APPENDIX D:

RECORD DRAWINGS

REMEDIAL DESIGN
CONTRACT DRAWINGS

FOR
LACKAWANNA INCINERATOR SITE
2960 SOUTH PARK AVENUE, LACKAWANNA, NEW YORK
NYSDEC SITE 915206

NEW YORK STATE OF OPPORTUNITY™ | Department of Environmental Conservation

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

Basil Seggos, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

SEPTEMBER 2019

URS Corporation
New York
257 West Genesee Street, Suite 400
Buffalo, New York 14202
(716)856-5636 phone - (716)856-2545 fax

1 RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * 074177 * LICENSED PROFESSIONAL ENGINEER

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
COVER

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:
T-001

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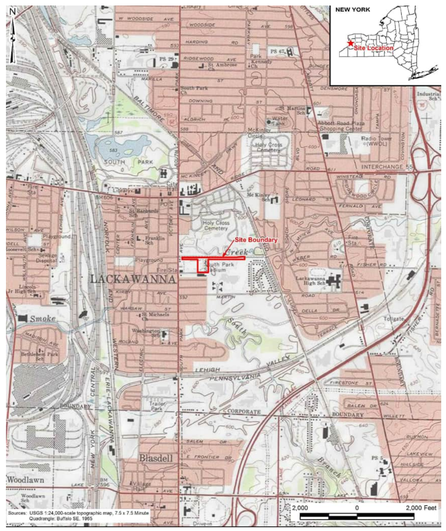
SITE PLAN

200' 0 200'

SCALE IN FEET

SITE LOCATION MAP



ABBREVIATIONS

APPROX.	APPROXIMATELY	NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
BLDG.	BUILDING	NYSDOTSS	NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS
CB	CATCH BASIN	NYSSSESC	NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL
CONC.	CONCRETE	OD	OUTSIDE DIAMETER
CY	CUBIC YARD	℄	PROPERTY LINE
DI	DRAINAGE INLET	PPM	PARTS PER MILLION
DIA/ø	DIAMETER	PROJ.	PROJECTED
DWGS.	DRAWINGS	PVC	POLYVINYL CHLORIDE
EL., ELEV.	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EXIST.	EXISTING	RECP	ROLLED EROSION CONTROL PRODUCT
F.E.	FINISHED ELEVATION	ROW	RIGHT-OF-WAY
F.F.	FINISHED FLOOR	S	SOUTH
FT	FEET	SAN	SANITARY
HDPE	HIGH DENSITY POLYETHYLENE	SB	SOIL BORING
HORZ.	HORIZONTAL	SCH	SCHEDULE
HYD	HYDRANT	SD	SEDIMENT SAMPLE
ID	INSIDE DIAMETER	SQ	SQUARE
IN.	INCHES	SS	SOIL SAMPLE
INV.	INVERT	STD.	STANDARD
LF	LINEAR FEET	TEMP.	TEMPORARY
MAX.	MAXIMUM	TYP	TYPICAL
MH	MANHOLE	UP	UTILITY POLE
MW	MONITORING WELL	VERT.	VERTICAL
N	NORTH	W	WIDTH/WIDE
NIC	NOT IN CONTRACT	WSEL	WATER SURFACE ELEVATION
NTS	NOT TO SCALE		

LEGEND

PROPERTY LINE	MW	MONITORING WELL	SILT FENCE
568 EXISTING CONTOUR		SOIL BORING	WOODED AREA
BOLLARD	E	OVERHEAD ELECTRIC LINE	4 C-005 | D-002 DETAIL CALLOUT
TREE	G	UNDERGROUND GAS LINE	CONSTRUCTION TRAFFIC DIRECTION
UTILITY POLE	ST	STORM SEWER	
HYDRANT	SAN	SANITARY SEWER	
GAS MARKER	X	FENCE/CHAINLINK FENCE	
MH MANHOLE		SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT	
CB CATCH BASIN	568	EXISTING CONTOUR	
595.7 + SPOT ELEVATION			

SURVEY NOTES

1. HORIZONTAL AND VERTICAL DATUM PROVIDED ON THE SITE PLAN ARE TAKEN FROM THE WORK OF JEFFREY F. PHILLIPS, LS 50773, DATED 11/9/15 AND PROVIDED TO THE POPLI DESIGN GROUP. THIS SURVEY WAS UPDATED BY A URS CORPORATION SURVEY, DATED 3/26/19.
2. HORIZONTAL DATUM IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (2011) – NEW YORK STATE PLANE COORDINATE SYSTEM, WEST ZONE.
3. VERTICAL DATUM IS REFERENCED TO THE NAVD88.
4. MAPPING UNITS ARE U.S. SURVEY FEET.
5. THE CONTOUR INTERVAL IS 1 FOOT.
6. UTILITIES SHOWN HEREON WERE PLOTTED FROM SURFACE FEATURES ONLY. UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN HEREON.
7. TAX PARCEL 142.14-1-5.112 IS IDENTIFIED ON COUNTY TAX MAPPING, HOWEVER, ERIE COUNTY'S TAX ROLL DATABASE HAS NO RECORD OF THIS TAX ACCOUNT, CURRENT OWNER OR CURRENT DEED.

DRAWING INDEX

DWG. No.	TITLE
	COVER
G-001	ABBREVIATIONS, NOTES, INDEX OF DRAWINGS, SITE PLAN AND SITE LOCATION MAP
G-002	SPECIFICATIONS (SHEET 1 OF 3)
G-003	SPECIFICATIONS (SHEET 2 OF 3)
G-004	SPECIFICATIONS (SHEET 3 OF 3)
C-001	EXISTING SITE CONDITIONS (1 OF 3)
C-002	EXISTING SITE CONDITIONS (2 OF 3)
C-003	EXISTING SITE CONDITIONS (3 OF 3)
C-004	REMEDIAL OPERATIONS PLAN
C-005	PROPOSED SITE CONDITIONS – INCINERATOR AREA
C-006	PROPOSED SITE CONDITIONS – SMOKES CREEK CORRIDOR (1 OF 2)
C-007	PROPOSED SITE CONDITIONS – SMOKES CREEK CORRIDOR (2 OF 2)
D-001	GENERAL DETAILS (1 OF 2)
D-002	GENERAL DETAILS (2 OF 2)

SUPPLEMENTAL DRAWING INDEX

1

DWG. No.	TITLE
SR-001	AS-BUILT EXCAVATION (SHEET 1 OF 3)
SR-002	AS-BUILT EXCAVATION (SHEET 2 OF 3)
SR-003	AS-BUILT EXCAVATION (SHEET 3 OF 3)
SR-004	AS-BUILT FINAL COVER – INCINERATOR AREA
SR-005	AS-BUILT FINAL COVER – SMOKES CREEK CORRIDOR (SHEET 1 OF 2)
SR-006	AS-BUILT FINAL COVER – SMOKES CREEK CORRIDOR (SHEET 2 OF 2)

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
2. WORK INCLUDED IN THIS CONTRACT SHALL BE PERFORMED IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL STATUTES, REGULATIONS, CODES, AND POLICIES. COMPLIANCE ASSURANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. WORK INCLUDED IN THIS CONTRACT SHALL BE COORDINATED WITH THE DEPARTMENT OR THEIR APPOINTED REPRESENTATIVE.
5. THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING TEST PITTING IF NECESSARY. ANY ENCOUNTERED BURIED UTILITIES, NOT IDENTIFIED BEFORE THE START OF CONSTRUCTION, SHALL BE REPORTED TO THE DEPARTMENT OR THEIR APPOINTED REPRESENTATIVE IMMEDIATELY.
6. THE CONTRACTOR SHALL PROTECT, MAINTAIN, AND RELOCATE (IF REQUIRED) LIGHTING AND POWER CONDUITS, PIPES, WIRES, SIGNAL/COMMUNICATION CABLES, AND EQUIPMENT ENCOUNTERED DURING THIS PROJECT.
7. STRUCTURES AND SITE FEATURE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION EQUIPMENT CAN BE TRANSPORTED TO AND OPERATED IN THE WORK AREA.
8. ANALYTICAL TESTING RESULTS FOR SOILS TO BE EXCAVATED WILL BE PROVIDED TO THE CONTRACTOR.
9. NO WORK SHALL BE PERFORMED UNTIL THE SUBMITTAL/SHOP DRAWING FOR THAT WORK ELEMENT HAS BEEN REVIEWED AND APPROVED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING PEDESTRIAN AND VEHICULAR TRAFFIC IN THE VICINITY OF THE WORK.
11. THE CONTRACTOR SHALL CALL 811 PRIOR TO DIGGING. THE CONTRACTOR SHALL APPLY APPROPRIATE DUE DILIGENCE IN CLEARING AND WORKING AROUND UTILITIES. THE CONTRACTOR SHALL HAND EXCAVATE OR USE A VACUUM AIR KNIFE (VACTOR UNIT) TO REMOVE SOIL TO A MINIMUM DEPTH OF FIVE (5') FEET WHEN WORKING NEAR UTILITIES TO DETERMINE THEIR EXACT LOCATIONS.
12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURITY TO PROTECT THEIR MATERIALS AND EQUIPMENT.
13. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL STRUCTURES AND ITEMS THAT ARE TO REMAIN.
14. ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING PRIOR TO CONSTRUCTION.
15. THE LOCATION OF UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. PRIOR TO ANY CONSTRUCTION ACTIVITIES, ALL UTILITY COMPANIES SHALL BE PROPERLY NOTIFIED TO VERIFY OR AMEND LOCATIONS AND/OR EXISTENCE OF UTILITIES.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

PROJECT NAME:

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Dwg No: G-001

Pg No: 2 of 14

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SUMMARY OF WORK:

1. MAJOR WORK ELEMENTS OF THIS CONTRACT INCLUDE THE FOLLOWING. THE CONTRACTOR SHALL IDENTIFY AND INCORPORATE INTO THE DESIGN THE MEASURES NECESSARY TO PERFORM THE SPECIFIED WORK SAFELY.
   - EXCAVATION AND DISPOSAL OF CONTAMINATED SOIL AND VEGETATION FROM THE TOP OF A STEEP SLOPE ABOVE A CREEK. CONSTRUCTION OF A SOIL COVER OVER THE EXCAVATION AREA, WITH CROSS-DRAINAGE STRUCTURES BELOW AN ASPHALT PATH.
   - REPAIR, WITH RIPRAP, OF AN AREA OF SEVERE EROSION OF THE BANK OF SMOKES CREEK, AND REALIGNMENT OF THE ADJACENT BIKE PATH.
   - EXCAVATION AND DISPOSAL OF CONTAMINATED SOIL, DEBRIS, AND VEGETATION FROM NEAR TWO OLD MUNICIPAL BUILDINGS. CONSTRUCTION OF SOIL OR ASPHALT COVER OVER THE EXCAVATION AREA.

SITE CONDITIONS:

1. THE SITE COMPRISES TWO DISTINCT USAGES, THE DEPARTMENT OF PUBLIC WORKS (DPW) INCINERATOR AREA AND THE SMOKES CREEK CORRIDOR. THE DPW INCINERATOR AREA'S MAIN STRUCTURAL FEATURES ARE TWO RED-BRICK, MULTI-STORY BUILDINGS AND ASSOCIATED CHIMNEYS THAT HOUSED MUNICIPAL SOLID WASTE INCINERATORS. THE PRIMARY USE OF THE AREA IS FOR COMMERCIAL PURPOSES, SUCH AS MATERIALS STAGING AND EQUIPMENT/VEHICLE STORAGE FOR THE CITY DPW. THE SMOKES CREEK CORRIDOR COMPRISES THE NORTHERN PORTION OF THE SITE, WHERE AN ASPHALT PAVED RECREATIONAL TRAIL RUNS EAST TO WEST ALONG THE TOP OF THE EMBANKMENT TO SMOKES CREEK. THE PRIMARY USE OF THE CORRIDOR IS FOR COMMERCIAL PURPOSES, I.E. PASSIVE RECREATION ACTIVITIES WHICH INCLUDE WALKING, CYCLING, AND FISHING.
2. BORING LOGS AND LOCATIONS ARE AVAILABLE UPON REQUEST.

REGULATORY REQUIREMENTS:

1. THE CONTRACTOR SHALL ADHERE TO ALL APPROPRIATE REGULATIONS AND LAWS IN CONDUCTING THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALERTING THE PROPER REGULATORY AGENCIES AND AUTHORITIES AS TO THE NATURE AND TIMING OF SITE ACTIVITIES WHICH WILL BE OCCURRING AT THE WORK SITE. THE CONTRACTOR SHALL INFORM AND UPDATE THE DEPARTMENT ON STATUS OF REQUIRED PERMITS AND REGULATORY COMPLIANCE.
2. COMPLIANCE WITH STATE AND FEDERAL REGULATIONS GOVERNING ACTIVITIES IS REQUIRED.
3. STATE AND FEDERAL REPRESENTATIVES SHALL BE AFFORDED UNRESTRICTED ACCESS TO THE SITE, SUBJECT TO REQUIREMENTS OF THE SITE HEALTH AND SAFETY PLAN.
4. EXCEPT AS NOTED, THE CONTRACTOR SHALL OBTAIN AND MAINTAIN AT THE SITE ALL PERMITS NECESSARY TO PERFORM THE WORK IN THIS CONTRACT. THE CONTRACTOR SHALL PAY ALL FEES IN ASSOCIATION WITH OBTAINING THESE PERMITS. APPLICABLE PERMITS INCLUDE THOSE ASSOCIATED WITH OFF-SITE TRANSPORTATION OF CONTAMINATED MATERIAL AND DISCHARGE OR WATER.

CONTRACTOR HEALTH AND SAFETY:

1. THE CONTRACTOR SHALL SUBMIT A HEALTH AND SAFETY PLAN SPECIFIC TO TASKS PERFORMED UNDER THIS CONTRACT FOR REVIEW PRIOR TO INITIATING THE WORK. AT A MINIMUM THE PLAN SHALL INCLUDE:
   - DESCRIPTIONS OF PHYSICAL HAZARDS, INCLUDING RISKS OF WORKING NEAR STEEP SLOPES ABOVE WATER.
   - DESCRIPTIONS OF CHEMICAL HAZARDS.
   - STANDARD OPERATING PROCEDURES AND ENGINEERING CONTROLS.
   - SAFE WORK PLANS FOR EACH TYPE OF ACTIVITY.
   - EMERGENCY RESPONSE AND CONTINGENCY PLAN.
   - CONFINED SPACE ENTRY PROCEDURES (IF NECESSARY).
   - PROCEDURES FOR COORDINATING WITH EMERGENCY SERVICES.
   - APPROPRIATE PERSONNEL PROTECTIVE EQUIPMENT.
   - SAFETY OFFICER'S RESUME AND CERTIFICATIONS.
   - EMPLOYEE ROSTER OF OSHA 1910.120 TRAINED WORKERS.
   - PERSONNEL AND EQUIPMENT DECONTAMINATION, INCLUDING THE PROPOSED DESIGN, OPERATION, CLOSURE, AND DISPOSAL OF DECONTAMINATION PADS.
   - DAILY SAFETY LOGS AND RECORD KEEPING.
   - DIRECTIONS TO NEAREST HOSPITAL.
2. THE CONTRACTOR'S EQUIPMENT SHALL MEET ALL OSHA REQUIREMENTS AND SHALL BE INSPECTED DAILY FOR COMPLIANCE.
3. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE CONSTRUCTION ACTIVITIES WITH THE LOCAL FIRE DEPARTMENT.

QUALITY CONTROL:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE MANAGEMENT OF QUALITY IN ALL PHASES OF THE PROJECT, INCLUDING ACTIVITIES OF SUBCONTRACTORS AND SUPPLIERS, TO ACHIEVE AN END PRODUCT THAT CONFORMS TO THE LEVEL OF QUALITY REQUIRED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUBMIT A QUALITY WORK PLAN SPECIFIC TO TASKS PERFORMED UNDER THIS CONTRACT FOR REVIEW PRIOR TO INITIATING WORK. THE PLAN SHALL INCLUDE THE FOLLOWING ITEMS TO THE EXTENT APPLICABLE FOR THE WORK ACTIVITY:
   - ASSURANCE AND CONTROL OF INSTALLATION, REFERENCES AND STANDARDS, TOLERANCES, FIELD SAMPLES, INSPECTION AND TESTING SERVICES, TESTING BY CONTRACTOR, AND MANUFACTURER'S FIELD SERVICES AND REPORTS.
   - METHODS TO BE USED (TOOLS, MEASURING DEVICES, ETC.) TO ENSURE COMPLIANCE WITH SPECIFICATION REQUIREMENTS.
   - CALIBRATION CONTROL OF MEASURING AND TESTING DEVICES.
   - COMPLIANCE WITH SPECIFIED STANDARDS AS A MINIMUM QUALITY FOR THE WORK, EXCEPT WHEN MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.
   - MONITOR FABRICATION AND INSTALLATION TOLERANCE CONTROL OF PRODUCTS TO PRODUCE ACCEPTABLE WORK. DO NOT PERMIT TOLERANCES TO ACCUMULATE.
   - METHODS FOR EXCAVATION AND BACKFILL OF SMOKES CREEK CORRIDOR. THIS SHALL INCLUDE PROPOSED TRAFFIC PATTERNS AND EQUIPMENT TO BE USED. ACCESS IN THIS AREA IS LIMITED AND WILL AFFECT THE METHODS REQUIRED TO COMPLETE THIS WORK.

MEASUREMENT FOR PAYMENT:

1. PAYMENT FOR THE WORK REQUIRED BY THESE CONTRACT DOCUMENTS SHALL BE MADE IN ACCORDANCE WITH TERMS AND CONDITIONS OF NYSDEC CALL-OUT CONTRACT UNDER WHICH THE WORK IS PERFORMED.

PROJECT COORDINATION:

1. PROJECT COORDINATION INCLUDES REQUIREMENTS FOR CONTRACTOR COORDINATION, SUBCONTRACTOR APPROVALS, AND PROJECT SCHEDULE STATUS AND UPDATING.
2. THE CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF PROPOSED SUBCONTRACTORS (INCLUDING DISPOSAL FACILITIES) IDENTIFYING NAME, ADDRESS, PHONE NUMBER, CONTACT, TYPE OF WORK TO BE SUBCONTRACTED, DOLLAR AMOUNT AND M/WBE STATUS.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE COORDINATION OF SCHEDULES FOR ALL OF HIS SUBCONTRACTORS. THE ENGINEER SHALL APPROVE ALL SCHEDULES AND THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ANY APPROPRIATE CHANGES TO THE SCHEDULE.
4. THE CONTRACTOR SHALL COORDINATE A LIST OF SUBMITTAL PACKAGES WITH THE ENGINEER PRIOR TO ANY SUBMITTALS BEING MADE.
5. IF TIME-AND-MATERIALS (T&M) DOCUMENTATION OF WORK IS REQUIRED, THE CONTRACTOR SHALL SUBMIT LABOR CLASSES, MATERIALS, AND EQUIPMENT, ALONG WITH ASSOCIATED RATES FOR TIME AND MATERIAL WORK TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. ENGINEER'S AND CONTRACTOR'S FIELD REPRESENTATIVES WILL SIGN A T&M RECORD OF WORK ON A DAILY BASIS. SIGNATURES FROM FIELD REPRESENTATIVES DO NOT REPRESENT THAT THE WORK SHOWN IS AN EXTRA OR THAT THE RATES ARE ACCEPTABLE. RATHER, IT IS MERELY TO DOCUMENT THE MATERIALS, LABOR, AND EQUIPMENT SHOWN WERE IN FACT USED FOR THE WORK IN QUESTION.
7. DAILY T&M WORKSHEETS WITHOUT THE SIGNATURE OF THE ENGINEER'S REPRESENTATIVE WILL NOT BE THE BASIS FOR A CLAIM FOR ADDITIONAL COMPENSATION.

ENVIRONMENTAL PROTECTION:

1. ENVIRONMENTAL PROTECTION INCLUDES, BUT IS NOT LIMITED TO THE CONTROL OF DUST, VAPOR, ODOR, EROSION AND SEDIMENTATION, AND IMPLEMENTATION OF OTHER MEASURES AS REQUIRED TO PROTECT LAND, AIR, AND WATER RESOURCES DURING ALL CONTRACT ACTIVITIES.
2. THE CONTRACTOR SHALL MAINTAIN THE ENVIRONMENT IN ITS NATURAL STATE TO THE GREATEST EXTENT POSSIBLE DURING PROJECT CONSTRUCTION AND ENHANCE THE NATURAL APPEARANCE IN ITS FINAL CONDITION. ENVIRONMENTAL PROTECTION REQUIRES CONSIDERATION OF AIR, SURFACE WATER, GROUNDWATER, WETLANDS, AND LAND RESOURCES AND INVOLVES NOISE, SOLID WASTE MANAGEMENT, AND MANAGEMENT OF OTHER POLLUTANTS.
3. IN ORDER TO PREVENT, AND TO PROVIDE FOR ABATEMENT AND CONTROL OF ANY ENVIRONMENTAL POLLUTION ARISING FROM THE CONTRACTOR'S ACTIVITIES IN PERFORMANCE OF THIS CONTRACT, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. COMPLIANCE WITH THE PROVISIONS OF THIS SECTION BY SUBCONTRACTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CONFINE HIS CONSTRUCTION ACTIVITIES TO AREAS DEFINED BY THE PLANS AND SPECIFICATIONS.
5. EXCEPT IN AREAS INDICATED ON THE PLANS AND SPECIFIED TO BE CLEARED, THE CONTRACTOR SHALL NOT DEFACE, INJURE, OR DESTROY TREES OR SHRUBS, NOR REMOVE OR CUT THEM WITHOUT THE APPROVAL OF THE DEPARTMENT.
6. RESTORATION OF LANDSCAPE DAMAGE: ANY TREE, TURFED AREAS OR OTHER LANDSCAPE FEATURE SCARRED OR DAMAGED BY THE CONTRACTOR'S EQUIPMENT OR OPERATIONS SHALL BE RESTORED TO A CONDITION SATISFACTORY TO THE DEPARTMENT. RESTORATION OF SCARRED AND DAMAGED TREES SHALL BE PERFORMED IN AN APPROVED MANNER BY EXPERIENCED WORKMEN. ANY DISTURBED TURFED (GRASSED) AREAS SHALL BE GRADED, SEEDED, AND MULCHED AS DIRECTED BY THE DEPARTMENT.
7. THE CONTRACTOR SHALL NOT POLLUTE ANY WETLANDS, STREAMS, RIVERS, OR WATERWAYS WITH FUELS, OILS, BITUMENS, CALCIUM CHLORIDE, ACIDS, INSECTICIDES, HERBICIDES, OR OTHER HARMFUL MATERIALS. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY, AND MUNICIPAL LAWS CONCERNING POLLUTION OF WETLANDS, WATERWAYS, RIVERS, AND/OR STREAMS.
8. ALL DEBRIS/WASTE WHICH THE CONTRACTOR GENERATES (E.G., LUMBER, PAPER) SHALL BE DISPOSED OFF-SITE AT THE CONTRACTOR'S OWN EXPENSE.

CONTRACTOR EROSION AND SEDIMENT CONTROL PLAN:

1. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, AN EROSION AND SEDIMENT CONTROL PLAN MEETING THE REQUIREMENTS OF THE SPDES GENERAL PERMIT GP-0-15-002, FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY. INFORMATION TO BE PROVIDED INCLUDES BUT IS NOT LIMITED TO:
   - SPECIFIC PRODUCTS TO BE USED.
   - SPECIFIC LOCATIONS AND ALIGNMENTS OF SILT FENCING, DRAINAGE SWALES, STRAW BALES, EROSION CONTROL BLANKETS, CONSTRUCTION ENTRANCES, AND OTHER PROPOSED FEATURES.
   - SPECIFIC SEQUENCING OF CONSTRUCTION OPERATIONS AND INSTALLATION OF CONTROL MEASURES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVALS (FROM REGULATORS AND THE DEPARTMENT) FOR THE SITE-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN.

SURVEY REQUIREMENTS:

1. THE STAKEOUT SURVEY SHALL PROCEED IMMEDIATELY FOLLOWING THE CONTRACTOR'S MOBILIZATION.
2. SURVEY WORK SHALL BE PERFORMED BY A STATE OF NEW YORK-LICENSED SURVEYOR WITH CURRENT REGISTRATION.
3. THE CONTRACTOR SHALL PERFORM, PREPARE, AND SUBMIT THE FOLLOWING SURVEYS, WHICH WILL BECOME THE SUPPLEMENTAL RECORD DRAWINGS OF THE WORK COMPLETED AS SPECIFIED:
   - PRECONSTRUCTION SURVEY OF THE SITE.
   - SOIL COVER SUBGRADE: THIS DRAWING SHALL BE SUBMITTED FOR THE DEPARTMENT'S REVIEW AND APPROVAL PRIOR TO PLACEMENT OF OVERLYING MATERIALS. THIS DRAWING MAY BE SUBMITTED INCREMENTALLY TO FACILITATE CONSTRUCTION.
   - GENERAL FILL LAYER (TOP ELEVATION).
   - TOPSOIL LAYER (TOP ELEVATION). THIS DRAWING SHALL INCLUDE THE RIPRAP, ALL OTHER FINAL ELEVATIONS, DRAINAGE SWALES, AND LIMITS OF TOPSOIL PLACEMENT AND SEEDING.
4. EACH OF THE SUPPLEMENTAL RECORD DRAWINGS SHALL INDICATE THE TOP AND BOTTOM ELEVATIONS OF THE LAYER, AS WELL AS THE TOTAL THICKNESS OF THE LAYER ON A 50-FOOT BY 50-FOOT GRID, AT SHARP BREAKS IN THE GRADE, AT THE TOES AND TOPS OF SLOPES AND AT OTHER UNIQUE POINTS THAT DO NOT LIE ON GRID POINTS. ONLY THE SUBGRADE ELEVATIONS SHALL BE SHOWN ON THE SUBGRADE DRAWING. EACH OF THESE DRAWINGS SHALL ALSO SHOW RECORD CONTOUR LINES AT THE TOP OF THE LAYER.
5. EACH RECORD DRAWING SHALL BE PREPARED ON A MINIMUM SIZE 22-INCH BY 34-INCH SHEET AND SHALL LOCATE ALL WORK REFERENCED TO APPROVED ESTABLISHED LIMITS. IN ADDITION, AN ELECTRONIC FILE COPY OF THE RECORD DRAWINGS SHALL ACCOMPANY THE HARDCOPY DRAWINGS.
6. ALL LOCATIONS SHALL BE REFERENCED TO THE HORIZONTAL COORDINATE SYSTEM SHOWN ON THE PLANS. THE GRID COORDINATE SYSTEM SHALL BE SHOWN ON ALL RECORD DRAWINGS. ELEVATIONS SHALL BE REFERENCED TO THE VERTICAL CONTROL ESTABLISHED FOR THE PROJECT.
7. SUPPLEMENTAL RECORD DRAWINGS SHALL BE STAMPED AND SIGNED BY A SURVEYOR LICENSED IN THE STATE OF NEW YORK, WITH CURRENT REGISTRATION.

PROJECT RECORD DRAWINGS:

1. THE CONTRACTOR SHALL CLEARLY AND NEATLY MARK UP IN RED INK ONE COMPLETE SET OF PAPER PRINTS OF THE DRAWINGS TO SHOW THE RECORD CONDITIONS. THESE RECORD MARKED PRINTS SHALL BE KEPT CURRENT AND AVAILABLE ON THE JOB SITE AT ALL TIMES. ALL CHANGES FROM THE CONTRACT PLANS WHICH ARE MADE IN THE WORK, OR ADDITIONAL INFORMATION WHICH MIGHT BE UNCOVERED OR PROVIDED IN THE COURSE OF CONSTRUCTION SHALL BE ACCURATELY AND NEATLY RECORDED AS THEY OCCUR BY MEANS OF DETAILS AND NOTES.
2. ALL PAPER PRINTS WILL BECOME THE PROPERTY OF THE DEPARTMENT UPON FINAL APPROVAL.
3. THE RECORD DRAWINGS SHALL BE JOINTLY INSPECTED FOR ACCURACY AND COMPLETENESS BY THE ENGINEER AND A RESPONSIBLE REPRESENTATIVE OF THE CONTRACTOR PRIOR TO SUBMISSION OF EACH MONTH'S PAY ESTIMATE.
4. THE RECORD DRAWINGS SHALL INCLUDE:
   - INSTALLATIONS OF ANY KIND OR DESCRIPTION KNOWN TO EXIST WITHIN THE CONSTRUCTION AREA. THE LOCATIONS SHALL INCLUDE DIMENSIONS TO PERMANENT FEATURES.
   - THE LOCATION AND DIMENSIONS OF ANY CHANGES WITHIN THE DESIGN FEATURES OF ANY KIND, OR DESCRIPTION KNOWN TO EXIST WITHIN THE CONSTRUCTION AREA.
   - CORRECT GRADE OR ALIGNMENT OF ROADS, STRUCTURES, UTILITIES, OR PROJECT COMPONENTS.
   - CORRECT ELEVATIONS.
   - CHANGES IN DETAILS OR DIMENSIONS.
   - THE TOPOGRAPHY AND GRADES OF ALL DRAINAGE STRUCTURES INSTALLED OR AFFECTED AS PART OF THE PROJECT CONSTRUCTION.
   - ADDITIONAL INFORMATION OBTAINED FROM WORKING DRAWINGS.
   - WHERE CONTRACT DOCUMENTS ALLOW OPTIONS, ONLY THE OPTION SELECTED FOR CONSTRUCTION SHALL BE SHOWN ON THE RECORD DRAWINGS.
   - ADDITIONAL WORK ORDERED BY THE ENGINEER OR DEPARTMENT.
6. THE CONTRACTOR SHALL PREPARE TWO (2) COPIES OF RECORD DRAWINGS AND THE SURVEYOR SHALL PREPARE TWO (2) COPIES OF SUPPLEMENTAL RECORD DRAWINGS. THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER WITHIN SEVEN (7) CALENDAR DAYS OF SUBSTANTIAL COMPLETION OF THE WORK FOR REVIEW AND APPROVAL BY THE ENGINEER.
   - IF UPON REVIEW, THE DRAWINGS ARE FOUND TO CONTAIN ERRORS AND/OR OMISSIONS, THEY SHALL BE RETURNED TO THE CONTRACTOR AND/OR SURVEYOR FOR CORRECTION.
   - THE CONTRACTOR AND/OR SURVEYOR SHALL COMPLETE THE CORRECTIONS AND RETURN TO THE ENGINEER WITHIN TEN (10) CALENDAR DAY FOR SUBSEQUENT REVIEW.
7. UPON APPROVAL OF THE RECORD DRAWINGS AND SUPPLEMENTAL RECORD DRAWINGS, THE CONTRACTOR SHALL SUPPLY SIX (6) COPES OF THE APPROVED RECORD DRAWINGS AND THE SURVEYOR SHALL PROVIDE SIX (6) COPIES OF THE SUPPLEMENTAL RECORD DRAWINGS.

1 **NOTE:**

1. THE SPECIFICATIONS PRESENTED ON DRAWINGS G-002 THROUGH G-004 HAVE NOT BEEN REVISED TO REFLECT THE ACTUAL MEANS, METHODS, OR MATERIALS OF CONSTRUCTION USED BY THE CONTRACTOR ON THIS PROJECT. FOR THAT INFORMATION, REFER TO THE INSPECTION REPORTS, SUBMITTALS, AND OTHER DOCUMENTATION PRESENTED FINAL ENGINEERING REPORT (AECOM 2022) AS WELL AS THE SUBSEQUENT DETAILED DRAWINGS IN THIS SET.

CONTRACTOR SUBMITTALS:

1. THE ENGINEER'S REVIEW, COMMENTS AND EXCEPTIONS TAKEN, IF ANY, SHALL NOT EXTEND TO, NOR CONSTITUTE DIRECTIONS NOR APPROVAL OF, THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OF CONSTRUCTION OR SAFETY PRECAUTIONS, THE CORRECTNESS OF WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. THE ENGINEER'S REVIEW WILL NOT BE INTENDED TO BE FOR THE PURPOSE OF DETERMINING THE ACCURACY OF OTHER MATTERS THAT MAY BE CONTAINED IN THE SUBMITTALS. WHEN THE REVIEW OF A SUBMITTAL RESULTS IN A NUMBER OF COMMENTS OR EXCEPTIONS TAKEN, THE DEPARTMENT DOES NOT WARRANT THAT THESE COMMENTS ARE INCLUSIVE OF ALL VARIATIONS, AS IT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO IDENTIFY EXPRESSLY ANY PROPOSED VARIATIONS.
3. THE REVIEW OF SUBMITTALS FROM THE CONTRACTOR SHALL NOT CONSTITUTE A WAIVER OF ANY OF THE REQUIREMENTS OF THIS CONTRACT, NOR SHALL THE DEPARTMENT BE COMPELLED TO ACCEPT ANY WORK, STRUCTURE, EQUIPMENT OR APPARATUS UNLESS IT PASSES ALL OF THE TESTS AND REQUIREMENTS OF THESE SPECIFICATIONS.
4. ALL CALCULATIONS SHALL BE STAMPED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER WITH CURRENT REGISTRATION AND SHALL BE SUBMITTED PRIOR TO STARTING FABRICATION OR INSTALLATION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE CALCULATIONS OF SUCH PROFESSIONAL ENGINEERS.
5. GENERAL REVIEW: UNLESS OTHERWISE SPECIFIED, SUBMITTALS SHALL BE SUBMITTED AT LEAST 14 CALENDAR DAYS BEFORE THEY ARE REQUIRED FOR FABRICATION OF THE MATERIALS BY THE CONTRACTOR OR SUPPLIER, AND AT LEAST 14 CALENDAR DAYS BEFORE THE SUBMITTAL PROCEDURE OR PLAN IS INTENDED TO BE IMPLEMENTED. LATE OR UNTIMELY SUBMITTAL OF INFORMATION SHALL NOT BE CAUSE TO REDUCE THE ENGINEER'S REVIEW TIME, TO ACCEPT LOWER QUALITY, OR TO DELAY THE PROJECT COMPLETION.
6. LIST OF REQUIRED SUBMITTALS (INCLUDING, BUT NOT LIMITED TO):

A. DATA FROM THE PROPOSED MANUFACTURER/SUPPLIER OF THE FOLLOWING MATERIALS DEMONSTRATING THAT THE PROPOSED MATERIAL MEETS THE CONTRACT REQUIREMENTS:
   - GENERAL FILL
   - TOPSOIL
   - AGGREGATE MATERIALS AND RIPRAP
   - ALL TEMPORARY AND PERMANENT GEOSYNTHETIC MATERIALS, INCLUDING EROSION CONTROL MATERIALS
   - DRAINAGE STRUCTURES AND MATERIALS NOT PROVIDED BY THE CITY
   - SEED
   - MULCH

B. A WORK PLAN IDENTIFYING THE CONTRACTOR'S PROPOSED MEANS AND METHODS FOR PERFORMING THE FOLLOWING WORK:
   - STOCKPILES (LOCATION)
   - SITE ACCESS (HAUL ROUTES)
   - SITE SUBGRADE PREPARATION
   - FILLING AND GRADING
   - PLACEMENT OF ALL MATERIALS
   - ENVIRONMENTAL PROTECTION
   - SURVEY
   - DISPOSAL LOCATION OF EXCAVATED MATERIALS

C. THE FOLLOWING REQUIRED PLANS AND INFORMATION:
   - HEALTH AND SAFETY PLAN
   - EROSION AND SEDIMENT CONTROL PLAN
   - WORK PLAN
   - PROGRESS SCHEDULE
   - RECORD DRAWINGS AND SUPPLEMENTAL RECORD DRAWINGS

CONSTRUCTION PROGRESS SCHEDULE:

1. PREPARE AND SUBMIT PROGRESS SCHEDULES AND UPDATES.
2. WITHIN 10 DAYS OF THE NOTICE TO PROCEED, SUBMIT A PRELIMINARY CONSTRUCTION SCHEDULE WITH ALL PLANNED OPERATIONS.
3. SUBMIT UPDATED SCHEDULES AS NEEDED, OR AS REQUESTED BY THE DEPARTMENT.

PROGRESS MEETINGS:

1. THE ENGINEER WILL SCHEDULE AND ADMINISTER PRE-CONSTRUCTION MEETINGS, PROGRESS MEETINGS, AND OTHER MEETINGS REQUIRED DURING THE PROGRESS OF THE WORK. REPRESENTATIVES OF CONTRACTOR, SUBCONTRACTORS, AND SUPPLIERS SHALL ATTEND MEETINGS AND SHALL BE QUALIFIED AND AUTHORIZED TO ACT ON BEHALF OF THE ENTITY EACH REPRESENTS.
2. A SCHEDULE FOR REGULAR MEETINGS WILL BE ESTABLISHED AT THE PRE-CONSTRUCTION MEETING. MEETINGS WILL BE HELD AS PROGRESS OF THE WORK DICTATES.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCALL · 074177 · LICENSED PROFESSIONAL ENGINEER

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

SPECIFICATIONS
(1 OF 3)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

G-002

Pg No: 3 of 14

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CLEARING:

1. THE CONTRACTOR SHALL STAKE OUT THE LIMITS OF CLEARING. CLEARING SHALL NOT PROCEED WITHOUT THE ENGINEER'S APPROVAL.
2. KEEP ROADS AND WALKS FREE OF DEBRIS AT ALL TIMES.
3. PROTECT EXISTING UTILITY LINES AND POLES, THAT ARE INDICATED TO REMAIN.
4. TREES, WETLANDS, AND OTHER VEGETATION TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY ALL CONSTRUCTION OPERATIONS BY ERECTING SUITABLE BARRIERS, GUARDS AND ENCLOSURES.
5. DO NOT OPERATE HEAVY EQUIPMENT OR STOCKPILE MATERIALS WITHIN THE BRANCH SPREAD OF EXISTING TREES. IMMEDIATELY REPAIR ANY DAMAGE TO EXISTING TREE CROWNS, TRUNKS, OR ROOT SYSTEMS.
6. CONDUCT THE CLEARING IN A MANNER THAT PREVENTS, TO THE EXTENT POSSIBLE, SOIL OR SOIL LIKE MATERIAL FROM BEING COLLECTED WITH CLEARED MATERIAL.
7. TRIM ONLY THOSE TREES AND OTHER VEGETATION ADJACENT TO CLEARED WORK AREAS AND NECESSARY TO CONDUCT THE REQUIRED WORK.
8. CONTAMINATED AREAS SHALL NOT BE GRUBBED. STUMPS, ROOTS, AND OTHER SUBSURFACE VEGETATION IN CONTAMINATED AREAS SHALL BE EXCAVATED AND HANDLED IN THE SAME MANNER AS CONTAMINATED SOILS OR SEDIMENTS.
9. MATERIALS CLEARED BY THE CONTRACTOR SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL NOT SEPARATELY GRUB THE ROOTS, ETC. ALL ROOTS, ETC. TO WHICH SIGNIFICANT QUANTITIES OF SOIL ADHERE SHALL BE EXCAVATED AND DISPOSED OF WITH THE EXCAVATED SOIL.

EXCAVATION:

1. THE EXTENT OF SOIL EXCAVATION AND HANDLING IS AS SPECIFIED AND SHOWN ON THE PLANS.
2. ALL EXISTING PIPES, WIRES, PROPERTY LINE MARKERS, AND OTHER STRUCTURES, WHICH THE ENGINEER DECIDES MUST BE PRESERVED IN PLACE WITHOUT BEING TEMPORARILY OR PERMANENTLY RELOCATED SHALL BE CAREFULLY SUPPORTED AND PROTECTED FROM DAMAGE BY THE CONTRACTOR. REPAIR TO PIPES, WIRES, OR CABLES SHALL BE PERFORMED BY THE CONTRACTOR AT NO EXPENSE TO THE DEPARTMENT.
3. THE CONTRACTOR SHALL KEEP MATERIALS CLASSIFIED FOR DIFFERENT TYPES OF DISPOSAL SEGREGATED. EXCAVATION AND STOCKPILING OPERATIONS FOR THE DIFFERENT MATERIALS MUST NOT BE MIXED.
4. THE CONTRACTOR SHALL EMPLOY DUST AND ODOR CONTROL METHODS DURING HANDLING ACTIVITIES AS NECESSARY, IN ACCORDANCE WITH THE HEALTH AND SAFETY PLAN AND THE RELEVANT SECTIONS OF THE ENVIRONMENTAL PROTECTION PLAN. THE CONTRACTOR SHALL USE WATER OR WATER AMENDED WITH AN APPROPRIATE SURFACTANT, USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR OTHER MEANS TO CONTROL DUST AND ODORS ACCEPTABLE TO THE ENGINEER. NO VISIBLE DUST OR SIGNIFICANT ODORS ARE PERMITTED BEYOND THE LIMITS OF THE EXCLUSION ZONE AS A RESULT OF EXCAVATION ACTIVITIES, AS DETERMINED BY THE ENGINEER.
5. ANY EXCAVATIONS THAT ARE LEFT UNATTENDED FOR ANY PERIOD OF TIME SHALL BE SECURELY FENCED WITH ORANGE SNOW FENCE AND POSTED WITH BARRICADE TAPE TO PREVENT UNAUTHORIZED ENTRY INTO THE EXCAVATION. ALL TEMPORARY FENCING IS TO BE REMOVED AND PROPERLY DISPOSED AT THE COMPLETION OF THE CONTRACT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAMPLING AND ANALYSES AS MAY BE REQUIRED BY DISPOSAL FACILITIES FOR DISPOSAL OF SOILS, SEDIMENTS, AND OTHER MATERIAL UNDER THIS CONTRACT. ALL SAMPLING WILL BE CONDUCTED WITH THE ENGINEER PRESENT.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL EXCAVATION WORK IN ACCORDANCE WITH ALL APPLICABLE LAWS INCLUDING, BUT NOT LIMITED TO, OSHA EXCAVATION AND TRENCHING SAFETY REGULATIONS (29 CFR 1926.650).
8. EXCAVATE TO CONTOURS, ELEVATIONS, AND DIMENSIONS INDICATED. CUT TRENCHES SUFFICIENTLY WIDE TO ENABLE INSTALLATION OF UTILITIES AND ALLOW INSPECTIONS. EXCAVATE SOIL DISTURBED OR WEAKENED BY CONTRACTOR'S OPERATIONS, SOILS SOFTENED OR MADE UNSUITABLE FOR SUBSEQUENT CONSTRUCTION DUE TO EXPOSURE OF WEATHER.

OFF-SITE TRANSPORTATION AND DISPOSAL:

1. THE CONTRACTOR SHALL PROPERLY TRANSPORT AND DISPOSE OF ALL ITEMS, INCLUDING SOLID AND LIQUID HAZARDOUS AND NONHAZARDOUS WASTES REMOVED FROM THE SITE, TO APPROPRIATE DISPOSAL FACILITIES. THIS INCLUDES EXISTING WASTES AS WELL AS THE WASTES GENERATED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL COMPLY WITH (AND DOCUMENT) ALL SAMPLING, ANALYSES, TRANSPORTATION, AND DISPOSAL REQUIREMENTS OF THE FEDERAL, STATE, AND LOCAL GOVERNMENTS.
3. THE CONTRACTOR SHALL SUBMIT COPIES OF TRANSPORTATION PERMITS FOR ALL PROPOSED DISPOSAL FACILITIES AND VEHICLES.
4. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, INFORMATION REGARDING PROPOSED FACILITIES FOR DISPOSAL OF EACH TYPE OF WASTE. ALL PROPOSED FACILITIES MUST BE PERMITTED. INFORMATION SUBMITTED SHALL INCLUDE:
   - NAME.
   - DEPARTMENT.
   - TYPE OF FACILITY/PERMIT.
   - CONTACT PERSON, PHONE NUMBER, AND LOCATION.
   - HOURS OF OPERATION.
   - COPIES OF PERMITS.
5. MATERIALS AND EQUIPMENT:
   - ALL EQUIPMENT SUPPLIED SHALL BE IN GOOD WORKING CONDITION. EQUIPMENT AND MACHINERY DELIVERED TO THE SITE, INCLUDING HAUL TRUCKS, THAT HAVE VISIBLE OIL OR HYDRAULIC FLUID LEAKS, WILL NOT BE ALLOWED ON SITE UNTIL SATISFACTORILY REPAIRED. THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP OF ANY OIL OR HYDRAULIC FLUID SPILLS AT THE CONTRACTOR'S EXPENSE.
   - THE CONTRACTOR SHALL NOT ALLOW SOIL TO BE TRACKED OFF-SITE AT ANY TIME DURING THE PROJECT. VISIBLE SOIL TRACKS ON STREETS WILL NOT BE ALLOWED. THE CONTRACTOR SHALL TAKE SUFFICIENT PRECAUTIONS TO PREVENT LOOSE SOILS FROM ADHERING TO TIRE TREADS, WHEEL WELLS, ETC. ANY LOOSE SOIL SPREAD SHALL BE CLEANED UP.
   - TRUCKS USED FOR TRANSPORTATION OF MATERIAL FOR OFF-SITE DISPOSAL SHALL BE WATERTIGHT AND PERMITTED PURSUANT TO 6 NYCRR PART 364. ALL TRUCKS SHALL BE COVERED PRIOR TO LEAVING THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH SAMPLING AND ANALYSES, ETC. AS MAY BE REQUIRED BY THE DISPOSAL FACILITY.
7. THE CONTRACTOR SHALL COMPLETE ALL REQUIRED MANIFEST FORMS AND BILL OF LOADING FORMS FOR THE DEPARTMENT FOR PROPER TRANSPORTATION AND DISPOSAL OF MATERIALS OFF-SITE. CONTRACTOR SHALL SIGN MANIFESTS AS AGENT OF NYSDEC.

SITE/SUBGRADE PREPARATION:

1. SUBGRADE IS DEFINED AS THE EXPOSED SURFACE ON WHICH FILL OR OTHER MATERIAL WILL BE PLACED. SUBGRADE SHALL BE SHAPED TO LINE, GRADE, AND CROSS-SECTION AS SPECIFIED AND REQUIRED.
2. LIMITS OF CLEARING SHALL BE VERIFIED IN THE FIELD AND APPROVED BY THE ENGINEER.
3. TREES, BRUSH, EXPOSED ROOTS, AND OTHER VEGETATION IN AREAS TO BE CLEARED, SHALL BE CUT OFF FLUSH WITH THE EXISTING GROUND SURFACE OR TO THE DEPTH OF STRIPPING, WHICHEVER IS DEEPER.

FILLING AND GRADING:

1. PRIOR TO ANY GRADING, THE CONTRACTOR SHALL SURVEY AND STAKEOUT THE SITE FOR FIELD APPROVAL BY THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPERVISION, LABOR, EQUIPMENT, AND MATERIALS AS NEEDED TO PERFORM THE SPECIFIED WORK, INCLUDING BUT NOT LIMITED TO, EXCAVATING, LOADING, HAULING, AND COMPACTING THE MATERIALS FROM APPROVED BORROW AND STOCKPILE AREAS TO THE SOIL COVER/FILL PLACEMENT LOCATIONS.
3. THE CONTRACTOR WILL NOT BE PERMITTED TO BRING ON SITE ANY PROPOSED OFF-SITE MATERIALS UNTIL SUBMITTALS REQUIRED FOR THOSE MATERIALS ARE APPROVED.
4. THE CONTRACTOR SHALL DEVELOP AND SUBMIT FOR APPROVAL A WORK PLAN DETAILING THE FOLLOWING:
   - PROPOSED STOCKPILE LOCATIONS FOR EACH MATERIAL TYPE.
   - EQUIPMENT PROPOSED FOR EACH WORK OPERATION.
   - ON-SITE TRAFFIC PATTERNS.
   - MATERIAL PLACEMENT DIRECTIONS/SEQUENCING.
   - SPECIAL MEASURES TO ADDRESS RISK ASSOCIATED WITH WORKING NEAR STEEP SLOPES ABOVE WATER.
5. THE CONTRACTOR SHALL PROVIDE THE DEPARTMENT WITH COPIES OF ALL WAYBILLS AND DELIVERY TICKETS OF ALL MATERIALS USED IN FILLS.
6. FILL SHALL BE PLACED AS REQUIRED ON APPROVED SUBGRADE TO CONSTRUCT THE SOIL COVER TO ACHIEVE REQUIRED THICKNESSES, LINES, GRADES, AND/OR ELEVATIONS INDICATED BY THE CONTRACT DRAWINGS.
7. FILL MATERIALS SHALL NOT BE PLACED ON SURFACES THAT ARE FROZEN OR CONTAIN FROST.
8. THE CONTRACTOR SHALL ENSURE THAT FINISHED GRADES PROMOTE POSITIVE DRAINAGE.
9. GENERAL FILL AND TOPSOIL SHALL BE PLACED AS SHOWN ON THE PLANS AND AS REQUIRED TO CONSTRUCT THE SOIL COVER, SURFACE WATER DRAINAGE STRUCTURES, AND OTHER DESIGN FEATURES.
10. THE FILL MATERIAL SHALL BE PLACED IN MAXIMUM 12-INCH (MEASURED AFTER COMPACTION) LIFTS, SPREAD IN LAYERS OF UNIFORM THICKNESS BY BULLDOZERS OR OTHER APPROVED MEANS, AND COMPACTED BY APPROVED COMPACTION EQUIPMENT.

1 NOTE:

1. THE SPECIFICATIONS PRESENTED ON DRAWINGS G-002 THROUGH G-004 HAVE NOT BEEN REVISED TO REFLECT THE ACTUAL MEANS, METHODS, OR MATERIALS OF CONSTRUCTION USED BY THE CONTRACTOR ON THIS PROJECT. FOR THAT INFORMATION, REFER TO THE INSPECTION REPORTS, SUBMITTALS, AND OTHER DOCUMENTATION PRESENTED FINAL ENGINEERING REPORT (AECOM 2022) AS WELL AS THE SUBSEQUENT DETAILED DRAWINGS IN THIS SET.

GENERAL FILL:

1. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE RESULTS FOR ALL REQUIRED TESTING.
2. GENERAL FILL AND TOPSOIL FOR USE AS SOIL COVER IN THE INCINERATOR AREA SHALL MEET REQUIREMENTS OF THE PUBLIC HEALTH SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE AS SET IN TABLE 375-6.8(b) IN 6 NYCRR PART 375.
3. GENERAL FILL AND TOPSOIL FOR USE AS SOIL COVER IN THE SMOKES CREEK CORRIDOR SHALL MEET REQUIREMENTS OF THE PUBLIC HEALTH SOIL CLEANUP OBJECTIVES FOR UNRESTRICTED USE AS SET IN TABLE 375-6.8(b) IN 6 NYCRR PART 375.
4. ANALYTICAL CRITERIA: THE SOURCE OF THE SOIL WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DOCUMENTATION AS REQUESTED THAT DEMONSTRATES THAT PROPOSED SOIL (INCLUDING TOPSOIL) MEETS THE FOLLOWING REQUIREMENTS.
   - ALL SOIL IMPORTED TO THE SITE MUST BE TESTED FOR 1,4-DIOXANE AND PFAS CONTAMINATION IN GENERAL CONFORMANCE WITH NYSDEC DER-10, SECTION 5.4(E). SOIL SAMPLES MUST BE ANALYZED FOR 1,4-DIOXANE USING EPA METHOD 8270 AS WELL AS THE FULL LIST OF PFAS COMPOUNDS (CURRENTLY 21) USING EPA METHOD 537.1 (MODIFIED).
   - FOR 1,4-DIOXANE, SOIL EXCEEDING THE UNRESTRICTED SCO OF 0.1 PPM MUST BE REJECTED PER NYSDEC DER 10: APPENDIX 5 – ALLOWABLE CONSTITUENT LEVELS FOR IMPORTED FILL OR SOIL, SUBDIVISION 5.4(E).
   - IF PFOA OR PFOS IS DETECTED IN ANY SAMPLE AT OR ABOVE 1 PPB, THEN A SOIL SAMPLE MUST BE TESTED BY THE SYNTHETIC PRECIPITATION LEACHING PROCEDURE (SPLP) AND THE LEACHATE ANALYZED. IF THE SPLP RESULTS EXCEED 70 PPT COMBINED PFOA/S, THEN THE SOURCE OF BACKFILL MUST BE REJECTED. DUE TO LABORATORY BACKLOGS BEING EXPERIENCED, CONTRACTORS ARE HIGHLY ENCOURAGED TO SAMPLE CONCURRENTLY FOR BOTH PFAS IN SOIL AND IN THE SPLP LEACHATE TO MINIMIZE PROJECT DELAYS. CATEGORY B DELIVERABLES ARE REQUIRED FOR PFAS ANALYSIS.
5. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COPIES OF ALL WAYBILLS AND DELIVERY TICKETS.
6. GENERAL FILL FROM OFF-SITE BORROW SOURCES SHALL BE FREE FROM ORGANIC OR OTHER PERISHABLE MATERIAL, ROOTS, FROZEN MATERIAL, STONES, OR OTHER MATERIALS LARGER THAN WHAT IS SPECIFIED IN THIS SECTION IN ANY DIMENSION, DEBRIS, CONTAMINANTS, AND ANY OTHER OBJECTIONABLE MATERIAL. MATERIALS WILL NOT BE PERMITTED FOR PLACEMENT IF THEY APPEAR TOO WET TO EFFECTIVELY COMPACT.
7. GENERAL FILL SHALL CONFORM TO THE FOLLOWING:
   - MAXIMUM PARTICLE SIZE: THE MAXIMUM PARTICLE SIZE SHALL BE THREE (3) INCHES IN ITS GREATEST DIMENSION.
   - SATISFACTORY MATERIAL FOR GENERAL FILL SHALL BE ANY NATURAL MATERIAL CLASSIFIED BY ASTM D-2487 AS SC, SM, ML, AND CL.
   - THE CONTRACTOR SHALL PERFORM PRECONSTRUCTION TESTING TO PROVE THAT PROPOSED OFF-SITE MATERIALS AND SOURCES CAN MEET THE MATERIAL REQUIREMENTS NOTED ABOVE PER THE LABORATORY TEST PROCEDURES SHOWN IN TABLE 1.
8. GENERAL FILL SHALL BE PLACED AS INDICATED BY THE PLANS AND AS REQUIRED TO CONSTRUCT THE SOIL COVER, SURFACE WATER DRAINAGE STRUCTURES, AND OTHER DESIGN FEATURES TO ACHIEVE REQUIRED LINES, GRADES, POSITIVE DRAINAGE, AND ELEVATIONS SHOWN ON THE PLANS.
9. GENERAL FILL SHALL BE APPROVED BY THE DEPARTMENT PRIOR TO PLANNED PLACEMENT. THE FILL MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 12 INCHES AFTER COMPACTION AND SPREAD IN LAYERS OF UNIFORM THICKNESS BY BULLDOZERS OR OTHER APPROVED MEANS.
10. GENERAL FILL SHALL BE COMPACTED WITH A MINIMUM OF 2 PASSES WITH A BULLDOZER AFTER PLACEMENT, AND TO AN UNYIELDING STATE.

TABLE 1

REQUIRED PHYSICAL TESTING FOR OFF-SITE FILL MATERIALS

TEST	TEST METHOD	FREQUENCY
PARTICLE SIZE (INCLUDING HYDROMETER)	ASTM D-422	1 TEST PER 2,5000 CY OF MATERIAL FROM EACH SOURCE
ATTERBERG LIMITS	ASTM D-4318	
USCS CLASSIFICATION	ASTM D-2487	

AGGREGATE MATERIALS AND RIP RAP:

1. THE CONTRACTOR SHALL SUBMIT NYSDOT SOURCE APPROVED MATERIAL CERTIFICATES OF COMPLIANCE WITH REFERENCE STANDARDS FOR EACH OF THE FOLLOWING AGGREGATE MATERIALS FOR PLACEMENT AT THE LOCATIONS SHOWN ON THESE PLANS:
   - BEDDING STONE – CONFORMING TO NYSDOTSS SECTION 703-02, TABLE 703-4 SIZE DESIGNATION NO. 1.
   - SUBBASE – CONFORMING TO NYSDOTSS SECTION 304, SUBBASE TYPE 2. BLAST FURNACE SLAG WILL NOT BE PERMITTED.
   - GRAVEL – CONFORMING TO NYSDOTSS SECTION 667-2, LOCAL ROAD GRAVEL SURFACE COURSE, TYPE A.
2. RIP RAP SHALL CONFORM TO THE REQUIREMENTS OF NYSDOTSS ITEM 620.03 (LIGHT STONE FILLING), AND SHALL BE SOUND, DURABLE ROCK, ANGULAR IN SHAPE, AND OF SUITABLE QUALITY TO ENSURE THE PERMANENCE IN THE CONDITION IN WHICH IT IS TO BE USED. ROUNDED STONES, BOULDERS, SANDSTONE, OR SIMILAR SOFT STONE WILL NOT BE ACCEPTABLE. MATERIAL SHALL BE FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATERIALS, AND SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.
3. SUBBASE SHALL BE PLACED IN UNIFORM LIFTS AND COMPACTED THOROUGHLY TO AN UNYIELDING STATE WITH SUITABLE APPROVED EQUIPMENT.
4. BEDDING STONE SHALL BE PLACED IN A UNIFORM 6-INCH (MIN.) LAYER.

ASPHALT PAVEMENT:

1. THE FURNISHING, HANDLING AND COMPACTION OF ALL BITUMINOUS MATERIALS SHALL BE IN ACCORDANCE WITH THE NYSDOT STANDARDS.
2. ASPHALT TACK COAT SHALL BE APPLIED AT THE RECOMMENDED RATE BETWEEN ALL ASPHALT PAVING COURSES. IN AREAS WHERE BINDER COURSE IS TO BE APPLIED TO EXISTING PAVEMENT, THE CONTRACTOR SHALL APPLY ASPHALT TACK COAT TO THE EXISTING PAVEMENT PRIOR TO PLACING THE BINDER COURSE.
3. CONSTRUCT ASPHALT PAVEMENT IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATIONS SECTION 400, HOT MIX ASPHALT, AND THE CONTRACT DRAWINGS.
4. ALL BITUMINOUS ASPHALT MATERIALS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATIONS SECTION 400 HOT MIX ASPHALT: 1
   - ~~TOP COURSE: NYSDOT, Table 403-1, Type 7.~~
   - BINDER COURSE: NYSDOT, Table 403-1, Type 3.
   - BASE COURSE: NYSDOT, Table 403-1, Type 1.
5. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE ASPHALT MIX DESIGN.
6. DO NOT PLACE ASPHALT CONCRETE ON WET SURFACES, OR WHEN WEATHER CONDITIONS OTHERWISE PREVENT THE PROPER HANDLING OR FINISHING OF BITUMINOUS MIXTURES.

DRAINAGE STRUCTURES AND PIPING:

1. MATERIAL:
   - CONTRACTOR SHALL SUPPLY THE FOLLOWING, AS REQUIRED: 1
     - YARD DRAINS: ~~NYOPLAST~~ KISTNER 2FT X 2FT STRUCTURE WITH ~~H-20 BICYCLE SAFE~~ E.J. GROUP 5426M GRATE OR APPROVED EQUAL.
     - DRAINAGE PIPE: 4"x100' COREX DRAIN PIPE, PERFORATED, BY ADS OR APPROVED EQUAL.
     - DRAINAGE CROSS PIPE: 6" ADS N-12 DUAL WALL – HDPE PIPE OR APPROVED EQUAL.
   - CATCH BASIN, GRATE, AND PIPE FOR CURVE AREA RESTORATION WILL BE PROVIDED BY THE CITY OF LACKAWANNA.
2. INSTALLATION:
   - THE CONTRACTOR SHALL PLACE, SHAPE, AND COMPACT ALL BEDDING MATERIAL TO RECEIVE THE MATERIAL TO BE SUPPORTED. THE CONTRACTOR SHALL INSTALL MATERIALS TO BEAR ON THE BEDDING MATERIAL ALONG THE ENTIRE LENGTH OF THE PIPE.
   - THE CONTRACTOR SHALL INSTALL PIPING IN ACCORDANCE WITH ASTM D-2321 AND THE CORRUGATED PE PIPE ASSOCIATION'S "RECOMMENDED INSTALLATION PRACTICES FOR CORRUGATED PE PIPE AND FITTINGS," BEGINNING AT THE LOW POINT, TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. FOR CULVERT, BELL ENDS OF PIPING SHALL FACE UPSTREAM. INSTALL GASKETS, SEALS, SLEEVES, COUPLINGS, END SECTIONS, AND MISCELLANEOUS FITTINGS ACCORDING TO THE MANUFACTURERS' WRITTEN INSTRUCTIONS.
   - PLASTIC PIPE, GRATES, AND FITTINGS SHALL BE INSTALLED AT THE LOCATIONS, LINES, AND GRADES SHOWN ON THE PLANS. ALL STORM DRAINAGE PIPE AND APPURTENANT STRUCTURES SHALL BE INSTALLED TO THE REQUIRED GRADES AND INVERTS PLUS OR MINUS ONE (1) TENTH OF ONE (1) FOOT (±0.1 FT.).

GEOTEXTILE FABRIC:

1. FIBERS USED IN THE MANUFACTURE OF GEOTEXTILES SHALL CONSIST OF LONG CHAIN SYNTHETIC POLYMERS, COMPOSED OF AT LEAST 85% BY WEIGHT POLYOLAFINS, POLYESTERS, OR POLYAMIDES.
2. GEOTEXTILES WITH LOW RESISTANCE TO ULTRAVIOLET DEGRADATION (MORE THAN 30% STRENGTH LOSS AT 500 HOURS EXPOSURE ASTM D-4355) SHALL NOT BE EXPOSED TO SUNLIGHT FOR MORE THAN 7 DAYS. GEOTEXTILES WITH HIGHER RESISTANCE TO ULTRAVIOLET DEGRADATION SHALL NOT BE EXPOSED FOR MORE THAN 30 DAYS.
3. GEOTEXTILE SEPARATION FABRIC SHALL BE MIRAFI 1100N OR APPROVED EQUAL.
4. THE GEOTEXTILE SEPARATION FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   - GRAB STRENGTH (LBS.) 250 (ASTM D-4632)
   - ELONGATION (%) 50 (ASTM D-4632)
   - PUNCTURE STRENGTH (LBS.) 155 (ASTM D-4833)
   - BURST STRENGTH (PSI) 500 (ASTM D-3786)
   - TRAPEZOID TEAR (LBS.) 100 (ASTM D-435)
5. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL LARGE STONES, ROOTS, AND DEBRIS AND EXCAVATE AND SHAPE THE SITE TO THE LINES AND GRADES AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FILL DEPRESSIONS OR HOLES TO PERMIT CLOSE CONTACT BETWEEN THE GEOTEXTILE AND THE PREPARED SURFACE.
6. PLACE THE GEOTEXTILE IN CLOSE CONTACT WITH THE SOIL, ELIMINATING FOLDS OR EXCESSIVE WRINKLES. THE CONTRACTOR SHALL NOT DAMAGE THE GEOTEXTILE DURING ANY CONSTRUCTION ACTIVITY.
7. THE GEOTEXTILE SHALL BE JOINED BY OVERLAPPING OR SEWING. THE MINIMUM OVERLAP DISTANCE IN THE TRANSVERSE OR LONGITUDINAL DIRECTION IS 2 FEET., EXCEPT IN UNDERWATER INSTALLATIONS WHERE THE MINIMUM OVERLAP IS 3 FEET. SEWN SEAMS ARE ALLOWED IF THE OVERLAP IN THE TRANSVERSE OR LONGITUDINAL DIRECTION IS AT LEAST 6 INCHES.
8. STONE FILLING SHALL NOT BE DROPPED ONTO THE GEOTEXTILE FROM A HEIGHT OF MORE THAN 1 FOOT. ANY GEOTEXTILE DAMAGED DURING PLACEMENT SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCAL · 074177 · LICENSED PROFESSIONAL ENGINEER

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

SPECIFICATIONS
(2 OF 3)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

G-003

Pg No: 4 of 14

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ROLLED EROSION CONTROL PRODUCT:

1. THE ROLLED EROSION CONTROL PRODUCT (RECP), SHALL BE:
   - CURLEX NET FREE, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, ARLINGTON TX.
   - BIONET C125N, AS MANUFACTURED BY NORTH AMERICAN GREEN, POSEYVILLE, IN.
   - APPROVED EQUAL.
2. RECP'S WITH POLYNETTING, INCLUDING BIODEGRADABLE/PHOTODEGRADABLE NETTING, WILL NOT BE ACCEPTED.
3. THE SELECTED RECP SHALL MEET THE STANDARDS SET FORTH BY THE EROSION CONTROL TECHNOLOGY COUNCIL WHERE NATURAL VEGETATION WILL PROVIDE PERMANENT EROSION CONTROL.
4. THE CONTRACTOR SHALL INSTALL THE RECP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
5. ROLLED EROSION CONTROL PRODUCT (RECP) SHALL BE INSTALLED IN ALL SLOPED AREAS OF THE SITE (SLOPE STEEPER THAN 25%) THAT ARE TO BE VEGETATED AND WHERE REQUIRED OR SHOWN ON THE DRAWINGS.
6. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL LARGE STONES, ROOTS, AND DEBRIS AND EXCAVATE AND SHAPE THE SITE TO THE LINES AND GRADES AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FILL DEPRESSIONS OR HOLES TO PERMIT CLOSE CONTACT BETWEEN THE RECP AND THE PREPARED SURFACE.
7. IN WATERWAY SLOPE APPLICATIONS A 2" OVERLAP SHALL BE APPLIED DURING THE INSTALLATION OF MULTIPLE BLANKETS. THE OVERLAPPING BLANKETS SHALL BE SECURED WITH A ROW OF STAPLES OR STAKES.
8. THE CONTRACTOR SHALL FASTEN THE RECP WITH STAPLES OF APPROPRIATE SIZE AND SPACING AS SPECIFIED BY THE MANUFACTURER FOR THIS APPLICATION.

TOPSOIL:

1. MATERIAL:
   - ORGANICS: TOPSOIL SHALL HAVE AT LEAST 6 PERCENT BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL AND NO GREATER THAN 20 PERCENT.
   - TOPSOIL SHALL HAVE NO LESS THAN 20 PERCENT FINE TEXTURED MATERIALS (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15 PERCENT CLAY.
   - TOPSOIL TREATED WITH SOIL STERILANTS OR HERBICIDES SHALL NOT BE USED.
   - TOPSOIL SHALL BE FREE OF STONES OVER 1 ½ INCHES IN DIAMETER, TRASH, NOXIOUS WEEDS, AND SHALL HAVE LESS THAN 10 PERCENT GRAVEL BY WEIGHT.
   - TOPSOIL CONTAINING SOLUBLE SALTS GREATER THAN 500 PPM WILL NOT BE PERMITTED.
   - TOPSOIL MAY BE MANUFACTURED AS A MIXTURE OF A MINERAL COMPONENT AND ORGANIC MATERIAL SUCH AS COMPOST.
   - ANALYTICAL CRITERIA: THE SOURCE OF THE TOPSOIL WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DOCUMENTATION AS REQUESTED THAT DEMONSTRATES THAT PROPOSED SOURCE(S) OF TOPSOIL ARE FREE FROM CONTAMINATION AND MEET THE ANALYTICAL CRITERIA SPECIFIED IN SECTION "GENERAL FILL."
2. SITE PREPARATION:
   - AS NEEDED, INSTALL EROSION AND SEDIMENT CONTROL STABILIZING MEASURES SUCH AS DIVERSIONS, CHANNELS, SEDIMENT TRAPS, AND STABILIZING MEASURES, OR MAINTAIN THOSE ALREADY INSTALLED.
   - COMPLETE ROUGH GRADING AND FINAL GRADE, ALLOWING FOR REQUIRED DEPTH OF TOPSOIL TO BE ADDED.
   - SCARIFY ALL COMPACT, SLOWLY PERMEABLE, MEDIUM AND FINE TEXTURED SUBSOIL AREAS. SCARIFY AT APPROXIMATELY RIGHT ANGLES TO THE SLOPE DIRECTION IN SOIL AREAS THAT ARE STEEPER THAN 5 PERCENT. AREAS THAT HAVE BEEN OVERLY COMPACTED SHALL BE DECOMPACTED IN ACCORDANCE WITH THE SOIL RESTORATION STANDARD.
   - REMOVE REFUSE, WOODY PLANT PARTS, STONES OVER 3 INCHES IN DIAMETER, AND OTHER LITTER.
3. APPLICATION AND GRADING:
   - TOPSOIL SHALL BE DISTRIBUTED TO A UNIFORM DEPTH OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, OR ON FROZEN SLOPES, ICE, SNOW, OR STANDING WATER PUDDLES.
   - TOPSOIL PLACED AND GRADED ON SLOPES STEEPER THAN 5 PERCENT SHALL BE PROMPTLY FERTILIZED, SEEDED, MULCHED, AND STABILIZED BY "TRACKING" WITH SUITABLE EQUIPMENT.
   - APPLY TOPSOIL TO A UNIFORM 4–INCH DEPTH AFTER GRADING.

GEOGRID:

1. BIAXIAL GEOGRIDS SHALL BE TENSAR BX–1300 OR APPROVED EQUAL.
2. GEOGRID SHALL BE INSTALLED IN ACCORDANCE WITH PUBLISHED INSTALLATION GUIDELINES OF THE GEOGRID MANUFACTURER, MEETING GENERALLY ACCEPTED STANDARDS OF THAT INDUSTRY.

SEED AND MULCH:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH TOPSOIL AND PERMANENT SEEDING AS SPECIFIED BELOW.
2. TOPSOIL PREPARATION:
   - INSTALL NEEDED WATER AND EROSION CONTROL MEASURES AND BRING AREA TO BE SEEDED TO DESIRED GRADES.
   - SCARIFY IF COMPACTED. REMOVE DEBRIS AND OBSTACLES SUCH AS ROCKS AND ROOTS FROM SURFACE.
   - LIME TO PH OF 6.5.
   - FERTILIZE AS PER SOIL TEST OR, IF SOIL MUST BE FERTILIZED BEFORE RESULTS OF A SOIL TEST CAN BE OBTAINED, APPLY COMMERCIAL FERTILIZER AT 850 LBS. OF 5–5–10 OR EQUIVALENT PER ACRE (20 LBS./1,000 SQ. FT.).
   - INCORPORATE LIME AND FERTILIZER IN TOP 2–4 INCHES OF TOPSOIL.
3. PLANTING:
   - USE A CULTIPACKER TYPE SEEDER IF POSSIBLE.
   - SEED TO A DEPTH OF 1/8 TO 1/4 INCH.
   - IF SEED IS TO BE BROADCAST, CULTIPACK OR ROLL AFTER SEEDING.
   - IF HYDROSEEDED, LIME AND FERTILIZER MAY BE APPLIED THROUGH THE SEEDER.
4. MULCHING:
   - MULCH ALL SEEDINGS WITH NETLESS ROLLED EROSION CONTROL PRODUCT, OR AS SPECIFIED IN NYSSSESC.
5. SEED MIXTURE:

TABLE 2
PERMANENT SEED MIX

MIXTURE	LBS./ACRE	LBS./1000 SQ. FT.
CREEPING RED FESCUE	20	0.45
CHEWINGS FESCUE COMMON	20	0.45
PERENNIAL RYEGRASS	5	0.1
RED CLOVER COMMON	10	0.45
TOTAL	55	1.45

6. TIME OF SEEDING:
   - FALL PLANTING IS PREFERRED. SEED AFTER AUGUST 15. IF SPRING PLANTING IS REQUIRED, PLANT UNTIL MAY 15.
   - IF SEEDING IS DONE BETWEEN MAY 15 AND AUGUST 15, IRRIGATION MAY BE NECESSARY TO ENSURE A SUCCESSFUL SEEDING.
   - THE CONTRACTOR SHALL WATER AS NECESSARY TO ESTABLISH GROWTH, AT NO ADDITIONAL COST TO THE DEPARTMENT.
   - ALL DISTURBED OR NEWLY–GRADED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION, AS SPECIFIED IN NYSSSECS, IF PERMANENT SEEDINGS ARE NOT SCHEDULED TO OCCUR FOR 14 DAYS OR MORE. TEMPORARY SEEDINGS SHALL BE MADE WITHIN 24 HOURS OF CONSTRUCTION OR DISTURBANCE. IF NOT, THE SOIL SHALL BE SCARIFIED PRIOR TO SEEDING.

HANDLING AND DISPOSAL OF JAPANESE KNOTWEED:

1. THE NEW YORK STATE LISTED INVASIVE SPECIES JAPANESE KNOTWEED (FALLOPIA JAPONICA) IS PRESENT WITHIN THE PROJECT LIMITS. THESE ARE EXTREMELY PERSISTENT AND INVASIVE PLANTS. EVERY POSSIBLE EFFORT SHALL BE MADE TO AVOID CONTACT WITH AND DISTURBANCE OF THESE INVASIVE PLANT SPECIES EXCEPT AT THE LOCATION INDICATED IN THE CONTRACT DOCUMENTS AND AS OTHERWISE APPROVED. THE CONTRACTOR SHALL CONCENTRATE ON MINIMIZING THE POTENTIAL FOR SPREADING THIS SPECIES.
2. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL CONSTRUCTION EQUIPMENT AND VEHICLES OPERATING IN AREAS INFESTED WITH AN IDENTIFIED INVASIVE SPECIES PRIOR TO MOVING TO NON–INFESTED AREAS.
3. THE CONTRACTOR SHALL NOT MIX EXCAVATION SPOILS THAT CONTAIN REMNANTS OF INVASIVE PLANT SPECIES PARTS (STEMS, ROOTS, FLOWERS, ETC.) WITH OTHER EXCAVATED MATERIALS. THE CONTRACTOR SHALL NOT SPOIL MATERIAL CONTAINING REMNANTS OF THE INVASIVE SPECIES PLANT PARTS OFF SITE.
4. STANDS OF INVASIVE PLANT SPECIES THAT REQUIRE EXCAVATION SHALL BE EXCAVATED TO THE DEPTHS INDICATED IN THE CONTRACT DOCUMENTS. STANDS OF INVASIVE PLANT SPECIES THAT REQUIRE CLEARING SHALL BE CLEARED AS INDICATED IN THE CONTRACT DOCUMENTS.
5. INVASIVE SPECIES "SPOILS" INCLUDING BUT NOT LIMITED TO ROOTS, STEMS, LEAVES, SHOOTS AND INVASIVE–SPECIES–INFESTED SOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF AS DESCRIBED BELOW.
6. IF EXCAVATION BEGINS DURING THE PLANT'S DORMANCY OR BEFORE THE INVASIVE PLANT SPECIES REACHES A HEIGHT OF 150 MM (6 IN.) THE CONTRACTOR SHALL EXCAVATE THE INVASIVE PLANT SPECIES MATERIAL.
7. IF EXCAVATION DOES NOT BEGIN BEFORE THE PLANTS REACH A HEIGHT OF 150 MM (6 IN.). THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING TREATMENT SCHEDULE:
   - THE CONTRACTOR SHALL CUT THE INVASIVE SPECIES TO A HEIGHT OF 150 MM (6 IN.).
   - ALL CUT INVASIVE PLANT SPECIES PARTS SHALL BE REMOVED FROM SITE AND DISPOSED OF AS DESCRIBED BELOW.
   - THE CONTRACTOR SHALL EXCAVATE THE INVASIVE PLANT SPECIES FROM THE AREAS INDICATED IN THE CONTRACT DOCUMENTS AND SHALL REMOVE THE CUT SOIL FROM SITE FOR DISPOSAL AS DESCRIBED BELOW.
8. AFTER EQUIPMENT COMES IN CONTACT WITH INVASIVE PLANT SPECIES, THE CONTRACTOR SHALL KEEP THE EQUIPMENT IN THE IMMEDIATE VICINITY OF THE INVASIVE PLANTS UNTIL THE EQUIPMENT CAN BE CLEANED. ALL EQUIPMENT USED IN AREAS CONTAINING INVASIVE PLANT SPECIES SHALL BE CLEANED PRIOR TO LEAVING THAT AREA OR WORKING IN AREAS THAT ARE NOT INFESTED WITH INVASIVE PLANT SPECIES. UNDER NO CIRCUMSTANCES ARE VEHICLES, EQUIPMENT AND ANY MATERIAL INFESTED WITH INVASIVE SPECIES ALLOWED TO ENTER THE HIGHWAY OR BE MOVED OR TRANSPORTED PRIOR TO CLEANING.
9. CUT PLANT MATERIAL SHALL BE PLACED IN (4 MIL MINIMUM THICKNESS) BLACK PLASTIC BAGS FOR TRANSPORTATION OUT OF THE AREA. BAGS SHALL BE SECURELY TIED OR SEALED. SOIL CONTAINING SEEDS, ROOTS AND/OR RHIZOMES SHALL BE WRAPPED IN BLACK PLASTIC SHEETING (4 MIL MINIMUM THICKNESS) AND TRANSPORTED IN A MANNER WHICH PREVENTS THE SPREAD OF THE CONTAMINATED MATERIAL DURING TRANSPORT. ACCEPTABLE DISPOSAL METHODS CAN BE ONE OF THE FOLLOWING:
   - NYSDEC QUARRY/ MINE RECLAMATION – WHERE FEASIBLE AND ACCESSIBLE, MATERIAL SHALL BE TRANSPORTED TO AN APPROVED QUARRY/ MINE ACCEPTING INVASIVE MATERIAL.
   - LANDFILL/ INCINERATOR – PLANT MATERIAL OR SPOIL CONTAINING INVASIVE PLANT MATERIAL SHALL BE DISPOSED OF IN A MUNICIPAL SOLID WASTE MANAGEMENT FACILITY OR INCINERATOR THAT IS OPERATED UNDER CURRENT 6 NYCRR PART 360 REGULATIONS.
   - APPROVED NYSDOT DISPOSAL FACILITY – WHERE AVAILABLE, PLANT MATERIAL OR SPOIL CONTAINING INVASIVE PLANT MATERIAL MAY BE DISPOSED OF IN REGIONAL INVASIVE SPECIES DISPOSAL FACILITIES.
10. EQUIPMENT USED IN AREAS CONTAINING INVASIVE PLANT SPECIES SHALL BE POWER–WASHED (1000 PSI MINIMUM) AND CLEANED WITH CLEAN WATER (WITHOUT USING CLEANING SOAPS OR CHEMICALS) BEFORE LEAVING THE INVASIVE CONTROL/REMOVAL AREA TO PREVENT THE SPREAD OF SEEDS, ROOTS, OR OTHER VIABLE PLANT PARTS. EQUIPMENT CLEANING STATIONS SHALL INCLUDE EITHER A CONSTRUCTED CLEANING STATION OR A PORTABLE COMMERCIAL CLEANING STATION WITH A RACK. LOOSE PLANT AND SOIL MATERIAL THAT HAS BEEN REMOVED FROM CLOTHING, BOOTS AND EQUIPMENT, OR GENERATED FROM CLEANING OPERATIONS, INCLUDING CONSTRUCTED CLEANING STATION MATERIAL AFTER USE, SHALL BE DISPOSED OF AS DESCRIBED IN DISPOSAL OF MATERIAL, ABOVE.

1 **NOTE:**

1. THE SPECIFICATIONS PRESENTED ON DRAWINGS G–002 THROUGH G–004 HAVE NOT BEEN REVISED TO REFLECT THE ACTUAL MEANS, METHODS, OR MATERIALS OF CONSTRUCTION USED BY THE CONTRACTOR ON THIS PROJECT. FOR THAT INFORMATION, REFER TO THE INSPECTION REPORTS, SUBMITTALS, AND OTHER DOCUMENTATION PRESENTED FINAL ENGINEERING REPORT (AECOM 2022) AS WELL AS THE SUBSEQUENT DETAILED DRAWINGS IN THIS SET.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCALL · LICENSED PROFESSIONAL ENGINEER · 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

SPECIFICATIONS
(3 OF 3)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

G-004

Pg No: 5 of 14

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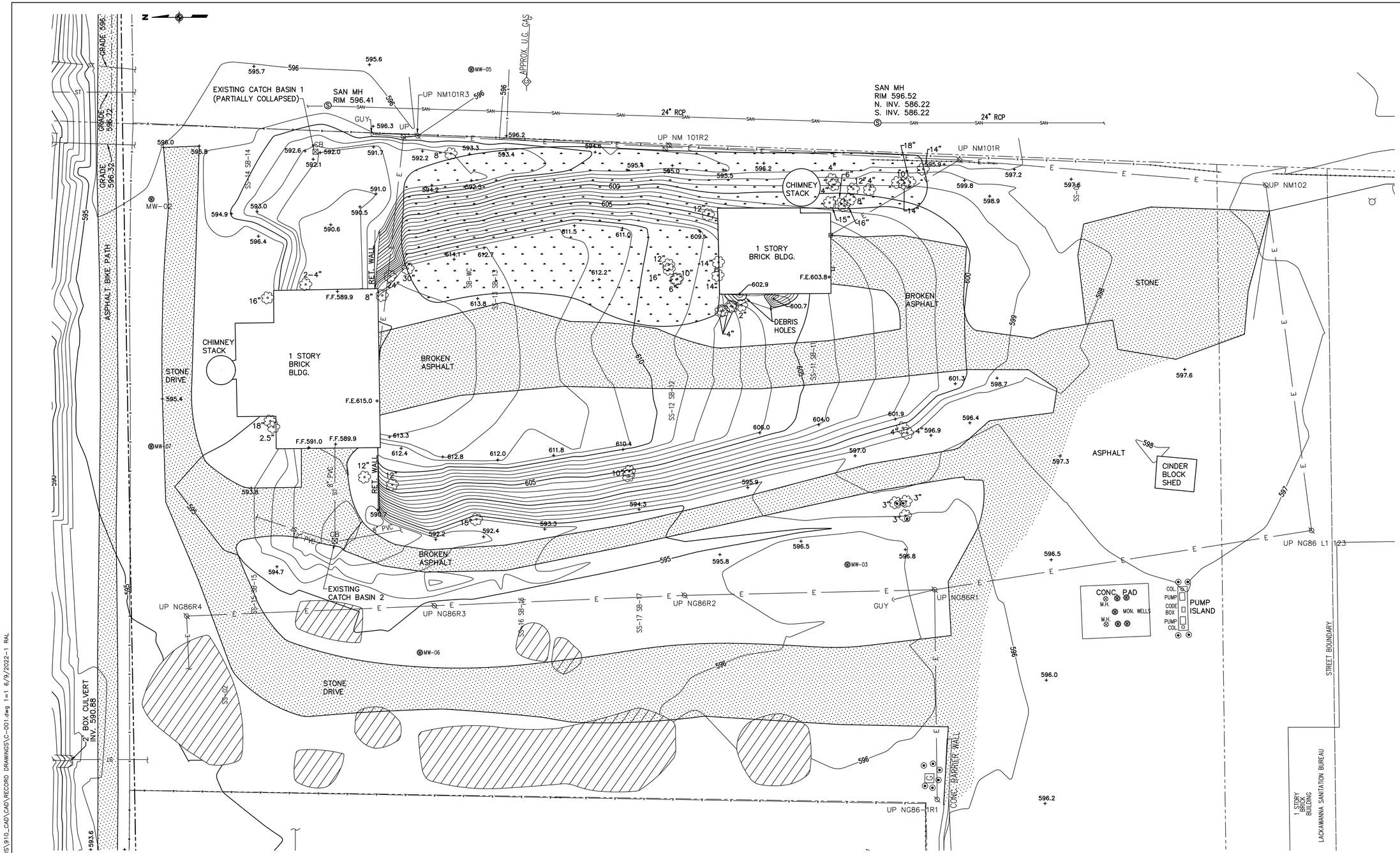

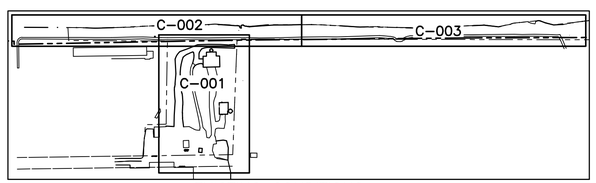

EXISTING CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING–SPECIFIC LEGEND

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- DEBRIS PILE (AS OF 3/26/19 URS SURVEY) NOT ALL DEBRIS PILES, ETC. SHOWN.
- APPROXIMATE AREA OF KNOTWEED. TO BE VERIFIED IN THE FIELD
- ASPHALT/STONE DRIVE OR BIKE PATH

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
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BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

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REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
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Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

EXISTING SITE CONDITIONS (1 OF 3)

Scale: 1"=20'

Date: OCTOBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: CED

Dwg No: C-001

Pg No: 6 of 14

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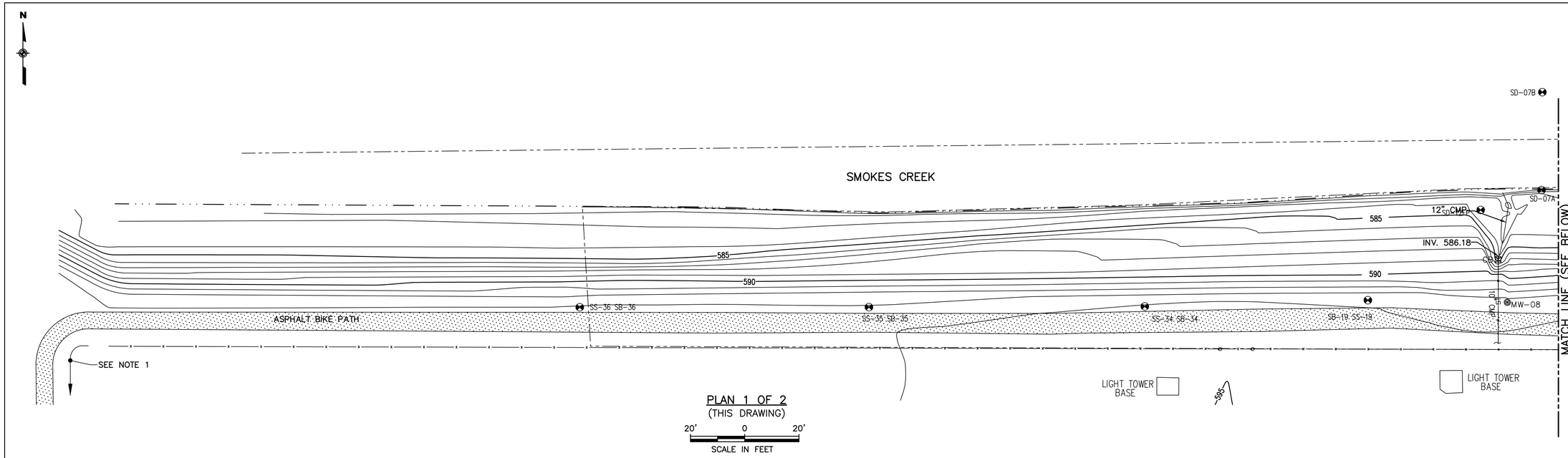

PLAN 1 OF 2
(THIS DRAWING)

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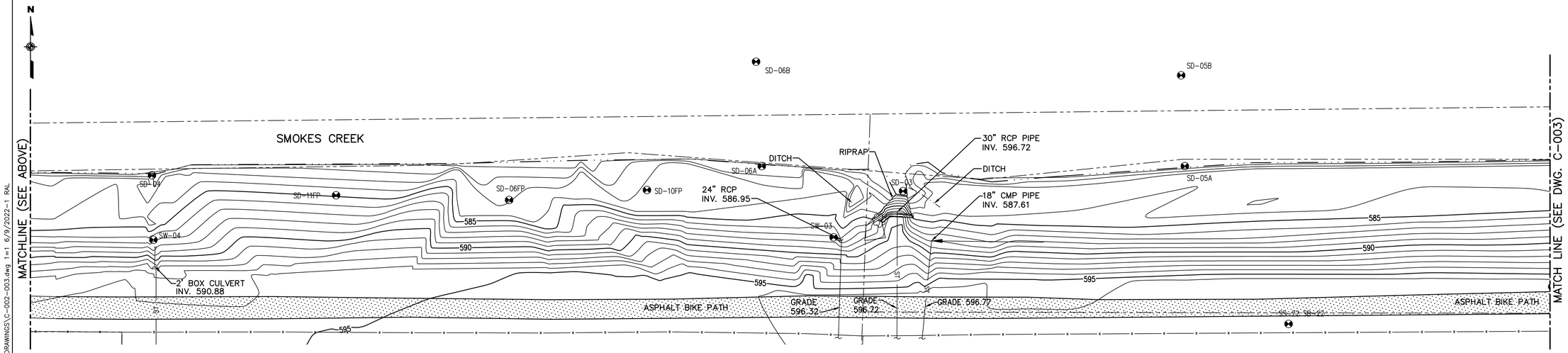
SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

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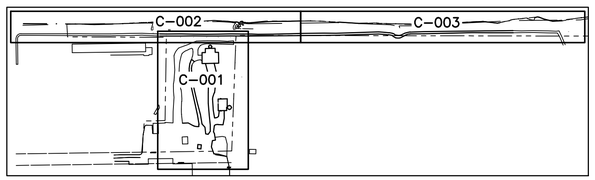
SCALE IN FEET

NOTE:

1. LOCATION OF WESTERN EXTENT OF ASPHALT BIKE PATH APPROXIMATED FROM AERIAL PHOTOGRAPHY.



EXISTING CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING-SPECIFIC LEGEND

ASPHALT BIKE PATH

1

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

EXISTING SITE CONDITIONS (2 OF 3)

Scale: 1"=20'

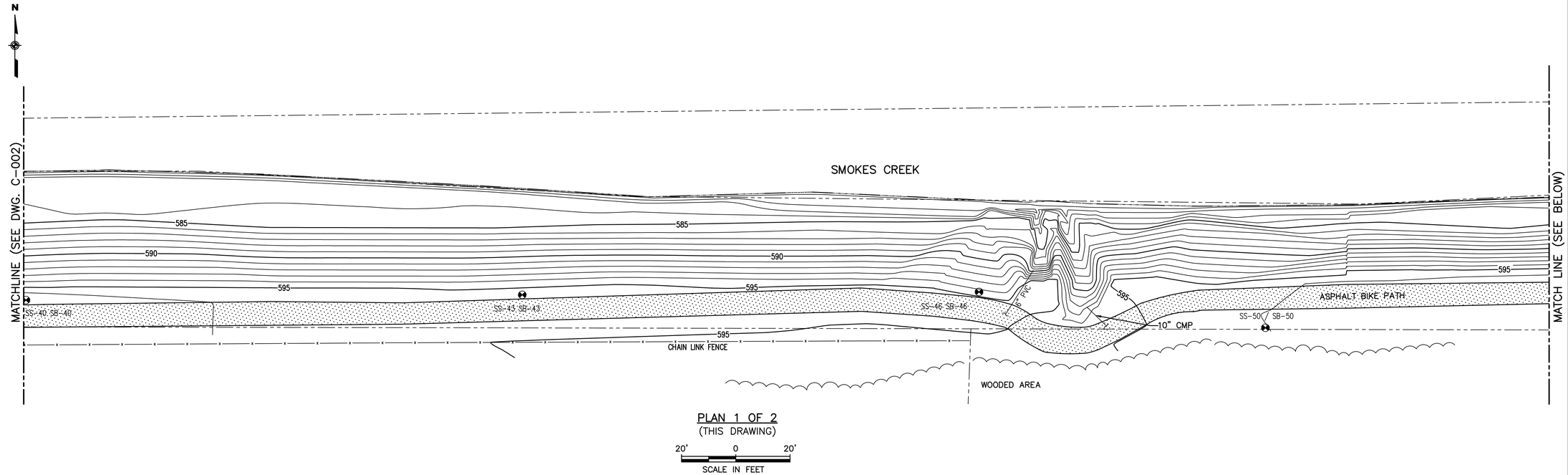
Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

C-002

Pg No: 7 of 14

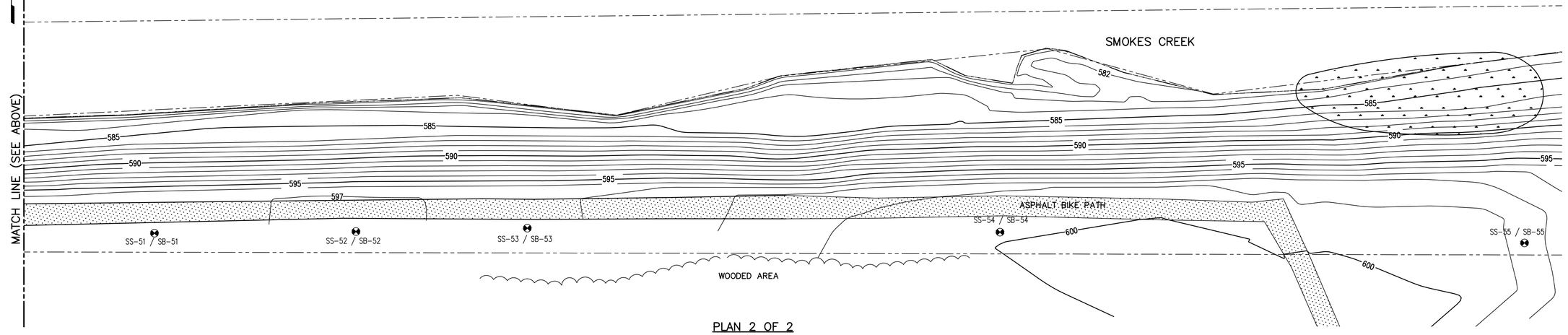
L:\DCS\Projects\60594844_Lackawanna\900_CAD_GIS\910_CAD\CAD\RECORD DRAWINGS\C-002-003.dwg 1=1 6/9/2022-1 RAL



PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'

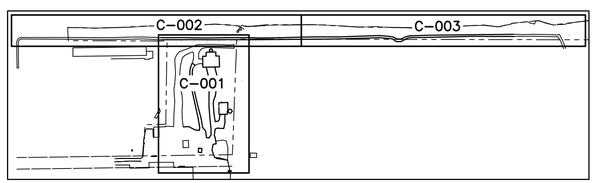
SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET



EXISTING CONDITIONS
KEY PLAN

SCALE: 1"=300'

DRAWING-SPECIFIC LEGEND

APPROXIMATE AREA OF KNOTWEED. TO BE VERIFIED IN THE FIELD

ASPHALT BIKE PATH

1 RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

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BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

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REV. NO.	DATE:	REVISION:
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Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

EXISTING SITE CONDITIONS (3 OF 3)

Scale: 1"=20'

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

C-003

Pg No: 8 of 14

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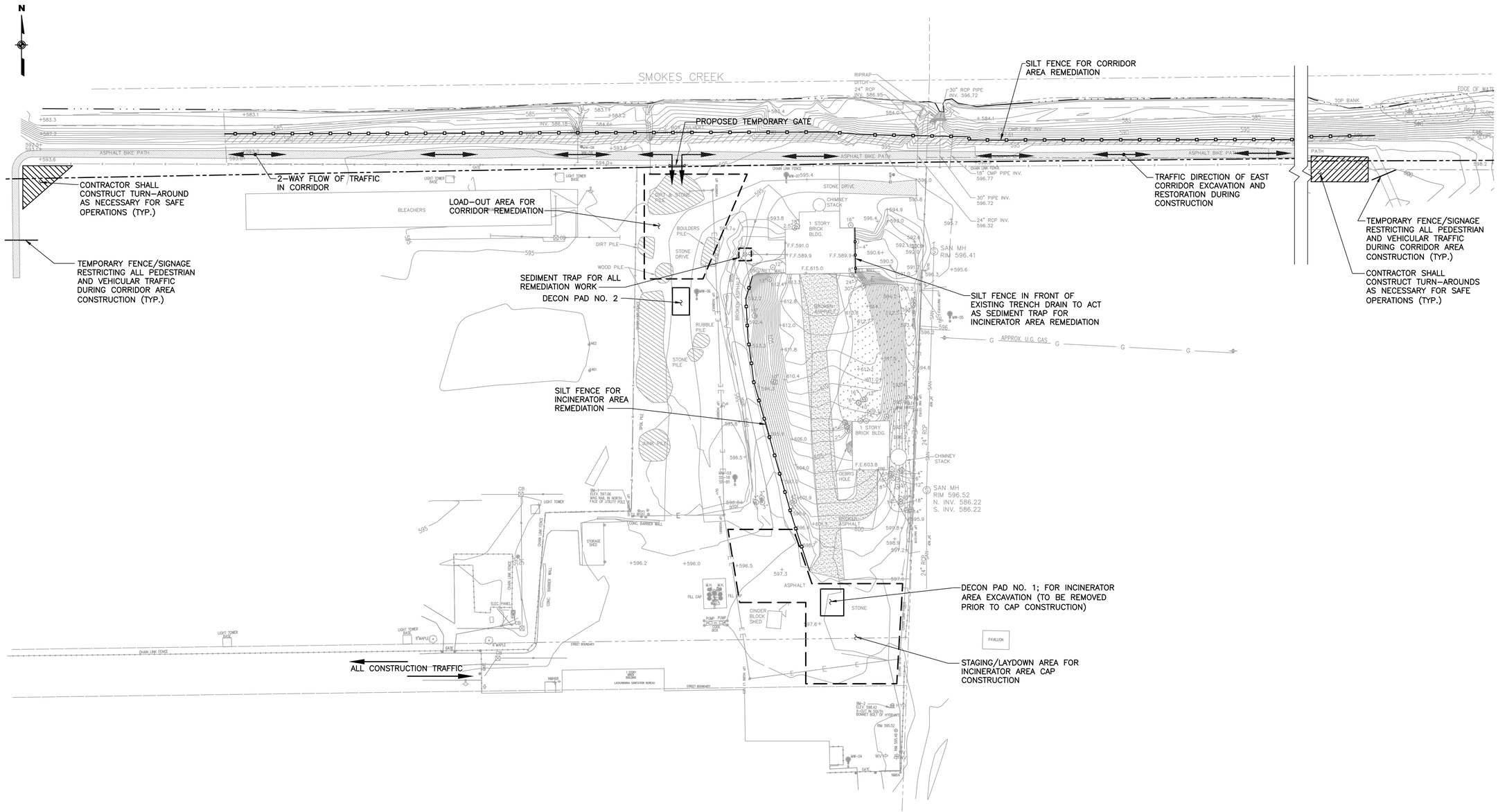

ANTICIPATED WORK LAYOUT:

THIS ANTICIPATED WORK LAYOUT IS INTENDED TO PROMOTE SAFETY AND REDUCE THE TIME REQUIRED FOR THE WORK. THE CONTRACTOR SHALL SUBMIT ITS PROPOSED WORK PLAN FOR APPROVAL BY THE ENGINEER OR THE DEPARTMENT PRIOR TO STARTING THE WORK.

50' 0 50'
SCALE IN FEET

1 NOTE:

1. DRAWING C-004 HAS NOT BEEN REVISED TO REFLECT THE ACTUAL MEANS, METHODS, OR MATERIALS OF CONSTRUCTION USED BY THE CONTRACTOR ON THIS PROJECT. FOR THAT INFORMATION, REFER TO THE INSPECTION REPORTS, SUBMITTALS, AND OTHER DOCUMENTATION PRESENTED FINAL ENGINEERING REPORT (AECOM 2022) AS WELL AS THE SUBSEQUENT DETAILED DRAWINGS IN THIS SET.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

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Engineer:
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Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

REMEDIAL OPERATIONS PLAN

Scale: 1"=50'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:

C-004

Pg No: 9 of 14

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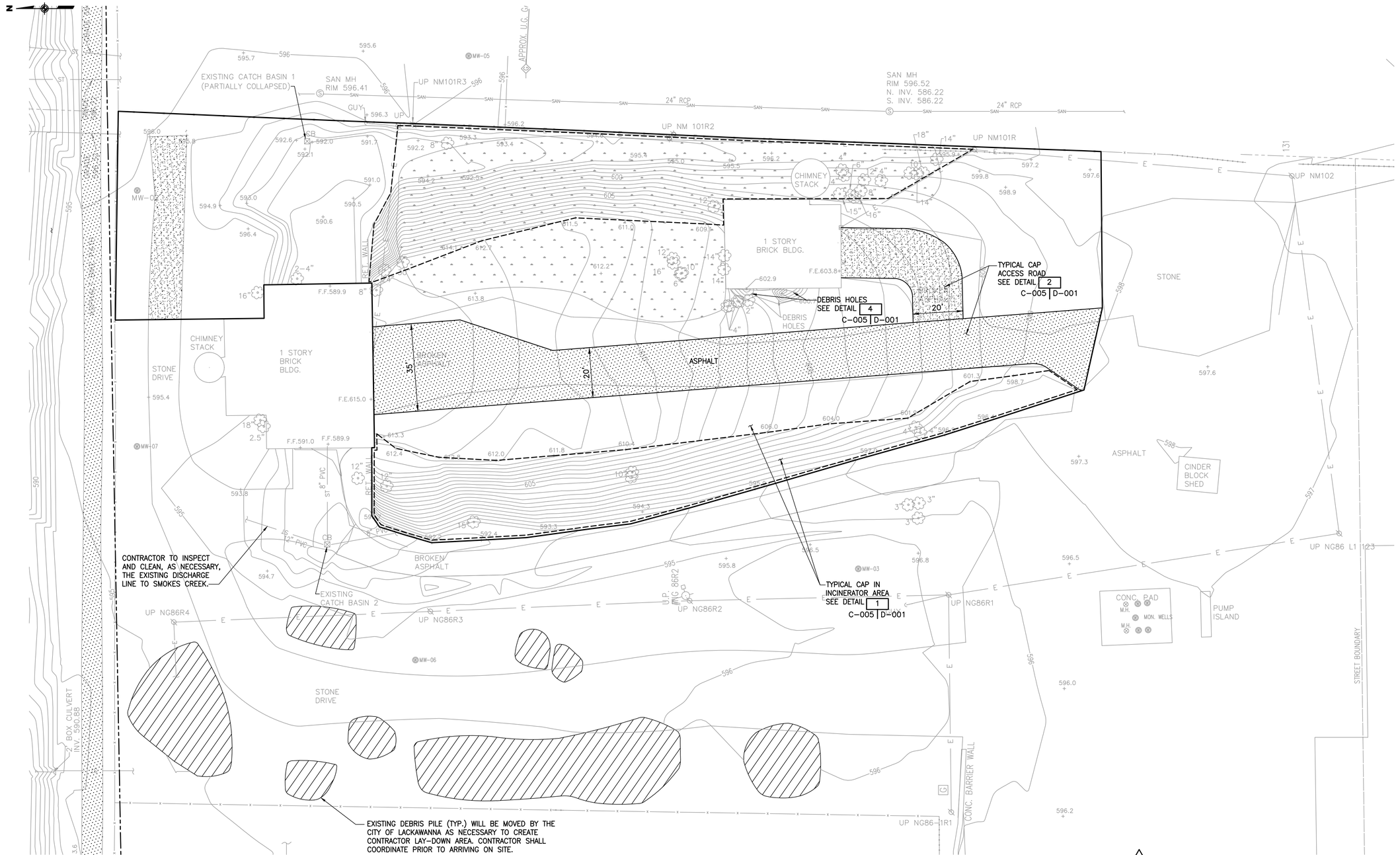

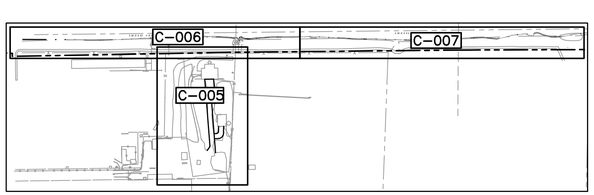

PROPOSED CONDITIONS KEY PLAN

SCALE: 1"=300'

20' 0 20'

SCALE IN FEET

DRAWING-SPECIFIC LEGEND

- MW-04 EXISTING MONITORING WELL
- LIMIT OF CAP IN INCINERATOR AREA
- ASPHALT ROAD PORTION OF CAP
- GRAVEL ROAD PORTION OF CAP
- APPROXIMATE AREA OF KNOTWEED. TO BE CONFIRMED IN THE FIELD.
- LIMITS OF EROSION CONTROL BLANKET
- DEBRIS PILE (AS OF 3/26/19 URS SURVEY)
- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 568 EXISTING CONTOUR

1 NOTE:

1. THE PROPOSED SITE CONDITIONS PRESENTED ON DRAWINGS C-005 THROUGH C-007 HAVE NOT BEEN REVISED TO REFLECT WHAT WAS ACTUALLY CONSTRUCTED, SUCH INFORMATION IS INCLUDED ON THE ATTACHED SUPPLEMENTAL RECORD DRAWINGS.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

PROPOSED SITE CONDITIONS – INCINERATOR AREA

Scale: 1"=20'

Date:	OCTOBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	CED

Dwg No:

C-005

Pg No: 10 of 14

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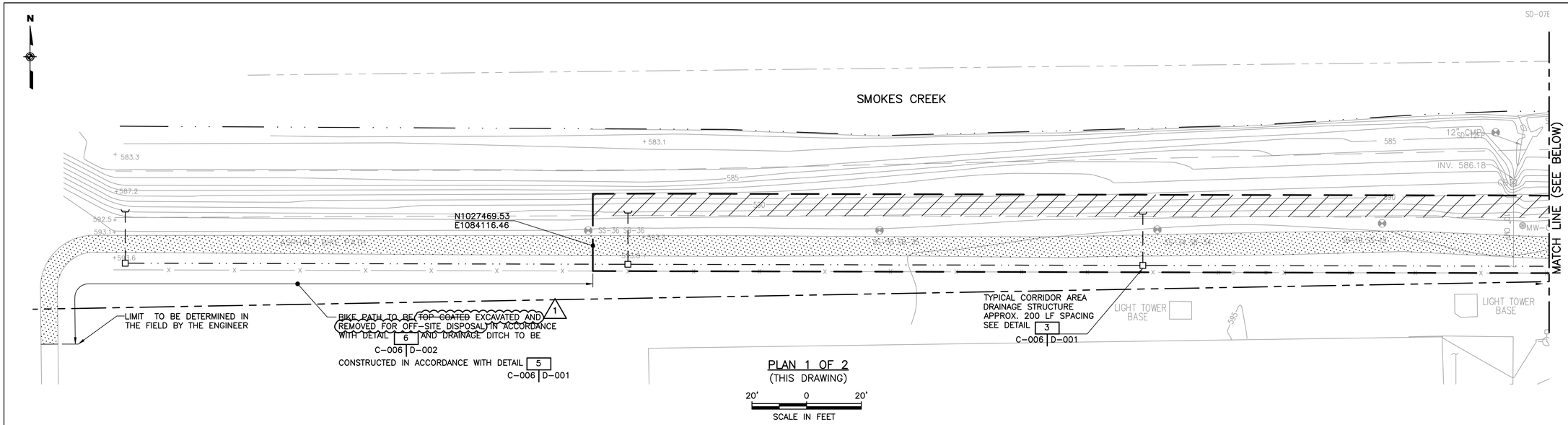
N
SMOKES CREEK
MATCH LINE (SEE BELOW)
N1027469.53
E1084116.46
LIMIT TO BE DETERMINED IN THE FIELD BY THE ENGINEER
BIKE PATH TO BE (TOP COATED) EXCAVATED AND REMOVED FOR OFF-SITE DISPOSAL IN ACCORDANCE WITH DETAIL 6 AND DRAINAGE DITCH TO BE CONSTRUCTED IN ACCORDANCE WITH DETAIL 5
C-006 | D-002
C-006 | D-001
TYPICAL CORRIDOR AREA DRAINAGE STRUCTURE APPROX. 200 LF SPACING SEE DETAIL 3
C-006 | D-001
LIGHT TOWER BASE
LIGHT TOWER BASE
12" CMP
INV. 586.18
SD-07E
SD-07A
SD-04
SD-06FP
SD-10FP
SD-06B
SD-06A
SD-05B
SD-05A
SW-03
SW-04
MW-1
SS-36
SB-36
SS-37
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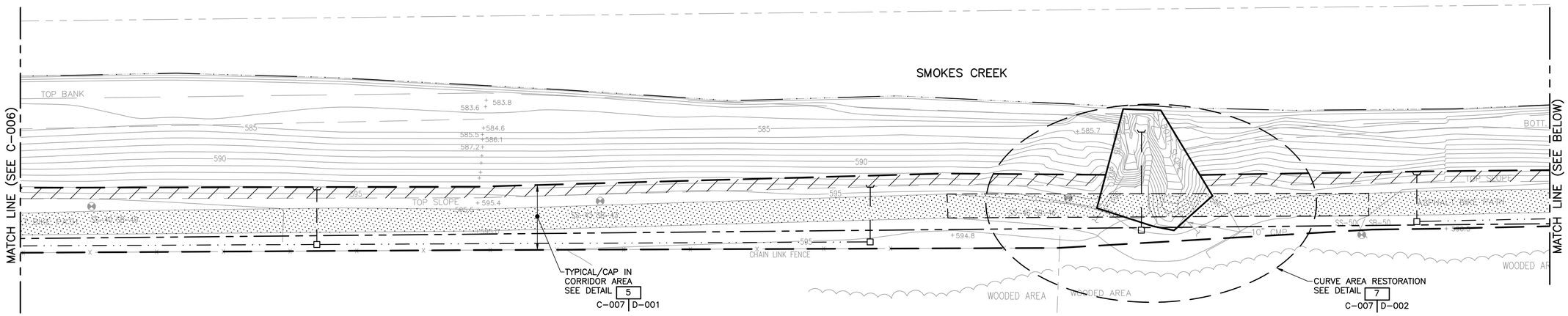
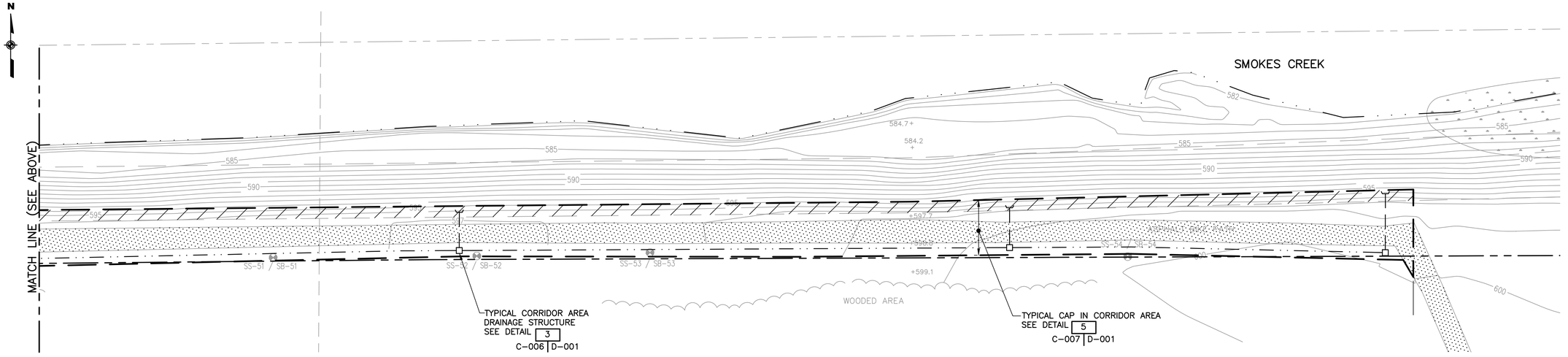
SB-55



PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'

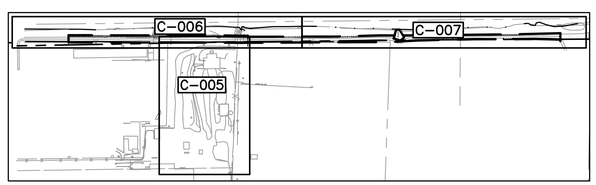
SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET



PROPOSED CONDITIONS
KEY PLAN

SCALE: 1"=300'

DRAWING SPECIFIC LEGEND:

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 568 EXISTING CONTOUR
- 2 FOOT EXCAVATION/BACKFILL AND STABILIZATION WITH RULED EROSION CONTROL PRODUCT
- LIMIT OF CAP IN CORRIDOR AREA
- ASPHALT BIKE PATH

1 NOTE:

1. THE PROPOSED SITE CONDITIONS PRESENTED ON DRAWINGS C-005 THROUGH C-007 HAVE NOT BEEN REVISED TO REFLECT WHAT WAS ACTUALLY CONSTRUCTED, SUCH INFORMATION IS INCLUDED ON THE ATTACHED SUPPLEMENTAL RECORD DRAWINGS.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCALL · LICENSED PROFESSIONAL ENGINEER · 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
PROPOSED SITE CONDITIONS-
SMOKES CREEK CORRIDOR
(2 OF 2)

Scale: 1"=20'

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:
C-007

Pg No: 12 of 14

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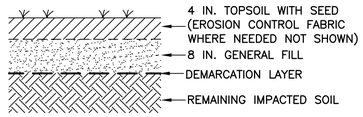
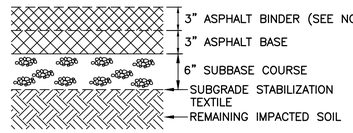
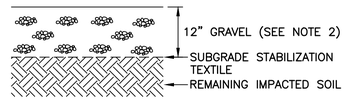


TYPICAL CAP IN INCINERATOR AREA DETAIL [1]

NTS C-005 | D-001



PAVED ACCESS ROAD



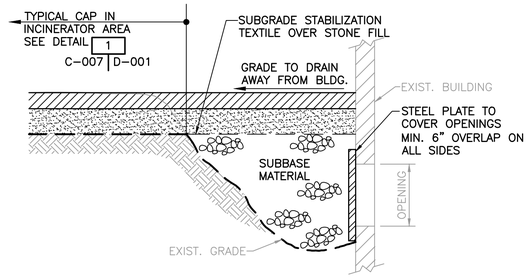
STONE ACCESS ROAD

ACCESS ROAD DETAIL [2]

NTS C-005 | D-001

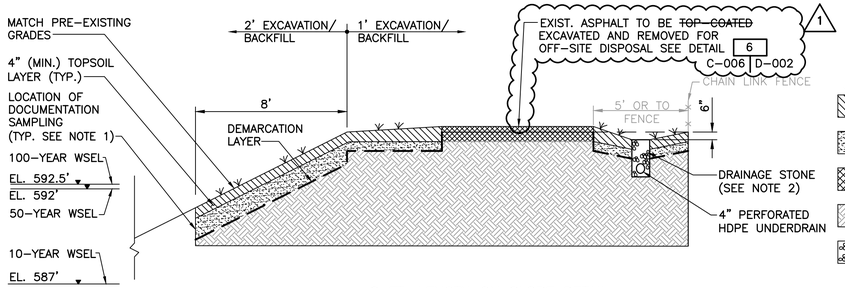
NOTES:

1. ASPHALT PAVEMENT FOR INCINERATOR AREA ACCESS ROAD SHALL CONSIST OF 3" NYSDOT TYPE 3 BINDER COURSE AND 3" NYSDOT TYPE 1 BASE COURSE.
2. GRAVEL FOR INCINERATOR AREA ACCESS ROAD SHALL CONSIST OF NYSDOT ITEM 667.01.



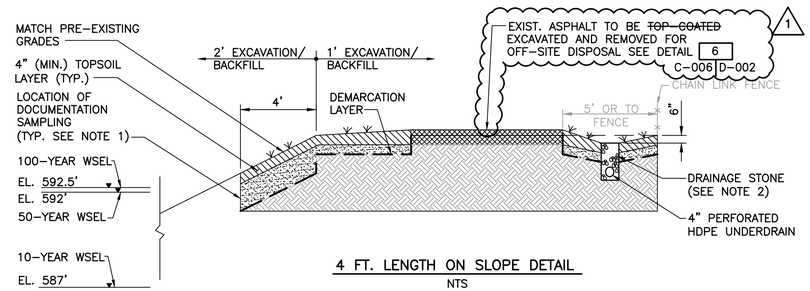
TYPICAL DEBRIS HOLE RESTORATION DETAIL [4]

NTS C-005 | D-001



8 FT. LENGTH ON SLOPE DETAIL

NTS



4 FT. LENGTH ON SLOPE DETAIL

NTS

TYPICAL CAP IN CORRIDOR AREA [5]

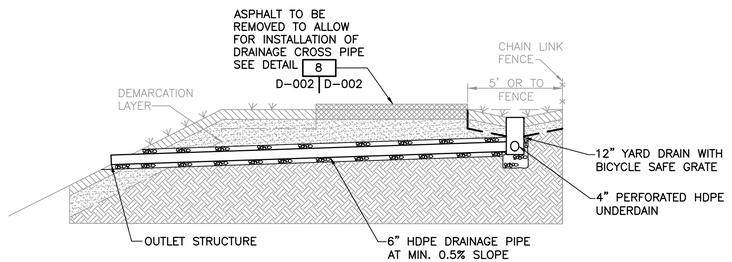
NTS C-006 | D-001

NOTE:

1. DOCUMENTATION SAMPLING IN IN CORRIDOR AREA TO BE TAKEN EVERY 500 LF.
2. DRAINAGE STONE WILL BE PROVIDED BY THE CITY OF LACKAWANNA.

LEGEND:

- VEGETATED TOPSOIL
- GENERAL FILL
- ASPHALT
- REMAINING IMPACTED SOIL
- SUBBBASE



TYPICAL CORRIDOR AREA DRAINAGE STRUCTURE

CORRIDOR AREA DRAINAGE DETAIL [3]

NTS C-006 | D-001

1 RECORD DRAWINGS

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

GENERAL DETAILS
(1 OF 2)

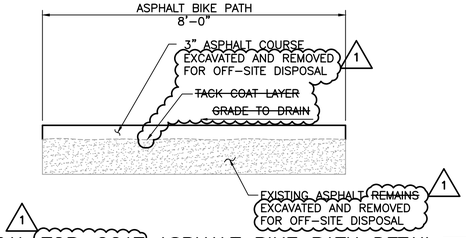
Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

D-001

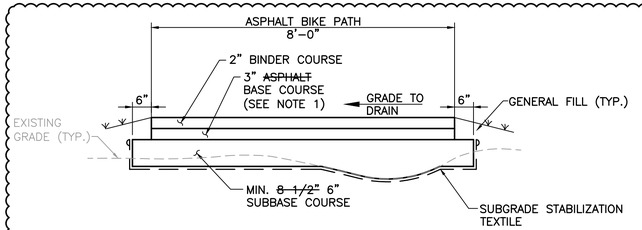
Pg No: 13 of 14



TYPICAL ~~TOP COAT~~ ASPHALT BIKE PATH DETAIL 6

NTS

C-006 | D-002



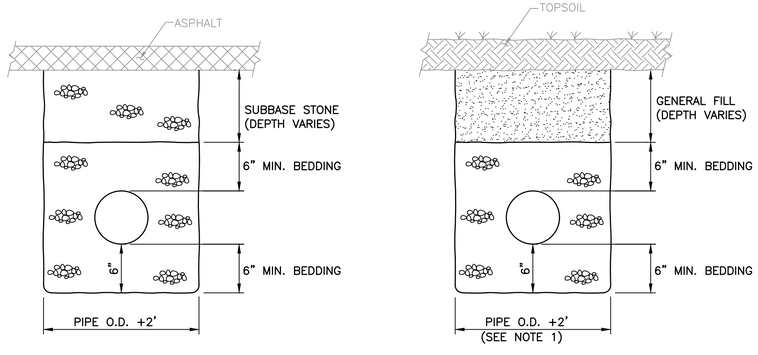
TYPICAL FULL DEPTH BIKE PATH DETAIL 8

NTS

D-002 | D-002

NOTE:

1. ASPHALT SHALL CONSIST OF ~~3"~~ 2" NYSDOT TYPE 3 BINDER COURSE.



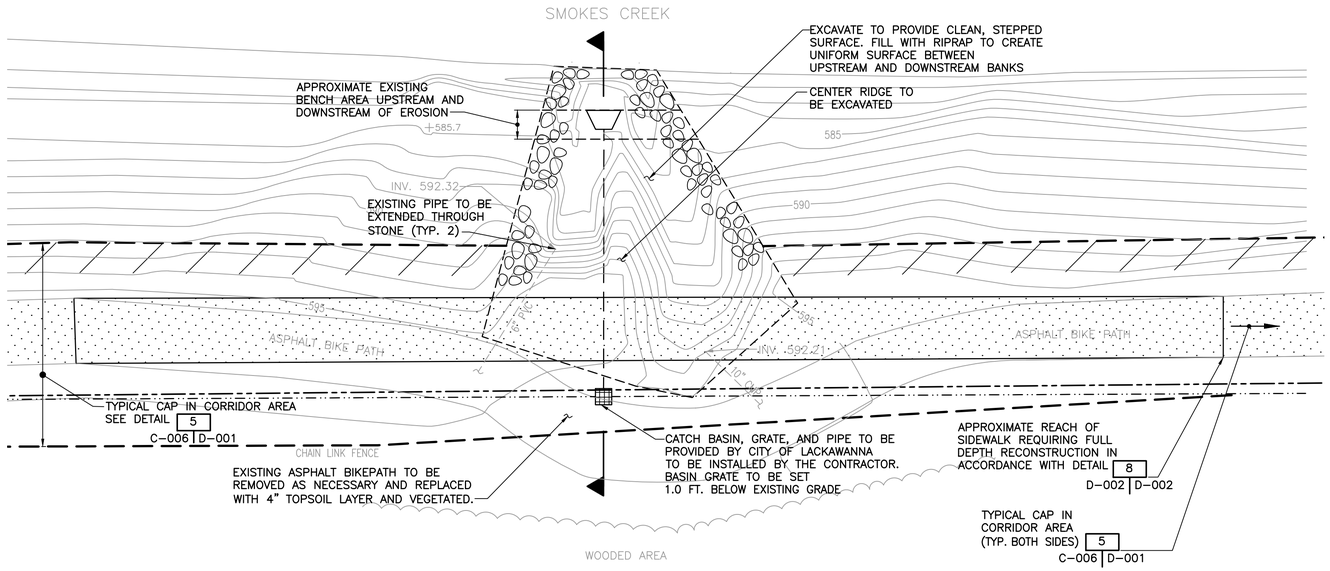
TYPICAL PIPE BEDDING DETAIL 9

N.T.S.

D-002 | D-002

NOTE:

1. WIDTH OF TRENCH FOR 4" HDPE UNDERDRAIN SHALL BE 1 FT.

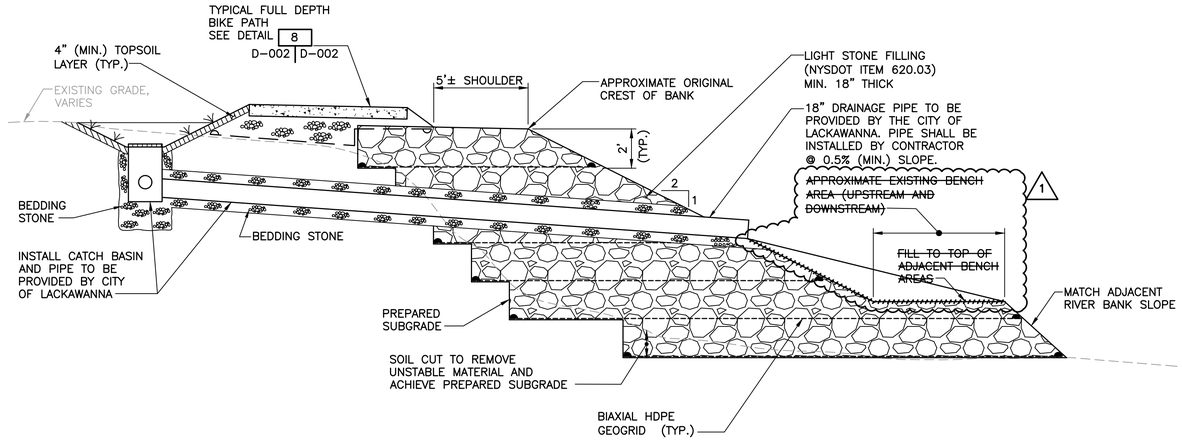


CURVE AREA RESTORATION DETAIL 7

C-007 | D-002

10' 0 10'

SCALE IN FEET



SECTION

N.T.S.

NOTES:

1. BIAXIAL GEOGRIDS SHALL BE TENSAR BX-1300 OR APPROVED EQUAL.
2. GEOGRIDS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS.
3. GEOGRIDS SHALL BE PLACED PERPENDICULAR TO THE FACE OF THE FILL, EXCEPT WHERE THE FACE OF THE FILL IS CURVED. GEOGRIDS SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SHEET 554-02, DETAIL H AND OVERLAPPING LAYERS SHALL BE SEPARATED BY A MINIMUM OF 3" OF BACKFILL MATERIAL.
4. ADJACENT GEOGRIDS SHALL BE BUTTED TOGETHER SIDE-BY-SIDE WITHOUT OVERLAP.
5. GEOGRIDS SHALL BE PRETENSIONED TO REMOVE ANY SLACK. PRETENSIONING SHALL BE MAINTAINED THROUGHOUT THE INSTALLATION BY STAKING OR ANCHORING WITH BACKFILL MATERIAL.
6. GEOGRID SHALL BE INSTALLED IN ACCORDANCE WITH PUBLISHED INSTALLATION GUIDELINES OF THE GEOGRID MANUFACTURER, MEETING GENERALLY ACCEPTED STANDARDS OF THAT INDUSTRY.
7. ANY LOOSE MATERIALS TO BE REMOVED PRIOR TO PLACEMENT OF NYSDOT 620.03 STONE.

1 **RECORD DRAWINGS**

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * 074177 LICENSED PROFESSIONAL ENGINEER

REV. NO.	DATE:	REVISION:
1	2/21	RECORD DRAWINGS
0	10/19	ISSUED FOR CONSTRUCTION

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

GENERAL DETAILS
(2 OF 2)

Scale: AS SHOWN

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

D-002

Pg No: 14 of 14

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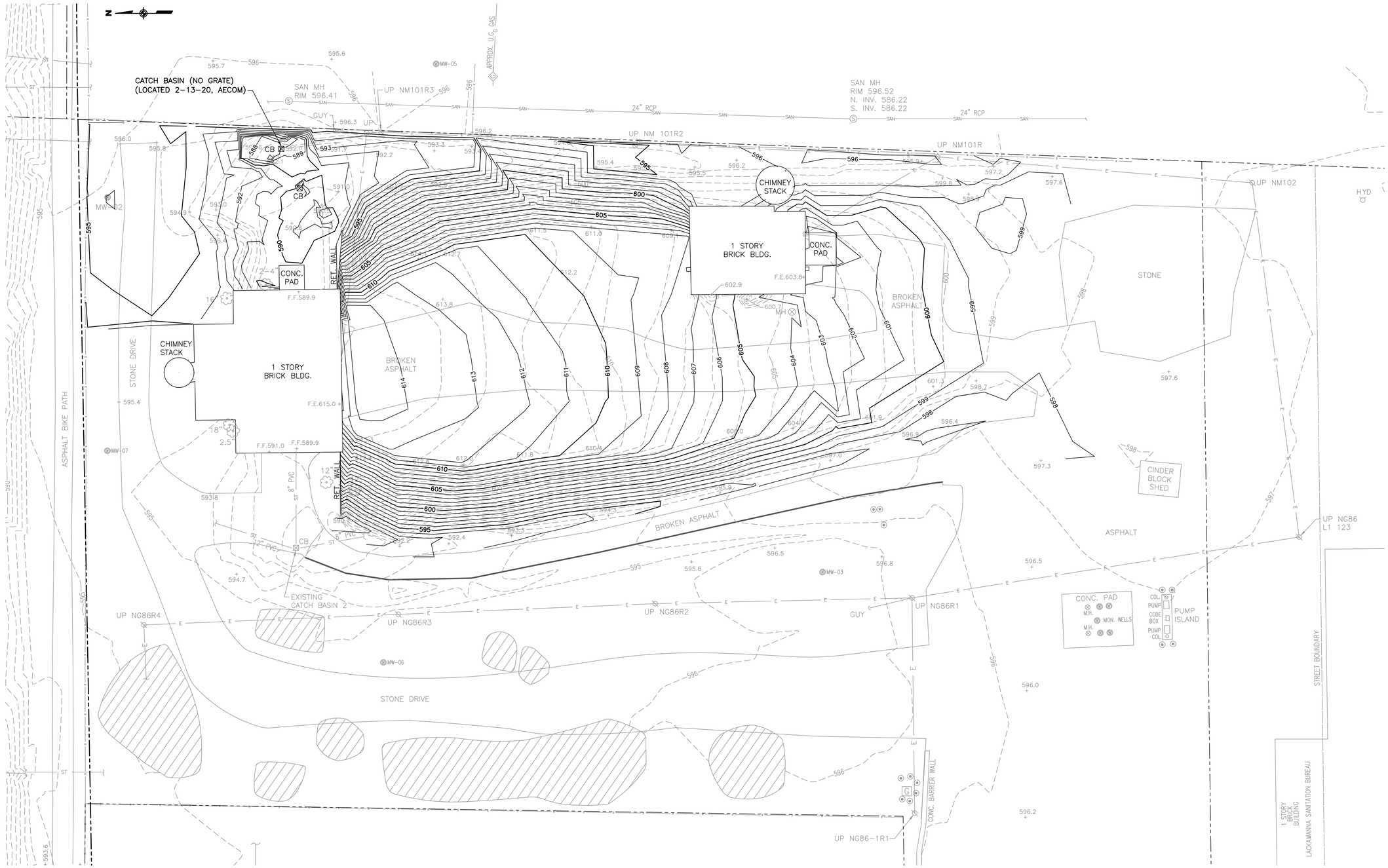

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
EX GRADE 4-22-19 TO EX GRADE 2-13-20	1.000	1.000	49154.54 Sq. Ft.	1627.35 Cu. Yd.	313.77 Cu. Yd.	1313.58 Cu. Yd.<Cut>
Totals			49154.54 Sq. Ft.	1627.35 Cu. Yd.	313.77 Cu. Yd.	1313.58 Cu. Yd.<Cut>

DRAWING-SPECIFIC LEGEND

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 600 EXISTING CONTOUR (APRIL 2019)
- 600 EXISTING CONTOUR AFTER EXCAVATION (FEBRUARY 2020)
- DEBRIS PILE (AS OF 3/26/19 URS SURVEY)

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

AS-BUILT EXCAVATION
(SHEET 1 OF 3)

Scale: 1"=20'

Date: FEBRUARY 2021
Project No.: 60594844
Dwg By: JJS
Chk By: RW

Dwg No:

SR-001

Pg No: 1 of 6

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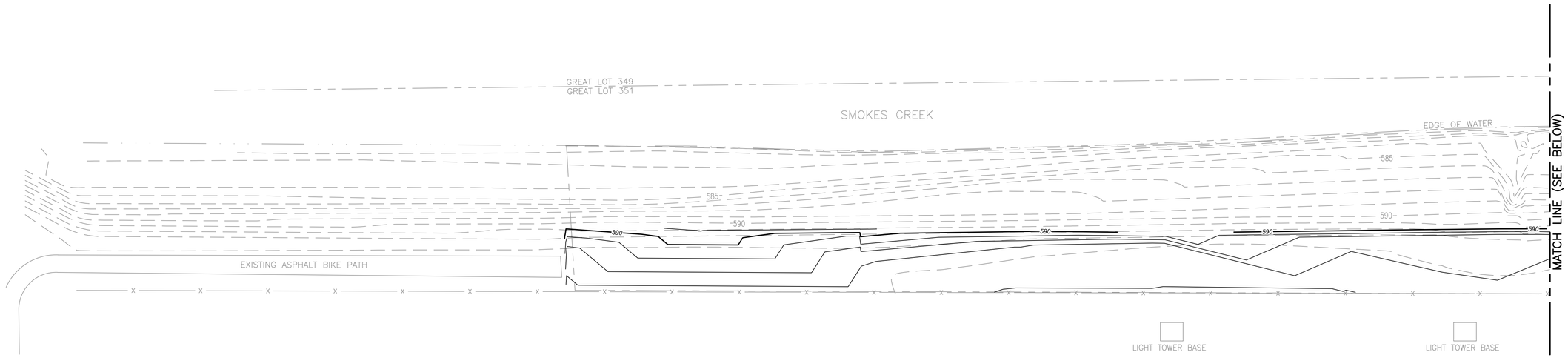
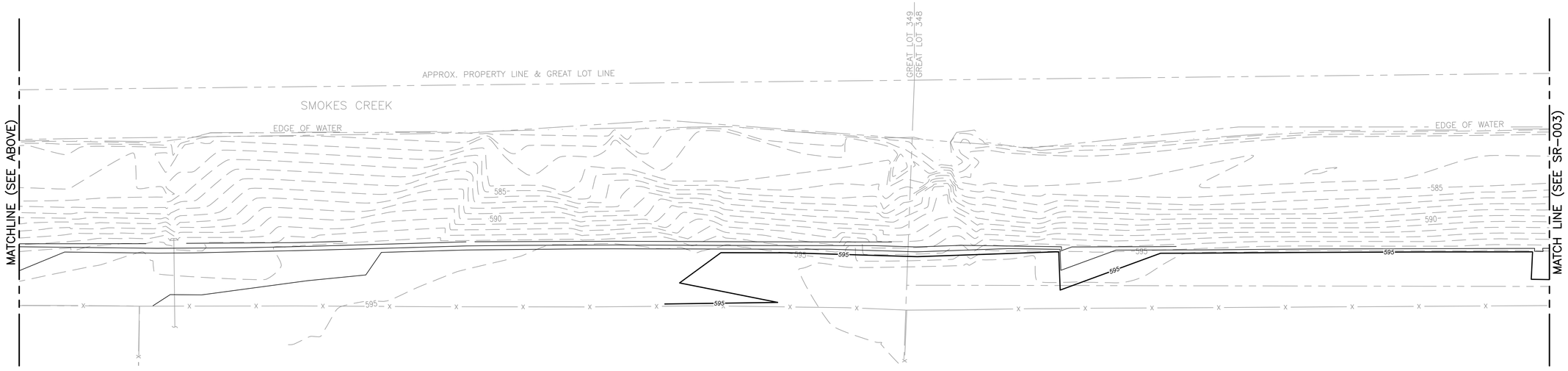


PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
EX GRADE 4-22-19 TO EX GRADE 5-11-20	1.000	1.000	43305.71 Sq. Ft.	1118.97 Cu. Yd.	32.83 Cu. Yd.	1086.13 Cu. Yd.<Cut>
Totals			43305.71 Sq. Ft.	1118.97 Cu. Yd.	32.83 Cu. Yd.	1086.13 Cu. Yd.<Cut>

DRAWING-SPECIFIC LEGEND

600 EXISTING CONTOUR (APRIL 2019)

600 EXISTING CONTOUR AFTER EXCAVATION (MAY 2020)

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

AS-BUILT EXCAVATION
(SHEET 2 OF 3)

Scale: 1"=20'

Date: FEBRUARY 2021
Project No.: 60594844
Dwg By: JJS
Chk By: RW

Dwg No:

SR-002

Pg No: 2 of 6

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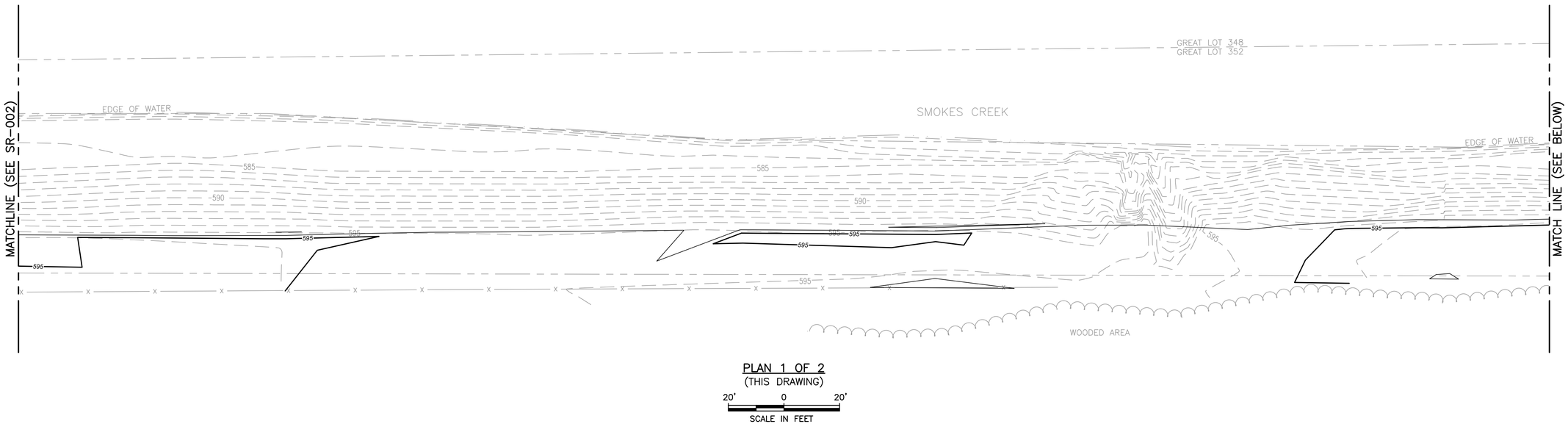
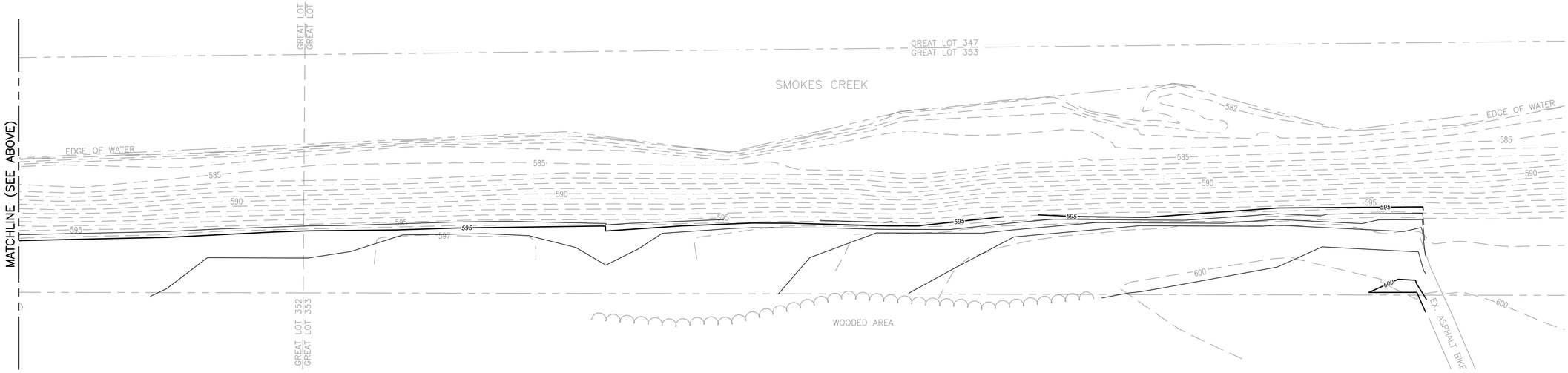


PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
EX GRADE 4-22-19 TO EX GRADE 5-11-20	1.000	1.000	43305.71 Sq. Ft.	1118.97 Cu. Yd.	32.83 Cu. Yd.	1086.13 Cu. Yd.<Cut>
Totals			43305.71 Sq. Ft.	1118.97 Cu. Yd.	32.83 Cu. Yd.	1086.13 Cu. Yd.<Cut>

DRAWING-SPECIFIC LEGEND

600 EXISTING CONTOUR (APRIL 2019)

600 EXISTING CONTOUR AFTER EXCAVATION (MAY 2020)

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

AS-BUILT EXCAVATION
(SHEET 3 OF 3)

Scale: 1"=20'

Date: FEBRUARY 2021
Project No.: 60594844
Dwg By: JJS
Chk By: RW

Dwg No:

SR-003

Pg No: 3 of 6

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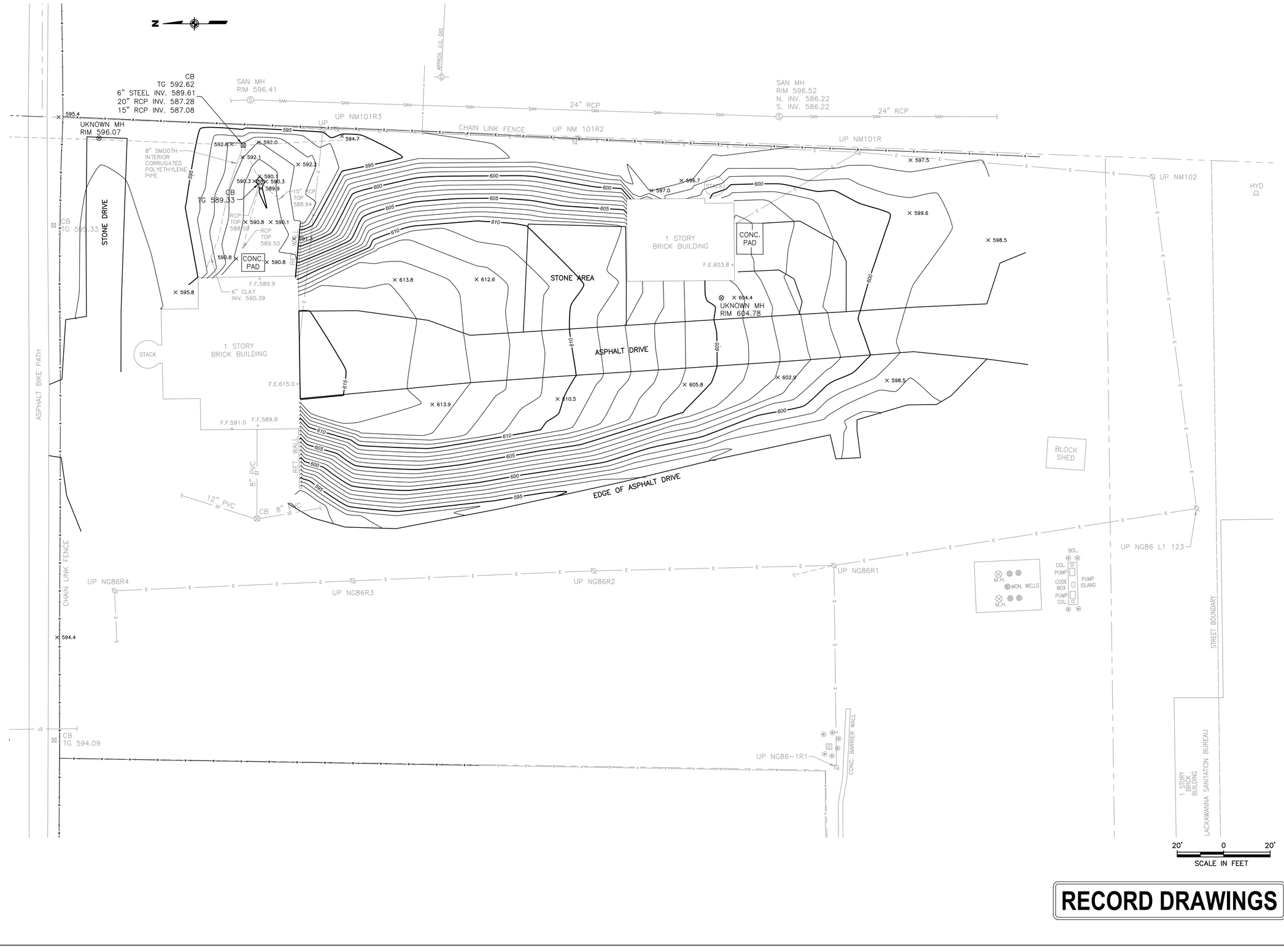

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK * DONALD A. McCALL * LICENSED PROFESSIONAL ENGINEER * 074177

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

AS-BUILT FINAL COVER - INCINERATOR AREA

Scale: 1"=20'

Date:	FEBRUARY 2021
Project No.:	60594844
Dwg By:	JJS
Chk By:	RW

Dwg No:

SR-004

Pg No: 4 of 6

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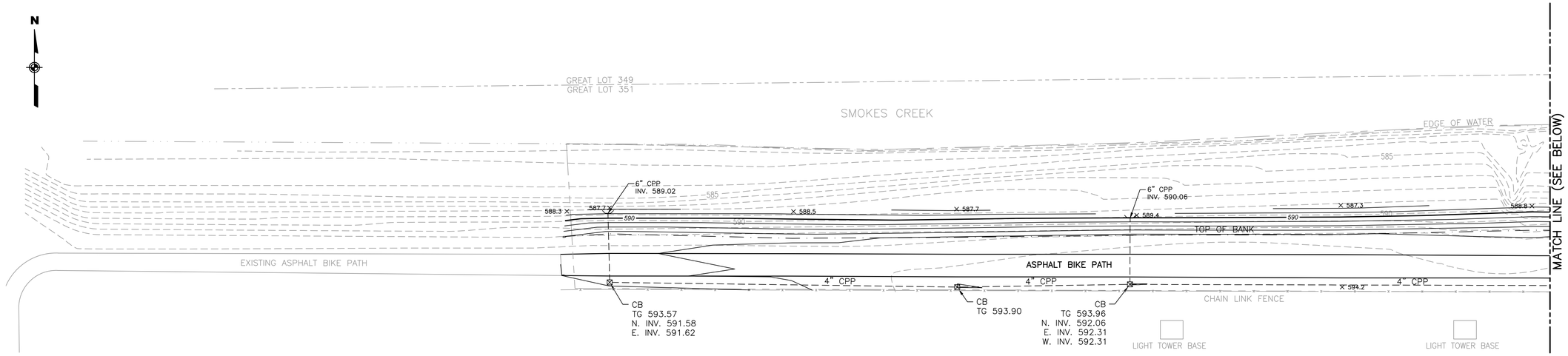

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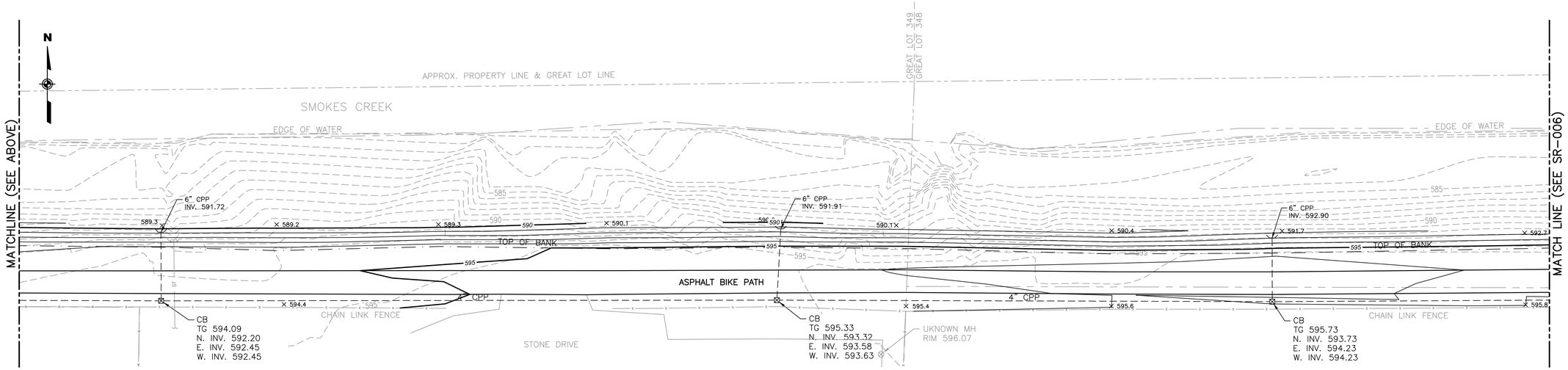
(THIS DRAWING)

20' 0 20'

SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'

SCALE IN FEET

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCALL · 074177 · LICENSED PROFESSIONAL ENGINEER

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
AS-BUILT FINAL COVER - SMOKES CREEK CORRIDOR (SHEET 1 OF 2)

Scale: 1"=20'

Date: FEBRUARY 2021
Project No.: 60594844
Dwg By: JJS
Chk By: RW

Dwg No:
SR-005

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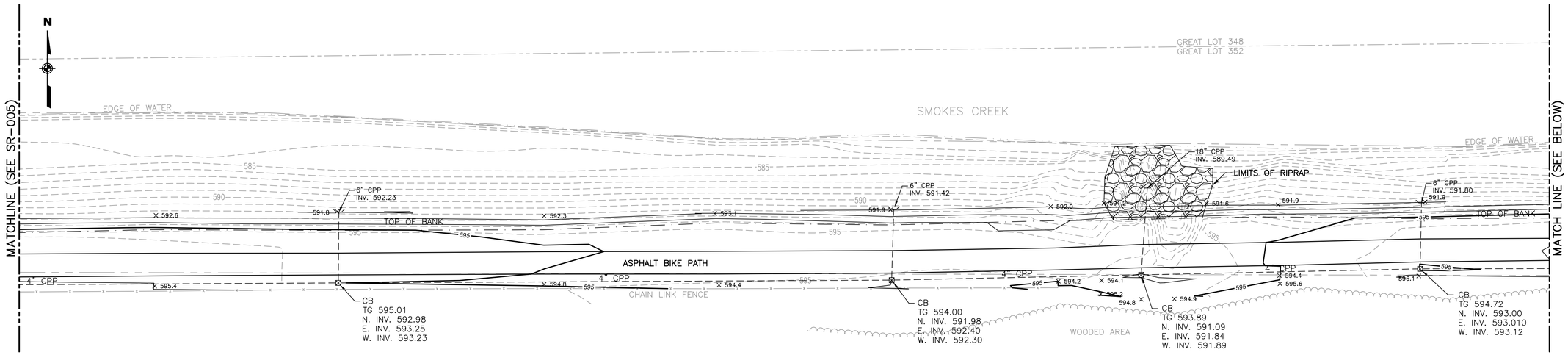
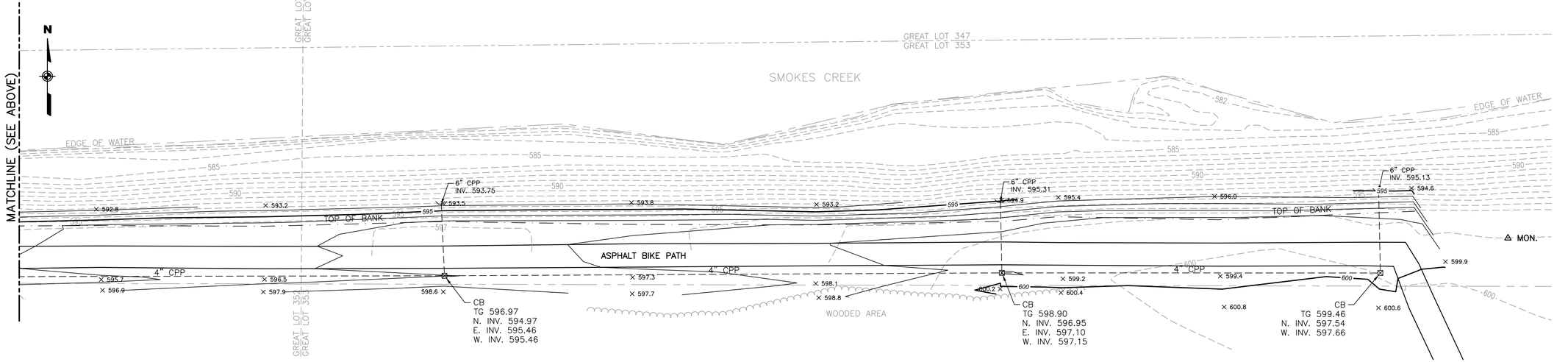


PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET

20' 0 20'
SCALE IN FEET

RECORD DRAWINGS

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

STATE OF NEW YORK · DONALD A. McCALL · LICENSED PROFESSIONAL ENGINEER · 074177

REV. NO.	DATE:	REVISION:
0	2/21	SUPPLEMENTAL RECORD DRAWING

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
AS-BUILT FINAL COVER - SMOKES CREEK CORRIDOR (SHEET 2 OF 2)
Scale: 1"=20'

Date: FEBRUARY 2021
Project No.: 60594844
Dwg By: JJS
Chk By: RW

Dwg No:
SR-006

Pg No: 6 of 6

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APPENDIX E:

SUBMITTALS

Construction Bid Results

GES Work Plan

Backfill Analytical Results

Geotextile

Waste Transporter Permit

Crushed Stone Certification

Russo Quarry Permit

Russo Quarry Gravel Sampling Map

Topsoil Particle Size Distribution

Common Fill Particle Size Distribution

Backfill Category B Analytical Report

Drainage Pipe Product Data

Drainage Structure

Drainage Stone

GES Health and Safety Plan

AECOM Health and Safety Plan

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **02 - Construction Bid Results**

REVIEW STATUS: *Choose one of the following:*

- ☐ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☒ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

1. Items "Stand down equipment charge (%)" and "Material Mark up (%)" have percentages given in the unit cost column for each bid but no cost added into each bid. Please revise the totals for each bid to include these mark-ups if allowed.

2. There are no costs for "Hydroseeding" for either the Buckeye Elm or TREC bids.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Jacob Anastasia Date: 1-3-20

		Abscope		Allied		Russo		Buckeye Elm		TREC	
	Units for Bid Comparison	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total	Unit Cost	Total
Mobilization	1	$ 40,500.00	$ 40,500.00	$ 8,700.00	$ 8,700.00	$ 3,900.00	$ 3,900.00	$ 18,882.00	$ 18,882.00	$ 13,500.00	$ 13,500.00
Operator (Day rate)	50	$ 900.00	$ 45,000.00	$ 760.00	$ 38,000.00	$ 830.00	$ 41,500.00	$ 800.00	$ 40,000.00	$ 795.00	$ 39,750.00
Operator (Weekend Day)		$ 1,230.00	$ -	$ 968.00	$ -	$ 1,430.00	$ -	$ 1,200.00	$ -	$ 1,195.00	$ -
Operator (OT hourly rate)		$ 145.00	$ -	$ 121.00	$ -	$ 144.00	$ -	$ 150.00	$ -	$ 150.00	$ -
Laborer (Day rate)	50	$ 755.00	$ 37,750.00	$ 608.00	$ 30,400.00	$ 670.00	$ 33,500.00	$ 715.00	$ 35,750.00	$ 645.00	$ 32,250.00
Laborer (Weekend day rate)		$ 1,118.00	$ -	$ 768.00	$ -	$ 1,070.00	$ -	$ 1,072.50	$ -	$ 900.00	$ -
Laborer (OT hourly rate)		$ 114.00	$ -	$ 96.00	$ -	$ 110.00	$ -	$ 134.00	$ -	$ 112.50	$ -
Truck Driver (Day rate)		$ 718.00	$ -	$ 760.00	$ -	$ 300.00	$ -	$ 470.00	$ -	$ 590.00	$ -
Truck Driver (Weekend day rate)		$ 1,057.00	$ -	$ 968.00	$ -	$ 600.00	$ -	$ 705.00	$ -	$ 895.00	$ -
Truck Driver (OT Hourly rate)		$ 116.00	$ -	$ 121.00	$ -	$ 56.25	$ -	$ 87.00	$ -	$ 112.00	$ -
Excavator 1	25	$ 484.00	$ 12,100.00	$ 905.00	$ 22,625.00	$ 500.00	$ 12,500.00	$ 650.00	$ 16,250.00	$ 375.00	$ 9,375.00
Excavator 2	25	$ 327.00	$ 8,175.00	$ 607.00	$ 15,175.00	$ 600.00	$ 15,000.00	$ 650.00	$ 16,250.00	$ 375.00	$ 9,375.00
Skid Steer	25	$ 165.00	$ 4,125.00	$ 450.00	$ 11,250.00	$ 50.00	$ 1,250.00	$ 151.00	$ 3,775.00	$ 150.00	$ 3,750.00
Bulldozer	25	$ 155.00	$ 3,875.00	$ 585.00	$ 14,625.00	$ 480.00	$ 12,000.00	$ 790.00	$ 19,750.00	$ 320.00	$ 8,000.00
Support Truck	25	$ 115.00	$ 2,875.00	$ 120.00	$ 3,000.00	$ 100.00	$ 2,500.00	$ 91.50	$ 2,287.50	$ 65.00	$ 1,625.00
Water Truck		$ 275.00	$ -	$ 790.00	$ -	$ 286.00	$ -	$ 300.00	$ -	$ 240.00	$ -
Roller	10	$ 225.00	$ 2,250.00	$ 375.00	$ 3,750.00	$ 100.00	$ 1,000.00	$ 357.50	$ 3,575.00	$ 200.00	$ 2,000.00
Plate Tamper	15	$ 50.00	$ 750.00	$ 44.00	$ 660.00	$ 50.00	$ 750.00	$ 48.80	$ 732.00	$ 45.00	$ 675.00
Dump Truck		$ 390.00	$ -	$ 400.00	$ -	$ 384.00	$ -	$ 250.00	$ -	$ 125.00	$ -
Geotextile Fabric	12	$ 594.00	$ 7,128.00	$ 756.00	$ 9,072.00	$ 750.00	$ 9,000.00	$ 661.70	$ 7,940.40	$ 1,350.00	$ 16,200.00
Stand down equipment charge (%)		50%	$ -	50%	$ -	5%	$ -	25%	$ -	20%	$ -
transport and soil disposal (per ton)	3750	$ 42.75	$ 160,312.50	$ 36.25	$ 135,937.50	$ 36.00	$ 135,000.00	$ 44.00	$ 165,000.00	$ 35.00	$ 131,250.00
Concrete T&D (per ton)		$ 36.00	$ -	$ 18.00	$ -	$ 4.25	$ -	$ 18.00	$ -	$ 8.50	$ -
C&Debris T&D (per ton)		$ 67.50	$ -	$ 65.00	$ -	$ 82.00	$ -	$ 80.00	$ -	$ 62.00	$ -
Asphalt T&D (per ton)	100	$ 36.00	$ 3,600.00	$ 65.00	$ 6,500.00	$ 4.25	$ 425.00	$ 18.00	$ 1,800.00	$ 8.50	$ 850.00
vac truck		$ 2,880.00	$ -	$ 2,100.00	$ -	$ 1,200.00	$ -	$ 1,780.00	$ -	$ 1,750.00	$ -
General Fill per ton	2500	$ 14.30	$ 35,750.00	$ 14.25	$ 35,625.00	$ 14.00	$ 35,000.00	$ 35.10	$ 87,750.00	$ 20.40	$ 51,000.00
Topsoil per ton	1200	$ 26.40	$ 31,680.00	$ 21.75	$ 26,100.00	$ 25.00	$ 30,000.00	$ 49.40	$ 59,280.00	$ 26.25	$ 31,500.00
Subbase per ton	225	$ 17.60	$ 3,960.00	$ 17.50	$ 3,937.50	$ 17.00	$ 3,825.00	$ 30.88	$ 6,948.00	$ 19.50	$ 4,387.50
Hydroseed per sq. ft.	47000	$ 0.06	$ 2,820.00	$ 0.13	$ 6,110.00	$ 0.15	$ 7,050.00				
Material Mark up (%)		10%		10%		5%		15%		12%	
			$ -		$ -		$ -		$ -		$ -
			$ 402,650.50		$ 371,467.00		$ 344,200.00		$ 485,969.90		$ 355,487.50

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **03 – Work Plan**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Jacob Anastasia Date: 1-13-20

New York State Department of Environmental Conservation

Remedial Excavation Workplan Incinerator Area

Lackawanna Incinerator Site
2960 South Park Avenue
Lackawanna, New York
NYSDEC Site #915206

January 8, 2019

Version 1

Remedial Excavation Workplan
Incinerator Area

Lackawanna Incinerator Site
2960 South Park Avenue
Lackawanna, New York

Prepared for:
NYSDEC, Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233

Prepared by:
Groundwater & Environmental Services, Inc.
415 Lawrence Bell Drive, Suite 6
Williamsville, New York 14221
TEL: 800-287-7857
www.gesonline.com

GES Project:
0901800-05-100

Date:
December 23, 2019

Joseph Halleck
Staff Geologist

Thomas Palmer
Project Manager

Genevieve Bock, P.E.
Regional Engineering Manager

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Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Historical Soil Analytical Map
Figure 4 – Groundwater Monitoring Map
Figure 5 – Proposed Area of Excavation

Appendices

Appendix A - Remedial Design Contract Drawings
Appendix B - Health and Safety Plan
Appendix C - Community Air Monitoring Plan
Appendix D - Material Specification Data Sheets

Acronyms

bgs	below ground surface
CAMP	Community Air Monitoring Plan
CP-51	Commissioner Policy 51
DER	Division of Environmental Remediation
Ft	feet
FWRIA	A Fish and Wildlife Resources Impact Analysis
GES	Groundwater & Environmental Services, Inc.
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
PAH	Polycylic Aromatic Hydrocarbons
ppm_v	Parts Per Million By Volume
PCBs	Polychlorinated biphenyls
RCRA	Recourse Conservation Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SCOs	Soil Cleanup Objectives
SVOC	Semi Volatile Organic Compound
TAL	Target Analyte List
TCL	Total Compound List
VOC	Volatile Organic Compound

1 INTRODUCTION

This workplan has been prepared by GES in order to document the proposed field activities intended to implement the Remedial Design Contract Drawings (**Appendix A**) provided by AECOM (URS Corporation) the project engineer for the remediation and restoration of the Lackawanna Incinerator Site located at 2960 South Park Avenue in Lackawanna, New York (Site). The Remedial Design Contract Drawings (**PLAN**) and this work plan were completed in order to implement the selected remedy as described in the Record of Decision (**ROD**) issued in June, 2017, by the New York State Department of Environmental Conservation (NYSDEC). A Site Location Map, as well as a Site Plan illustrating the site layout, has been included as page 2 of **Appendix A**.

The site consists of two areas of concern, the Incinerator Area and the Smokes Creek Corridor Area. This phase of work will address the Incinerator Area only.

2 PREVIOUS INVESTIGATIONS

During April 2005, Malcolm Pirnie conducted an environmental investigation at the subject property. Specifically, the purpose of this study was to determine the overall environmental conditions of the subject property. During this study a total of three sediment, three incinerator ash, and seven subsurface soil/fill samples were collected to characterize the conditions on-site. Three shallow groundwater monitoring wells were installed and sampled as well. The investigation results indicated the presence of high levels of heavy metals in the incinerator ash, elevated metals and PAHs in soil/fill on-site.

EA Engineering, P.C. and its affiliates conducted RI field activities between October 2012 and February 2014. In total five phases of study were completed by EA Engineering. The study compiled data from the onsite subsurface soils, groundwater, sediment, and storm water outfalls. Laboratory analysis included TCL VOCs, TCL SVOCs, TAL metals, TCL pesticides, TCL PCBs, and total cyanide. During the RI, TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, and total cyanide were not detected in exceedance of 6 NYCRR Part 375 criteria. Analytical results indicated that arsenic and lead were present exceeding 6 NYCRR Part 375 Unrestricted Use, Restricted Residential, and Commercial SCOs. Specifically, lead was detected up to 6,820 ppm, and Arsenic was detected up to 28 ppm.

Groundwater sampling was conducted during the RI field activities. Seven Monitoring wells were installed and sampled in November 2012 and April 2013. Multiple analytes were identified in exceedance of Class GA SCGs. All other inorganic constituents that exceeded Class GA criteria in the monitoring wells sampled were also detected at similar or lesser concentrations in groundwater from the up gradient monitoring wells. These similar analytical results suggest those constituents are unlikely to be related to on-site contamination.

A FWRIA was conducted to identify existing and potential impacts from the site to fish and wildlife receptors. Based on results reviewed under the FWRIA, surface water serves as a potential exposure pathway to fish and wildlife near the site. However, the creek does not appear to have been impacted by site-related contamination, based on the RI sampling results.

3 EXCAVATION ACTIVITIES

The purpose of this work plan is to address lead and arsenic contaminated soils at the former Lackawanna Incinerator property. GES proposes to complete a focused soil excavation in the areas outlined by engineer in the **PLAN**. **Figure 5** (Proposed Area of Excavation Map) depicts the approximate limits of the proposed excavation. No outstanding on-site limitations appear to inhibit the progress of this project.

The following sections expand in more detail the steps that will be implemented to accomplish the objectives of the proposed remedial action.

3.1 Extent of Impact

The engineer for this project provided a proposed area of excavation to address soil contamination (**PLAN Figure 5**). The approximate limits of the excavation have been provided to address the most feasible removal of impacted soil from the subject property to meet the objective. The previous studies identified elevated heavy metals impact within the on-site soils. Based on the laboratory analytical results impact identified in the soils exceeds NYCRR Part 375 criteria.

Based on the previous studies and discussions with the NYSDEC it had been determined the best approach to remediating this contamination is to excavate approximately one foot of impacted soil across the entire property and place a cap above a layer of geotextile/demarcation layer. Once soils have been excavated they will be disposed of properly at an NYSDEC approved landfill.

3.2 Health and Safety Plan

GES will have a site specific health and safety plan on-site and available to all parties pertaining to applicable onsite activities and hazards. The health and safety plan will have safety sheets, emergency contacts, route to the nearest hospital, and safety procedures. (**Appendix B**)

3.3 Permitting

If required, a permit will be obtained by the general contractor (**GC**) hired by GES, from the local municipality. Any permit will be available at the commencement of the work until such time that the permit is properly closed.

3.4 Security Fencing

An exclusion zone will be established prior to the start of activities to ensure the safety of both project personal and the general public. The exclusion zone will consist of safety cones, orange snow fencing placed around the proposed excavation, along with the existing chain link fencing extending along portion of the property boundary. Signage will also be placed to identify the work area. Work areas will be set up in a manner to allow City of Lackawanna access as needed to the north incinerator building, and to ensure that remedial activities effect on City operations are minimal.

3.5 Utility Mark Out

Dig Safely New York will be contacted to conduct a public utility mark out a minimum of three (3) days prior to the commencement of remedial activities. Dig Safely New York will contact all pertinent utilities companies to conduct a locate around the site. A positive response from the utility companies or visual observation of the utilities marked by Dig Safely New York will be obtained prior to conducting any intrusive activities. Additionally, a private utility mark out may be completed in the area targeted for excavation prior to the commencement of remedial activities if the client feels it is warranted.

3.6 Waste Management

On the first day of excavation additional waste characterization samples will be collected and submitted for laboratory analysis to ensure the receiving facility requirements are met. Russo Development (**GC**) has contracted with Waste Management to dispose of project derived wastes at their Chaffee, NY landfill facility. Waste transport will be completed by Russo under their waste transport permit to the landfill, and following the transportation plan provided by Russo and submitted to AECOM for approval. Waste profiles will be submitted to AECOM and the NYSDEC for approval before any material is transported to the Landfill for disposal.

3.7 Japanese Knotweed Removal

Japanese knotweed (fallopian japonica) is an invasive species in the state of New York, this invasive species is located at the subject property. Due to how easily the invasive species can spread it will be handled to specification per the **PLAN**. Knotweed will be cut to an approximate height of 6 inches above ground surface or less. All cut material will be placed into black contractor bags with a minimum thickness of 4 mil, and tied or taped so that no material cannot escape. Soil from the knotweed areas will be excavated separately and transported to the landfill for disposal to prevent the spreading of root material on-site. Following knotweed excavation the excavator will be cleaned to prevent transfer of plant material. Russo Development (**GC**) has contracted with Waste Management to dispose of project derived wastes at their Chaffee, NY landfill facility. Waste transport will be completed by Russo under their waste transport permit to the landfill, and following the transportation plan provided by Russo and submitted to AECOM for approval. Waste profiles will be submitted to AECOM and the NYSDEC for approval before any material is transported to the Landfill for disposal.

3.8 Tree Removal

All trees within the limits of the work area will be removed so that soil excavation can be completed. All trees within the limits of the excavation will be cut into manageable sized pieces (less than 10 ft. in length), wood that has been cut will be moved and placed in the onsite Town of Lackawanna wood pile. Tree stumps will not be grubbed, if significant soil remains on the roots they will be removed from site with the impacted soil and disposed of at the approved landfill.

Tree stumps may be cut below ground surface and buried at AECOMs discretion where applicable to aid in supporting slopes.

3.9 Working On Slopes

The east and west sides of the site have steeply sloped areas that will require tree and/or knotweed removal. Workers that need to work on the slope will wear a harness attached to a rope secured at the top of the slope. Safety equipment will be OSHA approved and inspected daily before use.

3.10 Erosion Control Plan

Rolled erosion control will be installed at minimum in the areas designated by **PLAN**. This includes areas were sloped is greater than 25% that are to be vegetated, as well as surrounding the onsite sediment trap. Erosion control will be inspected daily and placement will be modified as needed. All erosion control products must meet the specification in the **PLAN** and will be approved by AECOM before installation.

3.11 Decontamination Plan

Decontamination pads will be installed (if necessary) in two separate locations of the subject property per the **PLAN**. Decontamination pads will be boxed in areas lined with poly and filled with stone. A sump will be placed in the corner of the decontamination pad for dewatering if necessary. To avoid problems with freezing equipment and potentially dangerous icy areas, trucks will be loaded on existing site access roads to prevent tires from coming in contact with contaminated materials. If conditions do not allow clean access for trucks, an area of stone will be installed to allow trucks to be loaded while remaining clean. Trucks will be tarped with poly (essentially a drop cloth) for preventing any impacted soil from getting on the exterior of the truck or trailer during loading of material. If trucks and/or tires are visually impacted they will be cleaned with water. GC will have a water truck on call in case it is required for decontamination. Due to the time of year of fieldwork, using water to clean trucks is discouraged unless deemed necessary by the project team.

All equipment will be decontaminated before leaving the Japanese knotweed area, as well as before the equipment leaves the project. Equipment that was in the area of the invasive species will be power-washed with a minimum of a 1,000 psi. No soaps or chemicals will be used while cleaning equipment. A designated equipment cleaning station will be constructed or a commercial portable cleaning station with a rack is required.

Decon water will be pumped to 55-gallon drums or totes for sampling and disposal at a NYSDEC approved facility. Water containers will be left with sufficient headspace to allow expansion if freezing occurs.

3.12 Soil Excavation

Prior to using mechanical excavation methods, pre-clearing/hand digging to identify any known utilities previously identified will be completed. Following pre-clearing activities, excavation of soils will be accomplished using an excavator. The excavator will be sized appropriately to excavate the soils in a timely manner and to the appropriate depth.

The excavation will begin with the knotweed area to minimize the chance of spreading the invasive species. Excavation sequencing following the knotweed removal will follow the ramp from the north incinerator building down towards the Lackawanna DPW to try to use the existing broken asphalt drive for truck loading and contamination reduction. Refer to **PLAN Figure 5** for an approximate extent of the excavation. Hand clearing will take place around the structures and in sensitive areas as determined by the on-site GES representative and AECOM.

Impacted soils will either be temporarily staged on-site on non-excavated impacted soil, placed on poly proximate to the decontamination areas, or live-loaded into trucks for proper disposal at a licensed waste disposal facility. All backfill material will have had laboratory analyses completed on it as required in accordance with NYSDEC Division of Environmental Remediation (DER)-10 requirements.

The terminal depth of the proposed excavation will vary throughout the subject property but will generally remain approximately 1 ft. bgs. Demarcation fabric will be placed on top of the undisturbed soil in the excavation before backfill is placed back in the excavated area.

On the west side of the south incinerator, excavation will be greater than one ft. bgs in two select areas to uncover the two existing openings/windows referred to as debris holes in the **PLAN**. Once the subsurface openings/windows are free of surrounding soils steel plates will be placed over the openings/windows to prevent additional soils from entering the building as shown in **Detail 4, Page 13** of the **PLAN**. During excavation of the subsurface windows/openings sidewalls of the excavation will be stabilized by Russo. Russo will implement stepping, shoring, or trench boxes to stabilize the surrounding soils. The subcontractors stabilization method will be an efficient means to provide soil support while the steel plates area being placed over the subsurface windows/openings so that there will be no undermining hazards.

3.13 Trucking

Dump trucks will attempt to be staggered so that there is not multiple trucks on site at one time. If multiple trucks are onsite at once the trucks will be staged to the West side of the property. Trucks will be staged so that they are not disturbing the Highway department operations. Trucks will pull onto the constructed decontamination pad, existing roadway, or stone pad for loading. Loaded dump trucks will be inspected to ensure decontamination is not required, tarped, and driven to the approved landfill facility following the approved route plan.

3.14 Dewatering

Dewatering of the excavation is not anticipated to be necessary during excavation activities. Dewatering, if necessary, will be accomplished through the installation of sump(s) at appropriate locations and as the excavation expands. The sump(s) will be installed in a bed of crushed stone and will be utilized for the temporary installation of a groundwater depression pump(s). Recovered groundwater will be directed to on-site holding tanks and transported off-site to a licensed and permitted waste disposal facility, or groundwater could potentially be treated on-site and discharged to the local storm or sanitary sewer system under appropriate permitting.

3.15 Catch Basin Replacement

On-site catch basins and piping will be inspected during excavation activities for damage. If catch basins are compromised they will be replaced. Piping if not damaged will not be traced, if piping is discovered to be damaged it will be excavated and replaced until the pipe is found to be unbroken/satisfactory shape or leaves the property. If catch basins or piping needs to be replaced it will be completed to specification of the **PLAN**. Materials for the catch basin and pipe replacement may be provided by the city of Lackawanna or can be provided by the subcontractor at price plus markup provided in their bid.

3.16 Work Zone Air Monitoring

Air shall be monitored during the excavation activities. While monitoring, no visual dust may be visible in the air. If visual dust is observed work will be stopped until water can be added or similar methods can be employed to mitigate the dust issue. Once visual dust is dispersed, excavation activities will resume and the soil disturbance will be adjusted to minimize to release of dust.

Air monitoring shall be performed as described in the Community Air Monitoring Plan (**CAMP**) (**Appendix C**). Volatile organic compound vapors are not anticipated during this excavation; however, GES personnel will have a PID on-site to ensure safe working conditions during excavation.

4 RESTORATION ACTIVITIES

4.1 Backfilling and Site Restoration

The excavation will be backfilled once the impacted material has been removed. Backfill materials will be to specification provided by the **PLAN**. All backfilling will be accomplished in lifts no greater than 1-foot. A roller, excavator, or bulldozer will be used to compact backfill material to acceptable levels per the **PLAN** specification.

4.2 Geotextile Separation Fabric

A layer of geotextile fabric will be installed above all excavated areas before the commencement of backfilling operations. The **PLAN** provides specifications for the geotextile material and a cut

sheet for the fabric will be submitted to AECOM for approval before material is ordered or installed. Fabric will be installed with overlapping seams as described in the **PLAN**. Fabric installation will be inspected and photographed by GES before any fill is placed.

4.3 Groundwater Monitoring Wells

On-site groundwater monitoring wells will remain undisturbed during excavation activities. Soils will be hand cleared adjacent to the monitoring wells to ensure that the wells are not compromised during remediation.

4.4 Backfill

All general fill material will meet the requirements of the public health soil cleanup objectives for Part 375 unrestricted use as set in table 375-6.8(b), and ASTM testing will be performed to meet the requirements set in the **PLAN**. Aggregate will be imported from a New York State Department of Transportation (NYSDOT) approved material source, and an NYSDOT approval certificates will be provided for the imported backfill material. All imported backfill material will meet the specifications provided by the **PLAN** and required analytical data will be provided to AECOM for approval before purchase or placement on-site. General fill will be placed in a maximum of 12-inch lifts (measured after compaction) and compacted to an unyielding state with approved equipment (bulldozer or roller). Topsoil will be installed in the spring to allow for hydroseeding immediately following installation. General fill will be scarified prior to topsoil installation. Topsoil will be installed in a uniform 4-inch layer across the site.

4.5 Final Grade

Final grade of the subject property will be relative to what the subject property was prior to mobilization. Some areas may be reshaped to promote positive drainage per the **PLAN**. Areas above the retention walls may be shaved/re-shaped so that ground surface is flush or below the face of the concrete retention walls. Grade marks/stakes will be provided by the surveyor contracted by AECOM to confirm that final grade is set back to preexisting where required.

4.6 Stone Access Roads

Stone roadways that have been removed during remediation will be replaced per specification of the **PLAN** after excavation has been completed at the subject property. Stone will be installed in 6-inch lifts and compacted thoroughly to an unyielding state via roller. Stone will a minimum of 6” thick and will be the full 12-inch of cover in stone access roads.

4.7 Paved Access Roads

Paved access roads that have been removed during remediation will be replaced per specification per the **PLAN**. All handling and compaction of bituminous materials shall be in accordance with the NYSDOT standards. All preparations for paving will be in place upon completion of excavation activities during winter 2020. Subbase will be installed to 6-inch compacted layer to allow site

access and to cover the geotextile fabric until weather allows for asphalt paving. Subbase will be regraded and filled if needed prior to paving. Asphalt paving activities will take place in the spring of 2020 with cooperative weather.

4.8 Topsoil

Topsoil will be distributed in a uniform approximate 4 inch thick layer across the subject property. Topsoil will not be placed onto excessively muddy areas, or over standing water. Topsoil placed on slopes greater than five percent will be stabilized as deemed necessary. All imported topsoil and topsoil distribution methods will be to specification of the **PLAN**. Topsoil will not be placed until the spring of 2020 due to wintery conditions at the time of field work.

4.9 Seeding

Upon completion of topsoil distribution in the spring of 2020 hydroseeding will take place. The subcontractor will determine the means and methods to employ seeding activities at the subject property. All seeding activities will be to specification provided by the **PLAN**. Seed mix and fertilizer/additive material specifications will be submitted to AECOM for approval before purchase or application of hydroseed. Seeding will be scheduled, if weather permitting, prior to May 15th to minimize the need for irrigation of the seed. If required, irrigation will be coordinated with the Lackawanna DPW or be performed via water truck by Russo.

4.10 Survey

All surveying activities throughout the entirety of the project will be completed by the engineer or an entity appointed by the engineer.

5 Reporting

Following completion of excavation activities, a summary report will be prepared including a summary of the daily project tracking sheets, weekly progress reports, photo logs, all manifests, weight tickets, etc. will be published for the NSDEC and the Engineer.

Figures

FIGURE 1

SITE LOCATIOPN MAP

FIGURE 2

SITE MAP

FIGURE 3

HISTORICAL SOIL ANALYTICAL MAP

FIGURE 4

GROPUNDWATER MONITORING MAP

FIGURE 5

PROPOSED AREA OF EXCAVATION

Appendix A

Appendix B

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **04 – Backfill**

REVIEW STATUS: *Choose one of the following:*

- ☐ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☒ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

1. The proposed backfill materials are acceptable, pending a review of the Particle Size Distribution Report and ASTM Test Results.

2. PFAS in the lab report do not show ND in the result column for non-detects. It is assumed that the result values that equal the RL column values are non-detect. Please have the lab resubmit the report with non-detect PFAS results either called "ND" in the result column or a "U" in the qualifier column.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 2-5-20

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-159547-1
Client Project/Site: 1318 Niagara Street #E915213

For:
New York State D.E.C.
625 Broadway
12th Floor
Albany, New York 12233-7017

Attn: Ms. Heidi-Marie Dudek

Authorized for release by:
10/24/2019 8:51:22 AM

Orlette Johnson, Senior Project Manager
(484)685-0864
orlette.johnson@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Orlette Johnson
Senior Project Manager
10/24/2019 8:51:22 AM

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Definitions/Glossary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
vs	Reported analyte concentrations are below 200 ug/kg and may be biased low due to the sample not being collected according to 5035A-L low-level specifications.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-159547-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-159547-1

Receipt
The samples were received on 9/16/2019 4:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.8º C, 2.9º C, 3.0º C and 3.1º C.

GC/MS VOA
Method 8260C: The laboratory control sample (LCS) for preparation batch 480-493565 and analytical batch 480-493547 recovered outside control limits for the following analyte: 1,1,1-Trichloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported. The following samples are impacted: RUSSO-TS-GRAB 1 (480-159547-1), RUSSO-TS-GRAB 2 (480-159547-2), RUSSO-TS-GRAB 3 (480-159547-3), RUSSO-TS-GRAB 4 (480-159547-4), RUSSO-TS-GRAB 5 (480-159547-5), RUSSO-TS-GRAB 6 (480-159547-6), RUSSO-CF-GRAB 1 (480-159547-9), RUSSO-CF-GRAB 2 (480-159547-10), RUSSO-CF-GRAB 3 (480-159547-11), RUSSO-CF-GRAB 4 (480-159547-12), RUSSO-CF-GRAB 5 (480-159547-13), RUSSO-CF-GRAB 6 (480-159547-14), RUSSO-CF-GRAB 7 (480-159547-15), RUSSO-CF-GRAB 8 (480-159547-16), RUSSO-CF-GRAB 9 (480-159547-17), GERNATT-CF-GRAB 1 (480-159547-21), GERNATT-CF-GRAB 2 (480-159547-22) and GERNATT-CF-GRAB 3 (480-159547-23).

Method 8260C: Surrogate recoveries for the following samples were outside the upper control limit: RUSSO-TS-GRAB 1 (480-159547-1) and RUSSO-TS-GRAB 6 (480-159547-6). The samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: Surrogate recovery for the following samples was outside the upper control limit: GERNATT-TS-GRAB 2 (480-159547-34), GERNATT-TS-GRAB 4 (480-159547-36) and GERNATT-TS-GRAB 6 (480-159547-38). This sample did not contain any target analytes above the reporting limit; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-493944 recovered above the upper control limit for Carbon tetrachloride. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported. The following sample is impacted: GERNATT-CF-GRAB 4 (480-159547-24).

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 480-493988 and analytical batch 480-493944 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The following samples are impacted: (480-159547-A-24-C MS) and (480-159547-A-24-D MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method 8082A: The following sample is associated with a continuing calibration verification (CCV 480-494086/29) that had recoveries for the surrogate Tetrachloro-m-xylene that were above acceptance limits: RUSSO-CF-COMP 3 (480-159547-20). The secondary surrogate Decachlorobiphenyl is within limits. Therefore, the data has been reported.

Method 8082A: The continuing calibration verification (CCV 480-494086/29) associated with batch 480-494086 recovered above the upper control limit for PCB-1016 and PCB-1260. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: RUSSO-CF-COMP 3 (480-159547-20).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010C: The serial dilution (480-159547-E-7-A SD ^5) associated with batch 480-494449, exhibited results outside the quality control limits for Total Barium and Zinc. However, the post digestion spike (PDS) was compliant, therefore no corrective action was necessary.

Job ID: 480-159547-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

Method 6010C: The recovery of post spike, (480-159547-E-7-A PDS), associated with batch 480-494449, exhibited a result outside quality control limits for Total Manganese. However, the serial dilution (SD) of this sample was compliant, therefore no corrective action was necessary.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

Method 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-326599/11)

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).

RUSSO-TS-COMP 2 (480-159547-8)

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.

RUSSO-CF-COMP 2 (480-159547-19)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method 7196A: The matrix spike soluble recovery for was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7196A: The matrix spike soluble / matrix spike insoluble recoveries for 645471 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7196A: The matrix spike soluble/matrix spike insoluble (MSS/MSI) recoveries for batch 646036, which is a re-prep of batch 645571, were outside control limits due to sample matrix. The associated laboratory control sample (LCSS/LCSI) recoveries met acceptance criteria. Both sets of data have been reported.

Method 7196A: The matrix spike soluble (MSS) recovery for batch 646037, which is a re-prep of batch 645561, were outside control limits due to sample matrix. The associated laboratory control sample (LCSS/LCSI) recoveries met acceptance criteria. Both sets of data have been reported.

Method 9012B: The following samples were analyzed outside of analytical holding time due to laboratory error.RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8), RUSSO-CF-COMP 1 (480-159547-18), RUSSO-CF-COMP 2 (480-159547-19), RUSSO-CF-COMP 3 (480-159547-20), GERNATT-CF-COMP 1 (480-159547-30), GERNATT-CF-COMP 2 (480-159547-31), GERNATT-CF-COMP 3 (480-159547-32) and GERNATT-TS-COMP 1 (480-159547-39).

Method 9012B: The following sample was analyzed outside of analytical holding time due to samples being prepped with insufficient time remaining to analyze the samples within hold.GERNATT-TS-COMP 2 (480-159547-40).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method SHAKE: The following samples RUSSO-TS-COMP 2 (480-159547-8), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40) were yellow after the final volume.

Job ID: 480-159547-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

PFC_IDA
Solid
320-326624

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-326292, 320-327145 and 320-328853.

320-326292, 320-327145 and 320-328853
Method: 3535 PFC-W

Method 3535: The following samples are leachate samples: RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8), RUSSO-CF-COMP 1 (480-159547-18), RUSSO-CF-COMP 2 (480-159547-19), RUSSO-CF-COMP 3 (480-159547-20), GERNATT-CF-COMP 1 (480-159547-30), GERNATT-CF-COMP 2 (480-159547-31), GERNATT-CF-COMP 3 (480-159547-32), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40). The blanks associated with them are also included in this prep batch.

320-326292, 320-327145 and 320-328853
Method: 3535 PFC-W

Method 3550C: The following sample: RUSSO-TS-COMP 2 (480-159547-8) was decanted prior to preparation.

Method 3550C: The following samples required a Florisil clean-up, via EPA Method 3620C, to reduce matrix interferences: RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1
Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 82.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.0	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,1-Dichloroethane	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,1-Dichloroethene	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2,4-Trimethylbenzene	ND	vs	6.0	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2-Dichlorobenzene	ND	vs	6.0	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2-Dichloroethane	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,3,5-Trimethylbenzene	ND	vs	6.0	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,3-Dichlorobenzene	ND	vs	6.0	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,4-Dichlorobenzene	ND	vs	6.0	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
2-Butanone (MEK)	ND	vs	30	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Acetone	ND	vs	30	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Benzene	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Carbon tetrachloride	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Chlorobenzene	ND	vs	6.0	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Chloroform	ND	vs	6.0	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
cis-1,2-Dichloroethene	ND	vs	6.0	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Ethylbenzene	ND	vs	6.0	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Methyl tert-butyl ether	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Methylene Chloride	ND	vs	6.0	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
n-Butylbenzene	ND	vs	6.0	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
N-Propylbenzene	ND	vs	6.0	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
sec-Butylbenzene	ND	vs	6.0	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Tetrachloroethene	ND	vs	6.0	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Toluene	ND	vs	6.0	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
trans-1,2-Dichloroethene	ND	vs	6.0	0.62	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Trichloroethene	ND	vs	6.0	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Vinyl chloride	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
tert-Butylbenzene	ND	vs	6.0	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*131*	*X*	*64 - 126*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
4-Bromofluorobenzene (Surr)	*123*		*72 - 126*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/23/19 13:58*	*09/23/19 16:28*	*1*

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 75.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.6	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,1-Dichloroethane	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,1-Dichloroethene	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2,4-Trimethylbenzene	ND	vs	6.6	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2-Dichlorobenzene	ND	vs	6.6	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2-Dichloroethane	ND	vs	6.6	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,3,5-Trimethylbenzene	ND	vs	6.6	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,3-Dichlorobenzene	ND	vs	6.6	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,4-Dichlorobenzene	ND	vs	6.6	0.93	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,4-Dioxane	ND	vs	130	29	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
2-Butanone (MEK)	ND	vs	33	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Acetone	ND	vs	33	5.6	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Benzene	ND	vs	6.6	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Carbon tetrachloride	ND	vs	6.6	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Chlorobenzene	ND	vs	6.6	0.87	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Chloroform	ND	vs	6.6	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
cis-1,2-Dichloroethene	ND	vs	6.6	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Ethylbenzene	ND	vs	6.6	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Methyl tert-butyl ether	ND	vs	6.6	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Methylene Chloride	ND	vs	6.6	3.0	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
n-Butylbenzene	ND	vs	6.6	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
N-Propylbenzene	ND	vs	6.6	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
sec-Butylbenzene	ND	vs	6.6	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Tetrachloroethene	ND	vs	6.6	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Toluene	ND	vs	6.6	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
trans-1,2-Dichloroethene	ND	vs	6.6	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Trichloroethene	ND	vs	6.6	1.5	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Vinyl chloride	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Xylenes, Total	ND	vs	13	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
tert-Butylbenzene	ND	vs	6.6	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 126*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
Toluene-d8 (Surr)	*93*		*71 - 125*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 16:52*	*1*

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 73.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.8	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,1-Dichloroethane	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,1-Dichloroethene	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2,4-Trimethylbenzene	ND	vs	6.8	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2-Dichlorobenzene	ND	vs	6.8	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2-Dichloroethane	ND	vs	6.8	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,3,5-Trimethylbenzene	ND	vs	6.8	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,3-Dichlorobenzene	ND	vs	6.8	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,4-Dichlorobenzene	ND	vs	6.8	0.95	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,4-Dioxane	ND	vs	140	30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
2-Butanone (MEK)	ND	vs	34	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Acetone	ND	vs	34	5.7	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Benzene	ND	vs	6.8	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Carbon tetrachloride	ND	vs	6.8	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Chlorobenzene	ND	vs	6.8	0.90	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Chloroform	ND	vs	6.8	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
cis-1,2-Dichloroethene	ND	vs	6.8	0.87	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Ethylbenzene	ND	vs	6.8	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Methyl tert-butyl ether	ND	vs	6.8	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Methylene Chloride	ND	vs	6.8	3.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
n-Butylbenzene	ND	vs	6.8	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
N-Propylbenzene	ND	vs	6.8	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
sec-Butylbenzene	ND	vs	6.8	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Tetrachloroethene	ND	vs	6.8	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Toluene	ND	vs	6.8	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
trans-1,2-Dichloroethene	ND	vs	6.8	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Trichloroethene	ND	vs	6.8	1.5	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Vinyl chloride	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Xylenes, Total	ND	vs	14	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
tert-Butylbenzene	ND	vs	6.8	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
4-Bromofluorobenzene (Surr)	*98*		*72 - 126*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
Toluene-d8 (Surr)	*93*		*71 - 125*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
Dibromofluoromethane (Surr)	*100*		*60 - 140*	*09/23/19 13:58*	*09/23/19 17:17*	*1*

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4

Date Collected: 09/16/19 09:28
Matrix: Solid

Date Received: 09/16/19 16:10
Percent Solids: 81.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.0	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,1-Dichloroethane	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,1-Dichloroethene	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2,4-Trimethylbenzene	ND	vs	6.0	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2-Dichlorobenzene	ND	vs	6.0	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2-Dichloroethane	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,3,5-Trimethylbenzene	ND	vs	6.0	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,3-Dichlorobenzene	ND	vs	6.0	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,4-Dichlorobenzene	ND	vs	6.0	0.84	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
2-Butanone (MEK)	ND	vs	30	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Acetone	ND	vs	30	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Benzene	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Carbon tetrachloride	ND	vs	6.0	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Chlorobenzene	ND	vs	6.0	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Chloroform	ND	vs	6.0	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
cis-1,2-Dichloroethene	ND	vs	6.0	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Ethylbenzene	ND	vs	6.0	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Methyl tert-butyl ether	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Methylene Chloride	ND	vs	6.0	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
n-Butylbenzene	ND	vs	6.0	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
N-Propylbenzene	ND	vs	6.0	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
sec-Butylbenzene	ND	vs	6.0	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Tetrachloroethene	ND	vs	6.0	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Toluene	ND	vs	6.0	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
trans-1,2-Dichloroethene	ND	vs	6.0	0.62	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Trichloroethene	ND	vs	6.0	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Vinyl chloride	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
tert-Butylbenzene	ND	vs	6.0	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*64 - 126*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*72 - 126*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
Toluene-d8 (Surr)	*95*		*71 - 125*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
Dibromofluoromethane (Surr)	*103*		*60 - 140*	*09/23/19 13:58*	*09/23/19 17:41*	*1*

Client Sample ID: RUSSO-TS-GRAB 5
Lab Sample ID: 480-159547-5

Date Collected: 09/16/19 09:29
Matrix: Solid

Date Received: 09/16/19 16:10
Percent Solids: 79.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,1-Dichloroethane	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,1-Dichloroethene	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2,4-Trimethylbenzene	ND	vs	6.2	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2-Dichlorobenzene	ND	vs	6.2	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2-Dichloroethane	ND	vs	6.2	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,3,5-Trimethylbenzene	ND	vs	6.2	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,3-Dichlorobenzene	ND	vs	6.2	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,4-Dichlorobenzene	ND	vs	6.2	0.86	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,4-Dioxane	ND	vs	120	27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
2-Butanone (MEK)	ND	vs	31	2.3	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Acetone	ND	vs	31	5.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Benzene	ND	vs	6.2	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Carbon tetrachloride	ND	vs	6.2	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Chlorobenzene	ND	vs	6.2	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Chloroform	ND	vs	6.2	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
cis-1,2-Dichloroethene	ND	vs	6.2	0.79	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Ethylbenzene	ND	vs	6.2	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Methyl tert-butyl ether	ND	vs	6.2	0.61	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Methylene Chloride	ND	vs	6.2	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
n-Butylbenzene	ND	vs	6.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
N-Propylbenzene	ND	vs	6.2	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
sec-Butylbenzene	ND	vs	6.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Tetrachloroethene	ND	vs	6.2	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Toluene	ND	vs	6.2	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
trans-1,2-Dichloroethene	ND	vs	6.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Trichloroethene	ND	vs	6.2	1.4	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Vinyl chloride	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
tert-Butylbenzene	ND	vs	6.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*64 - 126*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
Toluene-d8 (Surr)	*94*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
Dibromofluoromethane (Surr)	*102*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:06*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-TS-GRAB 6

Date Collected: 09/16/19 09:30
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-6

Matrix: Solid
Percent Solids: 81.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.1	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,1-Dichloroethane	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,1-Dichloroethene	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2,4-Trimethylbenzene	ND	vs	6.1	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2-Dichlorobenzene	ND	vs	6.1	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2-Dichloroethane	ND	vs	6.1	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,3,5-Trimethylbenzene	ND	vs	6.1	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,3-Dichlorobenzene	ND	vs	6.1	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,4-Dichlorobenzene	ND	vs	6.1	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,4-Dioxane	ND	vs	120	27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
2-Butanone (MEK)	ND	vs	31	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Acetone	ND	vs	31	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Benzene	ND	vs	6.1	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Carbon tetrachloride	ND	vs	6.1	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Chlorobenzene	ND	vs	6.1	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Chloroform	ND	vs	6.1	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
cis-1,2-Dichloroethene	ND	vs	6.1	0.78	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Ethylbenzene	ND	vs	6.1	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Methyl tert-butyl ether	ND	vs	6.1	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Methylene Chloride	ND	vs	6.1	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
n-Butylbenzene	ND	vs	6.1	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
N-Propylbenzene	ND	vs	6.1	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
sec-Butylbenzene	ND	vs	6.1	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Tetrachloroethene	ND	vs	6.1	0.82	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Toluene	ND	vs	6.1	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
trans-1,2-Dichloroethene	ND	vs	6.1	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Trichloroethene	ND	vs	6.1	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Vinyl chloride	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
tert-Butylbenzene	ND	vs	6.1	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*131*	*X*	*64 - 126*	*09/23/19 13:58*	*09/23/19 18:30*	*1*
4-Bromofluorobenzene (Surr)	*122*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:30*	*1*
Toluene-d8 (Surr)	*117*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:30*	*1*
Dibromofluoromethane (Surr)	*125*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:30*	*1*

Client Sample ID: RUSSO-TS-COMP 1

Date Collected: 09/16/19 09:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-7

Matrix: Solid
Percent Solids: 78.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Acenaphthylene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Anthracene	ND		220	53	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[a]anthracene	ND		220	22	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[a]pyrene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[b]fluoranthene	ND		220	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[g,h,i]perylene	ND		220	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[k]fluoranthene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Chrysene	ND		220	48	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Dibenz(a,h)anthracene	ND		220	38	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Dibenzofuran	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Fluoranthene	**34**	**J**	220	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Fluorene	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Hexachlorobenzene	ND		220	29	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Indeno[1,2,3-cd]pyrene	ND		220	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
2-Methylphenol	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Methylphenol, 3 & 4	ND		420	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Naphthalene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
1,4-Dioxane	ND		250	70	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Pentachlorophenol	ND		420	220	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Phenanthrene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Phenol	ND		220	33	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Pyrene	**26**	**J**	220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*60 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
Nitrobenzene-d5 (Surr)	*87*		*53 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
Phenol-d5 (Surr)	*83*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
p-Terphenyl-d14 (Surr)	*99*		*79 - 130*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.81**	**J**	2.1	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
4,4'-DDE	**10**		2.1	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
4,4'-DDT	**3.6**		2.1	0.50	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Aldrin	ND		2.1	0.52	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
alpha-BHC	**0.90**	**J B**	2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
cis-Chlordane	ND		2.1	1.1	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
beta-BHC	**0.76**	**J**	2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
delta-BHC	**0.52**	**J B**	2.1	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Dieldrin	ND		2.1	0.51	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan I	ND		2.1	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan II	ND		2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan sulfate	ND		2.1	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endrin	ND		2.1	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
gamma-BHC (Lindane)	**0.54**	**J**	2.1	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Heptachlor	ND		2.1	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1

Client Sample ID: RUSSO-TS-COMP 1

Date Collected: 09/16/19 09:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-7

Matrix: Solid
Percent Solids: 78.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*103*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:11*	*1*
DCB Decachlorobiphenyl	*116*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:11*	*1*
Tetrachloro-m-xylene	*87*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:11*	*1*
Tetrachloro-m-xylene	*68*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1221	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1232	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1242	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1248	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1254	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1260	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1262	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1268	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
Polychlorinated biphenyls, Total	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*120*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:08*	*1*
Tetrachloro-m-xylene	*112*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:08*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		21	7.6	ug/Kg	☼	09/25/19 05:49	10/01/19 11:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:18*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.24		0.24	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoropentanoic acid (PFPeA)	0.24		0.24	0.094	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorohexanoic acid (PFHxA)	0.24		0.24	0.051	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroheptanoic acid (PFHpA)	0.24		0.24	0.035	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.24	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorononanoic acid (PFNA)	**0.066**	**J**	0.24	0.044	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorodecanoic acid (PFDA)	0.24		0.24	0.027	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroundecanoic acid (PFUnA)	**0.047**	**J**	0.24	0.044	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorododecanoic acid (PFDoA)	0.24		0.24	0.082	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorotridecanoic acid (PFTriA)	0.24		0.24	0.062	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorotetradecanoic acid (PFTeA)	0.24		0.24	0.066	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorobutanesulfonic acid (PFBS)	0.24		0.24	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorohexanesulfonic acid (PFHxS)	0.24		0.24	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.24		0.24	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorooctanesulfonic acid (PFOS)	**0.38**	**J**	0.61	0.24	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorodecanesulfonic acid (PFDS)	0.24		0.24	0.048	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorooctanesulfonamide (FOSA)	0.24		0.24	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1

Client Sample ID: RUSSO-TS-COMP 1

Date Collected: 09/16/19 09:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-7

Matrix: Solid
Percent Solids: 78.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.44		2.44	0.48	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.44		2.44	0.45	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
6:2 FTS	2.44		2.44	0.18	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
8:2 FTS	2.44		2.44	0.31	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C5 PFPeA	*88*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFHxA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFHpA	*87*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C5 PFNA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFUnA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFDoA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFTeDA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
18O2 PFHxS	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C8 FOSA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
d3-NMeFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
d5-NEtFOSAA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
M2-6:2 FTS	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
M2-8:2 FTS	*118*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.86**	**J**	1.80	0.32	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoropentanoic acid (PFPeA)	1.80		1.80	0.44	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorohexanoic acid (PFHxA)	1.80		1.80	0.52	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroheptanoic acid (PFHpA)	**0.49**	**J**	1.80	0.23	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorooctanoic acid (PFOA)	**1.73**	**J**	1.80	0.77	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorononanoic acid (PFNA)	**0.31**	**J**	1.80	0.24	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorodecanoic acid (PFDA)	1.80		1.80	0.28	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroundecanoic acid (PFUnA)	1.80		1.80	0.99	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorododecanoic acid (PFDoA)	1.80		1.80	0.50	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorotridecanoic acid (PFTriA)	1.80		1.80	1.17	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorotetradecanoic acid (PFTeA)	1.80		1.80	0.26	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorobutanesulfonic acid (PFBS)	1.80		1.80	0.18	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorohexanesulfonic acid (PFHxS)	**0.41**	**J B**	1.80	0.15	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.80		1.80	0.17	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorooctanesulfonic acid (PFOS)	**1.04**	**J B**	1.80	0.49	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorodecanesulfonic acid (PFDS)	1.80		1.80	0.29	ng/L		10/07/19 06:04	10/09/19 01:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFHxA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*

Client Sample ID: RUSSO-TS-COMP 1

Date Collected: 09/16/19 09:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-7

Matrix: Solid
Percent Solids: 78.5

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFUnA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFDoA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFTeDA	*96*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFOS	*98*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFHpA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C5 PFPeA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.5**		2.6		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Barium	**104**	**F1**	0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Beryllium	**0.79**		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Cadmium	ND		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Chromium	**20.6**		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Copper	**27.1**		1.3		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Lead	**32.5**		1.3		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Manganese	**402**		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Nickel	**28.8**		6.5		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Selenium	ND		5.2		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Silver	ND		0.78		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Zinc	**84.2**		2.6		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.048**		0.026		mg/Kg	☼	10/11/19 13:45	10/11/19 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.5		mg/Kg	☼	10/08/19 08:53	10/08/19 15:40	1
Cr (VI)	ND		2.6		mg/Kg	☼	10/09/19 07:53	10/10/19 16:24	1
Cyanide, Total	ND	H	1.2		mg/Kg	☼	09/30/19 20:45	10/02/19 09:41	1

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Acenaphthylene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Anthracene	ND		230	57	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[a]anthracene	ND		230	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[a]pyrene	ND		230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[b]fluoranthene	ND		230	37	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[g,h,i]perylene	ND		230	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[k]fluoranthene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Chrysene	ND		230	52	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Dibenz(a,h)anthracene	ND		230	41	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Dibenzofuran	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Fluoranthene	**47**	**J**	230	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Fluorene	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Hexachlorobenzene	ND		230	31	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Indeno[1,2,3-cd]pyrene	ND		230	29	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
2-Methylphenol	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Methylphenol, 3 & 4	ND		450	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Naphthalene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
1,4-Dioxane	ND		270	75	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Pentachlorophenol	ND		450	230	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Phenanthrene	**34**	**J**	230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Phenol	ND		230	35	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Pyrene	**37**	**J**	230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*60 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
2-Fluorophenol (Surr)	*79*		*52 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
Nitrobenzene-d5 (Surr)	*90*		*53 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
Phenol-d5 (Surr)	*86*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
p-Terphenyl-d14 (Surr)	*102*		*79 - 130*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.89**	**J**	2.3	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
4,4'-DDE	**6.3**		2.3	0.48	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
4,4'-DDT	**2.8**		2.3	0.54	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Aldrin	ND		2.3	0.56	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
alpha-BHC	**1.7**	**J B**	2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
cis-Chlordane	ND		2.3	1.1	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
beta-BHC	ND		2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
delta-BHC	**0.57**	**J B**	2.3	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Dieldrin	ND		2.3	0.55	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan I	ND		2.3	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan II	ND		2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan sulfate	ND		2.3	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endrin	ND		2.3	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
gamma-BHC (Lindane)	**0.49**	**J**	2.3	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Heptachlor	ND		2.3	0.50	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1

Client Sample ID: RUSSO-TS-COMP 2

Date Collected: 09/16/19 09:40
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-8

Matrix: Solid
Percent Solids: 72.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*95*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
DCB Decachlorobiphenyl	*104*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
Tetrachloro-m-xylene	*65*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1221	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1232	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1242	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1248	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1262	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1268	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
Polychlorinated biphenyls, Total	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*113*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:21*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:21*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		23	8.2	ug/Kg	☼	09/25/19 05:49	10/01/19 11:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*67*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:48*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.27		0.27	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoropentanoic acid (PFPeA)	0.27		0.27	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorohexanoic acid (PFHxA)	0.27		0.27	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	**0.051**	**J**	0.27	0.039	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.27	0.12	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorononanoic acid (PFNA)	**0.060**	**J**	0.27	0.049	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorodecanoic acid (PFDA)	0.27		0.27	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	**0.052**	**J I**	0.27	0.049	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorododecanoic acid (PFDoA)	0.27		0.27	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	0.27		0.27	0.069	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	0.27		0.27	0.073	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	0.27		0.27	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.27		0.27	0.042	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.27		0.27	0.047	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	**0.58**	**J**	0.68	0.27	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	0.27		0.27	0.053	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanesulfonamide (FOSA)	0.27		0.27	0.11	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1

Client Sample ID: RUSSO-TS-COMP 2

Date Collected: 09/16/19 09:40
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-8

Matrix: Solid
Percent Solids: 72.2

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.71		2.71	0.53	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.71		2.71	0.50	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
6:2 FTS	2.71		2.71	0.20	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
8:2 FTS	2.71		2.71	0.34	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C5 PFPeA	*83*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFHxA	*86*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFHpA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C5 PFNA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFDA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFUnA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFDoA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
18O2 PFHxS	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFOS	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C8 FOSA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
d3-NMeFOSAA	*74*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
d5-NEtFOSAA	*80*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
M2-6:2 FTS	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
M2-8:2 FTS	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.63**	**J**	1.93	0.34	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoropentanoic acid (PFPeA)	1.93		1.93	0.47	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorohexanoic acid (PFHxA)	1.93		1.93	0.56	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroheptanoic acid (PFHpA)	**0.33**	**J**	1.93	0.24	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorooctanoic acid (PFOA)	**1.56**	**J**	1.93	0.82	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorononanoic acid (PFNA)	1.93		1.93	0.26	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorodecanoic acid (PFDA)	1.93		1.93	0.30	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroundecanoic acid (PFUnA)	1.93		1.93	1.06	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorododecanoic acid (PFDoA)	1.93		1.93	0.53	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorotridecanoic acid (PFTriA)	1.93		1.93	1.26	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorotetradecanoic acid (PFTeA)	1.93		1.93	0.28	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorobutanesulfonic acid (PFBS)	1.93		1.93	0.19	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorohexanesulfonic acid (PFHxS)	**0.36**	**J B**	1.93	0.16	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.93		1.93	0.18	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorooctanesulfonic acid (PFOS)	**0.91**	**J B**	1.93	0.52	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorodecanesulfonic acid (PFDS)	1.93		1.93	0.31	ng/L		10/07/19 06:04	10/09/19 01:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFHxA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFOA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*

Client Sample ID: RUSSO-TS-COMP 2

Date Collected: 09/16/19 09:40
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-8

Matrix: Solid
Percent Solids: 72.2

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFUnA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFDoA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFTeDA	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
18O2 PFHxS	*115*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFOS	*97*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFHpA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C5 PFPeA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.5**		2.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Barium	**117**		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Beryllium	**0.74**		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Cadmium	ND		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Chromium	**21.9**		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Copper	**17.6**		1.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Lead	**27.6**		1.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Manganese	**411**		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Nickel	**23.8**		6.8		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Selenium	ND		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Silver	ND		0.82		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Zinc	**84.9**		2.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.039**		0.027		mg/Kg	☼	10/11/19 13:45	10/11/19 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.7		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.8		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.3		mg/Kg	☼	09/30/19 20:45	10/02/19 09:42	1

Client Sample ID: RUSSO-CF-GRAB 1

Date Collected: 09/16/19 11:40
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-9

Matrix: Solid
Percent Solids: 88.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Chlorobenzene	ND	vs	5.5	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Toluene	ND	vs	5.5	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Xylenes, Total	ND	vs	11	0.92	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
Toluene-d8 (Surr)	*91*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:55*	*1*

Client Sample ID: RUSSO-CF-GRAB 2
Lab Sample ID: 480-159547-10
Date Collected: 09/16/19 11:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Benzene	ND	vs	5.4	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Carbon tetrachloride	ND	vs	5.4	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Chlorobenzene	ND	vs	5.4	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Chloroform	ND	vs	5.4	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*126*		*64 - 126*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
4-Bromofluorobenzene (Surr)	*119*		*72 - 126*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
Toluene-d8 (Surr)	*117*		*71 - 125*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
Dibromofluoromethane (Surr)	*121*		*60 - 140*	*09/23/19 13:58*	*09/23/19 19:19*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11
Date Collected: 09/16/19 11:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Benzene	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Carbon tetrachloride	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Chlorobenzene	ND	vs	5.4	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Chloroform	ND	vs	5.4	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*64 - 126*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 126*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
Toluene-d8 (Surr)	*92*		*71 - 125*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/23/19 13:58*	*09/23/19 19:44*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12
Date Collected: 09/16/19 11:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.9	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,1-Dichloroethane	ND	vs	5.9	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,1-Dichloroethene	ND	vs	5.9	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2,4-Trimethylbenzene	ND	vs	5.9	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2-Dichlorobenzene	ND	vs	5.9	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2-Dichloroethane	ND	vs	5.9	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,3,5-Trimethylbenzene	ND	vs	5.9	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,3-Dichlorobenzene	ND	vs	5.9	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,4-Dichlorobenzene	ND	vs	5.9	0.82	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
2-Butanone (MEK)	ND	vs	29	2.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Acetone	ND	vs	29	4.9	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Benzene	ND	vs	5.9	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Carbon tetrachloride	ND	vs	5.9	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Chlorobenzene	ND	vs	5.9	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Chloroform	ND	vs	5.9	0.36	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
cis-1,2-Dichloroethene	ND	vs	5.9	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Ethylbenzene	ND	vs	5.9	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Methyl tert-butyl ether	ND	vs	5.9	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Methylene Chloride	ND	vs	5.9	2.7	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
n-Butylbenzene	ND	vs	5.9	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
N-Propylbenzene	ND	vs	5.9	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
sec-Butylbenzene	ND	vs	5.9	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Tetrachloroethene	ND	vs	5.9	0.79	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Toluene	ND	vs	5.9	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
trans-1,2-Dichloroethene	ND	vs	5.9	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Trichloroethene	ND	vs	5.9	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Vinyl chloride	ND	vs	5.9	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Xylenes, Total	ND	vs	12	0.98	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
tert-Butylbenzene	ND	vs	5.9	0.61	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
Dibromofluoromethane (Surr)	*116*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:08*	*1*

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13
Date Collected: 09/16/19 11:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Acetone	ND	vs	28	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Chlorobenzene	ND	vs	5.5	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Toluene	ND	vs	5.5	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Xylenes, Total	ND	vs	11	0.93	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:33*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-GRAB 6
Lab Sample ID: 480-159547-14
Date Collected: 09/16/19 11:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.2	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,1-Dichloroethane	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,1-Dichloroethene	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2,4-Trimethylbenzene	ND	vs	5.2	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2-Dichlorobenzene	ND	vs	5.2	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2-Dichloroethane	ND	vs	5.2	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,3,5-Trimethylbenzene	ND	vs	5.2	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,3-Dichlorobenzene	ND	vs	5.2	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,4-Dichlorobenzene	ND	vs	5.2	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,4-Dioxane	ND	vs	100	23	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Benzene	ND	vs	5.2	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Carbon tetrachloride	ND	vs	5.2	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Chlorobenzene	ND	vs	5.2	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Chloroform	ND	vs	5.2	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
cis-1,2-Dichloroethene	ND	vs	5.2	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Ethylbenzene	ND	vs	5.2	0.36	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Methyl tert-butyl ether	ND	vs	5.2	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Methylene Chloride	ND	vs	5.2	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
n-Butylbenzene	ND	vs	5.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
N-Propylbenzene	ND	vs	5.2	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
sec-Butylbenzene	ND	vs	5.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Tetrachloroethene	ND	vs	5.2	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Toluene	ND	vs	5.2	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
trans-1,2-Dichloroethene	ND	vs	5.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Trichloroethene	ND	vs	5.2	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Vinyl chloride	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Xylenes, Total	ND	vs	10	0.88	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
tert-Butylbenzene	ND	vs	5.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
Toluene-d8 (Surr)	*98*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
Dibromofluoromethane (Surr)	*105*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:58*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-GRAB 7
Date Collected: 09/16/19 11:46
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-15
Matrix: Solid
Percent Solids: 89.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Chlorobenzene	ND	vs	5.5	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Toluene	ND	vs	5.5	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Xylenes, Total	ND	vs	11	0.92	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 126*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 126*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
Toluene-d8 (Surr)	*95*		*71 - 125*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
Dibromofluoromethane (Surr)	*101*		*60 - 140*	*09/23/19 13:58*	*09/23/19 21:23*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-GRAB 8
Date Collected: 09/16/19 11:47
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-16
Matrix: Solid
Percent Solids: 90.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*64 - 126*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 126*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
Toluene-d8 (Surr)	*109*		*71 - 125*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/23/19 13:58*	*09/23/19 21:47*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-GRAB 9
Date Collected: 09/16/19 11:48
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-17
Matrix: Solid
Percent Solids: 92.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Benzene	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Carbon tetrachloride	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Chlorobenzene	ND	vs	5.4	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Chloroform	ND	vs	5.4	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 22:12*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Anthracene	ND		190	47	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Chrysene	ND		190	42	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Methylphenol, 3 & 4	ND		370	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
1,4-Dioxane	ND		220	61	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Phenol	ND		190	29	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*60 - 120*	*09/25/19 14:37*	*09/26/19 21:05*	*1*
2-Fluorophenol (Surr)	*81*		*52 - 120*	*09/25/19 14:37*	*09/26/19 21:05*	*1*
Nitrobenzene-d5 (Surr)	*94*		*53 - 120*	*09/25/19 14:37*	*09/26/19 21:05*	*1*
Phenol-d5 (Surr)	*88*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:05*	*1*
p-Terphenyl-d14 (Surr)	*111*		*79 - 130*	*09/25/19 14:37*	*09/26/19 21:05*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:05*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.62**	**J**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
4,4'-DDE	**0.66**	**J**	1.9	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
4,4'-DDT	**1.2**	**J**	1.9	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Aldrin	ND		1.9	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
alpha-BHC	**5.2**	**B**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
cis-Chlordane	ND		1.9	0.93	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
beta-BHC	**1.3**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
delta-BHC	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Dieldrin	ND		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan I	ND		1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan II	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan sulfate	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endrin	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
gamma-BHC (Lindane)	**0.39**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Heptachlor	ND		1.9	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1

Client Sample ID: RUSSO-CF-COMP 1

Date Collected: 09/16/19 11:50
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-18

Matrix: Solid
Percent Solids: 88.7

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*101*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
DCB Decachlorobiphenyl	*97*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
Tetrachloro-m-xylene	*77*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:50*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1221	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1232	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1242	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1248	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1254	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1260	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1262	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1268	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
Polychlorinated biphenyls, Total	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*121*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:33*	*1*
Tetrachloro-m-xylene	*87*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:33*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 12:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:18*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.21		0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.080	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.089	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.053	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.056	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorobutanesulfonic acid (PFBS)	**0.20**	**J**	0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanesulfonic acid (PFOS)	**0.21**	**J**	0.52	0.21	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.085	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1

Client Sample ID: RUSSO-CF-COMP 1

Date Collected: 09/16/19 11:50
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-18

Matrix: Solid
Percent Solids: 88.7

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.07		2.07	0.40	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.07		2.07	0.38	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
6:2 FTS	2.07		2.07	0.16	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
8:2 FTS	2.07		2.07	0.26	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFHxA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFHpA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFOA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C5 PFNA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFDA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFUnA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFDoA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
18O2 PFHxS	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFOS	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C8 FOSA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
d5-NEtFOSAA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
M2-6:2 FTS	*76*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
M2-8:2 FTS	*80*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.56**	**J**	1.77	0.31	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoropentanoic acid (PFPeA)	1.77		1.77	0.43	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorohexanoic acid (PFHxA)	1.77		1.77	0.51	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroheptanoic acid (PFHpA)	**0.27**	**J**	1.77	0.22	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorooctanoic acid (PFOA)	1.77		1.77	0.75	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorononanoic acid (PFNA)	1.77		1.77	0.24	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorodecanoic acid (PFDA)	1.77		1.77	0.27	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroundecanoic acid (PFUnA)	1.77		1.77	0.97	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorododecanoic acid (PFDoA)	1.77		1.77	0.49	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorotridecanoic acid (PFTriA)	1.77		1.77	1.15	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorotetradecanoic acid (PFTeA)	1.77		1.77	0.26	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorobutanesulfonic acid (PFBS)	1.77		1.77	0.18	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorohexanesulfonic acid (PFHxS)	**0.29**	**J B**	1.77	0.15	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.77		1.77	0.17	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorooctanesulfonic acid (PFOS)	**0.73**	**J B**	1.77	0.48	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorodecanesulfonic acid (PFDS)	1.77		1.77	0.28	ng/L		10/07/19 06:04	10/09/19 01:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFHxA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C4 PFOA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-COMP 1

Date Collected: 09/16/19 11:50
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-18

Matrix: Solid
Percent Solids: 88.7

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C5 PFNA	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFDA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFUnA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFDoA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFTeDA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
18O2 PFHxS	*116*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C4 PFOS	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C4 PFHpA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C5 PFPeA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**10.2**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Barium	**56.5**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Beryllium	**0.38**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Cadmium	ND		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Chromium	**9.9**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Copper	**23.9**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Lead	**11.5**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Manganese	**410**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Nickel	**21.3**		5.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Silver	ND		0.64		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Zinc	**106**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.023		mg/Kg	☼	10/11/19 13:45	10/11/19 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:44	1

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-COMP 2

Date Collected: 09/16/19 11:52
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-19

Matrix: Solid
Percent Solids: 90.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Acenaphthylene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Anthracene	ND		190	46	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[a]pyrene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[k]fluoranthene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Chrysene	ND		190	42	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Fluoranthene	**20**	**J**	190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Hexachlorobenzene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Methylphenol, 3 & 4	ND		360	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Naphthalene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
1,4-Dioxane	ND		220	60	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Pentachlorophenol	ND		360	190	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Phenanthrene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Phenol	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*85*		*60 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
Nitrobenzene-d5 (Surr)	*90*		*53 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
Phenol-d5 (Surr)	*82*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
p-Terphenyl-d14 (Surr)	*105*		*79 - 130*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.61**	**J**	1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
4,4'-DDE	**0.59**	**J**	1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
4,4'-DDT	**1.1**	**J**	1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Aldrin	ND		1.8	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
alpha-BHC	**0.56**	**J B**	1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
cis-Chlordane	ND		1.8	0.91	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Dieldrin	ND		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan II	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endrin	ND		1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Heptachlor	ND		1.8	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1

Client Sample ID: RUSSO-CF-COMP 2

Date Collected: 09/16/19 11:52
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-19

Matrix: Solid
Percent Solids: 90.6

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*90*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
DCB Decachlorobiphenyl	*90*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
Tetrachloro-m-xylene	*75*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
Tetrachloro-m-xylene	*71*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:09*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1221	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1232	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1242	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1248	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1254	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1260	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1262	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1268	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
Polychlorinated biphenyls, Total	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*114*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:45*	*1*
Tetrachloro-m-xylene	*106*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:45*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 12:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*83*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.033**	**J**	0.23	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoropentanoic acid (PFPeA)	0.23		0.23	0.088	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorohexanoic acid (PFHxA)	0.23		0.23	0.048	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoroheptanoic acid (PFHpA)	0.23		0.23	0.033	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanoic acid (PFOA)	0.23		0.23	0.098	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorononanoic acid (PFNA)	0.23		0.23	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorodecanoic acid (PFDA)	0.23		0.23	0.025	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoroundecanoic acid (PFUnA)	0.23		0.23	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorododecanoic acid (PFDoA)	0.23		0.23	0.077	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorotridecanoic acid (PFTriA)	0.23		0.23	0.058	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorotetradecanoic acid (PFTeA)	0.23		0.23	0.062	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorobutanesulfonic acid (PFBS)	0.23		0.23	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.23		0.23	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.23		0.23	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanesulfonic acid (PFOS)	**0.35**	**J**	0.57	0.23	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorodecanesulfonic acid (PFDS)	0.23		0.23	0.045	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanesulfonamide (FOSA)	0.23		0.23	0.094	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.29		2.29	0.45	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1

Client Sample ID: RUSSO-CF-COMP 2

Date Collected: 09/16/19 11:52
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-19

Matrix: Solid
Percent Solids: 90.6

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.29		2.29	0.42	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
6:2 FTS	2.29		2.29	0.17	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
8:2 FTS	2.29		2.29	0.29	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C5 PFPeA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFHxA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFHpA	*111*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFOA	*105*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C5 PFNA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFDA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFUnA	*113*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFDoA	*112*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFTeDA	*92*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
18O2 PFHxS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C8 FOSA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
d5-NEtFOSAA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
M2-6:2 FTS	*109*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
M2-8:2 FTS	*129*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.46**	**J**	1.84	0.32	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoropentanoic acid (PFPeA)	1.84		1.84	0.45	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorohexanoic acid (PFHxA)	1.84		1.84	0.53	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroheptanoic acid (PFHpA)	1.84		1.84	0.23	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorooctanoic acid (PFOA)	1.84		1.84	0.78	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorononanoic acid (PFNA)	1.84		1.84	0.25	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorodecanoic acid (PFDA)	1.84		1.84	0.29	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroundecanoic acid (PFUnA)	1.84		1.84	1.01	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorododecanoic acid (PFDoA)	1.84		1.84	0.51	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorotridecanoic acid (PFTriA)	1.84		1.84	1.20	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorotetradecanoic acid (PFTeA)	1.84		1.84	0.27	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorobutanesulfonic acid (PFBS)	1.84		1.84	0.18	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorohexanesulfonic acid (PFHxS)	**0.29**	**J B**	1.84	0.16	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.84		1.84	0.17	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorooctanesulfonic acid (PFOS)	**0.64**	**J I B**	1.84	0.50	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorodecanesulfonic acid (PFDS)	1.84		1.84	0.29	ng/L		10/07/19 06:04	10/09/19 02:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFHxA	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFDA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFUnA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFDoA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFOS	*99*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFHpA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C5 PFPeA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.9**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Barium	**73.8**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Beryllium	**0.47**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Chromium	**12.0**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Copper	**31.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Lead	**16.0**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Manganese	**641**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Nickel	**26.3**		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Silver	ND		0.66		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Zinc	**132**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg	☼	10/11/19 13:45	10/11/19 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:45	1

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-COMP 3
Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.8

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Acenaphthylene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[k]fluoranthene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Chrysene	ND		180	41	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Dibenzofuran	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Fluorene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Hexachlorobenzene	ND		180	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Indeno[1,2,3-cd]pyrene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
2-Methylphenol	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Methylphenol, 3 & 4	ND		360	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Naphthalene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
1,4-Dioxane	ND		220	60	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Pentachlorophenol	ND		360	180	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*60 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
2-Fluorophenol (Surr)	*76*		*52 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
Nitrobenzene-d5 (Surr)	*84*		*53 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
Phenol-d5 (Surr)	*83*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
p-Terphenyl-d14 (Surr)	*104*		*79 - 130*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.63**	**J**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
4,4'-DDE	**0.57**	**J**	1.9	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
4,4'-DDT	**1.1**	**J**	1.9	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Aldrin	ND		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
alpha-BHC	**0.88**	**J B**	1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
cis-Chlordane	ND		1.9	0.92	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
beta-BHC	ND		1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
delta-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Dieldrin	ND		1.9	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan I	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan II	ND		1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan sulfate	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endrin	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
gamma-BHC (Lindane)	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Heptachlor	ND		1.9	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1

Client Sample ID: RUSSO-CF-COMP 3

Date Collected: 09/16/19 11:55
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-20

Matrix: Solid
Percent Solids: 89.8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*99*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
DCB Decachlorobiphenyl	*94*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
Tetrachloro-m-xylene	*85*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
Tetrachloro-m-xylene	*76*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:29*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1221	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1232	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1242	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1248	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1254	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1260	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1262	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1268	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
Polychlorinated biphenyls, Total	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*140*		*65 - 174*	*09/24/19 05:51*	*09/26/19 00:09*	*1*
Tetrachloro-m-xylene	*132*		*60 - 154*	*09/24/19 05:51*	*09/26/19 00:09*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*78*		*28 - 129*	*09/25/19 05:49*	*10/01/19 13:17*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.085	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.046	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanoic acid (PFOA)	0.22		0.22	0.095	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorononanoic acid (PFNA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.074	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.056	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanesulfonic acid (PFOS)	**0.37**	**J**	0.55	0.22	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.21		2.21	0.43	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1

Client Sample ID: RUSSO-CF-COMP 3

Date Collected: 09/16/19 11:55
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-20

Matrix: Solid
Percent Solids: 89.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.21		2.21	0.41	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
6:2 FTS	2.21		2.21	0.17	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
8:2 FTS	2.21		2.21	0.28	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFHxA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFHpA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C5 PFNA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFUnA	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFDoA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFTeDA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
18O2 PFHxS	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFOS	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C8 FOSA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
d3-NMeFOSAA	*85*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
d5-NEtFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
M2-6:2 FTS	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
M2-8:2 FTS	*114*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.58**	**J**	1.81	0.32	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.53	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroheptanoic acid (PFHpA)	**0.34**	**J**	1.81	0.23	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorononanoic acid (PFNA)	1.81		1.81	0.24	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroundecanoic acid (PFUnA)	1.81		1.81	1.0	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	**0.28**	**J B**	1.81	0.15	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29	ng/L		10/07/19 06:04	10/09/19 02:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFHxA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C4 PFOA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C5 PFNA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFDA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFUnA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-COMP 3
Date Collected: 09/16/19 11:55
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-20
Matrix: Solid
Percent Solids: 89.8

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFTeDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
18O2 PFHxS	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C4 PFOS	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C4 PFHpA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C5 PFPeA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.7**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Barium	**64.7**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Beryllium	**0.44**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Chromium	**12.0**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Copper	**31.0**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Lead	**16.2**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Manganese	**564**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Nickel	**25.3**		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Silver	ND		0.66		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Zinc	**152**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.3		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:47	1

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-GRAB 1
Lab Sample ID: 480-159547-21
Date Collected: 09/16/19 13:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 85.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.7	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,1-Dichloroethane	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,1-Dichloroethene	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2,4-Trimethylbenzene	ND	vs	5.7	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2-Dichlorobenzene	ND	vs	5.7	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2-Dichloroethane	ND	vs	5.7	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,3,5-Trimethylbenzene	ND	vs	5.7	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,3-Dichlorobenzene	ND	vs	5.7	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,4-Dichlorobenzene	ND	vs	5.7	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,4-Dioxane	ND	vs	110	25	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
2-Butanone (MEK)	ND	vs	29	2.1	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Acetone	ND	vs	29	4.8	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Benzene	ND	vs	5.7	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Carbon tetrachloride	ND	vs	5.7	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Chlorobenzene	ND	vs	5.7	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Chloroform	ND	vs	5.7	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
cis-1,2-Dichloroethene	ND	vs	5.7	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Ethylbenzene	ND	vs	5.7	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Methyl tert-butyl ether	ND	vs	5.7	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Methylene Chloride	ND	vs	5.7	2.6	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
n-Butylbenzene	ND	vs	5.7	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
N-Propylbenzene	ND	vs	5.7	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
sec-Butylbenzene	ND	vs	5.7	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Tetrachloroethene	ND	vs	5.7	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Toluene	ND	vs	5.7	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
trans-1,2-Dichloroethene	ND	vs	5.7	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Trichloroethene	ND	vs	5.7	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Vinyl chloride	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Xylenes, Total	ND	vs	11	0.96	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
tert-Butylbenzene	ND	vs	5.7	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*64 - 126*	*09/23/19 13:58*	*09/23/19 22:37*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/23/19 13:58*	*09/23/19 22:37*	*1*
Toluene-d8 (Surr)	*114*		*71 - 125*	*09/23/19 13:58*	*09/23/19 22:37*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/23/19 13:58*	*09/23/19 22:37*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-GRAB 2
Lab Sample ID: 480-159547-22
Date Collected: 09/16/19 13:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 126*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 126*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/23/19 13:58*	*09/23/19 23:01*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 3

Date Collected: 09/16/19 13:42
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-23

Matrix: Solid
Percent Solids: 92.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Methylene Chloride	ND	vs	5.3	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Tetrachloroethene	ND	vs	5.3	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Xylenes, Total	ND	vs	11	0.90	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*64 - 126*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
4-Bromofluorobenzene (Surr)	*109*		*72 - 126*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
Dibromofluoromethane (Surr)	*112*		*60 - 140*	*09/23/19 13:58*	*09/23/19 23:26*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 4

Date Collected: 09/16/19 13:43
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-24

Matrix: Solid
Percent Solids: 92.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.3	0.38	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,1-Dichloroethane	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,1-Dichloroethene	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2,4-Trimethylbenzene	ND		5.3	1.0	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2-Dichlorobenzene	ND	F1	5.3	0.41	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2-Dichloroethane	ND		5.3	0.26	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,3,5-Trimethylbenzene	ND		5.3	0.34	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,3-Dichlorobenzene	ND		5.3	0.27	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,4-Dichlorobenzene	ND		5.3	0.74	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,4-Dioxane	ND	F1	110	23	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
2-Butanone (MEK)	ND	F1 *	26	1.9	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Acetone	ND	F1	26	4.4	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Benzene	ND		5.3	0.26	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Carbon tetrachloride	ND		5.3	0.51	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Chlorobenzene	ND		5.3	0.69	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Chloroform	ND		5.3	0.33	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
cis-1,2-Dichloroethene	ND		5.3	0.67	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Ethylbenzene	ND		5.3	0.36	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Methyl tert-butyl ether	ND		5.3	0.52	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Methylene Chloride	**2.5**	**J**	5.3	2.4	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
n-Butylbenzene	ND		5.3	0.46	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
N-Propylbenzene	ND		5.3	0.42	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
sec-Butylbenzene	ND		5.3	0.46	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Tetrachloroethene	ND		5.3	0.71	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Toluene	ND		5.3	0.40	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
trans-1,2-Dichloroethene	ND		5.3	0.54	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Trichloroethene	ND		5.3	1.2	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Vinyl chloride	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Xylenes, Total	ND		11	0.88	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
tert-Butylbenzene	ND		5.3	0.55	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*64 - 126*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 126*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
Toluene-d8 (Surr)	*98*		*71 - 125*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
Dibromofluoromethane (Surr)	*107*		*60 - 140*	*09/25/19 10:16*	*09/25/19 13:51*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25
Date Collected: 09/16/19 13:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,1-Dichloroethane	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,1-Dichloroethene	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2-Dichloroethane	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Chlorobenzene	ND	vs	5.3	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Vinyl chloride	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Xylenes, Total	ND	vs	11	0.88	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*64 - 126*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
4-Bromofluorobenzene (Surr)	*114*		*72 - 126*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/24/19 10:38*	*09/24/19 13:29*	*1*

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26

Date Collected: 09/16/19 13:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Acetone	ND	vs	26	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 126*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 126*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*	*09/24/19 10:38*	*09/24/19 13:53*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-GRAB 7
Lab Sample ID: 480-159547-27
Date Collected: 09/16/19 13:46
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*123*		*64 - 126*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
Toluene-d8 (Surr)	*110*		*71 - 125*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
Dibromofluoromethane (Surr)	*117*		*60 - 140*	*09/24/19 10:38*	*09/24/19 14:18*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 8
Date Collected: 09/16/19 13:47
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-28
Matrix: Solid
Percent Solids: 93.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,1-Dichloroethane	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,1-Dichloroethene	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2-Dichloroethane	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Chlorobenzene	ND	vs	5.3	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Chloroform	ND	vs	5.3	0.32	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Vinyl chloride	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Xylenes, Total	ND	vs	11	0.88	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/24/19 10:38*	*09/24/19 14:42*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/24/19 10:38*	*09/24/19 14:42*	*1*
Toluene-d8 (Surr)	*91*		*71 - 125*	*09/24/19 10:38*	*09/24/19 14:42*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/24/19 10:38*	*09/24/19 14:42*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-GRAB 9
Lab Sample ID: 480-159547-29
Date Collected: 09/16/19 13:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Methylene Chloride	ND	vs	5.3	2.5	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Tetrachloroethene	ND	vs	5.3	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Xylenes, Total	ND	vs	11	0.90	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*64 - 126*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
Toluene-d8 (Surr)	*111*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:07*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Chrysene	ND		180	41	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Hexachlorobenzene	ND		180	25	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
1,4-Dioxane	ND		210	59	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*60 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
Nitrobenzene-d5 (Surr)	*91*		*53 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
Phenol-d5 (Surr)	*86*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
p-Terphenyl-d14 (Surr)	*104*		*79 - 130*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
4,4'-DDT	**0.85**	**J**	1.8	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Aldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
alpha-BHC	**1.9**	**B**	1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
cis-Chlordane	ND		1.8	0.87	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
beta-BHC	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Dieldrin	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan II	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
gamma-BHC (Lindane)	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1

Client Sample ID: GERNATT-CF-COMP 1

Date Collected: 09/16/19 13:50
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-30

Matrix: Solid
Percent Solids: 93.0

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
DCB Decachlorobiphenyl	*100*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
Tetrachloro-m-xylene	*95*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
Tetrachloro-m-xylene	*82*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:48*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1221	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1232	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1242	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1248	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1254	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1260	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1262	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1268	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
Polychlorinated biphenyls, Total	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*122*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:58*	*1*
Tetrachloro-m-xylene	*111*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:58*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	09/25/19 05:49	10/01/19 14:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*74*		*28 - 129*	*09/25/19 05:49*	*10/01/19 14:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.030**	**J**	0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.081	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.044	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.090	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.070	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanesulfonic acid (PFOS)	0.53		0.53	0.21	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.086	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.10		2.10	0.41	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1

Client Sample ID: GERNATT-CF-COMP 1

Date Collected: 09/16/19 13:50
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-30

Matrix: Solid
Percent Solids: 93.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.10		2.10	0.39	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
6:2 FTS	2.10		2.10	0.16	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
8:2 FTS	2.10		2.10	0.26	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C5 PFPeA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFHxA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C4 PFHpA	*104*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C4 PFOA	*99*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C5 PFNA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFDA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFUnA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFDoA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFTeDA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
18O2 PFHxS	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C4 PFOS	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C8 FOSA	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
d3-NMeFOSAA	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
d5-NEtFOSAA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
M2-8:2 FTS	*122*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.47**	**J**	1.73	0.30	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoropentanoic acid (PFPeA)	1.73		1.73	0.42	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorohexanoic acid (PFHxA)	1.73		1.73	0.50	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroheptanoic acid (PFHpA)	**0.27**	**J**	1.73	0.22	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorooctanoic acid (PFOA)	1.73		1.73	0.74	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorononanoic acid (PFNA)	1.73		1.73	0.23	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorodecanoic acid (PFDA)	1.73		1.73	0.27	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroundecanoic acid (PFUnA)	1.73		1.73	0.95	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorododecanoic acid (PFDoA)	1.73		1.73	0.48	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorotridecanoic acid (PFTriA)	1.73		1.73	1.13	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorotetradecanoic acid (PFTeA)	1.73		1.73	0.25	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorobutanesulfonic acid (PFBS)	1.73		1.73	0.17	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorohexanesulfonic acid (PFHxS)	**0.25**	**J B**	1.73	0.15	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		1.73	0.16	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorooctanesulfonic acid (PFOS)	1.73		1.73	0.47	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorodecanesulfonic acid (PFDS)	1.73		1.73	0.28	ng/L		10/07/19 06:04	10/09/19 02:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFHxA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFOA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C5 PFNA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFUnA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*

Client Sample ID: GERNATT-CF-COMP 1

Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50
Date Received: 09/16/19 16:10

Matrix: Solid
Percent Solids: 93.0

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFTeDA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
18O2 PFHxS	*113*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFOS	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFHpA	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C5 PFPeA	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.8**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Barium	**45.1**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Beryllium	**0.47**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Cadmium	ND		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Chromium	**11.0**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Copper	**33.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Lead	**17.2**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Manganese	**514**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Nickel	**27.5**		5.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Silver	ND		0.64		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Zinc	**116**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg	☼	10/11/19 13:45	10/11/19 14:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:48	1

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-COMP 2

Date Collected: 09/16/19 13:53
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-31

Matrix: Solid
Percent Solids: 94.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Anthracene	ND		180	44	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[b]fluoranthene	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Chrysene	ND		180	40	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
1,4-Dioxane	ND		210	58	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Phenanthrene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Phenol	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*60 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
2-Fluorophenol (Surr)	*82*		*52 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
Nitrobenzene-d5 (Surr)	*91*		*53 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
Phenol-d5 (Surr)	*89*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
p-Terphenyl-d14 (Surr)	*105*		*79 - 130*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
4,4'-DDT	ND		1.8	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Aldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
alpha-BHC	**0.42**	**J B**	1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
cis-Chlordane	ND		1.8	0.87	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
beta-BHC	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Dieldrin	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan II	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
gamma-BHC (Lindane)	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1

Client Sample ID: GERNATT-CF-COMP 2

Date Collected: 09/16/19 13:53
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-31

Matrix: Solid
Percent Solids: 94.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	102		45 - 120	09/25/19 07:36	09/27/19 16:08	1
DCB Decachlorobiphenyl	93		45 - 120	09/25/19 07:36	09/27/19 16:08	1
Tetrachloro-m-xylene	87		30 - 124	09/25/19 07:36	09/27/19 16:08	1
Tetrachloro-m-xylene	74		30 - 124	09/25/19 07:36	09/27/19 16:08	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1221	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1232	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1242	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1248	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1254	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1260	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1262	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1268	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
Polychlorinated biphenyls, Total	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	120		65 - 174	09/24/19 05:51	09/27/19 16:10	1
Tetrachloro-m-xylene	98		60 - 154	09/24/19 05:51	09/27/19 16:10	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		17	6.2	ug/Kg	☼	09/25/19 05:49	10/01/19 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	80		28 - 129	09/25/19 05:49	10/01/19 15:16	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.032**	**J**	0.20	0.028	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoropentanoic acid (PFPeA)	0.20		0.20	0.078	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorohexanoic acid (PFHxA)	0.20		0.20	0.042	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanoic acid (PFOA)	0.20		0.20	0.087	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorononanoic acid (PFNA)	0.20		0.20	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorodecanoic acid (PFDA)	0.20		0.20	0.022	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroundecanoic acid (PFUnA)	0.20		0.20	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorododecanoic acid (PFDoA)	0.20		0.20	0.068	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorotridecanoic acid (PFTriA)	0.20		0.20	0.052	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorotetradecanoic acid (PFTeA)	0.20		0.20	0.055	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorobutanesulfonic acid (PFBS)	0.20		0.20	0.025	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.20		0.20	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.20		0.20	0.035	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.20	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanesulfonamide (FOSA)	0.20		0.20	0.083	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.02		2.02	0.39	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1

Client Sample ID: GERNATT-CF-COMP 2

Date Collected: 09/16/19 13:53
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-31

Matrix: Solid
Percent Solids: 94.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.02		2.02	0.37	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
6:2 FTS	2.02		2.02	0.15	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
8:2 FTS	2.02		2.02	0.25	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C5 PFPeA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFHxA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFHpA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C5 PFNA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFUnA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFDoA	*86*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFTeDA	*79*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
18O2 PFHxS	*107*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFOS	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C8 FOSA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
d5-NEtFOSAA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
M2-6:2 FTS	*108*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
M2-8:2 FTS	*124*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.43**	**J**	1.86	0.33	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoropentanoic acid (PFPeA)	1.86		1.86	0.46	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorohexanoic acid (PFHxA)	1.86		1.86	0.54	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroheptanoic acid (PFHpA)	**0.33**	**J**	1.86	0.23	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorooctanoic acid (PFOA)	1.86		1.86	0.79	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorononanoic acid (PFNA)	1.86		1.86	0.25	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorodecanoic acid (PFDA)	1.86		1.86	0.29	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroundecanoic acid (PFUnA)	1.86		1.86	1.02	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorododecanoic acid (PFDoA)	1.86		1.86	0.51	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorotridecanoic acid (PFTriA)	1.86		1.86	1.21	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorotetradecanoic acid (PFTeA)	1.86		1.86	0.27	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorobutanesulfonic acid (PFBS)	1.86		1.86	0.19	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**J B**	1.86	0.16	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.86		1.86	0.18	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorooctanesulfonic acid (PFOS)	1.86		1.86	0.50	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorodecanesulfonic acid (PFDS)	1.86		1.86	0.30	ng/L		10/07/19 06:04	10/09/19 02:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFHxA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C5 PFNA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFUnA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-COMP 2
Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 94.1

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFOS	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFHpA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C5 PFPeA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.5**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Barium	**45.1**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Beryllium	**0.87**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Chromium	**29.2**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Copper	**29.5**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Lead	**11.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Manganese	**508**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Nickel	**32.1**		5.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Silver	ND		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Zinc	**97.7**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.021		mg/Kg	☼	10/11/19 13:45	10/11/19 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.1		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:51	1

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Chrysene	ND		180	40	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
1,4-Dioxane	ND		210	58	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*60 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
2-Fluorophenol (Surr)	*73*		*52 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
Nitrobenzene-d5 (Surr)	*87*		*53 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
Phenol-d5 (Surr)	*80*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
p-Terphenyl-d14 (Surr)	*101*		*79 - 130*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
4,4'-DDT	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Aldrin	ND		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
alpha-BHC	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
cis-Chlordane	ND		1.8	0.88	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
beta-BHC	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Dieldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan II	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
gamma-BHC (Lindane)	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1

Client Sample ID: GERNATT-CF-COMP 3

Date Collected: 09/16/19 13:57
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-32

Matrix: Solid
Percent Solids: 92.9

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*116*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
DCB Decachlorobiphenyl	*108*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
Tetrachloro-m-xylene	*97*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:27*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1221	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1232	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1242	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1248	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1254	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1260	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1262	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1268	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
Polychlorinated biphenyls, Total	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*128*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:23*	*1*
Tetrachloro-m-xylene	*104*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:23*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	09/25/19 05:49	10/01/19 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*81*		*28 - 129*	*09/25/19 05:49*	*10/01/19 15:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.039**	**J**	0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.079	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.088	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.052	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.055	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.21	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.084	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.05		2.05	0.40	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1

Client Sample ID: GERNATT-CF-COMP 3

Date Collected: 09/16/19 13:57
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-32

Matrix: Solid
Percent Solids: 92.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.05		2.05	0.38	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
6:2 FTS	2.05		2.05	0.15	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
8:2 FTS	2.05		2.05	0.26	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFHxA	*92*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFHpA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFOA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C5 PFNA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFDA	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFUnA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFDoA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFTeDA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
18O2 PFHxS	*105*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C8 FOSA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
d3-NMeFOSAA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
d5-NEtFOSAA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
M2-8:2 FTS	*131*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.57**	**J**	1.81	0.32	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.52	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroheptanoic acid (PFHpA)	1.81		1.81	0.23	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorononanoic acid (PFNA)	1.81		1.81	0.24	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroundecanoic acid (PFUnA)	1.81		1.81	0.99	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorohexanesulfonic acid (PFHxS)	**0.23**	**J B**	1.81	0.15	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29	ng/L		10/07/19 06:04	10/09/19 02:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFHxA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFOA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C5 PFNA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFUnA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-COMP 3
Date Collected: 09/16/19 13:57
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-32
Matrix: Solid
Percent Solids: 92.9

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
18O2 PFHxS	*111*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFOS	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFHpA	*111*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C5 PFPeA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.3**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Barium	**43.1**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Beryllium	**0.40**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Chromium	**9.5**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Copper	**30.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Lead	**14.8**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Manganese	**611**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Nickel	**25.2**		5.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Silver	ND		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Zinc	**107**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.1		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:50	1

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-GRAB 1
Date Collected: 09/16/19 14:15
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-33
Matrix: Solid
Percent Solids: 88.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Chloroform	ND	vs	5.6	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Ethylbenzene	ND	vs	5.6	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
n-Butylbenzene	ND	vs	5.6	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
sec-Butylbenzene	ND	vs	5.6	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:31*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-GRAB 2

Date Collected: 09/16/19 14:16
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-34

Matrix: Solid
Percent Solids: 88.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*127*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
4-Bromofluorobenzene (Surr)	*117*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:55*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,1-Dichloroethane	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,1-Dichloroethene	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,4-Dichlorobenzene	ND	vs	5.6	0.79	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
2-Butanone (MEK)	ND	vs	28	2.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Benzene	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Vinyl chloride	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 126*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 126*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/24/19 10:38*	*09/24/19 16:20*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-GRAB 4

Date Collected: 09/16/19 14:18
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-36

Matrix: Solid
Percent Solids: 90.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.5	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Acetone	ND	vs	28	4.6	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Chlorobenzene	ND	vs	5.5	0.73	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Toluene	ND	vs	5.5	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Xylenes, Total	ND	vs	11	0.93	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*130*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 126*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
Dibromofluoromethane (Surr)	*124*		*60 - 140*	*09/24/19 10:38*	*09/24/19 16:44*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-GRAB 5
Date Collected: 09/16/19 14:19
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-37
Matrix: Solid
Percent Solids: 88.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,1-Dichloroethane	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,1-Dichloroethene	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,4-Dichlorobenzene	ND	vs	5.6	0.79	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,4-Dioxane	ND	vs	110	25	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
2-Butanone (MEK)	ND	vs	28	2.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Benzene	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Vinyl chloride	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
4-Bromofluorobenzene (Surr)	*92*		*72 - 126*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/24/19 10:38*	*09/24/19 17:09*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-GRAB 6
Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Chloroform	ND	vs	5.6	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*135*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
4-Bromofluorobenzene (Surr)	*123*		*72 - 126*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
Toluene-d8 (Surr)	*116*		*71 - 125*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
Dibromofluoromethane (Surr)	*127*		*60 - 140*	*09/24/19 10:38*	*09/24/19 17:34*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-COMP 1

Date Collected: 09/16/19 14:30
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-39

Matrix: Solid
Percent Solids: 88.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Anthracene	ND		190	47	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Chrysene	ND		190	43	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Methylphenol, 3 & 4	ND		370	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
1,4-Dioxane	ND		220	62	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Phenol	ND		190	29	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*60 - 120*	*09/25/19 14:37*	*09/26/19 23:38*	*1*
2-Fluorophenol (Surr)	*74*		*52 - 120*	*09/25/19 14:37*	*09/26/19 23:38*	*1*
Nitrobenzene-d5 (Surr)	*88*		*53 - 120*	*09/25/19 14:37*	*09/26/19 23:38*	*1*
Phenol-d5 (Surr)	*84*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:38*	*1*
p-Terphenyl-d14 (Surr)	*101*		*79 - 130*	*09/25/19 14:37*	*09/26/19 23:38*	*1*
2,4,6-Tribromophenol (Surr)	*101*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:38*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**5.7**		1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
4,4'-DDE	**11**		1.8	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
4,4'-DDT	**5.2**		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Aldrin	ND		1.8	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
alpha-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
cis-Chlordane	ND		1.8	0.92	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Dieldrin	**30**		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan II	**0.91**	**J**	1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endrin	**2.1**		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Heptachlor	**0.99**	**J**	1.8	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1

Client Sample ID: GERNATT-TS-COMP 1

Date Collected: 09/16/19 14:30
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-39

Matrix: Solid
Percent Solids: 88.4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*100*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:47*	*1*
DCB Decachlorobiphenyl	*92*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:47*	*1*
Tetrachloro-m-xylene	*82*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:47*	*1*
Tetrachloro-m-xylene	*63*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:47*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1221	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1232	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1242	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1248	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1254	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1260	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1262	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1268	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
Polychlorinated biphenyls, Total	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*115*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:35*	*1*
Tetrachloro-m-xylene	*99*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:35*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.7	ug/Kg	☼	09/25/19 05:49	10/01/19 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*74*		*28 - 129*	*09/25/19 05:49*	*10/01/19 16:16*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.16**	**J**	0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.082	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.045	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanoic acid (PFOA)	**0.11**	**J**	0.21	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorononanoic acid (PFNA)	**0.050**	**J**	0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.071	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.027	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanesulfonic acid (PFOS)	**0.37**	**J**	0.53	0.21	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.087	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.12		2.12	0.41	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1

Client Sample ID: GERNATT-TS-COMP 1

Date Collected: 09/16/19 14:30
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-39

Matrix: Solid
Percent Solids: 88.4

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.12		2.12	0.39	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
6:2 FTS	2.12		2.12	0.16	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
8:2 FTS	2.12		2.12	0.27	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C5 PFPeA	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFHxA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFHpA	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C5 PFNA	*87*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFDA	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFUnA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFDoA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFTeDA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
18O2 PFHxS	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C8 FOSA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
d3-NMeFOSAA	*75*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
d5-NEtFOSAA	*88*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
M2-6:2 FTS	*115*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
M2-8:2 FTS	*114*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.99**	**J**	1.83	0.32	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoropentanoic acid (PFPeA)	1.83		1.83	0.45	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorohexanoic acid (PFHxA)	1.83		1.83	0.53	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoroheptanoic acid (PFHpA)	**0.83**	**J**	1.83	0.23	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorooctanoic acid (PFOA)	**2.65**		1.83	0.78	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorononanoic acid (PFNA)	**0.57**	**J**	1.83	0.25	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorohexanesulfonic acid (PFHxS)	**0.37**	**J B**	1.83	0.16	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorooctanesulfonic acid (PFOS)	**1.01**	**J**	1.83	0.49	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29	ng/L		10/07/19 06:04	10/09/19 03:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFHxA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFOA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-COMP 1

Date Collected: 09/16/19 14:30
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-39

Matrix: Solid
Percent Solids: 88.4

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFUnA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFDoA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
18O2 PFHxS	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFOS	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFHpA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C5 PFPeA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.1**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Barium	**67.1**		0.56		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Beryllium	**0.38**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Cadmium	ND		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Chromium	**11.6**		0.56		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Copper	**20.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Lead	**15.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Manganese	**798**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Nickel	**16.4**		5.6		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Selenium	ND		4.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Silver	ND		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Zinc	**92.7**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.041**		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.3		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H F1	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:55	1

Client Sample ID: GERNATT-TS-COMP 2

Date Collected: 09/16/19 14:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-40

Matrix: Solid
Percent Solids: 87.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Anthracene	ND		190	48	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[b]fluoranthene	ND		190	31	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Chrysene	ND		190	43	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Dibenzofuran	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Fluorene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
2-Methylphenol	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Methylphenol, 3 & 4	ND		380	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
1,4-Dioxane	ND		230	63	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Pentachlorophenol	ND		380	190	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Phenol	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*60 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
Nitrobenzene-d5 (Surr)	*88*		*53 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
Phenol-d5 (Surr)	*89*		*54 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
p-Terphenyl-d14 (Surr)	*99*		*79 - 130*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*54 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**5.2**		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
4,4'-DDE	**10**		1.9	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
4,4'-DDT	**4.3**		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Aldrin	ND		1.9	0.47	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
alpha-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
cis-Chlordane	ND		1.9	0.95	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
beta-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
delta-BHC	**0.47**	**J B**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Dieldrin	**27**		1.9	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan I	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan II	**0.85**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan sulfate	ND		1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endrin	**1.7**	**J**	1.9	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
gamma-BHC (Lindane)	**0.63**	**J**	1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Heptachlor	**0.89**	**J**	1.9	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1

Client Sample ID: GERNATT-TS-COMP 2

Date Collected: 09/16/19 14:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-40

Matrix: Solid
Percent Solids: 87.0

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	97		45 - 120	09/25/19 07:36	09/27/19 17:07	1
DCB Decachlorobiphenyl	87		45 - 120	09/25/19 07:36	09/27/19 17:07	1
Tetrachloro-m-xylene	74		30 - 124	09/25/19 07:36	09/27/19 17:07	1
Tetrachloro-m-xylene	58		30 - 124	09/25/19 07:36	09/27/19 17:07	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1221	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1232	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1242	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1248	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1262	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1268	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
Polychlorinated biphenyls, Total	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	112		65 - 174	09/24/19 05:51	09/27/19 16:47	1
Tetrachloro-m-xylene	98		60 - 154	09/24/19 05:51	09/27/19 16:47	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.8	ug/Kg	☼	09/25/19 05:49	10/01/19 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	73		28 - 129	09/25/19 05:49	10/01/19 20:08	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.086	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.047	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanoic acid (PFOA)	**0.098**	**J**	0.22	0.096	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorononanoic acid (PFNA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.075	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanesulfonic acid (PFOS)	**0.44**	**J**	0.56	0.22	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.22		2.22	0.43	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1

Client Sample ID: GERNATT-TS-COMP 2

Date Collected: 09/16/19 14:35
Date Received: 09/16/19 16:10

Lab Sample ID: 480-159547-40

Matrix: Solid
Percent Solids: 87.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.22		2.22	0.41	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
6:2 FTS	2.22		2.22	0.17	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
8:2 FTS	2.22		2.22	0.28	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C5 PFPeA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFHxA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFHpA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C5 PFNA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFDA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFUnA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFDoA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFTeDA	*102*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
18O2 PFHxS	*107*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFOS	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C8 FOSA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
d3-NMeFOSAA	*76*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
d5-NEtFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
M2-8:2 FTS	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.97**	**J**	1.83	0.32	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoropentanoic acid (PFPeA)	**0.46**	**J**	1.83	0.45	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorohexanoic acid (PFHxA)	**0.61**	**J**	1.83	0.53	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroheptanoic acid (PFHpA)	**0.98**	**J**	1.83	0.23	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorooctanoic acid (PFOA)	**2.70**		1.83	0.78	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorononanoic acid (PFNA)	**0.56**	**J**	1.83	0.25	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorohexanesulfonic acid (PFHxS)	**0.34**	**J B**	1.83	0.16	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorooctanesulfonic acid (PFOS)	**1.09**	**J**	1.83	0.49	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29	ng/L		10/07/19 06:04	10/09/19 03:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFHxA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C4 PFOA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C5 PFNA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFDA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFUnA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFDoA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
18O2 PFHxS	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C4 PFOS	*99*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C4 PFHpA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C5 PFPeA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.8**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Barium	**78.8**		0.58		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Beryllium	**0.46**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Cadmium	ND		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Chromium	**13.3**		0.58		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Copper	**24.7**		1.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Lead	**17.8**		1.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Manganese	**889**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Nickel	**22.0**		5.8		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Selenium	ND		4.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Silver	ND		0.70		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Zinc	**115**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.041**		0.023		mg/Kg	☼	10/11/19 13:45	10/11/19 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 10:53	10/08/19 17:00	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 14:13	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 21:50	10/02/19 12:13	1

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1
Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1
Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 16:28	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 16:52	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 73.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 17:17	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4
Date Collected: 09/16/19 09:28
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4
Date Collected: 09/16/19 09:28
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 17:41	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 5
Lab Sample ID: 480-159547-5
Date Collected: 09/16/19 09:29
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 5
Lab Sample ID: 480-159547-5
Date Collected: 09/16/19 09:29
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:06	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 6
Lab Sample ID: 480-159547-6
Date Collected: 09/16/19 09:30
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 6
Lab Sample ID: 480-159547-6
Date Collected: 09/16/19 09:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:30	CDC	TAL BUF

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:21	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-TS-COMP 1

Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 20:15	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:11	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:08	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 11:18	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 05:46	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 12:46	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:41	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 15:40	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:24	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:41	MDL	TAL BUF

Client Sample ID: RUSSO-TS-COMP 2

Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:30	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-TS-COMP 2

Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 20:40	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:30	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:21	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 11:48	MAN	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-TS-COMP 2

Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 05:56	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:16	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:42	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:42	MDL	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 1

Lab Sample ID: 480-159547-9
Date Collected: 09/16/19 11:40
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 1

Lab Sample ID: 480-159547-9
Date Collected: 09/16/19 11:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:55	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 2

Lab Sample ID: 480-159547-10
Date Collected: 09/16/19 11:41
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 2

Lab Sample ID: 480-159547-10
Date Collected: 09/16/19 11:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 19:19	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11
Date Collected: 09/16/19 11:42
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11
Date Collected: 09/16/19 11:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 19:44	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12
Date Collected: 09/16/19 11:43
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12
Date Collected: 09/16/19 11:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:08	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13
Date Collected: 09/16/19 11:44
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13
Date Collected: 09/16/19 11:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:33	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 6
Lab Sample ID: 480-159547-14
Date Collected: 09/16/19 11:45
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-GRAB 6
Lab Sample ID: 480-159547-14
Date Collected: 09/16/19 11:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:58	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 7
Lab Sample ID: 480-159547-15
Date Collected: 09/16/19 11:46
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 7
Lab Sample ID: 480-159547-15
Date Collected: 09/16/19 11:46
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 21:23	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 8
Lab Sample ID: 480-159547-16
Date Collected: 09/16/19 11:47
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 8
Lab Sample ID: 480-159547-16
Date Collected: 09/16/19 11:47
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 21:47	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 9
Lab Sample ID: 480-159547-17
Date Collected: 09/16/19 11:48
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-GRAB 9

Lab Sample ID: 480-159547-17
Date Collected: 09/16/19 11:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 22:12	CDC	TAL BUF

Client Sample ID: RUSSO-CF-COMP 1

Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:40	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-CF-COMP 1

Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:05	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:50	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:33	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 12:18	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:06	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:20	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:43	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:44	MDL	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-COMP 2

Lab Sample ID: 480-159547-19
Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:18	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-CF-COMP 2

Lab Sample ID: 480-159547-19
Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:30	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:09	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:45	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 12:47	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 13:35	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:24	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:45	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:45	MDL	TAL BUF

Client Sample ID: RUSSO-CF-COMP 3

Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:28	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: RUSSO-CF-COMP 3

Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:56	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:29	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494086	09/26/19 00:09	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 13:17	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:03	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:28	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:46	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:47	MDL	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 1

Lab Sample ID: 480-159547-21
Date Collected: 09/16/19 13:40
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 1

Lab Sample ID: 480-159547-21
Date Collected: 09/16/19 13:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 85.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 22:37	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 2

Lab Sample ID: 480-159547-22
Date Collected: 09/16/19 13:41
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 2
Lab Sample ID: 480-159547-22
Date Collected: 09/16/19 13:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 23:01	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 3
Lab Sample ID: 480-159547-23
Date Collected: 09/16/19 13:42
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 3
Lab Sample ID: 480-159547-23
Date Collected: 09/16/19 13:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 23:26	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 4
Lab Sample ID: 480-159547-24
Date Collected: 09/16/19 13:43
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 4
Lab Sample ID: 480-159547-24
Date Collected: 09/16/19 13:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493988	09/25/19 10:16	WJD	TAL BUF
Total/NA	Analysis	8260C		1	493944	09/25/19 13:51	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25
Date Collected: 09/16/19 13:44
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25
Date Collected: 09/16/19 13:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 13:29	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26
Date Collected: 09/16/19 13:45
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26
Date Collected: 09/16/19 13:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 13:53	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 7
Lab Sample ID: 480-159547-27
Date Collected: 09/16/19 13:46
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 7
Lab Sample ID: 480-159547-27
Date Collected: 09/16/19 13:46
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 14:18	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 8
Lab Sample ID: 480-159547-28
Date Collected: 09/16/19 13:47
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 8

Lab Sample ID: 480-159547-28
Date Collected: 09/16/19 13:47
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 14:42	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 9

Lab Sample ID: 480-159547-29
Date Collected: 09/16/19 13:48
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 9

Lab Sample ID: 480-159547-29
Date Collected: 09/16/19 13:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:07	CDC	TAL BUF

Client Sample ID: GERNATT-CF-COMP 1

Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:37	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 1

Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 22:21	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:48	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:58	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 14:47	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:13	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:32	LMH	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-COMP 1

Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:47	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:48	MDL	TAL BUF

Client Sample ID: GERNATT-CF-COMP 2

Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:47	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 2

Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 94.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 22:47	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:08	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:10	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 15:16	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:22	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:47	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:48	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:51	MDL	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:57	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 23:13	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:27	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:23	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 15:46	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:32	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:51	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:50	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:50	MDL	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 1
Lab Sample ID: 480-159547-33
Date Collected: 09/16/19 14:15
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 1
Lab Sample ID: 480-159547-33
Date Collected: 09/16/19 14:15
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:31	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:55	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 16:20	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 4
Lab Sample ID: 480-159547-36
Date Collected: 09/16/19 14:18
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 4
Lab Sample ID: 480-159547-36
Date Collected: 09/16/19 14:18
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 16:44	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 5
Lab Sample ID: 480-159547-37
Date Collected: 09/16/19 14:19
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-GRAB 5

Lab Sample ID: 480-159547-37
Date Collected: 09/16/19 14:19
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 17:09	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 6

Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 6

Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 17:34	CDC	TAL BUF

Client Sample ID: GERNATT-TS-COMP 1

Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 03:06	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-TS-COMP 1

Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 23:38	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:47	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:35	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 16:16	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:15	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:55	LMH	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-TS-COMP 1

Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:54	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:55	MDL	TAL BUF

Client Sample ID: GERNATT-TS-COMP 2

Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 03:16	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-TS-COMP 2

Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/27/19 00:03	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 17:07	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:47	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 20:08	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:25	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:59	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:55	BMB	TAL BUF
Total/NA	Prep	3060A			645471	10/08/19 10:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645571	10/08/19 17:00	RAK	TAL EDI
Total/NA	Prep	3060A			645708	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646036	10/10/19 14:13	RPR	TAL EDI
Total/NA	Prep	9012B			495079	09/30/19 21:50	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495460	10/02/19 12:13	MDL	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8082A	3550C	Solid	PCB-1016
8082A	3550C	Solid	PCB-1221
8082A	3550C	Solid	PCB-1232
8082A	3550C	Solid	PCB-1242
8082A	3550C	Solid	PCB-1248
8082A	3550C	Solid	PCB-1254
8082A	3550C	Solid	PCB-1260
8082A	3550C	Solid	PCB-1262
8082A	3550C	Solid	PCB-1268
8082A	3550C	Solid	Polychlorinated biphenyls, Total
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

Accreditation/Certification Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
Nevada	State	CA000442020-1	07-31-20
Nevada	State Program	CA00044	07-31-20
New Hampshire	NELAP	2997	04-20-20
New Hampshire	NELAP	2997	04-18-20
New Jersey	NELAP	CA005	06-30-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
8081B	Organochlorine Pesticides (GC)	SW846	TAL BUF
8082A	Polychlorinated Biphenyls (PCBs) (GC)	SW846	TAL BUF
8151A	Herbicides (GC)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL EDI
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF
1312	SPLP Extraction	SW846	TAL SAC
3050B	Preparation, Metals	SW846	TAL BUF
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	TAL EDI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
3550C	Ultrasonic Extraction	SW846	TAL BUF
5035A_L	Closed System Purge and Trap	SW846	TAL BUF
7471B	Preparation, Mercury	SW846	TAL BUF
8151A	Extraction (Herbicides)	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL BUF
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-159547-1	RUSSO-TS-GRAB 1	Solid	09/16/19 09:25	09/16/19 16:10	
480-159547-2	RUSSO-TS-GRAB 2	Solid	09/16/19 09:26	09/16/19 16:10	
480-159547-3	RUSSO-TS-GRAB 3	Solid	09/16/19 09:27	09/16/19 16:10	
480-159547-4	RUSSO-TS-GRAB 4	Solid	09/16/19 09:28	09/16/19 16:10	
480-159547-5	RUSSO-TS-GRAB 5	Solid	09/16/19 09:29	09/16/19 16:10	
480-159547-6	RUSSO-TS-GRAB 6	Solid	09/16/19 09:30	09/16/19 16:10	
480-159547-7	RUSSO-TS-COMP 1	Solid	09/16/19 09:35	09/16/19 16:10	
480-159547-8	RUSSO-TS-COMP 2	Solid	09/16/19 09:40	09/16/19 16:10	
480-159547-9	RUSSO-CF-GRAB 1	Solid	09/16/19 11:40	09/16/19 16:10	
480-159547-10	RUSSO-CF-GRAB 2	Solid	09/16/19 11:41	09/16/19 16:10	
480-159547-11	RUSSO-CF-GRAB 3	Solid	09/16/19 11:42	09/16/19 16:10	
480-159547-12	RUSSO-CF-GRAB 4	Solid	09/16/19 11:43	09/16/19 16:10	
480-159547-13	RUSSO-CF-GRAB 5	Solid	09/16/19 11:44	09/16/19 16:10	
480-159547-14	RUSSO-CF-GRAB 6	Solid	09/16/19 11:45	09/16/19 16:10	
480-159547-15	RUSSO-CF-GRAB 7	Solid	09/16/19 11:46	09/16/19 16:10	
480-159547-16	RUSSO-CF-GRAB 8	Solid	09/16/19 11:47	09/16/19 16:10	
480-159547-17	RUSSO-CF-GRAB 9	Solid	09/16/19 11:48	09/16/19 16:10	
480-159547-18	RUSSO-CF-COMP 1	Solid	09/16/19 11:50	09/16/19 16:10	
480-159547-19	RUSSO-CF-COMP 2	Solid	09/16/19 11:52	09/16/19 16:10	
480-159547-20	RUSSO-CF-COMP 3	Solid	09/16/19 11:55	09/16/19 16:10	
480-159547-21	GERNATT-CF-GRAB 1	Solid	09/16/19 13:40	09/16/19 16:10	
480-159547-22	GERNATT-CF-GRAB 2	Solid	09/16/19 13:41	09/16/19 16:10	
480-159547-23	GERNATT-CF-GRAB 3	Solid	09/16/19 13:42	09/16/19 16:10	
480-159547-24	GERNATT-CF-GRAB 4	Solid	09/16/19 13:43	09/16/19 16:10	
480-159547-25	GERNATT-CF-GRAB 5	Solid	09/16/19 13:44	09/16/19 16:10	
480-159547-26	GERNATT-CF-GRAB 6	Solid	09/16/19 13:45	09/16/19 16:10	
480-159547-27	GERNATT-CF-GRAB 7	Solid	09/16/19 13:46	09/16/19 16:10	
480-159547-28	GERNATT-CF-GRAB 8	Solid	09/16/19 13:47	09/16/19 16:10	
480-159547-29	GERNATT-CF-GRAB 9	Solid	09/16/19 13:48	09/16/19 16:10	
480-159547-30	GERNATT-CF-COMP 1	Solid	09/16/19 13:50	09/16/19 16:10	
480-159547-31	GERNATT-CF-COMP 2	Solid	09/16/19 13:53	09/16/19 16:10	
480-159547-32	GERNATT-CF-COMP 3	Solid	09/16/19 13:57	09/16/19 16:10	
480-159547-33	GERNATT-TS-GRAB 1	Solid	09/16/19 14:15	09/16/19 16:10	
480-159547-34	GERNATT-TS-GRAB 2	Solid	09/16/19 14:16	09/16/19 16:10	
480-159547-35	GERNATT-TS-GRAB 3	Solid	09/16/19 14:17	09/16/19 16:10	
480-159547-36	GERNATT-TS-GRAB 4	Solid	09/16/19 14:18	09/16/19 16:10	
480-159547-37	GERNATT-TS-GRAB 5	Solid	09/16/19 14:19	09/16/19 16:10	
480-159547-38	GERNATT-TS-GRAB 6	Solid	09/16/19 14:20	09/16/19 16:10	
480-159547-39	GERNATT-TS-COMP 1	Solid	09/16/19 14:30	09/16/19 16:10	
480-159547-40	GERNATT-TS-COMP 2	Solid	09/16/19 14:35	09/16/19 16:10	

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon McKolm (GES)

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Russo - TS - Grab 1		9.16.19	925	B.McKolm	Soil	1					X										X			
	Russo - TS - Grab 2			926			1					X										X			
	Russo - TS - Grab 3			927			1					X										X			
	Russo - TS - Grab 4			928			1					X										X			
	Russo - TS - Grab 5			929			1					X										X			
	Russo - TS - Grab 6			930			1					X										X			
	Russo - TS - Comp 1			935			6					X					X	X	X	X	X		X		
	Russo - TS - Comp 2			940			6					X					X	X	X	X	X		X		
	Russo - CF - Grab 1			1140			1					X										X			
	Russo - CF - Grab 2			1141			1					X										X			
	Russo - CF - Grab 3			1142			1					X										X			
	Russo - CF - Grab 4			1143			1					X										X			

Turnaround Time (Business Days) **Approved By (Lab PM) / Date**

- ☐ Standard 14 Days _____/_____
- ☐ 1 day RUSH _____/_____
- ☑ Other _____ _____/_____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☑ NYASP Category B
- ☐ State Forms
- ☑ EQEDD (for GES)
- ☑ NYDEC EDD (for NYSDEC)

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sample:	Date / Time:	Received By:
1		9-20-19 / 1415	9/20/19 1415
2	Relinquished By :	Date / Time:	Received By:
3	Relinquished By :	Date / Time:	Received By:

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp _____

480-159547 Chain of Custody

Page 101 of 114
10/24/2019

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolm (GES)

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Russo-CF-Grab 5		9-16-19	1144	B Mikolm	Soil	1					X										X			
	Russo-CF-Grab 6			1145			1					X										X			
	Russo-CF-Grab 7			1146			1					X										X			
	Russo-CF-Grab 8			1147			1					X										X			
	Russo-CF-Grab 9			1148			1					X										X			
	Russo-CF-Comp 1			1150			6					X					X	X	X	X	X		X		
	Russo-CF-Comp 2			1152			6					X					X	X	X	X	X		X		
	Russo-CF-Comp 3			1155			6					X					X	X	X	X	X		X		
	Gernatt-CF-Grab 1			1340			1					X										X			
	Gernatt-CF-Grab 2			1341			1					X										X			
	Gernatt-CF-Grab 3			1342			1					X										X			
	Gernatt-CF-Grab 4			1343			1					X										X			

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- [x] Standard 14 Days
- [ ] 1 day RUSH
- [ ] Other _____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Data Deliverable Information

- [ ] Commercial 'A' (Level 1) = Results Only
- [ ] Commercial 'B' (Level 2) = Results + QC Summary
- [ ] FULLT1 (Level 3 & 4)
- [ ] NJ Reduced = Results + QC Summary + Partial Raw Data
- [ ] Commercial 'C'
- [ ] *NJ Data of Known Quality Protocol Reporting*
- [ ] NYASP Category A
- [x] NYASP Category B
- [ ] State Forms
- [x] EQEDD for GES
- [x] NYDEC EDD for NYSDEC

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler:	Date / Time:	Received By:
1		9-20-19 / 1445	Unknow Mikolb 09/26/19 1415
2	Relinquished By :	Date / Time:	Received By:
3	Relinquished By :	Date / Time:	Received By:

Custody Seal Number: [ ] Intact [ ] Not Intact [ ] Preserved where applicable [ ] On Ice Cooler Temp _____

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer — **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com — fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolon (GES) — Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Gernatt - CF - Grab 5		9-16-19	1344	B.Mikolon	Soil	1			•		X										X			
	Gernatt - CF - Grab 6			1345			1					X										X			
	Gernatt - CF - Grab 7			1346			1					X										X			
	Gernatt - CF - Grab 8			1347			1					X										X			
	Gernatt - CF - Grab 9			1348			1					X										X			
	Gernatt - CF - Comp 1			1350			6					X					X	X	X	X	X		X		
	Gernatt - CF - Comp 2			1353			6					X					X	X	X	X	X		X		
	Gernatt - CF - Comp 3			1357			6					X					X	X	X	X	X		X		
	Gernatt - TS - Grab 1			1415			1					X										X			
	Gernatt - TS - Grab 2			1416			1					X										X			
	Gernatt - TS - Grab 3			1417			1					X										X			
	Gernatt - TS - Grab 4			1418			1					X										X			

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☑ Standard 14 Days _____/_____
- ☐ 1 day RUSH _____/_____
- ☐ Other _____ _____/_____

Laboratory Information

Lab:	Buffalo TestAmerica
Address:	10 Hazelwood Dr, Amherst, NY 14228
Phone:	716-691-2600
Lab PM:	Orlette Johnson
Lab PM Email:	Orlette.Johnson@testamericainc.com

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Relinquished by _____ 9-20-19/1415

Received by Unknow Cikolb 9/21/19 1415

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Malcolm (GES)

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Gernatt - TS - Grab 5		9-16-19	1419	BMalcolm	Soil	1					X										X			
	Gernatt - TS - Grab 6		"	1420	"	"	1					X										X			
	Gernatt - TS - Comp 1		"	1430	"	"	6					X					X	X	X	X	X		X		
	Gernatt - TS - Comp 2		"	1435	"	"	6					X					X	X	X	X	X		X		

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☑ Standard 14 Days _____/_____
- ☐ 1 day RUSH _____/_____
- ☐ Other _____ _____/_____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318/ LabReport#.26963.EQEDD.zip

Relinquished by [signature] 9/20/19 1415

Received by Brandon Malcolm 09/20/19 1415

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolin / GES

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Russo - TS - Grab 1		9/16/19	0925	B. Mikolin	Soil	6	HCl				6										X			
	Russo - TS - COMP 1			0935			12					12					X	X	X	X	X		X		
	Russo - CF - Grab 1			1140			9					9										X			
	Russo - CF - COMP 1			1150			18					18					X	X	X	X	X	X	X		
	Cernatt - CF - COMP 1			1350			18					18					X	X	X	X	X		X		
	Cernatt - CF - GRAB 1			1340			9					9										X			
	Cernatt - TS - GRAB 1			1415			6					6										X			
	Cernatt - TS - COMP 1		↓	1430	↓	↓	12					12					X	X	X	X	X		X		

Turnaround Time (Business Days) **Approved By (Lab PM) / Date**

- ☐ Standard 14 Days ____/____
- ☐ 1 day RUSH ____/____
- ☑ Other ____ ____/____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B" (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☑ NYASP Category B
- ☐ State Forms
- ☑ EQEDD (for GES)
- ☑ NYDEC EDD (for NYSDEC)

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler:	Date / Time:	Received By:
1	Brandon Mikolin / GES	9/16/19 16:10	Raval Mahuel 9-16-19 4:01
2	Relinquished By :	Date / Time:	Received By:
3	Relinquished By :	Date / Time:	Received By:

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice **Cooler Temp** ____

4 coolers
2.8
2.9
3.1
3.0

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51839.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 9/26/2019			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/Shake_Bath_14D (MOD) PFAS, Standard List (21 Analytes)	PFC_IDA/1312_E (MOD) SPLP PFAS, Standard List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
RUSSO-TS-COMP 1 (480-159547-7)	9/16/19	09:35 Eastern		Solid			X	X	2	
RUSSO-TS-COMP 2 (480-159547-8)	9/16/19	09:40 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 1 (480-159547-18)	9/16/19	11:50 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 2 (480-159547-19)	9/16/19	11:52 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 3 (480-159547-20)	9/16/19	11:55 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 1 (480-159547-30)	9/16/19	13:50 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 2 (480-159547-31)	9/16/19	13:53 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 3 (480-159547-32)	9/16/19	13:57 Eastern		Solid			X	X	2	
GERNATT-TS-COMP 1 (480-159547-39)	9/16/19	14:30 Eastern		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
1	Chinkow Cikolb	9/24/19 1700	TA		9/25/19 905	ETA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51839.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 880 Riverside Parkway,	Due Date Requested: 9/26/2019			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/Shake_Bath_14D (MOD) PFAS, Standard List (21 Analytes)	PFC_IDA/1312_E (MOD) SPLP PFAS, Standard List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
GERNATT-TS-COMP 2 (480-159547-40)	9/16/19	14:35 Eastern		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Shannon Civello	09/24/19 1700	TA		9/25/19 905	TALSN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51806.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 777 New Durham Road, ,	Due Date Requested: 9/26/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7196A/3060A Hexavalent Chromium - 7196	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
RUSSO-TS-COMP 1 (480-159547-7)	9/16/19	09:35 Eastern		Solid			X	1	
RUSSO-TS-COMP 2 (480-159547-8)	9/16/19	09:40 Eastern		Solid			X	1	
RUSSO-CF-COMP 1 (480-159547-18)	9/16/19	11:50 Eastern		Solid			X	1	
RUSSO-CF-COMP 2 (480-159547-19)	9/16/19	11:52 Eastern		Solid			X	1	
RUSSO-CF-COMP 3 (480-159547-20)	9/16/19	11:55 Eastern		Solid			X	1	
GERNATT-CF-COMP 1 (480-159547-30)	9/16/19	13:50 Eastern		Solid			X	1	
GERNATT-CF-COMP 2 (480-159547-31)	9/16/19	13:53 Eastern		Solid			X	1	
GERNATT-CF-COMP 3 (480-159547-32)	9/16/19	13:57 Eastern		Solid			X	1	
GERNATT-TS-COMP 1 (480-159547-39)	9/16/19	14:30 Eastern		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 9/16/19 1500	Company TAS	Received by: Angela Pinilla via FEDEX	Date/Time: 9/25/19 9:20	Company TAEdison
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

993385

2.0°C IR#9

10/24/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51806.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 777 New Durham Road,	Due Date Requested: 9/26/2019	Analysis Requested		Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			Other:
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7196A/3060A Hexavalent Chromium - 7196	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GERNATT-TS-COMP 2 (480-159547-40)	9/16/19	14:35 Eastern		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 9/24/19 1500	Company: TAS	Received by: Angela Pinilla via FEDEX	Date/Time: 9/25/19 9:20	Company: TAEdis07
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 993385	Cooler Temperature(s) °C and Other Remarks: 2.0°C IR#9

Ver: 01/16/2019

10/24/2019

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Sacramento
Sample Receiving Notes

480-159547 Field Sheet

Tracking # : 4276 0121 1104

Job: _____

SO / PO / FO / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Notes: _____

Therm. ID: IR-HACCP Corr. Factor: 0

Ice X Wet X Gel _____ Other _____

Cooler Custody Seal: 993398

Sample Custody Seal: _____

Cooler ID: _____

Temp Observed: 2.1 Corrected: 2.1

From: Temp Blank ☐ Sample ☒

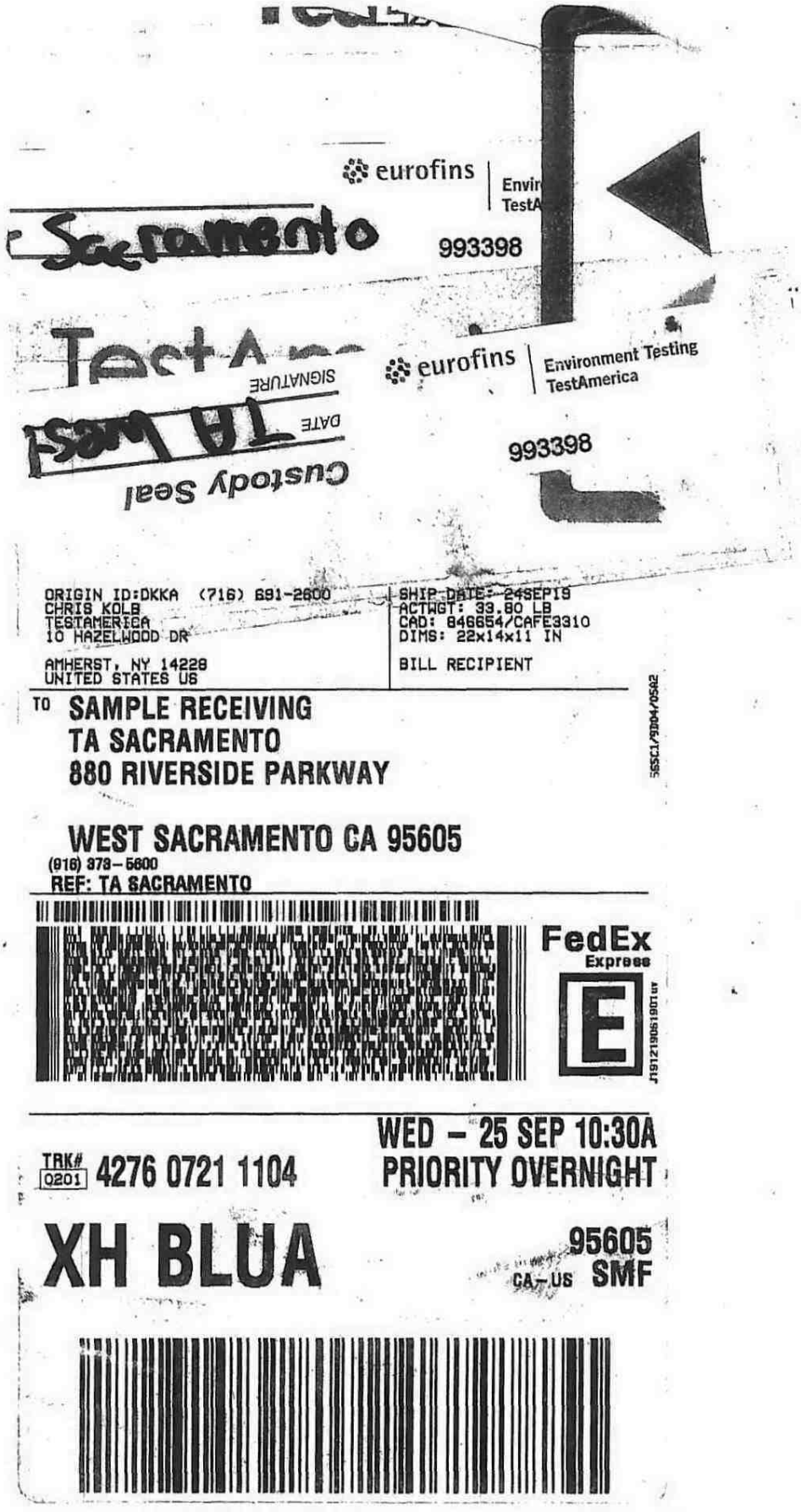
NCM Filed: Yes ☐ No ☐

	Yes	No	NA
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☒
Alkalinity has no headspace?	☐	☐	☒
CoC is complete w/o discrepancies?	☒	☐	☐
Samples received within holding time?	☒	☐	☐
Sample preservatives verified?	☐	☐	☒
Cooler compromised/tampered with?	☐	☒	☐
Samples compromised/tampered with?	☐	☒	☐
Samples w/o discrepancies?	☒	☐	☐
Sample containers have legible labels?	☒	☐	☐
Containers are not broken or leaking?	☒	☐	☐
Sample date/times are provided.	☒	☐	☐
Appropriate containers are used?	☒	☐	☐
Sample bottles are completely filled?	☒	☐	☐
Zero headspace?*	☐	☐	☒
Multiphasic samples are not present?	☑	☐	☐
Sample temp OK?	☒	☐	☐
Sample out of temp?	☐	☒	☐

Initials: DH Date: 9/25/19

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

W9B


eurofins
Sacramento
993398
Test A
eurofins
Environment Testing
TestAmerica
SIGNATURE
DATE
Custody Seal
993398
ORIGIN ID:DKKA (716) 691-2600
CHRIS KOLB
TESTAMERICA
10 HAZELWOOD DR
AMHERST, NY 14228
UNITED STATES US
SHIP DATE: 24SEP19
ACTWGT: 33.80 LB
CAD: 846654/CAFE3310
DIMS: 22x14x11 IN
BILL RECIPIENT
TO SAMPLE RECEIVING
TA SACRAMENTO
880 RIVERSIDE PARKWAY
WEST SACRAMENTO CA 95605
(916) 373-5600
REF: TA SACRAMENTO
FedEx
Express
WED - 25 SEP 10:30A
PRIORITY OVERNIGHT
TRK# 0201 4276 0721 1104
XH BLUA
95605
CA-US SMF

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-159547-1

Login Number: 159547 **List Source: Eurofins TestAmerica, Buffalo**
List Number: 1
Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ges
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-159547-1

Login Number: 159547
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 09/25/19 11:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	993385
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-159547-1

Login Number: 159547
List Number: 3
Creator: Kintaudi, Pauline W

List Source: Eurofins TestAmerica, Sacramento
List Creation: 09/25/19 12:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	993398
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **05 – Geotextile**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 1-23-20

HANES® GEO COMPONENTS™
A Leggett & Platt® COMPANY

815 Buxton Street | Winston Salem, NC | 27101
PH: 888.239.4539 | FAX: 336.747.1652
www.HanesGeo.com

TerraTex® N10

TerraTex® N10 is a nonwoven geotextile made up of polypropylene fibers. These fibers are needled to form a stable and durable network such that the fibers retain their relative position. It is non-biodegradable and resistant to most soil chemicals, acids, and alkali with a pH range of 3 to 12. TerraTex® N10 is manufactured to meet or exceed the following minimum average roll values:

Unless noted otherwise, all values are minimum average roll values (MARV).

PROPERTY	TEST METHOD	ENGLISH	METRIC
Weight (Typical) [1]	ASTM D5261	**10.0** oz/yd^2	**339** g/m^2
Grab Tensile	ASTM D4632	**250** lbs	**1.110** kN
Grab Elongation	ASTM D4632	**50** %	**50** %
Trapezoid Tear	ASTM D4533	**100** lbs	**0.444** kN
CBR Puncture	ASTM D6241	**700** lbs	**3.11** kN
Permittivity [1]	ASTM D4491	**1.20** sec^{-1}	**1.20** sec^{-1}
Water Flow Rate [1]	ASTM D4491	**80** gpm/ft^2	**3,251** Lpm/m^2
AOS [1,2]	ASTM D4751	**100** US Std. Sleve	**0.150** mm
UV Resistance	ASTM D4355	**70** % @ 500 hrs	**70** % @ 500 hrs

1 At the time of manufacturing. Handling, storage, and shipping may change these properties.
2 Value represents maximum average roll value.

DISCLAIMER: Descriptions regarding the products described herein are based solely upon information provided by the manufacturer and are provided for informational purposes only. **NOTHING CONTAINED HEREIN SHOULD BE CONSTRUED AS CREATING AN EXPRESSED OR IMPLIED WARRANTY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, EACH OF WHICH IS HEREBY DISCLAIMED. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.** The final determination as to the suitability of any product of Hanes Geo Components in any particular application rests solely with the user. Hanes Geo Components reserves the right to alter or modify its products and descriptions at any time without notice.

1/7/2016

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **06 - Waste Transporter Permit**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 1-23-20

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Allegany County Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Allied Waste Niagara Falls Landfill	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
American Recyclers Transfer Station	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant Waste Oil	
BIRD ISLAND WWTP	BUFFALO , NY	Non-Hazardous Industrial/Commercial Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Chaffee Landfill	Chaffee , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Chautauqua Landfill	Ellery , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Covanta Niagara I, LLC	Niagara Falls , NY	Non-Hazardous Industrial/Commercial	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS: New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: _____ Date: 12/4/19

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for change of address or company name.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/ offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department at the time of permit renewal, or to any law enforcement officer, if requested to do so.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. **Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:**

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Covanta Niagara I, LLC	Niagara Falls , NY	Petroleum Contaminated Soil Grease Trap Waste	
CWM CHEMICAL SERVICES LLC	MODEL CITY , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires	
DEPEW VILLAGE LANDFILL	DEPEW , NY	Hazardous Industrial/Commercial	
EASTMAN BUSINESS PARK	ROCHESTER , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	Petr. Cont. Water
EQ DETROIT TRANSFER & PROCESSING	DETROIT , MI	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
EQ DETROIT, INC (US ECOLOGY DETROIT SOUTH)	DETROIT , MI	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Hyland Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Industrial Oil Tank Used Oil Storage Facility	Oriskany , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Mill Seat SLF	Riga , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Modern Landfill, Inc.	Model City , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil	
NOCO Energy Corporation-Tonawanda	Tonawanda , NY	Non-Hazardous Industrial/Commercial	PETR CONT WAT
North Youngmann Commerce Center	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Safety-Kleen	Buffalo , NY	Non-Hazardous Industrial/Commercial	PETR CONT WAT
Tonawanda Terminals Corp	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

7 (Seven) Permitted Vehicle(s)

NY 13338TC
NY 30816MH
NY 81684ME
NY 95975MJ
NY 95976MJ
NY 95977MJ
NY 95979MJ
End of List

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **07 – Crushed Stone Certification**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 1-23-20

NEW ENTERPRISE STONE & LIME CO., INC.

500 Como Park Boulevard • Buffalo NY 14227

Office: (716) 826-7310
Fax: (716) 826-1342
Dispatch: (716) 566-9690

January 10, 2020

Steve Leitten

Russo Development, Inc.

Re: Lackawanna Incinerator Site

Dear Steve,

The crushed limestone 2" Crusher Run Subbase and Clean #1 stone to be supplied to the above referenced project was extracted, crushed and screened at our Lancaster, NY facility. The material is produced from a virgin stone source, un-impacted by hazardous materials or contaminants and free of loom, organic matter including clay. The quarry is a NYSDOT approved source; the source number is 5-3R and our mining permit # is 90018.

Sincerely,

Robert Warrington

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **08 – Russo Quarry Permit**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 1-29-20

The New York State
Department of Environmental Conservation
has issued a

MINING PERMIT

pursuant to the Environmental Conservation Law for the mining operation being conducted on this site. For more information regarding the nature and extent of work approved, contact the Mined Land Reclamation Specialist shown below. Please refer to the mine file number shown when contacting the DEC.

Mine File Number 90472 Permit Expiration Date 3/7/2024

DEC Contact H. McNEIL-NAZARETH

Phone Number 716-372-0645

NOTE: THIS IS NOT A PERMIT

ML-1

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **09 – Russo Quarry Gravel Sampling Map**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

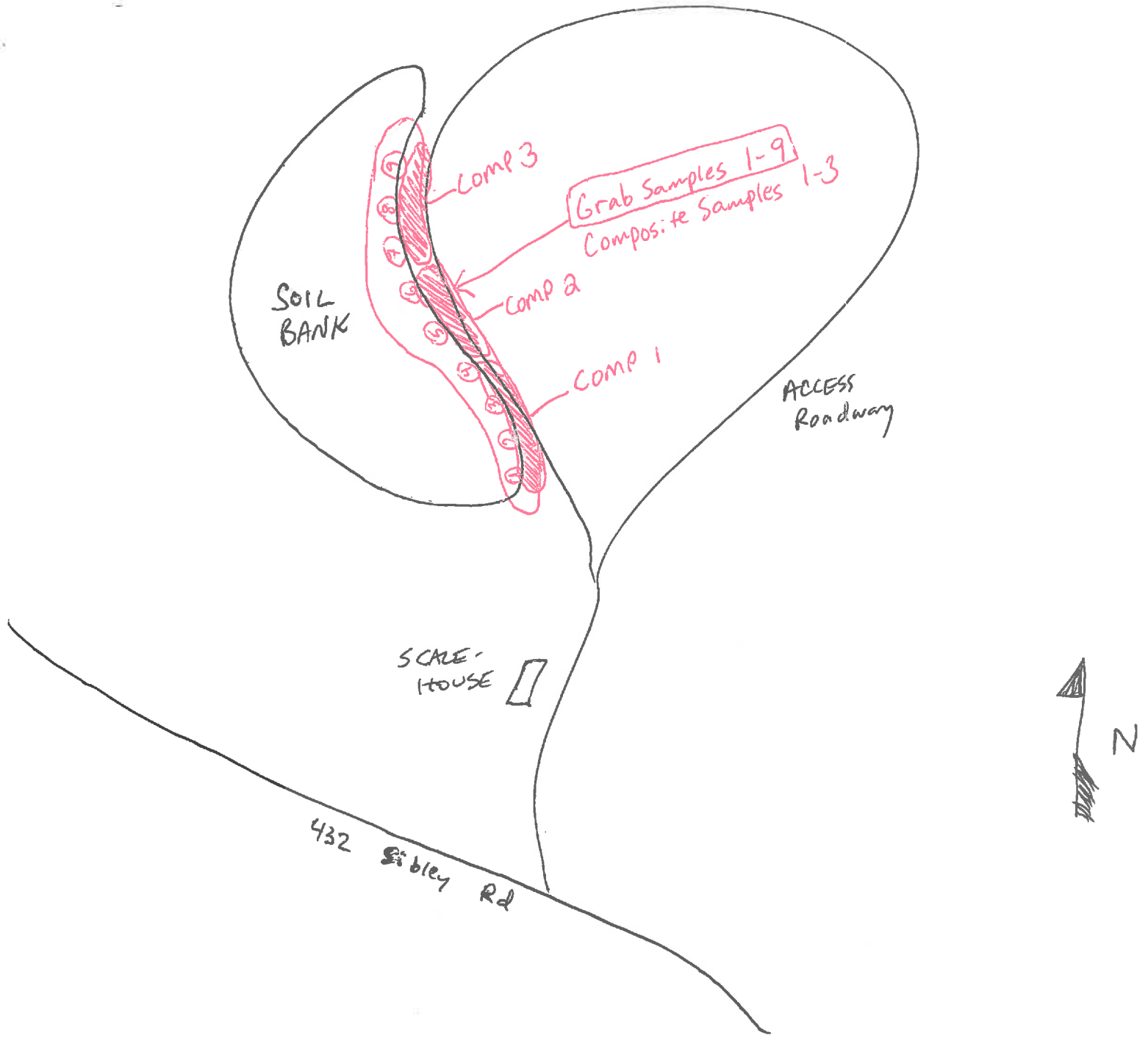
REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 1-29-20

from Russo Quarry
1/27/2020



URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **10 - Topsoil Particle Size Distribution Report and ASTM Test Results**

REVIEW STATUS: *Choose one of the following:*

- ☐ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☒ **DISAPPROVED**

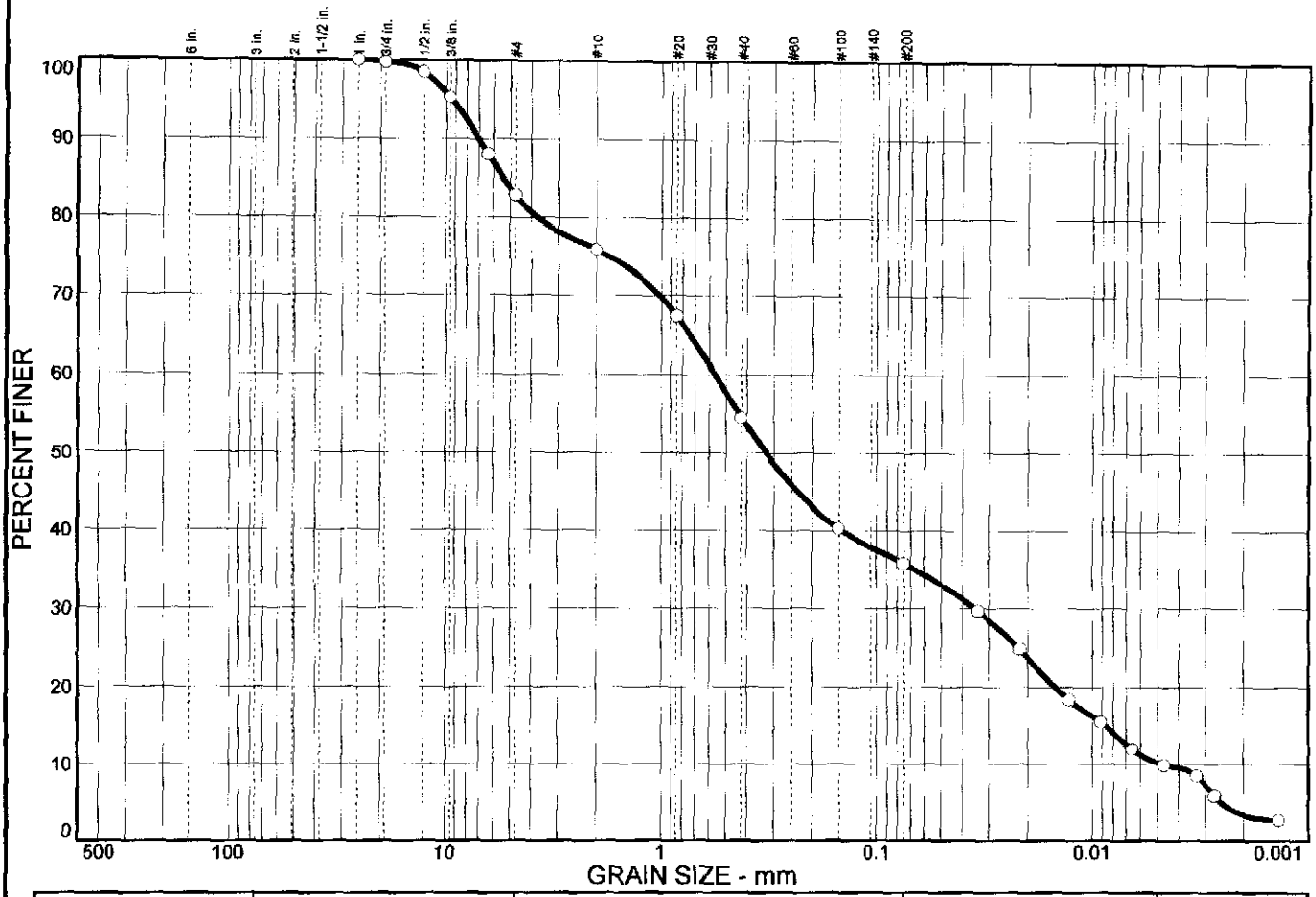
REVIEW COMMENTS:

1. Per the Contract Documents, topsoil shall have less than 10% gravel by weight.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 2-5-20

Particle Size Distribution Report ASTM D-422



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	17.1	47.0	25.8	10.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	99.8		
.5 in.	98.5		
.375 in.	95.3		
.25 in.	88.1		
#4	82.9		
#10	75.9		
#20	67.4		
#40	54.6		
#100	40.3		
#200	35.9		

* (no specification provided)

Soil Description

TOPSOIL MATERIAL; GERNATT-TS-COMP-1
ORGANIC CONTENT = 6.0 %
pH READING = 7.2

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 5.39 D_{60}= 0.563 D_{50}= 0.326
D_{30}= 0.0353 D_{15}= 0.0086 D_{10}= 0.0048
C_u= 116.99 C_c= 0.46

Classification

USCS= AASHTO=

Remarks

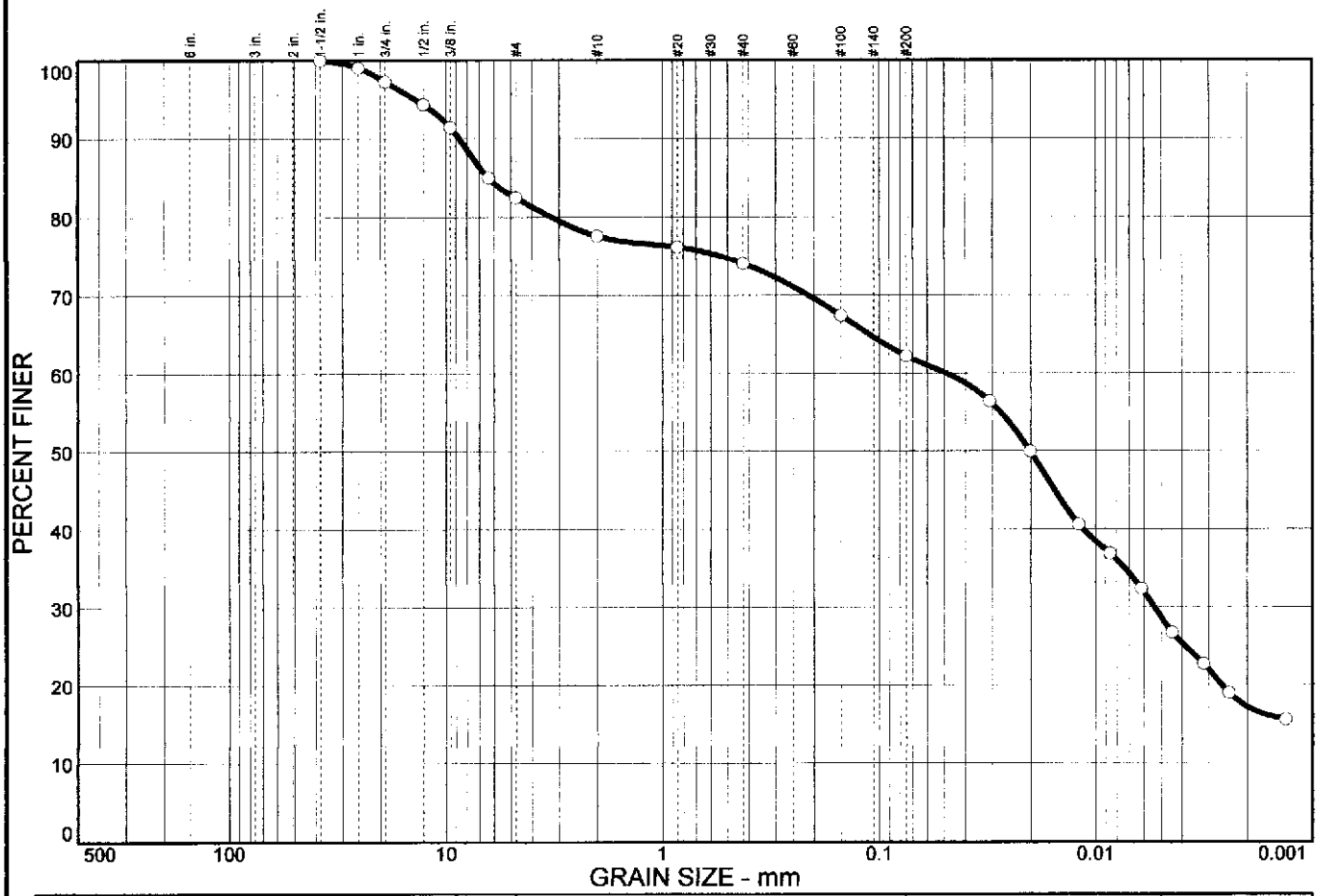
LTR-1
SAMPLED BY: GES, INC.
DATE RECEIVED: 9-16-19

Sample No.: 19-1628 **Source of Sample:** GERNATT **Date:** 10-7-19
Location: GERNATT: TS COMP 1 **Elev./Depth:**

SJB SERVICES, INC.

Client: GES, INC.
Project: 1318 NIAGARA STREET: BUFFALO, NY
Project No: BT-19-203 **Plate**

Particle Size Distribution Report ASTM D-422



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	17.5	20.3	33.5	28.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	99.1		
.75 in.	97.3		
.5 in.	94.3		
.375 in.	91.4		
.25 in.	85.0		
#4	82.5		
#10	77.6		
#20	76.2		
#40	74.1		
#100	67.4		
#200	62.2		

* (no specification provided)

Soil Description

TOPSOIL MATERIAL: RUSSO-TS-COMP-1
ORGANIC CONTENT =6.4 %
pH READING = 7.0

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 6.35 D_{60}= 0.0492 D_{50}= 0.0202
D_{30}= 0.0054 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

LTR-2
SAMPLED BY: GES, INC.
DATE RECEIVED: 9-16-19

Sample No.: 19-1629 **Source of Sample:** RUSSO **Date:** 10-7-19
Location: RUSSO-TS-COMP-1 **Elev./Depth:**

SJB SERVICES, INC.

Client: GES, INC.
Project: 1318 NIAGARA STREET: BUFFALO, NY
Project No: BT-19-203 **Plate**

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **11- Common Fill Particle Size Distribution Report and ASTM Test Results**

REVIEW STATUS: *Choose one of the following:*

- ☐ **APPROVED**
- ☒ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

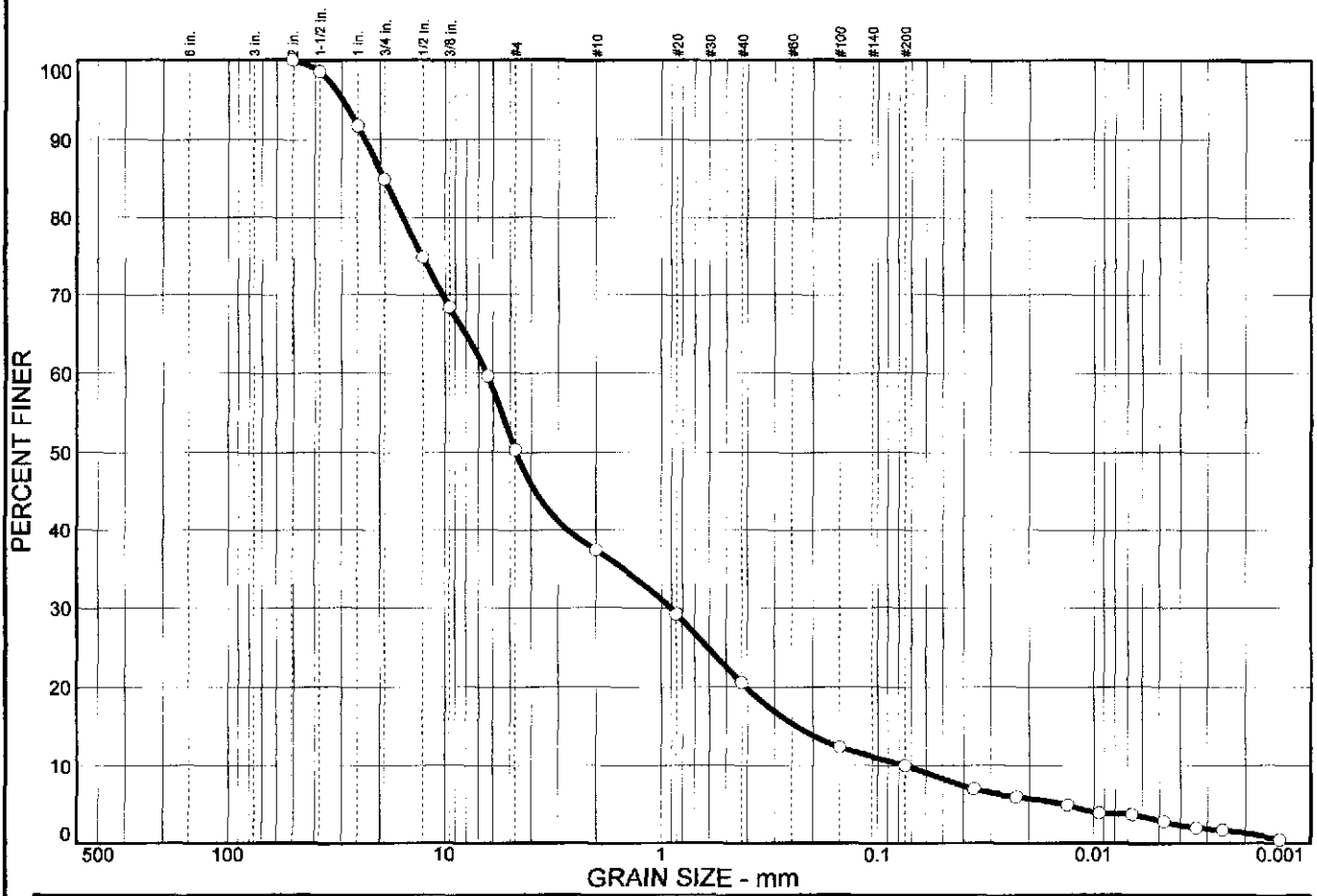
REVIEW COMMENTS:

1. Common fill imported to the site shall be representative of sample LTR-3.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 2-5-20

Particle Size Distribution Report ASTM D-422



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	49.6	40.4	7.0	3.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2 in.	100.0		
1.5 in.	98.6		
1 in.	91.7		
.75 in.	84.9		
.5 in.	74.9		
.375 in.	68.4		
.25 in.	59.6		
#4	50.4		
#10	37.4		
#20	29.2		
#40	20.5		
#100	12.4		
#200	10.0		

* (no specification provided)

Soil Description

COMMON FILL MATERIAL
GERNATT-CF-COMP-1

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 19.1 D_{60}= 6.44 D_{50}= 4.69
D_{30}= 0.911 D_{15}= 0.236 D_{10}= 0.0750
C_u= 85.89 C_c= 1.72

Classification

USCS= AASHTO=

Remarks

LTR-3
SAMPLED BY: GES, INC.
DATE RECEIVED: 9-16-19

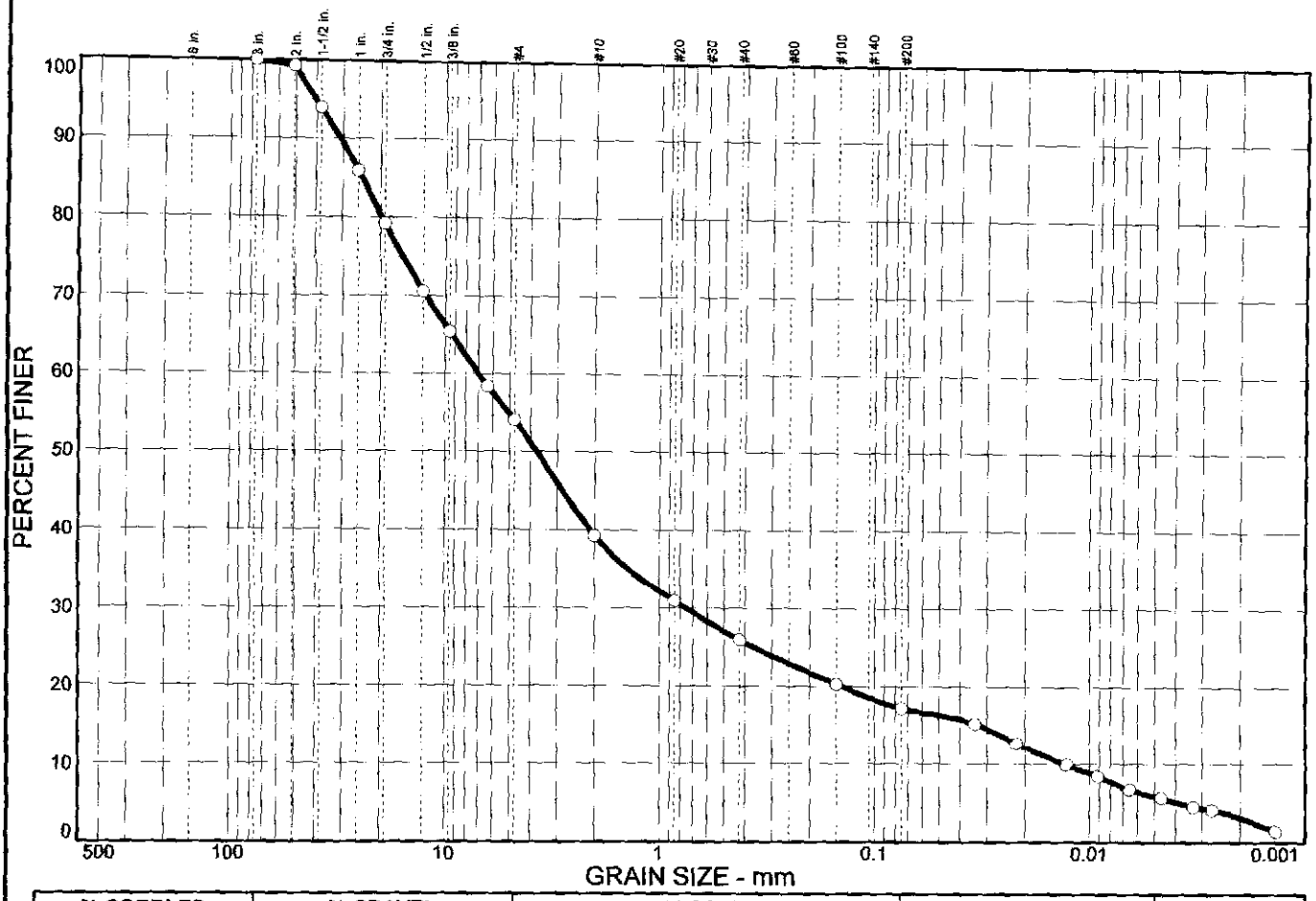
Sample No.: 19-1630 **Source of Sample:** GERNATT **Date:** 10-7-19
Location: GERNATT: CF COMP 1 **Elev./Depth:**

SJB SERVICES, INC.

Client: GES, INC.
Project: 1318 NIAGARA STREET: BUFFALO, NY

Project No: BT-19-203 **Plate**

Particle Size Distribution Report ASTM D-422



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	46.0	36.8	11.4	5.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3 in.	100.0		
2 in.	99.3		
1.5 in.	93.9		
1 in.	85.9		
.75 in.	79.2		
.5 in.	70.6		
.375 in.	65.4		
.25 in.	58.4		
#4	54.0		
#10	39.3		
#20	30.9		
#40	25.9		
#100	20.3		
#200	17.2		

* (no specification provided)

Soil Description

COMMON FILL MATERIAL
RUSSO-CF-COMP-1

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 24.4 D_{60}= 7.00 D_{50}= 3.75
D_{30}= 0.755 D_{15}= 0.0326 D_{10}= 0.0131
C_u= 533.37 C_c= 6.20

Classification

USCS= AASHTO=

Remarks

LTR-4
SAMPLED BY: GES, INC.
DATE RECEIVED: 9-16-19

Sample No.: 19-1631 **Source of Sample:** RUSSO **Date:** 10-7-19
Location: RUSSO-CF-COMP-1 **Elev./Depth:**

SJB SERVICES, INC.

Client: GES, INC.
Project: 1318 NIAGARA STREET: BUFFALO, NY

Project No: BT-19-203 **Plate**

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **12 - Backfill Analytical Category B Deliverable**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Kyle Jackson Date: 2-5-20

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

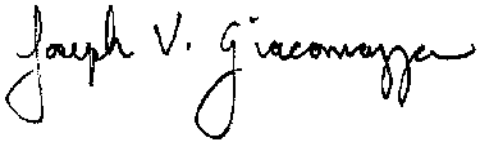
Job Number: 480-159547-1

Job Description: 1318 Niagara Street #E915213

Contract Number: C100700

For:
New York State D.E.C.
625 Broadway
12th Floor
Albany, NY 12233-7017

Attention: Mr. Dave Chiusano



Approved for release.
Joe V Giacomazza
Project Management Assistant II
10/28/2019 12:27 PM

Designee for
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10/28/2019

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Job Number: 480-159547-1

Job Description: 1318 Niagara Street #E915213

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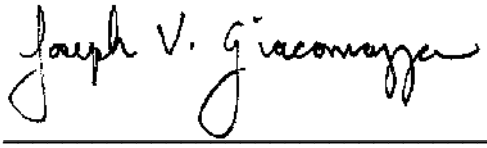

Approved for release.
Joe V Giacomazza
Project Management Assistant II
10/28/2019 12:27 PM

Designee for
Orlette S Johnson

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Job Narrative
480-159547-1

Comments
No additional comments.

Receipt
The samples were received on 9/16/2019 4:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 2.8º C, 2.9º C, 3.0º C and 3.1º C.

GC/MS VOA
Method 8260C: The laboratory control sample (LCS) for preparation batch 480-493565 and analytical batch 480-493547 recovered outside control limits for the following analyte: 1,1,1-Trichloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported. The following samples are impacted: RUSSO-TS-GRAB 1 (480-159547-1), RUSSO-TS-GRAB 2 (480-159547-2), RUSSO-TS-GRAB 3 (480-159547-3), RUSSO-TS-GRAB 4 (480-159547-4), RUSSO-TS-GRAB 5 (480-159547-5), RUSSO-TS-GRAB 6 (480-159547-6), RUSSO-CF-GRAB 1 (480-159547-9), RUSSO-CF-GRAB 2 (480-159547-10), RUSSO-CF-GRAB 3 (480-159547-11), RUSSO-CF-GRAB 4 (480-159547-12), RUSSO-CF-GRAB 5 (480-159547-13), RUSSO-CF-GRAB 6 (480-159547-14), RUSSO-CF-GRAB 7 (480-159547-15), RUSSO-CF-GRAB 8 (480-159547-16), RUSSO-CF-GRAB 9 (480-159547-17), GERNATT-CF-GRAB 1 (480-159547-21), GERNATT-CF-GRAB 2 (480-159547-22) and GERNATT-CF-GRAB 3 (480-159547-23).

Method 8260C: Surrogate recoveries for the following samples were outside the upper control limit: RUSSO-TS-GRAB 1 (480-159547-1) and RUSSO-TS-GRAB 6 (480-159547-6). The samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: Surrogate recovery for the following samples was outside the upper control limit: GERNATT-TS-GRAB 2 (480-159547-34), GERNATT-TS-GRAB 4 (480-159547-36) and GERNATT-TS-GRAB 6 (480-159547-38). This sample did not contain any target analytes above the reporting limit; therefore, re-extraction and/or re-analysis was not performed.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-493944 recovered above the upper control limit for Carbon tetrachloride. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported. The following sample is impacted: GERNATT-CF-GRAB 4 (480-159547-24).

Method 8260C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 480-493988 and analytical batch 480-493944 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The following samples are impacted: (480-159547-A-24-C MS) and (480-159547-A-24-D MSD).

Method 8260C: The laboratory control sample (LCS) for preparation batch 480-493988 and analytical batch 480-493944 recovered outside control limits for the following analytes: 2-Butanone. This analyte was biased high in the LCS and was not detected in the associated sample; therefore, the data have been reported. The following sample is impacted:GERNATT-CF-GRAB 4 (480-159547-24).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method 8082A: The following sample is associated with a continuing calibration verification (CCV 480-494086/29) that had recoveries for the surrogate Tetrachloro-m-xylene that were above acceptance limits: RUSSO-CF-COMP 3 (480-159547-20). The secondary surrogate Decachlorobiphenyl is within limits. Therefore, the data has been reported.

Method 8082A: The continuing calibration verification (CCV 480-494086/29) associated with batch 480-494086 recovered above the upper control limit for PCB-1016 and PCB-1260. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: RUSSO-CF-COMP 3 (480-159547-20).

Method 8081B: All primary data for analytical batch 494474 is reported from the RTX-CLPI column.

Method 8082A: The continuing calibration verification (CCV) associated with analytical batch 480-494086 recovered above the upper control limit for PCB-1262. The sample associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The following sample is impacted: RUSSO-CF-COMP 3 (480-159547-20).

Method 8082A: All primary data for analytical batch 494086 is reported from the ZB-35 column, while all primary data for analytical batch 494480 is reported from the ZB-5 column.

Method 8082A: The percent difference in a multi-component continuing calibration verification is assessed on the basis of the total amount, individual peak calculations are only listed for completeness.

Method 8151A: All primary data for analytical batch 495143 is reported from the RTX-CLPI column.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010C: The serial dilution (480-159547-E-7-A SD ^5) associated with batch 480-494449, exhibited results outside the quality control limits for Total Barium and Zinc. However, the post digestion spike (PDS) was compliant, therefore no corrective action was necessary.

Method 6010C: The recovery of post spike, (480-159547-E-7-A PDS), associated with batch 480-494449, exhibited a result outside quality control limits for Total Manganese. However, the serial dilution (SD) of this sample was compliant, therefore no corrective action was necessary.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS
Method 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-326599/11)

Method 537 (modified): Due to a shortage in the marketplace for 13C3-PFBS, the target analyte PFBS and/or Perfluoropentanesulfonic acid (PFPeS) could not be quantitated against 13C3-PFBS (its labeled variant) as listed in the SOP. PFBS and Perfluoropentanesulfonic acid (PFPeS) was quantitated versus 18O2-PFHxS instead. (ICV 320-328725/11)

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s).
RUSSO-TS-COMP 2 (480-159547-8)

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty. However, analyst judgment was used to positively identify the analyte.
RUSSO-CF-COMP 2 (480-159547-19)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 7196A: The matrix spike soluble recovery for was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7196A: The matrix spike soluble / matrix spike insoluble recoveries for 645471 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7196A: The matrix spike soluble/matrix spike insoluble (MSS/MSI) recoveries for batch 646036, which is a re-prep of batch 645571, were outside control limits due to sample matrix. The associated laboratory control sample (LCSS/LCSI) recoveries met acceptance criteria. Both sets of data have been reported.

Method 7196A: The matrix spike soluble (MSS) recovery for batch 646037, which is a re-prep of batch 645561, were outside control limits due to sample matrix. The associated laboratory control sample (LCSS/LCSI) recoveries met acceptance criteria. Both sets of data have been reported.

Method 9012B: The following samples were analyzed outside of analytical holding time due to laboratory error.RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8), RUSSO-CF-COMP 1 (480-159547-18), RUSSO-CF-COMP 2 (480-159547-19), RUSSO-CF-COMP 3 (480-159547-20), GERNATT-CF-COMP 1 (480-159547-30), GERNATT-CF-COMP 2 (480-159547-31), GERNATT-CF-COMP 3 (480-159547-32) and GERNATT-TS-COMP 1 (480-159547-39).

Method 9012B: The following sample was analyzed outside of analytical holding time due to samples being prepped with insufficient time remaining to analyze the samples within hold.GERNATT-TS-COMP 2 (480-159547-40).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method SHAKE: The following samples RUSSO-TS-COMP 2 (480-159547-8), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40) were yellow after the final volume.

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-326292, 320-327145 and 320-328853.

Method 3535: The following samples are leachate samples: RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8),

RUSSO-CF-COMP 1 (480-159547-18), RUSSO-CF-COMP 2 (480-159547-19), RUSSO-CF-COMP 3 (480-159547-20), GERNATT-CF-COMP 1 (480-159547-30), GERNATT-CF-COMP 2 (480-159547-31), GERNATT-CF-COMP 3 (480-159547-32), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40). The blanks associated with them are also included in this prep batch.

Method 3550C: The following sample: RUSSO-TS-COMP 2 (480-159547-8) was decanted prior to preparation.

Method 3550C: The following samples required a Florisil clean-up, via EPA Method 3620C, to reduce matrix interferences: RUSSO-TS-COMP 1 (480-159547-7), RUSSO-TS-COMP 2 (480-159547-8), GERNATT-TS-COMP 1 (480-159547-39) and GERNATT-TS-COMP 2 (480-159547-40).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
vs	Reported analyte concentrations are below 200 ug/kg and may be biased low due to the sample not being collected according to 5035A-L low-level specifications.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
V	Serial Dilution exceeds the control limits
W	PS: Post-digestion spike was outside control limits

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-159547-1	RUSSO-TS-GRAB 1	Solid	09/16/19 09:25	09/16/19 16:10	
480-159547-2	RUSSO-TS-GRAB 2	Solid	09/16/19 09:26	09/16/19 16:10	
480-159547-3	RUSSO-TS-GRAB 3	Solid	09/16/19 09:27	09/16/19 16:10	
480-159547-4	RUSSO-TS-GRAB 4	Solid	09/16/19 09:28	09/16/19 16:10	
480-159547-5	RUSSO-TS-GRAB 5	Solid	09/16/19 09:29	09/16/19 16:10	
480-159547-6	RUSSO-TS-GRAB 6	Solid	09/16/19 09:30	09/16/19 16:10	
480-159547-7	RUSSO-TS-COMP 1	Solid	09/16/19 09:35	09/16/19 16:10	
480-159547-8	RUSSO-TS-COMP 2	Solid	09/16/19 09:40	09/16/19 16:10	
480-159547-9	RUSSO-CF-GRAB 1	Solid	09/16/19 11:40	09/16/19 16:10	
480-159547-10	RUSSO-CF-GRAB 2	Solid	09/16/19 11:41	09/16/19 16:10	
480-159547-11	RUSSO-CF-GRAB 3	Solid	09/16/19 11:42	09/16/19 16:10	
480-159547-12	RUSSO-CF-GRAB 4	Solid	09/16/19 11:43	09/16/19 16:10	
480-159547-13	RUSSO-CF-GRAB 5	Solid	09/16/19 11:44	09/16/19 16:10	
480-159547-14	RUSSO-CF-GRAB 6	Solid	09/16/19 11:45	09/16/19 16:10	
480-159547-15	RUSSO-CF-GRAB 7	Solid	09/16/19 11:46	09/16/19 16:10	
480-159547-16	RUSSO-CF-GRAB 8	Solid	09/16/19 11:47	09/16/19 16:10	
480-159547-17	RUSSO-CF-GRAB 9	Solid	09/16/19 11:48	09/16/19 16:10	
480-159547-18	RUSSO-CF-COMP 1	Solid	09/16/19 11:50	09/16/19 16:10	
480-159547-19	RUSSO-CF-COMP 2	Solid	09/16/19 11:52	09/16/19 16:10	
480-159547-20	RUSSO-CF-COMP 3	Solid	09/16/19 11:55	09/16/19 16:10	
480-159547-21	GERNATT-CF-GRAB 1	Solid	09/16/19 13:40	09/16/19 16:10	
480-159547-22	GERNATT-CF-GRAB 2	Solid	09/16/19 13:41	09/16/19 16:10	
480-159547-23	GERNATT-CF-GRAB 3	Solid	09/16/19 13:42	09/16/19 16:10	
480-159547-24	GERNATT-CF-GRAB 4	Solid	09/16/19 13:43	09/16/19 16:10	
480-159547-25	GERNATT-CF-GRAB 5	Solid	09/16/19 13:44	09/16/19 16:10	
480-159547-26	GERNATT-CF-GRAB 6	Solid	09/16/19 13:45	09/16/19 16:10	
480-159547-27	GERNATT-CF-GRAB 7	Solid	09/16/19 13:46	09/16/19 16:10	
480-159547-28	GERNATT-CF-GRAB 8	Solid	09/16/19 13:47	09/16/19 16:10	
480-159547-29	GERNATT-CF-GRAB 9	Solid	09/16/19 13:48	09/16/19 16:10	
480-159547-30	GERNATT-CF-COMP 1	Solid	09/16/19 13:50	09/16/19 16:10	
480-159547-31	GERNATT-CF-COMP 2	Solid	09/16/19 13:53	09/16/19 16:10	
480-159547-32	GERNATT-CF-COMP 3	Solid	09/16/19 13:57	09/16/19 16:10	
480-159547-33	GERNATT-TS-GRAB 1	Solid	09/16/19 14:15	09/16/19 16:10	
480-159547-34	GERNATT-TS-GRAB 2	Solid	09/16/19 14:16	09/16/19 16:10	
480-159547-35	GERNATT-TS-GRAB 3	Solid	09/16/19 14:17	09/16/19 16:10	
480-159547-36	GERNATT-TS-GRAB 4	Solid	09/16/19 14:18	09/16/19 16:10	
480-159547-37	GERNATT-TS-GRAB 5	Solid	09/16/19 14:19	09/16/19 16:10	
480-159547-38	GERNATT-TS-GRAB 6	Solid	09/16/19 14:20	09/16/19 16:10	
480-159547-39	GERNATT-TS-COMP 1	Solid	09/16/19 14:30	09/16/19 16:10	
480-159547-40	GERNATT-TS-COMP 2	Solid	09/16/19 14:35	09/16/19 16:10	

Detection Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-GRAB 1 — Lab Sample ID: 480-159547-1

No Detections.

Client Sample ID: RUSSO-TS-GRAB 2 — Lab Sample ID: 480-159547-2

No Detections.

Client Sample ID: RUSSO-TS-GRAB 3 — Lab Sample ID: 480-159547-3

No Detections.

Client Sample ID: RUSSO-TS-GRAB 4 — Lab Sample ID: 480-159547-4

No Detections.

Client Sample ID: RUSSO-TS-GRAB 5 — Lab Sample ID: 480-159547-5

No Detections.

Client Sample ID: RUSSO-TS-GRAB 6 — Lab Sample ID: 480-159547-6

No Detections.

Client Sample ID: RUSSO-TS-COMP 1 — Lab Sample ID: 480-159547-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	34	J	220	23	ug/Kg	1	☼	8270D	Total/NA
Pyrene	26	J	220	25	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDD	0.81	J	2.1	0.41	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	10		2.1	0.44	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	3.6		2.1	0.50	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	0.90	J B	2.1	0.38	ug/Kg	1	☼	8081B	Total/NA
beta-BHC	0.76	J	2.1	0.38	ug/Kg	1	☼	8081B	Total/NA
delta-BHC	0.52	J B	2.1	0.39	ug/Kg	1	☼	8081B	Total/NA
gamma-BHC (Lindane)	0.54	J	2.1	0.39	ug/Kg	1	☼	8081B	Total/NA
Perfluorooctanoic acid (PFOA)	0.18	J	0.24	0.10	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.066	J	0.24	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.047	J	0.24	0.044	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.38	J	0.61	0.24	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.86	J	1.80	0.32	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.49	J	1.80	0.23	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	1.73	J	1.80	0.77	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	0.31	J	1.80	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.41	J B	1.80	0.15	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	1.04	J B	1.80	0.49	ng/L	1		537 (modified)	SPLP East
Arsenic	12.5		2.6		mg/Kg	1	☼	6010C	Total/NA
Barium	104	F1	0.65		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.79		0.26		mg/Kg	1	☼	6010C	Total/NA
Chromium	20.6		0.65		mg/Kg	1	☼	6010C	Total/NA
Copper	27.1		1.3		mg/Kg	1	☼	6010C	Total/NA
Lead	32.5		1.3		mg/Kg	1	☼	6010C	Total/NA
Manganese	402		0.26		mg/Kg	1	☼	6010C	Total/NA
Nickel	28.8		6.5		mg/Kg	1	☼	6010C	Total/NA
Zinc	84.2		2.6		mg/Kg	1	☼	6010C	Total/NA
Mercury	0.048		0.026		mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	47	J	230	25	ug/Kg	1	☼	8270D	Total/NA
Phenanthrene	34	J	230	34	ug/Kg	1	☼	8270D	Total/NA
Pyrene	37	J	230	27	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDD	0.89	J	2.3	0.45	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	6.3		2.3	0.48	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	2.8		2.3	0.54	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	1.7	J B	2.3	0.41	ug/Kg	1	☼	8081B	Total/NA
delta-BHC	0.57	J B	2.3	0.43	ug/Kg	1	☼	8081B	Total/NA
gamma-BHC (Lindane)	0.49	J	2.3	0.42	ug/Kg	1	☼	8081B	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.051	J	0.27	0.039	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.18	J	0.27	0.12	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.060	J	0.27	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.052	J I	0.27	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.58	J	0.68	0.27	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.63	J	1.93	0.34	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.33	J	1.93	0.24	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	1.56	J	1.93	0.82	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.36	J B	1.93	0.16	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	0.91	J B	1.93	0.52	ng/L	1		537 (modified)	SPLP East
Arsenic	9.5		2.7		mg/Kg	1	☼	6010C	Total/NA
Barium	117		0.68		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.74		0.27		mg/Kg	1	☼	6010C	Total/NA
Chromium	21.9		0.68		mg/Kg	1	☼	6010C	Total/NA
Copper	17.6		1.4		mg/Kg	1	☼	6010C	Total/NA
Lead	27.6		1.4		mg/Kg	1	☼	6010C	Total/NA
Manganese	411		0.27		mg/Kg	1	☼	6010C	Total/NA
Nickel	23.8		6.8		mg/Kg	1	☼	6010C	Total/NA
Zinc	84.9		2.7		mg/Kg	1	☼	6010C	Total/NA
Mercury	0.039		0.027		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: RUSSO-CF-GRAB 1
Lab Sample ID: 480-159547-9

No Detections.

Client Sample ID: RUSSO-CF-GRAB 2
Lab Sample ID: 480-159547-10

No Detections.

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11

No Detections.

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12

No Detections.

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13

No Detections.

Client Sample ID: RUSSO-CF-GRAB 6
Lab Sample ID: 480-159547-14

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-GRAB 7
Lab Sample ID: 480-159547-15

No Detections.

Client Sample ID: RUSSO-CF-GRAB 8
Lab Sample ID: 480-159547-16

No Detections.

Client Sample ID: RUSSO-CF-GRAB 9
Lab Sample ID: 480-159547-17

No Detections.

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDD	0.62	J	1.9	0.36	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	0.66	J	1.9	0.39	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	1.2	J	1.9	0.44	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	5.2	B	1.9	0.34	ug/Kg	1	☼	8081B	Total/NA
beta-BHC	1.3	J	1.9	0.34	ug/Kg	1	☼	8081B	Total/NA
gamma-BHC (Lindane)	0.39	J	1.9	0.34	ug/Kg	1	☼	8081B	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.21	0.026	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.21	J	0.52	0.21	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.56	J	1.77	0.31	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.27	J	1.77	0.22	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.77	0.15	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	0.73	J B	1.77	0.48	ng/L	1		537 (modified)	SPLP East
Arsenic	10.2		2.1		mg/Kg	1	☼	6010C	Total/NA
Barium	56.5		0.53		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.38		0.21		mg/Kg	1	☼	6010C	Total/NA
Chromium	9.9		0.53		mg/Kg	1	☼	6010C	Total/NA
Copper	23.9		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	11.5		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	410		0.21		mg/Kg	1	☼	6010C	Total/NA
Nickel	21.3		5.3		mg/Kg	1	☼	6010C	Total/NA
Zinc	106		2.1		mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	20	J	190	20	ug/Kg	1	☼	8270D	Total/NA
4,4'-DDD	0.61	J	1.8	0.36	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	0.59	J	1.8	0.38	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	1.1	J	1.8	0.43	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	0.56	J B	1.8	0.33	ug/Kg	1	☼	8081B	Total/NA
Perfluorobutanoic acid (PFBA)	0.033	J	0.23	0.032	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.35	J	0.57	0.23	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.46	J	1.84	0.32	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.84	0.16	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	0.64	J I B	1.84	0.50	ng/L	1		537 (modified)	SPLP East
Arsenic	12.9		2.2		mg/Kg	1	☼	6010C	Total/NA
Barium	73.8		0.55		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.47		0.22		mg/Kg	1	☼	6010C	Total/NA
Chromium	12.0		0.55		mg/Kg	1	☼	6010C	Total/NA
Copper	31.1		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	16.0		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	641		0.22		mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: RUSSO-CF-COMP 2 (Continued)
Lab Sample ID: 480-159547-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	26.3		5.5		mg/Kg	1	☼	6010C	Total/NA
Zinc	132		2.2		mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: RUSSO-CF-COMP 3
Lab Sample ID: 480-159547-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDD	0.63	J	1.9	0.36	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	0.57	J	1.9	0.39	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	1.1	J	1.9	0.43	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	0.88	J B	1.9	0.33	ug/Kg	1	☼	8081B	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.37	J	0.55	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.58	J	1.81	0.32	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.34	J	1.81	0.23	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.81	0.15	ng/L	1		537 (modified)	SPLP East
Arsenic	12.7		2.2		mg/Kg	1	☼	6010C	Total/NA
Barium	64.7		0.55		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.44		0.22		mg/Kg	1	☼	6010C	Total/NA
Chromium	12.0		0.55		mg/Kg	1	☼	6010C	Total/NA
Copper	31.0		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	16.2		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	564		0.22		mg/Kg	1	☼	6010C	Total/NA
Nickel	25.3		5.5		mg/Kg	1	☼	6010C	Total/NA
Zinc	152		2.2		mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: GERNATT-CF-GRAB 1
Lab Sample ID: 480-159547-21

No Detections.

Client Sample ID: GERNATT-CF-GRAB 2
Lab Sample ID: 480-159547-22

No Detections.

Client Sample ID: GERNATT-CF-GRAB 3
Lab Sample ID: 480-159547-23

No Detections.

Client Sample ID: GERNATT-CF-GRAB 4
Lab Sample ID: 480-159547-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	2.5	J	5.3	2.4	ug/Kg	1	☼	8260C	Total/NA

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25

No Detections.

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26

No Detections.

Client Sample ID: GERNATT-CF-GRAB 7
Lab Sample ID: 480-159547-27

No Detections.

Client Sample ID: GERNATT-CF-GRAB 8
Lab Sample ID: 480-159547-28

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: New York State D.E.C.
Project/Site: 1318 Niagara Street #E915213

Job ID: 480-159547-1

Client Sample ID: GERNATT-CF-GRAB 9 — Lab Sample ID: 480-159547-29

No Detections.

Client Sample ID: GERNATT-CF-COMP 1 — Lab Sample ID: 480-159547-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	0.85	J	1.8	0.41	ug/Kg	1	☼	8081B	Total/NA
alpha-BHC	1.9	B	1.8	0.31	ug/Kg	1	☼	8081B	Total/NA
Perfluorobutanoic acid (PFBA)	0.030	J	0.21	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.47	J	1.73	0.30	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.27	J	1.73	0.22	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.73	0.15	ng/L	1		537 (modified)	SPLP East
Arsenic	12.8		2.1		mg/Kg	1	☼	6010C	Total/NA
Barium	45.1		0.53		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.47		0.21		mg/Kg	1	☼	6010C	Total/NA
Chromium	11.0		0.53		mg/Kg	1	☼	6010C	Total/NA
Copper	33.7		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	17.2		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	514		0.21		mg/Kg	1	☼	6010C	Total/NA
Nickel	27.5		5.3		mg/Kg	1	☼	6010C	Total/NA
Zinc	116		2.1		mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: GERNATT-CF-COMP 2 — Lab Sample ID: 480-159547-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
alpha-BHC	0.42	J B	1.8	0.31	ug/Kg	1	☼	8081B	Total/NA
Perfluorobutanoic acid (PFBA)	0.032	J	0.20	0.028	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.43	J	1.86	0.33	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.33	J	1.86	0.23	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.30	J B	1.86	0.16	ng/L	1		537 (modified)	SPLP East
Arsenic	7.5		2.2		mg/Kg	1	☼	6010C	Total/NA
Barium	45.1		0.54		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.87		0.22		mg/Kg	1	☼	6010C	Total/NA
Chromium	29.2		0.54		mg/Kg	1	☼	6010C	Total/NA
Copper	29.5		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	11.7		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	508		0.22		mg/Kg	1	☼	6010C	Total/NA
Nickel	32.1		5.4		mg/Kg	1	☼	6010C	Total/NA
Zinc	97.7		2.2		mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: GERNATT-CF-COMP 3 — Lab Sample ID: 480-159547-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.039	J	0.21	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.57	J	1.81	0.32	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.23	J B	1.81	0.15	ng/L	1		537 (modified)	SPLP East
Arsenic	9.3		2.2		mg/Kg	1	☼	6010C	Total/NA
Barium	43.1		0.54		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.40		0.22		mg/Kg	1	☼	6010C	Total/NA
Chromium	9.5		0.54		mg/Kg	1	☼	6010C	Total/NA
Copper	30.7		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	14.8		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	611		0.22		mg/Kg	1	☼	6010C	Total/NA
Nickel	25.2		5.4		mg/Kg	1	☼	6010C	Total/NA
Zinc	107		2.2		mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-GRAB 1
Lab Sample ID: 480-159547-33

No Detections.

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34

No Detections.

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35

No Detections.

Client Sample ID: GERNATT-TS-GRAB 4
Lab Sample ID: 480-159547-36

No Detections.

Client Sample ID: GERNATT-TS-GRAB 5
Lab Sample ID: 480-159547-37

No Detections.

Client Sample ID: GERNATT-TS-GRAB 6
Lab Sample ID: 480-159547-38

No Detections.

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDD	5.7		1.8	0.36	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDE	11		1.8	0.39	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	5.2		1.8	0.43	ug/Kg	1	☼	8081B	Total/NA
Dieldrin	30		1.8	0.44	ug/Kg	1	☼	8081B	Total/NA
Endosulfan II	0.91	J	1.8	0.33	ug/Kg	1	☼	8081B	Total/NA
Endrin	2.1		1.8	0.37	ug/Kg	1	☼	8081B	Total/NA
Heptachlor	0.99	J	1.8	0.40	ug/Kg	1	☼	8081B	Total/NA
Perfluorobutanoic acid (PFBA)	0.16	J	0.21	0.030	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.091	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.050	J	0.21	0.038	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.37	J	0.53	0.21	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.99	J	1.83	0.32	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.83	J	1.83	0.23	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	2.65		1.83	0.78	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	0.57	J	1.83	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.37	J B	1.83	0.16	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	1.01	J	1.83	0.49	ng/L	1		537 (modified)	SPLP East
Arsenic	8.1		2.3		mg/Kg	1	☼	6010C	Total/NA
Barium	67.1		0.56		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.38		0.23		mg/Kg	1	☼	6010C	Total/NA
Chromium	11.6		0.56		mg/Kg	1	☼	6010C	Total/NA
Copper	20.1		1.1		mg/Kg	1	☼	6010C	Total/NA
Lead	15.1		1.1		mg/Kg	1	☼	6010C	Total/NA
Manganese	798		0.23		mg/Kg	1	☼	6010C	Total/NA
Nickel	16.4		5.6		mg/Kg	1	☼	6010C	Total/NA
Zinc	92.7		2.3		mg/Kg	1	☼	6010C	Total/NA
Mercury	0.041		0.022		mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDD	5.2		1.9	0.37	ug/Kg	1	☼	8081B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GERNATT-TS-COMP 2 (Continued)
Lab Sample ID: 480-159547-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDE	10		1.9	0.40	ug/Kg	1	☼	8081B	Total/NA
4,4'-DDT	4.3		1.9	0.45	ug/Kg	1	☼	8081B	Total/NA
delta-BHC	0.47	J B	1.9	0.36	ug/Kg	1	☼	8081B	Total/NA
Dieldrin	27		1.9	0.46	ug/Kg	1	☼	8081B	Total/NA
Endosulfan II	0.85	J	1.9	0.34	ug/Kg	1	☼	8081B	Total/NA
Endrin	1.7	J	1.9	0.38	ug/Kg	1	☼	8081B	Total/NA
gamma-BHC (Lindane)	0.63	J	1.9	0.35	ug/Kg	1	☼	8081B	Total/NA
Heptachlor	0.89	J	1.9	0.41	ug/Kg	1	☼	8081B	Total/NA
Perfluorooctanoic acid (PFOA)	0.098	J	0.22	0.096	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.44	J	0.56	0.22	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorobutanoic acid (PFBA)	0.97	J	1.83	0.32	ng/L	1		537 (modified)	SPLP East
Perfluoropentanoic acid (PFPeA)	0.46	J	1.83	0.45	ng/L	1		537 (modified)	SPLP East
Perfluorohexanoic acid (PFHxA)	0.61	J	1.83	0.53	ng/L	1		537 (modified)	SPLP East
Perfluoroheptanoic acid (PFHpA)	0.98	J	1.83	0.23	ng/L	1		537 (modified)	SPLP East
Perfluorooctanoic acid (PFOA)	2.70		1.83	0.78	ng/L	1		537 (modified)	SPLP East
Perfluorononanoic acid (PFNA)	0.56	J	1.83	0.25	ng/L	1		537 (modified)	SPLP East
Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	1.83	0.16	ng/L	1		537 (modified)	SPLP East
Perfluorooctanesulfonic acid (PFOS)	1.09	J	1.83	0.49	ng/L	1		537 (modified)	SPLP East
Arsenic	8.8		2.3		mg/Kg	1	☼	6010C	Total/NA
Barium	78.8		0.58		mg/Kg	1	☼	6010C	Total/NA
Beryllium	0.46		0.23		mg/Kg	1	☼	6010C	Total/NA
Chromium	13.3		0.58		mg/Kg	1	☼	6010C	Total/NA
Copper	24.7		1.2		mg/Kg	1	☼	6010C	Total/NA
Lead	17.8		1.2		mg/Kg	1	☼	6010C	Total/NA
Manganese	889		0.23		mg/Kg	1	☼	6010C	Total/NA
Nickel	22.0		5.8		mg/Kg	1	☼	6010C	Total/NA
Zinc	115		2.3		mg/Kg	1	☼	6010C	Total/NA
Mercury	0.041		0.023		mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
8081B	Organochlorine Pesticides (GC)	SW846	TAL BUF
8082A	Polychlorinated Biphenyls (PCBs) (GC)	SW846	TAL BUF
8151A	Herbicides (GC)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL EDI
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF
1312	SPLP Extraction	SW846	TAL SAC
3050B	Preparation, Metals	SW846	TAL BUF
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	TAL EDI
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
3550C	Ultrasonic Extraction	SW846	TAL BUF
5035A_L	Closed System Purge and Trap	SW846	TAL BUF
7471B	Preparation, Mercury	SW846	TAL BUF
8151A	Extraction (Herbicides)	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL BUF
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1

Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 82.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.0	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,1-Dichloroethane	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,1-Dichloroethene	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2,4-Trimethylbenzene	ND	vs	6.0	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2-Dichlorobenzene	ND	vs	6.0	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,2-Dichloroethane	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,3,5-Trimethylbenzene	ND	vs	6.0	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,3-Dichlorobenzene	ND	vs	6.0	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,4-Dichlorobenzene	ND	vs	6.0	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
2-Butanone (MEK)	ND	vs	30	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Acetone	ND	vs	30	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Benzene	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Carbon tetrachloride	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Chlorobenzene	ND	vs	6.0	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Chloroform	ND	vs	6.0	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
cis-1,2-Dichloroethene	ND	vs	6.0	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Ethylbenzene	ND	vs	6.0	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Methyl tert-butyl ether	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Methylene Chloride	ND	vs	6.0	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
n-Butylbenzene	ND	vs	6.0	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
N-Propylbenzene	ND	vs	6.0	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
sec-Butylbenzene	ND	vs	6.0	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Tetrachloroethene	ND	vs	6.0	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Toluene	ND	vs	6.0	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
trans-1,2-Dichloroethene	ND	vs	6.0	0.62	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Trichloroethene	ND	vs	6.0	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Vinyl chloride	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1
tert-Butylbenzene	ND	vs	6.0	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*131*	*X*	*64 - 126*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
4-Bromofluorobenzene (Surr)	*123*		*72 - 126*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/23/19 13:58*	*09/23/19 16:28*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/23/19 13:58*	*09/23/19 16:28*	*1*

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2

Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 75.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.6	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,1-Dichloroethane	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,1-Dichloroethene	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2,4-Trimethylbenzene	ND	vs	6.6	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2-Dichlorobenzene	ND	vs	6.6	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,2-Dichloroethane	ND	vs	6.6	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,3,5-Trimethylbenzene	ND	vs	6.6	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 75.6

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	vs	6.6	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,4-Dichlorobenzene	ND	vs	6.6	0.93	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
1,4-Dioxane	ND	vs	130	29	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
2-Butanone (MEK)	ND	vs	33	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Acetone	ND	vs	33	5.6	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Benzene	ND	vs	6.6	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Carbon tetrachloride	ND	vs	6.6	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Chlorobenzene	ND	vs	6.6	0.87	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Chloroform	ND	vs	6.6	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
cis-1,2-Dichloroethene	ND	vs	6.6	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Ethylbenzene	ND	vs	6.6	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Methyl tert-butyl ether	ND	vs	6.6	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Methylene Chloride	ND	vs	6.6	3.0	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
n-Butylbenzene	ND	vs	6.6	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
N-Propylbenzene	ND	vs	6.6	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
sec-Butylbenzene	ND	vs	6.6	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Tetrachloroethene	ND	vs	6.6	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Toluene	ND	vs	6.6	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
trans-1,2-Dichloroethene	ND	vs	6.6	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Trichloroethene	ND	vs	6.6	1.5	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Vinyl chloride	ND	vs	6.6	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
Xylenes, Total	ND	vs	13	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1
tert-Butylbenzene	ND	vs	6.6	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 126*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
Toluene-d8 (Surr)	*93*		*71 - 125*	*09/23/19 13:58*	*09/23/19 16:52*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 16:52*	*1*

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 73.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.8	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,1-Dichloroethane	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,1-Dichloroethene	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2,4-Trimethylbenzene	ND	vs	6.8	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2-Dichlorobenzene	ND	vs	6.8	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,2-Dichloroethane	ND	vs	6.8	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,3,5-Trimethylbenzene	ND	vs	6.8	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,3-Dichlorobenzene	ND	vs	6.8	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,4-Dichlorobenzene	ND	vs	6.8	0.95	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
1,4-Dioxane	ND	vs	140	30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
2-Butanone (MEK)	ND	vs	34	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Acetone	ND	vs	34	5.7	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Benzene	ND	vs	6.8	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Carbon tetrachloride	ND	vs	6.8	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 73.4

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND	vs	6.8	0.90	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Chloroform	ND	vs	6.8	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
cis-1,2-Dichloroethene	ND	vs	6.8	0.87	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Ethylbenzene	ND	vs	6.8	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Methyl tert-butyl ether	ND	vs	6.8	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Methylene Chloride	ND	vs	6.8	3.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
n-Butylbenzene	ND	vs	6.8	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
N-Propylbenzene	ND	vs	6.8	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
sec-Butylbenzene	ND	vs	6.8	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Tetrachloroethene	ND	vs	6.8	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Toluene	ND	vs	6.8	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
trans-1,2-Dichloroethene	ND	vs	6.8	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Trichloroethene	ND	vs	6.8	1.5	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Vinyl chloride	ND	vs	6.8	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
Xylenes, Total	ND	vs	14	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1
tert-Butylbenzene	ND	vs	6.8	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
4-Bromofluorobenzene (Surr)	*98*		*72 - 126*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
Toluene-d8 (Surr)	*93*		*71 - 125*	*09/23/19 13:58*	*09/23/19 17:17*	*1*
Dibromofluoromethane (Surr)	*100*		*60 - 140*	*09/23/19 13:58*	*09/23/19 17:17*	*1*

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4
Date Collected: 09/16/19 09:28
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.0	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,1-Dichloroethane	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,1-Dichloroethene	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2,4-Trimethylbenzene	ND	vs	6.0	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2-Dichlorobenzene	ND	vs	6.0	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,2-Dichloroethane	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,3,5-Trimethylbenzene	ND	vs	6.0	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,3-Dichlorobenzene	ND	vs	6.0	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,4-Dichlorobenzene	ND	vs	6.0	0.84	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
2-Butanone (MEK)	ND	vs	30	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Acetone	ND	vs	30	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Benzene	ND	vs	6.0	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Carbon tetrachloride	ND	vs	6.0	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Chlorobenzene	ND	vs	6.0	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Chloroform	ND	vs	6.0	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
cis-1,2-Dichloroethene	ND	vs	6.0	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Ethylbenzene	ND	vs	6.0	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Methyl tert-butyl ether	ND	vs	6.0	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Methylene Chloride	ND	vs	6.0	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
n-Butylbenzene	ND	vs	6.0	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4

Date Collected: 09/16/19 09:28
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.7

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND	vs	6.0	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
sec-Butylbenzene	ND	vs	6.0	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Tetrachloroethene	ND	vs	6.0	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Toluene	ND	vs	6.0	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
trans-1,2-Dichloroethene	ND	vs	6.0	0.62	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Trichloroethene	ND	vs	6.0	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Vinyl chloride	ND	vs	6.0	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1
tert-Butylbenzene	ND	vs	6.0	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 17:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*64 - 126*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*72 - 126*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
Toluene-d8 (Surr)	*95*		*71 - 125*	*09/23/19 13:58*	*09/23/19 17:41*	*1*
Dibromofluoromethane (Surr)	*103*		*60 - 140*	*09/23/19 13:58*	*09/23/19 17:41*	*1*

Client Sample ID: RUSSO-TS-GRAB 5
Lab Sample ID: 480-159547-5

Date Collected: 09/16/19 09:29
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 79.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,1-Dichloroethane	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,1-Dichloroethene	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2,4-Trimethylbenzene	ND	vs	6.2	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2-Dichlorobenzene	ND	vs	6.2	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,2-Dichloroethane	ND	vs	6.2	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,3,5-Trimethylbenzene	ND	vs	6.2	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,3-Dichlorobenzene	ND	vs	6.2	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,4-Dichlorobenzene	ND	vs	6.2	0.86	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
1,4-Dioxane	ND	vs	120	27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
2-Butanone (MEK)	ND	vs	31	2.3	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Acetone	ND	vs	31	5.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Benzene	ND	vs	6.2	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Carbon tetrachloride	ND	vs	6.2	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Chlorobenzene	ND	vs	6.2	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Chloroform	ND	vs	6.2	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
cis-1,2-Dichloroethene	ND	vs	6.2	0.79	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Ethylbenzene	ND	vs	6.2	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Methyl tert-butyl ether	ND	vs	6.2	0.61	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Methylene Chloride	ND	vs	6.2	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
n-Butylbenzene	ND	vs	6.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
N-Propylbenzene	ND	vs	6.2	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
sec-Butylbenzene	ND	vs	6.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Tetrachloroethene	ND	vs	6.2	0.83	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Toluene	ND	vs	6.2	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
trans-1,2-Dichloroethene	ND	vs	6.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Trichloroethene	ND	vs	6.2	1.4	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
Vinyl chloride	ND	vs	6.2	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1

Client Sample ID: RUSSO-TS-GRAB 5
Lab Sample ID: 480-159547-5
Date Collected: 09/16/19 09:29
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 79.5

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1
tert-Butylbenzene	ND	vs	6.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*64 - 126*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
Toluene-d8 (Surr)	*94*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:06*	*1*
Dibromofluoromethane (Surr)	*102*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:06*	*1*

Client Sample ID: RUSSO-TS-GRAB 6
Lab Sample ID: 480-159547-6
Date Collected: 09/16/19 09:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	6.1	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,1-Dichloroethane	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,1-Dichloroethene	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2,4-Trimethylbenzene	ND	vs	6.1	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2-Dichlorobenzene	ND	vs	6.1	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,2-Dichloroethane	ND	vs	6.1	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,3,5-Trimethylbenzene	ND	vs	6.1	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,3-Dichlorobenzene	ND	vs	6.1	0.31	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,4-Dichlorobenzene	ND	vs	6.1	0.85	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
1,4-Dioxane	ND	vs	120	27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
2-Butanone (MEK)	ND	vs	31	2.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Acetone	ND	vs	31	5.1	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Benzene	ND	vs	6.1	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Carbon tetrachloride	ND	vs	6.1	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Chlorobenzene	ND	vs	6.1	0.81	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Chloroform	ND	vs	6.1	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
cis-1,2-Dichloroethene	ND	vs	6.1	0.78	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Ethylbenzene	ND	vs	6.1	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Methyl tert-butyl ether	ND	vs	6.1	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Methylene Chloride	ND	vs	6.1	2.8	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
n-Butylbenzene	ND	vs	6.1	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
N-Propylbenzene	ND	vs	6.1	0.49	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
sec-Butylbenzene	ND	vs	6.1	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Tetrachloroethene	ND	vs	6.1	0.82	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Toluene	ND	vs	6.1	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
trans-1,2-Dichloroethene	ND	vs	6.1	0.63	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Trichloroethene	ND	vs	6.1	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Vinyl chloride	ND	vs	6.1	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
Xylenes, Total	ND	vs	12	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1
tert-Butylbenzene	ND	vs	6.1	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*131*	*X*	*64 - 126*	*09/23/19 13:58*	*09/23/19 18:30*	*1*
4-Bromofluorobenzene (Surr)	*122*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:30*	*1*
Toluene-d8 (Surr)	*117*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:30*	*1*

Client Sample ID: RUSSO-TS-GRAB 6
Lab Sample ID: 480-159547-6
Date Collected: 09/16/19 09:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.6

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*125*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:30*	*1*

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.86**	**J**	1.80	0.32	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoropentanoic acid (PFPeA)	1.80		1.80	0.44	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorohexanoic acid (PFHxA)	1.80		1.80	0.52	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroheptanoic acid (PFHpA)	**0.49**	**J**	1.80	0.23	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorooctanoic acid (PFOA)	**1.73**	**J**	1.80	0.77	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorononanoic acid (PFNA)	**0.31**	**J**	1.80	0.24	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorodecanoic acid (PFDA)	1.80		1.80	0.28	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroundecanoic acid (PFUnA)	1.80		1.80	0.99	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorododecanoic acid (PFDoA)	1.80		1.80	0.50	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorotridecanoic acid (PFTriA)	1.80		1.80	1.17	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorotetradecanoic acid (PFTeA)	1.80		1.80	0.26	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorobutanesulfonic acid (PFBS)	1.80		1.80	0.18	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorohexanesulfonic acid (PFHxS)	**0.41**	**J B**	1.80	0.15	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.80		1.80	0.17	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorooctanesulfonic acid (PFOS)	**1.04**	**J B**	1.80	0.49	ng/L		10/07/19 06:04	10/09/19 01:21	1
Perfluorodecanesulfonic acid (PFDS)	1.80		1.80	0.29	ng/L		10/07/19 06:04	10/09/19 01:21	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFHxA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFUnA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFDoA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C2 PFTeDA	*96*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFOS	*98*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C4 PFHpA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*
13C5 PFPeA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:21*	*1*

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 78.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Acenaphthylene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Anthracene	ND		220	53	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7

Date Collected: 09/16/19 09:35
Matrix: Solid

Date Received: 09/16/19 16:10
Percent Solids: 78.5

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		220	22	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[a]pyrene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[b]fluoranthene	ND		220	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[g,h,i]perylene	ND		220	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Benzo[k]fluoranthene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Chrysene	ND		220	48	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Dibenz(a,h)anthracene	ND		220	38	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Dibenzofuran	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Fluoranthene	**34**	**J**	220	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Fluorene	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Hexachlorobenzene	ND		220	29	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Indeno[1,2,3-cd]pyrene	ND		220	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
2-Methylphenol	ND		220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Methylphenol, 3 & 4	ND		420	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Naphthalene	ND		220	28	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
1,4-Dioxane	ND		250	70	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Pentachlorophenol	ND		420	220	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Phenanthrene	ND		220	32	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Phenol	ND		220	33	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1
Pyrene	**26**	**J**	220	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*60 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
Nitrobenzene-d5 (Surr)	*87*		*53 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
Phenol-d5 (Surr)	*83*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
p-Terphenyl-d14 (Surr)	*99*		*79 - 130*	*09/25/19 14:37*	*09/26/19 20:15*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:15*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.81**	**J**	2.1	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
4,4'-DDE	**10**		2.1	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
4,4'-DDT	**3.6**		2.1	0.50	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Aldrin	ND		2.1	0.52	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
alpha-BHC	**0.90**	**J B**	2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
cis-Chlordane	ND		2.1	1.1	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
beta-BHC	**0.76**	**J**	2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
delta-BHC	**0.52**	**J B**	2.1	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Dieldrin	ND		2.1	0.51	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan I	ND		2.1	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan II	ND		2.1	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endosulfan sulfate	ND		2.1	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Endrin	ND		2.1	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
gamma-BHC (Lindane)	**0.54**	**J**	2.1	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1
Heptachlor	ND		2.1	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 14:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*103*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:11*	*1*
DCB Decachlorobiphenyl	*116*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:11*	*1*

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 78.5

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:11*	*1*
Tetrachloro-m-xylene	*68*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1221	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1232	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1242	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1248	ND		0.30	0.059	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1254	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1260	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1262	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
PCB-1268	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1
Polychlorinated biphenyls, Total	ND		0.30	0.14	mg/Kg	☼	09/24/19 05:51	09/27/19 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*120*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:08*	*1*
DCB Decachlorobiphenyl	*108*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:08*	*1*
Tetrachloro-m-xylene	*112*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:08*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:08*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		21	7.6	ug/Kg	☼	09/25/19 05:49	10/01/19 11:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:18*	*1*
2,4-Dichlorophenylacetic acid	*68*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:18*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.24		0.24	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoropentanoic acid (PFPeA)	0.24		0.24	0.094	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorohexanoic acid (PFHxA)	0.24		0.24	0.051	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroheptanoic acid (PFHpA)	0.24		0.24	0.035	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.24	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorononanoic acid (PFNA)	**0.066**	**J**	0.24	0.044	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorodecanoic acid (PFDA)	0.24		0.24	0.027	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroundecanoic acid (PFUnA)	**0.047**	**J**	0.24	0.044	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorododecanoic acid (PFDoA)	0.24		0.24	0.082	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorotridecanoic acid (PFTriA)	0.24		0.24	0.062	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorotetradecanoic acid (PFTeA)	0.24		0.24	0.066	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorobutanesulfonic acid (PFBS)	0.24		0.24	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorohexanesulfonic acid (PFHxS)	0.24		0.24	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.24		0.24	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorooctanesulfonic acid (PFOS)	**0.38**	**J**	0.61	0.24	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
Perfluorodecanesulfonic acid (PFDS)	0.24		0.24	0.048	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7

Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 78.5

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonamide (FOSA)	0.24		0.24	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.44		2.44	0.48	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.44		2.44	0.45	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
6:2 FTS	2.44		2.44	0.18	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1
8:2 FTS	2.44		2.44	0.31	ug/Kg	☼	09/27/19 10:45	10/10/19 05:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C5 PFPeA	*88*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFHxA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFHpA	*87*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C5 PFNA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFUnA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFDoA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C2 PFTeDA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
18O2 PFHxS	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
13C8 FOSA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
d3-NMeFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
d5-NEtFOSAA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
M2-6:2 FTS	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*
M2-8:2 FTS	*118*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:46*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.5**		2.6		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Barium	**104**	**F1**	0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Beryllium	**0.79**		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Cadmium	ND		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Chromium	**20.6**		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Copper	**27.1**		1.3		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Lead	**32.5**		1.3		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Manganese	**402**		0.26		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Nickel	**28.8**		6.5		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Selenium	ND		5.2		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Silver	ND		0.78		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1
Zinc	**84.2**		2.6		mg/Kg	☼	09/25/19 07:01	09/26/19 12:46	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.048**		0.026		mg/Kg	☼	10/11/19 13:45	10/11/19 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.5		mg/Kg	☼	10/08/19 08:53	10/08/19 15:40	1
Cr (VI)	ND		2.6		mg/Kg	☼	10/09/19 07:53	10/10/19 16:24	1
Cyanide, Total	ND	H	1.2		mg/Kg	☼	09/30/19 20:45	10/02/19 09:41	1

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8

Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.63**	**J**	1.93	0.34	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoropentanoic acid (PFPeA)	1.93		1.93	0.47	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorohexanoic acid (PFHxA)	1.93		1.93	0.56	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroheptanoic acid (PFHpA)	**0.33**	**J**	1.93	0.24	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorooctanoic acid (PFOA)	**1.56**	**J**	1.93	0.82	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorononanoic acid (PFNA)	1.93		1.93	0.26	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorodecanoic acid (PFDA)	1.93		1.93	0.30	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroundecanoic acid (PFUnA)	1.93		1.93	1.06	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorododecanoic acid (PFDoA)	1.93		1.93	0.53	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorotridecanoic acid (PFTriA)	1.93		1.93	1.26	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorotetradecanoic acid (PFTeA)	1.93		1.93	0.28	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorobutanesulfonic acid (PFBS)	1.93		1.93	0.19	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorohexanesulfonic acid (PFHxS)	**0.36**	**J B**	1.93	0.16	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.93		1.93	0.18	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorooctanesulfonic acid (PFOS)	**0.91**	**J B**	1.93	0.52	ng/L		10/07/19 06:04	10/09/19 01:30	1
Perfluorodecanesulfonic acid (PFDS)	1.93		1.93	0.31	ng/L		10/07/19 06:04	10/09/19 01:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFHxA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFOA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C5 PFNA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFUnA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFDoA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C2 PFTeDA	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
18O2 PFHxS	*115*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFOS	*97*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C4 PFHpA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*
13C5 PFPeA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:30*	*1*

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8

Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Acenaphthylene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Anthracene	ND		230	57	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[a]anthracene	ND		230	23	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[a]pyrene	ND		230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[b]fluoranthene	ND		230	37	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[g,h,i]perylene	ND		230	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Benzo[k]fluoranthene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Chrysene	ND		230	52	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Dibenz(a,h)anthracene	ND		230	41	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Dibenzofuran	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	**47**	**J**	230	25	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Fluorene	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Hexachlorobenzene	ND		230	31	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Indeno[1,2,3-cd]pyrene	ND		230	29	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
2-Methylphenol	ND		230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Methylphenol, 3 & 4	ND		450	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Naphthalene	ND		230	30	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
1,4-Dioxane	ND		270	75	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Pentachlorophenol	ND		450	230	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Phenanthrene	**34**	**J**	230	34	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Phenol	ND		230	35	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1
Pyrene	**37**	**J**	230	27	ug/Kg	☼	09/25/19 14:37	09/26/19 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*60 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
2-Fluorophenol (Surr)	*79*		*52 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
Nitrobenzene-d5 (Surr)	*90*		*53 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
Phenol-d5 (Surr)	*86*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
p-Terphenyl-d14 (Surr)	*102*		*79 - 130*	*09/25/19 14:37*	*09/26/19 20:40*	*1*
2,4,6-Tribromophenol (Surr)	*103*		*54 - 120*	*09/25/19 14:37*	*09/26/19 20:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.89**	**J**	2.3	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
4,4'-DDE	**6.3**		2.3	0.48	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
4,4'-DDT	**2.8**		2.3	0.54	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Aldrin	ND		2.3	0.56	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
alpha-BHC	**1.7**	**J B**	2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
cis-Chlordane	ND		2.3	1.1	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
beta-BHC	ND		2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
delta-BHC	**0.57**	**J B**	2.3	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Dieldrin	ND		2.3	0.55	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan I	ND		2.3	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan II	ND		2.3	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endosulfan sulfate	ND		2.3	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Endrin	ND		2.3	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
gamma-BHC (Lindane)	**0.49**	**J**	2.3	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1
Heptachlor	ND		2.3	0.50	ug/Kg	☼	09/25/19 07:36	09/27/19 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*95*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
DCB Decachlorobiphenyl	*104*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:30*	*1*
Tetrachloro-m-xylene	*65*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:30*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1221	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1232	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8

Date Collected: 09/16/19 09:40
Matrix: Solid

Date Received: 09/16/19 16:10
Percent Solids: 72.2

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1242	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1248	ND		0.25	0.049	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1262	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
PCB-1268	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1
Polychlorinated biphenyls, Total	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*113*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:21*	*1*
DCB Decachlorobiphenyl	*100*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:21*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:21*	*1*
Tetrachloro-m-xylene	*92*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:21*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		23	8.2	ug/Kg	☼	09/25/19 05:49	10/01/19 11:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*67*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:48*	*1*
2,4-Dichlorophenylacetic acid	*70*		*28 - 129*	*09/25/19 05:49*	*10/01/19 11:48*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.27		0.27	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoropentanoic acid (PFPeA)	0.27		0.27	0.10	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorohexanoic acid (PFHxA)	0.27		0.27	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroheptanoic acid (PFHpA)	**0.051**	**J**	0.27	0.039	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.27	0.12	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorononanoic acid (PFNA)	**0.060**	**J**	0.27	0.049	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorodecanoic acid (PFDA)	0.27		0.27	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroundecanoic acid (PFUnA)	**0.052**	**J I**	0.27	0.049	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorododecanoic acid (PFDoA)	0.27		0.27	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorotridecanoic acid (PFTriA)	0.27		0.27	0.069	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorotetradecanoic acid (PFTeA)	0.27		0.27	0.073	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorobutanesulfonic acid (PFBS)	0.27		0.27	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorohexanesulfonic acid (PFHxS)	0.27		0.27	0.042	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.27		0.27	0.047	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanesulfonic acid (PFOS)	**0.58**	**J**	0.68	0.27	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorodecanesulfonic acid (PFDS)	0.27		0.27	0.053	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
Perfluorooctanesulfonamide (FOSA)	0.27		0.27	0.11	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.71		2.71	0.53	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.71		2.71	0.50	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
6:2 FTS	2.71		2.71	0.20	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1
8:2 FTS	2.71		2.71	0.34	ug/Kg	☼	09/27/19 10:45	10/10/19 05:56	1

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8

Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*86*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C5 PFPeA	*83*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFHxA	*86*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFHpA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C5 PFNA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFDA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFUnA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFDoA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
18O2 PFHxS	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C4 PFOS	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
13C8 FOSA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
d3-NMeFOSAA	*74*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
d5-NEtFOSAA	*80*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
M2-6:2 FTS	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*
M2-8:2 FTS	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 05:56*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.5**		2.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Barium	**117**		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Beryllium	**0.74**		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Cadmium	ND		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Chromium	**21.9**		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Copper	**17.6**		1.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Lead	**27.6**		1.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Manganese	**411**		0.27		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Nickel	**23.8**		6.8		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Selenium	ND		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Silver	ND		0.82		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1
Zinc	**84.9**		2.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:16	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.039**		0.027		mg/Kg	☼	10/11/19 13:45	10/11/19 14:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.7		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.8		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.3		mg/Kg	☼	09/30/19 20:45	10/02/19 09:42	1

Client Sample ID: RUSSO-CF-GRAB 1
Lab Sample ID: 480-159547-9

Date Collected: 09/16/19 11:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1

Client Sample ID: RUSSO-CF-GRAB 1
Lab Sample ID: 480-159547-9

Date Collected: 09/16/19 11:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.8

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Chlorobenzene	ND	vs	5.5	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Toluene	ND	vs	5.5	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
Xylenes, Total	ND	vs	11	0.92	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
Toluene-d8 (Surr)	*91*		*71 - 125*	*09/23/19 13:58*	*09/23/19 18:55*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*	*09/23/19 13:58*	*09/23/19 18:55*	*1*

Client Sample ID: RUSSO-CF-GRAB 2
Lab Sample ID: 480-159547-10

Date Collected: 09/16/19 11:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1

Client Sample ID: RUSSO-CF-GRAB 2
Lab Sample ID: 480-159547-10
Date Collected: 09/16/19 11:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.6

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Benzene	ND	vs	5.4	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Carbon tetrachloride	ND	vs	5.4	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Chlorobenzene	ND	vs	5.4	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Chloroform	ND	vs	5.4	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*126*		*64 - 126*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
4-Bromofluorobenzene (Surr)	*119*		*72 - 126*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
Toluene-d8 (Surr)	*117*		*71 - 125*	*09/23/19 13:58*	*09/23/19 19:19*	*1*
Dibromofluoromethane (Surr)	*121*		*60 - 140*	*09/23/19 13:58*	*09/23/19 19:19*	*1*

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11
Date Collected: 09/16/19 11:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Benzene	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Carbon tetrachloride	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Chlorobenzene	ND	vs	5.4	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Chloroform	ND	vs	5.4	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1

Client Sample ID: RUSSO-CF-GRAB 3
Lab Sample ID: 480-159547-11
Date Collected: 09/16/19 11:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.3

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*64 - 126*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
4-Bromofluorobenzene (Surr)	*96*		*72 - 126*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
Toluene-d8 (Surr)	*92*		*71 - 125*	*09/23/19 13:58*	*09/23/19 19:44*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/23/19 13:58*	*09/23/19 19:44*	*1*

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12
Date Collected: 09/16/19 11:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.9	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,1-Dichloroethane	ND	vs	5.9	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,1-Dichloroethene	ND	vs	5.9	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2,4-Trimethylbenzene	ND	vs	5.9	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2-Dichlorobenzene	ND	vs	5.9	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,2-Dichloroethane	ND	vs	5.9	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,3,5-Trimethylbenzene	ND	vs	5.9	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,3-Dichlorobenzene	ND	vs	5.9	0.30	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,4-Dichlorobenzene	ND	vs	5.9	0.82	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
1,4-Dioxane	ND	vs	120	26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
2-Butanone (MEK)	ND	vs	29	2.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Acetone	ND	vs	29	4.9	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Benzene	ND	vs	5.9	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Carbon tetrachloride	ND	vs	5.9	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Chlorobenzene	ND	vs	5.9	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Chloroform	ND	vs	5.9	0.36	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
cis-1,2-Dichloroethene	ND	vs	5.9	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Ethylbenzene	ND	vs	5.9	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Methyl tert-butyl ether	ND	vs	5.9	0.58	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Methylene Chloride	ND	vs	5.9	2.7	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
n-Butylbenzene	ND	vs	5.9	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
N-Propylbenzene	ND	vs	5.9	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
sec-Butylbenzene	ND	vs	5.9	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Tetrachloroethene	ND	vs	5.9	0.79	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1

Client Sample ID: RUSSO-CF-GRAB 4
Lab Sample ID: 480-159547-12
Date Collected: 09/16/19 11:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 81.8

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND	vs	5.9	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
trans-1,2-Dichloroethene	ND	vs	5.9	0.60	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Trichloroethene	ND	vs	5.9	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Vinyl chloride	ND	vs	5.9	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
Xylenes, Total	ND	vs	12	0.98	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1
tert-Butylbenzene	ND	vs	5.9	0.61	ug/Kg	☼	09/23/19 13:58	09/23/19 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:08*	*1*
Dibromofluoromethane (Surr)	*116*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:08*	*1*

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13
Date Collected: 09/16/19 11:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Acetone	ND	vs	28	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Chlorobenzene	ND	vs	5.5	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Toluene	ND	vs	5.5	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
Xylenes, Total	ND	vs	11	0.93	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 20:33	1

Client Sample ID: RUSSO-CF-GRAB 5
Lab Sample ID: 480-159547-13
Date Collected: 09/16/19 11:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:33*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:33*	*1*

Client Sample ID: RUSSO-CF-GRAB 6
Lab Sample ID: 480-159547-14
Date Collected: 09/16/19 11:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.2	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,1-Dichloroethane	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,1-Dichloroethene	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2,4-Trimethylbenzene	ND	vs	5.2	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2-Dichlorobenzene	ND	vs	5.2	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,2-Dichloroethane	ND	vs	5.2	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,3,5-Trimethylbenzene	ND	vs	5.2	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,3-Dichlorobenzene	ND	vs	5.2	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,4-Dichlorobenzene	ND	vs	5.2	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
1,4-Dioxane	ND	vs	100	23	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Benzene	ND	vs	5.2	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Carbon tetrachloride	ND	vs	5.2	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Chlorobenzene	ND	vs	5.2	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Chloroform	ND	vs	5.2	0.32	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
cis-1,2-Dichloroethene	ND	vs	5.2	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Ethylbenzene	ND	vs	5.2	0.36	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Methyl tert-butyl ether	ND	vs	5.2	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Methylene Chloride	ND	vs	5.2	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
n-Butylbenzene	ND	vs	5.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
N-Propylbenzene	ND	vs	5.2	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
sec-Butylbenzene	ND	vs	5.2	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Tetrachloroethene	ND	vs	5.2	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Toluene	ND	vs	5.2	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
trans-1,2-Dichloroethene	ND	vs	5.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Trichloroethene	ND	vs	5.2	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Vinyl chloride	ND	vs	5.2	0.64	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
Xylenes, Total	ND	vs	10	0.88	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1
tert-Butylbenzene	ND	vs	5.2	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 20:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*64 - 126*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 126*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
Toluene-d8 (Surr)	*98*		*71 - 125*	*09/23/19 13:58*	*09/23/19 20:58*	*1*
Dibromofluoromethane (Surr)	*105*		*60 - 140*	*09/23/19 13:58*	*09/23/19 20:58*	*1*

Client Sample ID: RUSSO-CF-GRAB 7
Lab Sample ID: 480-159547-15
Date Collected: 09/16/19 11:46
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.5	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Chlorobenzene	ND	vs	5.5	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Toluene	ND	vs	5.5	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
Xylenes, Total	ND	vs	11	0.92	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/23/19 13:58	09/23/19 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 126*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
4-Bromofluorobenzene (Surr)	*97*		*72 - 126*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
Toluene-d8 (Surr)	*95*		*71 - 125*	*09/23/19 13:58*	*09/23/19 21:23*	*1*
Dibromofluoromethane (Surr)	*101*		*60 - 140*	*09/23/19 13:58*	*09/23/19 21:23*	*1*

Client Sample ID: RUSSO-CF-GRAB 8
Lab Sample ID: 480-159547-16
Date Collected: 09/16/19 11:47
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1

Client Sample ID: RUSSO-CF-GRAB 8

Lab Sample ID: 480-159547-16
Date Collected: 09/16/19 11:47
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.3

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*64 - 126*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
4-Bromofluorobenzene (Surr)	*112*		*72 - 126*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
Toluene-d8 (Surr)	*109*		*71 - 125*	*09/23/19 13:58*	*09/23/19 21:47*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/23/19 13:58*	*09/23/19 21:47*	*1*

Client Sample ID: RUSSO-CF-GRAB 9

Lab Sample ID: 480-159547-17
Date Collected: 09/16/19 11:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.4	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,1-Dichloroethane	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,1-Dichloroethene	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2,4-Trimethylbenzene	ND	vs	5.4	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2-Dichlorobenzene	ND	vs	5.4	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,2-Dichloroethane	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,3,5-Trimethylbenzene	ND	vs	5.4	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,3-Dichlorobenzene	ND	vs	5.4	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,4-Dichlorobenzene	ND	vs	5.4	0.76	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Acetone	ND	vs	27	4.6	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Benzene	ND	vs	5.4	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Carbon tetrachloride	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1

Client Sample ID: RUSSO-CF-GRAB 9
Lab Sample ID: 480-159547-17
Date Collected: 09/16/19 11:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.2

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND	vs	5.4	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Chloroform	ND	vs	5.4	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
cis-1,2-Dichloroethene	ND	vs	5.4	0.69	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Ethylbenzene	ND	vs	5.4	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Methyl tert-butyl ether	ND	vs	5.4	0.53	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Methylene Chloride	ND	vs	5.4	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
n-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
N-Propylbenzene	ND	vs	5.4	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
sec-Butylbenzene	ND	vs	5.4	0.47	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Tetrachloroethene	ND	vs	5.4	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Toluene	ND	vs	5.4	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
trans-1,2-Dichloroethene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Trichloroethene	ND	vs	5.4	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Vinyl chloride	ND	vs	5.4	0.66	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
Xylenes, Total	ND	vs	11	0.91	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1
tert-Butylbenzene	ND	vs	5.4	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 22:12*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*	*09/23/19 13:58*	*09/23/19 22:12*	*1*

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.56**	**J**	1.77	0.31	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoropentanoic acid (PFPeA)	1.77		1.77	0.43	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorohexanoic acid (PFHxA)	1.77		1.77	0.51	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroheptanoic acid (PFHpA)	**0.27**	**J**	1.77	0.22	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorooctanoic acid (PFOA)	1.77		1.77	0.75	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorononanoic acid (PFNA)	1.77		1.77	0.24	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorodecanoic acid (PFDA)	1.77		1.77	0.27	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroundecanoic acid (PFUnA)	1.77		1.77	0.97	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorododecanoic acid (PFDoA)	1.77		1.77	0.49	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorotridecanoic acid (PFTriA)	1.77		1.77	1.15	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorotetradecanoic acid (PFTeA)	1.77		1.77	0.26	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorobutanesulfonic acid (PFBS)	1.77		1.77	0.18	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorohexanesulfonic acid (PFHxS)	**0.29**	**J B**	1.77	0.15	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.77		1.77	0.17	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorooctanesulfonic acid (PFOS)	**0.73**	**J B**	1.77	0.48	ng/L		10/07/19 06:04	10/09/19 01:40	1
Perfluorodecanesulfonic acid (PFDS)	1.77		1.77	0.28	ng/L		10/07/19 06:04	10/09/19 01:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*
13C2 PFHxA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:40*	*1*

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C5 PFNA	112		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C2 PFDA	110		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C2 PFUnA	107		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C2 PFDoA	110		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C2 PFTeDA	108		25 - 150	10/07/19 06:04	10/09/19 01:40	1
18O2 PFHxS	116		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C4 PFOS	105		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C4 PFHpA	110		25 - 150	10/07/19 06:04	10/09/19 01:40	1
13C5 PFPeA	108		25 - 150	10/07/19 06:04	10/09/19 01:40	1

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Anthracene	ND		190	47	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Chrysene	ND		190	42	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Methylphenol, 3 & 4	ND		370	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
1,4-Dioxane	ND		220	61	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Phenol	ND		190	29	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		60 - 120	09/25/19 14:37	09/26/19 21:05	1
2-Fluorophenol (Surr)	81		52 - 120	09/25/19 14:37	09/26/19 21:05	1
Nitrobenzene-d5 (Surr)	94		53 - 120	09/25/19 14:37	09/26/19 21:05	1
Phenol-d5 (Surr)	88		54 - 120	09/25/19 14:37	09/26/19 21:05	1
p-Terphenyl-d14 (Surr)	111		79 - 130	09/25/19 14:37	09/26/19 21:05	1
2,4,6-Tribromophenol (Surr)	110		54 - 120	09/25/19 14:37	09/26/19 21:05	1

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18

Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.62**	**J**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
4,4'-DDE	**0.66**	**J**	1.9	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
4,4'-DDT	**1.2**	**J**	1.9	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Aldrin	ND		1.9	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
alpha-BHC	**5.2**	**B**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
cis-Chlordane	ND		1.9	0.93	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
beta-BHC	**1.3**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
delta-BHC	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Dieldrin	ND		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan I	ND		1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan II	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endosulfan sulfate	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Endrin	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
gamma-BHC (Lindane)	**0.39**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1
Heptachlor	ND		1.9	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 14:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*101*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
DCB Decachlorobiphenyl	*97*		*45 - 120*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:50*	*1*
Tetrachloro-m-xylene	*77*		*30 - 124*	*09/25/19 07:36*	*09/27/19 14:50*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1221	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1232	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1242	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1248	ND		0.23	0.045	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1254	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1260	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1262	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
PCB-1268	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1
Polychlorinated biphenyls, Total	ND		0.23	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*121*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:33*	*1*
DCB Decachlorobiphenyl	*102*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:33*	*1*
Tetrachloro-m-xylene	*87*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:33*	*1*
Tetrachloro-m-xylene	*90*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:33*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 12:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:18*	*1*
2,4-Dichlorophenylacetic acid	*62*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:18*	*1*

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18

Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.21		0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.080	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.089	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.053	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.056	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorobutanesulfonic acid (PFBS)	**0.20**	**J**	0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanesulfonic acid (PFOS)	**0.21**	**J**	0.52	0.21	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.085	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.07		2.07	0.40	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.07		2.07	0.38	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
6:2 FTS	2.07		2.07	0.16	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1
8:2 FTS	2.07		2.07	0.26	ug/Kg	☼	09/27/19 10:45	10/10/19 06:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFHxA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFHpA	*94*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFOA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C5 PFNA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFDA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFUnA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFDoA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
18O2 PFHxS	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C4 PFOS	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
13C8 FOSA	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
d5-NEtFOSAA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
M2-6:2 FTS	*76*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*
M2-8:2 FTS	*80*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**10.2**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Barium	**56.5**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Beryllium	**0.38**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Cadmium	ND		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1

Client Sample ID: RUSSO-CF-COMP 1 — Lab Sample ID: 480-159547-18

Date Collected: 09/16/19 11:50 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 88.7**

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**9.9**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Copper	**23.9**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Lead	**11.5**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Manganese	**410**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Nickel	**21.3**		5.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Silver	ND		0.64		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1
Zinc	**106**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:20	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.023		mg/Kg	☼	10/11/19 13:45	10/11/19 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:44	1

Client Sample ID: RUSSO-CF-COMP 2 — Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.46**	**J**	1.84	0.32	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoropentanoic acid (PFPeA)	1.84		1.84	0.45	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorohexanoic acid (PFHxA)	1.84		1.84	0.53	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroheptanoic acid (PFHpA)	1.84		1.84	0.23	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorooctanoic acid (PFOA)	1.84		1.84	0.78	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorononanoic acid (PFNA)	1.84		1.84	0.25	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorodecanoic acid (PFDA)	1.84		1.84	0.29	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroundecanoic acid (PFUnA)	1.84		1.84	1.01	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorododecanoic acid (PFDoA)	1.84		1.84	0.51	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorotridecanoic acid (PFTriA)	1.84		1.84	1.20	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorotetradecanoic acid (PFTeA)	1.84		1.84	0.27	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorobutanesulfonic acid (PFBS)	1.84		1.84	0.18	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorohexanesulfonic acid (PFHxS)	**0.29**	**J B**	1.84	0.16	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.84		1.84	0.17	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorooctanesulfonic acid (PFOS)	**0.64**	**J I B**	1.84	0.50	ng/L		10/07/19 06:04	10/09/19 02:18	1
Perfluorodecanesulfonic acid (PFDS)	1.84		1.84	0.29	ng/L		10/07/19 06:04	10/09/19 02:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFHxA	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFDA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFUnA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19
Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFOS	*99*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C4 PFHpA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*
13C5 PFPeA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:18*	*1*

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19
Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Acenaphthylene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Anthracene	ND		190	46	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[a]pyrene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Benzo[k]fluoranthene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Chrysene	ND		190	42	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Dibenz(a,h)anthracene	ND		190	33	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Fluoranthene	**20**	**J**	190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Hexachlorobenzene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Indeno[1,2,3-cd]pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Methylphenol, 3 & 4	ND		360	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Naphthalene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
1,4-Dioxane	ND		220	60	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Pentachlorophenol	ND		360	190	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Phenanthrene	ND		190	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Phenol	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*85*		*60 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
Nitrobenzene-d5 (Surr)	*90*		*53 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
Phenol-d5 (Surr)	*82*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
p-Terphenyl-d14 (Surr)	*105*		*79 - 130*	*09/25/19 14:37*	*09/26/19 21:30*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.61**	**J**	1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
4,4'-DDE	**0.59**	**J**	1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
4,4'-DDT	**1.1**	**J**	1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.8	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
alpha-BHC	**0.56**	**J B**	1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
cis-Chlordane	ND		1.8	0.91	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Dieldrin	ND		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan II	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Endrin	ND		1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1
Heptachlor	ND		1.8	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 15:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*90*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
DCB Decachlorobiphenyl	*90*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
Tetrachloro-m-xylene	*75*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:09*	*1*
Tetrachloro-m-xylene	*71*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:09*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1221	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1232	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1242	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1248	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1254	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1260	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1262	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
PCB-1268	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1
Polychlorinated biphenyls, Total	ND		0.19	0.090	mg/Kg	☼	09/24/19 05:51	09/27/19 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*114*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:45*	*1*
DCB Decachlorobiphenyl	*107*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:45*	*1*
Tetrachloro-m-xylene	*106*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:45*	*1*
Tetrachloro-m-xylene	*95*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:45*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 12:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*83*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:47*	*1*
2,4-Dichlorophenylacetic acid	*76*		*28 - 129*	*09/25/19 05:49*	*10/01/19 12:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.033**	**J**	0.23	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoropentanoic acid (PFPeA)	0.23		0.23	0.088	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorohexanoic acid (PFHxA)	0.23		0.23	0.048	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1

Client Sample ID: RUSSO-CF-COMP 2
Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	0.23		0.23	0.033	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanoic acid (PFOA)	0.23		0.23	0.098	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorononanoic acid (PFNA)	0.23		0.23	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorodecanoic acid (PFDA)	0.23		0.23	0.025	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoroundecanoic acid (PFUnA)	0.23		0.23	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorododecanoic acid (PFDoA)	0.23		0.23	0.077	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorotridecanoic acid (PFTriA)	0.23		0.23	0.058	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorotetradecanoic acid (PFTeA)	0.23		0.23	0.062	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorobutanesulfonic acid (PFBS)	0.23		0.23	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorohexanesulfonic acid (PFHxS)	0.23		0.23	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.23		0.23	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanesulfonic acid (PFOS)	**0.35**	**J**	0.57	0.23	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorodecanesulfonic acid (PFDS)	0.23		0.23	0.045	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
Perfluorooctanesulfonamide (FOSA)	0.23		0.23	0.094	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.29		2.29	0.45	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.29		2.29	0.42	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
6:2 FTS	2.29		2.29	0.17	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1
8:2 FTS	2.29		2.29	0.29	ug/Kg	☼	09/27/19 10:45	10/03/19 13:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C5 PFPeA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFHxA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFHpA	*111*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFOA	*105*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C5 PFNA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFDA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFUnA	*113*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFDoA	*112*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C2 PFTeDA	*92*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
18O2 PFHxS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
13C8 FOSA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
d5-NEtFOSAA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
M2-6:2 FTS	*109*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*
M2-8:2 FTS	*129*		*25 - 150*	*09/27/19 10:45*	*10/03/19 13:35*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.9**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Barium	**73.8**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Beryllium	**0.47**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Chromium	**12.0**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Copper	**31.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Lead	**16.0**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1

Client Sample ID: RUSSO-CF-COMP 2

Lab Sample ID: 480-159547-19
Date Collected: 09/16/19 11:52
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.6

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**641**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Nickel	**26.3**		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Silver	ND		0.66		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1
Zinc	**132**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:24	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg	☼	10/11/19 13:45	10/11/19 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:45	1

Client Sample ID: RUSSO-CF-COMP 3

Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.58**	**J**	1.81	0.32	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.53	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroheptanoic acid (PFHpA)	**0.34**	**J**	1.81	0.23	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorononanoic acid (PFNA)	1.81		1.81	0.24	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroundecanoic acid (PFUnA)	1.81		1.81	1.0	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorohexanesulfonic acid (PFHxS)	**0.28**	**J B**	1.81	0.15	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49	ng/L		10/07/19 06:04	10/09/19 02:28	1
Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29	ng/L		10/07/19 06:04	10/09/19 02:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFHxA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C4 PFOA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C5 PFNA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFDA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFUnA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFDoA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C2 PFTeDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
18O2 PFHxS	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C4 PFOS	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*

Client Sample ID: RUSSO-CF-COMP 3 — Lab Sample ID: 480-159547-20

Date Collected: 09/16/19 11:55 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFHpA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*
13C5 PFPeA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:28*	*1*

Client Sample ID: RUSSO-CF-COMP 3 — Lab Sample ID: 480-159547-20

Date Collected: 09/16/19 11:55 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 89.8**

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Acenaphthylene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Benzo[k]fluoranthene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Chrysene	ND		180	41	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Dibenzofuran	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Fluorene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Hexachlorobenzene	ND		180	25	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Indeno[1,2,3-cd]pyrene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
2-Methylphenol	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Methylphenol, 3 & 4	ND		360	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Naphthalene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
1,4-Dioxane	ND		220	60	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Pentachlorophenol	ND		360	180	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1
Pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*86*		*60 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
2-Fluorophenol (Surr)	*76*		*52 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
Nitrobenzene-d5 (Surr)	*84*		*53 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
Phenol-d5 (Surr)	*83*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
p-Terphenyl-d14 (Surr)	*104*		*79 - 130*	*09/25/19 14:37*	*09/26/19 21:56*	*1*
2,4,6-Tribromophenol (Surr)	*100*		*54 - 120*	*09/25/19 14:37*	*09/26/19 21:56*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**0.63**	**J**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
4,4'-DDE	**0.57**	**J**	1.9	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
4,4'-DDT	**1.1**	**J**	1.9	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Aldrin	ND		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
alpha-BHC	**0.88**	**J B**	1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
cis-Chlordane	ND		1.9	0.92	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
beta-BHC	ND		1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1

Client Sample ID: RUSSO-CF-COMP 3
Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.8

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Dieldrin	ND		1.9	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan I	ND		1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan II	ND		1.9	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endosulfan sulfate	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Endrin	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
gamma-BHC (Lindane)	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1
Heptachlor	ND		1.9	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 15:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*99*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
DCB Decachlorobiphenyl	*94*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
Tetrachloro-m-xylene	*85*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:29*	*1*
Tetrachloro-m-xylene	*76*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:29*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1221	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1232	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1242	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1248	ND		0.22	0.043	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1254	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1260	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1262	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
PCB-1268	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1
Polychlorinated biphenyls, Total	ND		0.22	0.10	mg/Kg	☼	09/24/19 05:51	09/26/19 00:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*160*		*65 - 174*	*09/24/19 05:51*	*09/26/19 00:09*	*1*
DCB Decachlorobiphenyl	*140*		*65 - 174*	*09/24/19 05:51*	*09/26/19 00:09*	*1*
Tetrachloro-m-xylene	*145*		*60 - 154*	*09/24/19 05:51*	*09/26/19 00:09*	*1*
Tetrachloro-m-xylene	*132*		*60 - 154*	*09/24/19 05:51*	*09/26/19 00:09*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.6	ug/Kg	☼	09/25/19 05:49	10/01/19 13:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*78*		*28 - 129*	*09/25/19 05:49*	*10/01/19 13:17*	*1*
2,4-Dichlorophenylacetic acid	*68*		*28 - 129*	*09/25/19 05:49*	*10/01/19 13:17*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.085	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.046	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanoic acid (PFOA)	0.22		0.22	0.095	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorononanoic acid (PFNA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1

Client Sample ID: RUSSO-CF-COMP 3
Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.074	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.056	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanesulfonic acid (PFOS)	**0.37**	**J**	0.55	0.22	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.21		2.21	0.43	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.21		2.21	0.41	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
6:2 FTS	2.21		2.21	0.17	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1
8:2 FTS	2.21		2.21	0.28	ug/Kg	☼	09/27/19 10:45	10/03/19 14:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFHxA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFHpA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C5 PFNA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFUnA	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFDoA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C2 PFTeDA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
18O2 PFHxS	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C4 PFOS	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
13C8 FOSA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
d3-NMeFOSAA	*85*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
d5-NEtFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
M2-6:2 FTS	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*
M2-8:2 FTS	*114*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:03*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.7**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Barium	**64.7**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Beryllium	**0.44**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Chromium	**12.0**		0.55		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Copper	**31.0**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Lead	**16.2**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Manganese	**564**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Nickel	**25.3**		5.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1
Silver	ND		0.66		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1

Client Sample ID: RUSSO-CF-COMP 3
Lab Sample ID: 480-159547-20
Date Collected: 09/16/19 11:55
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.8

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	**152**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:28	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.3		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:47	1

Client Sample ID: GERNATT-CF-GRAB 1
Lab Sample ID: 480-159547-21
Date Collected: 09/16/19 13:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 85.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.7	0.41	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,1-Dichloroethane	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,1-Dichloroethene	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2,4-Trimethylbenzene	ND	vs	5.7	1.1	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2-Dichlorobenzene	ND	vs	5.7	0.45	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,2-Dichloroethane	ND	vs	5.7	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,3,5-Trimethylbenzene	ND	vs	5.7	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,3-Dichlorobenzene	ND	vs	5.7	0.29	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,4-Dichlorobenzene	ND	vs	5.7	0.80	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
1,4-Dioxane	ND	vs	110	25	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
2-Butanone (MEK)	ND	vs	29	2.1	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Acetone	ND	vs	29	4.8	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Benzene	ND	vs	5.7	0.28	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Carbon tetrachloride	ND	vs	5.7	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Chlorobenzene	ND	vs	5.7	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Chloroform	ND	vs	5.7	0.35	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
cis-1,2-Dichloroethene	ND	vs	5.7	0.73	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Ethylbenzene	ND	vs	5.7	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Methyl tert-butyl ether	ND	vs	5.7	0.56	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Methylene Chloride	ND	vs	5.7	2.6	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
n-Butylbenzene	ND	vs	5.7	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
N-Propylbenzene	ND	vs	5.7	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
sec-Butylbenzene	ND	vs	5.7	0.50	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Tetrachloroethene	ND	vs	5.7	0.77	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Toluene	ND	vs	5.7	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
trans-1,2-Dichloroethene	ND	vs	5.7	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Trichloroethene	ND	vs	5.7	1.3	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Vinyl chloride	ND	vs	5.7	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
Xylenes, Total	ND	vs	11	0.96	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1
tert-Butylbenzene	ND	vs	5.7	0.59	ug/Kg	☼	09/23/19 13:58	09/23/19 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*120*		*64 - 126*	*09/23/19 13:58*	*09/23/19 22:37*	*1*

Client Sample ID: GERNATT-CF-GRAB 1

Lab Sample ID: 480-159547-21
Date Collected: 09/16/19 13:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 85.7

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/23/19 13:58*	*09/23/19 22:37*	*1*
Toluene-d8 (Surr)	*114*		*71 - 125*	*09/23/19 13:58*	*09/23/19 22:37*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/23/19 13:58*	*09/23/19 22:37*	*1*

Client Sample ID: GERNATT-CF-GRAB 2

Lab Sample ID: 480-159547-22
Date Collected: 09/16/19 13:41
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 126*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 126*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/23/19 13:58*	*09/23/19 23:01*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/23/19 13:58*	*09/23/19 23:01*	*1*

Client Sample ID: GERNATT-CF-GRAB 3
Lab Sample ID: 480-159547-23

Date Collected: 09/16/19 13:42
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs *	5.3	0.39	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Methylene Chloride	ND	vs	5.3	2.5	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Tetrachloroethene	ND	vs	5.3	0.72	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
Xylenes, Total	ND	vs	11	0.90	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/23/19 13:58	09/23/19 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*64 - 126*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
4-Bromofluorobenzene (Surr)	*109*		*72 - 126*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/23/19 13:58*	*09/23/19 23:26*	*1*
Dibromofluoromethane (Surr)	*112*		*60 - 140*	*09/23/19 13:58*	*09/23/19 23:26*	*1*

Client Sample ID: GERNATT-CF-GRAB 4
Lab Sample ID: 480-159547-24

Date Collected: 09/16/19 13:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.6

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.3	0.38	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,1-Dichloroethane	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,1-Dichloroethene	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2,4-Trimethylbenzene	ND		5.3	1.0	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2-Dichlorobenzene	ND	F1	5.3	0.41	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,2-Dichloroethane	ND		5.3	0.26	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,3,5-Trimethylbenzene	ND		5.3	0.34	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1

Client Sample ID: GERNATT-CF-GRAB 4
Lab Sample ID: 480-159547-24
Date Collected: 09/16/19 13:43
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.6

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		5.3	0.27	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,4-Dichlorobenzene	ND		5.3	0.74	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
1,4-Dioxane	ND	F1	110	23	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
2-Butanone (MEK)	ND	F1 *	26	1.9	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Acetone	ND	F1	26	4.4	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Benzene	ND		5.3	0.26	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Carbon tetrachloride	ND		5.3	0.51	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Chlorobenzene	ND		5.3	0.69	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Chloroform	ND		5.3	0.33	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
cis-1,2-Dichloroethene	ND		5.3	0.67	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Ethylbenzene	ND		5.3	0.36	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Methyl tert-butyl ether	ND		5.3	0.52	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Methylene Chloride	**2.5**	**J**	5.3	2.4	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
n-Butylbenzene	ND		5.3	0.46	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
N-Propylbenzene	ND		5.3	0.42	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
sec-Butylbenzene	ND		5.3	0.46	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Tetrachloroethene	ND		5.3	0.71	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Toluene	ND		5.3	0.40	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
trans-1,2-Dichloroethene	ND		5.3	0.54	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Trichloroethene	ND		5.3	1.2	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Vinyl chloride	ND		5.3	0.64	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
Xylenes, Total	ND		11	0.88	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1
tert-Butylbenzene	ND		5.3	0.55	ug/Kg	☼	09/25/19 10:16	09/25/19 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*64 - 126*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 126*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
Toluene-d8 (Surr)	*98*		*71 - 125*	*09/25/19 10:16*	*09/25/19 13:51*	*1*
Dibromofluoromethane (Surr)	*107*		*60 - 140*	*09/25/19 10:16*	*09/25/19 13:51*	*1*

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25
Date Collected: 09/16/19 13:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,1-Dichloroethane	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,1-Dichloroethene	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,2-Dichloroethane	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1

Client Sample ID: GERNATT-CF-GRAB 5
Lab Sample ID: 480-159547-25
Date Collected: 09/16/19 13:44
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.7

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND	vs	5.3	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Vinyl chloride	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
Xylenes, Total	ND	vs	11	0.88	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*64 - 126*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
4-Bromofluorobenzene (Surr)	*114*		*72 - 126*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
Toluene-d8 (Surr)	*108*		*71 - 125*	*09/24/19 10:38*	*09/24/19 13:29*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/24/19 10:38*	*09/24/19 13:29*	*1*

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26
Date Collected: 09/16/19 13:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Acetone	ND	vs	26	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1

Client Sample ID: GERNATT-CF-GRAB 6
Lab Sample ID: 480-159547-26
Date Collected: 09/16/19 13:45
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.5

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 126*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
4-Bromofluorobenzene (Surr)	*95*		*72 - 126*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
Toluene-d8 (Surr)	*90*		*71 - 125*	*09/24/19 10:38*	*09/24/19 13:53*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*	*09/24/19 10:38*	*09/24/19 13:53*	*1*

Client Sample ID: GERNATT-CF-GRAB 7
Lab Sample ID: 480-159547-27
Date Collected: 09/16/19 13:46
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
2-Butanone (MEK)	ND	vs	27	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1

Client Sample ID: GERNATT-CF-GRAB 7 — Lab Sample ID: 480-159547-27

Date Collected: 09/16/19 13:46 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.1**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND	vs	11	0.89	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*123*		*64 - 126*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
Toluene-d8 (Surr)	*110*		*71 - 125*	*09/24/19 10:38*	*09/24/19 14:18*	*1*
Dibromofluoromethane (Surr)	*117*		*60 - 140*	*09/24/19 10:38*	*09/24/19 14:18*	*1*

Client Sample ID: GERNATT-CF-GRAB 8 — Lab Sample ID: 480-159547-28

Date Collected: 09/16/19 13:47 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.2**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,1-Dichloroethane	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,1-Dichloroethene	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2-Dichlorobenzene	ND	vs	5.3	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,2-Dichloroethane	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,4-Dichlorobenzene	ND	vs	5.3	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
2-Butanone (MEK)	ND	vs	26	1.9	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Acetone	ND	vs	26	4.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Carbon tetrachloride	ND	vs	5.3	0.51	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Chlorobenzene	ND	vs	5.3	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Chloroform	ND	vs	5.3	0.32	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Ethylbenzene	ND	vs	5.3	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Methylene Chloride	ND	vs	5.3	2.4	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
N-Propylbenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Tetrachloroethene	ND	vs	5.3	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Vinyl chloride	ND	vs	5.3	0.64	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
Xylenes, Total	ND	vs	11	0.88	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/24/19 10:38*	*09/24/19 14:42*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/24/19 10:38*	*09/24/19 14:42*	*1*
Toluene-d8 (Surr)	*91*		*71 - 125*	*09/24/19 10:38*	*09/24/19 14:42*	*1*

Client Sample ID: GERNATT-CF-GRAB 8

Lab Sample ID: 480-159547-28
Date Collected: 09/16/19 13:47
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.2

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/24/19 10:38*	*09/24/19 14:42*	*1*

Client Sample ID: GERNATT-CF-GRAB 9

Lab Sample ID: 480-159547-29
Date Collected: 09/16/19 13:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.3	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,1-Dichloroethane	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,1-Dichloroethene	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2,4-Trimethylbenzene	ND	vs	5.3	1.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2-Dichlorobenzene	ND	vs	5.3	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,2-Dichloroethane	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,3,5-Trimethylbenzene	ND	vs	5.3	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,3-Dichlorobenzene	ND	vs	5.3	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,4-Dichlorobenzene	ND	vs	5.3	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
1,4-Dioxane	ND	vs	110	23	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
2-Butanone (MEK)	ND	vs	27	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Acetone	ND	vs	27	4.5	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Benzene	ND	vs	5.3	0.26	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Carbon tetrachloride	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Chlorobenzene	ND	vs	5.3	0.70	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Chloroform	ND	vs	5.3	0.33	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
cis-1,2-Dichloroethene	ND	vs	5.3	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Ethylbenzene	ND	vs	5.3	0.37	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Methyl tert-butyl ether	ND	vs	5.3	0.52	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Methylene Chloride	ND	vs	5.3	2.5	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
n-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
N-Propylbenzene	ND	vs	5.3	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
sec-Butylbenzene	ND	vs	5.3	0.46	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Tetrachloroethene	ND	vs	5.3	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Toluene	ND	vs	5.3	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
trans-1,2-Dichloroethene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Trichloroethene	ND	vs	5.3	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Vinyl chloride	ND	vs	5.3	0.65	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
Xylenes, Total	ND	vs	11	0.90	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1
tert-Butylbenzene	ND	vs	5.3	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*118*		*64 - 126*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
4-Bromofluorobenzene (Surr)	*118*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
Toluene-d8 (Surr)	*111*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:07*	*1*
Dibromofluoromethane (Surr)	*118*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:07*	*1*

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.47**	**J**	1.73	0.30	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoropentanoic acid (PFPeA)	1.73		1.73	0.42	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorohexanoic acid (PFHxA)	1.73		1.73	0.50	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroheptanoic acid (PFHpA)	**0.27**	**J**	1.73	0.22	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorooctanoic acid (PFOA)	1.73		1.73	0.74	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorononanoic acid (PFNA)	1.73		1.73	0.23	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorodecanoic acid (PFDA)	1.73		1.73	0.27	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroundecanoic acid (PFUnA)	1.73		1.73	0.95	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorododecanoic acid (PFDoA)	1.73		1.73	0.48	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorotridecanoic acid (PFTriA)	1.73		1.73	1.13	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorotetradecanoic acid (PFTeA)	1.73		1.73	0.25	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorobutanesulfonic acid (PFBS)	1.73		1.73	0.17	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorohexanesulfonic acid (PFHxS)	**0.25**	**J B**	1.73	0.15	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.73		1.73	0.16	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorooctanesulfonic acid (PFOS)	1.73		1.73	0.47	ng/L		10/07/19 06:04	10/09/19 02:37	1
Perfluorodecanesulfonic acid (PFDS)	1.73		1.73	0.28	ng/L		10/07/19 06:04	10/09/19 02:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFHxA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFOA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C5 PFNA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFUnA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFDoA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C2 PFTeDA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
18O2 PFHxS	*113*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFOS	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C4 PFHpA	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*
13C5 PFPeA	*112*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:37*	*1*

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Chrysene	ND		180	41	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Hexachlorobenzene	ND		180	25	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
1,4-Dioxane	ND		210	59	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*84*		*60 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
Nitrobenzene-d5 (Surr)	*91*		*53 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
Phenol-d5 (Surr)	*86*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
p-Terphenyl-d14 (Surr)	*104*		*79 - 130*	*09/25/19 14:37*	*09/26/19 22:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:21*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
4,4'-DDT	**0.85**	**J**	1.8	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Aldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
alpha-BHC	**1.9**	**B**	1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
cis-Chlordane	ND		1.8	0.87	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
beta-BHC	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Dieldrin	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan II	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
gamma-BHC (Lindane)	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
DCB Decachlorobiphenyl	*100*		*45 - 120*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
Tetrachloro-m-xylene	*95*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:48*	*1*
Tetrachloro-m-xylene	*82*		*30 - 124*	*09/25/19 07:36*	*09/27/19 15:48*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1221	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1232	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1242	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1248	ND		0.19	0.037	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1254	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1260	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1262	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
PCB-1268	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1
Polychlorinated biphenyls, Total	ND		0.19	0.088	mg/Kg	☼	09/24/19 05:51	09/27/19 15:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*122*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:58*	*1*
DCB Decachlorobiphenyl	*110*		*65 - 174*	*09/24/19 05:51*	*09/27/19 15:58*	*1*
Tetrachloro-m-xylene	*111*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:58*	*1*
Tetrachloro-m-xylene	*97*		*60 - 154*	*09/24/19 05:51*	*09/27/19 15:58*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	09/25/19 05:49	10/01/19 14:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*74*		*28 - 129*	*09/25/19 05:49*	*10/01/19 14:47*	*1*
2,4-Dichlorophenylacetic acid	*68*		*28 - 129*	*09/25/19 05:49*	*10/01/19 14:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.030**	**J**	0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.081	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.044	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.090	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.070	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanesulfonic acid (PFOS)	0.53		0.53	0.21	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.086	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.10		2.10	0.41	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.10		2.10	0.39	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
6:2 FTS	2.10		2.10	0.16	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1
8:2 FTS	2.10		2.10	0.26	ug/Kg	☼	09/27/19 10:45	10/03/19 14:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C5 PFPeA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFHxA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*

Client Sample ID: GERNATT-CF-COMP 1
Lab Sample ID: 480-159547-30
Date Collected: 09/16/19 13:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 93.0

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFHpA	*104*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C4 PFOA	*99*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C5 PFNA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFDA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFUnA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFDoA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C2 PFTeDA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
18O2 PFHxS	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C4 PFOS	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
13C8 FOSA	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
d3-NMeFOSAA	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
d5-NEtFOSAA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*
M2-8:2 FTS	*122*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**12.8**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Barium	**45.1**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Beryllium	**0.47**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Cadmium	ND		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Chromium	**11.0**		0.53		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Copper	**33.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Lead	**17.2**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Manganese	**514**		0.21		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Nickel	**27.5**		5.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Silver	ND		0.64		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1
Zinc	**116**		2.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:32	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020		mg/Kg	☼	10/11/19 13:45	10/11/19 14:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:48	1

Client Sample ID: GERNATT-CF-COMP 2
Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.43**	**J**	1.86	0.33	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoropentanoic acid (PFPeA)	1.86		1.86	0.46	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorohexanoic acid (PFHxA)	1.86		1.86	0.54	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroheptanoic acid (PFHpA)	**0.33**	**J**	1.86	0.23	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorooctanoic acid (PFOA)	1.86		1.86	0.79	ng/L		10/07/19 06:04	10/09/19 02:47	1

Client Sample ID: GERNATT-CF-COMP 2
Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	1.86		1.86	0.25	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorodecanoic acid (PFDA)	1.86		1.86	0.29	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroundecanoic acid (PFUnA)	1.86		1.86	1.02	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorododecanoic acid (PFDoA)	1.86		1.86	0.51	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorotridecanoic acid (PFTriA)	1.86		1.86	1.21	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorotetradecanoic acid (PFTeA)	1.86		1.86	0.27	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorobutanesulfonic acid (PFBS)	1.86		1.86	0.19	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorohexanesulfonic acid (PFHxS)	**0.30**	**J B**	1.86	0.16	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.86		1.86	0.18	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorooctanesulfonic acid (PFOS)	1.86		1.86	0.50	ng/L		10/07/19 06:04	10/09/19 02:47	1
Perfluorodecanesulfonic acid (PFDS)	1.86		1.86	0.30	ng/L		10/07/19 06:04	10/09/19 02:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFHxA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFOA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C5 PFNA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFDA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFUnA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFDoA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFOS	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C4 PFHpA	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*
13C5 PFPeA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:47*	*1*

Client Sample ID: GERNATT-CF-COMP 2
Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 94.1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Anthracene	ND		180	44	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[a]pyrene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[b]fluoranthene	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Chrysene	ND		180	40	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1

Client Sample ID: GERNATT-CF-COMP 2 — Lab Sample ID: 480-159547-31

Date Collected: 09/16/19 13:53 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 94.1**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
1,4-Dioxane	ND		210	58	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Phenanthrene	ND		180	26	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Phenol	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 22:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*60 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
2-Fluorophenol (Surr)	*82*		*52 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
Nitrobenzene-d5 (Surr)	*91*		*53 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
Phenol-d5 (Surr)	*89*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
p-Terphenyl-d14 (Surr)	*105*		*79 - 130*	*09/25/19 14:37*	*09/26/19 22:47*	*1*
2,4,6-Tribromophenol (Surr)	*102*		*54 - 120*	*09/25/19 14:37*	*09/26/19 22:47*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
4,4'-DDT	ND		1.8	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Aldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
alpha-BHC	**0.42**	**J B**	1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
cis-Chlordane	ND		1.8	0.87	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
beta-BHC	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Dieldrin	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan II	ND		1.8	0.31	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
gamma-BHC (Lindane)	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 16:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*102*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:08*	*1*
DCB Decachlorobiphenyl	*93*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:08*	*1*
Tetrachloro-m-xylene	*87*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:08*	*1*
Tetrachloro-m-xylene	*74*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:08*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1221	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1232	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1242	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1248	ND		0.19	0.036	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1254	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1260	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1262	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1
PCB-1268	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1

Client Sample ID: GERNATT-CF-COMP 2
Lab Sample ID: 480-159547-31

Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 94.1

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Polychlorinated biphenyls, Total	ND		0.19	0.087	mg/Kg	☼	09/24/19 05:51	09/27/19 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*120*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:10*	*1*
DCB Decachlorobiphenyl	*107*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:10*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:10*	*1*
Tetrachloro-m-xylene	*93*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:10*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		17	6.2	ug/Kg	☼	09/25/19 05:49	10/01/19 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*	*09/25/19 05:49*	*10/01/19 15:16*	*1*
2,4-Dichlorophenylacetic acid	*63*		*28 - 129*	*09/25/19 05:49*	*10/01/19 15:16*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.032**	**J**	0.20	0.028	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoropentanoic acid (PFPeA)	0.20		0.20	0.078	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorohexanoic acid (PFHxA)	0.20		0.20	0.042	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanoic acid (PFOA)	0.20		0.20	0.087	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorononanoic acid (PFNA)	0.20		0.20	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorodecanoic acid (PFDA)	0.20		0.20	0.022	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroundecanoic acid (PFUnA)	0.20		0.20	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorododecanoic acid (PFDoA)	0.20		0.20	0.068	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorotridecanoic acid (PFTriA)	0.20		0.20	0.052	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorotetradecanoic acid (PFTeA)	0.20		0.20	0.055	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorobutanesulfonic acid (PFBS)	0.20		0.20	0.025	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorohexanesulfonic acid (PFHxS)	0.20		0.20	0.031	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.20		0.20	0.035	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.20	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
Perfluorooctanesulfonamide (FOSA)	0.20		0.20	0.083	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.02		2.02	0.39	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.02		2.02	0.37	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
6:2 FTS	2.02		2.02	0.15	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1
8:2 FTS	2.02		2.02	0.25	ug/Kg	☼	09/27/19 10:45	10/03/19 14:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C5 PFPeA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFHxA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFHpA	*100*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C5 PFNA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFDA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFUnA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*

Client Sample ID: GERNATT-CF-COMP 2

Lab Sample ID: 480-159547-31
Date Collected: 09/16/19 13:53
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 94.1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFDoA	*86*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C2 PFTeDA	*79*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
18O2 PFHxS	*107*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C4 PFOS	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
13C8 FOSA	*96*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
d3-NMeFOSAA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
d5-NEtFOSAA	*101*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
M2-6:2 FTS	*108*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*
M2-8:2 FTS	*124*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:22*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.5**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Barium	**45.1**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Beryllium	**0.87**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Chromium	**29.2**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Copper	**29.5**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Lead	**11.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Manganese	**508**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Nickel	**32.1**		5.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Selenium	ND		4.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Silver	ND		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1
Zinc	**97.7**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:47	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.021		mg/Kg	☼	10/11/19 13:45	10/11/19 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.1		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:51	1

Client Sample ID: GERNATT-CF-COMP 3

Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.57**	**J**	1.81	0.32	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.52	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroheptanoic acid (PFHpA)	1.81		1.81	0.23	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorononanoic acid (PFNA)	1.81		1.81	0.24	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroundecanoic acid (PFUnA)	1.81		1.81	0.99	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18	ng/L		10/07/19 06:04	10/09/19 02:57	1

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorohexanesulfonic acid (PFHxS)	**0.23**	**J B**	1.81	0.15	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49	ng/L		10/07/19 06:04	10/09/19 02:57	1
Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29	ng/L		10/07/19 06:04	10/09/19 02:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFHxA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFOA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C5 PFNA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFUnA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFDoA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
18O2 PFHxS	*111*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFOS	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C4 PFHpA	*111*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*
13C5 PFPeA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 02:57*	*1*

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Acenaphthylene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Anthracene	ND		180	45	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[a]anthracene	ND		180	18	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[a]pyrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[b]fluoranthene	ND		180	29	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[g,h,i]perylene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Benzo[k]fluoranthene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Chrysene	ND		180	40	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Dibenz(a,h)anthracene	ND		180	32	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Dibenzofuran	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Fluoranthene	ND		180	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Fluorene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Hexachlorobenzene	ND		180	24	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Indeno[1,2,3-cd]pyrene	ND		180	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
2-Methylphenol	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Methylphenol, 3 & 4	ND		350	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Naphthalene	ND		180	23	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
1,4-Dioxane	ND		210	58	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Pentachlorophenol	ND		350	180	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Phenanthrene	ND		180	27	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1
Phenol	ND		180	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1

Client Sample ID: GERNATT-CF-COMP 3 — Lab Sample ID: 480-159547-32

Date Collected: 09/16/19 13:57 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.9**

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		180	21	ug/Kg	☼	09/25/19 14:37	09/26/19 23:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*60 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
2-Fluorophenol (Surr)	*73*		*52 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
Nitrobenzene-d5 (Surr)	*87*		*53 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
Phenol-d5 (Surr)	*80*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
p-Terphenyl-d14 (Surr)	*101*		*79 - 130*	*09/25/19 14:37*	*09/26/19 23:13*	*1*
2,4,6-Tribromophenol (Surr)	*94*		*54 - 120*	*09/25/19 14:37*	*09/26/19 23:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
4,4'-DDE	ND		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
4,4'-DDT	ND		1.8	0.42	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Aldrin	ND		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
alpha-BHC	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
cis-Chlordane	ND		1.8	0.88	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
beta-BHC	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
delta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Dieldrin	ND		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan I	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan II	ND		1.8	0.32	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endosulfan sulfate	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Endrin	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
gamma-BHC (Lindane)	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1
Heptachlor	ND		1.8	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*116*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
DCB Decachlorobiphenyl	*108*		*45 - 120*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
Tetrachloro-m-xylene	*97*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:27*	*1*
Tetrachloro-m-xylene	*86*		*30 - 124*	*09/25/19 07:36*	*09/27/19 16:27*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1221	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1232	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1242	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1248	ND		0.24	0.046	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1254	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1260	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1262	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
PCB-1268	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1
Polychlorinated biphenyls, Total	ND		0.24	0.11	mg/Kg	☼	09/24/19 05:51	09/27/19 16:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*128*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:23*	*1*
DCB Decachlorobiphenyl	*109*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:23*	*1*
Tetrachloro-m-xylene	*104*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:23*	*1*

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32

Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*92*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:23*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		18	6.4	ug/Kg	☼	09/25/19 05:49	10/01/19 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid	*81*		*28 - 129*	*09/25/19 05:49*	*10/01/19 15:46*	*1*
2,4-Dichlorophenylacetic acid	*65*		*28 - 129*	*09/25/19 05:49*	*10/01/19 15:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.039**	**J**	0.21	0.029	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.079	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanoic acid (PFOA)	0.21		0.21	0.088	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorononanoic acid (PFNA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.052	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.055	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.21	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.084	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.05		2.05	0.40	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.05		2.05	0.38	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
6:2 FTS	2.05		2.05	0.15	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1
8:2 FTS	2.05		2.05	0.26	ug/Kg	☼	09/27/19 10:45	10/03/19 14:32	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	*95*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C5 PFPeA	*97*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFHxA	*92*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFHpA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFOA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C5 PFNA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFDA	*91*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFUnA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFDoA	*94*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C2 PFTeDA	*89*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
18O2 PFHxS	*105*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
13C8 FOSA	*98*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*

Client Sample ID: GERNATT-CF-COMP 3
Lab Sample ID: 480-159547-32
Date Collected: 09/16/19 13:57
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d3-NMeFOSAA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
d5-NEtFOSAA	*102*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*
M2-8:2 FTS	*131*		*25 - 150*	*09/27/19 10:45*	*10/03/19 14:32*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**9.3**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Barium	**43.1**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Beryllium	**0.40**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Cadmium	ND		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Chromium	**9.5**		0.54		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Copper	**30.7**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Lead	**14.8**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Manganese	**611**		0.22		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Nickel	**25.2**		5.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Selenium	ND		4.4		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Silver	ND		0.65		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1
Zinc	**107**		2.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:51	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.1		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.2		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H	1.0		mg/Kg	☼	09/30/19 20:45	10/02/19 09:50	1

Client Sample ID: GERNATT-TS-GRAB 1
Lab Sample ID: 480-159547-33
Date Collected: 09/16/19 14:15
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1

Client Sample ID: GERNATT-TS-GRAB 1
Lab Sample ID: 480-159547-33
Date Collected: 09/16/19 14:15
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.3

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND	vs	5.6	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Ethylbenzene	ND	vs	5.6	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
n-Butylbenzene	ND	vs	5.6	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
sec-Butylbenzene	ND	vs	5.6	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 126*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:31*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:31*	*1*

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1

Client Sample ID: GERNATT-TS-GRAB 2

Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.0

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*127*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
4-Bromofluorobenzene (Surr)	*117*		*72 - 126*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/24/19 10:38*	*09/24/19 15:55*	*1*
Dibromofluoromethane (Surr)	*120*		*60 - 140*	*09/24/19 10:38*	*09/24/19 15:55*	*1*

Client Sample ID: GERNATT-TS-GRAB 3

Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,1-Dichloroethane	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,1-Dichloroethene	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,4-Dichlorobenzene	ND	vs	5.6	0.79	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
2-Butanone (MEK)	ND	vs	28	2.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Benzene	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Vinyl chloride	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1

Client Sample ID: GERNATT-TS-GRAB 3 — Lab Sample ID: 480-159547-35

Date Collected: 09/16/19 14:17 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 87.3**

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 126*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
4-Bromofluorobenzene (Surr)	*93*		*72 - 126*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 16:20*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/24/19 10:38*	*09/24/19 16:20*	*1*

Client Sample ID: GERNATT-TS-GRAB 4 — Lab Sample ID: 480-159547-36

Date Collected: 09/16/19 14:18 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 90.7**

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.5	0.40	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,1-Dichloroethane	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,1-Dichloroethene	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2,4-Trimethylbenzene	ND	vs	5.5	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2-Dichlorobenzene	ND	vs	5.5	0.43	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,2-Dichloroethane	ND	vs	5.5	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,3,5-Trimethylbenzene	ND	vs	5.5	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,3-Dichlorobenzene	ND	vs	5.5	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,4-Dichlorobenzene	ND	vs	5.5	0.77	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Acetone	ND	vs	28	4.6	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Benzene	ND	vs	5.5	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Carbon tetrachloride	ND	vs	5.5	0.53	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Chlorobenzene	ND	vs	5.5	0.73	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Chloroform	ND	vs	5.5	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
cis-1,2-Dichloroethene	ND	vs	5.5	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Ethylbenzene	ND	vs	5.5	0.38	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Methyl tert-butyl ether	ND	vs	5.5	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Methylene Chloride	ND	vs	5.5	2.5	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
n-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
N-Propylbenzene	ND	vs	5.5	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
sec-Butylbenzene	ND	vs	5.5	0.48	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Tetrachloroethene	ND	vs	5.5	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Toluene	ND	vs	5.5	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
trans-1,2-Dichloroethene	ND	vs	5.5	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Trichloroethene	ND	vs	5.5	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Vinyl chloride	ND	vs	5.5	0.67	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
Xylenes, Total	ND	vs	11	0.93	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1
tert-Butylbenzene	ND	vs	5.5	0.57	ug/Kg	☼	09/24/19 10:38	09/24/19 16:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*130*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
4-Bromofluorobenzene (Surr)	*116*		*72 - 126*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
Toluene-d8 (Surr)	*113*		*71 - 125*	*09/24/19 10:38*	*09/24/19 16:44*	*1*
Dibromofluoromethane (Surr)	*124*		*60 - 140*	*09/24/19 10:38*	*09/24/19 16:44*	*1*

Client Sample ID: GERNATT-TS-GRAB 5

Lab Sample ID: 480-159547-37
Date Collected: 09/16/19 14:19
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,1-Dichloroethane	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,1-Dichloroethene	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,4-Dichlorobenzene	ND	vs	5.6	0.79	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
1,4-Dioxane	ND	vs	110	25	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
2-Butanone (MEK)	ND	vs	28	2.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Benzene	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Chloroform	ND	vs	5.6	0.35	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.72	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Vinyl chloride	ND	vs	5.6	0.69	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 126*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
4-Bromofluorobenzene (Surr)	*92*		*72 - 126*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
Toluene-d8 (Surr)	*89*		*71 - 125*	*09/24/19 10:38*	*09/24/19 17:09*	*1*
Dibromofluoromethane (Surr)	*94*		*60 - 140*	*09/24/19 10:38*	*09/24/19 17:09*	*1*

Client Sample ID: GERNATT-TS-GRAB 6

Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	vs	5.6	0.41	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,1-Dichloroethane	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,1-Dichloroethene	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2,4-Trimethylbenzene	ND	vs	5.6	1.1	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2-Dichlorobenzene	ND	vs	5.6	0.44	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,2-Dichloroethane	ND	vs	5.6	0.28	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,3,5-Trimethylbenzene	ND	vs	5.6	0.36	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1

Client Sample ID: GERNATT-TS-GRAB 6

Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.0

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	vs	5.6	0.29	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,4-Dichlorobenzene	ND	vs	5.6	0.78	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
1,4-Dioxane	ND	vs	110	24	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
2-Butanone (MEK)	ND	vs	28	2.0	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Acetone	ND	vs	28	4.7	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Benzene	ND	vs	5.6	0.27	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Carbon tetrachloride	ND	vs	5.6	0.54	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Chlorobenzene	ND	vs	5.6	0.74	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Chloroform	ND	vs	5.6	0.34	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
cis-1,2-Dichloroethene	ND	vs	5.6	0.71	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Ethylbenzene	ND	vs	5.6	0.39	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Methyl tert-butyl ether	ND	vs	5.6	0.55	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Methylene Chloride	ND	vs	5.6	2.6	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
n-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
N-Propylbenzene	ND	vs	5.6	0.45	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
sec-Butylbenzene	ND	vs	5.6	0.49	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Tetrachloroethene	ND	vs	5.6	0.75	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Toluene	ND	vs	5.6	0.42	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
trans-1,2-Dichloroethene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Trichloroethene	ND	vs	5.6	1.2	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Vinyl chloride	ND	vs	5.6	0.68	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
Xylenes, Total	ND	vs	11	0.94	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1
tert-Butylbenzene	ND	vs	5.6	0.58	ug/Kg	☼	09/24/19 10:38	09/24/19 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*135*	*X*	*64 - 126*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
4-Bromofluorobenzene (Surr)	*123*		*72 - 126*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
Toluene-d8 (Surr)	*116*		*71 - 125*	*09/24/19 10:38*	*09/24/19 17:34*	*1*
Dibromofluoromethane (Surr)	*127*		*60 - 140*	*09/24/19 10:38*	*09/24/19 17:34*	*1*

Client Sample ID: GERNATT-TS-COMP 1

Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.99**	**J**	1.83	0.32	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoropentanoic acid (PFPeA)	1.83		1.83	0.45	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorohexanoic acid (PFHxA)	1.83		1.83	0.53	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoroheptanoic acid (PFHpA)	**0.83**	**J**	1.83	0.23	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorooctanoic acid (PFOA)	**2.65**		1.83	0.78	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorononanoic acid (PFNA)	**0.57**	**J**	1.83	0.25	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorohexanesulfonic acid (PFHxS)	**0.37**	**J B**	1.83	0.16	ng/L		10/07/19 06:04	10/09/19 03:06	1

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorooctanesulfonic acid (PFOS)	**1.01**	**J**	1.83	0.49	ng/L		10/07/19 06:04	10/09/19 03:06	1
Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29	ng/L		10/07/19 06:04	10/09/19 03:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFHxA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFOA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C5 PFNA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFUnA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFDoA	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
18O2 PFHxS	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFOS	*101*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C4 PFHpA	*106*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*
13C5 PFPeA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:06*	*1*

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Anthracene	ND		190	47	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[b]fluoranthene	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Chrysene	ND		190	43	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Dibenzofuran	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Fluorene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
2-Methylphenol	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Methylphenol, 3 & 4	ND		370	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
1,4-Dioxane	ND		220	62	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Pentachlorophenol	ND		370	190	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Phenol	ND		190	29	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1
Pyrene	ND		190	22	ug/Kg	☼	09/25/19 14:37	09/26/19 23:38	1

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39

Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	87		60 - 120	09/25/19 14:37	09/26/19 23:38	1
2-Fluorophenol (Surr)	74		52 - 120	09/25/19 14:37	09/26/19 23:38	1
Nitrobenzene-d5 (Surr)	88		53 - 120	09/25/19 14:37	09/26/19 23:38	1
Phenol-d5 (Surr)	84		54 - 120	09/25/19 14:37	09/26/19 23:38	1
p-Terphenyl-d14 (Surr)	101		79 - 130	09/25/19 14:37	09/26/19 23:38	1
2,4,6-Tribromophenol (Surr)	101		54 - 120	09/25/19 14:37	09/26/19 23:38	1

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**5.7**		1.8	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
4,4'-DDE	**11**		1.8	0.39	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
4,4'-DDT	**5.2**		1.8	0.43	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Aldrin	ND		1.8	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
alpha-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
cis-Chlordane	ND		1.8	0.92	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
beta-BHC	ND		1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
delta-BHC	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Dieldrin	**30**		1.8	0.44	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan I	ND		1.8	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan II	**0.91**	**J**	1.8	0.33	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endosulfan sulfate	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Endrin	**2.1**		1.8	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
gamma-BHC (Lindane)	ND		1.8	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1
Heptachlor	**0.99**	**J**	1.8	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	100		45 - 120	09/25/19 07:36	09/27/19 16:47	1
DCB Decachlorobiphenyl	92		45 - 120	09/25/19 07:36	09/27/19 16:47	1
Tetrachloro-m-xylene	82		30 - 124	09/25/19 07:36	09/27/19 16:47	1
Tetrachloro-m-xylene	63		30 - 124	09/25/19 07:36	09/27/19 16:47	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1221	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1232	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1242	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1248	ND		0.26	0.051	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1254	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1260	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1262	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
PCB-1268	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1
Polychlorinated biphenyls, Total	ND		0.26	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	115		65 - 174	09/24/19 05:51	09/27/19 16:35	1
DCB Decachlorobiphenyl	101		65 - 174	09/24/19 05:51	09/27/19 16:35	1
Tetrachloro-m-xylene	99		60 - 154	09/24/19 05:51	09/27/19 16:35	1
Tetrachloro-m-xylene	94		60 - 154	09/24/19 05:51	09/27/19 16:35	1

Client Sample ID: GERNATT-TS-COMP 1 — Lab Sample ID: 480-159547-39

Date Collected: 09/16/19 14:30 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 88.4**

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.7	ug/Kg	☼	09/25/19 05:49	10/01/19 16:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*74*		*28 - 129*	*09/25/19 05:49*	*10/01/19 16:16*	*1*
2,4-Dichlorophenylacetic acid	*75*		*28 - 129*	*09/25/19 05:49*	*10/01/19 16:16*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.16**	**J**	0.21	0.030	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.082	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.045	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanoic acid (PFOA)	**0.11**	**J**	0.21	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorononanoic acid (PFNA)	**0.050**	**J**	0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.071	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.027	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanesulfonic acid (PFOS)	**0.37**	**J**	0.53	0.21	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.087	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.12		2.12	0.41	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.12		2.12	0.39	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
6:2 FTS	2.12		2.12	0.16	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1
8:2 FTS	2.12		2.12	0.27	ug/Kg	☼	09/27/19 10:45	10/10/19 06:15	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C5 PFPeA	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFHxA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFHpA	*91*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFOA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C5 PFNA	*87*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFDA	*90*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFUnA	*92*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFDoA	*85*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C2 PFTeDA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
18O2 PFHxS	*100*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C4 PFOS	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
13C8 FOSA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
d3-NMeFOSAA	*75*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
d5-NEtFOSAA	*88*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
M2-6:2 FTS	*115*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*
M2-8:2 FTS	*114*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:15*	*1*

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.1**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Barium	**67.1**		0.56		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Beryllium	**0.38**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Cadmium	ND		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Chromium	**11.6**		0.56		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Copper	**20.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Lead	**15.1**		1.1		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Manganese	**798**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Nickel	**16.4**		5.6		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Selenium	ND		4.5		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Silver	ND		0.68		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1
Zinc	**92.7**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:55	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.041**		0.022		mg/Kg	☼	10/11/19 13:45	10/11/19 14:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.3		mg/Kg	☼	10/08/19 08:53	10/08/19 16:50	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 16:48	1
Cyanide, Total	ND	H F1	1.1		mg/Kg	☼	09/30/19 20:45	10/02/19 09:55	1

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.97**	**J**	1.83	0.32	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoropentanoic acid (PFPeA)	**0.46**	**J**	1.83	0.45	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorohexanoic acid (PFHxA)	**0.61**	**J**	1.83	0.53	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroheptanoic acid (PFHpA)	**0.98**	**J**	1.83	0.23	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorooctanoic acid (PFOA)	**2.70**		1.83	0.78	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorononanoic acid (PFNA)	**0.56**	**J**	1.83	0.25	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorohexanesulfonic acid (PFHxS)	**0.34**	**J B**	1.83	0.16	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorooctanesulfonic acid (PFOS)	**1.09**	**J**	1.83	0.49	ng/L		10/07/19 06:04	10/09/19 03:16	1
Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29	ng/L		10/07/19 06:04	10/09/19 03:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFHxA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10

Method: 537 (modified) - Fluorinated Alkyl Substances - SPLP East (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFOA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C5 PFNA	*102*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFDA	*109*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFUnA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFDoA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
18O2 PFHxS	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C4 PFOS	*99*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C4 PFHpA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*
13C5 PFPeA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 03:16*	*1*

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Acenaphthylene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Anthracene	ND		190	48	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[a]anthracene	ND		190	19	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[a]pyrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[b]fluoranthene	ND		190	31	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[g,h,i]perylene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Benzo[k]fluoranthene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Chrysene	ND		190	43	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Dibenz(a,h)anthracene	ND		190	34	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Dibenzofuran	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Fluoranthene	ND		190	20	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Fluorene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Hexachlorobenzene	ND		190	26	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Indeno[1,2,3-cd]pyrene	ND		190	24	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
2-Methylphenol	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Methylphenol, 3 & 4	ND		380	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Naphthalene	ND		190	25	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
1,4-Dioxane	ND		230	63	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Pentachlorophenol	ND		380	190	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Phenanthrene	ND		190	28	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Phenol	ND		190	30	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1
Pyrene	ND		190	23	ug/Kg	☼	09/25/19 14:37	09/27/19 00:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*60 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
2-Fluorophenol (Surr)	*77*		*52 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
Nitrobenzene-d5 (Surr)	*88*		*53 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
Phenol-d5 (Surr)	*89*		*54 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
p-Terphenyl-d14 (Surr)	*99*		*79 - 130*	*09/25/19 14:37*	*09/27/19 00:03*	*1*
2,4,6-Tribromophenol (Surr)	*110*		*54 - 120*	*09/25/19 14:37*	*09/27/19 00:03*	*1*

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40

Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	**5.2**		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
4,4'-DDE	**10**		1.9	0.40	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
4,4'-DDT	**4.3**		1.9	0.45	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Aldrin	ND		1.9	0.47	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
alpha-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
cis-Chlordane	ND		1.9	0.95	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
beta-BHC	ND		1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
delta-BHC	**0.47**	**J B**	1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Dieldrin	**27**		1.9	0.46	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan I	ND		1.9	0.37	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan II	**0.85**	**J**	1.9	0.34	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endosulfan sulfate	ND		1.9	0.36	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Endrin	**1.7**	**J**	1.9	0.38	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
gamma-BHC (Lindane)	**0.63**	**J**	1.9	0.35	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1
Heptachlor	**0.89**	**J**	1.9	0.41	ug/Kg	☼	09/25/19 07:36	09/27/19 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*97*		*45 - 120*	*09/25/19 07:36*	*09/27/19 17:07*	*1*
DCB Decachlorobiphenyl	*87*		*45 - 120*	*09/25/19 07:36*	*09/27/19 17:07*	*1*
Tetrachloro-m-xylene	*74*		*30 - 124*	*09/25/19 07:36*	*09/27/19 17:07*	*1*
Tetrachloro-m-xylene	*58*		*30 - 124*	*09/25/19 07:36*	*09/27/19 17:07*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1221	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1232	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1242	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1248	ND		0.25	0.050	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1254	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1260	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1262	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
PCB-1268	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1
Polychlorinated biphenyls, Total	ND		0.25	0.12	mg/Kg	☼	09/24/19 05:51	09/27/19 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*112*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:47*	*1*
DCB Decachlorobiphenyl	*100*		*65 - 174*	*09/24/19 05:51*	*09/27/19 16:47*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:47*	*1*
Tetrachloro-m-xylene	*92*		*60 - 154*	*09/24/19 05:51*	*09/27/19 16:47*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		19	6.8	ug/Kg	☼	09/25/19 05:49	10/01/19 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*73*		*28 - 129*	*09/25/19 05:49*	*10/01/19 20:08*	*1*
2,4-Dichlorophenylacetic acid	*62*		*28 - 129*	*09/25/19 05:49*	*10/01/19 20:08*	*1*

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40

Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.086	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.047	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanoic acid (PFOA)	**0.098**	**J**	0.22	0.096	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorononanoic acid (PFNA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.075	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.057	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanesulfonic acid (PFOS)	**0.44**	**J**	0.56	0.22	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.22		2.22	0.43	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.22		2.22	0.41	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
6:2 FTS	2.22		2.22	0.17	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1
8:2 FTS	2.22		2.22	0.28	ug/Kg	☼	09/27/19 10:45	10/10/19 06:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C5 PFPeA	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFHxA	*96*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFHpA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFOA	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C5 PFNA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFDA	*98*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFUnA	*93*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFDoA	*97*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C2 PFTeDA	*102*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
18O2 PFHxS	*107*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C4 PFOS	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
13C8 FOSA	*99*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
d3-NMeFOSAA	*76*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
d5-NEtFOSAA	*84*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
M2-6:2 FTS	*103*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*
M2-8:2 FTS	*101*		*25 - 150*	*09/27/19 10:45*	*10/10/19 06:25*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.8**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Barium	**78.8**		0.58		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Beryllium	**0.46**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Cadmium	ND		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40

Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**13.3**		0.58		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Copper	**24.7**		1.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Lead	**17.8**		1.2		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Manganese	**889**		0.23		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Nickel	**22.0**		5.8		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Selenium	ND		4.7		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Silver	ND		0.70		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1
Zinc	**115**		2.3		mg/Kg	☼	09/25/19 07:01	09/26/19 13:59	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.041**		0.023		mg/Kg	☼	10/11/19 13:45	10/11/19 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.2		mg/Kg	☼	10/08/19 10:53	10/08/19 17:00	1
Cr (VI)	ND		2.3		mg/Kg	☼	10/09/19 07:53	10/10/19 14:13	1
Cyanide, Total	ND	H	1.1		mg/Kg	☼	09/30/19 21:50	10/02/19 12:13	1

Surrogate Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(64-126)	(72-126)	(71-125)	(60-140)
480-159547-1	RUSSO-TS-GRAB 1	131 X	123	113	120
480-159547-2	RUSSO-TS-GRAB 2	101	96	93	98
480-159547-3	RUSSO-TS-GRAB 3	101	98	93	100
480-159547-4	RUSSO-TS-GRAB 4	106	102	95	103
480-159547-5	RUSSO-TS-GRAB 5	107	97	94	102
480-159547-6	RUSSO-TS-GRAB 6	131 X	122	117	125
480-159547-9	RUSSO-CF-GRAB 1	99	94	91	96
480-159547-10	RUSSO-CF-GRAB 2	126	119	117	121
480-159547-11	RUSSO-CF-GRAB 3	94	96	92	93
480-159547-12	RUSSO-CF-GRAB 4	113	112	108	116
480-159547-13	RUSSO-CF-GRAB 5	101	95	90	98
480-159547-14	RUSSO-CF-GRAB 6	110	101	98	105
480-159547-15	RUSSO-CF-GRAB 7	103	97	95	101
480-159547-16	RUSSO-CF-GRAB 8	119	112	109	118
480-159547-17	RUSSO-CF-GRAB 9	101	94	90	98
480-159547-21	GERNATT-CF-GRAB 1	120	118	114	118
480-159547-22	GERNATT-CF-GRAB 2	97	93	90	94
480-159547-23	GERNATT-CF-GRAB 3	114	109	108	112
480-159547-24	GERNATT-CF-GRAB 4	104	99	98	107
480-159547-24 MS	GERNATT-CF-GRAB 4	85	97	100	104
480-159547-24 MSD	GERNATT-CF-GRAB 4	86	99	101	102
480-159547-25	GERNATT-CF-GRAB 5	119	114	108	120
480-159547-26	GERNATT-CF-GRAB 6	100	95	90	96
480-159547-27	GERNATT-CF-GRAB 7	123	118	110	117
480-159547-28	GERNATT-CF-GRAB 8	99	94	91	93
480-159547-29	GERNATT-CF-GRAB 9	118	118	111	118
480-159547-33	GERNATT-TS-GRAB 1	99	94	89	93
480-159547-34	GERNATT-TS-GRAB 2	127 X	117	113	120
480-159547-35	GERNATT-TS-GRAB 3	100	93	89	94
480-159547-36	GERNATT-TS-GRAB 4	130 X	116	113	124
480-159547-37	GERNATT-TS-GRAB 5	101	92	89	94
480-159547-38	GERNATT-TS-GRAB 6	135 X	123	116	127
LCS 480-493565/1-A	Lab Control Sample	97	103	97	101
LCS 480-493743/1-A	Lab Control Sample	102	105	102	102
LCS 480-493988/1-A	Lab Control Sample	113	98	97	107
MB 480-493565/2-A	Method Blank	102	105	96	99
MB 480-493743/2-A	Method Blank	109	105	96	104
MB 480-493988/3-A	Method Blank	104	99	97	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Surrogate Summary

Client: New York State D.E.C. Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPHd14	TBP
Lab Sample ID	Client Sample ID	(60-120)	(52-120)	(53-120)	(54-120)	(79-130)	(54-120)
480-159547-7	RUSSO-TS-COMP 1	86	77	87	83	99	99
480-159547-8	RUSSO-TS-COMP 2	84	79	90	86	102	103
480-159547-18	RUSSO-CF-COMP 1	90	81	94	88	111	110
480-159547-19	RUSSO-CF-COMP 2	85	77	90	82	105	100
480-159547-20	RUSSO-CF-COMP 3	86	76	84	83	104	100
480-159547-30	GERNATT-CF-COMP 1	84	77	91	86	104	99
480-159547-31	GERNATT-CF-COMP 2	90	82	91	89	105	102
480-159547-32	GERNATT-CF-COMP 3	81	73	87	80	101	94
480-159547-39	GERNATT-TS-COMP 1	87	74	88	84	101	101
480-159547-40	GERNATT-TS-COMP 2	87	77	88	89	99	110
LCS 480-494075/2-A	Lab Control Sample	89	78	96	87	109	115
MB 480-494075/1-A	Method Blank	91	83	96	91	104	98

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1	DCBP2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(45-120)	(45-120)	(30-124)	(30-124)
480-159547-7	RUSSO-TS-COMP 1	103	116	87	68
480-159547-8	RUSSO-TS-COMP 2	95	104	86	65
480-159547-18	RUSSO-CF-COMP 1	101	97	86	77
480-159547-19	RUSSO-CF-COMP 2	90	90	75	71
480-159547-20	RUSSO-CF-COMP 3	99	94	85	76
480-159547-30	GERNATT-CF-COMP 1	107	100	95	82
480-159547-31	GERNATT-CF-COMP 2	102	93	87	74
480-159547-32	GERNATT-CF-COMP 3	116	108	97	86
480-159547-39	GERNATT-TS-COMP 1	100	92	82	63
480-159547-40	GERNATT-TS-COMP 2	97	87	74	58
LCS 480-493908/2-A	Lab Control Sample	93	85	74	57
MB 480-493908/1-A	Method Blank	79	74	63	49

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1	DCBP2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(65-174)	(65-174)	(60-154)	(60-154)
480-159547-7	RUSSO-TS-COMP 1	120	108	112	98
480-159547-8	RUSSO-TS-COMP 2	113	100	98	92

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1	DCBP2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(65-174)	(65-174)	(60-154)	(60-154)
480-159547-18	RUSSO-CF-COMP 1	121	102	87	90
480-159547-19	RUSSO-CF-COMP 2	114	107	106	95
480-159547-20	RUSSO-CF-COMP 3	160	140	145	132
480-159547-30	GERNATT-CF-COMP 1	122	110	111	97
480-159547-31	GERNATT-CF-COMP 2	120	107	98	93
480-159547-32	GERNATT-CF-COMP 3	128	109	104	92
480-159547-39	GERNATT-TS-COMP 1	115	101	99	94
480-159547-40	GERNATT-TS-COMP 2	112	100	98	92
LCS 480-493640/2-A	Lab Control Sample	125	116	131	121
MB 480-493640/1-A	Method Blank	111	84	99	98

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCPAA1	DCPAA2
Lab Sample ID	Client Sample ID	(28-129)	(28-129)
480-159547-7	RUSSO-TS-COMP 1	80	68
480-159547-7 MS	RUSSO-TS-COMP 1	89	76
480-159547-7 MSD	RUSSO-TS-COMP 1	81	75
480-159547-8	RUSSO-TS-COMP 2	67	70
480-159547-18	RUSSO-CF-COMP 1	80	62
480-159547-19	RUSSO-CF-COMP 2	83	76
480-159547-20	RUSSO-CF-COMP 3	78	68
480-159547-30	GERNATT-CF-COMP 1	74	68
480-159547-31	GERNATT-CF-COMP 2	80	63
480-159547-32	GERNATT-CF-COMP 3	81	65
480-159547-39	GERNATT-TS-COMP 1	74	75
480-159547-40	GERNATT-TS-COMP 2	73	62
LCS 480-493889/2-A	Lab Control Sample	80	72
MB 480-493889/1-A	Method Blank	83	68

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid

Isotope Dilution Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
480-159547-7	RUSSO-TS-COMP 1	90	88	85	87	93	96	94	96
480-159547-8	RUSSO-TS-COMP 2	86	83	86	93	93	94	96	98
480-159547-18	RUSSO-CF-COMP 1	98	97	100	94	103	95	100	103
480-159547-19	RUSSO-CF-COMP 2	102	101	102	111	105	101	96	113
480-159547-20	RUSSO-CF-COMP 3	96	97	96	95	101	101	94	103
480-159547-30	GERNATT-CF-COMP 1	94	96	89	104	99	100	95	97
480-159547-31	GERNATT-CF-COMP 2	95	96	89	100	101	98	94	96
480-159547-32	GERNATT-CF-COMP 3	95	97	92	102	98	102	91	94
480-159547-39	GERNATT-TS-COMP 1	92	91	85	91	93	87	90	92
480-159547-40	GERNATT-TS-COMP 2	98	103	96	97	101	93	98	93
LCS 320-326624/2-A	Lab Control Sample	84	84	84	88	88	91	84	87
LCS 320-328853/2-A	Lab Control Sample	107	107	104	108	105	104	104	103
LCSD 320-328853/3-A	Lab Control Sample Dup	110	109	108	111	108	109	108	105
MB 320-326624/1-A	Method Blank	79	80	79	84	82	81	77	75
MB 320-328853/1-A	Method Blank	111	110	109	112	106	107	109	109

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	PFHxS	PFOS	PFOSA	-NMeFOS/	-NEtFOS/	M262FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
480-159547-7	RUSSO-TS-COMP 1	95	103	98	93	99	84	85	101
480-159547-8	RUSSO-TS-COMP 2	98	104	95	92	100	74	80	91
480-159547-18	RUSSO-CF-COMP 1	96	104	97	90	100	95	92	76
480-159547-19	RUSSO-CF-COMP 2	112	92	103	93	101	88	89	109
480-159547-20	RUSSO-CF-COMP 3	95	89	100	91	98	85	84	102
480-159547-30	GERNATT-CF-COMP 1	100	95	101	89	93	91	97	103
480-159547-31	GERNATT-CF-COMP 2	86	79	107	95	96	95	101	108
480-159547-32	GERNATT-CF-COMP 3	94	89	105	93	98	102	102	103
480-159547-39	GERNATT-TS-COMP 1	85	99	100	93	93	75	88	115
480-159547-40	GERNATT-TS-COMP 2	97	102	107	99	99	76	84	103
LCS 320-326624/2-A	Lab Control Sample	90	85	92	80	80	81	88	64
LCS 320-328853/2-A	Lab Control Sample	106	106	110	99				
LCSD 320-328853/3-A	Lab Control Sample Dup	107	110	111	101				
MB 320-326624/1-A	Method Blank	69	71	94	80	71	73	75	78
MB 320-328853/1-A	Method Blank	108	111	111	104				

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M282FTS							
Lab Sample ID	Client Sample ID	(25-150)							
480-159547-7	RUSSO-TS-COMP 1	118							
480-159547-8	RUSSO-TS-COMP 2	96							
480-159547-18	RUSSO-CF-COMP 1	80							
480-159547-19	RUSSO-CF-COMP 2	129							
480-159547-20	RUSSO-CF-COMP 3	114							
480-159547-30	GERNATT-CF-COMP 1	122							
480-159547-31	GERNATT-CF-COMP 2	124							
480-159547-32	GERNATT-CF-COMP 3	131							
480-159547-39	GERNATT-TS-COMP 1	114							
480-159547-40	GERNATT-TS-COMP 2	101							
LCS 320-326624/2-A	Lab Control Sample	62							
LCS 320-328853/2-A	Lab Control Sample								
LCSD 320-328853/3-A	Lab Control Sample Dup								

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M282FTS (25-150)							
MB 320-326624/1-A	Method Blank	74							
MB 320-328853/1-A	Method Blank								

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
PFHpA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFHxA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)	PFDoA (25-150)	PFTDA (25-150)
480-159547-7	RUSSO-TS-COMP 1	105	107	106	101	105	102	101	96
480-159547-8	RUSSO-TS-COMP 2	109	106	107	106	107	108	106	100
480-159547-18	RUSSO-CF-COMP 1	109	109	109	112	110	107	110	108
480-159547-19	RUSSO-CF-COMP 2	105	100	106	101	103	103	107	105
480-159547-20	RUSSO-CF-COMP 3	108	108	110	106	102	107	103	107
480-159547-30	GERNATT-CF-COMP 1	109	108	108	104	105	109	102	108
480-159547-31	GERNATT-CF-COMP 2	110	106	106	107	107	104	108	104
480-159547-32	GERNATT-CF-COMP 3	109	103	109	105	105	108	105	105
480-159547-39	GERNATT-TS-COMP 1	103	104	103	101	104	101	101	90
480-159547-40	GERNATT-TS-COMP 2	105	105	104	102	109	104	105	90
LB 320-326292/1-B	Method Blank	107	105	105	105	104	104	103	104
LB 320-327145/1-B	Method Blank	113	107	108	107	106	109	108	109

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	PFHxS (25-150)	PFOS (25-150)	PFHpA (25-150)	PFPeA (25-150)
480-159547-7	RUSSO-TS-COMP 1	110	98	105	107
480-159547-8	RUSSO-TS-COMP 2	115	97	110	108
480-159547-18	RUSSO-CF-COMP 1	116	105	110	108
480-159547-19	RUSSO-CF-COMP 2	110	99	105	102
480-159547-20	RUSSO-CF-COMP 3	112	104	109	109
480-159547-30	GERNATT-CF-COMP 1	113	108	112	112
480-159547-31	GERNATT-CF-COMP 2	110	100	110	108
480-159547-32	GERNATT-CF-COMP 3	111	100	111	106

Isotope Dilution Summary

Client: New York State D.E.C. Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Solid **Prep Type: SPLP East**

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		PFHxS	PFOS	PFHpA	PFPeA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)
480-159547-39	GERNATT-TS-COMP 1	105	101	106	103
480-159547-40	GERNATT-TS-COMP 2	108	99	108	104
LB 320-326292/1-B	Method Blank	110	100	108	107
LB 320-327145/1-B	Method Blank	113	101	112	111

Surrogate Legend

PFBA = 13C4 PFBA
PFHxA = 13C2 PFHxA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFHpA = 13C4 PFHpA
PFPeA = 13C5 PFPeA

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-493565/2-A
Matrix: Solid
Analysis Batch: 493547

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493565

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,2,4-Trimethylbenzene	ND		5.0	0.96	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
1,4-Dioxane	ND		100	22	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Acetone	ND		25	4.2	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Benzene	ND		5.0	0.25	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Carbon tetrachloride	ND		5.0	0.48	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Chlorobenzene	ND		5.0	0.66	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Chloroform	ND		5.0	0.31	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Ethylbenzene	ND		5.0	0.35	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Methylene Chloride	ND		5.0	2.3	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
N-Propylbenzene	ND		5.0	0.40	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Tetrachloroethene	ND		5.0	0.67	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Toluene	ND		5.0	0.38	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Trichloroethene	ND		5.0	1.1	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Vinyl chloride	ND		5.0	0.61	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
Xylenes, Total	ND		10	0.84	ug/Kg		09/23/19 13:58	09/23/19 15:37	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg		09/23/19 13:58	09/23/19 15:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 126*	*09/23/19 13:58*	*09/23/19 15:37*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 126*	*09/23/19 13:58*	*09/23/19 15:37*	*1*
Toluene-d8 (Surr)	*96*		*71 - 125*	*09/23/19 13:58*	*09/23/19 15:37*	*1*
Dibromofluoromethane (Surr)	*99*		*60 - 140*	*09/23/19 13:58*	*09/23/19 15:37*	*1*

Lab Sample ID: LCS 480-493565/1-A
Matrix: Solid
Analysis Batch: 493547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493565

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	60.8	*	ug/Kg		122	77 - 121
1,1-Dichloroethane	50.0	55.4		ug/Kg		111	73 - 126
1,1-Dichloroethene	50.0	61.4		ug/Kg		123	59 - 125
1,2,4-Trimethylbenzene	50.0	54.9		ug/Kg		110	74 - 120
1,2-Dichlorobenzene	50.0	49.6		ug/Kg		99	75 - 120
1,2-Dichloroethane	50.0	51.0		ug/Kg		102	77 - 122

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-493565/1-A
Matrix: Solid
Analysis Batch: 493547

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493565

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	56.2		ug/Kg		112	74 - 120
1,3-Dichlorobenzene	50.0	53.0		ug/Kg		106	74 - 120
1,4-Dichlorobenzene	50.0	53.0		ug/Kg		106	73 - 120
1,4-Dioxane	1000	1090		ug/Kg		109	64 - 124
2-Butanone (MEK)	250	255		ug/Kg		102	70 - 134
Acetone	250	258		ug/Kg		103	61 - 137
Benzene	50.0	55.7		ug/Kg		111	79 - 127
Carbon tetrachloride	50.0	62.7		ug/Kg		125	75 - 135
Chlorobenzene	50.0	50.9		ug/Kg		102	76 - 124
Chloroform	50.0	54.4		ug/Kg		109	80 - 120
cis-1,2-Dichloroethene	50.0	54.8		ug/Kg		110	81 - 120
Ethylbenzene	50.0	54.7		ug/Kg		109	80 - 120
Methyl tert-butyl ether	50.0	52.8		ug/Kg		106	63 - 125
Methylene Chloride	50.0	51.9		ug/Kg		104	61 - 127
n-Butylbenzene	50.0	58.3		ug/Kg		117	70 - 120
N-Propylbenzene	50.0	57.9		ug/Kg		116	70 - 130
sec-Butylbenzene	50.0	57.1		ug/Kg		114	74 - 120
Tetrachloroethene	50.0	58.5		ug/Kg		117	74 - 122
Toluene	50.0	53.2		ug/Kg		106	74 - 128
trans-1,2-Dichloroethene	50.0	56.7		ug/Kg		113	78 - 126
Trichloroethene	50.0	57.2		ug/Kg		114	77 - 129
Vinyl chloride	50.0	57.8		ug/Kg		116	61 - 133
tert-Butylbenzene	50.0	56.1		ug/Kg		112	73 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 126*
4-Bromofluorobenzene (Surr)	*103*		*72 - 126*
Toluene-d8 (Surr)	*97*		*71 - 125*
Dibromofluoromethane (Surr)	*101*		*60 - 140*

Lab Sample ID: MB 480-493743/2-A
Matrix: Solid
Analysis Batch: 493693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493743

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,2,4-Trimethylbenzene	ND		5.0	0.96	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
1,4-Dioxane	ND		100	22	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Acetone	ND		25	4.2	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Benzene	ND		5.0	0.25	ug/Kg		09/24/19 10:38	09/24/19 12:05	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-493743/2-A
Matrix: Solid
Analysis Batch: 493693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493743

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		5.0	0.48	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Chlorobenzene	ND		5.0	0.66	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Chloroform	ND		5.0	0.31	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Ethylbenzene	ND		5.0	0.35	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Methylene Chloride	ND		5.0	2.3	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
N-Propylbenzene	ND		5.0	0.40	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Tetrachloroethene	ND		5.0	0.67	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Toluene	ND		5.0	0.38	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Trichloroethene	ND		5.0	1.1	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Vinyl chloride	ND		5.0	0.61	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
Xylenes, Total	ND		10	0.84	ug/Kg		09/24/19 10:38	09/24/19 12:05	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg		09/24/19 10:38	09/24/19 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*64 - 126*	*09/24/19 10:38*	*09/24/19 12:05*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 126*	*09/24/19 10:38*	*09/24/19 12:05*	*1*
Toluene-d8 (Surr)	*96*		*71 - 125*	*09/24/19 10:38*	*09/24/19 12:05*	*1*
Dibromofluoromethane (Surr)	*104*		*60 - 140*	*09/24/19 10:38*	*09/24/19 12:05*	*1*

Lab Sample ID: LCS 480-493743/1-A
Matrix: Solid
Analysis Batch: 493693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493743

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	60.2		ug/Kg		120	77 - 121
1,1-Dichloroethane	50.0	55.5		ug/Kg		111	73 - 126
1,1-Dichloroethene	50.0	59.3		ug/Kg		119	59 - 125
1,2,4-Trimethylbenzene	50.0	55.3		ug/Kg		111	74 - 120
1,2-Dichlorobenzene	50.0	50.1		ug/Kg		100	75 - 120
1,2-Dichloroethane	50.0	51.7		ug/Kg		103	77 - 122
1,3,5-Trimethylbenzene	50.0	56.4		ug/Kg		113	74 - 120
1,3-Dichlorobenzene	50.0	52.9		ug/Kg		106	74 - 120
1,4-Dichlorobenzene	50.0	53.1		ug/Kg		106	73 - 120
1,4-Dioxane	1000	960		ug/Kg		96	64 - 124
2-Butanone (MEK)	250	241		ug/Kg		97	70 - 134
Acetone	250	249		ug/Kg		99	61 - 137
Benzene	50.0	55.1		ug/Kg		110	79 - 127
Carbon tetrachloride	50.0	62.1		ug/Kg		124	75 - 135
Chlorobenzene	50.0	50.5		ug/Kg		101	76 - 124
Chloroform	50.0	53.8		ug/Kg		108	80 - 120
cis-1,2-Dichloroethene	50.0	54.1		ug/Kg		108	81 - 120
Ethylbenzene	50.0	54.4		ug/Kg		109	80 - 120
Methyl tert-butyl ether	50.0	51.3		ug/Kg		103	63 - 125

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-493743/1-A
Matrix: Solid
Analysis Batch: 493693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493743

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	52.6		ug/Kg		105	61 - 127
n-Butylbenzene	50.0	58.5		ug/Kg		117	70 - 120
N-Propylbenzene	50.0	56.1		ug/Kg		112	70 - 130
sec-Butylbenzene	50.0	57.2		ug/Kg		114	74 - 120
Tetrachloroethene	50.0	60.7		ug/Kg		121	74 - 122
Toluene	50.0	53.7		ug/Kg		107	74 - 128
trans-1,2-Dichloroethene	50.0	56.1		ug/Kg		112	78 - 126
Trichloroethene	50.0	55.4		ug/Kg		111	77 - 129
Vinyl chloride	50.0	57.6		ug/Kg		115	61 - 133
tert-Butylbenzene	50.0	56.9		ug/Kg		114	73 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 126*
4-Bromofluorobenzene (Surr)	*105*		*72 - 126*
Toluene-d8 (Surr)	*102*		*71 - 125*
Dibromofluoromethane (Surr)	*102*		*60 - 140*

Lab Sample ID: MB 480-493988/3-A
Matrix: Solid
Analysis Batch: 493944

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,2,4-Trimethylbenzene	ND		5.0	0.96	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
1,4-Dioxane	ND		100	22	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Acetone	ND		25	4.2	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Benzene	ND		5.0	0.25	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Carbon tetrachloride	ND		5.0	0.48	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Chlorobenzene	ND		5.0	0.66	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Chloroform	ND		5.0	0.31	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Ethylbenzene	ND		5.0	0.35	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Methylene Chloride	ND		5.0	2.3	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
N-Propylbenzene	ND		5.0	0.40	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Tetrachloroethene	ND		5.0	0.67	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Toluene	ND		5.0	0.38	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg		09/25/19 10:16	09/25/19 11:56	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-493988/3-A
Matrix: Solid
Analysis Batch: 493944

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		5.0	1.1	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Vinyl chloride	ND		5.0	0.61	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
Xylenes, Total	ND		10	0.84	ug/Kg		09/25/19 10:16	09/25/19 11:56	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg		09/25/19 10:16	09/25/19 11:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*64 - 126*	*09/25/19 10:16*	*09/25/19 11:56*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 126*	*09/25/19 10:16*	*09/25/19 11:56*	*1*
Toluene-d8 (Surr)	*97*		*71 - 125*	*09/25/19 10:16*	*09/25/19 11:56*	*1*
Dibromofluoromethane (Surr)	*107*		*60 - 140*	*09/25/19 10:16*	*09/25/19 11:56*	*1*

Lab Sample ID: LCS 480-493988/1-A
Matrix: Solid
Analysis Batch: 493944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	57.7		ug/Kg		115	77 - 121
1,1-Dichloroethane	50.0	53.9		ug/Kg		108	73 - 126
1,1-Dichloroethene	50.0	53.1		ug/Kg		106	59 - 125
1,2,4-Trimethylbenzene	50.0	51.7		ug/Kg		103	74 - 120
1,2-Dichlorobenzene	50.0	49.8		ug/Kg		100	75 - 120
1,2-Dichloroethane	50.0	52.5		ug/Kg		105	77 - 122
1,3,5-Trimethylbenzene	50.0	52.4		ug/Kg		105	74 - 120
1,3-Dichlorobenzene	50.0	51.9		ug/Kg		104	74 - 120
1,4-Dichlorobenzene	50.0	50.2		ug/Kg		100	73 - 120
1,4-Dioxane	1000	902		ug/Kg		90	64 - 124
2-Butanone (MEK)	250	445	*	ug/Kg		178	70 - 134
Acetone	250	253		ug/Kg		101	61 - 137
Benzene	50.0	52.4		ug/Kg		105	79 - 127
Carbon tetrachloride	50.0	63.2		ug/Kg		126	75 - 135
Chlorobenzene	50.0	51.8		ug/Kg		104	76 - 124
Chloroform	50.0	54.5		ug/Kg		109	80 - 120
cis-1,2-Dichloroethene	50.0	53.6		ug/Kg		107	81 - 120
Ethylbenzene	50.0	52.4		ug/Kg		105	80 - 120
Methyl tert-butyl ether	50.0	50.9		ug/Kg		102	63 - 125
Methylene Chloride	50.0	49.9		ug/Kg		100	61 - 127
n-Butylbenzene	50.0	54.5		ug/Kg		109	70 - 120
N-Propylbenzene	50.0	53.0		ug/Kg		106	70 - 130
sec-Butylbenzene	50.0	53.6		ug/Kg		107	74 - 120
Tetrachloroethene	50.0	57.0		ug/Kg		114	74 - 122
Toluene	50.0	51.3		ug/Kg		103	74 - 128
trans-1,2-Dichloroethene	50.0	55.1		ug/Kg		110	78 - 126
Trichloroethene	50.0	54.8		ug/Kg		110	77 - 129
Vinyl chloride	50.0	57.1		ug/Kg		114	61 - 133
tert-Butylbenzene	50.0	51.6		ug/Kg		103	73 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*113*		*64 - 126*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-493988/1-A
Matrix: Solid
Analysis Batch: 493944

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493988

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*98*		*72 - 126*
Toluene-d8 (Surr)	*97*		*71 - 125*
Dibromofluoromethane (Surr)	*107*		*60 - 140*

Lab Sample ID: 480-159547-24 MS
Matrix: Solid
Analysis Batch: 493944

Client Sample ID: GERNATT-CF-GRAB 4
Prep Type: Total/NA
Prep Batch: 493988

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		52.8	52.7		ug/Kg	☼	100	77 - 121
1,1-Dichloroethane	ND		52.8	48.7		ug/Kg	☼	92	73 - 126
1,1-Dichloroethene	ND		52.8	48.4		ug/Kg	☼	92	59 - 125
1,2,4-Trimethylbenzene	ND		52.8	44.0		ug/Kg	☼	83	74 - 120
1,2-Dichlorobenzene	ND	F1	52.8	39.3	F1	ug/Kg	☼	74	75 - 120
1,2-Dichloroethane	ND		52.8	42.9		ug/Kg	☼	81	77 - 122
1,3,5-Trimethylbenzene	ND		52.8	44.8		ug/Kg	☼	85	74 - 120
1,3-Dichlorobenzene	ND		52.8	41.1		ug/Kg	☼	78	74 - 120
1,4-Dichlorobenzene	ND		52.8	40.3		ug/Kg	☼	76	73 - 120
1,4-Dioxane	ND	F1	1060	482	F1	ug/Kg	☼	46	64 - 124
2-Butanone (MEK)	ND	F1 *	264	142	F1	ug/Kg	☼	54	70 - 134
Acetone	ND	F1	264	143	F1	ug/Kg	☼	54	61 - 137
Benzene	ND		52.8	48.4		ug/Kg	☼	92	79 - 127
Carbon tetrachloride	ND		52.8	56.0		ug/Kg	☼	106	75 - 135
Chlorobenzene	ND		52.8	44.8		ug/Kg	☼	85	76 - 124
Chloroform	ND		52.8	50.3		ug/Kg	☼	95	80 - 120
cis-1,2-Dichloroethene	ND		52.8	48.6		ug/Kg	☼	92	80 - 120
Ethylbenzene	ND		52.8	46.6		ug/Kg	☼	88	80 - 120
Methyl tert-butyl ether	ND		52.8	40.4		ug/Kg	☼	76	63 - 125
Methylene Chloride	2.5	J	52.8	46.4		ug/Kg	☼	83	61 - 127
n-Butylbenzene	ND		52.8	40.6		ug/Kg	☼	77	70 - 120
N-Propylbenzene	ND		52.8	44.8		ug/Kg	☼	85	70 - 130
sec-Butylbenzene	ND		52.8	44.0		ug/Kg	☼	83	74 - 120
Tetrachloroethene	ND		52.8	48.0		ug/Kg	☼	91	74 - 122
Toluene	ND		52.8	46.5		ug/Kg	☼	88	74 - 128
trans-1,2-Dichloroethene	ND		52.8	50.0		ug/Kg	☼	95	78 - 126
Trichloroethene	ND		52.8	47.8		ug/Kg	☼	90	77 - 129
Vinyl chloride	ND		52.8	51.6		ug/Kg	☼	98	61 - 133
tert-Butylbenzene	ND		52.8	45.4		ug/Kg	☼	86	73 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*85*		*64 - 126*
4-Bromofluorobenzene (Surr)	*97*		*72 - 126*
Toluene-d8 (Surr)	*100*		*71 - 125*
Dibromofluoromethane (Surr)	*104*		*60 - 140*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-159547-24 MSD
Client Sample ID: GERNATT-CF-GRAB 4
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 493944
Prep Batch: 493988

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		53.8	50.7		ug/Kg	☼	94	77 - 121	4	30
1,1-Dichloroethane	ND		53.8	47.2		ug/Kg	☼	88	73 - 126	3	30
1,1-Dichloroethene	ND		53.8	45.5		ug/Kg	☼	85	59 - 125	6	30
1,2,4-Trimethylbenzene	ND		53.8	43.3		ug/Kg	☼	81	74 - 120	2	30
1,2-Dichlorobenzene	ND	F1	53.8	38.6	F1	ug/Kg	☼	72	75 - 120	2	30
1,2-Dichloroethane	ND		53.8	42.1		ug/Kg	☼	78	77 - 122	2	30
1,3,5-Trimethylbenzene	ND		53.8	44.2		ug/Kg	☼	82	74 - 120	1	30
1,3-Dichlorobenzene	ND		53.8	40.8		ug/Kg	☼	76	74 - 120	1	30
1,4-Dichlorobenzene	ND		53.8	40.0		ug/Kg	☼	74	73 - 120	1	30
1,4-Dioxane	ND	F1	1080	492	F1	ug/Kg	☼	46	64 - 124	2	30
2-Butanone (MEK)	ND	F1 *	269	137	F1	ug/Kg	☼	51	70 - 134	3	30
Acetone	ND	F1	269	138	F1	ug/Kg	☼	51	61 - 137	3	30
Benzene	ND		53.8	46.9		ug/Kg	☼	87	79 - 127	3	30
Carbon tetrachloride	ND		53.8	53.1		ug/Kg	☼	99	75 - 135	5	30
Chlorobenzene	ND		53.8	45.3		ug/Kg	☼	84	76 - 124	1	30
Chloroform	ND		53.8	49.7		ug/Kg	☼	92	80 - 120	1	30
cis-1,2-Dichloroethene	ND		53.8	48.2		ug/Kg	☼	90	80 - 120	1	30
Ethylbenzene	ND		53.8	46.0		ug/Kg	☼	86	80 - 120	1	30
Methyl tert-butyl ether	ND		53.8	39.4		ug/Kg	☼	73	63 - 125	3	30
Methylene Chloride	2.5	J	53.8	45.1		ug/Kg	☼	79	61 - 127	3	30
n-Butylbenzene	ND		53.8	39.1		ug/Kg	☼	73	70 - 120	4	30
N-Propylbenzene	ND		53.8	43.5		ug/Kg	☼	81	70 - 130	3	30
sec-Butylbenzene	ND		53.8	42.8		ug/Kg	☼	79	74 - 120	3	30
Tetrachloroethene	ND		53.8	47.0		ug/Kg	☼	87	74 - 122	2	30
Toluene	ND		53.8	46.7		ug/Kg	☼	87	74 - 128	0	30
trans-1,2-Dichloroethene	ND		53.8	48.4		ug/Kg	☼	90	78 - 126	3	30
Trichloroethene	ND		53.8	47.7		ug/Kg	☼	89	77 - 129	0	30
Vinyl chloride	ND		53.8	51.0		ug/Kg	☼	95	61 - 133	1	30
tert-Butylbenzene	ND		53.8	43.8		ug/Kg	☼	81	73 - 120	4	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*64 - 126*
4-Bromofluorobenzene (Surr)	*99*		*72 - 126*
Toluene-d8 (Surr)	*101*		*71 - 125*
Dibromofluoromethane (Surr)	*102*		*60 - 140*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-494075/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 494348
Prep Batch: 494075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		170	25	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Acenaphthylene	ND		170	22	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Anthracene	ND		170	42	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Benzo[a]anthracene	ND		170	17	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Benzo[a]pyrene	ND		170	25	ug/Kg		09/25/19 14:37	09/26/19 16:52	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-494075/1-A
Matrix: Solid
Analysis Batch: 494348

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 494075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		170	27	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Benzo[g,h,i]perylene	ND		170	18	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Benzo[k]fluoranthene	ND		170	22	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Chrysene	ND		170	38	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Dibenz(a,h)anthracene	ND		170	30	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Dibenzofuran	ND		170	20	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Fluoranthene	ND		170	18	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Fluorene	ND		170	20	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Hexachlorobenzene	ND		170	23	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Indeno[1,2,3-cd]pyrene	ND		170	21	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
2-Methylphenol	ND		170	20	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Methylphenol, 3 & 4	ND		330	20	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Naphthalene	ND		170	22	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
1,4-Dioxane	ND		200	55	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Pentachlorophenol	ND		330	170	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Phenanthrene	ND		170	25	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Phenol	ND		170	26	ug/Kg		09/25/19 14:37	09/26/19 16:52	1
Pyrene	ND		170	20	ug/Kg		09/25/19 14:37	09/26/19 16:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*91*		*60 - 120*	*09/25/19 14:37*	*09/26/19 16:52*	*1*
2-Fluorophenol (Surr)	*83*		*52 - 120*	*09/25/19 14:37*	*09/26/19 16:52*	*1*
Nitrobenzene-d5 (Surr)	*96*		*53 - 120*	*09/25/19 14:37*	*09/26/19 16:52*	*1*
Phenol-d5 (Surr)	*91*		*54 - 120*	*09/25/19 14:37*	*09/26/19 16:52*	*1*
p-Terphenyl-d14 (Surr)	*104*		*79 - 130*	*09/25/19 14:37*	*09/26/19 16:52*	*1*
2,4,6-Tribromophenol (Surr)	*98*		*54 - 120*	*09/25/19 14:37*	*09/26/19 16:52*	*1*

Lab Sample ID: LCS 480-494075/2-A
Matrix: Solid
Analysis Batch: 494348

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 494075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	1670	1510		ug/Kg		91	62 - 120
Acenaphthylene	1670	1570		ug/Kg		94	58 - 121
Anthracene	1670	1770		ug/Kg		107	62 - 120
Benzo[a]anthracene	1670	1630		ug/Kg		98	65 - 120
Benzo[a]pyrene	1670	1560		ug/Kg		94	64 - 120
Benzo[b]fluoranthene	1670	1830		ug/Kg		110	64 - 120
Benzo[g,h,i]perylene	1670	1590		ug/Kg		95	45 - 145
Benzo[k]fluoranthene	1670	1640		ug/Kg		99	65 - 120
Chrysene	1670	1660		ug/Kg		100	64 - 120
Dibenz(a,h)anthracene	1670	1640		ug/Kg		99	54 - 132
Dibenzofuran	1670	1550		ug/Kg		93	63 - 120
Fluoranthene	1670	1840		ug/Kg		110	62 - 120
Fluorene	1670	1590		ug/Kg		95	63 - 120
Hexachlorobenzene	1670	1730		ug/Kg		104	60 - 120
Indeno[1,2,3-cd]pyrene	1670	1640		ug/Kg		98	56 - 134
2-Methylphenol	1670	1480		ug/Kg		89	54 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-494075/2-A
Matrix: Solid
Analysis Batch: 494348

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 494075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylphenol, 3 & 4	1670	1540		ug/Kg		93	55 - 120
Naphthalene	1670	1430		ug/Kg		86	55 - 120
1,4-Dioxane	1670	651		ug/Kg		39	23 - 120
Pentachlorophenol	3330	2900		ug/Kg		87	51 - 120
Phenanthrene	1670	1710		ug/Kg		103	60 - 120
Phenol	1670	1410		ug/Kg		85	53 - 120
Pyrene	1670	1760		ug/Kg		106	61 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*89*		*60 - 120*
2-Fluorophenol (Surr)	*78*		*52 - 120*
Nitrobenzene-d5 (Surr)	*96*		*53 - 120*
Phenol-d5 (Surr)	*87*		*54 - 120*
p-Terphenyl-d14 (Surr)	*109*		*79 - 130*
2,4,6-Tribromophenol (Surr)	*115*		*54 - 120*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 480-493908/1-A
Matrix: Solid
Analysis Batch: 494474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493908

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		1.6	0.32	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
4,4'-DDE	ND		1.6	0.34	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
4,4'-DDT	ND		1.6	0.38	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Aldrin	ND		1.6	0.40	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
alpha-BHC	0.340	J	1.6	0.29	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
cis-Chlordane	ND		1.6	0.81	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
beta-BHC	ND		1.6	0.29	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
delta-BHC	0.435	J	1.6	0.30	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Dieldrin	ND		1.6	0.39	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Endosulfan I	ND		1.6	0.31	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Endosulfan II	ND		1.6	0.29	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Endosulfan sulfate	ND		1.6	0.30	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Endrin	ND		1.6	0.32	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
gamma-BHC (Lindane)	ND		1.6	0.30	ug/Kg		09/25/19 07:36	09/27/19 10:55	1
Heptachlor	ND		1.6	0.35	ug/Kg		09/25/19 07:36	09/27/19 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*45 - 120*	*09/25/19 07:36*	*09/27/19 10:55*	*1*
DCB Decachlorobiphenyl	*74*		*45 - 120*	*09/25/19 07:36*	*09/27/19 10:55*	*1*
Tetrachloro-m-xylene	*63*		*30 - 124*	*09/25/19 07:36*	*09/27/19 10:55*	*1*
Tetrachloro-m-xylene	*49*		*30 - 124*	*09/25/19 07:36*	*09/27/19 10:55*	*1*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 480-493908/2-A
Matrix: Solid
Analysis Batch: 494474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493908

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	16.7	12.0		ug/Kg		72	56 - 120
4,4'-DDE	16.7	10.8		ug/Kg		65	44 - 120
4,4'-DDT	16.7	12.2		ug/Kg		73	38 - 120
Aldrin	16.7	8.65		ug/Kg		52	38 - 120
alpha-BHC	16.7	10.3		ug/Kg		62	39 - 120
cis-Chlordane	16.7	13.1		ug/Kg		79	47 - 120
beta-BHC	16.7	10.1		ug/Kg		60	40 - 120
delta-BHC	16.7	11.3		ug/Kg		68	45 - 120
Dieldrin	16.7	12.5		ug/Kg		75	58 - 120
Endosulfan I	16.7	11.1		ug/Kg		67	49 - 120
Endosulfan II	16.7	13.8		ug/Kg		83	55 - 120
Endosulfan sulfate	16.7	11.7		ug/Kg		70	49 - 124
Endrin	16.7	12.0		ug/Kg		72	58 - 120
gamma-BHC (Lindane)	16.7	9.62		ug/Kg		58	50 - 120
Heptachlor	16.7	10.6		ug/Kg		64	50 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*93*		*45 - 120*
DCB Decachlorobiphenyl	*85*		*45 - 120*
Tetrachloro-m-xylene	*74*		*30 - 124*
Tetrachloro-m-xylene	*57*		*30 - 124*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 480-493640/1-A
Matrix: Solid
Analysis Batch: 494086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.21	0.042	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1221	ND		0.21	0.042	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1232	ND		0.21	0.042	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1242	ND		0.21	0.042	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1248	ND		0.21	0.042	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1254	ND		0.21	0.10	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1260	ND		0.21	0.10	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1262	ND		0.21	0.10	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
PCB-1268	ND		0.21	0.10	mg/Kg		09/24/19 05:51	09/25/19 20:25	1
Polychlorinated biphenyls, Total	ND		0.21	0.10	mg/Kg		09/24/19 05:51	09/25/19 20:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*111*		*65 - 174*	*09/24/19 05:51*	*09/25/19 20:25*	*1*
DCB Decachlorobiphenyl	*84*		*65 - 174*	*09/24/19 05:51*	*09/25/19 20:25*	*1*
Tetrachloro-m-xylene	*99*		*60 - 154*	*09/24/19 05:51*	*09/25/19 20:25*	*1*
Tetrachloro-m-xylene	*98*		*60 - 154*	*09/24/19 05:51*	*09/25/19 20:25*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCS 480-493640/2-A
Matrix: Solid
Analysis Batch: 494086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493640

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	1.82	2.34		mg/Kg		129	51 - 185
PCB-1260	1.82	2.04		mg/Kg		112	61 - 184

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*125*		*65 - 174*
DCB Decachlorobiphenyl	*116*		*65 - 174*
Tetrachloro-m-xylene	*131*		*60 - 154*
Tetrachloro-m-xylene	*121*		*60 - 154*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 480-493889/1-A
Matrix: Solid
Analysis Batch: 495143

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493889

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	ND		17	5.9	ug/Kg		09/25/19 05:49	10/01/19 09:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*83*		*28 - 129*	*09/25/19 05:49*	*10/01/19 09:19*	*1*
2,4-Dichlorophenylacetic acid	*68*		*28 - 129*	*09/25/19 05:49*	*10/01/19 09:19*	*1*

Lab Sample ID: LCS 480-493889/2-A
Matrix: Solid
Analysis Batch: 495143

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493889

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP)	65.5	54.8		ug/Kg		84	39 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*80*		*28 - 129*
2,4-Dichlorophenylacetic acid	*72*		*28 - 129*

Lab Sample ID: 480-159547-7 MS
Matrix: Solid
Analysis Batch: 495143

Client Sample ID: RUSSO-TS-COMP 1
Prep Type: Total/NA
Prep Batch: 493889

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP)	ND		84.2	72.5		ug/Kg	☼	86	22 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*89*		*28 - 129*
2,4-Dichlorophenylacetic acid	*76*		*28 - 129*

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 480-159547-7 MSD
Client Sample ID: RUSSO-TS-COMP 1
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 495143
Prep Batch: 493889

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Silvex (2,4,5-TP)	ND		83.8	68.6		ug/Kg	☼	82	22 - 140	6	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4-Dichlorophenylacetic acid	*81*		*28 - 129*
2,4-Dichlorophenylacetic acid	*75*		*28 - 129*

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-326624/1-A
Client Sample ID: Method Blank
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 328148
Prep Batch: 326624

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.20		0.20	0.028	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluoropentanoic acid (PFPeA)	0.20		0.20	0.077	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorohexanoic acid (PFHxA)	0.20		0.20	0.042	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.029	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorooctanoic acid (PFOA)	0.20		0.20	0.086	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorononanoic acid (PFNA)	0.20		0.20	0.036	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorodecanoic acid (PFDA)	0.20		0.20	0.022	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluoroundecanoic acid (PFUnA)	0.20		0.20	0.036	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorododecanoic acid (PFDoA)	0.20		0.20	0.067	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorotridecanoic acid (PFTriA)	0.20		0.20	0.051	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorotetradecanoic acid (PFTeA)	0.20		0.20	0.054	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorobutanesulfonic acid (PFBS)	0.20		0.20	0.025	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorohexanesulfonic acid (PFHxS)	0.20		0.20	0.031	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.20		0.20	0.035	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorooctanesulfonic acid (PFOS)	0.50		0.50	0.20	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
Perfluorooctanesulfonamide (FOSA)	0.20		0.20	0.082	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00		2.00	0.39	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00		2.00	0.37	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
6:2 FTS	2.00		2.00	0.15	ug/Kg		09/27/19 10:45	10/03/19 12:09	1
8:2 FTS	2.00		2.00	0.25	ug/Kg		09/27/19 10:45	10/03/19 12:09	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*79*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C2 PFHxA	*79*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C4 PFOA	*82*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C5 PFNA	*81*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C2 PFDA	*77*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C4 PFHpA	*84*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C2 PFUnA	*75*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C5 PFPeA	*80*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C2 PFDoA	*69*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*
13C2 PFTeDA	*71*		*25 - 150*	*09/27/19 10:45*	*10/03/19 12:09*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-326624/1-A
Matrix: Solid
Analysis Batch: 328148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 326624

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	94		25 - 150	09/27/19 10:45	10/03/19 12:09	1
13C4 PFOS	80		25 - 150	09/27/19 10:45	10/03/19 12:09	1
13C8 FOSA	71		25 - 150	09/27/19 10:45	10/03/19 12:09	1
d3-NMeFOSAA	73		25 - 150	09/27/19 10:45	10/03/19 12:09	1
d5-NEtFOSAA	75		25 - 150	09/27/19 10:45	10/03/19 12:09	1
M2-6:2 FTS	78		25 - 150	09/27/19 10:45	10/03/19 12:09	1
M2-8:2 FTS	74		25 - 150	09/27/19 10:45	10/03/19 12:09	1

Lab Sample ID: LCS 320-326624/2-A
Matrix: Solid
Analysis Batch: 329754

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 326624

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	2.00	2.150		ug/Kg		108	81 - 133
Perfluoropentanoic acid (PFPeA)	2.00	2.112		ug/Kg		106	79 - 120
Perfluorohexanoic acid (PFHxA)	2.00	2.029		ug/Kg		101	75 - 125
Perfluoroheptanoic acid (PFHpA)	2.00	2.091		ug/Kg		105	76 - 124
Perfluorooctanoic acid (PFOA)	2.00	1.873		ug/Kg		94	76 - 121
Perfluorononanoic acid (PFNA)	2.00	2.022		ug/Kg		101	74 - 126
Perfluorodecanoic acid (PFDA)	2.00	2.187		ug/Kg		109	74 - 124
Perfluoroundecanoic acid (PFUnA)	2.00	1.997		ug/Kg		100	74 - 114
Perfluorododecanoic acid (PFDoA)	2.00	2.054		ug/Kg		103	75 - 123
Perfluorotridecanoic acid (PFTriA)	2.00	2.059		ug/Kg		103	43 - 116
Perfluorotetradecanoic acid (PFTeA)	2.00	2.058		ug/Kg		103	22 - 129
Perfluorobutanesulfonic acid (PFBS)	1.77	1.718		ug/Kg		97	73 - 142
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.576		ug/Kg		87	75 - 121
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.911		ug/Kg		100	78 - 146
Perfluorooctanesulfonic acid (PFOS)	1.86	2.008		ug/Kg		108	69 - 131
Perfluorodecanesulfonic acid (PFDS)	1.93	2.085		ug/Kg		108	54 - 113
Perfluorooctanesulfonamide (FOSA)	2.00	2.201		ug/Kg		110	62 - 135
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.142		ug/Kg		107	65 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.973	J	ug/Kg		99	65 - 135
6:2 FTS	1.90	2.291		ug/Kg		121	65 - 135
8:2 FTS	1.92	2.061		ug/Kg		108	65 - 135

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	84		25 - 150
13C2 PFHxA	84		25 - 150
13C4 PFOA	88		25 - 150
13C5 PFNA	91		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-326624/2-A
Matrix: Solid
Analysis Batch: 329754

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 326624

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFDA	84		25 - 150
13C4 PFHpA	88		25 - 150
13C2 PFUnA	87		25 - 150
13C5 PFPeA	84		25 - 150
13C2 PFDoA	90		25 - 150
13C2 PFTeDA	85		25 - 150
18O2 PFHxS	92		25 - 150
13C4 PFOS	80		25 - 150
13C8 FOSA	80		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	88		25 - 150
M2-6:2 FTS	64		25 - 150
M2-8:2 FTS	62		25 - 150

Lab Sample ID: MB 320-328853/1-A
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328853

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.00		2.00	0.35	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluoropentanoic acid (PFPeA)	2.00		2.00	0.49	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorohexanoic acid (PFHxA)	2.00		2.00	0.58	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluoroheptanoic acid (PFHpA)	2.00		2.00	0.25	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorooctanoic acid (PFOA)	2.00		2.00	0.85	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorononanoic acid (PFNA)	2.00		2.00	0.27	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorodecanoic acid (PFDA)	2.00		2.00	0.31	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluoroundecanoic acid (PFUnA)	2.00		2.00	1.10	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorododecanoic acid (PFDoA)	2.00		2.00	0.55	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorotridecanoic acid (PFTriA)	2.00		2.00	1.30	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorotetradecanoic acid (PFTeA)	2.00		2.00	0.29	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorobutanesulfonic acid (PFBS)	2.00		2.00	0.20	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorohexanesulfonic acid (PFHxS)	0.319	J	2.00	0.17	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00		2.00	0.19	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorooctanesulfonic acid (PFOS)	2.00		2.00	0.54	ng/L		10/07/19 06:04	10/09/19 00:33	1
Perfluorodecanesulfonic acid (PFDS)	2.00		2.00	0.32	ng/L		10/07/19 06:04	10/09/19 00:33	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	111		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C2 PFHxA	109		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C4 PFOA	106		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C5 PFNA	107		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C2 PFDA	109		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C4 PFHpA	112		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C2 PFUnA	109		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C5 PFPeA	110		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C2 PFDoA	108		25 - 150	10/07/19 06:04	10/09/19 00:33	1
13C2 PFTeDA	111		25 - 150	10/07/19 06:04	10/09/19 00:33	1
18O2 PFHxS	111		25 - 150	10/07/19 06:04	10/09/19 00:33	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-328853/1-A
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328853

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	104		25 - 150	10/07/19 06:04	10/09/19 00:33	1

Lab Sample ID: LCS 320-328853/2-A
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328853

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.91		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	39.84		ng/L		100	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	42.76		ng/L		107	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	41.15		ng/L		103	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	39.77		ng/L		99	64 - 124
Perfluorononanoic acid (PFNA)	40.0	41.61		ng/L		104	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.78		ng/L		107	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	41.96		ng/L		105	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	40.74		ng/L		102	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	39.87		ng/L		100	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	42.45		ng/L		106	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	34.51		ng/L		98	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	31.69		ng/L		87	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.59		ng/L		101	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.44		ng/L		98	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.37		ng/L		102	68 - 128

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	107		25 - 150
13C2 PFHxA	104		25 - 150
13C4 PFOA	105		25 - 150
13C5 PFNA	104		25 - 150
13C2 PFDA	104		25 - 150
13C4 PFHpA	108		25 - 150
13C2 PFUnA	103		25 - 150
13C5 PFPeA	107		25 - 150
13C2 PFDoA	106		25 - 150
13C2 PFTeDA	106		25 - 150
18O2 PFHxS	110		25 - 150
13C4 PFOS	99		25 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-328853/3-A
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 328853

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)			40.0	41.76		ng/L		104	70 - 130	0	30
Perfluoropentanoic acid (PFPeA)			40.0	40.18		ng/L		100	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)			40.0	42.25		ng/L		106	66 - 126	1	30
Perfluoroheptanoic acid (PFHpA)			40.0	41.70		ng/L		104	66 - 126	1	30
Perfluorooctanoic acid (PFOA)			40.0	41.57		ng/L		104	64 - 124	4	30
Perfluorononanoic acid (PFNA)			40.0	41.44		ng/L		104	68 - 128	0	30
Perfluorodecanoic acid (PFDA)			40.0	43.34		ng/L		108	69 - 129	1	30
Perfluoroundecanoic acid (PFUnA)			40.0	41.35		ng/L		103	60 - 120	1	30
Perfluorododecanoic acid (PFDoA)			40.0	40.73		ng/L		102	71 - 131	0	30
Perfluorotridecanoic acid (PFTriA)			40.0	40.74		ng/L		102	72 - 132	2	30
Perfluorotetradecanoic acid (PFTeA)			40.0	41.63		ng/L		104	68 - 128	2	30
Perfluorobutanesulfonic acid (PFBS)			35.4	34.96		ng/L		99	73 - 133	1	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.14		ng/L		88	63 - 123	1	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	37.40		ng/L		98	68 - 128	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.01		ng/L		102	67 - 127	4	30
Perfluorodecanesulfonic acid (PFDS)			38.6	42.35		ng/L		110	68 - 128	7	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C4 PFBA	*110*		*25 - 150*
13C2 PFHxA	*108*		*25 - 150*
13C4 PFOA	*108*		*25 - 150*
13C5 PFNA	*109*		*25 - 150*
13C2 PFDA	*108*		*25 - 150*
13C4 PFHpA	*111*		*25 - 150*
13C2 PFUnA	*105*		*25 - 150*
13C5 PFPeA	*109*		*25 - 150*
13C2 PFDoA	*107*		*25 - 150*
13C2 PFTeDA	*110*		*25 - 150*
18O2 PFHxS	*111*		*25 - 150*
13C4 PFOS	*101*		*25 - 150*

Lab Sample ID: LB 320-326292/1-B
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 328853

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.81		1.81	0.32	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.52	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluoroheptanoic acid (PFHpA)	1.81		1.81	0.23	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorononanoic acid (PFNA)	1.81		1.81	0.24	ng/L		10/07/19 06:04	10/09/19 01:02	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LB 320-326292/1-B
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 328853

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluoroundecanoic acid (PFUnA)	1.81		1.81	0.99	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.17	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorohexanesulfonic acid (PFHxS)	0.275	J	1.81	0.15	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorooctanesulfonic acid (PFOS)	0.570	J	1.81	0.49	ng/L		10/07/19 06:04	10/09/19 01:02	1
Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29	ng/L		10/07/19 06:04	10/09/19 01:02	1

Isotope Dilution	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C2 PFHxA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C4 PFOA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C5 PFNA	*105*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C2 PFDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C4 PFHpA	*108*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C2 PFUnA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C5 PFPeA	*107*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C2 PFDoA	*103*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C2 PFTeDA	*104*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*
13C4 PFOS	*100*		*25 - 150*	*10/07/19 06:04*	*10/09/19 01:02*	*1*

Lab Sample ID: LB 320-327145/1-B
Matrix: Solid
Analysis Batch: 329447

Client Sample ID: Method Blank
Prep Type: SPLP East
Prep Batch: 328853

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.76		1.76	0.31	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluoropentanoic acid (PFPeA)	1.76		1.76	0.43	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorohexanoic acid (PFHxA)	1.76		1.76	0.51	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluoroheptanoic acid (PFHpA)	1.76		1.76	0.22	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorooctanoic acid (PFOA)	1.76		1.76	0.75	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorononanoic acid (PFNA)	1.76		1.76	0.24	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorodecanoic acid (PFDA)	1.76		1.76	0.27	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluoroundecanoic acid (PFUnA)	1.76		1.76	0.97	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorododecanoic acid (PFDoA)	1.76		1.76	0.48	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorotridecanoic acid (PFTriA)	1.76		1.76	1.14	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorotetradecanoic acid (PFTeA)	1.76		1.76	0.26	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorobutanesulfonic acid (PFBS)	1.76		1.76	0.18	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorohexanesulfonic acid (PFHxS)	0.279	J	1.76	0.15	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.76		1.76	0.17	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorooctanesulfonic acid (PFOS)	1.76		1.76	0.47	ng/L		10/07/19 06:04	10/09/19 01:11	1
Perfluorodecanesulfonic acid (PFDS)	1.76		1.76	0.28	ng/L		10/07/19 06:04	10/09/19 01:11	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	113		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C2 PFHxA	107		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C4 PFOA	108		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C5 PFNA	107		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C2 PFDA	106		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C4 PFHpA	112		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C2 PFUnA	109		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C5 PFPeA	111		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C2 PFDoA	108		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C2 PFTeDA	109		25 - 150	10/07/19 06:04	10/09/19 01:11	1
18O2 PFHxS	113		25 - 150	10/07/19 06:04	10/09/19 01:11	1
13C4 PFOS	101		25 - 150	10/07/19 06:04	10/09/19 01:11	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-493602/1-A
Matrix: Solid
Analysis Batch: 494449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 493602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Barium	ND		0.50		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Beryllium	ND		0.20		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Cadmium	ND		0.20		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Chromium	ND		0.50		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Copper	ND		1.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Lead	ND		1.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Manganese	ND		0.20		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Nickel	ND		5.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Selenium	ND		4.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Silver	ND		0.60		mg/Kg		09/25/19 07:01	09/26/19 12:39	1
Zinc	ND		2.0		mg/Kg		09/25/19 07:01	09/26/19 12:39	1

Lab Sample ID: LCSSRM 480-493602/2-A
Matrix: Solid
Analysis Batch: 494449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 493602

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	221	185.3		mg/Kg		83.9	63.8 - 119.0
Barium	288	252.8		mg/Kg		87.8	70.5 - 117.4
Beryllium	102	88.77		mg/Kg		87.0	71.2 - 118.6
Cadmium	153	130.8		mg/Kg		85.5	68.6 - 115.0
Chromium	179	149.3		mg/Kg		83.4	65.4 - 121.2
Copper	113	93.82		mg/Kg		83.0	71.4 - 118.6
Lead	74.5	72.86		mg/Kg		97.8	67.8 - 130.3
Manganese	348	301.7		mg/Kg		86.7	71.3 - 118.4

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-493602/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 494449
Prep Batch: 493602

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	98.0	90.69		mg/Kg		92.5	63.8 - 118.4
Selenium	54.4	44.12		mg/Kg		81.1	53.3 - 130.0
Silver	75.5	62.43		mg/Kg		82.7	66.6 - 121.7
Zinc	281	234.4		mg/Kg		83.4	65.8 - 122.4

Lab Sample ID: 480-159547-7 MS
Client Sample ID: RUSSO-TS-COMP 1
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 494449
Prep Batch: 493602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	12.5		49.9	55.87		mg/Kg	☼	87	75 - 125
Barium	104	F1	49.9	187.7	F1	mg/Kg	☼	168	75 - 125
Beryllium	0.79		49.9	46.41		mg/Kg	☼	91	75 - 125
Cadmium	ND		49.9	46.07		mg/Kg	☼	92	75 - 125
Chromium	20.6		49.9	74.85		mg/Kg	☼	109	75 - 125
Copper	27.1		49.9	65.38		mg/Kg	☼	77	75 - 125
Lead	32.5		49.9	75.54		mg/Kg	☼	86	75 - 125
Manganese	402		49.9	478.0	4	mg/Kg	☼	152	75 - 125
Nickel	28.8		49.9	73.56		mg/Kg	☼	90	75 - 125
Selenium	ND		49.9	44.71		mg/Kg	☼	90	75 - 125
Silver	ND		12.5	11.70		mg/Kg	☼	94	75 - 125
Zinc	84.2		49.9	125.1		mg/Kg	☼	82	75 - 125

Lab Sample ID: 480-159547-7 MSD
Client Sample ID: RUSSO-TS-COMP 1
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 494449
Prep Batch: 493602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	12.5		48.6	54.63		mg/Kg	☼	87	75 - 125	2	20
Barium	104	F1	48.6	199.2	F1	mg/Kg	☼	196	75 - 125	6	20
Beryllium	0.79		48.6	46.63		mg/Kg	☼	94	75 - 125	0	20
Cadmium	ND		48.6	45.94		mg/Kg	☼	94	75 - 125	0	20
Chromium	20.6		48.6	75.31		mg/Kg	☼	113	75 - 125	1	20
Copper	27.1		48.6	66.04		mg/Kg	☼	80	75 - 125	1	20
Lead	32.5		48.6	73.19		mg/Kg	☼	84	75 - 125	3	20
Manganese	402		48.6	529.4	4	mg/Kg	☼	262	75 - 125	10	20
Nickel	28.8		48.6	75.50		mg/Kg	☼	96	75 - 125	3	20
Selenium	ND		48.6	44.67		mg/Kg	☼	92	75 - 125	0	20
Silver	ND		12.1	11.54		mg/Kg	☼	95	75 - 125	1	20
Zinc	84.2		48.6	127.8		mg/Kg	☼	90	75 - 125	2	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-497458/1-A
Matrix: Solid
Analysis Batch: 497542

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 497458

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.019		mg/Kg		10/11/19 13:45	10/11/19 14:38	1

Lab Sample ID: LCDSRM 480-497458/25-A ^5
Matrix: Solid
Analysis Batch: 497542

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 497458

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	3.12	2.73		mg/Kg		87.4	56.4 - 131.4	4	20

Lab Sample ID: LCSSRM 480-497458/2-A ^5
Matrix: Solid
Analysis Batch: 497542

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 497458

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	3.12	2.83		mg/Kg		90.7	56.4 - 131.4

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 460-645413/1-A
Matrix: Solid
Analysis Batch: 645561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645413

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0		mg/Kg		10/08/19 08:53	10/08/19 14:00	1

Lab Sample ID: LCSI 460-645413/3-A
Matrix: Solid
Analysis Batch: 645561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645413

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	708	711.4		mg/Kg		100	80 - 120

Lab Sample ID: LCSSRM 460-645413/2-A
Matrix: Solid
Analysis Batch: 645561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645413

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	14.4	14.47		mg/Kg		100.5	84.2 - 114.4

Lab Sample ID: MB 460-645471/1-A
Matrix: Solid
Analysis Batch: 645571

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645471

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0		mg/Kg		10/08/19 10:53	10/08/19 17:00	1

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: LCSI 460-645471/3-A
Matrix: Solid
Analysis Batch: 645571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645471

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	708	704.1		mg/Kg		99	80 - 120

Lab Sample ID: LCSSRM 460-645471/2-A
Matrix: Solid
Analysis Batch: 645571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645471

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	14.4	14.28		mg/Kg		99.2	84.2 - 114.4

Lab Sample ID: MB 460-645708/1-A
Matrix: Solid
Analysis Batch: 646036

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645708

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0		mg/Kg		10/09/19 07:53	10/10/19 14:13	1

Lab Sample ID: LCSI 460-645708/3-A
Matrix: Solid
Analysis Batch: 646036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645708

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	708	705.1		mg/Kg		100	80 - 120

Lab Sample ID: LCSSRM 460-645708/2-A
Matrix: Solid
Analysis Batch: 646036

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645708

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	14.4	14.05		mg/Kg		97.6	84.2 - 114.4

Lab Sample ID: MB 460-645709/1-A
Matrix: Solid
Analysis Batch: 646037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645709

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		2.0		mg/Kg		10/09/19 07:53	10/10/19 15:38	1

Lab Sample ID: LCSI 460-645709/3-A
Matrix: Solid
Analysis Batch: 646037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645709

Analyte	Spike Added	LCSI Result	LCSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	708	749.9		mg/Kg		106	80 - 120

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: LCSSRM 460-645709/2-A
Matrix: Solid
Analysis Batch: 646037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645709

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	14.4	13.61		mg/Kg		94.5	84.2 - 114.4

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-495078/1-A
Matrix: Solid
Analysis Batch: 495424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 495078

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.98		mg/Kg		09/30/19 20:45	10/02/19 09:21	1

Lab Sample ID: LCSSRM 480-495078/2-A ^10
Matrix: Solid
Analysis Batch: 495424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 495078

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	86.4	55.16		mg/Kg		63.8	29.1 - 119.2

Lab Sample ID: 480-159547-39 MS
Matrix: Solid
Analysis Batch: 495424

Client Sample ID: GERNATT-TS-COMP 1
Prep Type: Total/NA
Prep Batch: 495078

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND	H F1	1.31	1.88	F1	mg/Kg	☼	144	85 - 115

Lab Sample ID: MB 480-495079/1-A
Matrix: Solid
Analysis Batch: 495460

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 495079

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.95		mg/Kg		09/30/19 21:50	10/02/19 12:06	1

Lab Sample ID: LCSSRM 480-495079/2-A ^10
Matrix: Solid
Analysis Batch: 495460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 495079

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	86.4	34.22		mg/Kg		39.6	29.1 - 119.2

QC Association Summary

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

GC/MS VOA

Analysis Batch: 493547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-1	RUSSO-TS-GRAB 1	Total/NA	Solid	8260C	493565
480-159547-2	RUSSO-TS-GRAB 2	Total/NA	Solid	8260C	493565
480-159547-3	RUSSO-TS-GRAB 3	Total/NA	Solid	8260C	493565
480-159547-4	RUSSO-TS-GRAB 4	Total/NA	Solid	8260C	493565
480-159547-5	RUSSO-TS-GRAB 5	Total/NA	Solid	8260C	493565
480-159547-6	RUSSO-TS-GRAB 6	Total/NA	Solid	8260C	493565
480-159547-9	RUSSO-CF-GRAB 1	Total/NA	Solid	8260C	493565
480-159547-10	RUSSO-CF-GRAB 2	Total/NA	Solid	8260C	493565
480-159547-11	RUSSO-CF-GRAB 3	Total/NA	Solid	8260C	493565
480-159547-12	RUSSO-CF-GRAB 4	Total/NA	Solid	8260C	493565
480-159547-13	RUSSO-CF-GRAB 5	Total/NA	Solid	8260C	493565
480-159547-14	RUSSO-CF-GRAB 6	Total/NA	Solid	8260C	493565
480-159547-15	RUSSO-CF-GRAB 7	Total/NA	Solid	8260C	493565
480-159547-16	RUSSO-CF-GRAB 8	Total/NA	Solid	8260C	493565
480-159547-17	RUSSO-CF-GRAB 9	Total/NA	Solid	8260C	493565
480-159547-21	GERNATT-CF-GRAB 1	Total/NA	Solid	8260C	493565
480-159547-22	GERNATT-CF-GRAB 2	Total/NA	Solid	8260C	493565
480-159547-23	GERNATT-CF-GRAB 3	Total/NA	Solid	8260C	493565
MB 480-493565/2-A	Method Blank	Total/NA	Solid	8260C	493565
LCS 480-493565/1-A	Lab Control Sample	Total/NA	Solid	8260C	493565

Prep Batch: 493565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-1	RUSSO-TS-GRAB 1	Total/NA	Solid	5035A_L	
480-159547-2	RUSSO-TS-GRAB 2	Total/NA	Solid	5035A_L	
480-159547-3	RUSSO-TS-GRAB 3	Total/NA	Solid	5035A_L	
480-159547-4	RUSSO-TS-GRAB 4	Total/NA	Solid	5035A_L	
480-159547-5	RUSSO-TS-GRAB 5	Total/NA	Solid	5035A_L	
480-159547-6	RUSSO-TS-GRAB 6	Total/NA	Solid	5035A_L	
480-159547-9	RUSSO-CF-GRAB 1	Total/NA	Solid	5035A_L	
480-159547-10	RUSSO-CF-GRAB 2	Total/NA	Solid	5035A_L	
480-159547-11	RUSSO-CF-GRAB 3	Total/NA	Solid	5035A_L	
480-159547-12	RUSSO-CF-GRAB 4	Total/NA	Solid	5035A_L	
480-159547-13	RUSSO-CF-GRAB 5	Total/NA	Solid	5035A_L	
480-159547-14	RUSSO-CF-GRAB 6	Total/NA	Solid	5035A_L	
480-159547-15	RUSSO-CF-GRAB 7	Total/NA	Solid	5035A_L	
480-159547-16	RUSSO-CF-GRAB 8	Total/NA	Solid	5035A_L	
480-159547-17	RUSSO-CF-GRAB 9	Total/NA	Solid	5035A_L	
480-159547-21	GERNATT-CF-GRAB 1	Total/NA	Solid	5035A_L	
480-159547-22	GERNATT-CF-GRAB 2	Total/NA	Solid	5035A_L	
480-159547-23	GERNATT-CF-GRAB 3	Total/NA	Solid	5035A_L	
MB 480-493565/2-A	Method Blank	Total/NA	Solid	5035A_L	
LCS 480-493565/1-A	Lab Control Sample	Total/NA	Solid	5035A_L	

Analysis Batch: 493693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-25	GERNATT-CF-GRAB 5	Total/NA	Solid	8260C	493743
480-159547-26	GERNATT-CF-GRAB 6	Total/NA	Solid	8260C	493743
480-159547-27	GERNATT-CF-GRAB 7	Total/NA	Solid	8260C	493743
480-159547-28	GERNATT-CF-GRAB 8	Total/NA	Solid	8260C	493743
480-159547-29	GERNATT-CF-GRAB 9	Total/NA	Solid	8260C	493743

GC/MS VOA (Continued)

Analysis Batch: 493693 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-33	GERNATT-TS-GRAB 1	Total/NA	Solid	8260C	493743
480-159547-34	GERNATT-TS-GRAB 2	Total/NA	Solid	8260C	493743
480-159547-35	GERNATT-TS-GRAB 3	Total/NA	Solid	8260C	493743
480-159547-36	GERNATT-TS-GRAB 4	Total/NA	Solid	8260C	493743
480-159547-37	GERNATT-TS-GRAB 5	Total/NA	Solid	8260C	493743
480-159547-38	GERNATT-TS-GRAB 6	Total/NA	Solid	8260C	493743
MB 480-493743/2-A	Method Blank	Total/NA	Solid	8260C	493743
LCS 480-493743/1-A	Lab Control Sample	Total/NA	Solid	8260C	493743

Prep Batch: 493743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-25	GERNATT-CF-GRAB 5	Total/NA	Solid	5035A_L	
480-159547-26	GERNATT-CF-GRAB 6	Total/NA	Solid	5035A_L	
480-159547-27	GERNATT-CF-GRAB 7	Total/NA	Solid	5035A_L	
480-159547-28	GERNATT-CF-GRAB 8	Total/NA	Solid	5035A_L	
480-159547-29	GERNATT-CF-GRAB 9	Total/NA	Solid	5035A_L	
480-159547-33	GERNATT-TS-GRAB 1	Total/NA	Solid	5035A_L	
480-159547-34	GERNATT-TS-GRAB 2	Total/NA	Solid	5035A_L	
480-159547-35	GERNATT-TS-GRAB 3	Total/NA	Solid	5035A_L	
480-159547-36	GERNATT-TS-GRAB 4	Total/NA	Solid	5035A_L	
480-159547-37	GERNATT-TS-GRAB 5	Total/NA	Solid	5035A_L	
480-159547-38	GERNATT-TS-GRAB 6	Total/NA	Solid	5035A_L	
MB 480-493743/2-A	Method Blank	Total/NA	Solid	5035A_L	
LCS 480-493743/1-A	Lab Control Sample	Total/NA	Solid	5035A_L	

Analysis Batch: 493944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-24	GERNATT-CF-GRAB 4	Total/NA	Solid	8260C	493988
MB 480-493988/3-A	Method Blank	Total/NA	Solid	8260C	493988
LCS 480-493988/1-A	Lab Control Sample	Total/NA	Solid	8260C	493988
480-159547-24 MS	GERNATT-CF-GRAB 4	Total/NA	Solid	8260C	493988
480-159547-24 MSD	GERNATT-CF-GRAB 4	Total/NA	Solid	8260C	493988

Prep Batch: 493988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-24	GERNATT-CF-GRAB 4	Total/NA	Solid	5035A_L	
MB 480-493988/3-A	Method Blank	Total/NA	Solid	5035A_L	
LCS 480-493988/1-A	Lab Control Sample	Total/NA	Solid	5035A_L	
480-159547-24 MS	GERNATT-CF-GRAB 4	Total/NA	Solid	5035A_L	
480-159547-24 MSD	GERNATT-CF-GRAB 4	Total/NA	Solid	5035A_L	

GC/MS Semi VOA

Prep Batch: 494075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3550C	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3550C	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3550C	

GC/MS Semi VOA (Continued)

Prep Batch: 494075 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3550C	
MB 480-494075/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-494075/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Analysis Batch: 494348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	8270D	494075
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	8270D	494075
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	8270D	494075
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	8270D	494075
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	8270D	494075
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	8270D	494075
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	8270D	494075
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	8270D	494075
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	8270D	494075
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	8270D	494075
MB 480-494075/1-A	Method Blank	Total/NA	Solid	8270D	494075
LCS 480-494075/2-A	Lab Control Sample	Total/NA	Solid	8270D	494075

GC Semi VOA

Prep Batch: 493640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3550C	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3550C	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3550C	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3550C	
MB 480-493640/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-493640/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Prep Batch: 493889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	8151A	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	8151A	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	8151A	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	8151A	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	8151A	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	8151A	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	8151A	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	8151A	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	8151A	

GC Semi VOA (Continued)

Prep Batch: 493889 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-493889/1-A	Method Blank	Total/NA	Solid	8151A	
LCS 480-493889/2-A	Lab Control Sample	Total/NA	Solid	8151A	
480-159547-7 MS	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	
480-159547-7 MSD	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	

Prep Batch: 493908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3550C	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3550C	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3550C	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3550C	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3550C	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3550C	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3550C	
MB 480-493908/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 480-493908/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Analysis Batch: 494086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	8082A	493640
MB 480-493640/1-A	Method Blank	Total/NA	Solid	8082A	493640
LCS 480-493640/2-A	Lab Control Sample	Total/NA	Solid	8082A	493640

Analysis Batch: 494474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	8081B	493908
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	8081B	493908
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	8081B	493908
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	8081B	493908
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	8081B	493908
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	8081B	493908
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	8081B	493908
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	8081B	493908
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	8081B	493908
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	8081B	493908
MB 480-493908/1-A	Method Blank	Total/NA	Solid	8081B	493908
LCS 480-493908/2-A	Lab Control Sample	Total/NA	Solid	8081B	493908

Analysis Batch: 494480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	8082A	493640
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	8082A	493640
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	8082A	493640
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	8082A	493640
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	8082A	493640
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	8082A	493640
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	8082A	493640
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	8082A	493640

GC Semi VOA (Continued)

Analysis Batch: 494480 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	8082A	493640

Analysis Batch: 495143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	493889
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	8151A	493889
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	8151A	493889
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	8151A	493889
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	8151A	493889
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	8151A	493889
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	8151A	493889
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	8151A	493889
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	8151A	493889
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	8151A	493889
MB 480-493889/1-A	Method Blank	Total/NA	Solid	8151A	493889
LCS 480-493889/2-A	Lab Control Sample	Total/NA	Solid	8151A	493889
480-159547-7 MS	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	493889
480-159547-7 MSD	RUSSO-TS-COMP 1	Total/NA	Solid	8151A	493889

LCMS

Leach Batch: 326292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	SPLP East	Solid	1312	
480-159547-8	RUSSO-TS-COMP 2	SPLP East	Solid	1312	
480-159547-18	RUSSO-CF-COMP 1	SPLP East	Solid	1312	
480-159547-19	RUSSO-CF-COMP 2	SPLP East	Solid	1312	
480-159547-20	RUSSO-CF-COMP 3	SPLP East	Solid	1312	
480-159547-30	GERNATT-CF-COMP 1	SPLP East	Solid	1312	
LB 320-326292/1-B	Method Blank	SPLP East	Solid	1312	

Prep Batch: 326624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	SHAKE	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	SHAKE	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	SHAKE	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	SHAKE	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	SHAKE	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	SHAKE	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	SHAKE	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	SHAKE	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	SHAKE	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	SHAKE	
MB 320-326624/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-326624/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Leach Batch: 327145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-31	GERNATT-CF-COMP 2	SPLP East	Solid	1312	
480-159547-32	GERNATT-CF-COMP 3	SPLP East	Solid	1312	
480-159547-39	GERNATT-TS-COMP 1	SPLP East	Solid	1312	

LCMS (Continued)

Leach Batch: 327145 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	SPLP East	Solid	1312	
LB 320-327145/1-B	Method Blank	SPLP East	Solid	1312	

Analysis Batch: 328148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	537 (modified)	326624
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	537 (modified)	326624
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	537 (modified)	326624
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	537 (modified)	326624
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	537 (modified)	326624
MB 320-326624/1-A	Method Blank	Total/NA	Solid	537 (modified)	326624

Prep Batch: 328853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	SPLP East	Solid	3535	326292
480-159547-8	RUSSO-TS-COMP 2	SPLP East	Solid	3535	326292
480-159547-18	RUSSO-CF-COMP 1	SPLP East	Solid	3535	326292
480-159547-19	RUSSO-CF-COMP 2	SPLP East	Solid	3535	326292
480-159547-20	RUSSO-CF-COMP 3	SPLP East	Solid	3535	326292
480-159547-30	GERNATT-CF-COMP 1	SPLP East	Solid	3535	326292
480-159547-31	GERNATT-CF-COMP 2	SPLP East	Solid	3535	327145
480-159547-32	GERNATT-CF-COMP 3	SPLP East	Solid	3535	327145
480-159547-39	GERNATT-TS-COMP 1	SPLP East	Solid	3535	327145
480-159547-40	GERNATT-TS-COMP 2	SPLP East	Solid	3535	327145
LB 320-326292/1-B	Method Blank	SPLP East	Solid	3535	326292
LB 320-327145/1-B	Method Blank	SPLP East	Solid	3535	327145
MB 320-328853/1-A	Method Blank	Total/NA	Solid	3535	
LCS 320-328853/2-A	Lab Control Sample	Total/NA	Solid	3535	
LCSD 320-328853/3-A	Lab Control Sample Dup	Total/NA	Solid	3535	

Analysis Batch: 329447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	SPLP East	Solid	537 (modified)	328853
480-159547-8	RUSSO-TS-COMP 2	SPLP East	Solid	537 (modified)	328853
480-159547-18	RUSSO-CF-COMP 1	SPLP East	Solid	537 (modified)	328853
480-159547-19	RUSSO-CF-COMP 2	SPLP East	Solid	537 (modified)	328853
480-159547-20	RUSSO-CF-COMP 3	SPLP East	Solid	537 (modified)	328853
480-159547-30	GERNATT-CF-COMP 1	SPLP East	Solid	537 (modified)	328853
480-159547-31	GERNATT-CF-COMP 2	SPLP East	Solid	537 (modified)	328853
480-159547-32	GERNATT-CF-COMP 3	SPLP East	Solid	537 (modified)	328853
480-159547-39	GERNATT-TS-COMP 1	SPLP East	Solid	537 (modified)	328853
480-159547-40	GERNATT-TS-COMP 2	SPLP East	Solid	537 (modified)	328853
LB 320-326292/1-B	Method Blank	SPLP East	Solid	537 (modified)	328853
LB 320-327145/1-B	Method Blank	SPLP East	Solid	537 (modified)	328853
MB 320-328853/1-A	Method Blank	Total/NA	Solid	537 (modified)	328853
LCS 320-328853/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	328853
LCSD 320-328853/3-A	Lab Control Sample Dup	Total/NA	Solid	537 (modified)	328853

Analysis Batch: 329754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	537 (modified)	326624

LCMS (Continued)

Analysis Batch: 329754 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	537 (modified)	326624
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	537 (modified)	326624
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	537 (modified)	326624
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	537 (modified)	326624
LCS 320-326624/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	326624

Metals

Prep Batch: 493602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3050B	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3050B	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3050B	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3050B	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3050B	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3050B	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3050B	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3050B	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3050B	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3050B	
MB 480-493602/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 480-493602/2-A	Lab Control Sample	Total/NA	Solid	3050B	
480-159547-7 MS	RUSSO-TS-COMP 1	Total/NA	Solid	3050B	
480-159547-7 MSD	RUSSO-TS-COMP 1	Total/NA	Solid	3050B	

Analysis Batch: 494449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	6010C	493602
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	6010C	493602
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	6010C	493602
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	6010C	493602
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	6010C	493602
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	6010C	493602
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	6010C	493602
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	6010C	493602
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	6010C	493602
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	6010C	493602
MB 480-493602/1-A	Method Blank	Total/NA	Solid	6010C	493602
LCSSRM 480-493602/2-A	Lab Control Sample	Total/NA	Solid	6010C	493602
480-159547-7 MS	RUSSO-TS-COMP 1	Total/NA	Solid	6010C	493602
480-159547-7 MSD	RUSSO-TS-COMP 1	Total/NA	Solid	6010C	493602

Prep Batch: 497458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	7471B	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	7471B	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	7471B	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	7471B	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	7471B	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	7471B	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	7471B	

Metals (Continued)

Prep Batch: 497458 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	7471B	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	7471B	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	7471B	
MB 480-497458/1-A	Method Blank	Total/NA	Solid	7471B	
LCDSRM 480-497458/25-A ^	Lab Control Sample Dup	Total/NA	Solid	7471B	
LCSSRM 480-497458/2-A ^5	Lab Control Sample	Total/NA	Solid	7471B	

Analysis Batch: 497542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	7471B	497458
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	7471B	497458
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	7471B	497458
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	7471B	497458
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	7471B	497458
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	7471B	497458
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	7471B	497458
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	7471B	497458
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	7471B	497458
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	7471B	497458
MB 480-497458/1-A	Method Blank	Total/NA	Solid	7471B	497458
LCDSRM 480-497458/25-A ^	Lab Control Sample Dup	Total/NA	Solid	7471B	497458
LCSSRM 480-497458/2-A ^5	Lab Control Sample	Total/NA	Solid	7471B	497458

General Chemistry

Analysis Batch: 493698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-1	RUSSO-TS-GRAB 1	Total/NA	Solid	Moisture	
480-159547-2	RUSSO-TS-GRAB 2	Total/NA	Solid	Moisture	
480-159547-3	RUSSO-TS-GRAB 3	Total/NA	Solid	Moisture	
480-159547-4	RUSSO-TS-GRAB 4	Total/NA	Solid	Moisture	
480-159547-5	RUSSO-TS-GRAB 5	Total/NA	Solid	Moisture	
480-159547-6	RUSSO-TS-GRAB 6	Total/NA	Solid	Moisture	
480-159547-9	RUSSO-CF-GRAB 1	Total/NA	Solid	Moisture	
480-159547-10	RUSSO-CF-GRAB 2	Total/NA	Solid	Moisture	
480-159547-11	RUSSO-CF-GRAB 3	Total/NA	Solid	Moisture	
480-159547-12	RUSSO-CF-GRAB 4	Total/NA	Solid	Moisture	
480-159547-13	RUSSO-CF-GRAB 5	Total/NA	Solid	Moisture	
480-159547-14	RUSSO-CF-GRAB 6	Total/NA	Solid	Moisture	
480-159547-15	RUSSO-CF-GRAB 7	Total/NA	Solid	Moisture	
480-159547-16	RUSSO-CF-GRAB 8	Total/NA	Solid	Moisture	
480-159547-17	RUSSO-CF-GRAB 9	Total/NA	Solid	Moisture	
480-159547-21	GERNATT-CF-GRAB 1	Total/NA	Solid	Moisture	
480-159547-22	GERNATT-CF-GRAB 2	Total/NA	Solid	Moisture	
480-159547-23	GERNATT-CF-GRAB 3	Total/NA	Solid	Moisture	
480-159547-24	GERNATT-CF-GRAB 4	Total/NA	Solid	Moisture	
480-159547-25	GERNATT-CF-GRAB 5	Total/NA	Solid	Moisture	
480-159547-26	GERNATT-CF-GRAB 6	Total/NA	Solid	Moisture	
480-159547-27	GERNATT-CF-GRAB 7	Total/NA	Solid	Moisture	
480-159547-28	GERNATT-CF-GRAB 8	Total/NA	Solid	Moisture	
480-159547-29	GERNATT-CF-GRAB 9	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 493698 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-33	GERNATT-TS-GRAB 1	Total/NA	Solid	Moisture	
480-159547-34	GERNATT-TS-GRAB 2	Total/NA	Solid	Moisture	
480-159547-35	GERNATT-TS-GRAB 3	Total/NA	Solid	Moisture	
480-159547-36	GERNATT-TS-GRAB 4	Total/NA	Solid	Moisture	
480-159547-37	GERNATT-TS-GRAB 5	Total/NA	Solid	Moisture	
480-159547-38	GERNATT-TS-GRAB 6	Total/NA	Solid	Moisture	

Analysis Batch: 493706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	Moisture	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	Moisture	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	Moisture	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	Moisture	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	Moisture	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	Moisture	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	Moisture	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	Moisture	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	Moisture	
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	Moisture	

Prep Batch: 495078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	9012B	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	9012B	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	9012B	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	9012B	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	9012B	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	9012B	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	9012B	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	9012B	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	9012B	
MB 480-495078/1-A	Method Blank	Total/NA	Solid	9012B	
LCSSRM 480-495078/2-A ^1	Lab Control Sample	Total/NA	Solid	9012B	
480-159547-39 MS	GERNATT-TS-COMP 1	Total/NA	Solid	9012B	

Prep Batch: 495079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	9012B	
MB 480-495079/1-A	Method Blank	Total/NA	Solid	9012B	
LCSSRM 480-495079/2-A ^1	Lab Control Sample	Total/NA	Solid	9012B	

Analysis Batch: 495424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	9012B	495078
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	9012B	495078
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	9012B	495078
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	9012B	495078
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	9012B	495078
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	9012B	495078
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	9012B	495078
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	9012B	495078

General Chemistry (Continued)

Analysis Batch: 495424 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	9012B	495078
MB 480-495078/1-A	Method Blank	Total/NA	Solid	9012B	495078
LCSSRM 480-495078/2-A ^1	Lab Control Sample	Total/NA	Solid	9012B	495078
480-159547-39 MS	GERNATT-TS-COMP 1	Total/NA	Solid	9012B	495078

Analysis Batch: 495460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	9012B	495079
MB 480-495079/1-A	Method Blank	Total/NA	Solid	9012B	495079
LCSSRM 480-495079/2-A ^1	Lab Control Sample	Total/NA	Solid	9012B	495079

Prep Batch: 645413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3060A	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3060A	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3060A	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3060A	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3060A	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3060A	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3060A	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3060A	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3060A	
MB 460-645413/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-645413/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSSRM 460-645413/2-A	Lab Control Sample	Total/NA	Solid	3060A	

Prep Batch: 645471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3060A	
MB 460-645471/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-645471/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSSRM 460-645471/2-A	Lab Control Sample	Total/NA	Solid	3060A	

Analysis Batch: 645561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	7196A	645413
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	7196A	645413
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	7196A	645413
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	7196A	645413
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	7196A	645413
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	7196A	645413
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	7196A	645413
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	7196A	645413
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	7196A	645413
MB 460-645413/1-A	Method Blank	Total/NA	Solid	7196A	645413
LCSI 460-645413/3-A	Lab Control Sample	Total/NA	Solid	7196A	645413
LCSSRM 460-645413/2-A	Lab Control Sample	Total/NA	Solid	7196A	645413

Analysis Batch: 645571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	7196A	645471

General Chemistry (Continued)

Analysis Batch: 645571 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 460-645471/1-A	Method Blank	Total/NA	Solid	7196A	645471
LCSI 460-645471/3-A	Lab Control Sample	Total/NA	Solid	7196A	645471
LCSSRM 460-645471/2-A	Lab Control Sample	Total/NA	Solid	7196A	645471

Prep Batch: 645708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	3060A	
MB 460-645708/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-645708/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSSRM 460-645708/2-A	Lab Control Sample	Total/NA	Solid	3060A	

Prep Batch: 645709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	3060A	
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	3060A	
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	3060A	
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	3060A	
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	3060A	
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	3060A	
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	3060A	
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	3060A	
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	3060A	
MB 460-645709/1-A	Method Blank	Total/NA	Solid	3060A	
LCSI 460-645709/3-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSSRM 460-645709/2-A	Lab Control Sample	Total/NA	Solid	3060A	

Analysis Batch: 646036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-40	GERNATT-TS-COMP 2	Total/NA	Solid	7196A	645708
MB 460-645708/1-A	Method Blank	Total/NA	Solid	7196A	645708
LCSI 460-645708/3-A	Lab Control Sample	Total/NA	Solid	7196A	645708
LCSSRM 460-645708/2-A	Lab Control Sample	Total/NA	Solid	7196A	645708

Analysis Batch: 646037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-159547-7	RUSSO-TS-COMP 1	Total/NA	Solid	7196A	645709
480-159547-8	RUSSO-TS-COMP 2	Total/NA	Solid	7196A	645709
480-159547-18	RUSSO-CF-COMP 1	Total/NA	Solid	7196A	645709
480-159547-19	RUSSO-CF-COMP 2	Total/NA	Solid	7196A	645709
480-159547-20	RUSSO-CF-COMP 3	Total/NA	Solid	7196A	645709
480-159547-30	GERNATT-CF-COMP 1	Total/NA	Solid	7196A	645709
480-159547-31	GERNATT-CF-COMP 2	Total/NA	Solid	7196A	645709
480-159547-32	GERNATT-CF-COMP 3	Total/NA	Solid	7196A	645709
480-159547-39	GERNATT-TS-COMP 1	Total/NA	Solid	7196A	645709
MB 460-645709/1-A	Method Blank	Total/NA	Solid	7196A	645709
LCSI 460-645709/3-A	Lab Control Sample	Total/NA	Solid	7196A	645709
LCSSRM 460-645709/2-A	Lab Control Sample	Total/NA	Solid	7196A	645709

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1
Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 1
Lab Sample ID: 480-159547-1
Date Collected: 09/16/19 09:25
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 82.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 16:28	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 2
Lab Sample ID: 480-159547-2
Date Collected: 09/16/19 09:26
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 75.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 16:52	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 3
Lab Sample ID: 480-159547-3
Date Collected: 09/16/19 09:27
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 73.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 17:17	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 4
Lab Sample ID: 480-159547-4
Date Collected: 09/16/19 09:28
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 4 — Lab Sample ID: 480-159547-4

Date Collected: 09/16/19 09:28 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 81.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 17:41	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 5 — Lab Sample ID: 480-159547-5

Date Collected: 09/16/19 09:29 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 5 — Lab Sample ID: 480-159547-5

Date Collected: 09/16/19 09:29 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 79.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:06	CDC	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 6 — Lab Sample ID: 480-159547-6

Date Collected: 09/16/19 09:30 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-TS-GRAB 6 — Lab Sample ID: 480-159547-6

Date Collected: 09/16/19 09:30 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 81.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:30	CDC	TAL BUF

Client Sample ID: RUSSO-TS-COMP 1 — Lab Sample ID: 480-159547-7

Date Collected: 09/16/19 09:35 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:21	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-TS-COMP 1
Lab Sample ID: 480-159547-7
Date Collected: 09/16/19 09:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 78.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 20:15	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:11	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:08	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 11:18	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 05:46	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 12:46	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:41	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 15:40	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:24	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:41	MDL	TAL BUF

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:30	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-TS-COMP 2
Lab Sample ID: 480-159547-8
Date Collected: 09/16/19 09:40
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 72.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 20:40	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:30	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:21	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 11:48	MAN	TAL BUF

Client Sample ID: RUSSO-TS-COMP 2 — Lab Sample ID: 480-159547-8

Date Collected: 09/16/19 09:40 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 72.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 05:56	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:16	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:42	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:42	MDL	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 1 — Lab Sample ID: 480-159547-9

Date Collected: 09/16/19 11:40 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 1 — Lab Sample ID: 480-159547-9

Date Collected: 09/16/19 11:40 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 88.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 18:55	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 2 — Lab Sample ID: 480-159547-10

Date Collected: 09/16/19 11:41 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 2 — Lab Sample ID: 480-159547-10

Date Collected: 09/16/19 11:41 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 89.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 19:19	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 3 — Lab Sample ID: 480-159547-11

Date Collected: 09/16/19 11:42 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 3 — Lab Sample ID: 480-159547-11

Date Collected: 09/16/19 11:42 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 89.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 19:44	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 4 — Lab Sample ID: 480-159547-12

Date Collected: 09/16/19 11:43 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 4 — Lab Sample ID: 480-159547-12

Date Collected: 09/16/19 11:43 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 81.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:08	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 5 — Lab Sample ID: 480-159547-13

Date Collected: 09/16/19 11:44 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 5 — Lab Sample ID: 480-159547-13

Date Collected: 09/16/19 11:44 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 90.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:33	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 6 — Lab Sample ID: 480-159547-14

Date Collected: 09/16/19 11:45 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 6 — Lab Sample ID: 480-159547-14

Date Collected: 09/16/19 11:45 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 20:58	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 7 — Lab Sample ID: 480-159547-15

Date Collected: 09/16/19 11:46 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 7 — Lab Sample ID: 480-159547-15

Date Collected: 09/16/19 11:46 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 89.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 21:23	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 8 — Lab Sample ID: 480-159547-16

Date Collected: 09/16/19 11:47 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 8 — Lab Sample ID: 480-159547-16

Date Collected: 09/16/19 11:47 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 90.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 21:47	CDC	TAL BUF

Client Sample ID: RUSSO-CF-GRAB 9 — Lab Sample ID: 480-159547-17

Date Collected: 09/16/19 11:48 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: RUSSO-CF-GRAB 9
Lab Sample ID: 480-159547-17
Date Collected: 09/16/19 11:48
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 92.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 22:12	CDC	TAL BUF

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 01:40	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-CF-COMP 1
Lab Sample ID: 480-159547-18
Date Collected: 09/16/19 11:50
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:05	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 14:50	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:33	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 12:18	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:06	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:20	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:43	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:44	MDL	TAL BUF

Client Sample ID: RUSSO-CF-COMP 2 — Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:18	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-CF-COMP 2 — Lab Sample ID: 480-159547-19

Date Collected: 09/16/19 11:52 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 90.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:30	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:09	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:45	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 12:47	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 13:35	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:24	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:45	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:45	MDL	TAL BUF

Client Sample ID: RUSSO-CF-COMP 3 — Lab Sample ID: 480-159547-20

Date Collected: 09/16/19 11:55 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:28	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: RUSSO-CF-COMP 3 — Lab Sample ID: 480-159547-20

Date Collected: 09/16/19 11:55 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 89.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 21:56	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:29	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494086	09/26/19 00:09	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 13:17	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:03	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:28	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:46	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:47	MDL	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 1 — Lab Sample ID: 480-159547-21

Date Collected: 09/16/19 13:40 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 1 — Lab Sample ID: 480-159547-21

Date Collected: 09/16/19 13:40 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 85.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 22:37	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 2 — Lab Sample ID: 480-159547-22

Date Collected: 09/16/19 13:41 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 2 — Lab Sample ID: 480-159547-22

Date Collected: 09/16/19 13:41 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.4**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 23:01	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 3 — Lab Sample ID: 480-159547-23

Date Collected: 09/16/19 13:42 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 3 — Lab Sample ID: 480-159547-23

Date Collected: 09/16/19 13:42 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493565	09/23/19 13:58	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493547	09/23/19 23:26	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 4 — Lab Sample ID: 480-159547-24

Date Collected: 09/16/19 13:43 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 4 — Lab Sample ID: 480-159547-24

Date Collected: 09/16/19 13:43 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.6**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493988	09/25/19 10:16	WJD	TAL BUF
Total/NA	Analysis	8260C		1	493944	09/25/19 13:51	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 5 — Lab Sample ID: 480-159547-25

Date Collected: 09/16/19 13:44 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 5 — Lab Sample ID: 480-159547-25

Date Collected: 09/16/19 13:44 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 13:29	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 6 — Lab Sample ID: 480-159547-26

Date Collected: 09/16/19 13:45 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 6 — Lab Sample ID: 480-159547-26

Date Collected: 09/16/19 13:45 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 13:53	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 7 — Lab Sample ID: 480-159547-27

Date Collected: 09/16/19 13:46 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 7 — Lab Sample ID: 480-159547-27

Date Collected: 09/16/19 13:46 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 14:18	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 8 — Lab Sample ID: 480-159547-28

Date Collected: 09/16/19 13:47 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 8 — Lab Sample ID: 480-159547-28

Date Collected: 09/16/19 13:47 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.2**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 14:42	CDC	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 9 — Lab Sample ID: 480-159547-29

Date Collected: 09/16/19 13:48 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-CF-GRAB 9 — Lab Sample ID: 480-159547-29

Date Collected: 09/16/19 13:48 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:07	CDC	TAL BUF

Client Sample ID: GERNATT-CF-COMP 1 — Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			326292	09/28/19 12:15	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:37	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 1 — Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 22:21	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 15:48	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 15:58	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 14:47	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:13	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:32	LMH	TAL BUF

Client Sample ID: GERNATT-CF-COMP 1 — Lab Sample ID: 480-159547-30

Date Collected: 09/16/19 13:50 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 93.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:47	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:48	MDL	TAL BUF

Client Sample ID: GERNATT-CF-COMP 2 — Lab Sample ID: 480-159547-31

Date Collected: 09/16/19 13:53 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:47	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 2 — Lab Sample ID: 480-159547-31

Date Collected: 09/16/19 13:53 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 94.1**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 22:47	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:08	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:10	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 15:16	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:22	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:47	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:48	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:51	MDL	TAL BUF

Client Sample ID: GERNATT-CF-COMP 3 — Lab Sample ID: 480-159547-32

Date Collected: 09/16/19 13:57 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 02:57	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-CF-COMP 3 — Lab Sample ID: 480-159547-32

Date Collected: 09/16/19 13:57 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 92.9**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 23:13	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:27	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:23	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 15:46	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	328148	10/03/19 14:32	S1M	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:51	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:50	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:50	MDL	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 1 — Lab Sample ID: 480-159547-33

Date Collected: 09/16/19 14:15 — **Matrix: Solid**
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 1 — Lab Sample ID: 480-159547-33

Date Collected: 09/16/19 14:15 — **Matrix: Solid**
Date Received: 09/16/19 16:10 — **Percent Solids: 88.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:31	CDC	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 2
Lab Sample ID: 480-159547-34
Date Collected: 09/16/19 14:16
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 15:55	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 3
Lab Sample ID: 480-159547-35
Date Collected: 09/16/19 14:17
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 16:20	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 4
Lab Sample ID: 480-159547-36
Date Collected: 09/16/19 14:18
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 4
Lab Sample ID: 480-159547-36
Date Collected: 09/16/19 14:18
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 90.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 16:44	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 5
Lab Sample ID: 480-159547-37
Date Collected: 09/16/19 14:19
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-GRAB 5
Lab Sample ID: 480-159547-37
Date Collected: 09/16/19 14:19
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 17:09	CDC	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 6
Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	493698	09/24/19 08:59	S1V	TAL BUF

Client Sample ID: GERNATT-TS-GRAB 6
Lab Sample ID: 480-159547-38
Date Collected: 09/16/19 14:20
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A_L			493743	09/24/19 10:38	CDC	TAL BUF
Total/NA	Analysis	8260C		1	493693	09/24/19 17:34	CDC	TAL BUF

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 03:06	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/26/19 23:38	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 16:47	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:35	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 16:16	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:15	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:55	LMH	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Client Sample ID: GERNATT-TS-COMP 1
Lab Sample ID: 480-159547-39
Date Collected: 09/16/19 14:30
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:54	BMB	TAL BUF
Total/NA	Prep	3060A			645413	10/08/19 08:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645561	10/08/19 16:50	RAK	TAL EDI
Total/NA	Prep	3060A			645709	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646037	10/10/19 16:48	RPR	TAL EDI
Total/NA	Prep	9012B			495078	09/30/19 20:45	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495424	10/02/19 09:55	MDL	TAL BUF

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP East	Leach	1312			327145	09/29/19 14:35	DPM	TAL SAC
SPLP East	Prep	3535			328853	10/07/19 06:04	MTN	TAL SAC
SPLP East	Analysis	537 (modified)		1	329447	10/09/19 03:16	D1R	TAL SAC
Total/NA	Analysis	Moisture		1	493706	09/24/19 09:31	CMK	TAL BUF

Client Sample ID: GERNATT-TS-COMP 2
Lab Sample ID: 480-159547-40
Date Collected: 09/16/19 14:35
Matrix: Solid
Date Received: 09/16/19 16:10
Percent Solids: 87.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550C			494075	09/25/19 14:37	SGD	TAL BUF
Total/NA	Analysis	8270D		1	494348	09/27/19 00:03	PJQ	TAL BUF
Total/NA	Prep	3550C			493908	09/25/19 07:36	ELS	TAL BUF
Total/NA	Analysis	8081B		1	494474	09/27/19 17:07	JLS	TAL BUF
Total/NA	Prep	3550C			493640	09/24/19 05:51	SMP	TAL BUF
Total/NA	Analysis	8082A		1	494480	09/27/19 16:47	DSC	TAL BUF
Total/NA	Prep	8151A			493889	09/25/19 05:49	SMP	TAL BUF
Total/NA	Analysis	8151A		1	495143	10/01/19 20:08	MAN	TAL BUF
Total/NA	Prep	SHAKE			326624	09/27/19 10:45	AEC	TAL SAC
Total/NA	Analysis	537 (modified)		1	329754	10/10/19 06:25	VPM	TAL SAC
Total/NA	Prep	3050B			493602	09/25/19 07:01	NSW	TAL BUF
Total/NA	Analysis	6010C		1	494449	09/26/19 13:59	LMH	TAL BUF
Total/NA	Prep	7471B			497458	10/11/19 13:45	BMB	TAL BUF
Total/NA	Analysis	7471B		1	497542	10/11/19 14:55	BMB	TAL BUF
Total/NA	Prep	3060A			645471	10/08/19 10:53	RAK	TAL EDI
Total/NA	Analysis	7196A		1	645571	10/08/19 17:00	RAK	TAL EDI
Total/NA	Prep	3060A			645708	10/09/19 07:53	RPR	TAL EDI
Total/NA	Analysis	7196A		1	646036	10/10/19 14:13	RPR	TAL EDI
Total/NA	Prep	9012B			495079	09/30/19 21:50	LAW	TAL BUF
Total/NA	Analysis	9012B		1	495460	10/02/19 12:13	MDL	TAL BUF

Lab Chronicle

Client: New York State D.E.C. Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C. Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8082A	3550C	Solid	PCB-1016
8082A	3550C	Solid	PCB-1221
8082A	3550C	Solid	PCB-1232
8082A	3550C	Solid	PCB-1242
8082A	3550C	Solid	PCB-1248
8082A	3550C	Solid	PCB-1254
8082A	3550C	Solid	PCB-1260
8082A	3550C	Solid	PCB-1262
8082A	3550C	Solid	PCB-1268
8082A	3550C	Solid	Polychlorinated biphenyls, Total
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

Accreditation/Certification Summary

Client: New York State D.E.C. Job ID: 480-159547-1
Project/Site: 1318 Niagara Street #E915213

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State Program	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	08-09-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
Arkansas DEQ	State Program	88-0691	06-17-20
California	State	2897	01-31-20
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-20
Hawaii	State	<cert No.>	01-29-20
Illinois	NELAP	200060	03-17-20
Kansas	NELAP	E-10375	10-31-19
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-20
Maine	State Program	CA0004	04-14-20
Michigan	State	9947	01-29-20
Michigan	State Program	9947	01-31-20
Nevada	State	CA000442020-1	07-31-20
Nevada	State Program	CA00044	07-31-20
New Hampshire	NELAP	2997	04-20-20
New Hampshire	NELAP	2997	04-18-20
New Jersey	NELAP	CA005	06-30-20
New York	NELAP	11666	04-01-20
Oregon	NELAP	4040	01-29-20
Pennsylvania	NELAP	68-01272	03-31-20
Texas	NELAP	T104704399-19-13	05-31-20
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
USEPA UCMR	Federal	CA00044	12-31-20
Utah	NELAP	CA00044	02-29-20
Vermont	State	VT-4040	04-16-20
Virginia	NELAP	460278	03-14-20
Washington	State	C581	05-05-20
West Virginia (DW)	State	9930C	12-31-19
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method 8260C

Volatile Organic Compounds (GC/MS) by Method 8260C

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): ZB-624 (20) ID: 0.18(mm)

Client Sample ID	Lab Sample ID	DBFM	#	DCA	#	TOL	#	BFB	#
RUSSO-TS-GRAB 1	480-159547-1	120		131	X	113		123	
RUSSO-TS-GRAB 2	480-159547-2	98		101		93		96	
RUSSO-TS-GRAB 3	480-159547-3	100		101		93		98	
RUSSO-TS-GRAB 4	480-159547-4	103		106		95		102	
RUSSO-TS-GRAB 5	480-159547-5	102		107		94		97	
RUSSO-TS-GRAB 6	480-159547-6	125		131	X	117		122	
RUSSO-CF-GRAB 1	480-159547-9	96		99		91		94	
RUSSO-CF-GRAB 2	480-159547-10	121		126		117		119	
RUSSO-CF-GRAB 3	480-159547-11	93		94		92		96	
RUSSO-CF-GRAB 4	480-159547-12	116		113		108		112	
RUSSO-CF-GRAB 5	480-159547-13	98		101		90		95	
RUSSO-CF-GRAB 6	480-159547-14	105		110		98		101	
RUSSO-CF-GRAB 7	480-159547-15	101		103		95		97	
RUSSO-CF-GRAB 8	480-159547-16	118		119		109		112	
RUSSO-CF-GRAB 9	480-159547-17	98		101		90		94	
GERNATT-CF-GRAB 1	480-159547-21	118		120		114		118	
GERNATT-CF-GRAB 2	480-159547-22	94		97		90		93	
GERNATT-CF-GRAB 3	480-159547-23	112		114		108		109	
GERNATT-CF-GRAB 4	480-159547-24	107		104		98		99	
GERNATT-CF-GRAB 5	480-159547-25	120		119		108		114	
GERNATT-CF-GRAB 6	480-159547-26	96		100		90		95	
GERNATT-CF-GRAB 7	480-159547-27	117		123		110		118	
GERNATT-CF-GRAB 8	480-159547-28	93		99		91		94	
GERNATT-CF-GRAB 9	480-159547-29	118		118		111		118	
GERNATT-TS-GRAB 1	480-159547-33	93		99		89		94	
GERNATT-TS-GRAB 2	480-159547-34	120		127	X	113		117	
GERNATT-TS-GRAB 3	480-159547-35	94		100		89		93	
GERNATT-TS-GRAB 4	480-159547-36	124		130	X	113		116	
GERNATT-TS-GRAB 5	480-159547-37	94		101		89		92	
GERNATT-TS-GRAB 6	480-159547-38	127		135	X	116		123	
	MB 480-493565/2-A	99		102		96		105	
	MB 480-493743/2-A	104		109		96		105	
	MB 480-493988/3-A	107		104		97		99	

	QC LIMITS
DBFM = Dibromofluoromethane (Surr)	60-140
DCA = 1,2-Dichloroethane-d4 (Surr)	64-126
TOL = Toluene-d8 (Surr)	71-125
BFB = 4-Bromofluorobenzene (Surr)	72-126

Column to be used to flag recovery values

FORM II 8260C

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): ZB-624 (20) ID: 0.18(mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TOL #	BFB #
	LCS 480-493565/1-A	101	97	97	103
	LCS 480-493743/1-A	102	102	102	105
	LCS 480-493988/1-A	107	113	97	98
GERNATT-CF-GRAB 4 MS	480-159547-24 MS	104	85	100	97
GERNATT-CF-GRAB 4 MSD	480-159547-24 MSD	102	86	101	99

	QC LIMITS
DBFM = Dibromofluoromethane (Surr)	60-140
DCA = 1,2-Dichloroethane-d4 (Surr)	64-126
TOL = Toluene-d8 (Surr)	71-125
BFB = 4-Bromofluorobenzene (Surr)	72-126

Column to be used to flag recovery values

FORM II 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: P0096.D

Lab ID: LCS 480-493565/1-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	50.0	60.8	122	77-121	*
1,1-Dichloroethane	50.0	55.4	111	73-126	
1,1-Dichloroethene	50.0	61.4	123	59-125	
1,2,4-Trimethylbenzene	50.0	54.9	110	74-120	
1,2-Dichlorobenzene	50.0	49.6	99	75-120	
1,2-Dichloroethane	50.0	51.0	102	77-122	
1,3,5-Trimethylbenzene	50.0	56.2	112	74-120	
1,3-Dichlorobenzene	50.0	53.0	106	74-120	
1,4-Dichlorobenzene	50.0	53.0	106	73-120	
1,4-Dioxane	1000	1090	109	64-124	
2-Butanone (MEK)	250	255	102	70-134	
Acetone	250	258	103	61-137	
Benzene	50.0	55.7	111	79-127	
Carbon tetrachloride	50.0	62.7	125	75-135	
Chlorobenzene	50.0	50.9	102	76-124	
Chloroform	50.0	54.4	109	80-120	
cis-1,2-Dichloroethene	50.0	54.8	110	81-120	
Ethylbenzene	50.0	54.7	109	80-120	
Methyl tert-butyl ether	50.0	52.8	106	63-125	
Methylene Chloride	50.0	51.9	104	61-127	
n-Butylbenzene	50.0	58.3	117	70-120	
N-Propylbenzene	50.0	57.9	116	70-130	
sec-Butylbenzene	50.0	57.1	114	74-120	
Tetrachloroethene	50.0	58.5	117	74-122	
Toluene	50.0	53.2	106	74-128	
trans-1,2-Dichloroethene	50.0	56.7	113	78-126	
Trichloroethene	50.0	57.2	114	77-129	
Vinyl chloride	50.0	57.8	116	61-133	
tert-Butylbenzene	50.0	56.1	112	73-120	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: P0124.D

Lab ID: LCS 480-493743/1-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	50.0	60.2	120	77-121	
1,1-Dichloroethane	50.0	55.5	111	73-126	
1,1-Dichloroethene	50.0	59.3	119	59-125	
1,2,4-Trimethylbenzene	50.0	55.3	111	74-120	
1,2-Dichlorobenzene	50.0	50.1	100	75-120	
1,2-Dichloroethane	50.0	51.7	103	77-122	
1,3,5-Trimethylbenzene	50.0	56.4	113	74-120	
1,3-Dichlorobenzene	50.0	52.9	106	74-120	
1,4-Dichlorobenzene	50.0	53.1	106	73-120	
1,4-Dioxane	1000	960	96	64-124	
2-Butanone (MEK)	250	241	97	70-134	
Acetone	250	249	99	61-137	
Benzene	50.0	55.1	110	79-127	
Carbon tetrachloride	50.0	62.1	124	75-135	
Chlorobenzene	50.0	50.5	101	76-124	
Chloroform	50.0	53.8	108	80-120	
cis-1,2-Dichloroethene	50.0	54.1	108	81-120	
Ethylbenzene	50.0	54.4	109	80-120	
Methyl tert-butyl ether	50.0	51.3	103	63-125	
Methylene Chloride	50.0	52.6	105	61-127	
n-Butylbenzene	50.0	58.5	117	70-120	
N-Propylbenzene	50.0	56.1	112	70-130	
sec-Butylbenzene	50.0	57.2	114	74-120	
Tetrachloroethene	50.0	60.7	121	74-122	
Toluene	50.0	53.7	107	74-128	
trans-1,2-Dichloroethene	50.0	56.1	112	78-126	
Trichloroethene	50.0	55.4	111	77-129	
Vinyl chloride	50.0	57.6	115	61-133	
tert-Butylbenzene	50.0	56.9	114	73-120	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: F2444.D

Lab ID: LCS 480-493988/1-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	50.0	57.7	115	77-121	
1,1-Dichloroethane	50.0	53.9	108	73-126	
1,1-Dichloroethene	50.0	53.1	106	59-125	
1,2,4-Trimethylbenzene	50.0	51.7	103	74-120	
1,2-Dichlorobenzene	50.0	49.8	100	75-120	
1,2-Dichloroethane	50.0	52.5	105	77-122	
1,3,5-Trimethylbenzene	50.0	52.4	105	74-120	
1,3-Dichlorobenzene	50.0	51.9	104	74-120	
1,4-Dichlorobenzene	50.0	50.2	100	73-120	
1,4-Dioxane	1000	902	90	64-124	
2-Butanone (MEK)	250	445	178	70-134	*
Acetone	250	253	101	61-137	
Benzene	50.0	52.4	105	79-127	
Carbon tetrachloride	50.0	63.2	126	75-135	
Chlorobenzene	50.0	51.8	104	76-124	
Chloroform	50.0	54.5	109	80-120	
cis-1,2-Dichloroethene	50.0	53.6	107	81-120	
Ethylbenzene	50.0	52.4	105	80-120	
Methyl tert-butyl ether	50.0	50.9	102	63-125	
Methylene Chloride	50.0	49.9	100	61-127	
n-Butylbenzene	50.0	54.5	109	70-120	
N-Propylbenzene	50.0	53.0	106	70-130	
sec-Butylbenzene	50.0	53.6	107	74-120	
Tetrachloroethene	50.0	57.0	114	74-122	
Toluene	50.0	51.3	103	74-128	
trans-1,2-Dichloroethene	50.0	55.1	110	78-126	
Trichloroethene	50.0	54.8	110	77-129	
Vinyl chloride	50.0	57.1	114	61-133	
tert-Butylbenzene	50.0	51.6	103	73-120	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: F2466.D

Lab ID: 480-159547-24 MS Client ID: GERNATT-CF-GRAB 4 MS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	52.8	ND	52.7	100	77-121	
1,1-Dichloroethane	52.8	ND	48.7	92	73-126	
1,1-Dichloroethene	52.8	ND	48.4	92	59-125	
1,2,4-Trimethylbenzene	52.8	ND	44.0	83	74-120	
1,2-Dichlorobenzene	52.8	ND	39.3	74	75-120	F1
1,2-Dichloroethane	52.8	ND	42.9	81	77-122	
1,3,5-Trimethylbenzene	52.8	ND	44.8	85	74-120	
1,3-Dichlorobenzene	52.8	ND	41.1	78	74-120	
1,4-Dichlorobenzene	52.8	ND	40.3	76	73-120	
1,4-Dioxane	1060	ND	482	46	64-124	F1
2-Butanone (MEK)	264	ND	142	54	70-134	F1
Acetone	264	ND	143	54	61-137	F1
Benzene	52.8	ND	48.4	92	79-127	
Carbon tetrachloride	52.8	ND	56.0	106	75-135	
Chlorobenzene	52.8	ND	44.8	85	76-124	
Chloroform	52.8	ND	50.3	95	80-120	
cis-1,2-Dichloroethene	52.8	ND	48.6	92	80-120	
Ethylbenzene	52.8	ND	46.6	88	80-120	
Methyl tert-butyl ether	52.8	ND	40.4	76	63-125	
Methylene Chloride	52.8	2.5 J	46.4	83	61-127	
n-Butylbenzene	52.8	ND	40.6	77	70-120	
N-Propylbenzene	52.8	ND	44.8	85	70-130	
sec-Butylbenzene	52.8	ND	44.0	83	74-120	
Tetrachloroethene	52.8	ND	48.0	91	74-122	
Toluene	52.8	ND	46.5	88	74-128	
trans-1,2-Dichloroethene	52.8	ND	50.0	95	78-126	
Trichloroethene	52.8	ND	47.8	90	77-129	
Vinyl chloride	52.8	ND	51.6	98	61-133	
tert-Butylbenzene	52.8	ND	45.4	86	73-120	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: F2467.D

Lab ID: 480-159547-24 MSD Client ID: GERNATT-CF-GRAB 4 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,1,1-Trichloroethane	53.8	50.7	94	4	30	77-121	
1,1-Dichloroethane	53.8	47.2	88	3	30	73-126	
1,1-Dichloroethene	53.8	45.5	85	6	30	59-125	
1,2,4-Trimethylbenzene	53.8	43.3	81	2	30	74-120	
1,2-Dichlorobenzene	53.8	38.6	72	2	30	75-120	F1
1,2-Dichloroethane	53.8	42.1	78	2	30	77-122	
1,3,5-Trimethylbenzene	53.8	44.2	82	1	30	74-120	
1,3-Dichlorobenzene	53.8	40.8	76	1	30	74-120	
1,4-Dichlorobenzene	53.8	40.0	74	1	30	73-120	
1,4-Dioxane	1080	492	46	2	30	64-124	F1
2-Butanone (MEK)	269	137	51	3	30	70-134	F1
Acetone	269	138	51	3	30	61-137	F1
Benzene	53.8	46.9	87	3	30	79-127	
Carbon tetrachloride	53.8	53.1	99	5	30	75-135	
Chlorobenzene	53.8	45.3	84	1	30	76-124	
Chloroform	53.8	49.7	92	1	30	80-120	
cis-1,2-Dichloroethene	53.8	48.2	90	1	30	80-120	
Ethylbenzene	53.8	46.0	86	1	30	80-120	
Methyl tert-butyl ether	53.8	39.4	73	3	30	63-125	
Methylene Chloride	53.8	45.1	79	3	30	61-127	
n-Butylbenzene	53.8	39.1	73	4	30	70-120	
N-Propylbenzene	53.8	43.5	81	3	30	70-130	
sec-Butylbenzene	53.8	42.8	79	3	30	74-120	
Tetrachloroethene	53.8	47.0	87	2	30	74-122	
Toluene	53.8	46.7	87	0	30	74-128	
trans-1,2-Dichloroethene	53.8	48.4	90	3	30	78-126	
Trichloroethene	53.8	47.7	89	0	30	77-129	
Vinyl chloride	53.8	51.0	95	1	30	61-133	
tert-Butylbenzene	53.8	43.8	81	4	30	73-120	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: P0098.D Lab Sample ID: MB 480-493565/2-A

Matrix: Solid Heated Purge:(Y/N) Y

Instrument ID: HP5973P Date Analyzed: 09/23/2019 15:37

GC Column: ZB-624 (20) ID: 0.18(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-493565/1-A	P0096.D	09/23/2019 14:48
RUSSO-TS-GRAB 1	480-159547-1	P0099.D	09/23/2019 16:28
RUSSO-TS-GRAB 2	480-159547-2	P0100.D	09/23/2019 16:52
RUSSO-TS-GRAB 3	480-159547-3	P0101.D	09/23/2019 17:17
RUSSO-TS-GRAB 4	480-159547-4	P0102.D	09/23/2019 17:41
RUSSO-TS-GRAB 5	480-159547-5	P0103.D	09/23/2019 18:06
RUSSO-TS-GRAB 6	480-159547-6	P0104.D	09/23/2019 18:30
RUSSO-CF-GRAB 1	480-159547-9	P0105.D	09/23/2019 18:55
RUSSO-CF-GRAB 2	480-159547-10	P0106.D	09/23/2019 19:19
RUSSO-CF-GRAB 3	480-159547-11	P0107.D	09/23/2019 19:44
RUSSO-CF-GRAB 4	480-159547-12	P0108.D	09/23/2019 20:08
RUSSO-CF-GRAB 5	480-159547-13	P0109.D	09/23/2019 20:33
RUSSO-CF-GRAB 6	480-159547-14	P0110.D	09/23/2019 20:58
RUSSO-CF-GRAB 7	480-159547-15	P0111.D	09/23/2019 21:23
RUSSO-CF-GRAB 8	480-159547-16	P0112.D	09/23/2019 21:47
RUSSO-CF-GRAB 9	480-159547-17	P0113.D	09/23/2019 22:12
GERNATT-CF-GRAB 1	480-159547-21	P0114.D	09/23/2019 22:37
GERNATT-CF-GRAB 2	480-159547-22	P0115.D	09/23/2019 23:01
GERNATT-CF-GRAB 3	480-159547-23	P0116.D	09/23/2019 23:26

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: P0126.D Lab Sample ID: MB 480-493743/2-A

Matrix: Solid Heated Purge:(Y/N) Y

Instrument ID: HP5973P Date Analyzed: 09/24/2019 12:05

GC Column: ZB-624 (20) ID: 0.18(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-493743/1-A	P0124.D	09/24/2019 11:16
GERNATT-CF-GRAB 5	480-159547-25	P0128.D	09/24/2019 13:29
GERNATT-CF-GRAB 6	480-159547-26	P0129.D	09/24/2019 13:53
GERNATT-CF-GRAB 7	480-159547-27	P0130.D	09/24/2019 14:18
GERNATT-CF-GRAB 8	480-159547-28	P0131.D	09/24/2019 14:42
GERNATT-CF-GRAB 9	480-159547-29	P0132.D	09/24/2019 15:07
GERNATT-TS-GRAB 1	480-159547-33	P0133.D	09/24/2019 15:31
GERNATT-TS-GRAB 2	480-159547-34	P0134.D	09/24/2019 15:55
GERNATT-TS-GRAB 3	480-159547-35	P0135.D	09/24/2019 16:20
GERNATT-TS-GRAB 4	480-159547-36	P0136.D	09/24/2019 16:44
GERNATT-TS-GRAB 5	480-159547-37	P0137.D	09/24/2019 17:09
GERNATT-TS-GRAB 6	480-159547-38	P0138.D	09/24/2019 17:34

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: F2447.D Lab Sample ID: MB 480-493988/3-A

Matrix: Solid Heated Purge:(Y/N) Y

Instrument ID: HP5973F Date Analyzed: 09/25/2019 11:56

GC Column: ZB-624 (30) VOA ID: 0.25(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-493988/1-A	F2444.D	09/25/2019 10:39
GERNATT-CF-GRAB 4	480-159547-24	F2451.D	09/25/2019 13:51
GERNATT-CF-GRAB 4 MS	480-159547-24 MS	F2466.D	09/25/2019 20:11
GERNATT-CF-GRAB 4 MSD	480-159547-24 MSD	F2467.D	09/25/2019 20:36

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: F1714.D BFB Injection Date: 08/27/2019

Instrument ID: HP5973F BFB Injection Time: 12:21

Analysis Batch No.: 489014

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	18.0	
75	30.0 - 60.0 % of mass 95	49.0	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.9	
173	Less than 2.0 % of mass 174	0.3	(0.4) 1
174	50.0 - 120.00 % of mass 95	81.2	
175	5.0 - 9.0 % of mass 174	6.0	(7.4) 1
176	95.0 - 101.0 % of mass 174	77.8	(95.8) 1
177	5.0 - 9.0 % of mass 176	5.3	(6.8) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-489014/4	F1717.D	08/27/2019	13:41
	IC 480-489014/5	F1718.D	08/27/2019	14:06
	IC 480-489014/6	F1719.D	08/27/2019	14:31
	IC 480-489014/7	F1720.D	08/27/2019	14:57
	ICIS 480-489014/8	F1721.D	08/27/2019	15:22
	IC 480-489014/9	F1722.D	08/27/2019	15:48
	IC 480-489014/10	F1723.D	08/27/2019	16:13

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: F2441.D BFB Injection Date: 09/25/2019

Instrument ID: HP5973F BFB Injection Time: 08:55

Analysis Batch No.: 493944

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	19.5	
75	30.0 - 60.0 % of mass 95	51.8	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	7.3	
173	Less than 2.0 % of mass 174	0.5	(0.6) 1
174	50.0 - 120.00 % of mass 95	82.1	
175	5.0 - 9.0 % of mass 174	6.1	(7.4) 1
176	95.0 - 101.0 % of mass 174	79.8	(97.2) 1
177	5.0 - 9.0 % of mass 176	6.3	(7.8) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-493944/3	F2442.D	09/25/2019	09:29
	LCS 480-493988/1-A	F2444.D	09/25/2019	10:39
	MB 480-493988/3-A	F2447.D	09/25/2019	11:56
GERNATT-CF-GRAB 4	480-159547-24	F2451.D	09/25/2019	13:51
GERNATT-CF-GRAB 4 MS	480-159547-24 MS	F2466.D	09/25/2019	20:11
GERNATT-CF-GRAB 4 MSD	480-159547-24 MSD	F2467.D	09/25/2019	20:36

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: P0064.D BFB Injection Date: 09/20/2019

Instrument ID: HP5973P BFB Injection Time: 18:09

Analysis Batch No.: 493257

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	26.7	
75	30.0 - 60.0 % of mass 95	51.4	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	7.5	
173	Less than 2.0 % of mass 174	1.0	(1.1) 1
174	50.0 - 120.00 % of mass 95	91.1	
175	5.0 - 9.0 % of mass 174	8.0	(8.8) 1
176	95.0 - 101.0 % of mass 174	90.3	(99.1) 1
177	5.0 - 9.0 % of mass 176	6.1	(6.8) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-493257/8	P0066.D	09/20/2019	19:03
	IC 480-493257/9	P0067.D	09/20/2019	19:28
	IC 480-493257/10	P0068.D	09/20/2019	19:52
	IC 480-493257/11	P0069.D	09/20/2019	20:17
	ICIS 480-493257/12	P0070.D	09/20/2019	20:41
	IC 480-493257/13	P0071.D	09/20/2019	21:06
	IC 480-493257/14	P0072.D	09/20/2019	21:30

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: P0093.D BFB Injection Date: 09/23/2019

Instrument ID: HP5973P BFB Injection Time: 13:11

Analysis Batch No.: 493547

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	27.3	
75	30.0 - 60.0 % of mass 95	51.3	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	7.4	
173	Less than 2.0 % of mass 174	0.2	(0.2) 1
174	50.0 - 120.00 % of mass 95	86.9	
175	5.0 - 9.0 % of mass 174	7.2	(8.3) 1
176	95.0 - 101.0 % of mass 174	87.5	(100.7) 1
177	5.0 - 9.0 % of mass 176	5.7	(6.5) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-493547/3	P0094.D	09/23/2019	13:43
	LCS 480-493565/1-A	P0096.D	09/23/2019	14:48
	MB 480-493565/2-A	P0098.D	09/23/2019	15:37
RUSSO-TS-GRAB 1	480-159547-1	P0099.D	09/23/2019	16:28
RUSSO-TS-GRAB 2	480-159547-2	P0100.D	09/23/2019	16:52
RUSSO-TS-GRAB 3	480-159547-3	P0101.D	09/23/2019	17:17
RUSSO-TS-GRAB 4	480-159547-4	P0102.D	09/23/2019	17:41
RUSSO-TS-GRAB 5	480-159547-5	P0103.D	09/23/2019	18:06
RUSSO-TS-GRAB 6	480-159547-6	P0104.D	09/23/2019	18:30
RUSSO-CF-GRAB 1	480-159547-9	P0105.D	09/23/2019	18:55
RUSSO-CF-GRAB 2	480-159547-10	P0106.D	09/23/2019	19:19
RUSSO-CF-GRAB 3	480-159547-11	P0107.D	09/23/2019	19:44
RUSSO-CF-GRAB 4	480-159547-12	P0108.D	09/23/2019	20:08
RUSSO-CF-GRAB 5	480-159547-13	P0109.D	09/23/2019	20:33
RUSSO-CF-GRAB 6	480-159547-14	P0110.D	09/23/2019	20:58
RUSSO-CF-GRAB 7	480-159547-15	P0111.D	09/23/2019	21:23
RUSSO-CF-GRAB 8	480-159547-16	P0112.D	09/23/2019	21:47
RUSSO-CF-GRAB 9	480-159547-17	P0113.D	09/23/2019	22:12
GERNATT-CF-GRAB 1	480-159547-21	P0114.D	09/23/2019	22:37
GERNATT-CF-GRAB 2	480-159547-22	P0115.D	09/23/2019	23:01
GERNATT-CF-GRAB 3	480-159547-23	P0116.D	09/23/2019	23:26

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: P0121.D BFB Injection Date: 09/24/2019

Instrument ID: HP5973P BFB Injection Time: 09:41

Analysis Batch No.: 493693

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	26.5	
75	30.0 - 60.0 % of mass 95	51.5	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	7.3	
173	Less than 2.0 % of mass 174	1.1	(1.3) 1
174	50.0 - 120.00 % of mass 95	84.9	
175	5.0 - 9.0 % of mass 174	7.1	(8.4) 1
176	95.0 - 101.0 % of mass 174	83.8	(98.7) 1
177	5.0 - 9.0 % of mass 176	4.8	(5.7) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-493693/3	P0122.D	09/24/2019	10:12
	LCS 480-493743/1-A	P0124.D	09/24/2019	11:16
	MB 480-493743/2-A	P0126.D	09/24/2019	12:05
GERNATT-CF-GRAB 5	480-159547-25	P0128.D	09/24/2019	13:29
GERNATT-CF-GRAB 6	480-159547-26	P0129.D	09/24/2019	13:53
GERNATT-CF-GRAB 7	480-159547-27	P0130.D	09/24/2019	14:18
GERNATT-CF-GRAB 8	480-159547-28	P0131.D	09/24/2019	14:42
GERNATT-CF-GRAB 9	480-159547-29	P0132.D	09/24/2019	15:07
GERNATT-TS-GRAB 1	480-159547-33	P0133.D	09/24/2019	15:31
GERNATT-TS-GRAB 2	480-159547-34	P0134.D	09/24/2019	15:55
GERNATT-TS-GRAB 3	480-159547-35	P0135.D	09/24/2019	16:20
GERNATT-TS-GRAB 4	480-159547-36	P0136.D	09/24/2019	16:44
GERNATT-TS-GRAB 5	480-159547-37	P0137.D	09/24/2019	17:09
GERNATT-TS-GRAB 6	480-159547-38	P0138.D	09/24/2019	17:34

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-489014/8 Date Analyzed: 08/27/2019 15:22

Instrument ID: HP5973F GC Column: ZB-624 (30) VOA ID: 0.25(mm)

Lab File ID (Standard): F1721.D Heated Purge: (Y/N) Y

Calibration ID: 37508

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		184748	5.72	392274	8.57	364064	10.87
UPPER LIMIT		369496	6.22	784548	9.07	728128	11.37
LOWER LIMIT		92374	5.22	196137	8.07	182032	10.37
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-493944/3		173464	5.72	376558	8.57	362344	10.86

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-493944/3 Date Analyzed: 09/25/2019 09:29

Instrument ID: HP5973F GC Column: ZB-624 (30) VOA ID: 0.25(mm)

Lab File ID (Standard): F2442.D Heated Purge: (Y/N) Y

Calibration ID: 37511

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		173464	5.72	376558	8.57	362344	10.86
UPPER LIMIT		346928	6.22	753116	9.07	724688	11.36
LOWER LIMIT		86732	5.22	188279	8.07	181172	10.36
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 480-493988/1-A		167185	5.72	366990	8.57	345304	10.87
MB 480-493988/3-A		193091	5.72	414883	8.57	393243	10.86
480-159547-24	GERNATT-CF-GRAB 4	176187	5.72	374994	8.57	351492	10.86
480-159547-24 MS	GERNATT-CF-GRAB 4 MS	163060	5.72	338981	8.57	316623	10.86
480-159547-24 MSD	GERNATT-CF-GRAB 4 MSD	168172	5.72	344273	8.57	324246	10.86

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-493257/12 Date Analyzed: 09/20/2019 20:41

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm)

Lab File ID (Standard): P0070.D Heated Purge: (Y/N) Y

Calibration ID: 37767

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		172868	5.55	365773	8.56	364850	10.94
UPPER LIMIT		345736	6.05	731546	9.06	729700	11.44
LOWER LIMIT		86434	5.05	182887	8.06	182425	10.44
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-493547/3		209273	5.55	427045	8.56	429172	10.94
CCVIS 480-493693/3		171716	5.55	368191	8.56	373898	10.94

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-493547/3 Date Analyzed: 09/23/2019 13:43

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm)

Lab File ID (Standard): P0094.D Heated Purge: (Y/N) Y

Calibration ID: 37764

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		209273	5.55	427045	8.56	429172	10.94
UPPER LIMIT		418546	6.05	854090	9.06	858344	11.44
LOWER LIMIT		104637	5.05	213523	8.06	214586	10.44
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 480-493565/1-A		194467	5.55	410323	8.56	414461	10.94
MB 480-493565/2-A		183763	5.55	383643	8.56	395484	10.94
480-159547-1	RUSSO-TS-GRAB 1	158917	5.55	332532	8.56	330164	10.94
480-159547-2	RUSSO-TS-GRAB 2	182587	5.55	391389	8.56	384897	10.94
480-159547-3	RUSSO-TS-GRAB 3	177536	5.55	382776	8.56	383038	10.94
480-159547-4	RUSSO-TS-GRAB 4	172156	5.55	367313	8.56	375057	10.94
480-159547-5	RUSSO-TS-GRAB 5	168532	5.55	368595	8.56	364707	10.94
480-159547-6	RUSSO-TS-GRAB 6	139684	5.55	294866	8.56	300409	10.94
480-159547-9	RUSSO-CF-GRAB 1	175045	5.55	379760	8.56	376296	10.94
480-159547-10	RUSSO-CF-GRAB 2	139155	5.55	296627	8.56	286003	10.94
480-159547-11	RUSSO-CF-GRAB 3	180696	5.55	371793	8.56	377878	10.94
480-159547-12	RUSSO-CF-GRAB 4	147734	5.55	317040	8.56	314084	10.94
480-159547-13	RUSSO-CF-GRAB 5	173861	5.55	377148	8.56	377435	10.94
480-159547-14	RUSSO-CF-GRAB 6	157267	5.55	343956	8.56	336047	10.94
480-159547-15	RUSSO-CF-GRAB 7	164484	5.55	346641	8.56	360537	10.94
480-159547-16	RUSSO-CF-GRAB 8	143712	5.55	310084	8.56	312042	10.94
480-159547-17	RUSSO-CF-GRAB 9	171404	5.55	376835	8.56	376573	10.94
480-159547-21	GERNATT-CF-GRAB 1	141652	5.55	293458	8.56	294851	10.94
480-159547-22	GERNATT-CF-GRAB 2	179055	5.55	378527	8.56	370665	10.94
480-159547-23	GERNATT-CF-GRAB 3	146318	5.55	311748	8.56	310820	10.94

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-493693/3 Date Analyzed: 09/24/2019 10:12

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm)

Lab File ID (Standard): P0122.D Heated Purge: (Y/N) Y

Calibration ID: 37764

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		171716	5.55	368191	8.56	373898	10.94
UPPER LIMIT		343432	6.05	736382	9.06	747796	11.44
LOWER LIMIT		85858	5.05	184096	8.06	186949	10.44
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 480-493743/1-A		172309	5.55	360756	8.56	367499	10.94
MB 480-493743/2-A		166121	5.55	360198	8.56	371150	10.94
480-159547-25	GERNATT-CF-GRAB 5	145186	5.55	315104	8.56	313596	10.94
480-159547-26	GERNATT-CF-GRAB 6	173402	5.55	376844	8.56	374167	10.94
480-159547-27	GERNATT-CF-GRAB 7	141134	5.55	305394	8.56	306313	10.94
480-159547-28	GERNATT-CF-GRAB 8	175179	5.55	371219	8.56	376152	10.94
480-159547-29	GERNATT-CF-GRAB 9	139054	5.55	302115	8.56	304425	10.94
480-159547-33	GERNATT-TS-GRAB 1	166645	5.55	352237	8.56	355353	10.94
480-159547-34	GERNATT-TS-GRAB 2	134408	5.55	292983	8.56	299702	10.94
480-159547-35	GERNATT-TS-GRAB 3	174007	5.55	373142	8.56	374305	10.94
480-159547-36	GERNATT-TS-GRAB 4	132117	5.55	293553	8.56	290214	10.94
480-159547-37	GERNATT-TS-GRAB 5	170348	5.55	371724	8.56	380449	10.94
480-159547-38	GERNATT-TS-GRAB 6	128014	5.55	284301	8.56	293468	10.94

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 1 Lab Sample ID: 480-159547-1

Matrix: Solid Lab File ID: P0099.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:25

Sample wt/vol: 5.01(g) Date Analyzed: 09/23/2019 16:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 17.5 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.0	0.44
75-34-3	1,1-Dichloroethane	ND	vs	6.0	0.74
75-35-4	1,1-Dichloroethene	ND	vs	6.0	0.74
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.0	1.2
95-50-1	1,2-Dichlorobenzene	ND	vs	6.0	0.47
107-06-2	1,2-Dichloroethane	ND	vs	6.0	0.30
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.0	0.39
541-73-1	1,3-Dichlorobenzene	ND	vs	6.0	0.31
106-46-7	1,4-Dichlorobenzene	ND	vs	6.0	0.85
123-91-1	1,4-Dioxane	ND	vs	120	26
78-93-3	2-Butanone (MEK)	ND	vs	30	2.2
67-64-1	Acetone	ND	vs	30	5.1
71-43-2	Benzene	ND	vs	6.0	0.30
56-23-5	Carbon tetrachloride	ND	vs	6.0	0.59
108-90-7	Chlorobenzene	ND	vs	6.0	0.80
67-66-3	Chloroform	ND	vs	6.0	0.37
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.0	0.77
100-41-4	Ethylbenzene	ND	vs	6.0	0.42
1634-04-4	Methyl tert-butyl ether	ND	vs	6.0	0.59
75-09-2	Methylene Chloride	ND	vs	6.0	2.8
104-51-8	n-Butylbenzene	ND	vs	6.0	0.53
103-65-1	N-Propylbenzene	ND	vs	6.0	0.48
135-98-8	sec-Butylbenzene	ND	vs	6.0	0.53
127-18-4	Tetrachloroethene	ND	vs	6.0	0.81
108-88-3	Toluene	ND	vs	6.0	0.46
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.0	0.62
79-01-6	Trichloroethene	ND	vs	6.0	1.3
75-01-4	Vinyl chloride	ND	vs	6.0	0.74
1330-20-7	Xylenes, Total	ND	vs	12	1.0
98-06-6	tert-Butylbenzene	ND	vs	6.0	0.63

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 1 Lab Sample ID: 480-159547-1

Matrix: Solid Lab File ID: P0099.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:25

Sample wt/vol: 5.01(g) Date Analyzed: 09/23/2019 16:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 17.5 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	131	X	64-126
460-00-4	4-Bromofluorobenzene (Surr)	123		72-126
2037-26-5	Toluene-d8 (Surr)	113		71-125
1868-53-7	Dibromofluoromethane (Surr)	120		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0099.D
Lims ID: 480-159547-A-1-A
Client ID: RUSSO-TS-GRAB 1
Sample Type: Client
Inject. Date: 23-Sep-2019 16:28:30 ALS Bottle#: 1 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-1-A
Misc. Info.: 480-0084382-008
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:04:19

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	158917	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	-0.001	87	332532	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	330164	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	243584	59.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	142608	65.4	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	925120	56.5	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	318129	61.6	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

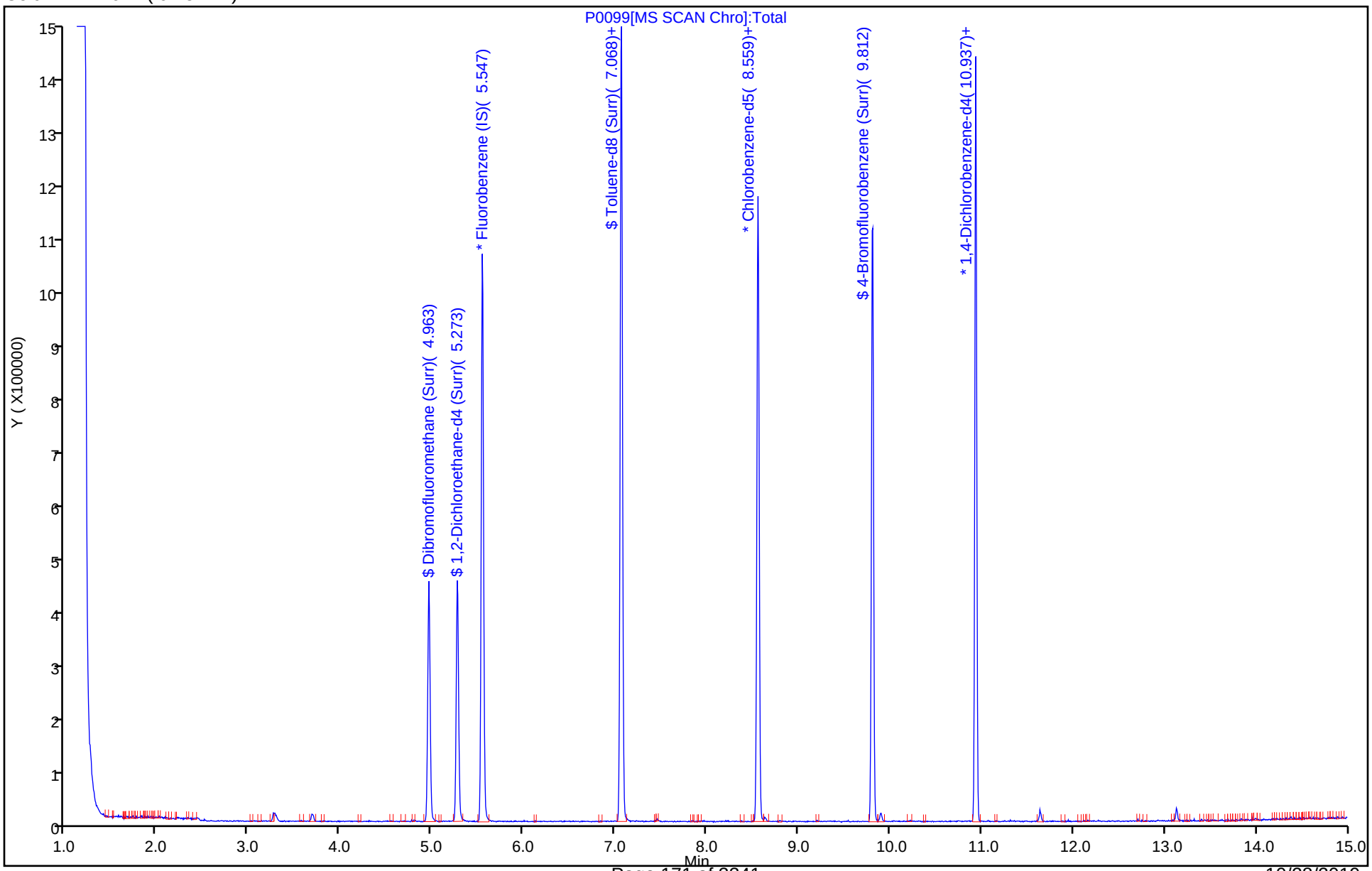
Report Date: 24-Sep-2019 14:04:20 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0099.D

Injection Date:	23-Sep-2019 16:28:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-1-A	Lab Sample ID:	480-159547-1	Worklist Smp#:	8
Client ID:	RUSSO-TS-GRAB 1				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 2 Lab Sample ID: 480-159547-2

Matrix: Solid Lab File ID: P0100.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:26

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 16:52

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 24.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.6	0.48
75-34-3	1,1-Dichloroethane	ND	vs	6.6	0.81
75-35-4	1,1-Dichloroethene	ND	vs	6.6	0.81
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.6	1.3
95-50-1	1,2-Dichlorobenzene	ND	vs	6.6	0.52
107-06-2	1,2-Dichloroethane	ND	vs	6.6	0.33
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.6	0.43
541-73-1	1,3-Dichlorobenzene	ND	vs	6.6	0.34
106-46-7	1,4-Dichlorobenzene	ND	vs	6.6	0.93
123-91-1	1,4-Dioxane	ND	vs	130	29
78-93-3	2-Butanone (MEK)	ND	vs	33	2.4
67-64-1	Acetone	ND	vs	33	5.6
71-43-2	Benzene	ND	vs	6.6	0.32
56-23-5	Carbon tetrachloride	ND	vs	6.6	0.64
108-90-7	Chlorobenzene	ND	vs	6.6	0.87
67-66-3	Chloroform	ND	vs	6.6	0.41
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.6	0.85
100-41-4	Ethylbenzene	ND	vs	6.6	0.46
1634-04-4	Methyl tert-butyl ether	ND	vs	6.6	0.65
75-09-2	Methylene Chloride	ND	vs	6.6	3.0
104-51-8	n-Butylbenzene	ND	vs	6.6	0.58
103-65-1	N-Propylbenzene	ND	vs	6.6	0.53
135-98-8	sec-Butylbenzene	ND	vs	6.6	0.58
127-18-4	Tetrachloroethene	ND	vs	6.6	0.89
108-88-3	Toluene	ND	vs	6.6	0.50
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.6	0.68
79-01-6	Trichloroethene	ND	vs	6.6	1.5
75-01-4	Vinyl chloride	ND	vs	6.6	0.81
1330-20-7	Xylenes, Total	ND	vs	13	1.1
98-06-6	tert-Butylbenzene	ND	vs	6.6	0.69

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 2 Lab Sample ID: 480-159547-2

Matrix: Solid Lab File ID: P0100.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:26

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 16:52

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 24.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		64-126
460-00-4	4-Bromofluorobenzene (Surr)	96		72-126
2037-26-5	Toluene-d8 (Surr)	93		71-125
1868-53-7	Dibromofluoromethane (Surr)	98		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0100.D
Lims ID: 480-159547-A-2-A
Client ID: RUSSO-TS-GRAB 2
Sample Type: Client
Inject. Date: 23-Sep-2019 16:52:30 ALS Bottle#: 2 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-2-A
Misc. Info.: 480-0084382-009
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:05:17

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	182587	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	391389	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	384897	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	228283	48.8	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	98	126051	50.3	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	898467	46.6	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	95	291453	47.9	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

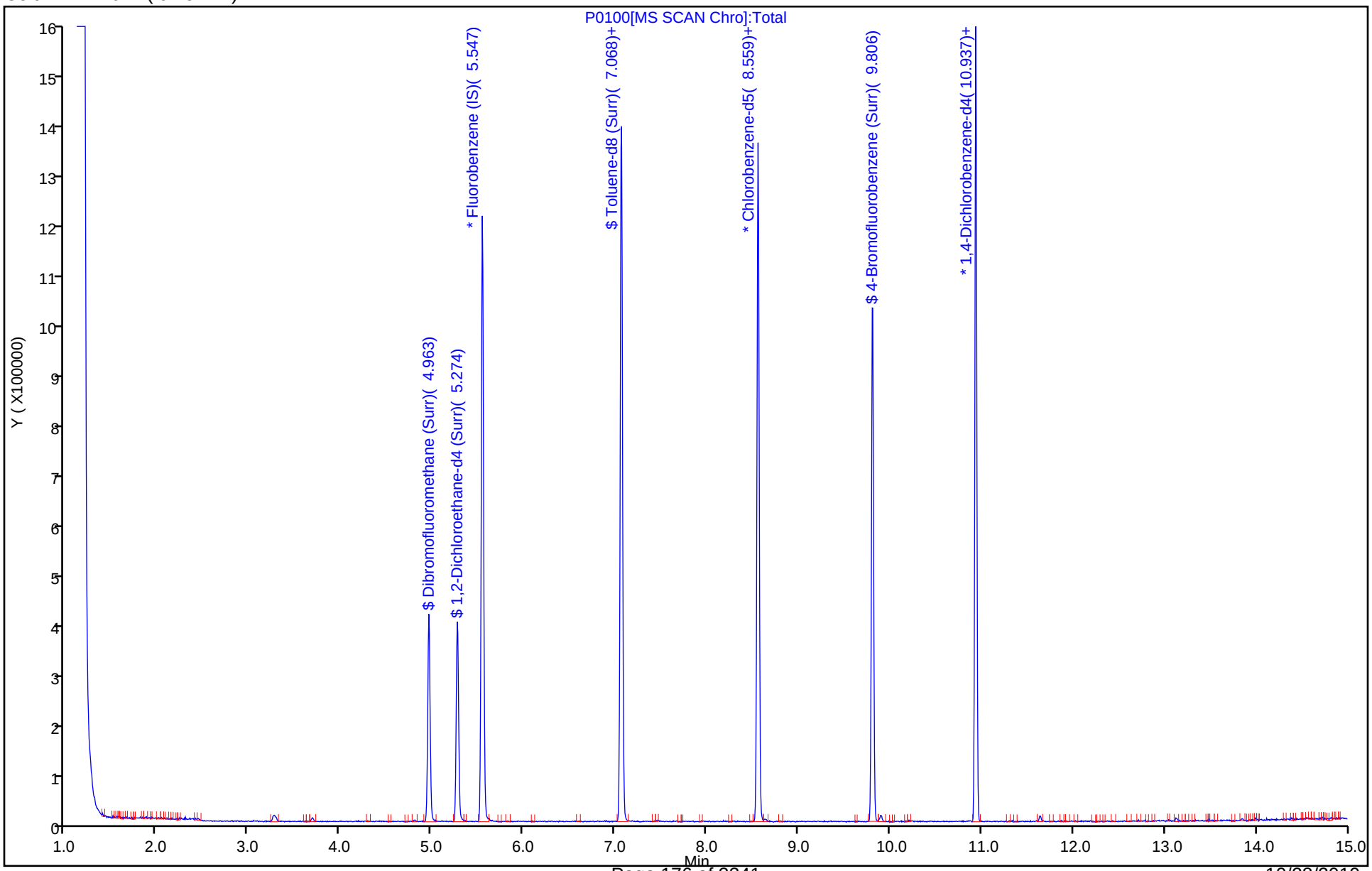
Report Date: 24-Sep-2019 14:05:17 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0100.D

Injection Date:	23-Sep-2019 16:52:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-2-A	Lab Sample ID:	480-159547-2	Worklist Smp#:	9
Client ID:	RUSSO-TS-GRAB 2				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 3 Lab Sample ID: 480-159547-3

Matrix: Solid Lab File ID: P0101.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:27

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 17:17

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 26.6 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.8	0.49
75-34-3	1,1-Dichloroethane	ND	vs	6.8	0.83
75-35-4	1,1-Dichloroethene	ND	vs	6.8	0.83
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.8	1.3
95-50-1	1,2-Dichlorobenzene	ND	vs	6.8	0.53
107-06-2	1,2-Dichloroethane	ND	vs	6.8	0.34
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.8	0.44
541-73-1	1,3-Dichlorobenzene	ND	vs	6.8	0.35
106-46-7	1,4-Dichlorobenzene	ND	vs	6.8	0.95
123-91-1	1,4-Dioxane	ND	vs	140	30
78-93-3	2-Butanone (MEK)	ND	vs	34	2.5
67-64-1	Acetone	ND	vs	34	5.7
71-43-2	Benzene	ND	vs	6.8	0.33
56-23-5	Carbon tetrachloride	ND	vs	6.8	0.66
108-90-7	Chlorobenzene	ND	vs	6.8	0.90
67-66-3	Chloroform	ND	vs	6.8	0.42
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.8	0.87
100-41-4	Ethylbenzene	ND	vs	6.8	0.47
1634-04-4	Methyl tert-butyl ether	ND	vs	6.8	0.67
75-09-2	Methylene Chloride	ND	vs	6.8	3.1
104-51-8	n-Butylbenzene	ND	vs	6.8	0.59
103-65-1	N-Propylbenzene	ND	vs	6.8	0.55
135-98-8	sec-Butylbenzene	ND	vs	6.8	0.59
127-18-4	Tetrachloroethene	ND	vs	6.8	0.91
108-88-3	Toluene	ND	vs	6.8	0.52
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.8	0.70
79-01-6	Trichloroethene	ND	vs	6.8	1.5
75-01-4	Vinyl chloride	ND	vs	6.8	0.83
1330-20-7	Xylenes, Total	ND	vs	14	1.1
98-06-6	tert-Butylbenzene	ND	vs	6.8	0.71

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 3 Lab Sample ID: 480-159547-3

Matrix: Solid Lab File ID: P0101.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:27

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 17:17

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 26.6 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		64-126
460-00-4	4-Bromofluorobenzene (Surr)	98		72-126
2037-26-5	Toluene-d8 (Surr)	93		71-125
1868-53-7	Dibromofluoromethane (Surr)	100		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0101.D
Lims ID: 480-159547-A-3-A
Client ID: RUSSO-TS-GRAB 3
Sample Type: Client
Inject. Date: 23-Sep-2019 17:17:30 ALS Bottle#: 3 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-3-A
Misc. Info.: 480-0084382-010
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:05:29

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	177536	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	382776	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	383038	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	227685	50.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	123395	50.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	872797	46.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	290717	48.9	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

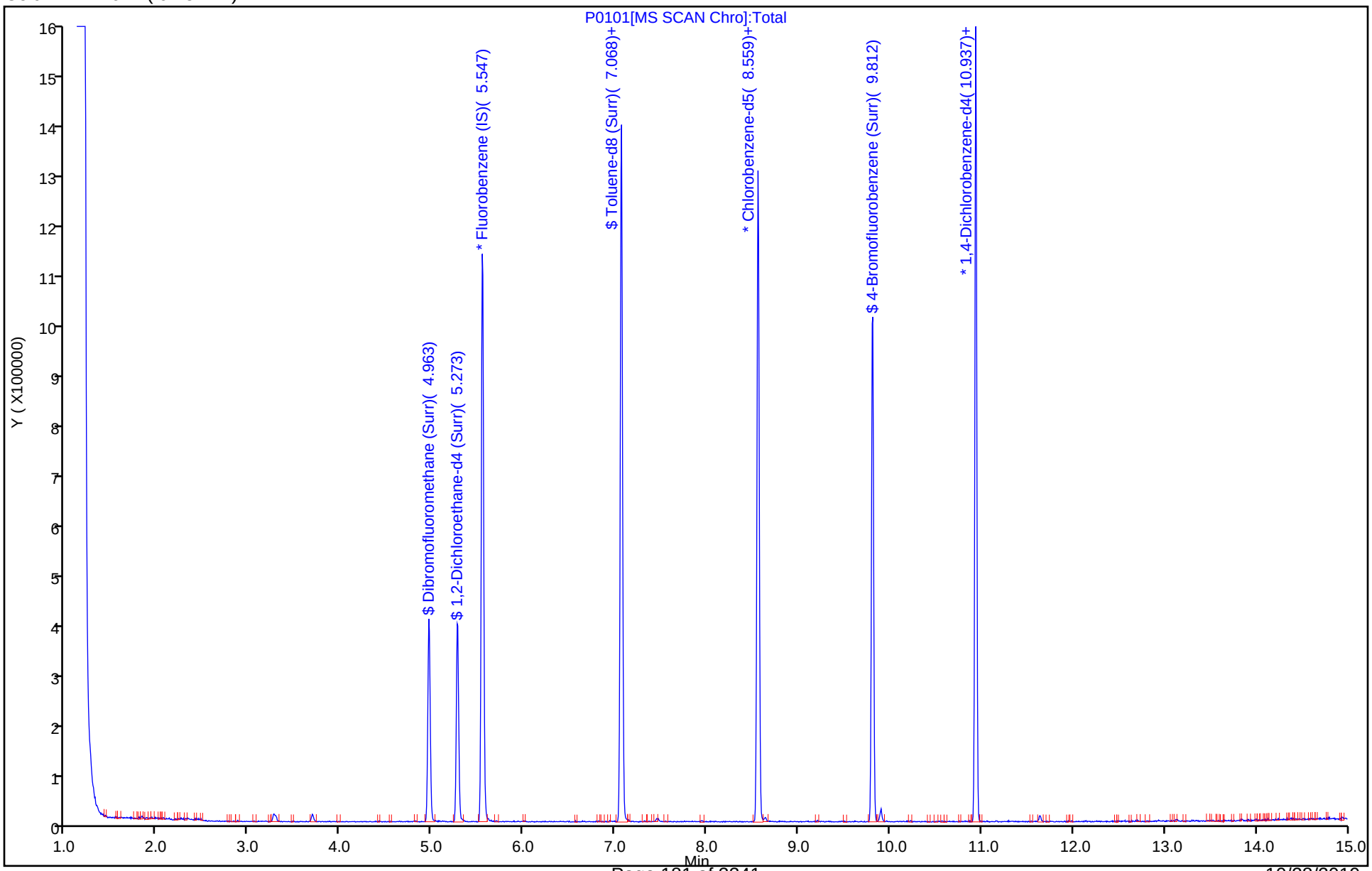
Report Date: 24-Sep-2019 14:05:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0101.D

Injection Date:	23-Sep-2019 17:17:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-3-A	Lab Sample ID:	480-159547-3	Worklist Smp#:	10
Client ID:	RUSSO-TS-GRAB 3				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 4 Lab Sample ID: 480-159547-4

Matrix: Solid Lab File ID: P0102.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:28

Sample wt/vol: 5.08(g) Date Analyzed: 09/23/2019 17:41

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.0	0.44
75-34-3	1,1-Dichloroethane	ND	vs	6.0	0.74
75-35-4	1,1-Dichloroethene	ND	vs	6.0	0.74
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.0	1.2
95-50-1	1,2-Dichlorobenzene	ND	vs	6.0	0.47
107-06-2	1,2-Dichloroethane	ND	vs	6.0	0.30
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.0	0.39
541-73-1	1,3-Dichlorobenzene	ND	vs	6.0	0.31
106-46-7	1,4-Dichlorobenzene	ND	vs	6.0	0.84
123-91-1	1,4-Dioxane	ND	vs	120	26
78-93-3	2-Butanone (MEK)	ND	vs	30	2.2
67-64-1	Acetone	ND	vs	30	5.1
71-43-2	Benzene	ND	vs	6.0	0.30
56-23-5	Carbon tetrachloride	ND	vs	6.0	0.58
108-90-7	Chlorobenzene	ND	vs	6.0	0.80
67-66-3	Chloroform	ND	vs	6.0	0.37
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.0	0.77
100-41-4	Ethylbenzene	ND	vs	6.0	0.42
1634-04-4	Methyl tert-butyl ether	ND	vs	6.0	0.59
75-09-2	Methylene Chloride	ND	vs	6.0	2.8
104-51-8	n-Butylbenzene	ND	vs	6.0	0.52
103-65-1	N-Propylbenzene	ND	vs	6.0	0.48
135-98-8	sec-Butylbenzene	ND	vs	6.0	0.52
127-18-4	Tetrachloroethene	ND	vs	6.0	0.81
108-88-3	Toluene	ND	vs	6.0	0.46
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.0	0.62
79-01-6	Trichloroethene	ND	vs	6.0	1.3
75-01-4	Vinyl chloride	ND	vs	6.0	0.74
1330-20-7	Xylenes, Total	ND	vs	12	1.0
98-06-6	tert-Butylbenzene	ND	vs	6.0	0.63

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 4 Lab Sample ID: 480-159547-4

Matrix: Solid Lab File ID: P0102.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:28

Sample wt/vol: 5.08(g) Date Analyzed: 09/23/2019 17:41

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	106		64-126
460-00-4	4-Bromofluorobenzene (Surr)	102		72-126
2037-26-5	Toluene-d8 (Surr)	95		71-125
1868-53-7	Dibromofluoromethane (Surr)	103		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0102.D
Lims ID: 480-159547-A-4-A
Client ID: RUSSO-TS-GRAB 4
Sample Type: Client
Inject. Date: 23-Sep-2019 17:41:30 ALS Bottle#: 4 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-4-A
Misc. Info.: 480-0084382-011
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:05:42

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	172156	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	367313	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	375057	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	227052	51.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	125081	52.9	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	862689	47.7	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	290713	50.9	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

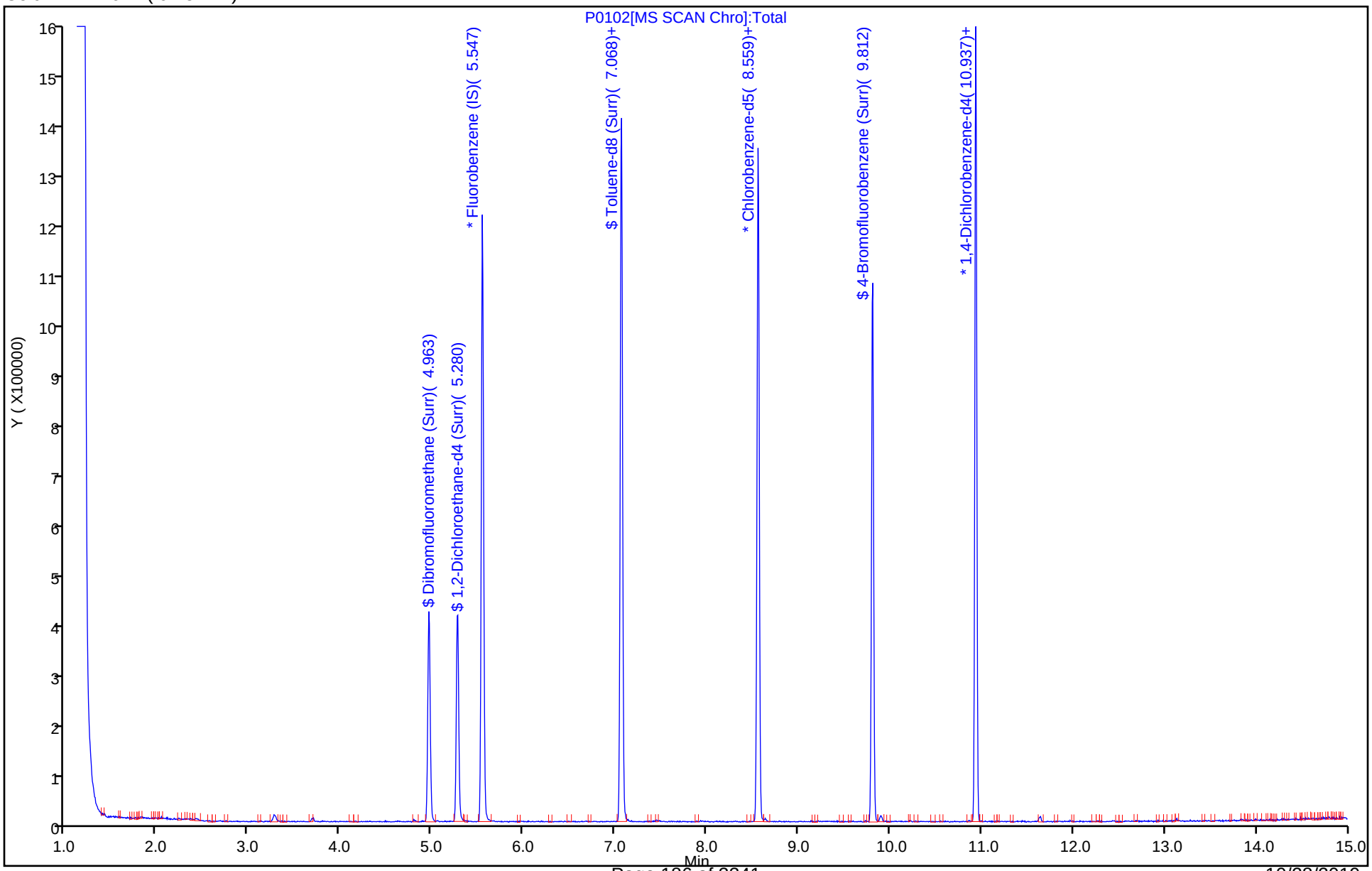
Report Date: 24-Sep-2019 14:05:42 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0102.D

Injection Date:	23-Sep-2019 17:41:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-4-A	Lab Sample ID:	480-159547-4	Worklist Smp#:	11
Client ID:	RUSSO-TS-GRAB 4				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 5 Lab Sample ID: 480-159547-5

Matrix: Solid Lab File ID: P0103.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:29

Sample wt/vol: 5.1(g) Date Analyzed: 09/23/2019 18:06

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 20.5 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.2	0.45
75-34-3	1,1-Dichloroethane	ND	vs	6.2	0.75
75-35-4	1,1-Dichloroethene	ND	vs	6.2	0.75
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.2	1.2
95-50-1	1,2-Dichlorobenzene	ND	vs	6.2	0.48
107-06-2	1,2-Dichloroethane	ND	vs	6.2	0.31
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.2	0.40
541-73-1	1,3-Dichlorobenzene	ND	vs	6.2	0.32
106-46-7	1,4-Dichlorobenzene	ND	vs	6.2	0.86
123-91-1	1,4-Dioxane	ND	vs	120	27
78-93-3	2-Butanone (MEK)	ND	vs	31	2.3
67-64-1	Acetone	ND	vs	31	5.2
71-43-2	Benzene	ND	vs	6.2	0.30
56-23-5	Carbon tetrachloride	ND	vs	6.2	0.60
108-90-7	Chlorobenzene	ND	vs	6.2	0.81
67-66-3	Chloroform	ND	vs	6.2	0.38
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.2	0.79
100-41-4	Ethylbenzene	ND	vs	6.2	0.43
1634-04-4	Methyl tert-butyl ether	ND	vs	6.2	0.61
75-09-2	Methylene Chloride	ND	vs	6.2	2.8
104-51-8	n-Butylbenzene	ND	vs	6.2	0.54
103-65-1	N-Propylbenzene	ND	vs	6.2	0.49
135-98-8	sec-Butylbenzene	ND	vs	6.2	0.54
127-18-4	Tetrachloroethene	ND	vs	6.2	0.83
108-88-3	Toluene	ND	vs	6.2	0.47
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.2	0.64
79-01-6	Trichloroethene	ND	vs	6.2	1.4
75-01-4	Vinyl chloride	ND	vs	6.2	0.75
1330-20-7	Xylenes, Total	ND	vs	12	1.0
98-06-6	tert-Butylbenzene	ND	vs	6.2	0.64

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 5 Lab Sample ID: 480-159547-5

Matrix: Solid Lab File ID: P0103.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:29

Sample wt/vol: 5.1(g) Date Analyzed: 09/23/2019 18:06

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 20.5 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	107		64-126
460-00-4	4-Bromofluorobenzene (Surr)	97		72-126
2037-26-5	Toluene-d8 (Surr)	94		71-125
1868-53-7	Dibromofluoromethane (Surr)	102		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0103.D
Lims ID: 480-159547-A-5-A
Client ID: RUSSO-TS-GRAB 5
Sample Type: Client
Inject. Date: 23-Sep-2019 18:06:30 ALS Bottle#: 5 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-5-A
Misc. Info.: 480-0084382-012
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:05:53

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	168532	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	368595	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	364707	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	220001	51.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	98	124221	53.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	851279	46.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	276754	48.3	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

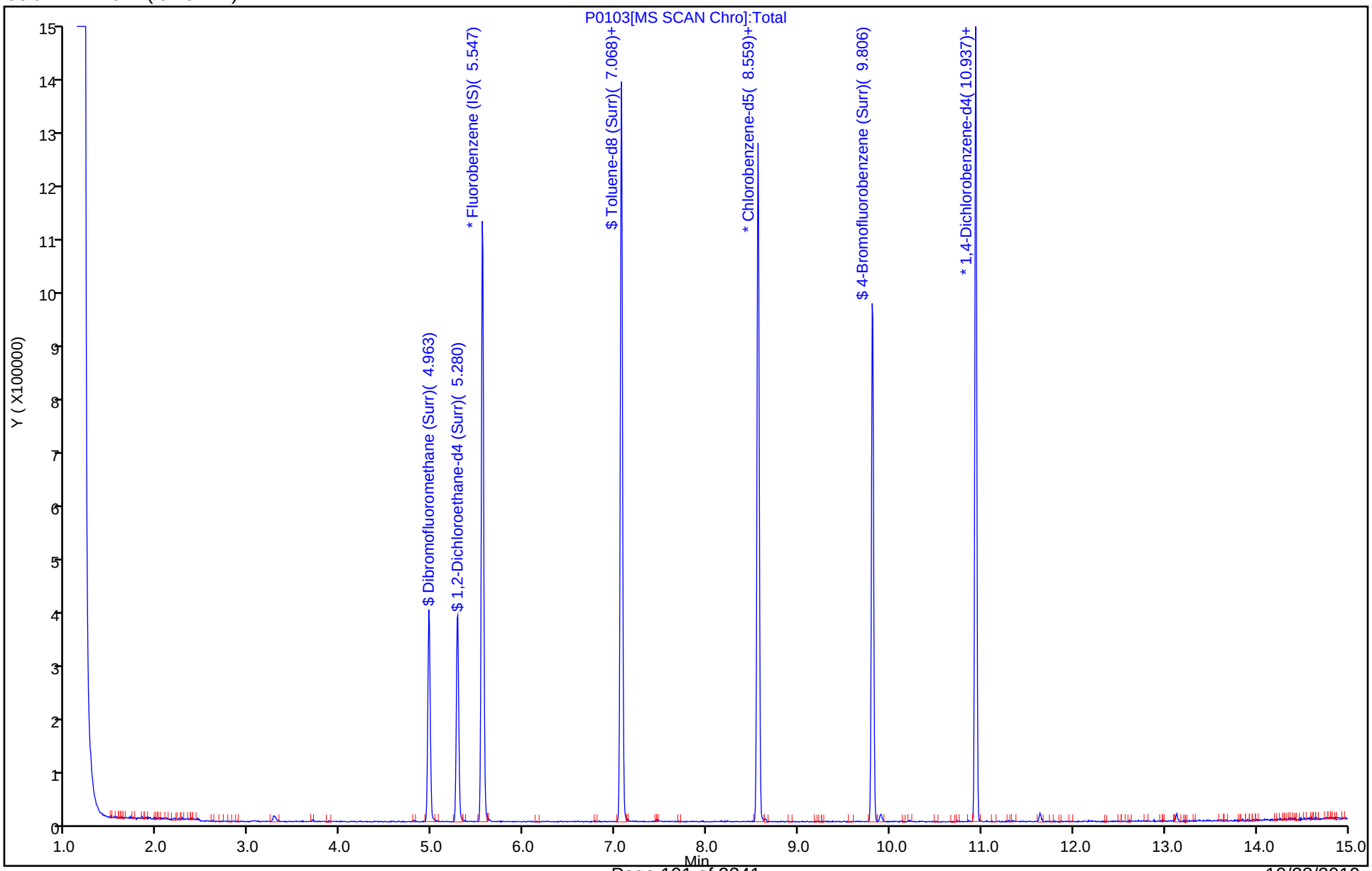
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

Report Date: 24-Sep-2019 14:05:53 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0103.D				
Injection Date:	23-Sep-2019 18:06:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-5-A	Lab Sample ID:	480-159547-5	Worklist Smp#:	12
Client ID:	RUSSO-TS-GRAB 5				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 6 Lab Sample ID: 480-159547-6

Matrix: Solid Lab File ID: P0104.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:30

Sample wt/vol: 5.02(g) Date Analyzed: 09/23/2019 18:30

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	6.1	0.44
75-34-3	1,1-Dichloroethane	ND	vs	6.1	0.75
75-35-4	1,1-Dichloroethene	ND	vs	6.1	0.75
95-63-6	1,2,4-Trimethylbenzene	ND	vs	6.1	1.2
95-50-1	1,2-Dichlorobenzene	ND	vs	6.1	0.48
107-06-2	1,2-Dichloroethane	ND	vs	6.1	0.31
108-67-8	1,3,5-Trimethylbenzene	ND	vs	6.1	0.39
541-73-1	1,3-Dichlorobenzene	ND	vs	6.1	0.31
106-46-7	1,4-Dichlorobenzene	ND	vs	6.1	0.85
123-91-1	1,4-Dioxane	ND	vs	120	27
78-93-3	2-Butanone (MEK)	ND	vs	31	2.2
67-64-1	Acetone	ND	vs	31	5.1
71-43-2	Benzene	ND	vs	6.1	0.30
56-23-5	Carbon tetrachloride	ND	vs	6.1	0.59
108-90-7	Chlorobenzene	ND	vs	6.1	0.81
67-66-3	Chloroform	ND	vs	6.1	0.38
156-59-2	cis-1,2-Dichloroethene	ND	vs	6.1	0.78
100-41-4	Ethylbenzene	ND	vs	6.1	0.42
1634-04-4	Methyl tert-butyl ether	ND	vs	6.1	0.60
75-09-2	Methylene Chloride	ND	vs	6.1	2.8
104-51-8	n-Butylbenzene	ND	vs	6.1	0.53
103-65-1	N-Propylbenzene	ND	vs	6.1	0.49
135-98-8	sec-Butylbenzene	ND	vs	6.1	0.53
127-18-4	Tetrachloroethene	ND	vs	6.1	0.82
108-88-3	Toluene	ND	vs	6.1	0.46
156-60-5	trans-1,2-Dichloroethene	ND	vs	6.1	0.63
79-01-6	Trichloroethene	ND	vs	6.1	1.3
75-01-4	Vinyl chloride	ND	vs	6.1	0.75
1330-20-7	Xylenes, Total	ND	vs	12	1.0
98-06-6	tert-Butylbenzene	ND	vs	6.1	0.64

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-GRAB 6 Lab Sample ID: 480-159547-6

Matrix: Solid Lab File ID: P0104.D

Analysis Method: 8260C Date Collected: 09/16/2019 09:30

Sample wt/vol: 5.02(g) Date Analyzed: 09/23/2019 18:30

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	131	X	64-126
460-00-4	4-Bromofluorobenzene (Surr)	122		72-126
2037-26-5	Toluene-d8 (Surr)	117		71-125
1868-53-7	Dibromofluoromethane (Surr)	125		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0104.D
Lims ID: 480-159547-A-6-A
Client ID: RUSSO-TS-GRAB 6
Sample Type: Client
Inject. Date: 23-Sep-2019 18:30:30 ALS Bottle#: 6 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-6-A
Misc. Info.: 480-0084382-013
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:06:05

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	139684	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	294866	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	300409	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.969	4.963	0.006	93	223397	62.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.280	5.273	0.007	98	125870	65.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	849192	58.5	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	280449	61.2	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

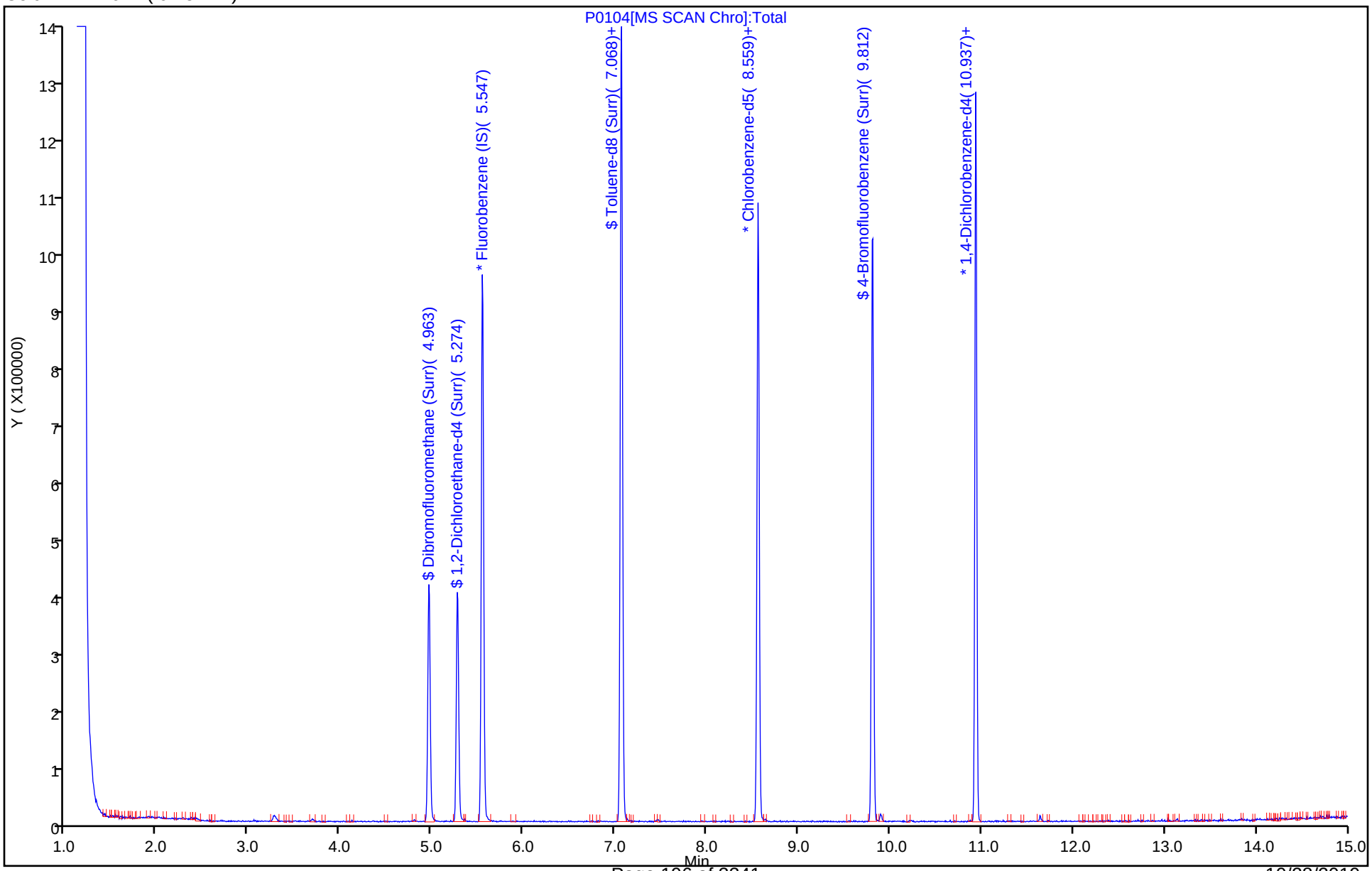
Report Date: 24-Sep-2019 14:06:06 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0104.D

Injection Date:	23-Sep-2019 18:30:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-6-A	Lab Sample ID:	480-159547-6	Worklist Smp#:	13
Client ID:	RUSSO-TS-GRAB 6				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 1 Lab Sample ID: 480-159547-9

Matrix: Solid Lab File ID: P0105.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:40

Sample wt/vol: 5.14(g) Date Analyzed: 09/23/2019 18:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.5	0.40
75-34-3	1,1-Dichloroethane	ND	vs	5.5	0.67
75-35-4	1,1-Dichloroethene	ND	vs	5.5	0.67
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.5	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.5	0.43
107-06-2	1,2-Dichloroethane	ND	vs	5.5	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.5	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.5	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.5	0.77
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.6
71-43-2	Benzene	ND	vs	5.5	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.5	0.53
108-90-7	Chlorobenzene	ND	vs	5.5	0.72
67-66-3	Chloroform	ND	vs	5.5	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.5	0.70
100-41-4	Ethylbenzene	ND	vs	5.5	0.38
1634-04-4	Methyl tert-butyl ether	ND	vs	5.5	0.54
75-09-2	Methylene Chloride	ND	vs	5.5	2.5
104-51-8	n-Butylbenzene	ND	vs	5.5	0.48
103-65-1	N-Propylbenzene	ND	vs	5.5	0.44
135-98-8	sec-Butylbenzene	ND	vs	5.5	0.48
127-18-4	Tetrachloroethene	ND	vs	5.5	0.74
108-88-3	Toluene	ND	vs	5.5	0.41
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.5	0.57
79-01-6	Trichloroethene	ND	vs	5.5	1.2
75-01-4	Vinyl chloride	ND	vs	5.5	0.67
1330-20-7	Xylenes, Total	ND	vs	11	0.92
98-06-6	tert-Butylbenzene	ND	vs	5.5	0.57

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 1 Lab Sample ID: 480-159547-9

Matrix: Solid Lab File ID: P0105.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:40

Sample wt/vol: 5.14(g) Date Analyzed: 09/23/2019 18:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		64-126
460-00-4	4-Bromofluorobenzene (Surr)	94		72-126
2037-26-5	Toluene-d8 (Surr)	91		71-125
1868-53-7	Dibromofluoromethane (Surr)	96		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0105.D
Lims ID: 480-159547-A-9-A
Client ID: RUSSO-CF-GRAB 1
Sample Type: Client
Inject. Date: 23-Sep-2019 18:55:30 ALS Bottle#: 7 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-9-A
Misc. Info.: 480-0084382-014
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 21:37:31 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:06:18

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	175045	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	379760	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	376296	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	214141	47.8	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.280	5.273	0.007	99	119145	49.6	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	850142	45.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	277452	47.0	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

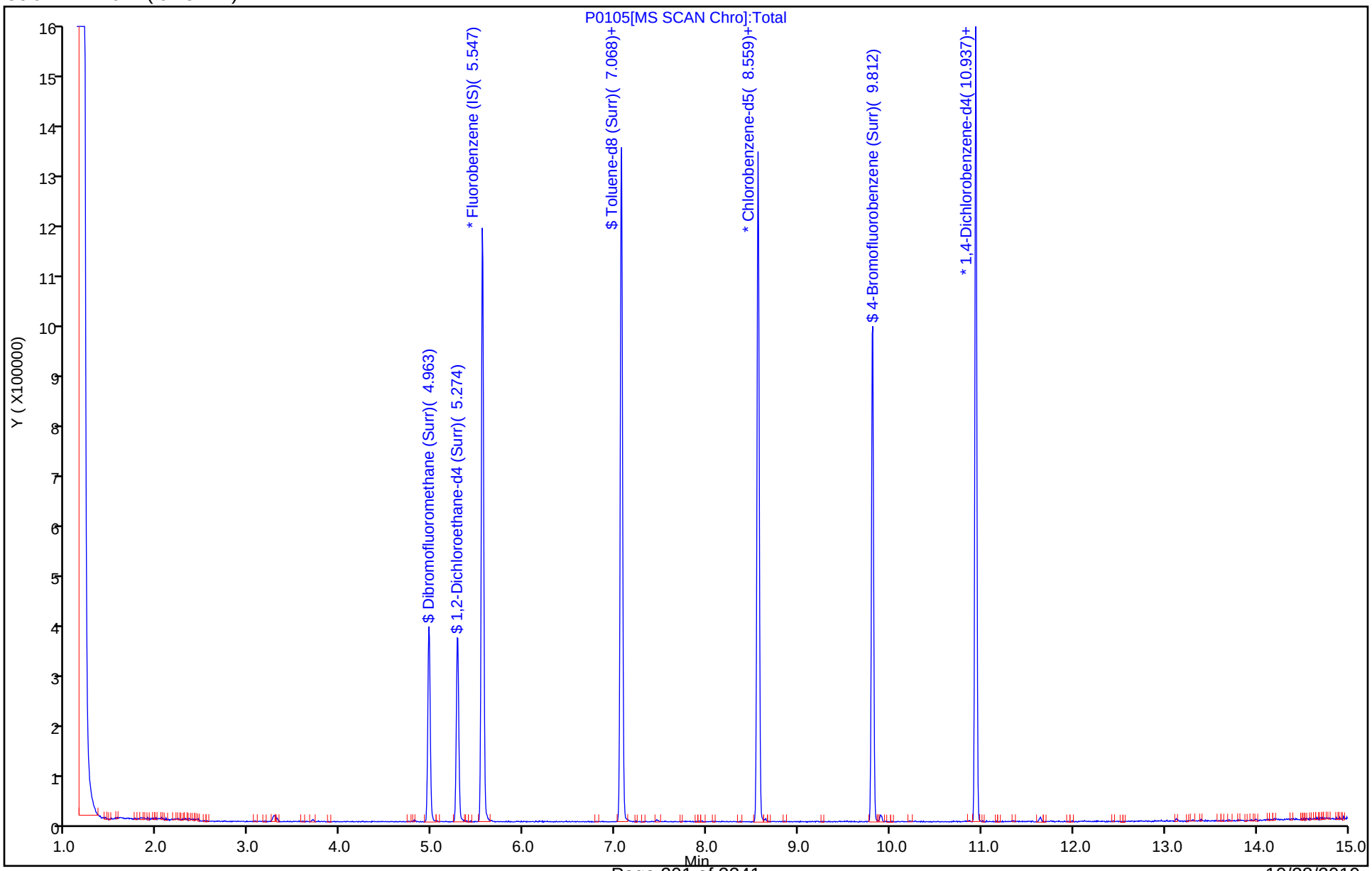
Report Date: 24-Sep-2019 14:06:18 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0105.D

Injection Date:	23-Sep-2019 18:55:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-9-A	Lab Sample ID:	480-159547-9	Worklist Smp#:	14
Client ID:	RUSSO-CF-GRAB 1				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 2 Lab Sample ID: 480-159547-10

Matrix: Solid Lab File ID: P0106.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:41

Sample wt/vol: 5.16(g) Date Analyzed: 09/23/2019 19:19

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.4	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.4	0.66
75-35-4	1,1-Dichloroethene	ND	vs	5.4	0.66
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.4	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.4	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.4	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.4	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.4	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.4	0.76
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.6
71-43-2	Benzene	ND	vs	5.4	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.4	0.52
108-90-7	Chlorobenzene	ND	vs	5.4	0.71
67-66-3	Chloroform	ND	vs	5.4	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.4	0.69
100-41-4	Ethylbenzene	ND	vs	5.4	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.4	0.53
75-09-2	Methylene Chloride	ND	vs	5.4	2.5
104-51-8	n-Butylbenzene	ND	vs	5.4	0.47
103-65-1	N-Propylbenzene	ND	vs	5.4	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.4	0.47
127-18-4	Tetrachloroethene	ND	vs	5.4	0.73
108-88-3	Toluene	ND	vs	5.4	0.41
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.4	0.56
79-01-6	Trichloroethene	ND	vs	5.4	1.2
75-01-4	Vinyl chloride	ND	vs	5.4	0.66
1330-20-7	Xylenes, Total	ND	vs	11	0.91
98-06-6	tert-Butylbenzene	ND	vs	5.4	0.56

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 2 Lab Sample ID: 480-159547-10

Matrix: Solid Lab File ID: P0106.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:41

Sample wt/vol: 5.16(g) Date Analyzed: 09/23/2019 19:19

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.4 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	126		64-126
460-00-4	4-Bromofluorobenzene (Surr)	119		72-126
2037-26-5	Toluene-d8 (Surr)	117		71-125
1868-53-7	Dibromofluoromethane (Surr)	121		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0106.D
Lims ID: 480-159547-A-10-A
Client ID: RUSSO-CF-GRAB 2
Sample Type: Client
Inject. Date: 23-Sep-2019 19:19:30 ALS Bottle#: 8 Worklist Smp#: 15
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-10-A
Misc. Info.: 480-0084382-015
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:06:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	139155	50.0	
* 2 Chlorobenzene-d5	82	8.558	8.559	-0.001	88	296627	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	286003	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	216131	60.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	99	120211	63.0	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	858117	58.7	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	274544	59.6	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

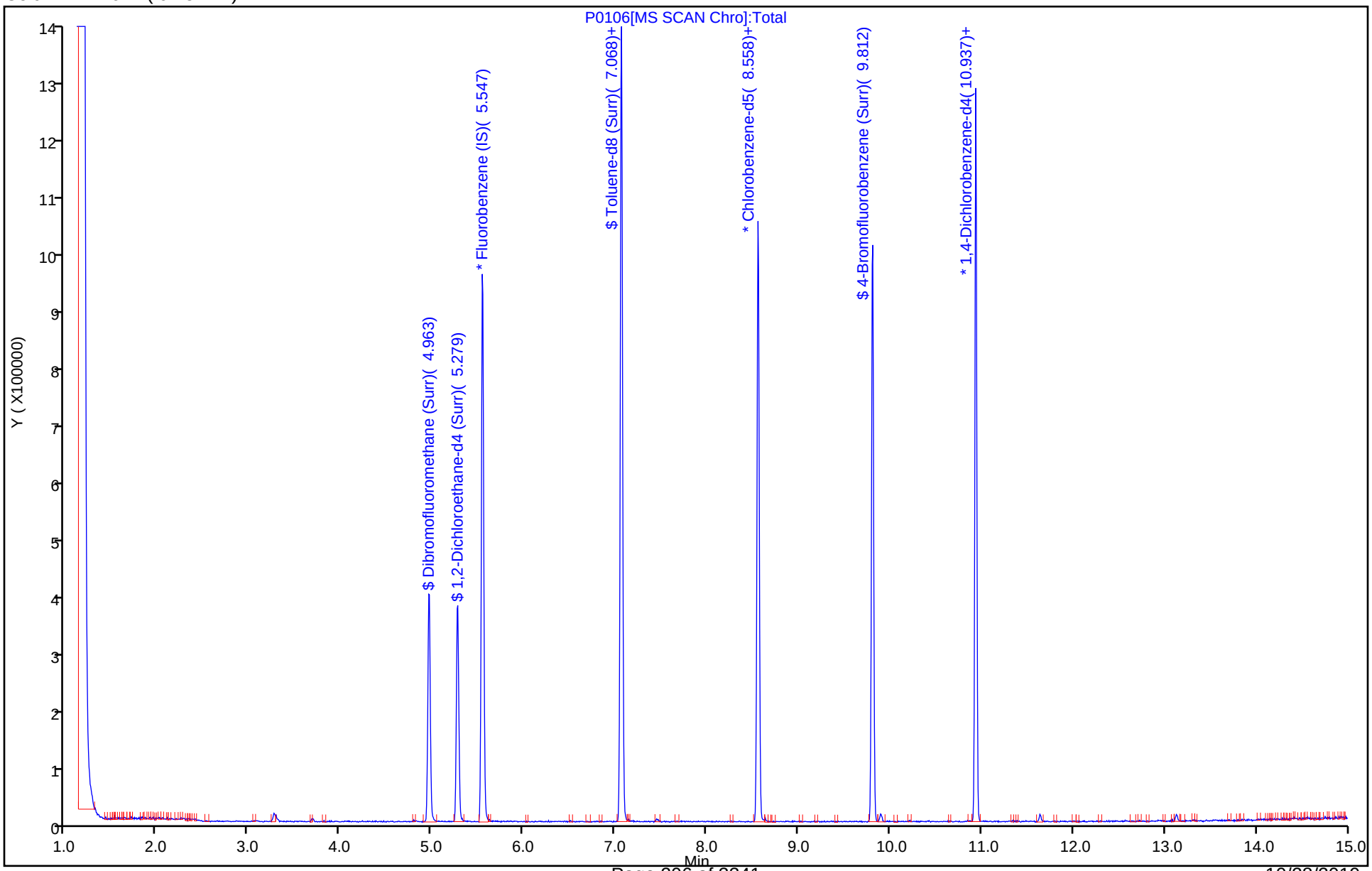
Report Date: 24-Sep-2019 14:06:41 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0106.D

Injection Date:	23-Sep-2019 19:19:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-10-A	Lab Sample ID:	480-159547-10	Worklist Smp#:	15
Client ID:	RUSSO-CF-GRAB 2				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 3 Lab Sample ID: 480-159547-11

Matrix: Solid Lab File ID: P0107.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:42

Sample wt/vol: 5.16(g) Date Analyzed: 09/23/2019 19:44

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.7 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.4	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.4	0.66
75-35-4	1,1-Dichloroethene	ND	vs	5.4	0.66
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.4	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.4	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.4	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.4	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.4	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.4	0.76
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.6
71-43-2	Benzene	ND	vs	5.4	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.4	0.53
108-90-7	Chlorobenzene	ND	vs	5.4	0.72
67-66-3	Chloroform	ND	vs	5.4	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.4	0.69
100-41-4	Ethylbenzene	ND	vs	5.4	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.4	0.53
75-09-2	Methylene Chloride	ND	vs	5.4	2.5
104-51-8	n-Butylbenzene	ND	vs	5.4	0.47
103-65-1	N-Propylbenzene	ND	vs	5.4	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.4	0.47
127-18-4	Tetrachloroethene	ND	vs	5.4	0.73
108-88-3	Toluene	ND	vs	5.4	0.41
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.4	0.56
79-01-6	Trichloroethene	ND	vs	5.4	1.2
75-01-4	Vinyl chloride	ND	vs	5.4	0.66
1330-20-7	Xylenes, Total	ND	vs	11	0.91
98-06-6	tert-Butylbenzene	ND	vs	5.4	0.56

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 3 Lab Sample ID: 480-159547-11

Matrix: Solid Lab File ID: P0107.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:42

Sample wt/vol: 5.16(g) Date Analyzed: 09/23/2019 19:44

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.7 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	94		64-126
460-00-4	4-Bromofluorobenzene (Surr)	96		72-126
2037-26-5	Toluene-d8 (Surr)	92		71-125
1868-53-7	Dibromofluoromethane (Surr)	93		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0107.D
Lims ID: 480-159547-A-11-A
Client ID: RUSSO-CF-GRAB 3
Sample Type: Client
Inject. Date: 23-Sep-2019 19:44:30 ALS Bottle#: 9 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-11-A
Misc. Info.: 480-0084382-016
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:06:52

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	180696	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	371793	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	377878	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	215824	46.6	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	98	116958	47.2	
$ 5 Toluene-d8 (Surr)	98	7.062	7.068	-0.006	95	845376	46.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	95	278118	48.2	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

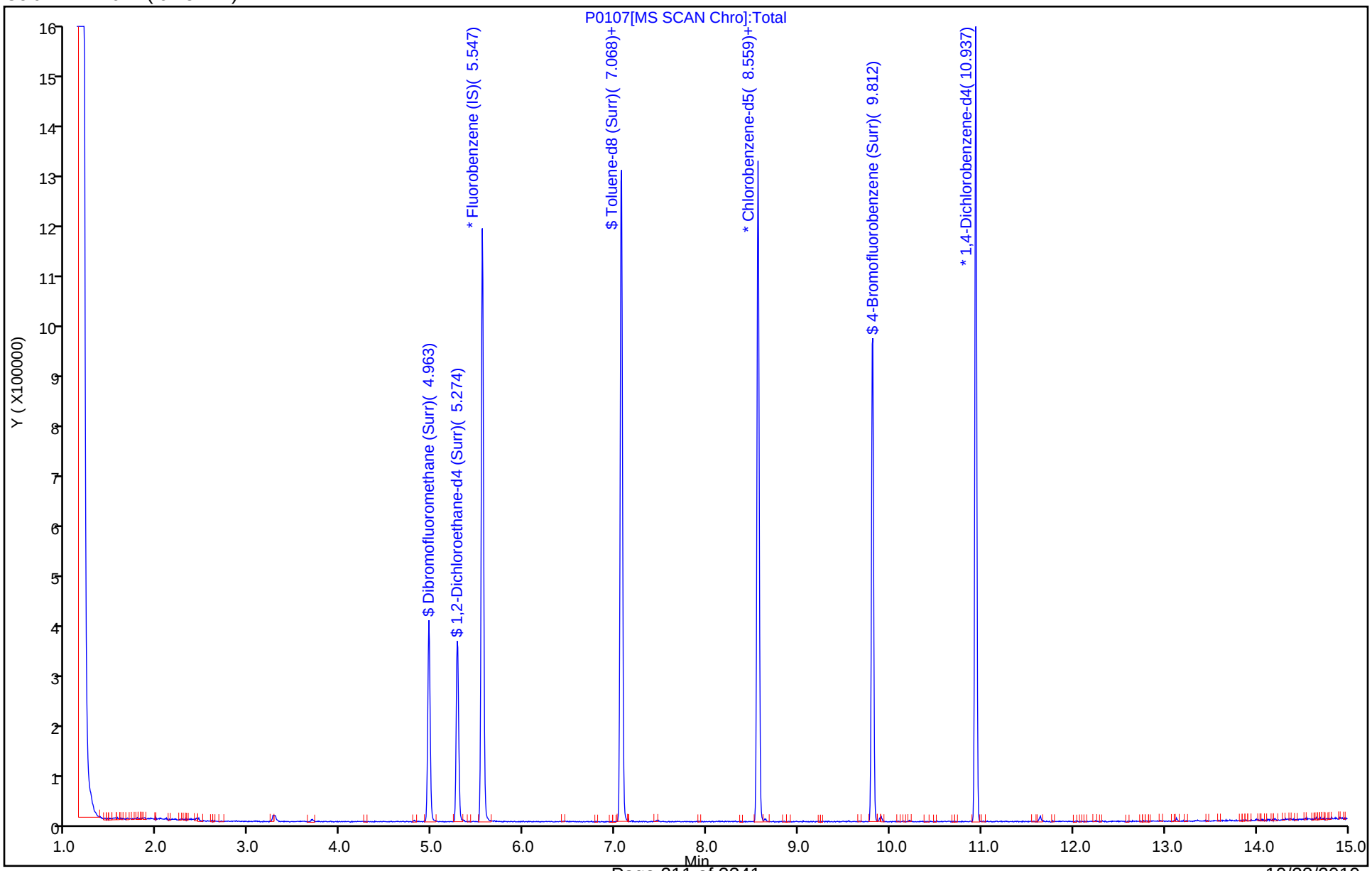
Report Date: 24-Sep-2019 14:06:53 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0107.D

Injection Date:	23-Sep-2019 19:44:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-11-A	Lab Sample ID:	480-159547-11	Worklist Smp#:	16
Client ID:	RUSSO-CF-GRAB 3				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 4 Lab Sample ID: 480-159547-12

Matrix: Solid Lab File ID: P0108.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:43

Sample wt/vol: 5.22(g) Date Analyzed: 09/23/2019 20:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.9	0.43
75-34-3	1,1-Dichloroethane	ND	vs	5.9	0.71
75-35-4	1,1-Dichloroethene	ND	vs	5.9	0.72
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.9	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.9	0.46
107-06-2	1,2-Dichloroethane	ND	vs	5.9	0.29
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.9	0.38
541-73-1	1,3-Dichlorobenzene	ND	vs	5.9	0.30
106-46-7	1,4-Dichlorobenzene	ND	vs	5.9	0.82
123-91-1	1,4-Dioxane	ND	vs	120	26
78-93-3	2-Butanone (MEK)	ND	vs	29	2.1
67-64-1	Acetone	ND	vs	29	4.9
71-43-2	Benzene	ND	vs	5.9	0.29
56-23-5	Carbon tetrachloride	ND	vs	5.9	0.57
108-90-7	Chlorobenzene	ND	vs	5.9	0.77
67-66-3	Chloroform	ND	vs	5.9	0.36
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.9	0.75
100-41-4	Ethylbenzene	ND	vs	5.9	0.40
1634-04-4	Methyl tert-butyl ether	ND	vs	5.9	0.58
75-09-2	Methylene Chloride	ND	vs	5.9	2.7
104-51-8	n-Butylbenzene	ND	vs	5.9	0.51
103-65-1	N-Propylbenzene	ND	vs	5.9	0.47
135-98-8	sec-Butylbenzene	ND	vs	5.9	0.51
127-18-4	Tetrachloroethene	ND	vs	5.9	0.79
108-88-3	Toluene	ND	vs	5.9	0.44
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.9	0.60
79-01-6	Trichloroethene	ND	vs	5.9	1.3
75-01-4	Vinyl chloride	ND	vs	5.9	0.71
1330-20-7	Xylenes, Total	ND	vs	12	0.98
98-06-6	tert-Butylbenzene	ND	vs	5.9	0.61

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 4 Lab Sample ID: 480-159547-12

Matrix: Solid Lab File ID: P0108.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:43

Sample wt/vol: 5.22(g) Date Analyzed: 09/23/2019 20:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 18.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	113		64-126
460-00-4	4-Bromofluorobenzene (Surr)	112		72-126
2037-26-5	Toluene-d8 (Surr)	108		71-125
1868-53-7	Dibromofluoromethane (Surr)	116		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0108.D
Lims ID: 480-159547-A-12-A
Client ID: RUSSO-CF-GRAB 4
Sample Type: Client
Inject. Date: 23-Sep-2019 20:08:30 ALS Bottle#: 10 Worklist Smp#: 17
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-12-A
Misc. Info.: 480-0084382-017
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:07:11

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	147734	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	317040	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	314084	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	220231	58.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.279	5.273	0.006	98	114794	56.6	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	839833	53.8	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	276413	56.1	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

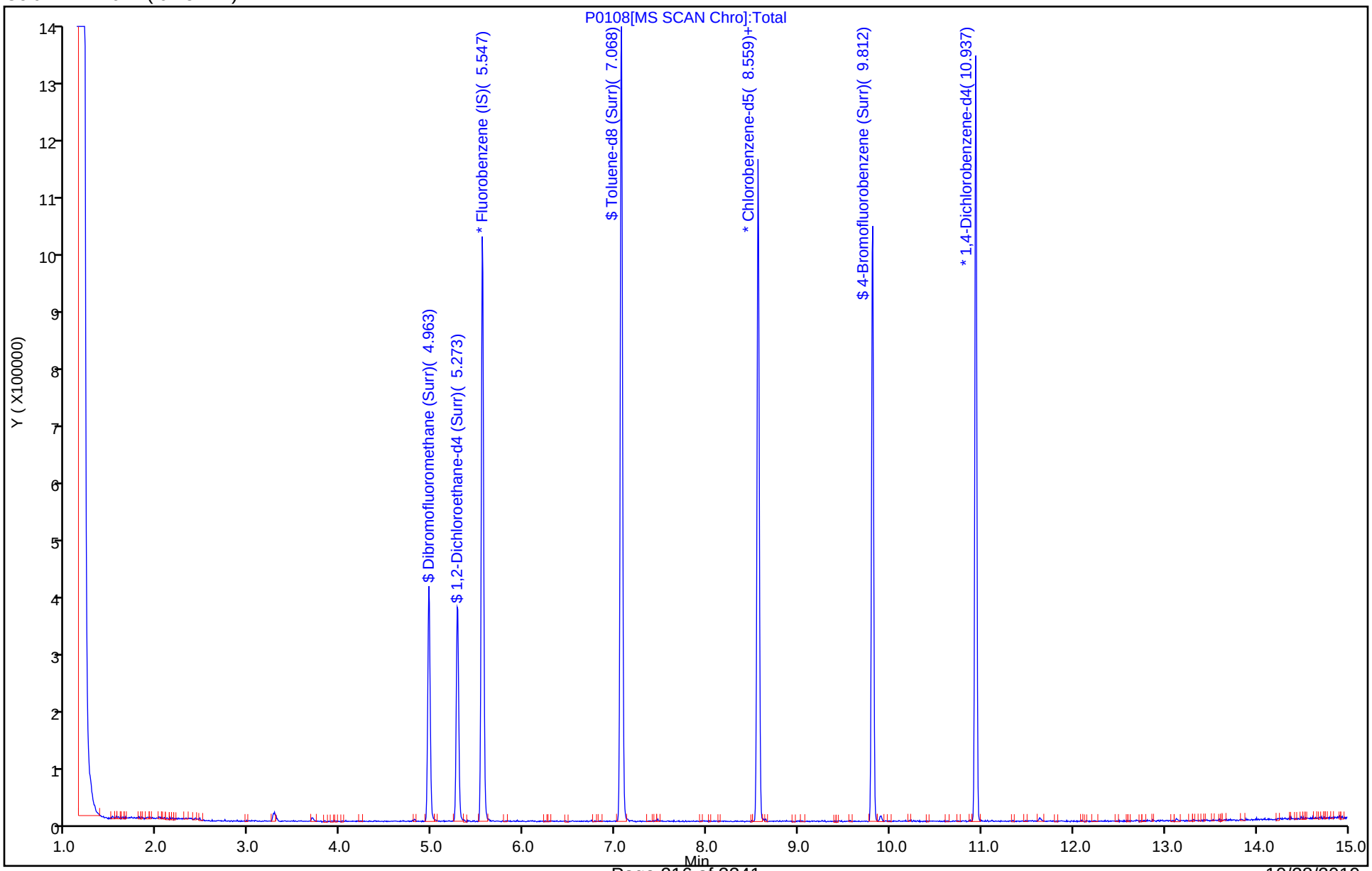
Report Date: 24-Sep-2019 14:07:11 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0108.D

Injection Date:	23-Sep-2019 20:08:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-12-A	Lab Sample ID:	480-159547-12	Worklist Smp#:	17
Client ID:	RUSSO-CF-GRAB 4				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 5 Lab Sample ID: 480-159547-13

Matrix: Solid Lab File ID: P0109.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:44

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 20:33

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.5	0.40
75-34-3	1,1-Dichloroethane	ND	vs	5.5	0.67
75-35-4	1,1-Dichloroethene	ND	vs	5.5	0.67
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.5	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.5	0.43
107-06-2	1,2-Dichloroethane	ND	vs	5.5	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.5	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.5	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.5	0.77
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.0
67-64-1	Acetone	ND	vs	28	4.6
71-43-2	Benzene	ND	vs	5.5	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.5	0.53
108-90-7	Chlorobenzene	ND	vs	5.5	0.73
67-66-3	Chloroform	ND	vs	5.5	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.5	0.70
100-41-4	Ethylbenzene	ND	vs	5.5	0.38
1634-04-4	Methyl tert-butyl ether	ND	vs	5.5	0.54
75-09-2	Methylene Chloride	ND	vs	5.5	2.5
104-51-8	n-Butylbenzene	ND	vs	5.5	0.48
103-65-1	N-Propylbenzene	ND	vs	5.5	0.44
135-98-8	sec-Butylbenzene	ND	vs	5.5	0.48
127-18-4	Tetrachloroethene	ND	vs	5.5	0.74
108-88-3	Toluene	ND	vs	5.5	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.5	0.57
79-01-6	Trichloroethene	ND	vs	5.5	1.2
75-01-4	Vinyl chloride	ND	vs	5.5	0.67
1330-20-7	Xylenes, Total	ND	vs	11	0.93
98-06-6	tert-Butylbenzene	ND	vs	5.5	0.57

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 5 Lab Sample ID: 480-159547-13

Matrix: Solid Lab File ID: P0109.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:44

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 20:33

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.2 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		64-126
460-00-4	4-Bromofluorobenzene (Surr)	95		72-126
2037-26-5	Toluene-d8 (Surr)	90		71-125
1868-53-7	Dibromofluoromethane (Surr)	98		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0109.D
Lims ID: 480-159547-A-13-A
Client ID: RUSSO-CF-GRAB 5
Sample Type: Client
Inject. Date: 23-Sep-2019 20:33:30 ALS Bottle#: 11 Worklist Smp#: 18
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-13-A
Misc. Info.: 480-0084382-018
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:07:48

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	173861	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	377148	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	377435	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	217373	48.8	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	120470	50.5	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	840093	45.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	277230	47.3	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

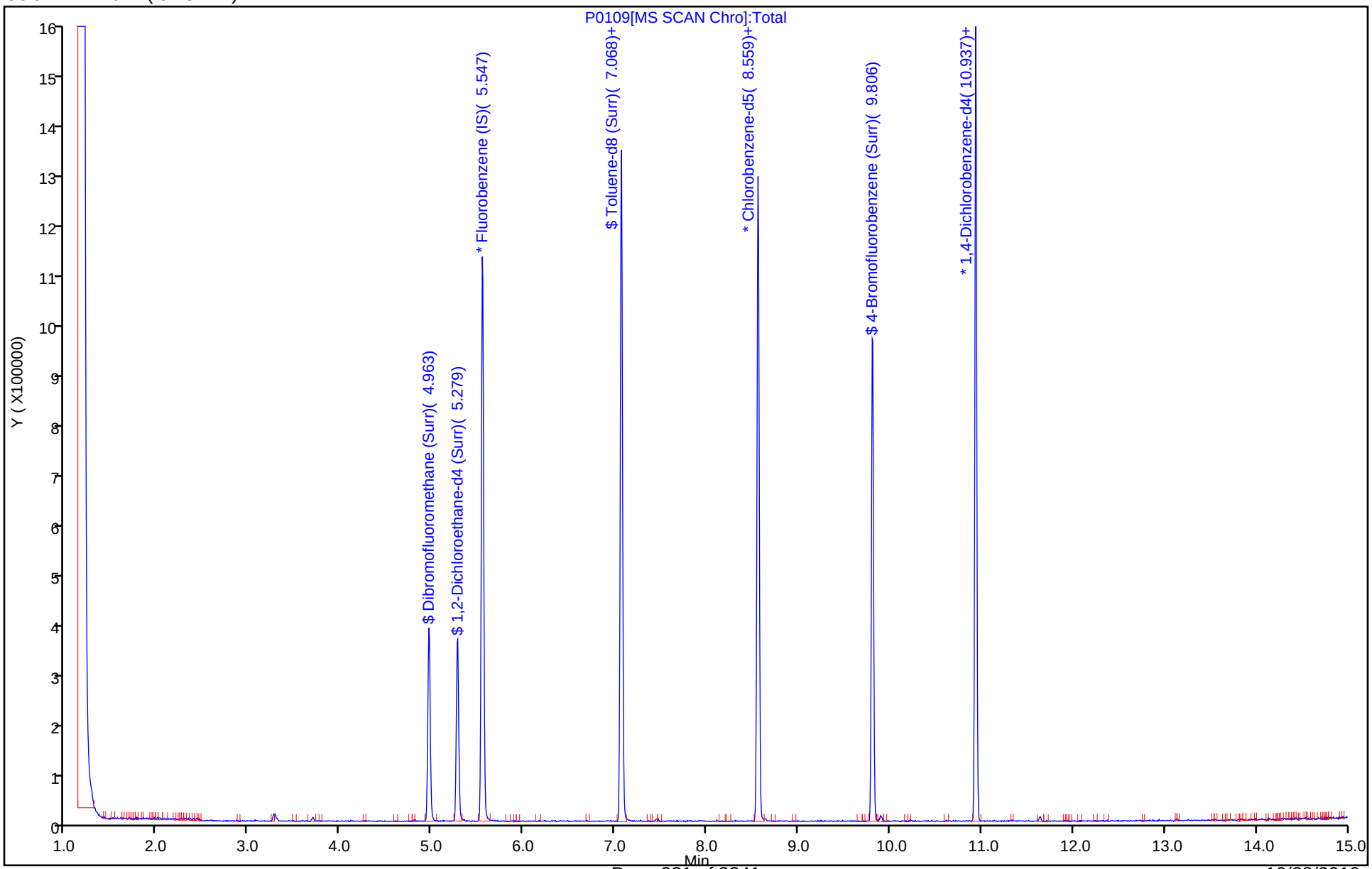
Report Date: 24-Sep-2019 14:07:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0109.D

Injection Date:	23-Sep-2019 20:33:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-13-A	Lab Sample ID:	480-159547-13	Worklist Smp#:	18
Client ID:	RUSSO-CF-GRAB 5				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 6 Lab Sample ID: 480-159547-14

Matrix: Solid Lab File ID: P0110.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:45

Sample wt/vol: 5.15(g) Date Analyzed: 09/23/2019 20:58

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.1 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.2	0.38
75-34-3	1,1-Dichloroethane	ND	vs	5.2	0.64
75-35-4	1,1-Dichloroethene	ND	vs	5.2	0.64
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.2	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.2	0.41
107-06-2	1,2-Dichloroethane	ND	vs	5.2	0.26
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.2	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.2	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.2	0.73
123-91-1	1,4-Dioxane	ND	vs	100	23
78-93-3	2-Butanone (MEK)	ND	vs	26	1.9
67-64-1	Acetone	ND	vs	26	4.4
71-43-2	Benzene	ND	vs	5.2	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.2	0.51
108-90-7	Chlorobenzene	ND	vs	5.2	0.69
67-66-3	Chloroform	ND	vs	5.2	0.32
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.2	0.67
100-41-4	Ethylbenzene	ND	vs	5.2	0.36
1634-04-4	Methyl tert-butyl ether	ND	vs	5.2	0.51
75-09-2	Methylene Chloride	ND	vs	5.2	2.4
104-51-8	n-Butylbenzene	ND	vs	5.2	0.45
103-65-1	N-Propylbenzene	ND	vs	5.2	0.42
135-98-8	sec-Butylbenzene	ND	vs	5.2	0.45
127-18-4	Tetrachloroethene	ND	vs	5.2	0.70
108-88-3	Toluene	ND	vs	5.2	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.2	0.54
79-01-6	Trichloroethene	ND	vs	5.2	1.2
75-01-4	Vinyl chloride	ND	vs	5.2	0.64
1330-20-7	Xylenes, Total	ND	vs	10	0.88
98-06-6	tert-Butylbenzene	ND	vs	5.2	0.54

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 6 Lab Sample ID: 480-159547-14

Matrix: Solid Lab File ID: P0110.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:45

Sample wt/vol: 5.15(g) Date Analyzed: 09/23/2019 20:58

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.1 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	110		64-126
460-00-4	4-Bromofluorobenzene (Surr)	101		72-126
2037-26-5	Toluene-d8 (Surr)	98		71-125
1868-53-7	Dibromofluoromethane (Surr)	105		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0110.D
Lims ID: 480-159547-A-14-A
Client ID: RUSSO-CF-GRAB 6
Sample Type: Client
Inject. Date: 23-Sep-2019 20:58:30 ALS Bottle#: 12 Worklist Smp#: 19
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-14-A
Misc. Info.: 480-0084382-019
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:08:01

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	157267	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	343956	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	336047	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	212153	52.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	119199	55.2	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	826296	48.8	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	270912	50.7	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

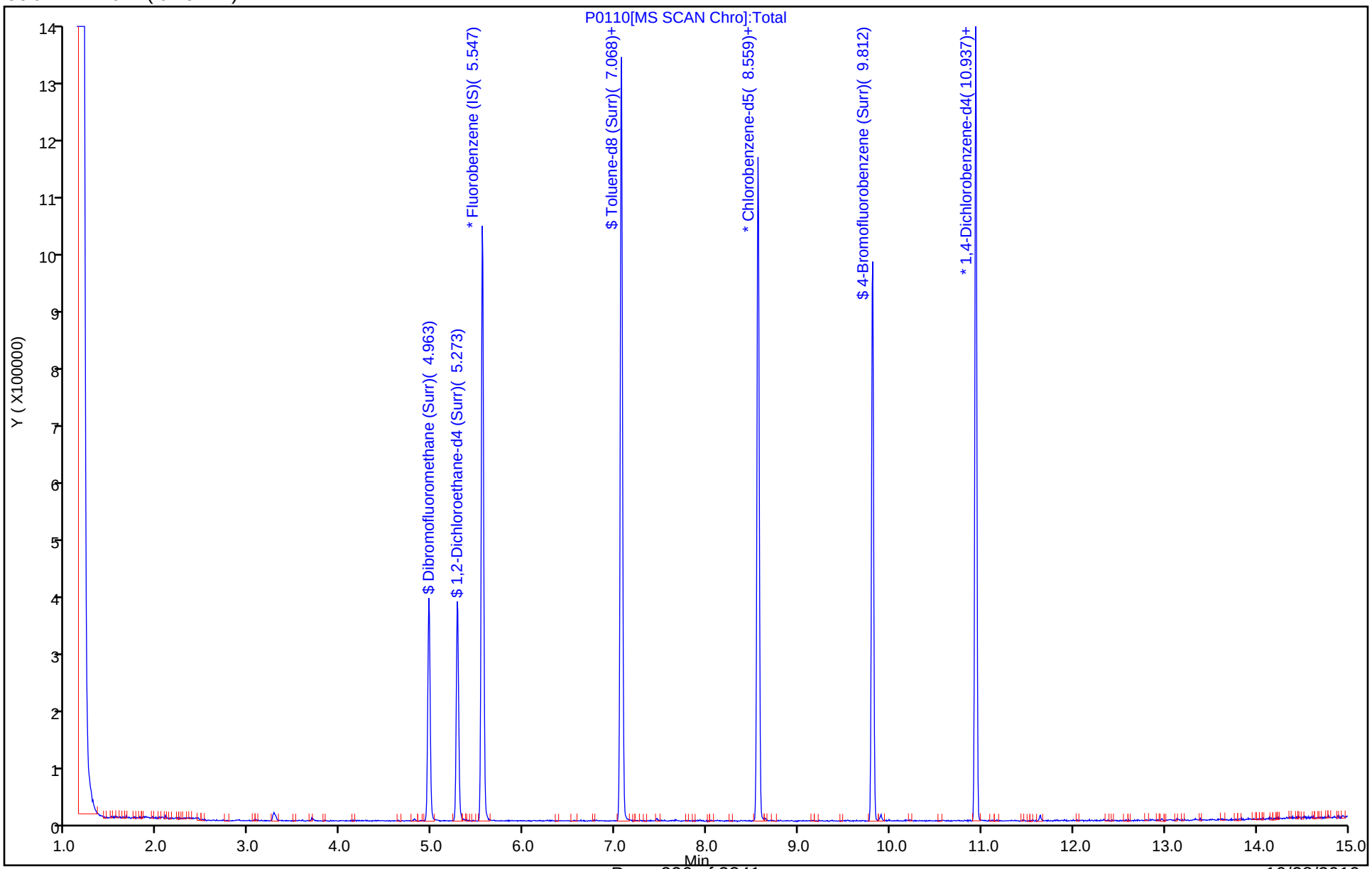
Report Date: 24-Sep-2019 14:08:01 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0110.D

Injection Date:	23-Sep-2019 20:58:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-14-A	Lab Sample ID:	480-159547-14	Worklist Smp#:	19
Client ID:	RUSSO-CF-GRAB 6				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 7 Lab Sample ID: 480-159547-15

Matrix: Solid Lab File ID: P0111.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:46

Sample wt/vol: 5.11(g) Date Analyzed: 09/23/2019 21:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.8 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.5	0.40
75-34-3	1,1-Dichloroethane	ND	vs	5.5	0.67
75-35-4	1,1-Dichloroethene	ND	vs	5.5	0.67
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.5	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.5	0.43
107-06-2	1,2-Dichloroethane	ND	vs	5.5	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.5	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.5	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.5	0.77
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.6
71-43-2	Benzene	ND	vs	5.5	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.5	0.53
108-90-7	Chlorobenzene	ND	vs	5.5	0.72
67-66-3	Chloroform	ND	vs	5.5	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.5	0.70
100-41-4	Ethylbenzene	ND	vs	5.5	0.38
1634-04-4	Methyl tert-butyl ether	ND	vs	5.5	0.54
75-09-2	Methylene Chloride	ND	vs	5.5	2.5
104-51-8	n-Butylbenzene	ND	vs	5.5	0.48
103-65-1	N-Propylbenzene	ND	vs	5.5	0.44
135-98-8	sec-Butylbenzene	ND	vs	5.5	0.48
127-18-4	Tetrachloroethene	ND	vs	5.5	0.74
108-88-3	Toluene	ND	vs	5.5	0.41
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.5	0.57
79-01-6	Trichloroethene	ND	vs	5.5	1.2
75-01-4	Vinyl chloride	ND	vs	5.5	0.67
1330-20-7	Xylenes, Total	ND	vs	11	0.92
98-06-6	tert-Butylbenzene	ND	vs	5.5	0.57

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 7 Lab Sample ID: 480-159547-15

Matrix: Solid Lab File ID: P0111.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:46

Sample wt/vol: 5.11(g) Date Analyzed: 09/23/2019 21:23

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 10.8 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		64-126
460-00-4	4-Bromofluorobenzene (Surr)	97		72-126
2037-26-5	Toluene-d8 (Surr)	95		71-125
1868-53-7	Dibromofluoromethane (Surr)	101		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0111.D
Lims ID: 480-159547-A-15-A
Client ID: RUSSO-CF-GRAB 7
Sample Type: Client
Inject. Date: 23-Sep-2019 21:23:30 ALS Bottle#: 13 Worklist Smp#: 20
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-15-A
Misc. Info.: 480-0084382-020
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:08:13

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	164484	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	346641	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	360537	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	91	212100	50.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.280	5.273	0.007	98	115853	51.3	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	810965	47.5	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	261286	48.5	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

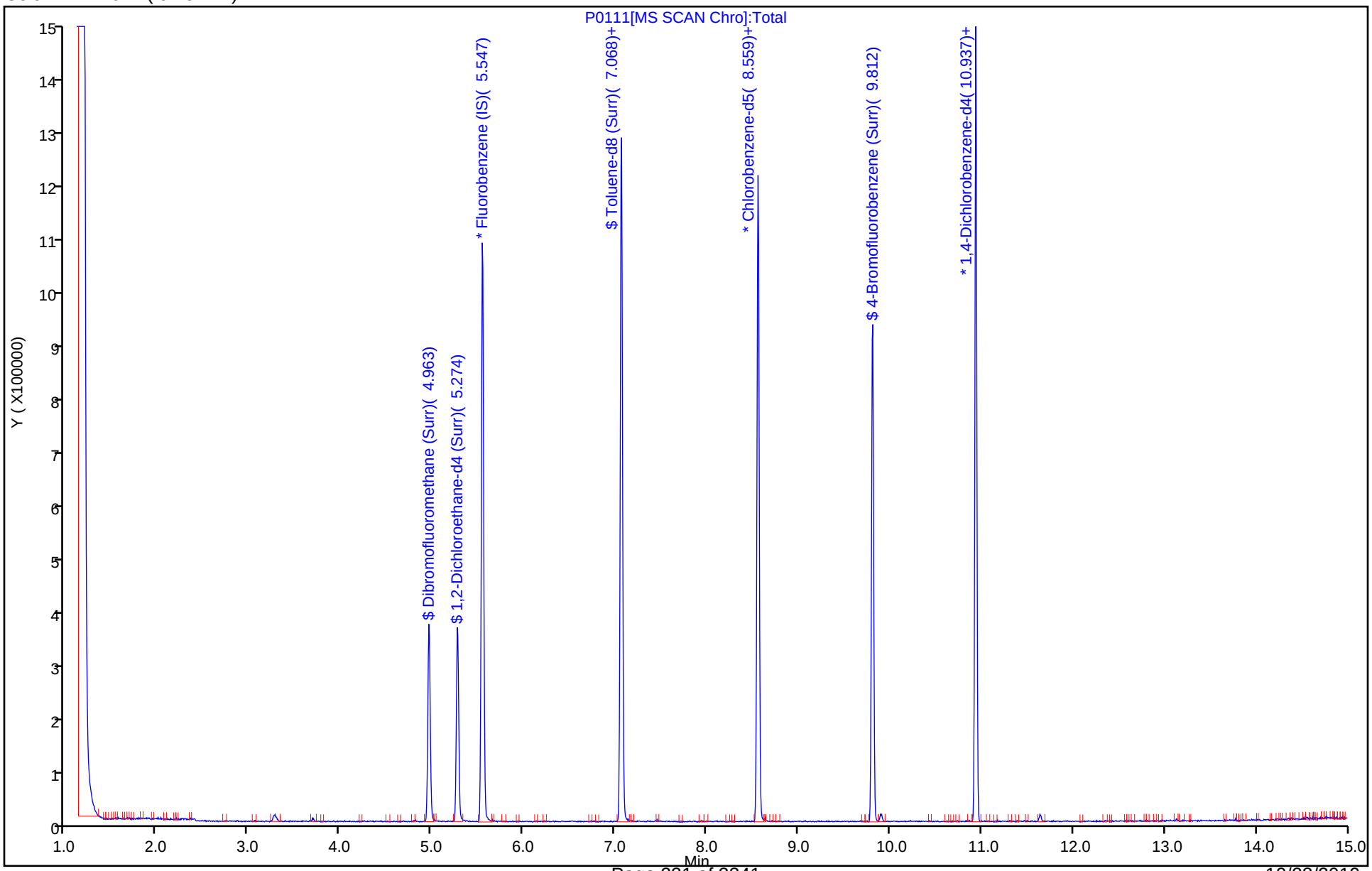
Report Date: 24-Sep-2019 14:08:14 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0111.D

Injection Date:	23-Sep-2019 21:23:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-15-A	Lab Sample ID:	480-159547-15	Worklist Smp#:	20
Client ID:	RUSSO-CF-GRAB 7				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 8 Lab Sample ID: 480-159547-16

Matrix: Solid Lab File ID: P0112.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:47

Sample wt/vol: 5.22(g) Date Analyzed: 09/23/2019 21:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.7 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.3	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.41
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.74
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	27	1.9
67-64-1	Acetone	ND	vs	27	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.51
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.42
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.89
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 8 Lab Sample ID: 480-159547-16

Matrix: Solid Lab File ID: P0112.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:47

Sample wt/vol: 5.22(g) Date Analyzed: 09/23/2019 21:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.7 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	119		64-126
460-00-4	4-Bromofluorobenzene (Surr)	112		72-126
2037-26-5	Toluene-d8 (Surr)	109		71-125
1868-53-7	Dibromofluoromethane (Surr)	118		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0112.D
Lims ID: 480-159547-A-16-A
Client ID: RUSSO-CF-GRAB 8
Sample Type: Client
Inject. Date: 23-Sep-2019 21:47:30 ALS Bottle#: 14 Worklist Smp#: 21
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-16-A
Misc. Info.: 480-0084382-021
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:09:09

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	143712	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	310084	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	312042	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	217643	59.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	117514	59.6	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	828706	54.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	269885	56.0	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

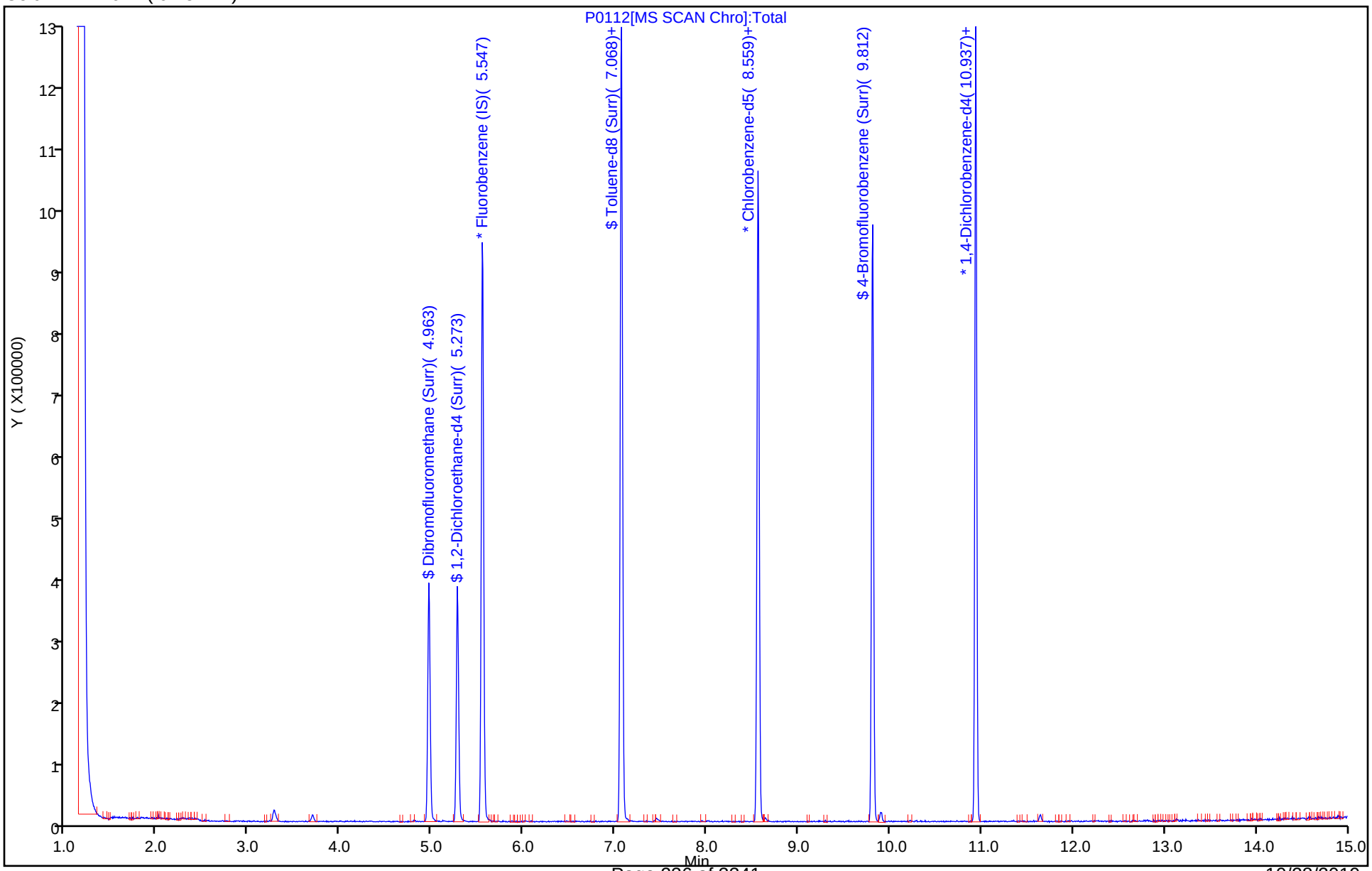
Report Date: 24-Sep-2019 14:09:10 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0112.D

Injection Date:	23-Sep-2019 21:47:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-16-A	Lab Sample ID:	480-159547-16	Worklist Smp#:	21
Client ID:	RUSSO-CF-GRAB 8				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 9 Lab Sample ID: 480-159547-17

Matrix: Solid Lab File ID: P0113.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:48

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 22:12

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.8 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.4	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.4	0.66
75-35-4	1,1-Dichloroethene	ND	vs	5.4	0.66
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.4	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.4	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.4	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.4	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.4	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.4	0.76
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.6
71-43-2	Benzene	ND	vs	5.4	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.4	0.53
108-90-7	Chlorobenzene	ND	vs	5.4	0.72
67-66-3	Chloroform	ND	vs	5.4	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.4	0.69
100-41-4	Ethylbenzene	ND	vs	5.4	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.4	0.53
75-09-2	Methylene Chloride	ND	vs	5.4	2.5
104-51-8	n-Butylbenzene	ND	vs	5.4	0.47
103-65-1	N-Propylbenzene	ND	vs	5.4	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.4	0.47
127-18-4	Tetrachloroethene	ND	vs	5.4	0.73
108-88-3	Toluene	ND	vs	5.4	0.41
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.4	0.56
79-01-6	Trichloroethene	ND	vs	5.4	1.2
75-01-4	Vinyl chloride	ND	vs	5.4	0.66
1330-20-7	Xylenes, Total	ND	vs	11	0.91
98-06-6	tert-Butylbenzene	ND	vs	5.4	0.56

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-GRAB 9 Lab Sample ID: 480-159547-17

Matrix: Solid Lab File ID: P0113.D

Analysis Method: 8260C Date Collected: 09/16/2019 11:48

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 22:12

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.8 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		64-126
460-00-4	4-Bromofluorobenzene (Surr)	94		72-126
2037-26-5	Toluene-d8 (Surr)	90		71-125
1868-53-7	Dibromofluoromethane (Surr)	98		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0113.D
Lims ID: 480-159547-A-17-A
Client ID: RUSSO-CF-GRAB 9
Sample Type: Client
Inject. Date: 23-Sep-2019 22:12:30 ALS Bottle#: 15 Worklist Smp#: 22
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-17-A
Misc. Info.: 480-0084382-022
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:09:37

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	171404	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	376835	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	376573	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	214442	48.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	98	119255	50.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	833342	44.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	275483	47.1	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

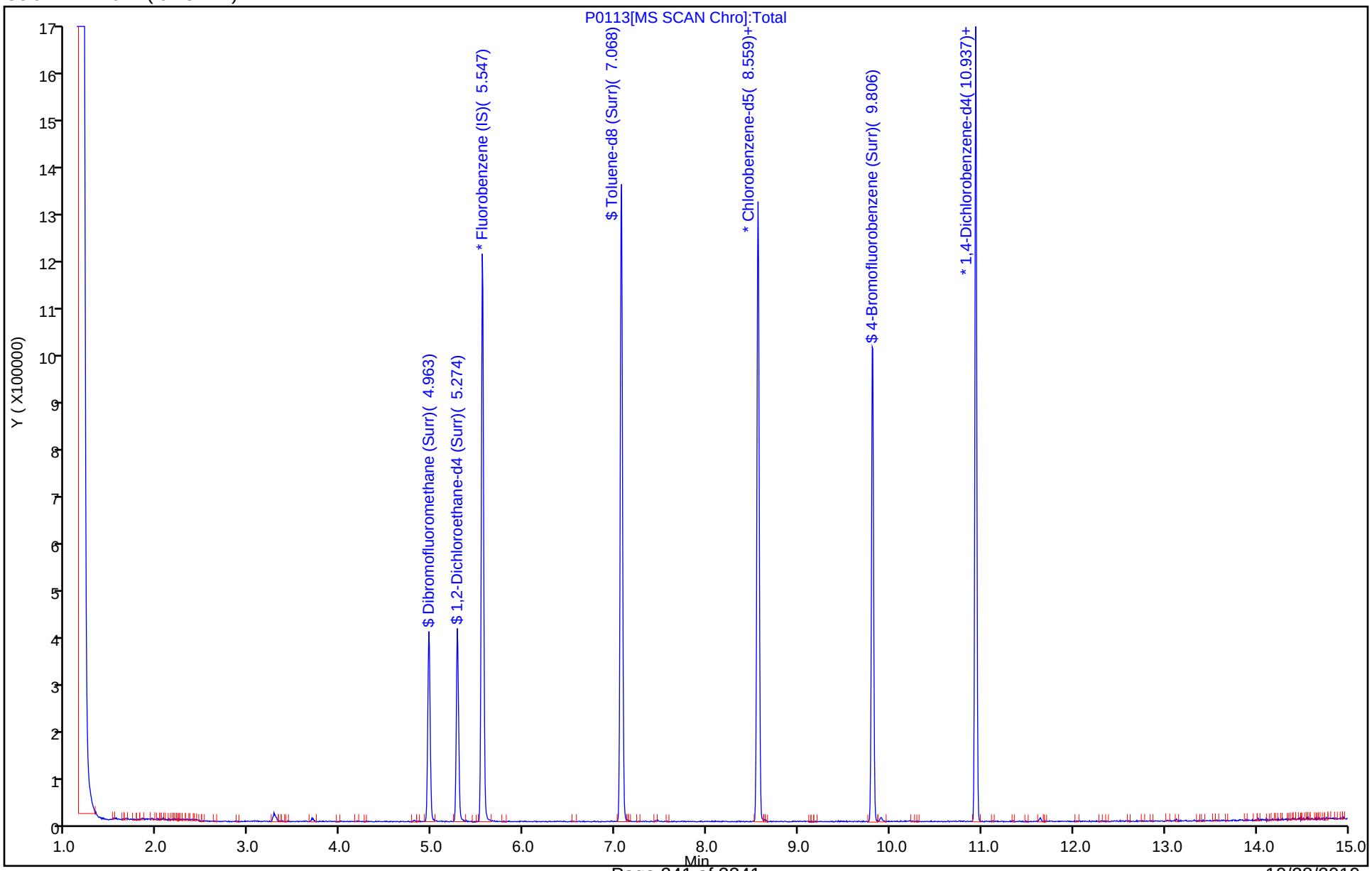
Report Date: 24-Sep-2019 14:09:37 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0113.D

Injection Date:	23-Sep-2019 22:12:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-17-A	Lab Sample ID:	480-159547-17	Worklist Smp#:	22
Client ID:	RUSSO-CF-GRAB 9				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	15
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 1 Lab Sample ID: 480-159547-21

Matrix: Solid Lab File ID: P0114.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:40

Sample wt/vol: 5.11(g) Date Analyzed: 09/23/2019 22:37

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 14.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.7	0.41
75-34-3	1,1-Dichloroethane	ND	vs	5.7	0.70
75-35-4	1,1-Dichloroethene	ND	vs	5.7	0.70
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.7	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.7	0.45
107-06-2	1,2-Dichloroethane	ND	vs	5.7	0.29
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.7	0.37
541-73-1	1,3-Dichlorobenzene	ND	vs	5.7	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.7	0.80
123-91-1	1,4-Dioxane	ND	vs	110	25
78-93-3	2-Butanone (MEK)	ND	vs	29	2.1
67-64-1	Acetone	ND	vs	29	4.8
71-43-2	Benzene	ND	vs	5.7	0.28
56-23-5	Carbon tetrachloride	ND	vs	5.7	0.55
108-90-7	Chlorobenzene	ND	vs	5.7	0.75
67-66-3	Chloroform	ND	vs	5.7	0.35
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.7	0.73
100-41-4	Ethylbenzene	ND	vs	5.7	0.39
1634-04-4	Methyl tert-butyl ether	ND	vs	5.7	0.56
75-09-2	Methylene Chloride	ND	vs	5.7	2.6
104-51-8	n-Butylbenzene	ND	vs	5.7	0.50
103-65-1	N-Propylbenzene	ND	vs	5.7	0.46
135-98-8	sec-Butylbenzene	ND	vs	5.7	0.50
127-18-4	Tetrachloroethene	ND	vs	5.7	0.77
108-88-3	Toluene	ND	vs	5.7	0.43
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.7	0.59
79-01-6	Trichloroethene	ND	vs	5.7	1.3
75-01-4	Vinyl chloride	ND	vs	5.7	0.70
1330-20-7	Xylenes, Total	ND	vs	11	0.96
98-06-6	tert-Butylbenzene	ND	vs	5.7	0.59

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 1 Lab Sample ID: 480-159547-21

Matrix: Solid Lab File ID: P0114.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:40

Sample wt/vol: 5.11(g) Date Analyzed: 09/23/2019 22:37

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 14.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	120		64-126
460-00-4	4-Bromofluorobenzene (Surr)	118		72-126
2037-26-5	Toluene-d8 (Surr)	114		71-125
1868-53-7	Dibromofluoromethane (Surr)	118		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0114.D
Lims ID: 480-159547-A-21-A
Client ID: GERNATT-CF-GRAB 1
Sample Type: Client
Inject. Date: 23-Sep-2019 22:37:30 ALS Bottle#: 16 Worklist Smp#: 23
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-21-A
Misc. Info.: 480-0084382-023
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:09:49

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	141652	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	293458	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	294851	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	214128	59.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	98	116294	59.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	827158	57.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	268611	58.9	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

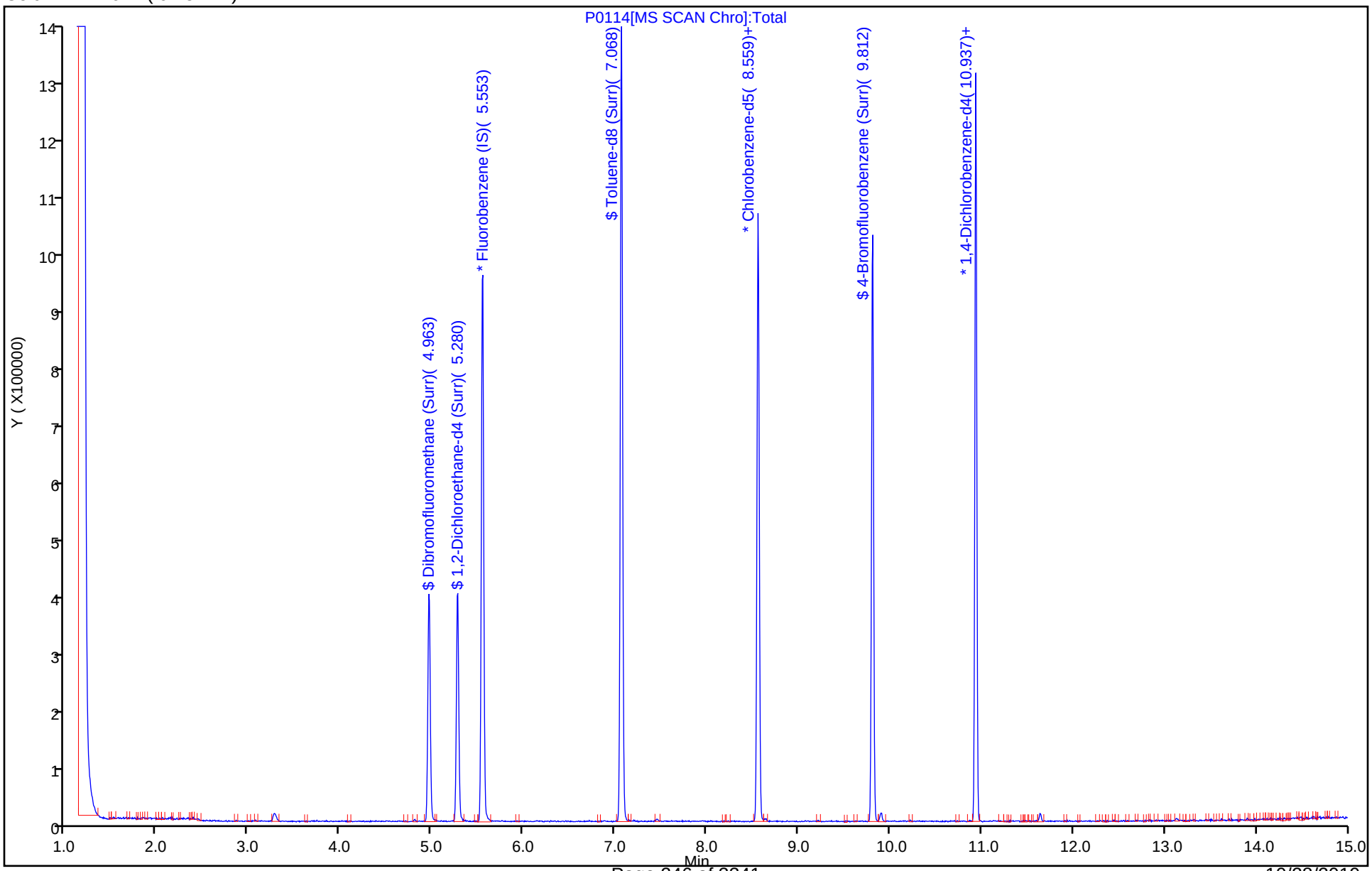
Report Date: 24-Sep-2019 14:09:50 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0114.D

Injection Date:	23-Sep-2019 22:37:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-21-A	Lab Sample ID:	480-159547-21	Worklist Smp#:	23
Client ID:	GERNATT-CF-GRAB 1				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	16
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 2 Lab Sample ID: 480-159547-22

Matrix: Solid Lab File ID: P0115.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:41

Sample wt/vol: 5.03(g) Date Analyzed: 09/23/2019 23:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.6 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.3	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.74
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	27	1.9
67-64-1	Acetone	ND	vs	27	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.51
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.89
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 2 Lab Sample ID: 480-159547-22

Matrix: Solid Lab File ID: P0115.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:41

Sample wt/vol: 5.03(g) Date Analyzed: 09/23/2019 23:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.6 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		64-126
460-00-4	4-Bromofluorobenzene (Surr)	93		72-126
2037-26-5	Toluene-d8 (Surr)	90		71-125
1868-53-7	Dibromofluoromethane (Surr)	94		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0115.D
Lims ID: 480-159547-A-22-A
Client ID: GERNATT-CF-GRAB 2
Sample Type: Client
Inject. Date: 23-Sep-2019 23:01:30 ALS Bottle#: 17 Worklist Smp#: 24
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-22-A
Misc. Info.: 480-0084382-024
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:10:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	179055	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	378527	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	370665	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	215154	46.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	98	119326	48.6	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	839837	45.0	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	95	272520	46.3	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

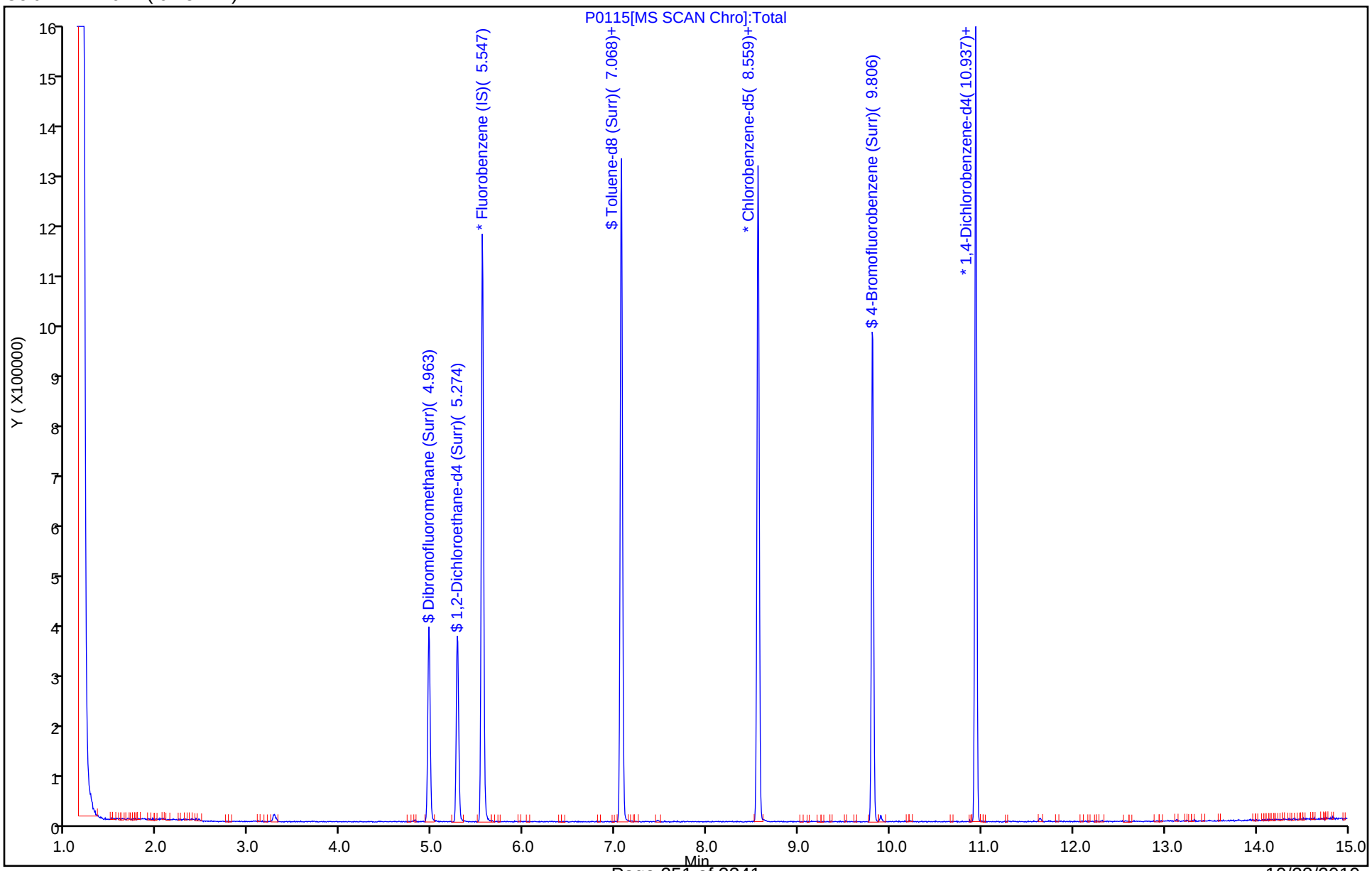
Report Date: 24-Sep-2019 14:10:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0115.D

Injection Date:	23-Sep-2019 23:01:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-22-A	Lab Sample ID:	480-159547-22	Worklist Smp#:	24
Client ID:	GERNATT-CF-GRAB 2				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	17
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 3 Lab Sample ID: 480-159547-23

Matrix: Solid Lab File ID: P0116.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:42

Sample wt/vol: 5.06(g) Date Analyzed: 09/23/2019 23:26

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs *	5.3	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.75
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.52
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.5
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.72
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.90
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 3 Lab Sample ID: 480-159547-23

Matrix: Solid Lab File ID: P0116.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:42

Sample wt/vol: 5.06(g) Date Analyzed: 09/23/2019 23:26

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.3 Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	114		64-126
460-00-4	4-Bromofluorobenzene (Surr)	109		72-126
2037-26-5	Toluene-d8 (Surr)	108		71-125
1868-53-7	Dibromofluoromethane (Surr)	112		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0116.D
Lims ID: 480-159547-A-23-A
Client ID: GERNATT-CF-GRAB 3
Sample Type: Client
Inject. Date: 23-Sep-2019 23:26:30 ALS Bottle#: 18 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-23-A
Misc. Info.: 480-0084382-025
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:06:40 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 14:11:30

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	146318	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	311748	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	310820	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	210643	56.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	97	114084	56.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	825625	53.8	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	264325	54.6	
17 Vinyl chloride	62		1.599				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.272				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.914				ND	
55 Carbon tetrachloride	117		5.054				ND	
57 Benzene	78		5.273				ND	
60 1,2-Dichloroethane	62		5.346				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.802				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.314				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

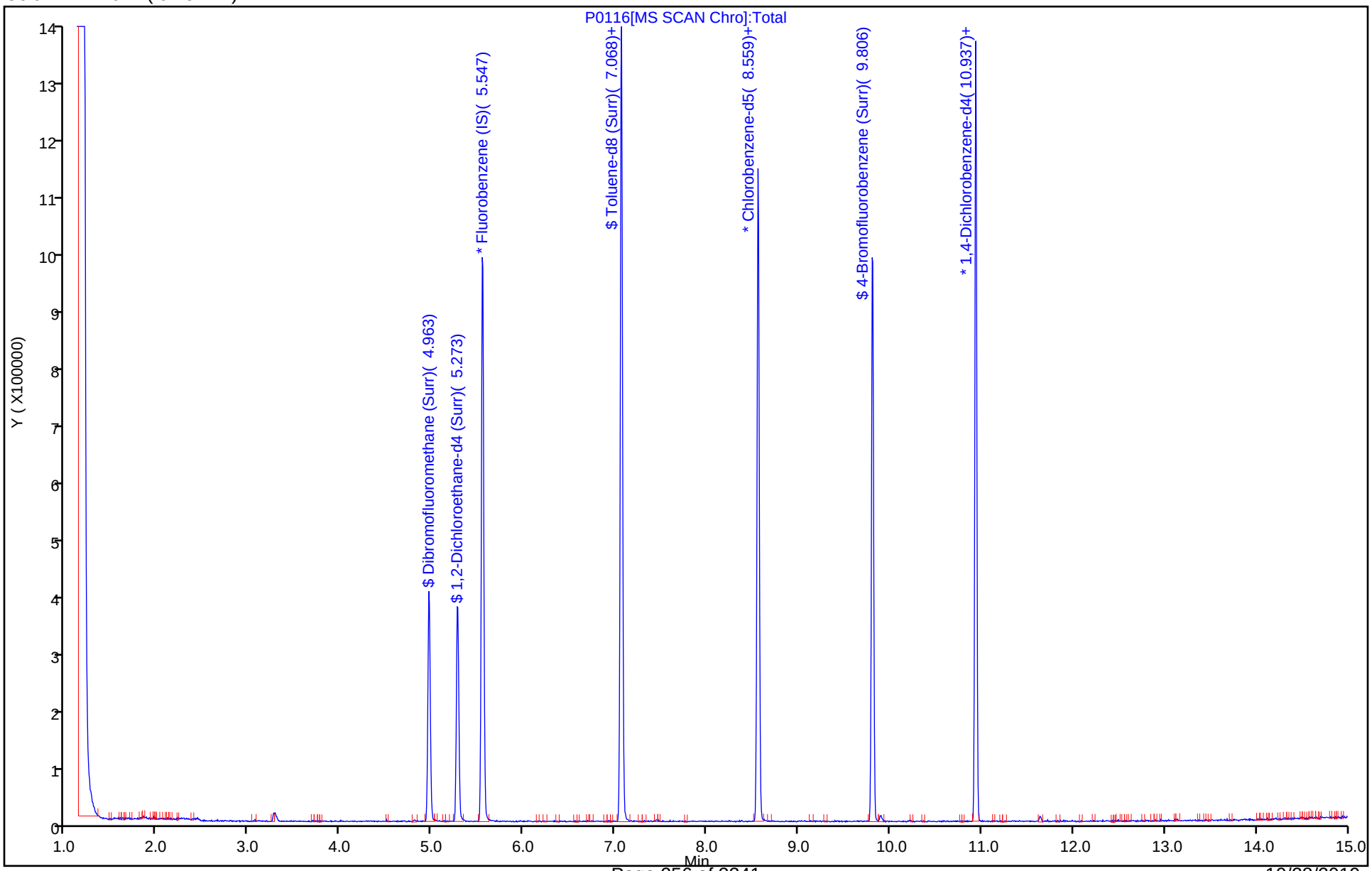
Report Date: 24-Sep-2019 14:11:31 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0116.D

Injection Date:	23-Sep-2019 23:26:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-23-A	Lab Sample ID:	480-159547-23	Worklist Smp#:	25
Client ID:	GERNATT-CF-GRAB 3				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 Lab Sample ID: 480-159547-24

Matrix: Solid Lab File ID: F2451.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.13(g) Date Analyzed: 09/25/2019 13:51

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND		5.3	0.38
75-34-3	1,1-Dichloroethane	ND		5.3	0.64
75-35-4	1,1-Dichloroethene	ND		5.3	0.64
95-63-6	1,2,4-Trimethylbenzene	ND		5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	F1	5.3	0.41
107-06-2	1,2-Dichloroethane	ND		5.3	0.26
108-67-8	1,3,5-Trimethylbenzene	ND		5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND		5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND		5.3	0.74
123-91-1	1,4-Dioxane	ND	F1	110	23
78-93-3	2-Butanone (MEK)	ND	F1 *	26	1.9
67-64-1	Acetone	ND	F1	26	4.4
71-43-2	Benzene	ND		5.3	0.26
56-23-5	Carbon tetrachloride	ND		5.3	0.51
108-90-7	Chlorobenzene	ND		5.3	0.69
67-66-3	Chloroform	ND		5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND		5.3	0.67
100-41-4	Ethylbenzene	ND		5.3	0.36
1634-04-4	Methyl tert-butyl ether	ND		5.3	0.52
75-09-2	Methylene Chloride	2.5	J	5.3	2.4
104-51-8	n-Butylbenzene	ND		5.3	0.46
103-65-1	N-Propylbenzene	ND		5.3	0.42
135-98-8	sec-Butylbenzene	ND		5.3	0.46
127-18-4	Tetrachloroethene	ND		5.3	0.71
108-88-3	Toluene	ND		5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND		5.3	0.54
79-01-6	Trichloroethene	ND		5.3	1.2
75-01-4	Vinyl chloride	ND		5.3	0.64
1330-20-7	Xylenes, Total	ND		11	0.88
98-06-6	tert-Butylbenzene	ND		5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 Lab Sample ID: 480-159547-24

Matrix: Solid Lab File ID: F2451.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.13(g) Date Analyzed: 09/25/2019 13:51

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		64-126
460-00-4	4-Bromofluorobenzene (Surr)	99		72-126
2037-26-5	Toluene-d8 (Surr)	98		71-125
1868-53-7	Dibromofluoromethane (Surr)	107		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2451.D
Lims ID: 480-159547-A-24-B
Client ID: GERNATT-CF-GRAB 4
Sample Type: Client
Inject. Date: 25-Sep-2019 13:51:30 ALS Bottle#: 4 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-24-B
Misc. Info.: 480-0084450-012
Operator ID: CDC Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 14:31:26 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 16:38:34

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	176187	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	86	374994	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.858	10.864	-0.006	96	351492	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.170	5.164	0.006	93	226030	53.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.468	5.462	0.006	98	135023	51.9	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	881793	49.0	
$ 6 4-Bromofluorobenzene (Surr	174	9.776	9.769	0.007	93	266276	49.7	
13 Vinyl chloride	62		2.426				ND	
22 1,1-Dichloroethene	96		3.418				ND	
23 Acetone	43		3.448				ND	
30 Methylene Chloride	84	3.808	3.801	0.007	96	14327	2.42	
32 Methyl tert-butyl ether	73		3.966				ND	
34 trans-1,2-Dichloroethene	96		4.002				ND	
39 1,1-Dichloroethane	63		4.337				ND	
43 2-Butanone (MEK)	43		4.769				ND	
45 cis-1,2-Dichloroethene	96		4.793				ND	
50 Chloroform	83	5.030	5.030	0.000	74	2815	0.3052	
51 1,1,1-Trichloroethane	97		5.201				ND	
55 Carbon tetrachloride	117		5.340				ND	
57 Benzene	78		5.511				ND	
58 1,2-Dichloroethane	62		5.529				ND	
62 Trichloroethene	95		6.034				ND	
66 1,4-Dioxane	88		6.338				ND	
74 Toluene	92		7.184				ND	
81 Tetrachloroethene	166		7.719				ND	
87 Chlorobenzene	112		8.601				ND	
88 Ethylbenzene	91		8.668				ND	
90 m-Xylene & p-Xylene	106		8.784				ND	
91 o-Xylene	106		9.216				ND	
99 N-Propylbenzene	91		9.982				ND	
102 1,3,5-Trimethylbenzene	105		10.140				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/kg	Flags
106 tert-Butylbenzene	134		10.457				ND	
107 1,2,4-Trimethylbenzene	105		10.505				ND	
109 sec-Butylbenzene	105		10.658				ND	
111 1,3-Dichlorobenzene	146		10.804				ND	
113 1,4-Dichlorobenzene	146		10.883				ND	
115 n-Butylbenzene	91		11.144				ND	
116 1,2-Dichlorobenzene	146		11.223				ND	
S 124 Xylenes, Total	1		30.000				ND	

Reagents:

F 8260 IS/SS_00095 Amount Added: 1.00 Units: uL Run Reagent

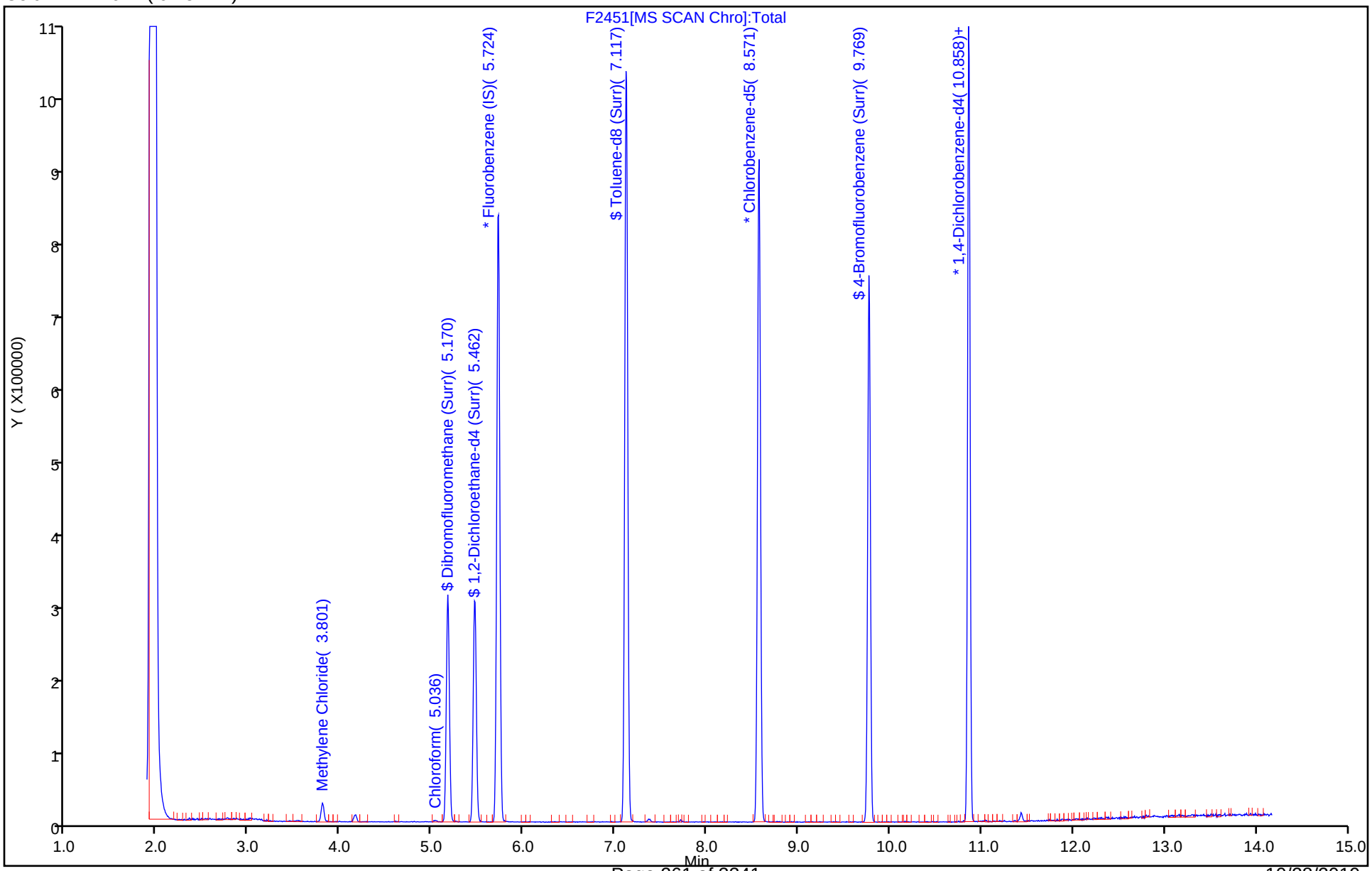
Report Date: 25-Sep-2019 16:38:34 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2451.D

Injection Date:	25-Sep-2019 13:51:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	480-159547-A-24-B	Lab Sample ID:	480-159547-24	Worklist Smp#:	12
Client ID:	GERNATT-CF-GRAB 4				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

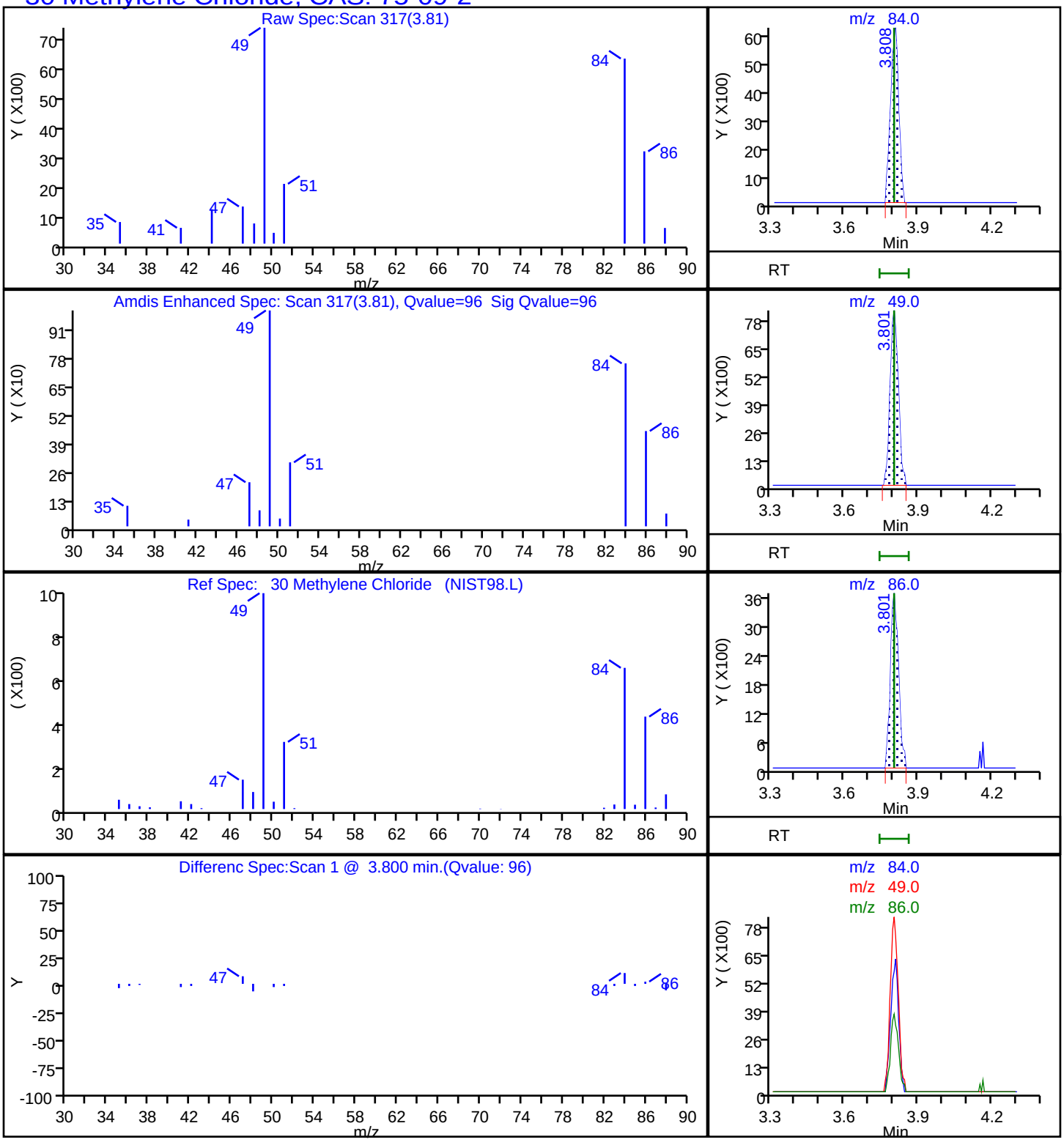
Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2451.D				
Injection Date:	25-Sep-2019 13:51:30	Instrument ID:	HP5973F		
Lims ID:	480-159547-A-24-B	Lab Sample ID:	480-159547-24		
Client ID:	GERNATT-CF-GRAB 4				
Operator ID:	CDC	ALS Bottle#:	4	Worklist Smp#:	12
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		
Column:	ZB-624 (0.25 mm)	Detector	MS SCAN		

30 Methylene Chloride, CAS: 75-09-2



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 5 Lab Sample ID: 480-159547-25

Matrix: Solid Lab File ID: P0128.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:44

Sample wt/vol: 5.12(g) Date Analyzed: 09/24/2019 13:29

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.3 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.3	0.38
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.64
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.64
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.41
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.26
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.74
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	26	1.9
67-64-1	Acetone	ND	vs	26	4.4
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.51
108-90-7	Chlorobenzene	ND	vs	5.3	0.69
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.67
100-41-4	Ethylbenzene	ND	vs	5.3	0.36
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.42
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.54
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.64
1330-20-7	Xylenes, Total	ND	vs	11	0.88
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 5 Lab Sample ID: 480-159547-25

Matrix: Solid Lab File ID: P0128.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:44

Sample wt/vol: 5.12(g) Date Analyzed: 09/24/2019 13:29

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.3 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	119		64-126
460-00-4	4-Bromofluorobenzene (Surr)	114		72-126
2037-26-5	Toluene-d8 (Surr)	108		71-125
1868-53-7	Dibromofluoromethane (Surr)	120		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0128.D
Lims ID: 480-159547-A-25-A
Client ID: GERNATT-CF-GRAB 5
Sample Type: Client
Inject. Date: 24-Sep-2019 13:29:30 ALS Bottle#: 2 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-25-A
Misc. Info.: 480-0084410-009
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:11:25

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	145186	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	315104	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	313596	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	223318	60.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	98	118069	59.3	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	840454	54.1	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	279090	57.0	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.272	3.266	0.006	95	16845	0.8891	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

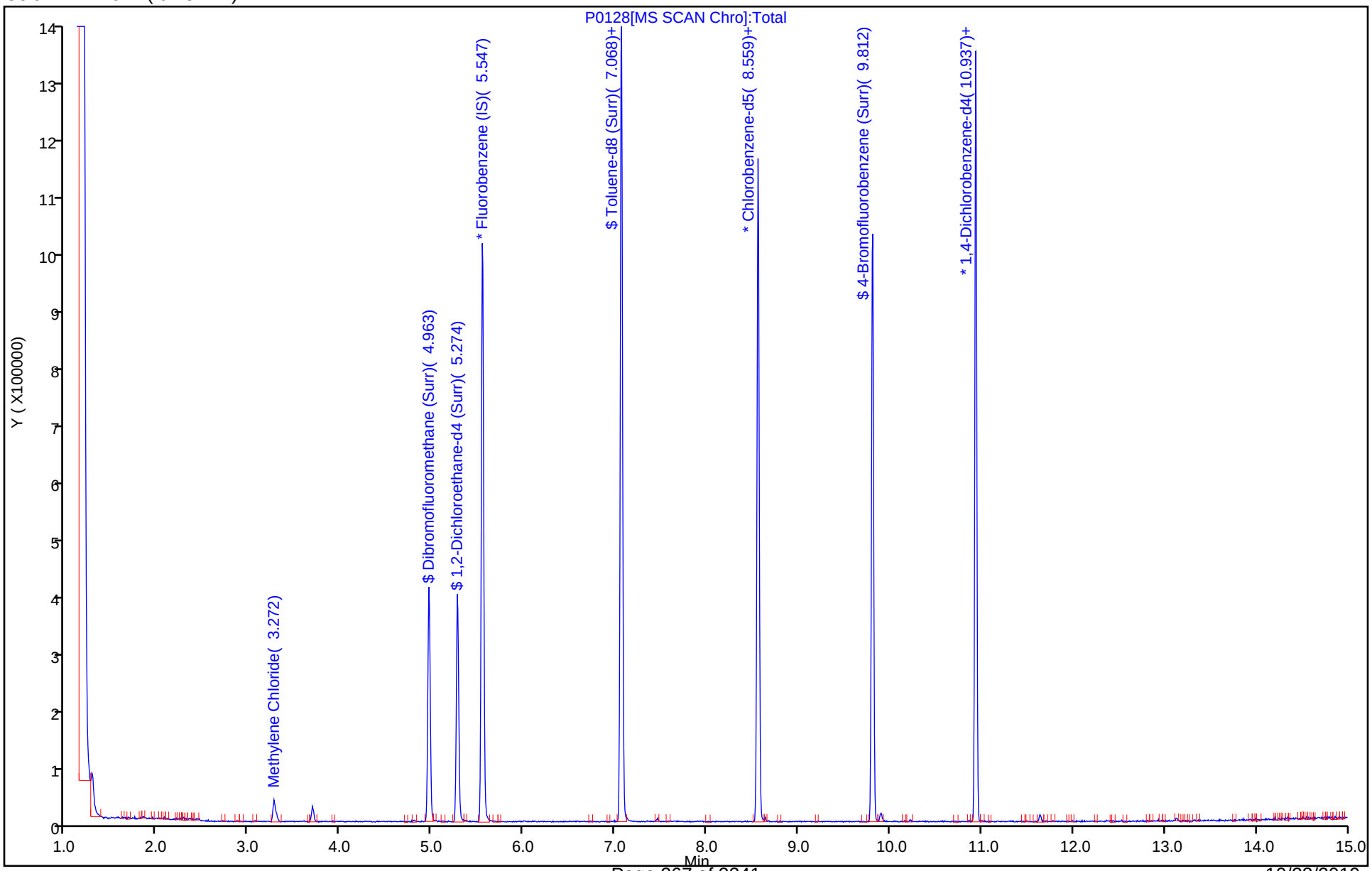
Report Date: 24-Sep-2019 17:11:25 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0128.D

Injection Date:	24-Sep-2019 13:29:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-25-A	Lab Sample ID:	480-159547-25	Worklist Smp#:	9
Client ID:	GERNATT-CF-GRAB 5				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 6 Lab Sample ID: 480-159547-26

Matrix: Solid Lab File ID: P0129.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:45

Sample wt/vol: 5.11(g) Date Analyzed: 09/24/2019 13:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.5 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.3	0.38
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.41
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.74
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	26	1.9
67-64-1	Acetone	ND	vs	26	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.51
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.36
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.42
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.89
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 6 Lab Sample ID: 480-159547-26

Matrix: Solid Lab File ID: P0129.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:45

Sample wt/vol: 5.11(g) Date Analyzed: 09/24/2019 13:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.5 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		64-126
460-00-4	4-Bromofluorobenzene (Surr)	95		72-126
2037-26-5	Toluene-d8 (Surr)	90		71-125
1868-53-7	Dibromofluoromethane (Surr)	96		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0129.D
Lims ID: 480-159547-A-26-A
Client ID: GERNATT-CF-GRAB 6
Sample Type: Client
Inject. Date: 24-Sep-2019 13:53:30 ALS Bottle#: 3 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-26-A
Misc. Info.: 480-0084410-010
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:11:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	173402	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	376844	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	374167	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	213481	48.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	98	118474	49.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	833394	44.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	276730	47.3	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.278	3.266	0.012	97	17845	0.3734	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

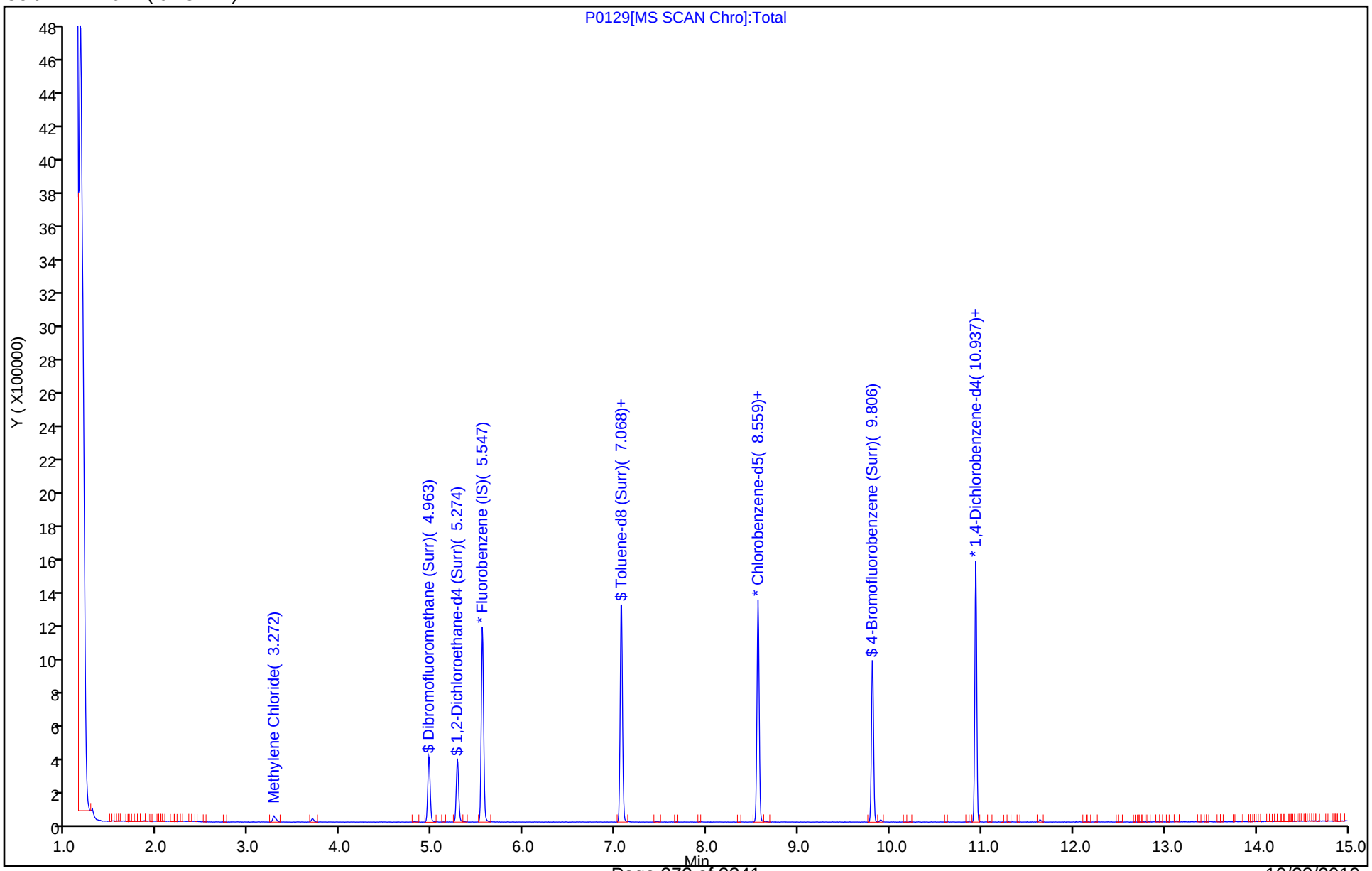
Report Date: 24-Sep-2019 17:11:40 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0129.D

Injection Date:	24-Sep-2019 13:53:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-26-A	Lab Sample ID:	480-159547-26	Worklist Smp#:	10
Client ID:	GERNATT-CF-GRAB 6				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 7 Lab Sample ID: 480-159547-27

Matrix: Solid Lab File ID: P0130.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:46

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 14:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.9 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.3	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.75
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	27	1.9
67-64-1	Acetone	ND	vs	27	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.52
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.89
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 7 Lab Sample ID: 480-159547-27

Matrix: Solid Lab File ID: P0130.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:46

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 14:18

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 7.9 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	123		64-126
460-00-4	4-Bromofluorobenzene (Surr)	118		72-126
2037-26-5	Toluene-d8 (Surr)	110		71-125
1868-53-7	Dibromofluoromethane (Surr)	117		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0130.D
Lims ID: 480-159547-A-27-A
Client ID: GERNATT-CF-GRAB 7
Sample Type: Client
Inject. Date: 24-Sep-2019 14:18:30 ALS Bottle#: 4 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-27-A
Misc. Info.: 480-0084410-011
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:11:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	141134	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	305394	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	306313	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	211242	58.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.274	-0.001	99	118734	61.3	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	94	825457	54.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	279540	58.9	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.272	3.266	0.006	98	19098	1.65	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

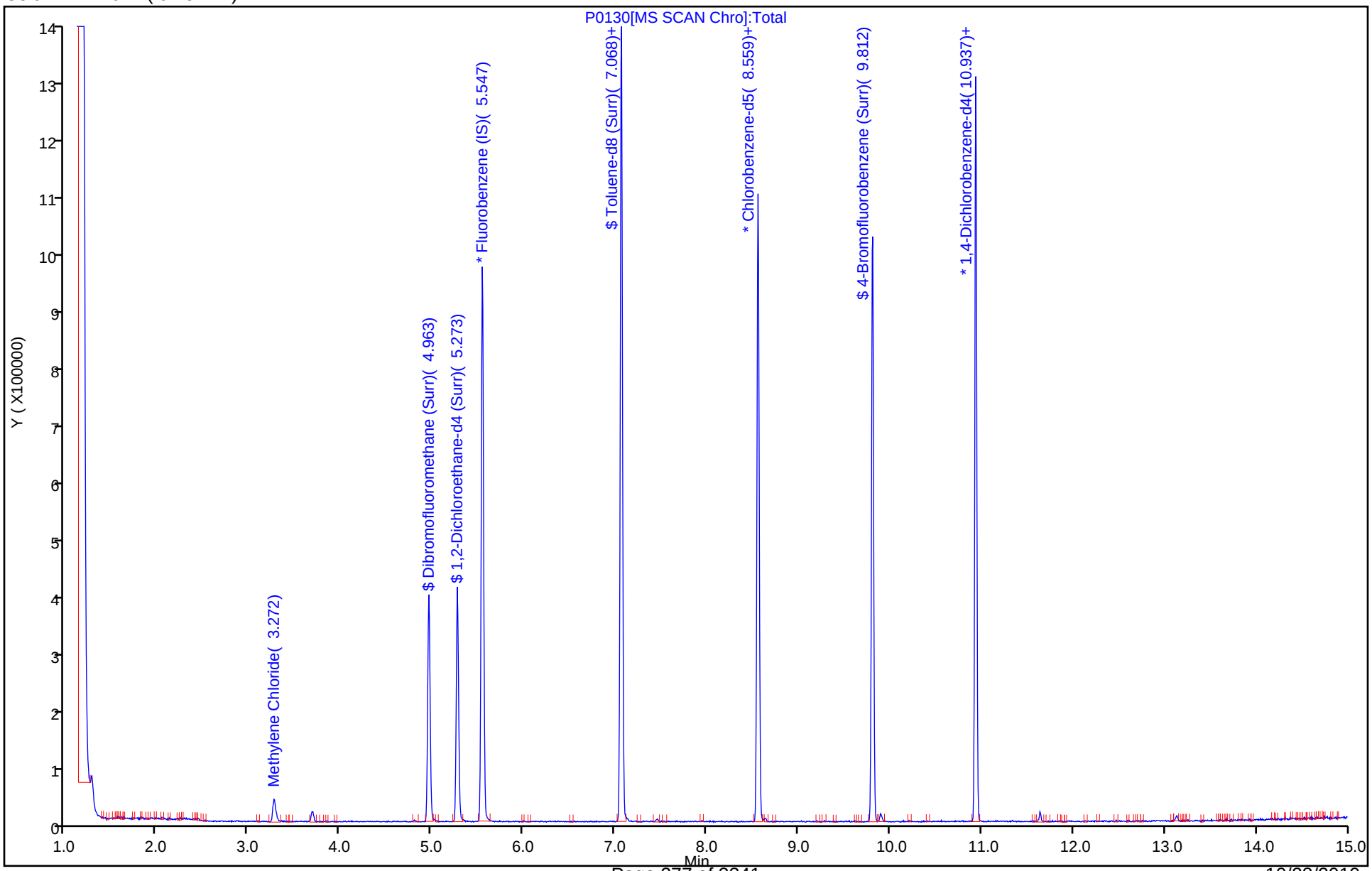
Report Date: 24-Sep-2019 17:11:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0130.D

Injection Date:	24-Sep-2019 14:18:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-27-A	Lab Sample ID:	480-159547-27	Worklist Smp#:	11
Client ID:	GERNATT-CF-GRAB 7				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 8 Lab Sample ID: 480-159547-28

Matrix: Solid Lab File ID: P0131.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:47

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 14:42

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.8 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.3	0.38
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.64
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.64
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.41
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.26
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.74
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	26	1.9
67-64-1	Acetone	ND	vs	26	4.4
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.51
108-90-7	Chlorobenzene	ND	vs	5.3	0.69
67-66-3	Chloroform	ND	vs	5.3	0.32
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.67
100-41-4	Ethylbenzene	ND	vs	5.3	0.36
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.4
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.42
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.71
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.54
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.64
1330-20-7	Xylenes, Total	ND	vs	11	0.88
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 8 Lab Sample ID: 480-159547-28

Matrix: Solid Lab File ID: P0131.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:47

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 14:42

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.8 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		64-126
460-00-4	4-Bromofluorobenzene (Surr)	94		72-126
2037-26-5	Toluene-d8 (Surr)	91		71-125
1868-53-7	Dibromofluoromethane (Surr)	93		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0131.D
Lims ID: 480-159547-A-28-A
Client ID: GERNATT-CF-GRAB 8
Sample Type: Client
Inject. Date: 24-Sep-2019 14:42:30 ALS Bottle#: 5 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-28-A
Misc. Info.: 480-0084410-012
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:12:06

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	175179	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	371219	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	376152	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	92	209638	46.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	99	118636	49.4	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	831863	45.5	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	269723	46.8	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.266				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

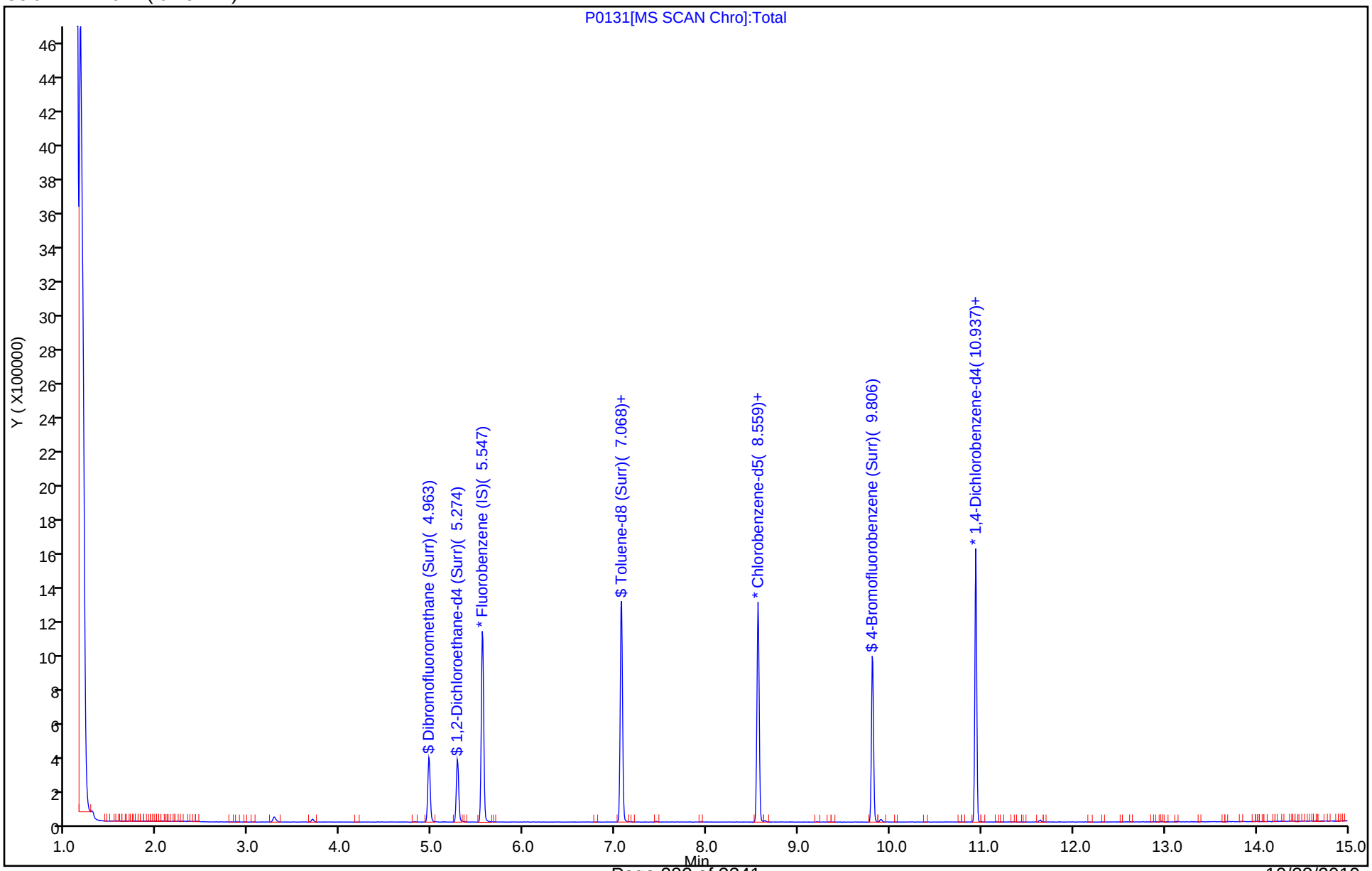
Report Date: 24-Sep-2019 17:12:06 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0131.D

Injection Date:	24-Sep-2019 14:42:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-28-A	Lab Sample ID:	480-159547-28	Worklist Smp#:	12
Client ID:	GERNATT-CF-GRAB 8				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 9 Lab Sample ID: 480-159547-29

Matrix: Solid Lab File ID: P0132.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:48

Sample wt/vol: 5.02(g) Date Analyzed: 09/24/2019 15:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.3	0.39
75-34-3	1,1-Dichloroethane	ND	vs	5.3	0.65
75-35-4	1,1-Dichloroethene	ND	vs	5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.3	1.0
95-50-1	1,2-Dichlorobenzene	ND	vs	5.3	0.42
107-06-2	1,2-Dichloroethane	ND	vs	5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.3	0.34
541-73-1	1,3-Dichlorobenzene	ND	vs	5.3	0.27
106-46-7	1,4-Dichlorobenzene	ND	vs	5.3	0.75
123-91-1	1,4-Dioxane	ND	vs	110	23
78-93-3	2-Butanone (MEK)	ND	vs	27	2.0
67-64-1	Acetone	ND	vs	27	4.5
71-43-2	Benzene	ND	vs	5.3	0.26
56-23-5	Carbon tetrachloride	ND	vs	5.3	0.52
108-90-7	Chlorobenzene	ND	vs	5.3	0.70
67-66-3	Chloroform	ND	vs	5.3	0.33
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.3	0.68
100-41-4	Ethylbenzene	ND	vs	5.3	0.37
1634-04-4	Methyl tert-butyl ether	ND	vs	5.3	0.52
75-09-2	Methylene Chloride	ND	vs	5.3	2.5
104-51-8	n-Butylbenzene	ND	vs	5.3	0.46
103-65-1	N-Propylbenzene	ND	vs	5.3	0.43
135-98-8	sec-Butylbenzene	ND	vs	5.3	0.46
127-18-4	Tetrachloroethene	ND	vs	5.3	0.72
108-88-3	Toluene	ND	vs	5.3	0.40
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.3	0.55
79-01-6	Trichloroethene	ND	vs	5.3	1.2
75-01-4	Vinyl chloride	ND	vs	5.3	0.65
1330-20-7	Xylenes, Total	ND	vs	11	0.90
98-06-6	tert-Butylbenzene	ND	vs	5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 9 Lab Sample ID: 480-159547-29

Matrix: Solid Lab File ID: P0132.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:48

Sample wt/vol: 5.02(g) Date Analyzed: 09/24/2019 15:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 6.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	118		64-126
460-00-4	4-Bromofluorobenzene (Surr)	118		72-126
2037-26-5	Toluene-d8 (Surr)	111		71-125
1868-53-7	Dibromofluoromethane (Surr)	118		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0132.D
Lims ID: 480-159547-A-29-A
Client ID: GERNATT-CF-GRAB 9
Sample Type: Client
Inject. Date: 24-Sep-2019 15:07:30 ALS Bottle#: 6 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-29-A
Misc. Info.: 480-0084410-013
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:12:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	139054	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	302115	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	304425	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	210234	59.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	98	113019	59.2	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	825154	55.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	275747	58.8	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.278	3.266	0.012	97	16719	1.05	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

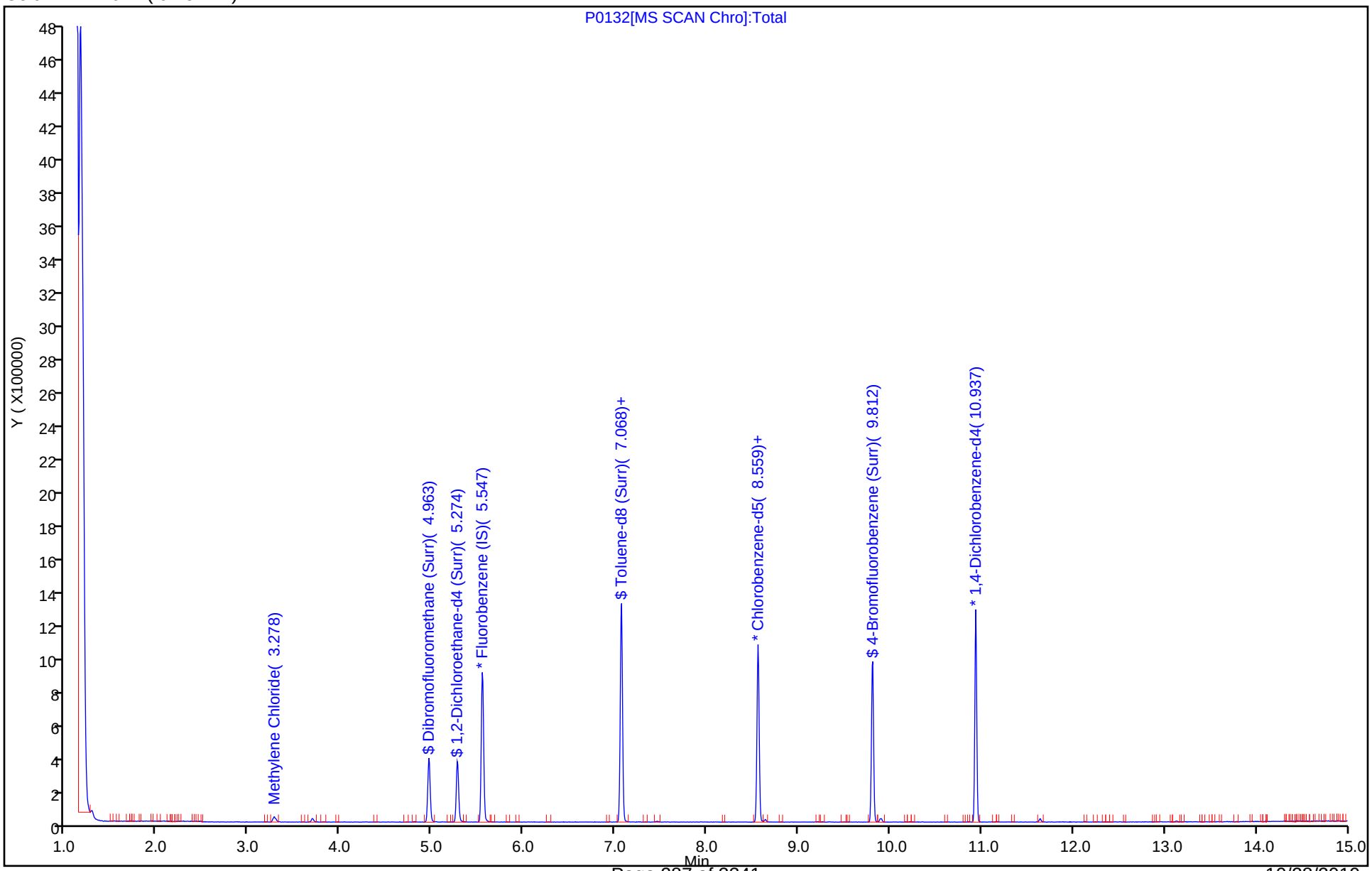
Report Date: 24-Sep-2019 17:12:21 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0132.D

Injection Date:	24-Sep-2019 15:07:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-29-A	Lab Sample ID:	480-159547-29	Worklist Smp#:	13
Client ID:	GERNATT-CF-GRAB 9				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 1 Lab Sample ID: 480-159547-33

Matrix: Solid Lab File ID: P0133.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:15

Sample wt/vol: 5.08(g) Date Analyzed: 09/24/2019 15:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.6	0.40
75-34-3	1,1-Dichloroethane	ND	vs	5.6	0.68
75-35-4	1,1-Dichloroethene	ND	vs	5.6	0.68
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.6	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.6	0.44
107-06-2	1,2-Dichloroethane	ND	vs	5.6	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.6	0.36
541-73-1	1,3-Dichlorobenzene	ND	vs	5.6	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.6	0.78
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.0
67-64-1	Acetone	ND	vs	28	4.7
71-43-2	Benzene	ND	vs	5.6	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.6	0.54
108-90-7	Chlorobenzene	ND	vs	5.6	0.74
67-66-3	Chloroform	ND	vs	5.6	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.6	0.71
100-41-4	Ethylbenzene	ND	vs	5.6	0.38
1634-04-4	Methyl tert-butyl ether	ND	vs	5.6	0.55
75-09-2	Methylene Chloride	ND	vs	5.6	2.6
104-51-8	n-Butylbenzene	ND	vs	5.6	0.48
103-65-1	N-Propylbenzene	ND	vs	5.6	0.45
135-98-8	sec-Butylbenzene	ND	vs	5.6	0.48
127-18-4	Tetrachloroethene	ND	vs	5.6	0.75
108-88-3	Toluene	ND	vs	5.6	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.6	0.57
79-01-6	Trichloroethene	ND	vs	5.6	1.2
75-01-4	Vinyl chloride	ND	vs	5.6	0.68
1330-20-7	Xylenes, Total	ND	vs	11	0.94
98-06-6	tert-Butylbenzene	ND	vs	5.6	0.58

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 1 Lab Sample ID: 480-159547-33

Matrix: Solid Lab File ID: P0133.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:15

Sample wt/vol: 5.08(g) Date Analyzed: 09/24/2019 15:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		64-126
460-00-4	4-Bromofluorobenzene (Surr)	94		72-126
2037-26-5	Toluene-d8 (Surr)	89		71-125
1868-53-7	Dibromofluoromethane (Surr)	93		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0133.D
Lims ID: 480-159547-A-33-A
Client ID: GERNATT-TS-GRAB 1
Sample Type: Client
Inject. Date: 24-Sep-2019 15:31:30 ALS Bottle#: 7 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-33-A
Misc. Info.: 480-0084410-014
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:12:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	166645	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	352237	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	355353	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	198532	46.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	99	113494	49.6	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	772561	44.5	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	258507	47.2	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.266				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

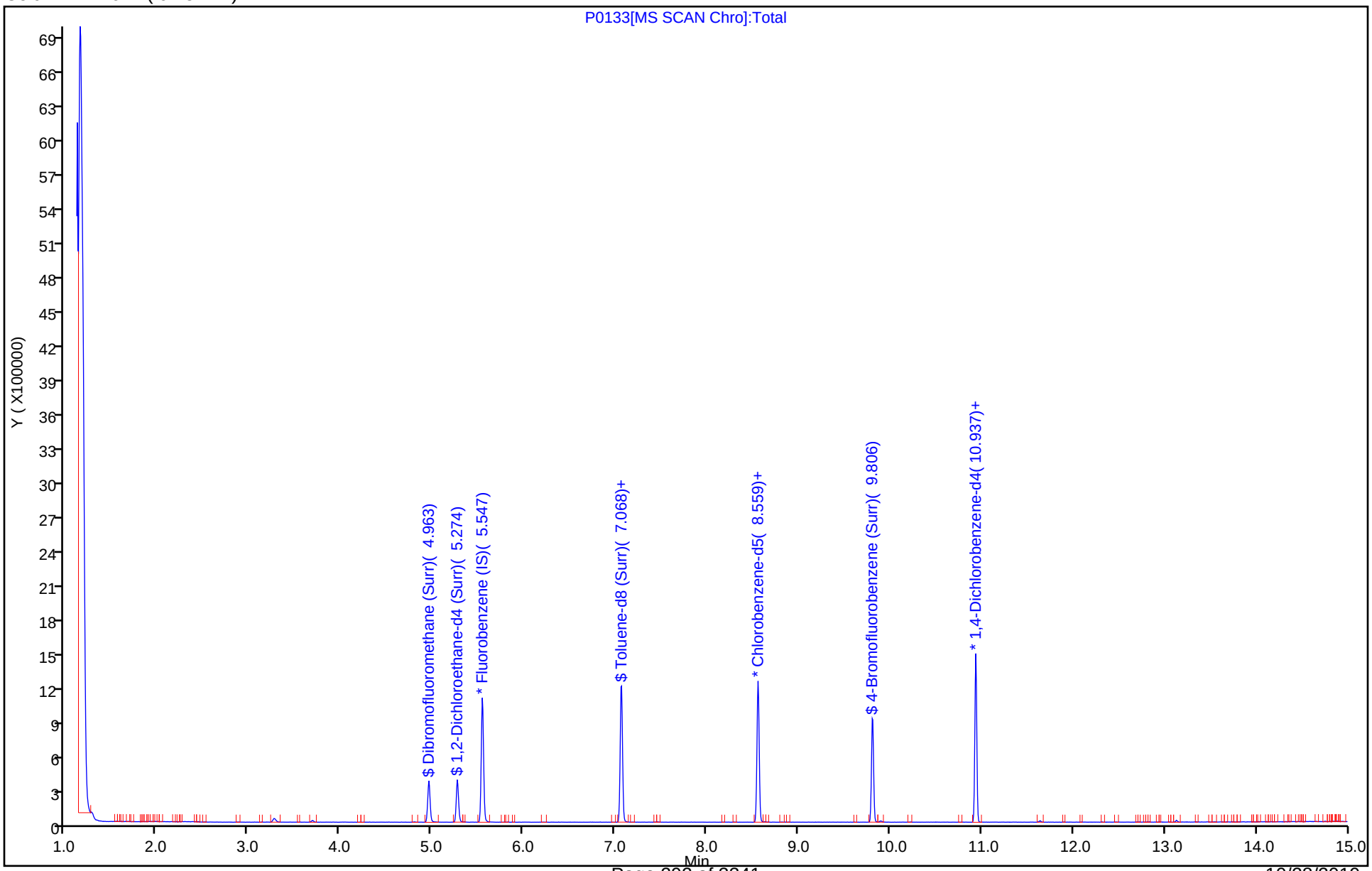
Report Date: 24-Sep-2019 17:12:33 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0133.D

Injection Date:	24-Sep-2019 15:31:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-33-A	Lab Sample ID:	480-159547-33	Worklist Smp#:	14
Client ID:	GERNATT-TS-GRAB 1				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 2 Lab Sample ID: 480-159547-34

Matrix: Solid Lab File ID: P0134.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:16

Sample wt/vol: 5.09(g) Date Analyzed: 09/24/2019 15:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 12.0 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.6	0.41
75-34-3	1,1-Dichloroethane	ND	vs	5.6	0.68
75-35-4	1,1-Dichloroethene	ND	vs	5.6	0.68
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.6	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.6	0.44
107-06-2	1,2-Dichloroethane	ND	vs	5.6	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.6	0.36
541-73-1	1,3-Dichlorobenzene	ND	vs	5.6	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.6	0.78
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.0
67-64-1	Acetone	ND	vs	28	4.7
71-43-2	Benzene	ND	vs	5.6	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.6	0.54
108-90-7	Chlorobenzene	ND	vs	5.6	0.74
67-66-3	Chloroform	ND	vs	5.6	0.35
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.6	0.71
100-41-4	Ethylbenzene	ND	vs	5.6	0.39
1634-04-4	Methyl tert-butyl ether	ND	vs	5.6	0.55
75-09-2	Methylene Chloride	ND	vs	5.6	2.6
104-51-8	n-Butylbenzene	ND	vs	5.6	0.49
103-65-1	N-Propylbenzene	ND	vs	5.6	0.45
135-98-8	sec-Butylbenzene	ND	vs	5.6	0.49
127-18-4	Tetrachloroethene	ND	vs	5.6	0.75
108-88-3	Toluene	ND	vs	5.6	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.6	0.58
79-01-6	Trichloroethene	ND	vs	5.6	1.2
75-01-4	Vinyl chloride	ND	vs	5.6	0.68
1330-20-7	Xylenes, Total	ND	vs	11	0.94
98-06-6	tert-Butylbenzene	ND	vs	5.6	0.58

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 2 Lab Sample ID: 480-159547-34

Matrix: Solid Lab File ID: P0134.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:16

Sample wt/vol: 5.09(g) Date Analyzed: 09/24/2019 15:55

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 12.0 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	127	X	64-126
460-00-4	4-Bromofluorobenzene (Surr)	117		72-126
2037-26-5	Toluene-d8 (Surr)	113		71-125
1868-53-7	Dibromofluoromethane (Surr)	120		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0134.D
Lims ID: 480-159547-A-34-A
Client ID: GERNATT-TS-GRAB 2
Sample Type: Client
Inject. Date: 24-Sep-2019 15:55:30 ALS Bottle#: 8 Worklist Smp#: 15
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-34-A
Misc. Info.: 480-0084410-015
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:12:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	134408	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	292983	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	299702	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	207232	60.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	98	117484	63.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	811831	56.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	265526	58.3	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.284	3.266	0.018	94	16131	1.05	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

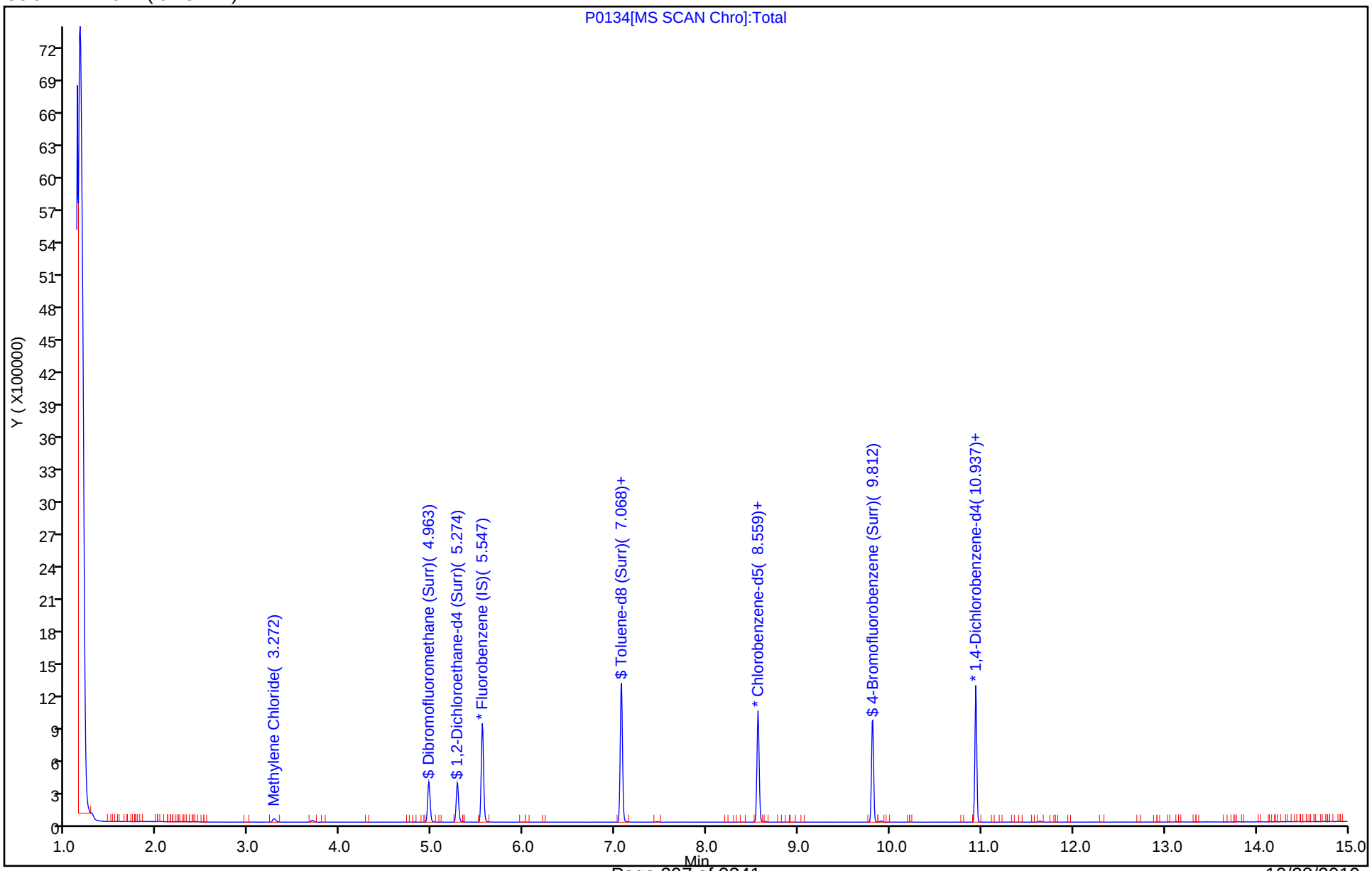
Report Date: 24-Sep-2019 17:12:46 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0134.D

Injection Date:	24-Sep-2019 15:55:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-34-A	Lab Sample ID:	480-159547-34	Worklist Smp#:	15
Client ID:	GERNATT-TS-GRAB 2				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 3 Lab Sample ID: 480-159547-35

Matrix: Solid Lab File ID: P0135.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:17

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 16:20

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 12.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.6	0.41
75-34-3	1,1-Dichloroethane	ND	vs	5.6	0.69
75-35-4	1,1-Dichloroethene	ND	vs	5.6	0.69
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.6	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.6	0.44
107-06-2	1,2-Dichloroethane	ND	vs	5.6	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.6	0.36
541-73-1	1,3-Dichlorobenzene	ND	vs	5.6	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.6	0.79
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.1
67-64-1	Acetone	ND	vs	28	4.7
71-43-2	Benzene	ND	vs	5.6	0.28
56-23-5	Carbon tetrachloride	ND	vs	5.6	0.54
108-90-7	Chlorobenzene	ND	vs	5.6	0.74
67-66-3	Chloroform	ND	vs	5.6	0.35
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.6	0.72
100-41-4	Ethylbenzene	ND	vs	5.6	0.39
1634-04-4	Methyl tert-butyl ether	ND	vs	5.6	0.55
75-09-2	Methylene Chloride	ND	vs	5.6	2.6
104-51-8	n-Butylbenzene	ND	vs	5.6	0.49
103-65-1	N-Propylbenzene	ND	vs	5.6	0.45
135-98-8	sec-Butylbenzene	ND	vs	5.6	0.49
127-18-4	Tetrachloroethene	ND	vs	5.6	0.75
108-88-3	Toluene	ND	vs	5.6	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.6	0.58
79-01-6	Trichloroethene	ND	vs	5.6	1.2
75-01-4	Vinyl chloride	ND	vs	5.6	0.69
1330-20-7	Xylenes, Total	ND	vs	11	0.94
98-06-6	tert-Butylbenzene	ND	vs	5.6	0.58

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 3 Lab Sample ID: 480-159547-35

Matrix: Solid Lab File ID: P0135.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:17

Sample wt/vol: 5.1(g) Date Analyzed: 09/24/2019 16:20

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 12.7 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		64-126
460-00-4	4-Bromofluorobenzene (Surr)	93		72-126
2037-26-5	Toluene-d8 (Surr)	89		71-125
1868-53-7	Dibromofluoromethane (Surr)	94		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0135.D
Lims ID: 480-159547-A-35-A
Client ID: GERNATT-TS-GRAB 3
Sample Type: Client
Inject. Date: 24-Sep-2019 16:20:30 ALS Bottle#: 9 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-35-A
Misc. Info.: 480-0084410-016
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 14:55:34 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:13:00

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	174007	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	373142	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	374305	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	210348	47.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.280	5.274	0.006	99	119632	50.1	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	816285	44.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	270502	46.7	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.278	3.266	0.012	97	18729	0.5591	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

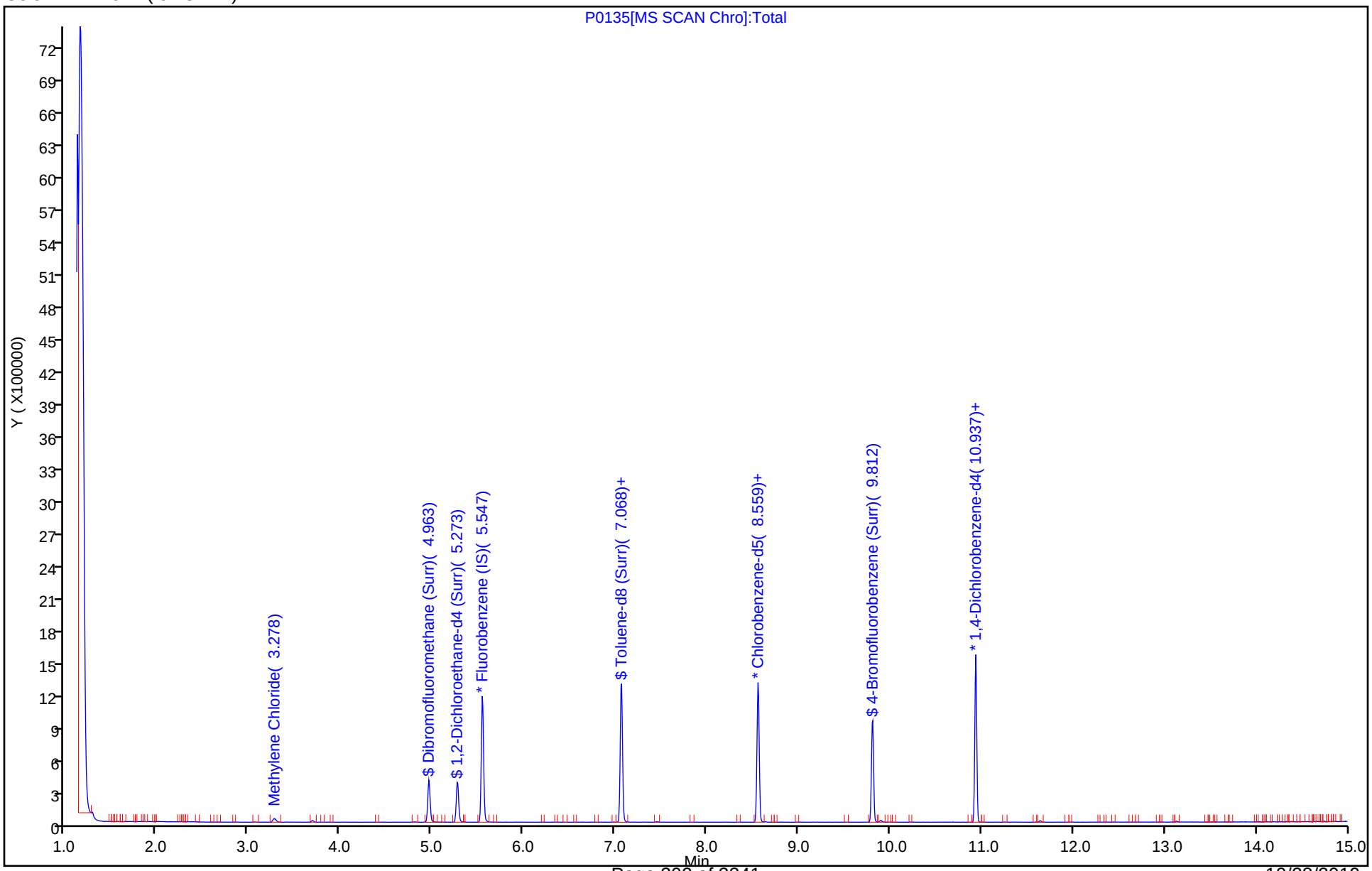
Report Date: 24-Sep-2019 17:13:00 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0135.D

Injection Date:	24-Sep-2019 16:20:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-35-A	Lab Sample ID:	480-159547-35	Worklist Smp#:	16
Client ID:	GERNATT-TS-GRAB 3				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 4 Lab Sample ID: 480-159547-36

Matrix: Solid Lab File ID: P0136.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:18

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 16:44

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.3 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.5	0.40
75-34-3	1,1-Dichloroethane	ND	vs	5.5	0.67
75-35-4	1,1-Dichloroethene	ND	vs	5.5	0.67
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.5	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.5	0.43
107-06-2	1,2-Dichloroethane	ND	vs	5.5	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.5	0.35
541-73-1	1,3-Dichlorobenzene	ND	vs	5.5	0.28
106-46-7	1,4-Dichlorobenzene	ND	vs	5.5	0.77
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.0
67-64-1	Acetone	ND	vs	28	4.6
71-43-2	Benzene	ND	vs	5.5	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.5	0.53
108-90-7	Chlorobenzene	ND	vs	5.5	0.73
67-66-3	Chloroform	ND	vs	5.5	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.5	0.71
100-41-4	Ethylbenzene	ND	vs	5.5	0.38
1634-04-4	Methyl tert-butyl ether	ND	vs	5.5	0.54
75-09-2	Methylene Chloride	ND	vs	5.5	2.5
104-51-8	n-Butylbenzene	ND	vs	5.5	0.48
103-65-1	N-Propylbenzene	ND	vs	5.5	0.44
135-98-8	sec-Butylbenzene	ND	vs	5.5	0.48
127-18-4	Tetrachloroethene	ND	vs	5.5	0.74
108-88-3	Toluene	ND	vs	5.5	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.5	0.57
79-01-6	Trichloroethene	ND	vs	5.5	1.2
75-01-4	Vinyl chloride	ND	vs	5.5	0.67
1330-20-7	Xylenes, Total	ND	vs	11	0.93
98-06-6	tert-Butylbenzene	ND	vs	5.5	0.57

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 4 Lab Sample ID: 480-159547-36

Matrix: Solid Lab File ID: P0136.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:18

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 16:44

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 9.3 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	130	X	64-126
460-00-4	4-Bromofluorobenzene (Surr)	116		72-126
2037-26-5	Toluene-d8 (Surr)	113		71-125
1868-53-7	Dibromofluoromethane (Surr)	124		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0136.D
Lims ID: 480-159547-A-36-A
Client ID: GERNATT-TS-GRAB 4
Sample Type: Client
Inject. Date: 24-Sep-2019 16:44:30 ALS Bottle#: 10 Worklist Smp#: 17
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-36-A
Misc. Info.: 480-0084410-017
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 17:14:02 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 17:14:02

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	132117	50.0	
* 2 Chlorobenzene-d5	82	8.558	8.559	-0.001	88	293553	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	290214	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	209863	62.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.279	5.274	0.005	98	117682	64.9	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	94	813574	56.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	265330	58.2	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.284	3.266	0.018	96	15936	1.07	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

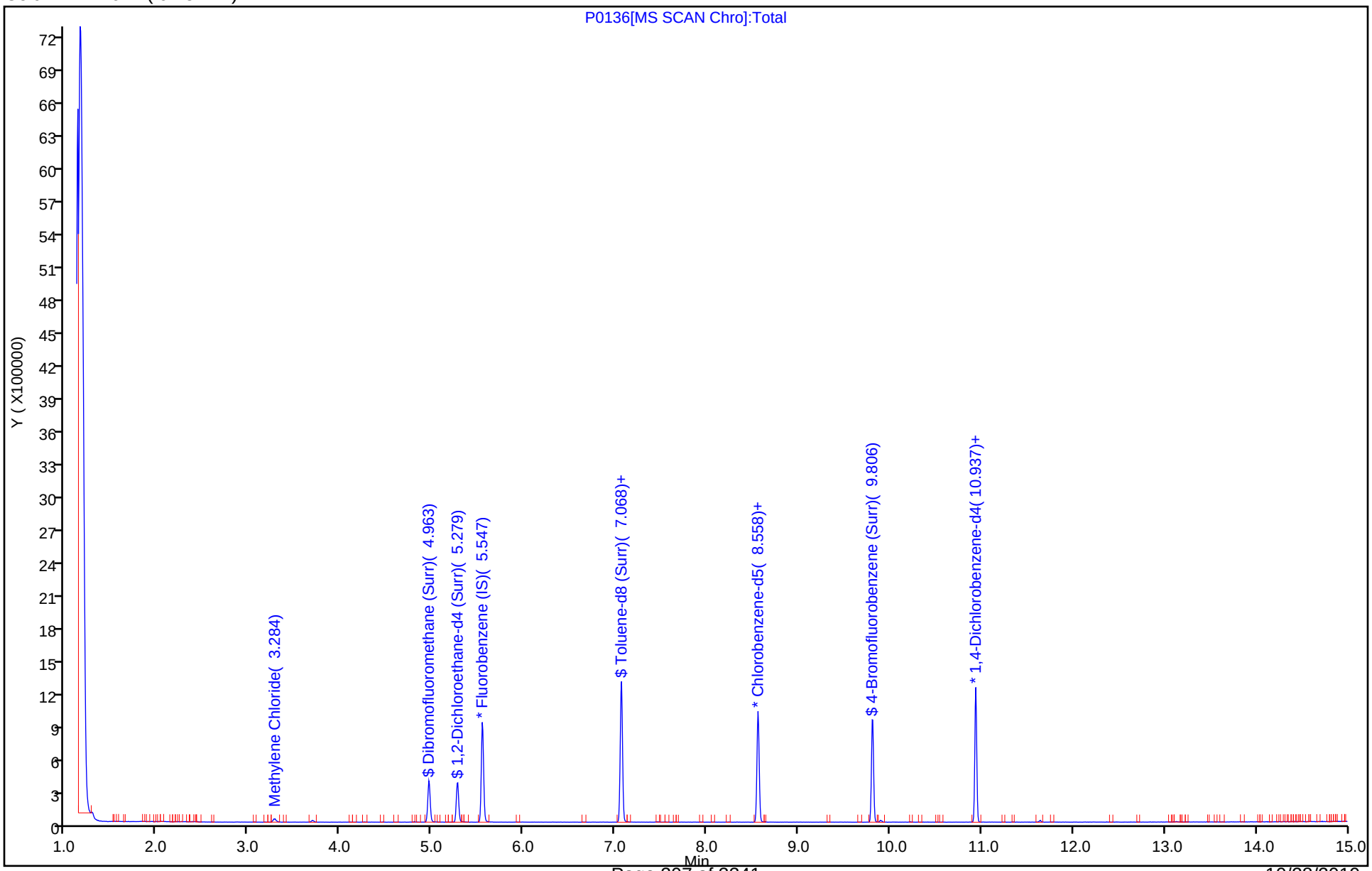
Report Date: 24-Sep-2019 17:14:02 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0136.D

Injection Date:	24-Sep-2019 16:44:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-36-A	Lab Sample ID:	480-159547-36	Worklist Smp#:	17
Client ID:	GERNATT-TS-GRAB 4				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 5 Lab Sample ID: 480-159547-37

Matrix: Solid Lab File ID: P0137.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:19

Sample wt/vol: 5.03(g) Date Analyzed: 09/24/2019 17:09

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.6 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.6	0.41
75-34-3	1,1-Dichloroethane	ND	vs	5.6	0.69
75-35-4	1,1-Dichloroethene	ND	vs	5.6	0.69
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.6	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.6	0.44
107-06-2	1,2-Dichloroethane	ND	vs	5.6	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.6	0.36
541-73-1	1,3-Dichlorobenzene	ND	vs	5.6	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.6	0.79
123-91-1	1,4-Dioxane	ND	vs	110	25
78-93-3	2-Butanone (MEK)	ND	vs	28	2.1
67-64-1	Acetone	ND	vs	28	4.7
71-43-2	Benzene	ND	vs	5.6	0.28
56-23-5	Carbon tetrachloride	ND	vs	5.6	0.54
108-90-7	Chlorobenzene	ND	vs	5.6	0.74
67-66-3	Chloroform	ND	vs	5.6	0.35
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.6	0.72
100-41-4	Ethylbenzene	ND	vs	5.6	0.39
1634-04-4	Methyl tert-butyl ether	ND	vs	5.6	0.55
75-09-2	Methylene Chloride	ND	vs	5.6	2.6
104-51-8	n-Butylbenzene	ND	vs	5.6	0.49
103-65-1	N-Propylbenzene	ND	vs	5.6	0.45
135-98-8	sec-Butylbenzene	ND	vs	5.6	0.49
127-18-4	Tetrachloroethene	ND	vs	5.6	0.75
108-88-3	Toluene	ND	vs	5.6	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.6	0.58
79-01-6	Trichloroethene	ND	vs	5.6	1.2
75-01-4	Vinyl chloride	ND	vs	5.6	0.69
1330-20-7	Xylenes, Total	ND	vs	11	0.94
98-06-6	tert-Butylbenzene	ND	vs	5.6	0.58

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 5 Lab Sample ID: 480-159547-37

Matrix: Solid Lab File ID: P0137.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:19

Sample wt/vol: 5.03(g) Date Analyzed: 09/24/2019 17:09

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.6 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		64-126
460-00-4	4-Bromofluorobenzene (Surr)	92		72-126
2037-26-5	Toluene-d8 (Surr)	89		71-125
1868-53-7	Dibromofluoromethane (Surr)	94		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0137.D
Lims ID: 480-159547-A-37-A
Client ID: GERNATT-TS-GRAB 5
Sample Type: Client
Inject. Date: 24-Sep-2019 17:09:30 ALS Bottle#: 11 Worklist Smp#: 18
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-37-A
Misc. Info.: 480-0084410-018
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 17:48:09 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 09:23:13

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	170348	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	371724	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	380449	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	205974	47.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	99	118429	50.7	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	811580	44.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	265840	46.0	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84		3.266				ND	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

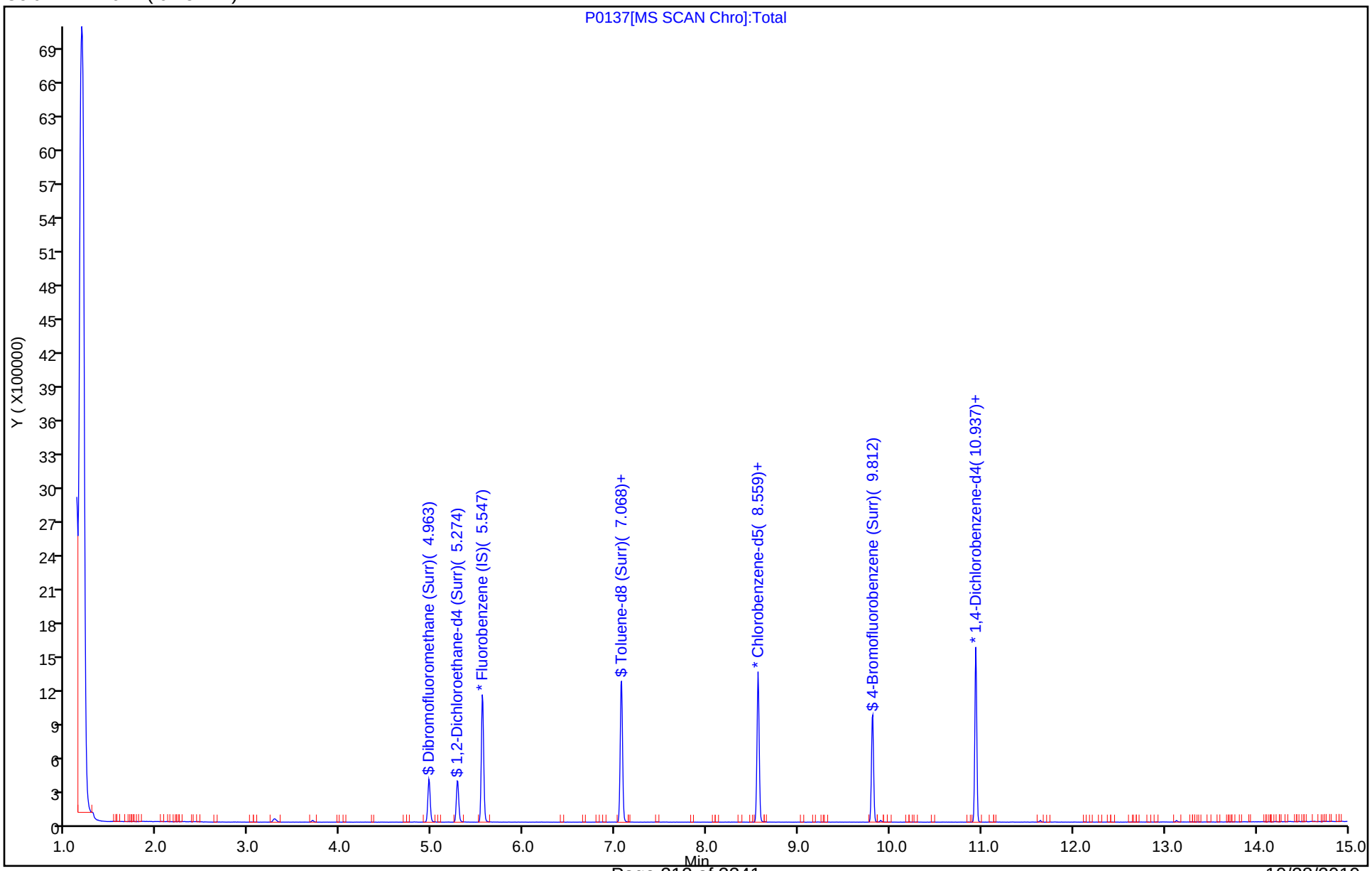
Report Date: 25-Sep-2019 09:23:13 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0137.D

Injection Date:	24-Sep-2019 17:09:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-37-A	Lab Sample ID:	480-159547-37	Worklist Smp#:	18
Client ID:	GERNATT-TS-GRAB 5				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 6 Lab Sample ID: 480-159547-38

Matrix: Solid Lab File ID: P0138.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:20

Sample wt/vol: 5.03(g) Date Analyzed: 09/24/2019 17:34

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.0 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND	vs	5.6	0.41
75-34-3	1,1-Dichloroethane	ND	vs	5.6	0.68
75-35-4	1,1-Dichloroethene	ND	vs	5.6	0.68
95-63-6	1,2,4-Trimethylbenzene	ND	vs	5.6	1.1
95-50-1	1,2-Dichlorobenzene	ND	vs	5.6	0.44
107-06-2	1,2-Dichloroethane	ND	vs	5.6	0.28
108-67-8	1,3,5-Trimethylbenzene	ND	vs	5.6	0.36
541-73-1	1,3-Dichlorobenzene	ND	vs	5.6	0.29
106-46-7	1,4-Dichlorobenzene	ND	vs	5.6	0.78
123-91-1	1,4-Dioxane	ND	vs	110	24
78-93-3	2-Butanone (MEK)	ND	vs	28	2.0
67-64-1	Acetone	ND	vs	28	4.7
71-43-2	Benzene	ND	vs	5.6	0.27
56-23-5	Carbon tetrachloride	ND	vs	5.6	0.54
108-90-7	Chlorobenzene	ND	vs	5.6	0.74
67-66-3	Chloroform	ND	vs	5.6	0.34
156-59-2	cis-1,2-Dichloroethene	ND	vs	5.6	0.71
100-41-4	Ethylbenzene	ND	vs	5.6	0.39
1634-04-4	Methyl tert-butyl ether	ND	vs	5.6	0.55
75-09-2	Methylene Chloride	ND	vs	5.6	2.6
104-51-8	n-Butylbenzene	ND	vs	5.6	0.49
103-65-1	N-Propylbenzene	ND	vs	5.6	0.45
135-98-8	sec-Butylbenzene	ND	vs	5.6	0.49
127-18-4	Tetrachloroethene	ND	vs	5.6	0.75
108-88-3	Toluene	ND	vs	5.6	0.42
156-60-5	trans-1,2-Dichloroethene	ND	vs	5.6	0.58
79-01-6	Trichloroethene	ND	vs	5.6	1.2
75-01-4	Vinyl chloride	ND	vs	5.6	0.68
1330-20-7	Xylenes, Total	ND	vs	11	0.94
98-06-6	tert-Butylbenzene	ND	vs	5.6	0.58

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-GRAB 6 Lab Sample ID: 480-159547-38

Matrix: Solid Lab File ID: P0138.D

Analysis Method: 8260C Date Collected: 09/16/2019 14:20

Sample wt/vol: 5.03(g) Date Analyzed: 09/24/2019 17:34

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: 11.0 Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	135	X	64-126
460-00-4	4-Bromofluorobenzene (Surr)	123		72-126
2037-26-5	Toluene-d8 (Surr)	116		71-125
1868-53-7	Dibromofluoromethane (Surr)	127		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0138.D
Lims ID: 480-159547-A-38-A
Client ID: GERNATT-TS-GRAB 6
Sample Type: Client
Inject. Date: 24-Sep-2019 17:34:30 ALS Bottle#: 12 Worklist Smp#: 19
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-38-A
Misc. Info.: 480-0084410-019
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 09:24:27 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 09:24:27

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.553	5.547	0.006	99	128014	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	-0.001	87	284301	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	293468	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.969	4.963	0.006	93	207688	63.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.279	5.274	0.005	98	118187	67.3	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	812533	58.0	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	271286	61.4	
17 Vinyl chloride	62		1.587				ND	
25 1,1-Dichloroethene	96		2.749				ND	
24 Acetone	43		2.864				ND	
31 Methylene Chloride	84	3.278	3.266	0.012	97	16317	1.34	
32 Methyl tert-butyl ether	73		3.479				ND	
35 trans-1,2-Dichloroethene	96		3.497				ND	
40 1,1-Dichloroethane	63		3.923				ND	
43 cis-1,2-Dichloroethene	96		4.489				ND	
44 2-Butanone (MEK)	43		4.525				ND	
49 Chloroform	83		4.805				ND	
52 1,1,1-Trichloroethane	97		4.915				ND	
55 Carbon tetrachloride	117		5.048				ND	
57 Benzene	78		5.274				ND	
60 1,2-Dichloroethane	62		5.347				ND	
62 Trichloroethene	95		5.888				ND	
68 1,4-Dioxane	88		6.277				ND	
76 Toluene	92		7.129				ND	
80 Tetrachloroethene	166		7.664				ND	
87 Chlorobenzene	112		8.589				ND	
89 Ethylbenzene	91		8.674				ND	
90 m-Xylene & p-Xylene	106		8.796				ND	
93 o-Xylene	106		9.228				ND	
99 N-Propylbenzene	91		10.031				ND	
102 1,3,5-Trimethylbenzene	105		10.207				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/L	Flags
106 tert-Butylbenzene	134		10.524				ND	
107 1,2,4-Trimethylbenzene	105		10.578				ND	
109 sec-Butylbenzene	105		10.730				ND	
110 1,3-Dichlorobenzene	146		10.870				ND	
111 1,4-Dichlorobenzene	146		10.962				ND	
115 n-Butylbenzene	91		11.254				ND	
116 1,2-Dichlorobenzene	146		11.308				ND	
S 126 Xylenes, Total	1		30.000				ND	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

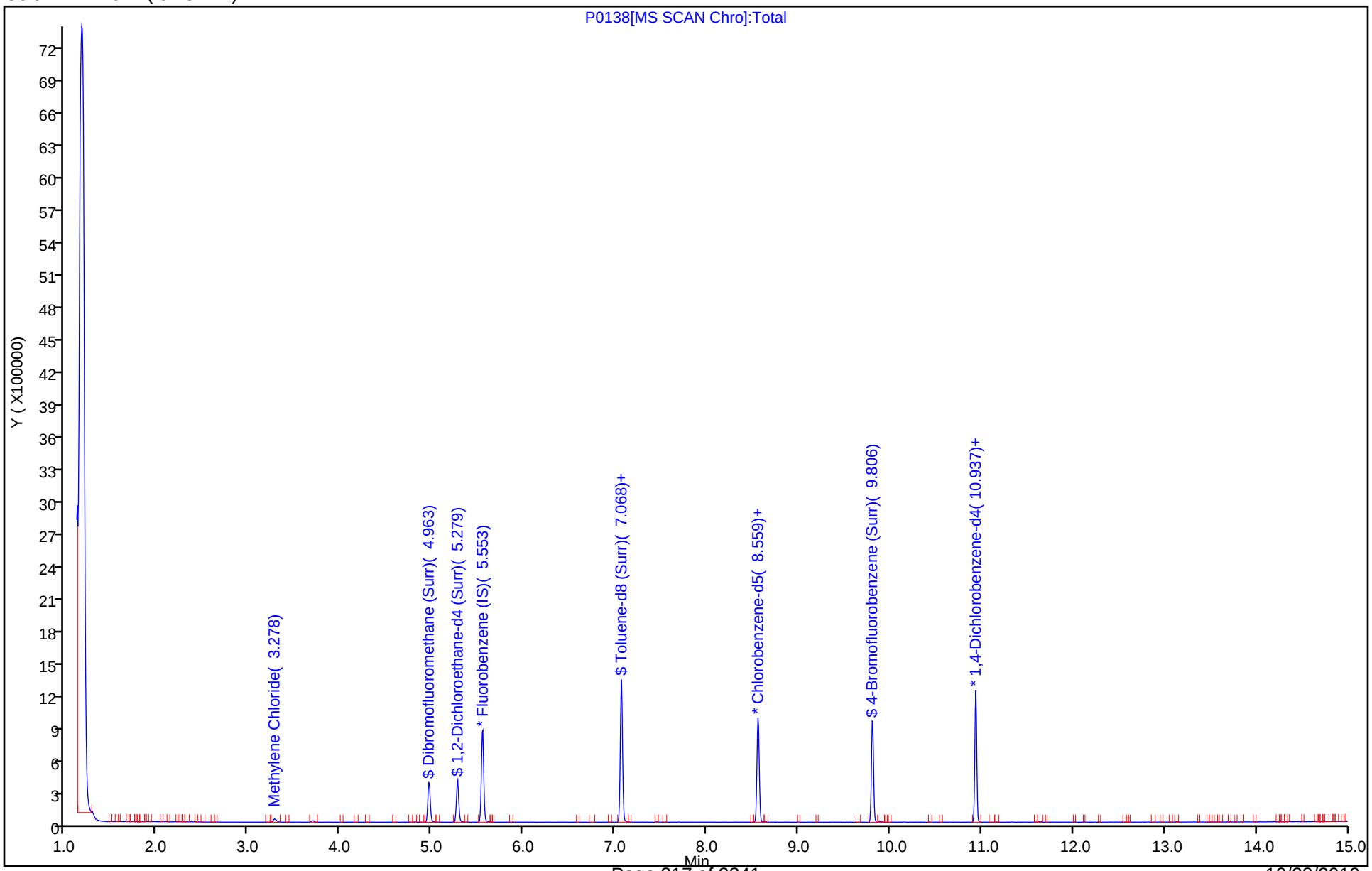
Report Date: 25-Sep-2019 09:24:28 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0138.D

Injection Date:	24-Sep-2019 17:34:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	480-159547-A-38-A	Lab Sample ID:	480-159547-38	Worklist Smp#:	19
Client ID:	GERNATT-TS-GRAB 6				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-489014/4	F1717.D
Level 2	IC 480-489014/5	F1718.D
Level 3	IC 480-489014/6	F1719.D
Level 4	IC 480-489014/7	F1720.D
Level 5	ICIS 480-489014/8	F1721.D
Level 6	IC 480-489014/9	F1722.D
Level 7	IC 480-489014/10	F1723.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Dichlorodifluoromethane	1.8201 1.7484	1.8114 1.6004	1.9755	1.7930	1.8640	Ave		1.8018			0.1000	6.3		20.0			
Chloromethane	1.5615 1.1715	1.4498 1.1621	1.3486	1.2995	1.1951	Ave		1.3126			0.1000	11.6		20.0			
Vinyl chloride	1.1334 1.0215	1.1171 1.0224	1.1382	1.0594	1.0652	Ave		1.0796			0.1000	4.6		20.0			
Butadiene	1.2900 1.0684	1.1795 1.0575	1.2353	1.0708	1.1034	Ave		1.1436				8.1		20.0			
Bromomethane	0.8609 0.6069	0.7612 0.6183	0.7065	0.6724	0.6148	Ave		0.6916			0.1000	13.5		20.0			
Chloroethane	0.7308 0.5576	0.6796 0.5541	0.6159	0.5673	0.5654	Ave		0.6101			0.1000	11.4		20.0			
Dichlorofluoromethane	1.9406 1.6002	1.9012 1.5546	1.8666	1.7834	1.6442	Ave		1.7558				8.9		20.0			
Trichlorofluoromethane	2.2557 1.9216	2.1269 1.8713	2.1312	1.9339	1.9668	Ave		2.0296			0.1000	7.0		20.0			
Ethyl ether	1.5430 1.2605	1.3837 1.2643	1.4141	1.3675	1.2764	Ave		1.3585				7.5		20.0			
Acrolein	0.2032 0.1551	0.1768 0.1653	0.1667	0.1660	0.1634	Ave		0.1709				9.1		20.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	1.4461 1.2796	1.4236 1.2226	1.3890	1.3242	1.3737	Ave		1.3513			0.1000	5.9		20.0			
1,1-Dichloroethene	1.5279 1.1963	1.3727 1.1873	1.3938	1.2905	1.3025	Ave		1.3244			0.1000	9.0		20.0			
Acetone	0.6533 0.4541	0.5671 0.4961	0.5228	0.4864	0.4819	Ave		0.5231			0.1000	12.9		20.0			
Iodomethane	2.8066 2.2225	2.5172 2.2149	2.4697	2.4584	2.3712	Ave		2.4372				8.3		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Carbon disulfide	5.4381 4.3993	4.8777 4.2799	4.9929	4.6490	4.6098	Ave		4.7495			0.1000	8.3		20.0			
Methyl acetate	1.4018 1.0507	1.1482 1.1135	1.1848	1.0990	1.1010	Ave		1.1570			0.1000	10.0		20.0			
Allyl chloride	3.1243 2.4292	2.8932 2.3630	2.7725	2.6283	2.5954	Ave		2.6866				9.9		20.0			
Methylene Chloride	+++++ 1.4332	2.1448 1.3922	1.9512	1.6444	1.5102	Ave		1.6793			0.1000	18.1		20.0			
2-Methyl-2-propanol	0.1658 0.1582	0.1517 0.1861	0.1655	0.1586	0.1619	Ave		0.1640				6.7		20.0			
Methyl tert-butyl ether	4.1903 3.5849	3.9531 3.6381	3.9497	3.7934	3.7366	Ave		3.8352			0.1000	5.5		20.0			
Acrylonitrile	0.6061 0.5110	0.5814 0.5159	0.5813	0.5630	0.5426	Ave		0.5573				6.4		20.0			
trans-1,2-Dichloroethene	1.6125 1.3687	1.6160 1.3463	1.6382	1.5436	1.4665	Ave		1.5131			0.1000	8.0		20.0			
Hexane	3.1631 2.3575	3.0544 2.2362	2.8606	2.5967	2.4823	Ave		2.6787				13.2		20.0			
Vinyl acetate	3.2486 2.9586	3.0044 2.9321	3.1465	3.1060	3.0459	Ave		3.0631				3.7		20.0			
1,1-Dichloroethane	3.1388 2.4355	2.9181 2.3886	2.8573	2.7046	2.5723	Ave		2.7165			0.2000	10.0		20.0			
2-Butanone (MEK)	0.8158 0.6871	0.7434 0.7336	0.7281	0.7330	0.7194	Ave		0.7372			0.1000	5.3		20.0			
2,2-Dichloropropane	2.2698 1.9254	2.1730 1.9384	2.0999	2.0378	2.0027	Ave		2.0639				6.1		20.0			
cis-1,2-Dichloroethene	1.8194 1.5095	1.7818 1.4748	1.7414	1.6569	1.5695	Ave		1.6505			0.1000	8.3		20.0			
Chlorobromomethane	0.8912 0.7316	0.8572 0.7307	0.8375	0.8154	0.7636	Ave		0.8039				7.9		20.0			
Tetrahydrofuran	0.5769 0.4434	0.4730 0.4849	0.4746	0.4721	0.4660	Ave		0.4844				8.8		20.0			
Chloroform	2.9308 2.3931	2.7989 2.3816	2.7100	2.5950	2.5153	Ave		2.6178			0.2000	7.9		20.0			
1,1,1-Trichloroethane	2.3174 2.1014	2.2148 2.1127	2.2473	2.1706	2.1767	Ave		2.1915			0.1000	3.5		20.0			
Cyclohexane	3.0702 2.5362	2.9050 2.4673	2.8966	2.7316	2.7104	Ave		2.7596			0.1000	7.8		20.0			
1,1-Dichloropropene	2.3450 1.8609	2.1647 1.8229	2.1174	2.0088	1.9740	Ave		2.0420				8.9		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Isobutyl alcohol	0.0802 0.0748	0.0670 0.0836	0.0716	0.0753	0.0780	Ave		0.0758				7.3		20.0			
Carbon tetrachloride	1.9457 1.7622	1.7164 1.8099	1.7669	1.7542	1.7817	Ave		1.7910			0.1000	4.1		20.0			
Benzene	7.1422 5.4375	6.5484 5.2734	6.4412	6.0688	5.7320	Ave		6.0919			0.5000	10.9		20.0			
1,2-Dichloroethane	2.2819 1.8684	2.1510 1.8762	2.0636	2.0626	1.9104	Ave		2.0306			0.1000	7.6		20.0			
n-Heptane	3.0611 2.4619	2.7749 2.3217	2.7698	2.6835	2.6259	Ave		2.6713				8.9		20.0			
Trichloroethene	1.7640 1.4276	1.6140 1.4211	1.6650	1.5502	1.4862	Ave		1.5612			0.2000	8.2		20.0			
Methylcyclohexane	2.9407 2.4393	2.7115 2.3682	2.7278	2.5563	2.5929	Ave		2.6195			0.1000	7.4		20.0			
1,2-Dichloropropane	1.7983 1.3710	1.6345 1.3963	1.5653	1.5086	1.4814	Ave		1.5365			0.1000	9.6		20.0			
1,4-Dioxane	0.0070 0.0076	0.0075 0.0086	0.0082	0.0080	0.0076	Ave		0.0078				6.6		20.0			
Dibromomethane	0.8703 0.7919	0.8338 0.7988	0.8524	0.8421	0.8086	Ave		0.8283			0.1000	3.5		20.0			
Bromodichloromethane	1.5714 1.6974	1.6395 1.7602	1.6815	1.6471	1.6970	Ave		1.6706			0.2000	3.5		20.0			
2-Chloroethyl vinyl ether	0.5353 0.4918	0.5057 0.5371	0.4967	0.5013	0.5110	Ave		0.5113				3.5		20.0			
cis-1,3-Dichloropropene	2.3433 2.1504	2.0366 2.1978	2.1432	2.2107	2.1742	Ave		2.1795			0.2000	4.2		20.0			
4-Methyl-2-pentanone (MIBK)	0.7434 0.6601	0.7358 0.6880	0.6949	0.7137	0.6867	Ave		0.7032			0.1000	4.2		20.0			
Toluene	+++++ 1.6813	2.1015 1.6779	2.0331	1.9370	1.8109	Ave		1.8736			0.4000	9.6		20.0			
trans-1,3-Dichloropropene	0.9126 0.9384	0.9158 0.9875	0.9097	0.9551	0.9586	Ave		0.9397			0.1000	3.1		20.0			
Ethyl methacrylate	0.7565 0.8135	0.7538 0.8648	0.7967	0.8512	0.8398	Ave		0.8109				5.5		20.0			
1,1,2-Trichloroethane	0.5153 0.4569	0.5079 0.4721	0.4998	0.4870	0.4630	Ave		0.4860			0.1000	4.7		20.0			
Tetrachloroethene	0.8628 0.6863	0.8081 0.6987	0.8007	0.7714	0.7241	Ave		0.7646			0.2000	8.4		20.0			
1,3-Dichloropropane	1.1008 0.9381	1.0994 0.9462	1.0518	1.0726	0.9653	Ave		1.0249				7.1		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
2-Hexanone	0.4840 0.4711	0.5000 0.5052	0.4955	0.5068	0.4915	Ave		0.4934			0.1000	2.6		20.0			
Dibromochloromethane	0.4644 0.5818	0.4862 0.6527	0.5082	0.5386	0.5846	Ave		0.5452			0.1000	12.0		20.0			
1,2-Dibromoethane	0.5612 0.5679	0.5845 0.6009	0.6053	0.6085	0.5872	Ave		0.5879				3.1		20.0			
Chlorobenzene	2.2786 1.8191	2.1559 1.8012	2.0920	2.0546	1.8969	Ave		2.0141			0.5000	8.9		20.0			
Ethylbenzene	3.8850 3.0301	3.6277 2.9591	3.5327	3.4459	3.1626	Ave		3.3776			0.1000	10.0		20.0			
1,1,1,2-Tetrachloroethane	0.6135 0.6179	0.5955 0.6346	0.6286	0.6425	0.6280	Ave		0.6229				2.5		20.0			
m,p-Xylene	1.4835 1.2393	1.4013 1.2490	1.3596	1.3770	1.2818	Ave		1.3416			0.1000	6.7		20.0			
o-Xylene	1.4242 1.1867	1.3799 1.1713	1.3072	1.3341	1.2285	Ave		1.2903			0.3000	7.5		20.0			
Styrene	2.3814 1.9789	2.2403 1.9564	2.1833	2.1674	2.0698	Ave		2.1397			0.3000	7.0		20.0			
Bromoform	+++++ 0.3412	0.2568 0.4007	0.2544	0.2908	0.3230	Ave		0.3111			0.1000	18.0		20.0			
Isopropylbenzene	4.0003 3.2371	3.6752 3.1419	3.6675	3.4630	3.3940	Ave		3.5113			0.1000	8.4		20.0			
1,1,2,2-Tetrachloroethane	0.7667 0.7380	0.8014 0.7907	0.8207	0.7853	0.7795	Ave		0.7832			0.3000	3.3		20.0			
Bromobenzene	0.9789 0.8183	0.9358 0.8147	0.9123	0.9017	0.8492	Ave		0.8873				7.0		20.0			
trans-1,4-Dichloro-2-butene	0.2689 0.2744	0.2673 0.2998	0.2649	0.2665	0.2793	Ave		0.2744				4.5		20.0			
1,2,3-Trichloropropane	0.2721 0.2425	0.2555 0.2558	0.2485	0.2571	0.2445	Ave		0.2537				3.9		20.0			
N-Propylbenzene	4.7272 3.8204	4.4946 3.6561	4.3547	4.2350	4.0026	Ave		4.1844				9.1		20.0			
2-Chlorotoluene	0.9745 0.7869	0.9309 0.7857	0.9135	0.8705	0.8208	Ave		0.8690				8.5		20.0			
1,3,5-Trimethylbenzene	3.2638 2.7828	3.1067 2.7185	3.1024	2.9898	2.8889	Ave		2.9790				6.5		20.0			
4-Chlorotoluene	1.0100 0.8139	0.9548 0.8202	0.9588	0.9161	0.8402	Ave		0.9020				8.6		20.0			
tert-Butylbenzene	0.6728 0.6133	0.7366 0.6160	0.6934	0.6772	0.6382	Ave		0.6639				6.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,2,4-Trimethylbenzene	3.2605 2.7849	3.2287 2.7110	3.0936	3.0301	2.8592	Ave		2.9954				7.2		20.0			
sec-Butylbenzene	4.0436 3.4571	4.0393 3.3239	3.9450	3.8487	3.6412	Ave		3.7570				7.7		20.0			
4-Isopropyltoluene	3.5939 2.9985	3.5175 2.8850	3.3691	3.3016	3.1413	Ave		3.2581				8.1		20.0			
1,3-Dichlorobenzene	1.9401 1.5441	1.8691 1.5170	1.7611	1.7180	1.5938	Ave		1.7062			0.6000	9.5		20.0			
1,4-Dichlorobenzene	1.9434 1.5482	1.8800 1.5255	1.7736	1.7460	1.5833	Ave		1.7143			0.5000	9.7		20.0			
n-Butylbenzene	3.0854 2.7182	3.0852 2.6043	2.9636	2.9288	2.7805	Ave		2.8808				6.4		20.0			
1,2-Dichlorobenzene	1.8460 1.5003	1.7437 1.4873	1.6813	1.6615	1.5481	Ave		1.6383			0.4000	8.1		20.0			
1,2-Dibromo-3-Chloropropane	0.1517 0.1421	0.1087 0.1634	0.1283	0.1249	0.1314	Ave		0.1358			0.0500	13.4		20.0			
1,2,4-Trichlorobenzene	1.2253 1.0063	1.1498 1.0057	1.0800	1.0728	0.9956	Ave		1.0765			0.2000	8.0		20.0			
Hexachlorobutadiene	0.6531 0.5721	0.5989 0.5698	0.5930	0.6038	0.5734	Ave		0.5949				4.9		20.0			
Naphthalene	2.7669 2.6100	2.7018 2.6948	2.6163	2.6226	2.5557	Ave		2.6526				2.7		20.0			
1,2,3-Trichlorobenzene	1.0869 0.9404	1.0443 0.9558	0.9940	1.0172	0.9473	Ave		0.9980				5.5		20.0			
Dibromofluoromethane (Surr)	1.1881 1.1887	1.2065 1.1703	1.2179	1.2025	1.2366	Ave		1.2015				1.8		20.0			
1,2-Dichloroethane-d4 (Surr)	0.7443 0.7473	0.7238 0.7274	0.7458	0.7336	0.7427	Ave		0.7378				1.3		20.0			
Toluene-d8 (Surr)	2.3616 2.3906	2.4212 2.3836	2.4074	2.4349	2.3990	Ave		2.3998				1.0		20.0			
4-Bromofluorobenzene (Surr)	0.7067 0.7105	0.7128 0.7206	0.7329	0.7167	0.6997	Ave		0.7143				1.5		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-489014/4	F1717.D
Level 2	IC 480-489014/5	F1718.D
Level 3	IC 480-489014/6	F1719.D
Level 4	IC 480-489014/7	F1720.D
Level 5	ICIS 480-489014/8	F1721.D
Level 6	IC 480-489014/9	F1722.D
Level 7	IC 480-489014/10	F1723.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/KG)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dichlorodifluoromethane	FB	Ave	17390 650426	33925 1218570	71507	129502	344365	2.50 100	5.00 200	10.0	20.0	50.0
Chloromethane	FB	Ave	14919 435827	27153 884877	48814	93860	220793	2.50 100	5.00 200	10.0	20.0	50.0
Vinyl chloride	FB	Ave	10829 380030	20923 778452	41199	76515	196800	2.50 100	5.00 200	10.0	20.0	50.0
Butadiene	FB	Ave	12325 397457	22091 805198	44714	77342	203847	2.50 100	5.00 200	10.0	20.0	50.0
Bromomethane	FB	Ave	8225 225795	14257 470818	25571	48566	113590	2.50 100	5.00 200	10.0	20.0	50.0
Chloroethane	FB	Ave	6982 207421	12729 421906	22292	40973	104450	2.50 100	5.00 200	10.0	20.0	50.0
Dichlorofluoromethane	FB	Ave	18541 595313	35607 1183727	67563	128806	303769	2.50 100	5.00 200	10.0	20.0	50.0
Trichlorofluoromethane	FB	Ave	21551 714854	39834 1424876	77140	139676	363354	2.50 100	5.00 200	10.0	20.0	50.0
Ethyl ether	FB	Ave	14742 468917	25915 962637	51187	98772	235819	2.50 100	5.00 200	10.0	20.0	50.0
Acrolein	FB	Ave	9706 288472	16556 629314	30166	59956	150941	12.5 500	25.0 1000	50.0	100	250
1,1,2-Trichloro-1,2,2-trifluoroethane	FB	Ave	13816 476026	26663 930919	50276	95646	253788	2.50 100	5.00 200	10.0	20.0	50.0
1,1-Dichloroethene	FB	Ave	14598 445040	25710 904054	50449	93210	240640	2.50 100	5.00 200	10.0	20.0	50.0
Acetone	FB	Ave	31208 844665	53108 1888823	94612	175650	445141	12.5 500	25.0 1000	50.0	100	250
Iodomethane	FB	Ave	26815 826825	47145 1686451	89396	177564	438074	2.50 100	5.00 200	10.0	20.0	50.0
Carbon disulfide	FB	Ave	51957 1636608	91354 3258835	180725	335786	851654	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/KG)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Methyl acetate	FB	Ave	26787 781730	43011 1695720	85768	158749	406821	5.00 200	10.0 400	20.0	40.0	100
Allyl chloride	FB	Ave	29850 903712	54187 1799226	100356	189832	479499	2.50 100	5.00 200	10.0	20.0	50.0
Methylene Chloride	FB	Ave	+++++ 533186	40170 1060027	70628	118767	278998	+++++ 100	5.00 200	10.0	20.0	50.0
2-Methyl-2-propanol	FB	Ave	15839 588460	28408 1417068	59898	114516	299080	25.0 1000	50.0 2000	100	200	500
Methyl tert-butyl ether	FB	Ave	40035 1333633	74038 2770172	142964	273984	690327	2.50 100	5.00 200	10.0	20.0	50.0
Acrylonitrile	FB	Ave	57905 1901055	108888 3928188	210424	406649	1002439	25.0 1000	50.0 2000	100	200	500
trans-1,2-Dichloroethene	FB	Ave	15406 509187	30267 1025075	59296	111489	270941	2.50 100	5.00 200	10.0	20.0	50.0
Hexane	FB	Ave	30221 877026	57205 1702693	103544	187554	458593	2.50 100	5.00 200	10.0	20.0	50.0
Vinyl acetate	FB	Ave	62076 2201283	112537 4465086	227782	448676	1125460	5.00 200	10.0 400	20.0	40.0	100
1,1-Dichloroethane	FB	Ave	29989 906050	54653 1818739	103425	195346	475220	2.50 100	5.00 200	10.0	20.0	50.0
2-Butanone (MEK)	FB	Ave	38973 1278022	69620 2792761	131774	264720	664516	12.5 500	25.0 1000	50.0	100	250
2,2-Dichloropropane	FB	Ave	21686 716297	40698 1475917	76010	147184	370001	2.50 100	5.00 200	10.0	20.0	50.0
cis-1,2-Dichloroethene	FB	Ave	17383 561551	33371 1122929	63033	119674	289966	2.50 100	5.00 200	10.0	20.0	50.0
Chlorobromomethane	FB	Ave	8515 272159	16054 556383	30313	58893	141074	2.50 100	5.00 200	10.0	20.0	50.0
Tetrahydrofuran	FB	Ave	11024 329911	17716 738473	34357	68190	172192	5.00 200	10.0 400	20.0	40.0	100
Chloroform	FB	Ave	28001 890290	52421 1813384	98091	187432	464697	2.50 100	5.00 200	10.0	20.0	50.0
1,1,1-Trichloroethane	FB	Ave	22141 781742	41481 1608688	81344	156774	402134	2.50 100	5.00 200	10.0	20.0	50.0
Cyclohexane	FB	Ave	29333 943522	54407 1878698	104847	197294	500739	2.50 100	5.00 200	10.0	20.0	50.0
1,1-Dichloropropene	FB	Ave	22405 692287	40543 1388023	76644	145086	364697	2.50 100	5.00 200	10.0	20.0	50.0
Isobutyl alcohol	FB	Ave	19149 695737	31356 1591155	64791	135944	360131	62.5 2500	125 5000	250	500	1250
Carbon tetrachloride	FB	Ave	18590 655578	32147 1378101	63957	126699	329173	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/KG)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Benzene	FB	Ave	68238 2022855	122645 4015310	233147	438332	1058968	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dichloroethane	FB	Ave	21802 695090	40287 1428602	74695	148973	352944	2.50 100	5.00 200	10.0	20.0	50.0
n-Heptane	FB	Ave	29246 915865	51972 1767813	100256	193823	485123	2.50 100	5.00 200	10.0	20.0	50.0
Trichloroethene	FB	Ave	16854 531081	30229 1082039	60266	111965	274581	2.50 100	5.00 200	10.0	20.0	50.0
Methylcyclohexane	FB	Ave	28096 907480	50784 1803213	98735	184636	479042	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dichloropropane	FB	Ave	17181 510023	30613 1063187	56660	108960	273692	2.50 100	5.00 200	10.0	20.0	50.0
1,4-Dioxane	CBNZ d5	Ave	2787 116800	5686 265399	12289	23511	60008	50.0 2000	100 4000	200	400	1000
Dibromomethane	FB	Ave	8315 294600	15617 608235	30853	60822	149393	2.50 100	5.00 200	10.0	20.0	50.0
Bromodichloromethane	FB	Ave	15013 631450	30707 1340276	60863	118966	313526	2.50 100	5.00 200	10.0	20.0	50.0
2-Chloroethyl vinyl ether	FB	Ave	5114 182975	9472 408972	17980	36205	94404	2.50 100	5.00 200	10.0	20.0	50.0
cis-1,3-Dichloropropene	FB	Ave	22388 799985	38144 1673428	77577	159672	401686	2.50 100	5.00 200	10.0	20.0	50.0
4-Methyl-2-pentanone (MIBK)	CBNZ d5	Ave	74132 2550365	138789 5326932	260722	522209	1346832	12.5 500	25.0 1000	50.0	100	250
Toluene	CBNZ d5	Ave	+++++ 1299244	79275 2598462	152564	283469	710367	+++++ 100	5.00 200	10.0	20.0	50.0
trans-1,3-Dichloropropene	CBNZ d5	Ave	18202 725189	34547 1529205	68263	139775	376026	2.50 100	5.00 200	10.0	20.0	50.0
Ethyl methacrylate	CBNZ d5	Ave	15089 628643	28436 1339327	59783	124572	329428	2.50 100	5.00 200	10.0	20.0	50.0
1,1,2-Trichloroethane	CBNZ d5	Ave	10278 353039	19160 731143	37503	71267	181628	2.50 100	5.00 200	10.0	20.0	50.0
Tetrachloroethene	CBNZ d5	Ave	17209 530363	30483 1082054	60084	112885	284049	2.50 100	5.00 200	10.0	20.0	50.0
1,3-Dichloropropane	CBNZ d5	Ave	21956 724962	41475 1465314	78927	156974	378659	2.50 100	5.00 200	10.0	20.0	50.0
2-Hexanone	CBNZ d5	Ave	48268 1820403	94308 3911478	185896	370874	964056	12.5 500	25.0 1000	50.0	100	250
Dibromochloromethane	CBNZ d5	Ave	9262 449608	18341 1010761	38136	78821	229307	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dibromoethane	CBNZ d5	Ave	11194 438870	22050 930507	45420	89053	230349	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/KG)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Chlorobenzene	CBNZ d5	Ave	45448 1405752	81328 2789407	156979	300689	744122	2.50 100	5.00 200	10.0	20.0	50.0
Ethylbenzene	CBNZ d5	Ave	77487 2341515	136848 4582561	265094	504297	1240620	2.50 100	5.00 200	10.0	20.0	50.0
1,1,1,2-Tetrachloroethane	CBNZ d5	Ave	12236 477478	22464 982766	47167	94031	246331	2.50 100	5.00 200	10.0	20.0	50.0
m,p-Xylene	CBNZ d5	Ave	29588 957718	52861 1934235	102021	201514	502801	2.50 100	5.00 200	10.0	20.0	50.0
o-Xylene	CBNZ d5	Ave	28407 917031	52053 1813838	98089	195247	481918	2.50 100	5.00 200	10.0	20.0	50.0
Styrene	CBNZ d5	Ave	47497 1529258	84512 3029727	163832	317197	811947	2.50 100	5.00 200	10.0	20.0	50.0
Bromoform	CBNZ d5	Ave	+++++ 263635	9686 620464	19088	42560	126703	+++++ 100	5.00 200	10.0	20.0	50.0
Isopropylbenzene	DCBd 4	Ave	74995 2339984	131524 4541157	259637	483620	1235649	2.50 100	5.00 200	10.0	20.0	50.0
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	14373 533485	28678 1142872	58100	109670	283804	2.50 100	5.00 200	10.0	20.0	50.0
Bromobenzene	DCBd 4	Ave	18351 591487	33489 1177536	64588	125924	309169	2.50 100	5.00 200	10.0	20.0	50.0
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	5042 198352	9566 433331	18750	37218	101690	2.50 100	5.00 200	10.0	20.0	50.0
1,2,3-Trichloropropane	DCBd 4	Ave	5102 175326	9145 369727	17589	35902	89002	2.50 100	5.00 200	10.0	20.0	50.0
N-Propylbenzene	DCBd 4	Ave	88624 2761611	160846 5284286	308284	591432	1457200	2.50 100	5.00 200	10.0	20.0	50.0
2-Chlorotoluene	DCBd 4	Ave	18269 568837	33314 1135622	64667	121566	298839	2.50 100	5.00 200	10.0	20.0	50.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	61189 2011626	111177 3929210	219633	417542	1051734	2.50 100	5.00 200	10.0	20.0	50.0
4-Chlorotoluene	DCBd 4	Ave	18935 588306	34170 1185440	67874	127936	305870	2.50 100	5.00 200	10.0	20.0	50.0
tert-Butylbenzene	DCBd 4	Ave	12614 443318	26361 890323	49086	94574	232354	2.50 100	5.00 200	10.0	20.0	50.0
1,2,4-Trimethylbenzene	DCBd 4	Ave	61127 2013112	115544 3918322	219005	423169	1040921	2.50 100	5.00 200	10.0	20.0	50.0
sec-Butylbenzene	DCBd 4	Ave	75807 2498984	144554 4804163	279282	537492	1325647	2.50 100	5.00 200	10.0	20.0	50.0
4-Isopropyltoluene	DCBd 4	Ave	67376 2167482	125878 4169776	238514	461080	1143623	2.50 100	5.00 200	10.0	20.0	50.0
1,3-Dichlorobenzene	DCBd 4	Ave	36372 1116209	66889 2192603	124677	239924	580244	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 489014

SDG No.:

Instrument ID: HP5973F GC Column: ZB-624 (30) ID: 0.25(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 08/27/2019 13:41 Calibration End Date: 08/27/2019 16:13 Calibration ID: 37508

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/KG)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
1,4-Dichlorobenzene	DCBd 4	Ave	36434 1119164	67278 2204803	125561	243844	576429	2.50 100	5.00 200	10.0	20.0	50.0
n-Butylbenzene	DCBd 4	Ave	57843 1964862	110408 3764045	209804	409019	1012287	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dichlorobenzene	DCBd 4	Ave	34607 1084543	62400 2149607	119027	232042	563591	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Ave	2844 102740	3890 236208	9083	17446	47827	2.50 100	5.00 200	10.0	20.0	50.0
1,2,4-Trichlorobenzene	DCBd 4	Ave	22972 727436	41148 1453542	76456	149826	362462	2.50 100	5.00 200	10.0	20.0	50.0
Hexachlorobutadiene	DCBd 4	Ave	12244 413542	21434 823581	41984	84322	208760	2.50 100	5.00 200	10.0	20.0	50.0
Naphthalene	DCBd 4	Ave	51872 1886700	96688 3894892	185216	366259	930432	2.50 100	5.00 200	10.0	20.0	50.0
1,2,3-Trichlorobenzene	DCBd 4	Ave	20377 679819	37372 1381429	70368	142060	344883	2.50 100	5.00 200	10.0	20.0	50.0
Dibromofluoromethane (Surr)	FB	Ave	227021 221113	225963 222776	220423	217128	228465	50.0 50.0	50.0 50.0	50.0	50.0	50.0
1,2-Dichloroethane-d4 (Surr)	FB	Ave	142222 139008	135566 138465	134977	132456	137206	50.0 50.0	50.0 50.0	50.0	50.0	50.0
Toluene-d8 (Surr)	CBNZ d5	Ave	942057 923690	913347 922835	903245	890860	941071	50.0 50.0	50.0 50.0	50.0	50.0	50.0
4-Bromofluorobenzene (Surr)	CBNZ d5	Ave	281900 274538	268886 278987	274977	262220	274473	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend:
Ave = Average ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1717.D
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 27-Aug-2019 13:41:30 ALS Bottle#: 53 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC
Misc. Info.: 480-0083694-004
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:16 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 14:26:40

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	191084	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	87	398905	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.858	10.865	-0.007	96	374950	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	93	227021	50.0	49.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.456	5.462	-0.006	98	142222	50.0	50.4	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	942057	50.0	49.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	88	281900	50.0	49.5	
10 Dichlorodifluoromethane	85	2.122	2.122	0.000	95	17390	2.50	2.53	
12 Chloromethane	50	2.281	2.293	-0.012	98	14919	2.50	2.97	
13 Vinyl chloride	62	2.396	2.396	0.000	94	10829	2.50	2.62	
151 Butadiene	54	2.408	2.408	0.000	95	12325	2.50	2.82	
14 Bromomethane	94	2.700	2.700	0.000	72	8225	2.50	3.11	
15 Chloroethane	64	2.785	2.779	0.006	95	6982	2.50	2.99	a
16 Dichlorofluoromethane	67	2.919	2.925	-0.006	54	18541	2.50	2.76	
17 Trichlorofluoromethane	101	2.968	2.980	-0.012	95	21551	2.50	2.78	
18 Ethyl ether	59	3.181	3.175	0.006	95	14742	2.50	2.84	
20 Acrolein	56	3.321	3.327	-0.006	93	9706	12.5	14.9	
21 1,1,2-Trichloro-1,2,2-trif	101	3.382	3.382	0.000	88	13816	2.50	2.68	
22 1,1-Dichloroethene	96	3.406	3.406	0.000	98	14598	2.50	2.88	
23 Acetone	43	3.436	3.436	0.000	99	31208	12.5	15.6	
25 Iodomethane	142	3.564	3.564	0.000	97	26815	2.50	2.88	
26 Carbon disulfide	76	3.631	3.631	0.000	99	51957	2.50	2.86	
27 Methyl acetate	43	3.668	3.674	-0.006	91	26787	5.00	6.06	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	84	29850	2.50	2.91	
30 Methylene Chloride	84	3.789	3.795	-0.006	98	22150	2.50	3.45	
31 2-Methyl-2-propanol	59	3.820	3.820	0.000	90	15839	25.0	25.3	
32 Methyl tert-butyl ether	73	3.960	3.960	0.000	98	40035	2.50	2.73	
33 Acrylonitrile	53	3.978	3.984	-0.006	99	57905	25.0	27.2	
34 trans-1,2-Dichloroethene	96	3.990	3.996	-0.006	58	15406	2.50	2.66	
35 Hexane	57	4.148	4.154	-0.006	94	30221	2.50	2.95	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.306	4.306	0.000	98	62076	5.00	5.30	
39 1,1-Dichloroethane	63	4.331	4.331	0.000	96	29989	2.50	2.89	
43 2-Butanone (MEK)	43	4.769	4.763	0.006	99	38973	12.5	13.8	
45 cis-1,2-Dichloroethene	96	4.793	4.787	0.006	83	17383	2.50	2.76	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	68	21686	2.50	2.75	
48 Chlorobromomethane	128	4.994	5.000	-0.006	83	8515	2.50	2.77	
49 Tetrahydrofuran	42	5.018	5.018	0.000	63	11024	5.00	5.95	M
50 Chloroform	83	5.024	5.030	-0.006	95	28001	2.50	2.80	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	22141	2.50	2.64	
52 Cyclohexane	56	5.237	5.237	0.000	92	29333	2.50	2.78	
54 1,1-Dichloropropene	75	5.322	5.316	0.006	96	22405	2.50	2.87	
53 Isobutyl alcohol	43	5.334	5.328	0.006	79	19149	62.5	66.1	
55 Carbon tetrachloride	117	5.334	5.335	-0.001	91	18590	2.50	2.72	
57 Benzene	78	5.505	5.505	0.000	94	68238	2.50	2.93	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	59	21802	2.50	2.81	
59 n-Heptane	43	5.614	5.614	0.000	93	29246	2.50	2.86	
62 Trichloroethene	95	6.028	6.034	-0.006	96	16854	2.50	2.82	
64 Methylcyclohexane	83	6.186	6.192	-0.006	88	28096	2.50	2.81	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	94	17181	2.50	2.93	
66 1,4-Dioxane	88	6.350	6.338	0.012	27	2787	50.0	44.9	
67 Dibromomethane	93	6.363	6.375	-0.012	92	8315	2.50	2.63	Ma
68 Dichlorobromomethane	83	6.478	6.478	0.000	93	15013	2.50	2.35	
69 2-Chloroethyl vinyl ether	63	6.697	6.691	0.006	86	5114	2.50	2.62	
72 cis-1,3-Dichloropropene	75	6.874	6.874	0.000	94	22388	2.50	2.69	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	74132	12.5	13.2	
74 Toluene	92	7.178	7.184	-0.006	99	48023	2.50	3.21	
77 trans-1,3-Dichloropropene	75	7.391	7.385	0.006	94	18202	2.50	2.43	
75 Ethyl methacrylate	69	7.391	7.391	0.000	72	15089	2.50	2.33	
79 1,1,2-Trichloroethane	83	7.579	7.585	-0.006	92	10278	2.50	2.65	
81 Tetrachloroethene	166	7.713	7.719	-0.006	97	17209	2.50	2.82	
82 1,3-Dichloropropane	76	7.756	7.750	0.006	65	21956	2.50	2.69	
80 2-Hexanone	43	7.768	7.762	0.006	92	48268	12.5	12.3	
83 Chlorodibromomethane	129	7.999	7.999	0.000	90	9262	2.50	2.13	
84 Ethylene Dibromide	107	8.133	8.133	0.000	97	11194	2.50	2.39	
87 Chlorobenzene	112	8.601	8.601	0.000	93	45448	2.50	2.83	
88 Ethylbenzene	91	8.668	8.668	0.000	98	77487	2.50	2.88	
89 1,1,1,2-Tetrachloroethane	131	8.668	8.674	-0.006	42	12236	2.50	2.46	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	99	29588	2.50	2.76	
91 o-Xylene	106	9.216	9.216	0.000	96	28407	2.50	2.76	
92 Styrene	104	9.234	9.234	0.000	92	47497	2.50	2.78	
95 Bromoform	173	9.496	9.490	0.006	94	5372	2.50	2.16	
94 Isopropylbenzene	105	9.575	9.575	0.000	95	74995	2.50	2.85	
97 1,1,2,2-Tetrachloroethane	83	9.903	9.909	-0.006	91	14373	2.50	2.45	
101 Bromobenzene	156	9.940	9.940	0.000	93	18351	2.50	2.76	
98 trans-1,4-Dichloro-2-buten	53	9.958	9.952	0.006	71	5042	2.50	2.45	
100 1,2,3-Trichloropropane	110	9.958	9.964	-0.006	89	5102	2.50	2.68	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	88624	2.50	2.82	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	18269	2.50	2.80	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	-0.001	94	61189	2.50	2.74	
105 4-Chlorotoluene	126	10.201	10.201	0.000	98	18935	2.50	2.80	
106 tert-Butylbenzene	134	10.463	10.457	0.006	93	12614	2.50	2.53	
107 1,2,4-Trimethylbenzene	105	10.499	10.506	-0.007	95	61127	2.50	2.72	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	95	75807	2.50	2.69	
110 4-Isopropyltoluene	119	10.773	10.779	-0.006	97	67376	2.50	2.76	
111 1,3-Dichlorobenzene	146	10.804	10.810	-0.006	96	36372	2.50	2.84	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	93	36434	2.50	2.83	
115 n-Butylbenzene	91	11.144	11.144	0.000	97	57843	2.50	2.68	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	96	34607	2.50	2.82	
117 1,2-Dibromo-3-Chloropropan	75	11.886	11.880	0.006	83	2844	2.50	2.79	
119 1,2,4-Trichlorobenzene	180	12.568	12.562	0.006	94	22972	2.50	2.85	
120 Hexachlorobutadiene	225	12.671	12.671	0.000	95	12244	2.50	2.74	
121 Naphthalene	128	12.805	12.805	0.000	97	51872	2.50	2.61	
122 1,2,3-Trichlorobenzene	180	13.030	13.030	0.000	93	20377	2.50	2.72	
S 123 Total BTEX	1				0			14.5	
S 124 Xylenes, Total	1				0			5.52	
S 125 1,2-Dichloroethene, Total	1				0			5.42	
S 126 1,3-Dichloropropene, Total	1				0			5.12	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8260 CORP mix_00164	Amount Added:	2.50	Units: uL	
GAS CORP mix_00358	Amount Added:	2.50	Units: uL	
F 8260 IS/SS_00094	Amount Added:	1.00	Units: uL	Run Reagent

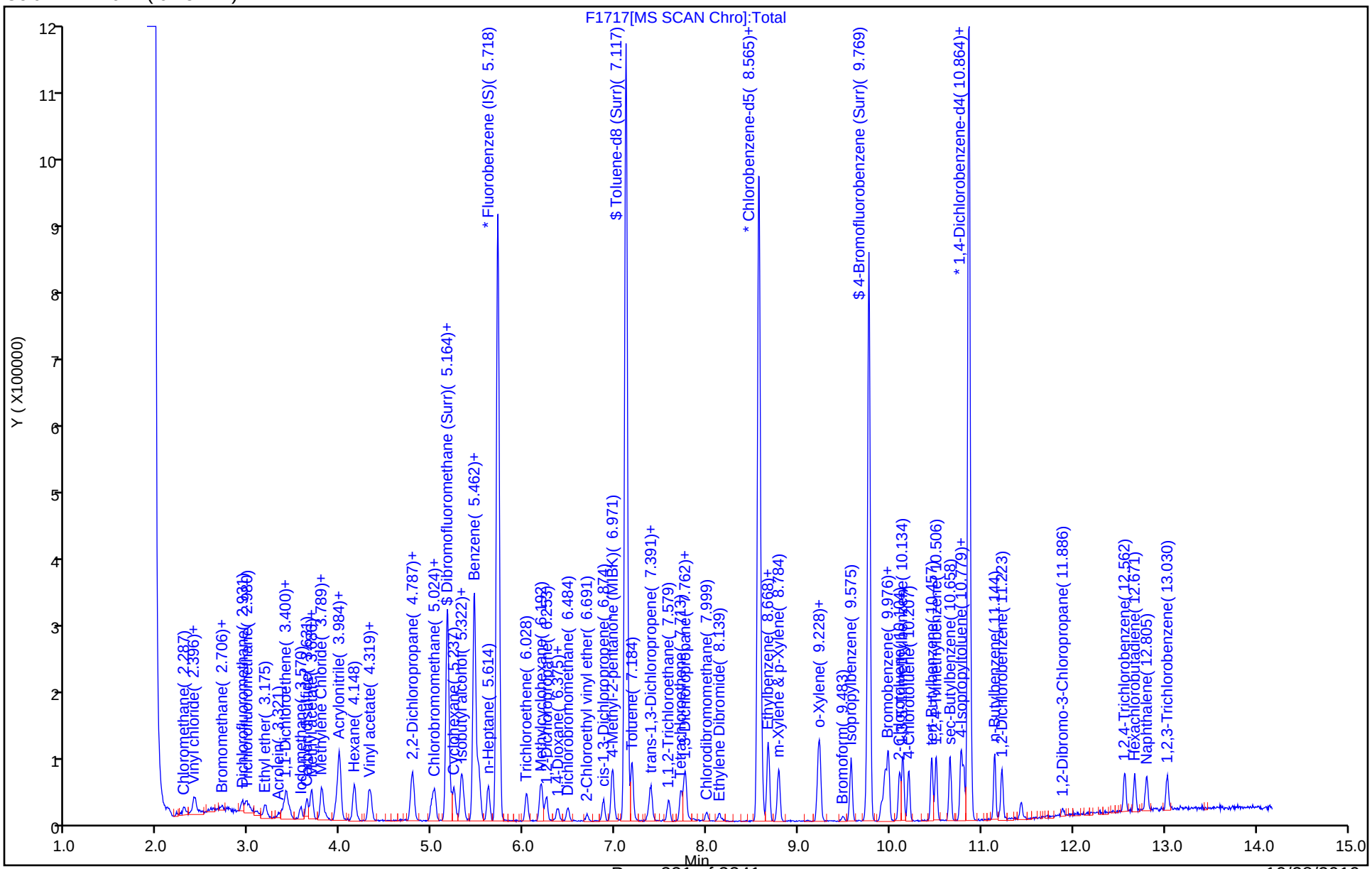
Report Date: 28-Aug-2019 10:38:20 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1717.D

Injection Date:	27-Aug-2019 13:41:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC			Worklist Smp#:	4
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	53
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

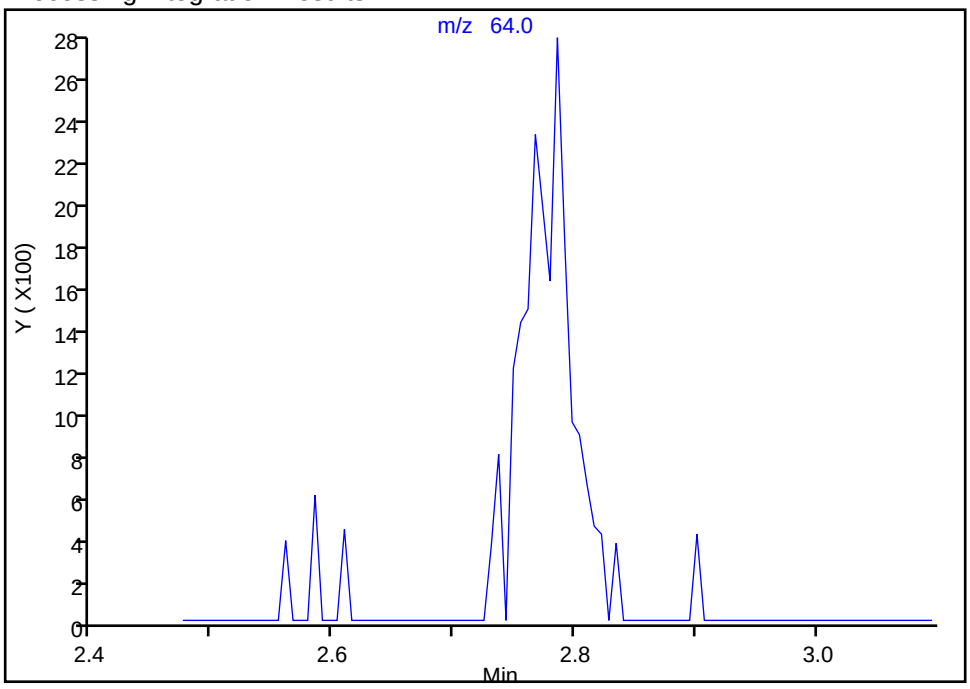
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1717.D
Injection Date: 27-Aug-2019 13:41:30 Instrument ID: HP5973F
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 53 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

15 Chloroethane, CAS: 75-00-3

Signal: 1

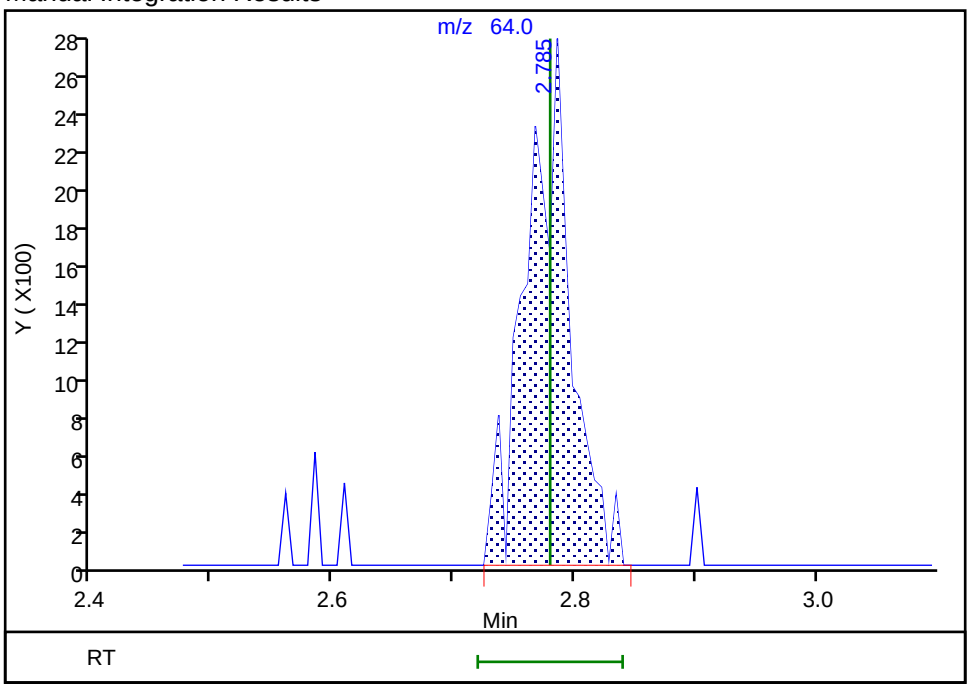
Not Detected
Expected RT: 2.78

Processing Integration Results



Manual Integration Results

RT: 2.79
Area: 6982
Amount: 2.994581
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 14:25:30
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

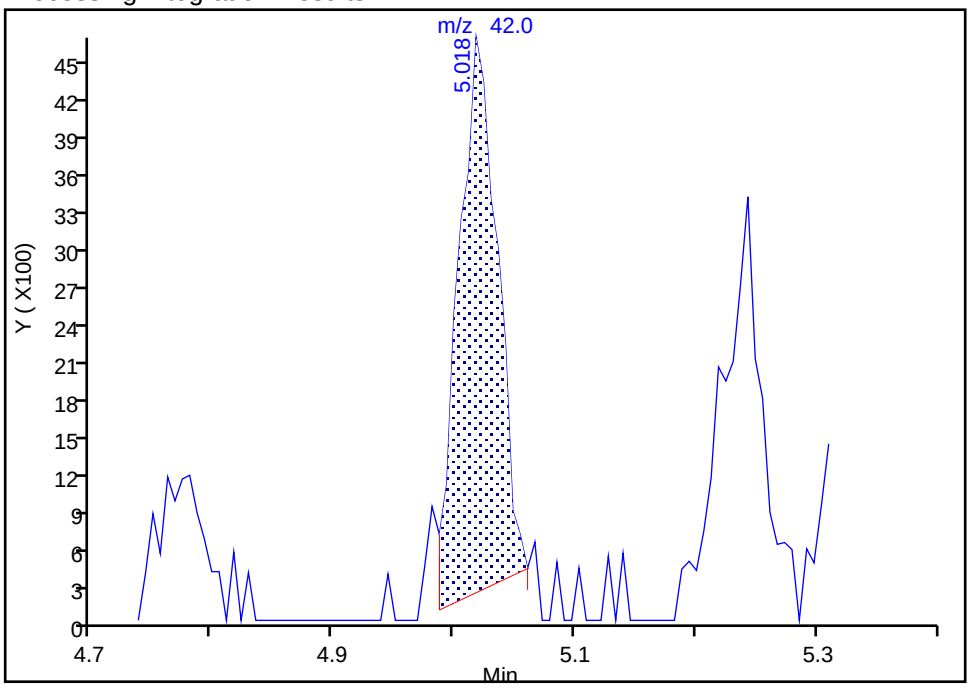
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1717.D
Injection Date: 27-Aug-2019 13:41:30 Instrument ID: HP5973F
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 53 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

49 Tetrahydrofuran, CAS: 109-99-9

Signal: 1

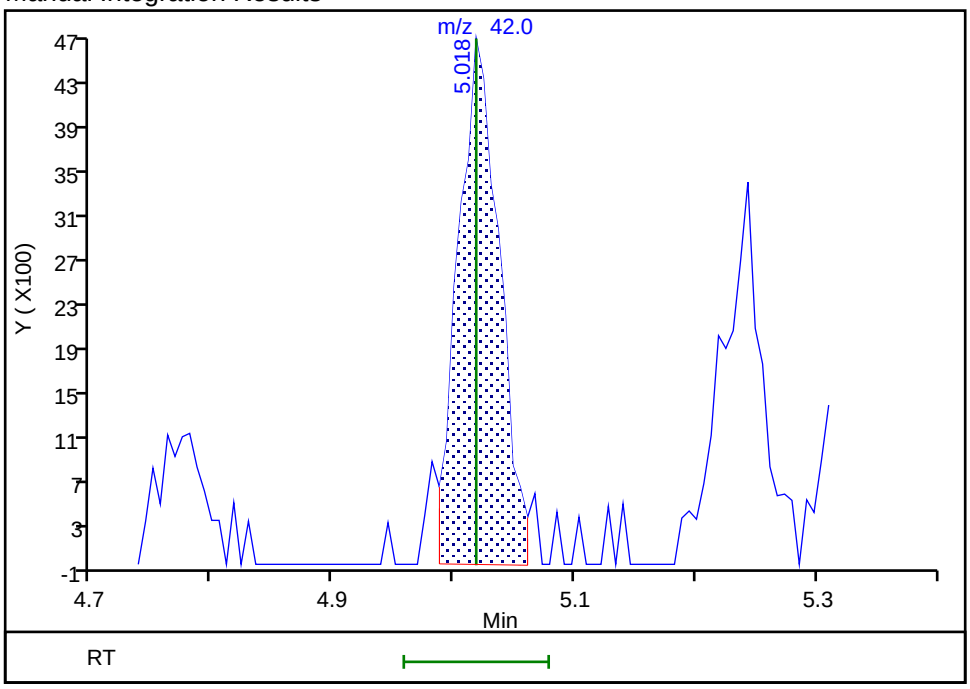
Processing Integration Results

RT: 5.02
Area: 9848
Amount: 5.214599
Amount Units: ug/kg



Manual Integration Results

RT: 5.02
Area: 11024
Amount: 5.954852
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 14:25:55
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

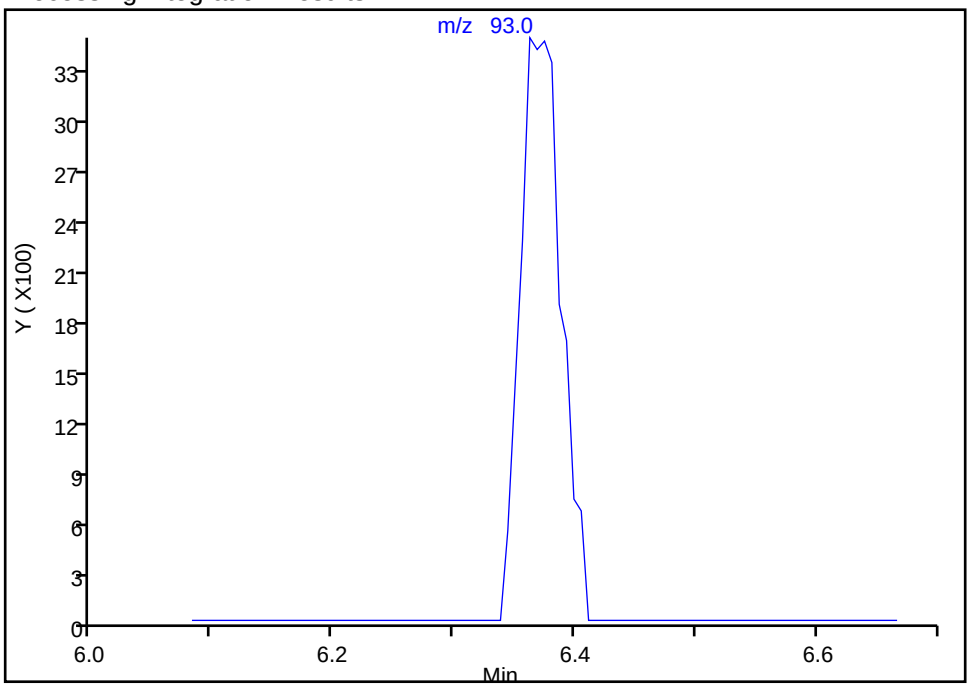
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1717.D
Injection Date: 27-Aug-2019 13:41:30 Instrument ID: HP5973F
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 53 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

67 Dibromomethane, CAS: 74-95-3

Signal: 1

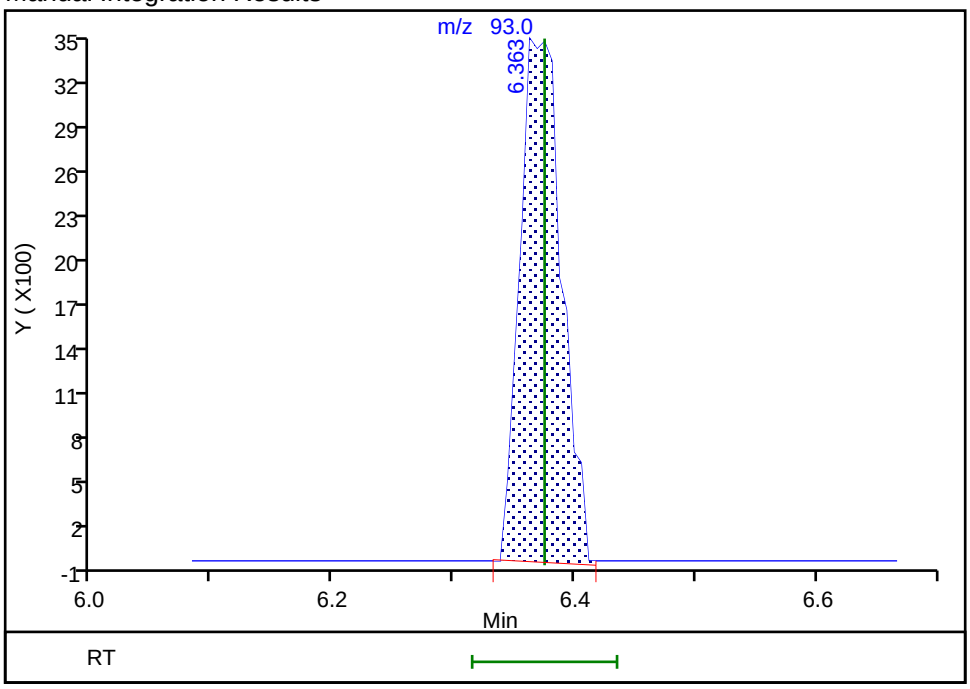
Not Detected
Expected RT: 6.37

Processing Integration Results



Manual Integration Results

RT: 6.36
Area: 8315
Amount: 2.626825
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 14:26:22
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1718.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 27-Aug-2019 14:06:30 ALS Bottle#: 54 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 2
Misc. Info.: 480-0083694-005
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:22 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 14:38:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	98	187290	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	86	377235	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.865	10.865	0.000	96	357866	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	93	225963	50.0	50.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	99	135566	50.0	49.1	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	913347	50.0	50.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.770	9.769	0.001	87	268886	50.0	49.9	
10 Dichlorodifluoromethane	85	2.135	2.122	0.013	97	33925	5.00	5.03	
12 Chloromethane	50	2.299	2.293	0.006	99	27153	5.00	5.52	
13 Vinyl chloride	62	2.408	2.396	0.012	90	20923	5.00	5.17	
151 Butadiene	54	2.414	2.408	0.006	92	22091	5.00	5.16	
14 Bromomethane	94	2.713	2.700	0.013	96	14257	5.00	5.50	
15 Chloroethane	64	2.786	2.779	0.007	47	12729	5.00	5.57	
16 Dichlorofluoromethane	67	2.925	2.925	0.000	98	35607	5.00	5.41	Ma
17 Trichlorofluoromethane	101	2.986	2.980	0.006	97	39834	5.00	5.24	
18 Ethyl ether	59	3.181	3.175	0.006	92	25915	5.00	5.09	
20 Acrolein	56	3.333	3.327	0.006	99	16556	25.0	25.9	
21 1,1,2-Trichloro-1,2,2-trif	101	3.388	3.382	0.006	92	26663	5.00	5.27	
22 1,1-Dichloroethene	96	3.406	3.406	0.000	97	25710	5.00	5.18	
23 Acetone	43	3.443	3.436	0.007	99	53108	25.0	27.1	
25 Iodomethane	142	3.576	3.564	0.012	99	47145	5.00	5.16	
26 Carbon disulfide	76	3.637	3.631	0.006	100	91354	5.00	5.13	
27 Methyl acetate	43	3.674	3.674	0.000	97	43011	10.0	9.92	a
28 3-Chloro-1-propene	41	3.686	3.686	0.000	88	54187	5.00	5.38	
30 Methylene Chloride	84	3.795	3.795	0.000	97	40170	5.00	6.39	
31 2-Methyl-2-propanol	59	3.832	3.820	0.012	94	28408	50.0	46.3	
32 Methyl tert-butyl ether	73	3.966	3.960	0.006	98	74038	5.00	5.15	
33 Acrylonitrile	53	3.984	3.984	0.000	100	108888	50.0	52.2	
34 trans-1,2-Dichloroethene	96	4.002	3.996	0.006	98	30267	5.00	5.34	
35 Hexane	57	4.154	4.154	0.000	94	57205	5.00	5.70	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.313	4.306	0.007	97	112537	10.0	9.81	
39 1,1-Dichloroethane	63	4.337	4.331	0.006	97	54653	5.00	5.37	
43 2-Butanone (MEK)	43	4.769	4.763	0.006	99	69620	25.0	25.2	
45 cis-1,2-Dichloroethene	96	4.787	4.787	0.000	85	33371	5.00	5.40	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	67	40698	5.00	5.26	
48 Chlorobromomethane	128	5.000	5.000	0.000	96	16054	5.00	5.33	
49 Tetrahydrofuran	42	5.024	5.018	0.006	60	17716	10.0	9.76	
50 Chloroform	83	5.030	5.030	0.000	94	52421	5.00	5.35	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	99	41481	5.00	5.05	
52 Cyclohexane	56	5.243	5.237	0.006	92	54407	5.00	5.26	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	97	40543	5.00	5.30	
53 Isobutyl alcohol	43	5.335	5.328	0.007	96	31356	125.0	110.5	
55 Carbon tetrachloride	117	5.335	5.335	0.000	92	32147	5.00	4.79	
57 Benzene	78	5.511	5.505	0.006	94	122645	5.00	5.37	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	94	40287	5.00	5.30	
59 n-Heptane	43	5.621	5.614	0.006	93	51972	5.00	5.19	
62 Trichloroethene	95	6.034	6.034	0.000	96	30229	5.00	5.17	
64 Methylcyclohexane	83	6.186	6.192	-0.006	88	50784	5.00	5.18	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	95	30613	5.00	5.32	
66 1,4-Dioxane	88	6.351	6.338	0.013	37	5686	100.0	96.8	
67 Dibromomethane	93	6.381	6.375	0.006	92	15617	5.00	5.03	
68 Dichlorobromomethane	83	6.484	6.478	0.006	99	30707	5.00	4.91	
69 2-Chloroethyl vinyl ether	63	6.697	6.691	0.006	91	9472	5.00	4.95	
72 cis-1,3-Dichloropropene	75	6.868	6.874	-0.006	94	38144	5.00	4.67	
73 4-Methyl-2-pentanone (MIBK	43	6.971	6.965	0.006	98	138789	25.0	26.2	
74 Toluene	92	7.184	7.184	0.000	99	79275	5.00	5.61	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	97	34547	5.00	4.87	
75 Ethyl methacrylate	69	7.397	7.391	0.006	91	28436	5.00	4.65	
79 1,1,2-Trichloroethane	83	7.585	7.585	0.000	92	19160	5.00	5.23	
81 Tetrachloroethene	166	7.713	7.719	-0.006	94	30483	5.00	5.28	
82 1,3-Dichloropropane	76	7.756	7.750	0.006	71	41475	5.00	5.36	
80 2-Hexanone	43	7.768	7.762	0.006	93	94308	25.0	25.3	
83 Chlorodibromomethane	129	7.999	7.999	0.000	89	18341	5.00	4.46	
84 Ethylene Dibromide	107	8.133	8.133	0.000	98	22050	5.00	4.97	
87 Chlorobenzene	112	8.601	8.601	0.000	94	81328	5.00	5.35	
88 Ethylbenzene	91	8.668	8.668	0.000	98	136848	5.00	5.37	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	42	22464	5.00	4.78	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	99	52861	5.00	5.22	
91 o-Xylene	106	9.216	9.216	0.000	96	52053	5.00	5.35	
92 Styrene	104	9.234	9.234	0.000	92	84512	5.00	5.24	
95 Bromoform	173	9.484	9.490	-0.006	94	9686	5.00	4.13	
94 Isopropylbenzene	105	9.575	9.575	0.000	96	131524	5.00	5.23	
97 1,1,2,2-Tetrachloroethane	83	9.909	9.909	0.000	95	28678	5.00	5.12	
101 Bromobenzene	156	9.940	9.940	0.000	93	33489	5.00	5.27	
98 trans-1,4-Dichloro-2-buten	53	9.958	9.952	0.006	71	9566	5.00	4.87	
100 1,2,3-Trichloropropane	110	9.970	9.964	0.006	83	9145	5.00	5.04	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	160846	5.00	5.37	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	33314	5.00	5.36	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	0.000	93	111177	5.00	5.21	
105 4-Chlorotoluene	126	10.208	10.201	0.007	97	34170	5.00	5.29	
106 tert-Butylbenzene	134	10.457	10.457	0.000	93	26361	5.00	5.55	
107 1,2,4-Trimethylbenzene	105	10.506	10.506	0.000	94	115544	5.00	5.39	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	94	144554	5.00	5.38	
110 4-Isopropyltoluene	119	10.773	10.779	-0.006	97	125878	5.00	5.40	
111 1,3-Dichlorobenzene	146	10.804	10.810	-0.006	96	66889	5.00	5.48	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	95	67278	5.00	5.48	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	110408	5.00	5.35	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	97	62400	5.00	5.32	
117 1,2-Dibromo-3-Chloropropan	75	11.887	11.880	0.007	80	3890	5.00	4.00	
119 1,2,4-Trichlorobenzene	180	12.568	12.562	0.006	94	41148	5.00	5.34	
120 Hexachlorobutadiene	225	12.677	12.671	0.006	97	21434	5.00	5.03	
121 Naphthalene	128	12.805	12.805	0.000	97	96688	5.00	5.09	
122 1,2,3-Trichlorobenzene	180	13.024	13.030	-0.006	94	37372	5.00	5.23	
S 123 Total BTEX	1				0			26.9	
S 124 Xylenes, Total	1				0			10.6	
S 125 1,2-Dichloroethene, Total	1				0			10.7	
S 126 1,3-Dichloropropene, Total	1				0			9.55	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8260 CORP mix_00164	Amount Added:	5.00	Units: uL	
GAS CORP mix_00358	Amount Added:	5.00	Units: uL	
F 8260 IS/SS_00094	Amount Added:	1.00	Units: uL	Run Reagent

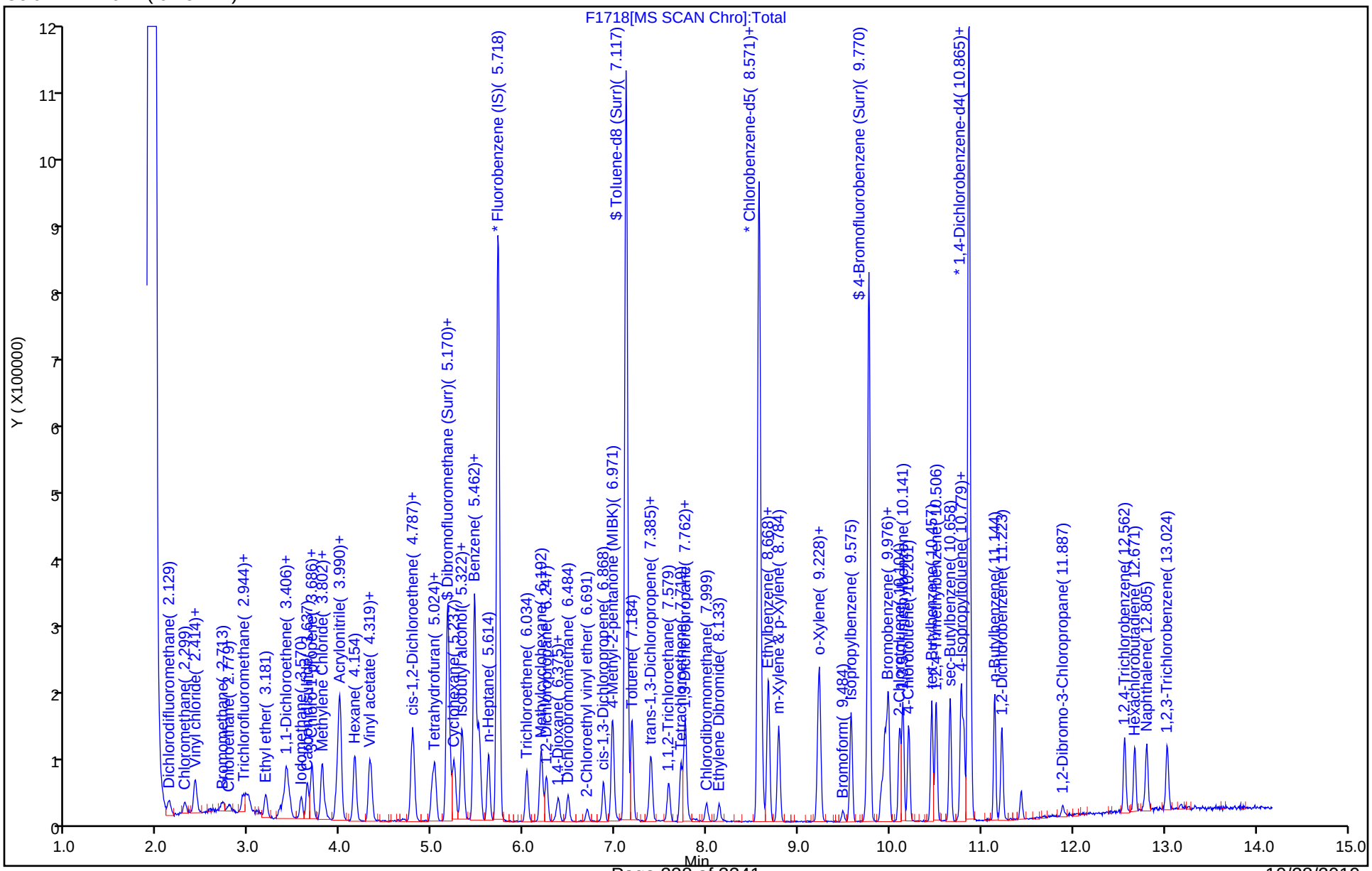
Report Date: 28-Aug-2019 10:38:25 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1718.D

Injection Date:	27-Aug-2019 14:06:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC 2			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	54
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo

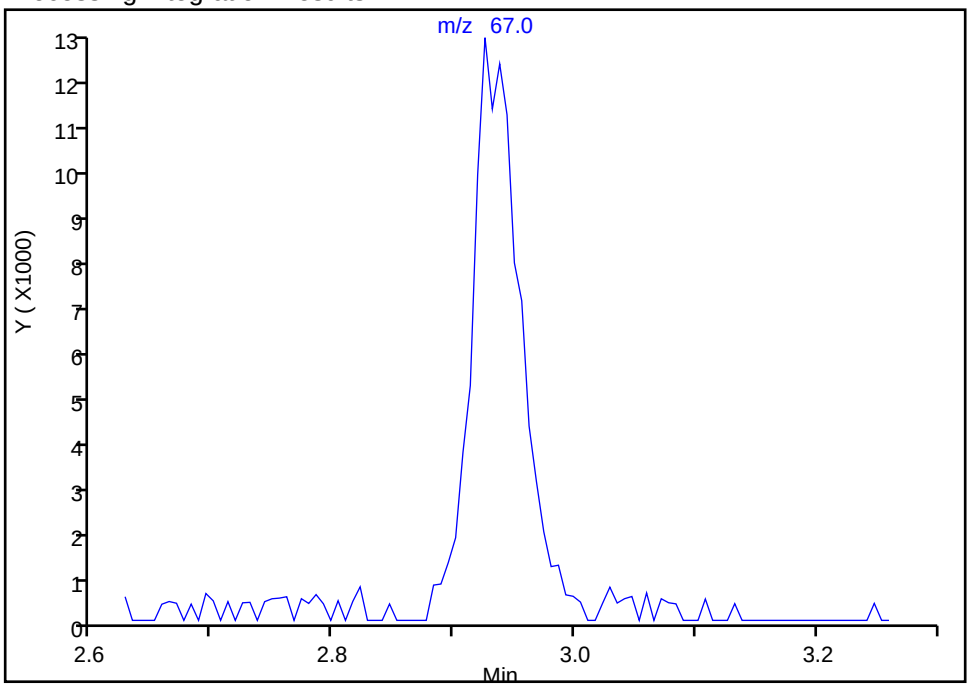
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1718.D
Injection Date: 27-Aug-2019 14:06:30 Instrument ID: HP5973F
Lims ID: IC 2
Client ID:
Operator ID: LH ALS Bottle#: 54 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

16 Dichlorofluoromethane, CAS: 75-43-4

Signal: 1

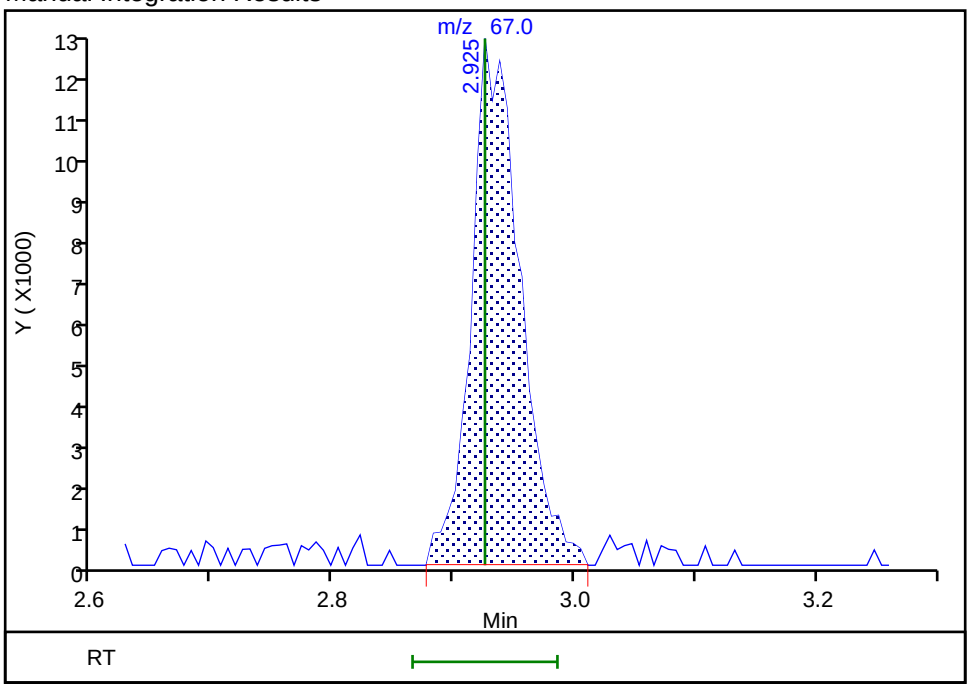
Not Detected
Expected RT: 2.93

Processing Integration Results



Manual Integration Results

RT: 2.93
Area: 35607
Amount: 5.413887
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 14:27:08
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo

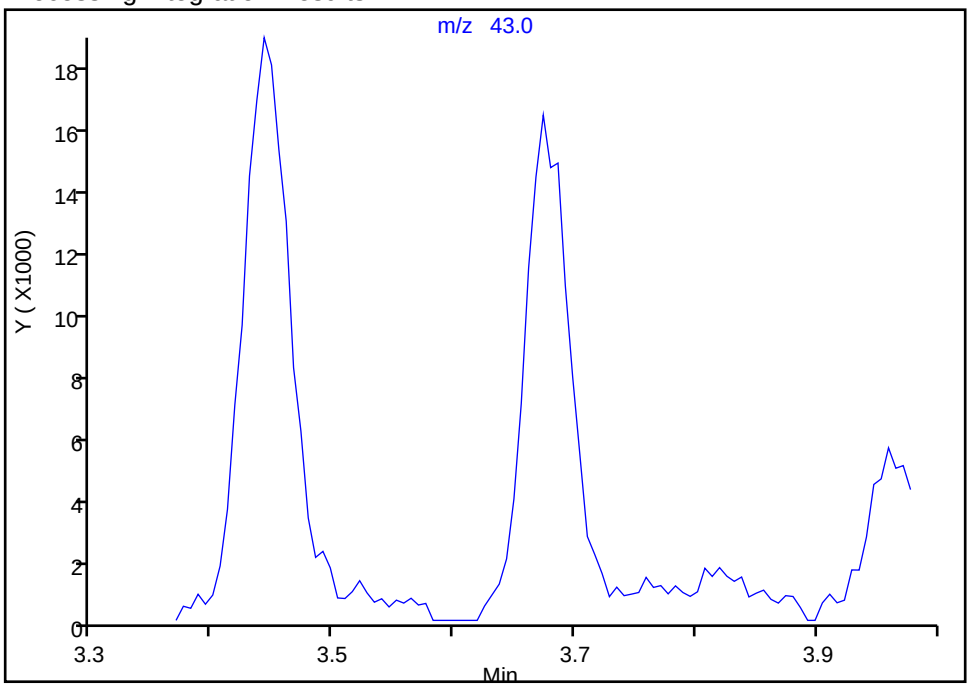
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1718.D
Injection Date: 27-Aug-2019 14:06:30 Instrument ID: HP5973F
Lims ID: IC 2
Client ID:
Operator ID: LH ALS Bottle#: 54 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

27 Methyl acetate, CAS: 79-20-9

Signal: 1

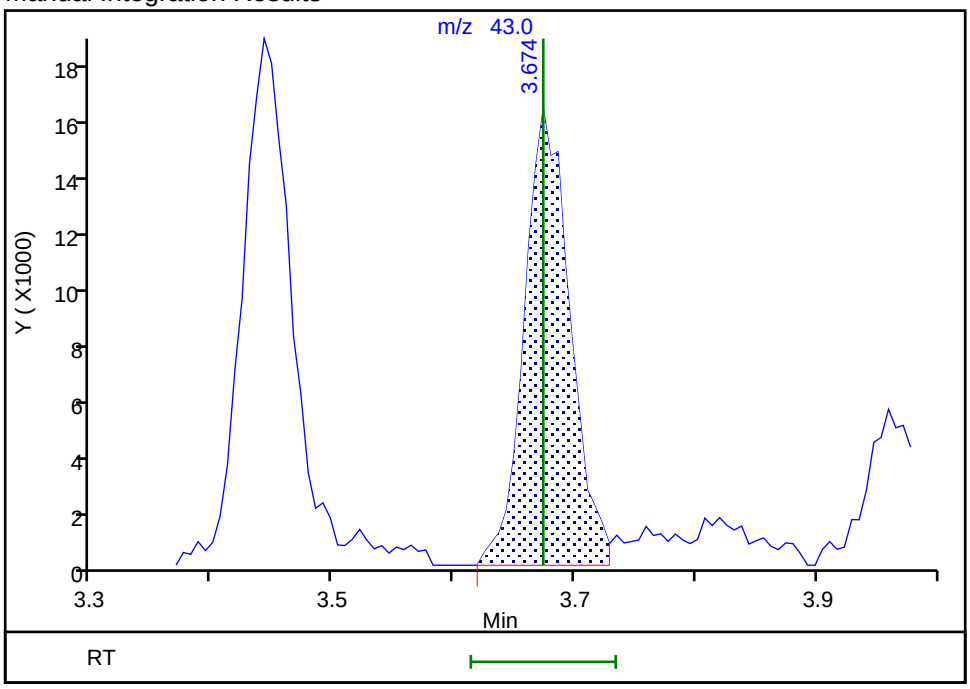
Not Detected
Expected RT: 3.67

Processing Integration Results



Manual Integration Results

RT: 3.67
Area: 43011
Amount: 9.924330
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 14:27:16
Audit Action: Assigned Compound ID Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 27-Aug-2019 14:31:30 ALS Bottle#: 55 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 3
Misc. Info.: 480-0083694-006
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:27 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: moffata Date: 28-Aug-2019 09:44:45

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.712	5.718	-0.006	99	180982	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	87	375195	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.865	10.865	0.000	96	353969	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	92	220423	50.0	50.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	98	134977	50.0	50.5	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	903245	50.0	50.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.776	9.769	0.007	90	274977	50.0	51.3	
10 Dichlorodifluoromethane	85	2.122	2.122	0.000	100	71507	10.0	11.0	
12 Chloromethane	50	2.299	2.293	0.006	98	48814	10.0	10.3	
13 Vinyl chloride	62	2.396	2.396	0.000	98	41199	10.0	10.5	
151 Butadiene	54	2.414	2.408	0.006	92	44714	10.0	10.8	
14 Bromomethane	94	2.713	2.700	0.013	94	25571	10.0	10.2	
15 Chloroethane	64	2.773	2.779	-0.006	95	22292	10.0	10.1	
16 Dichlorofluoromethane	67	2.938	2.925	0.013	97	67563	10.0	10.6	Ma
17 Trichlorofluoromethane	101	2.986	2.980	0.006	98	77140	10.0	10.5	
18 Ethyl ether	59	3.181	3.175	0.006	95	51187	10.0	10.4	
20 Acrolein	56	3.327	3.327	0.000	96	30166	50.0	48.8	
21 1,1,2-Trichloro-1,2,2-trif	101	3.382	3.382	0.000	93	50276	10.0	10.3	
22 1,1-Dichloroethene	96	3.412	3.406	0.006	97	50449	10.0	10.5	
23 Acetone	43	3.436	3.436	0.000	99	94612	50.0	50.0	
25 Iodomethane	142	3.570	3.564	0.006	99	89396	10.0	10.1	
26 Carbon disulfide	76	3.631	3.631	0.000	99	180725	10.0	10.5	
27 Methyl acetate	43	3.674	3.674	0.000	98	85768	20.0	20.5	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	87	100356	10.0	10.3	
30 Methylene Chloride	84	3.795	3.795	0.000	98	70628	10.0	11.6	
31 2-Methyl-2-propanol	59	3.826	3.820	0.006	98	59898	100.0	100.9	
32 Methyl tert-butyl ether	73	3.966	3.960	0.006	98	142964	10.0	10.3	
33 Acrylonitrile	53	3.984	3.984	0.000	100	210424	100.0	104.3	
34 trans-1,2-Dichloroethene	96	3.996	3.996	0.000	98	59296	10.0	10.8	
35 Hexane	57	4.154	4.154	0.000	95	103544	10.0	10.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.313	4.306	0.007	97	227782	20.0	20.5	
39 1,1-Dichloroethane	63	4.325	4.331	-0.006	96	103425	10.0	10.5	
43 2-Butanone (MEK)	43	4.763	4.763	0.000	99	131774	50.0	49.4	a
45 cis-1,2-Dichloroethene	96	4.793	4.787	0.006	83	63033	10.0	10.6	
44 2,2-Dichloropropane	77	4.793	4.793	0.000	69	76010	10.0	10.2	
48 Chlorobromomethane	128	4.994	5.000	-0.006	97	30313	10.0	10.4	
49 Tetrahydrofuran	42	5.024	5.018	0.006	61	34357	20.0	19.6	
50 Chloroform	83	5.024	5.030	-0.006	94	98091	10.0	10.4	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	81344	10.0	10.3	
52 Cyclohexane	56	5.237	5.237	0.000	93	104847	10.0	10.5	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	95	76644	10.0	10.4	
53 Isobutyl alcohol	43	5.335	5.328	0.007	94	64791	250.0	236.2	
55 Carbon tetrachloride	117	5.335	5.335	0.000	94	63957	10.0	9.87	
57 Benzene	78	5.505	5.505	0.000	96	233147	10.0	10.6	
58 1,2-Dichloroethane	62	5.529	5.523	0.006	96	74695	10.0	10.2	a
59 n-Heptane	43	5.614	5.614	0.000	96	100256	10.0	10.4	
62 Trichloroethene	95	6.028	6.034	-0.006	98	60266	10.0	10.7	
64 Methylcyclohexane	83	6.186	6.192	-0.006	88	98735	10.0	10.4	
65 1,2-Dichloropropane	63	6.253	6.247	0.006	96	56660	10.0	10.2	
66 1,4-Dioxane	88	6.344	6.338	0.006	91	12289	200.0	210.3	
67 Dibromomethane	93	6.375	6.375	0.000	94	30853	10.0	10.3	
68 Dichlorobromomethane	83	6.484	6.478	0.006	98	60863	10.0	10.1	
69 2-Chloroethyl vinyl ether	63	6.697	6.691	0.006	91	17980	10.0	9.72	Ma
72 cis-1,3-Dichloropropene	75	6.874	6.874	0.000	93	77577	10.0	9.83	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	260722	50.0	49.4	
74 Toluene	92	7.184	7.184	0.000	99	152564	10.0	10.9	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	96	68263	10.0	9.68	
75 Ethyl methacrylate	69	7.397	7.391	0.006	88	59783	10.0	9.82	
79 1,1,2-Trichloroethane	83	7.585	7.585	0.000	90	37503	10.0	10.3	
81 Tetrachloroethene	166	7.719	7.719	0.000	96	60084	10.0	10.5	
82 1,3-Dichloropropane	76	7.756	7.750	0.006	67	78927	10.0	10.3	
80 2-Hexanone	43	7.762	7.762	0.000	97	185896	50.0	50.2	
83 Chlorodibromomethane	129	7.999	7.999	0.000	89	38136	10.0	9.32	
84 Ethylene Dibromide	107	8.133	8.133	0.000	98	45420	10.0	10.3	
87 Chlorobenzene	112	8.601	8.601	0.000	95	156979	10.0	10.4	
88 Ethylbenzene	91	8.674	8.668	0.006	98	265094	10.0	10.5	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	43	47167	10.0	10.1	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	99	102021	10.0	10.1	
91 o-Xylene	106	9.216	9.216	0.000	97	98089	10.0	10.1	
92 Styrene	104	9.234	9.234	0.000	93	163832	10.0	10.2	
95 Bromoform	173	9.490	9.490	0.000	95	19088	10.0	8.18	
94 Isopropylbenzene	105	9.575	9.575	0.000	96	259637	10.0	10.4	
97 1,1,2,2-Tetrachloroethane	83	9.903	9.909	-0.006	95	58100	10.0	10.5	
101 Bromobenzene	156	9.940	9.940	0.000	94	64588	10.0	10.3	
98 trans-1,4-Dichloro-2-buten	53	9.958	9.952	0.006	71	18750	10.0	9.65	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	87	17589	10.0	9.79	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	308284	10.0	10.4	
103 2-Chlorotoluene	126	10.110	10.104	0.006	97	64667	10.0	10.5	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	0.000	94	219633	10.0	10.4	
105 4-Chlorotoluene	126	10.201	10.201	0.000	97	67874	10.0	10.6	
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	49086	10.0	10.4	
107 1,2,4-Trimethylbenzene	105	10.506	10.506	0.000	96	219005	10.0	10.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	94	279282	10.0	10.5	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	97	238514	10.0	10.3	
111 1,3-Dichlorobenzene	146	10.810	10.810	0.000	98	124677	10.0	10.3	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	95	125561	10.0	10.3	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	209804	10.0	10.3	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	98	119027	10.0	10.3	
117 1,2-Dibromo-3-Chloropropan	75	11.887	11.880	0.007	75	9083	10.0	9.45	
119 1,2,4-Trichlorobenzene	180	12.568	12.562	0.006	95	76456	10.0	10.0	
120 Hexachlorobutadiene	225	12.677	12.671	0.006	97	41984	10.0	9.97	
121 Naphthalene	128	12.799	12.805	-0.006	97	185216	10.0	9.86	
122 1,2,3-Trichlorobenzene	180	13.024	13.030	-0.006	94	70368	10.0	9.96	
S 123 Total BTEX	1				0			52.1	
S 124 Xylenes, Total	1				0			20.3	
S 125 1,2-Dichloroethene, Total	1				0			21.4	
S 126 1,3-Dichloropropene, Total	1				0			19.5	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8260 CORP mix_00164	Amount Added: 10.00	Units: uL	
GAS CORP mix_00358	Amount Added: 10.00	Units: uL	
F 8260 IS/SS_00094	Amount Added: 1.00	Units: uL	Run Reagent

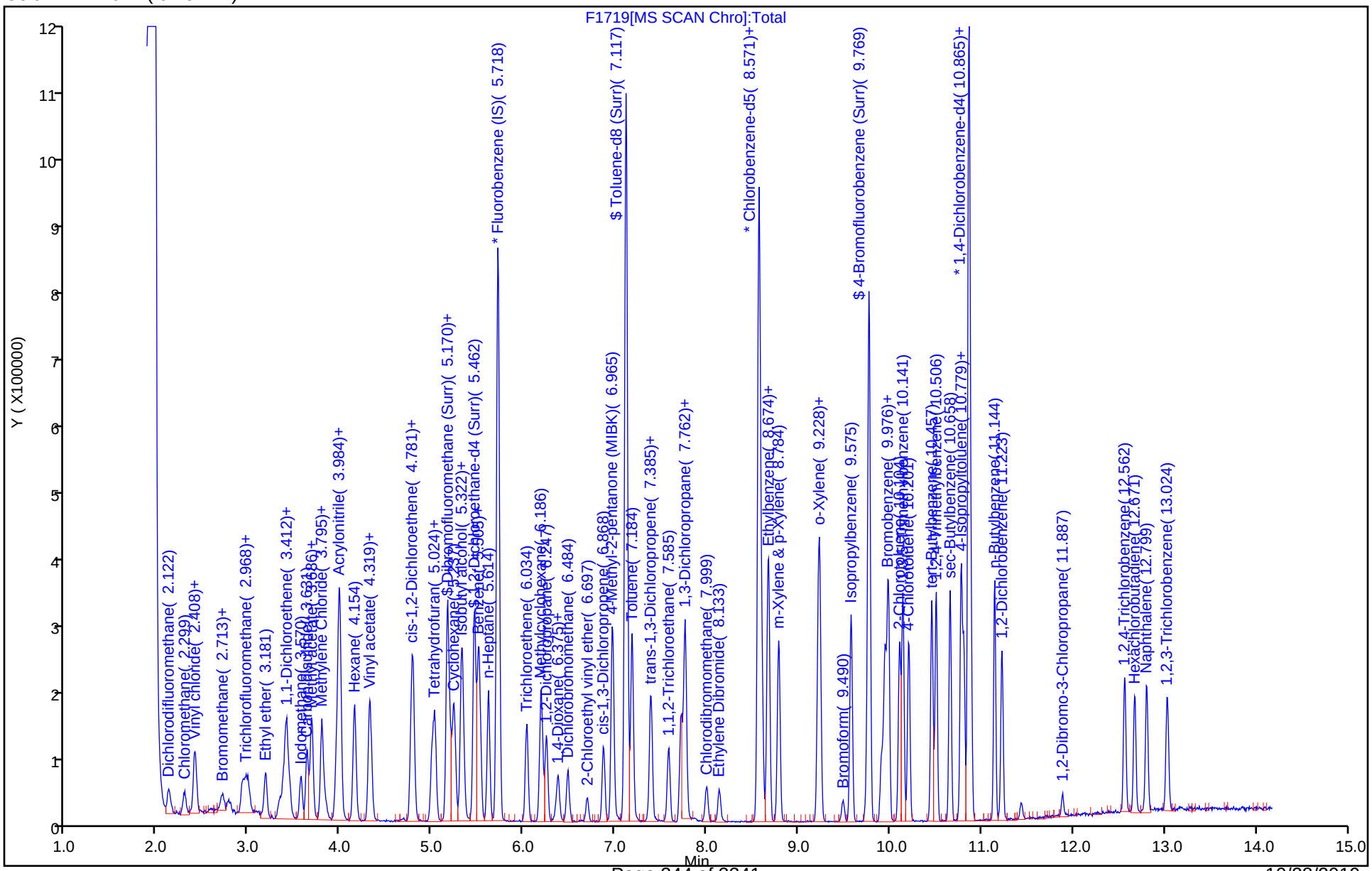
Report Date: 28-Aug-2019 10:38:31 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D

Injection Date:	27-Aug-2019 14:31:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC 3			Worklist Smp#:	6
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	55
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo

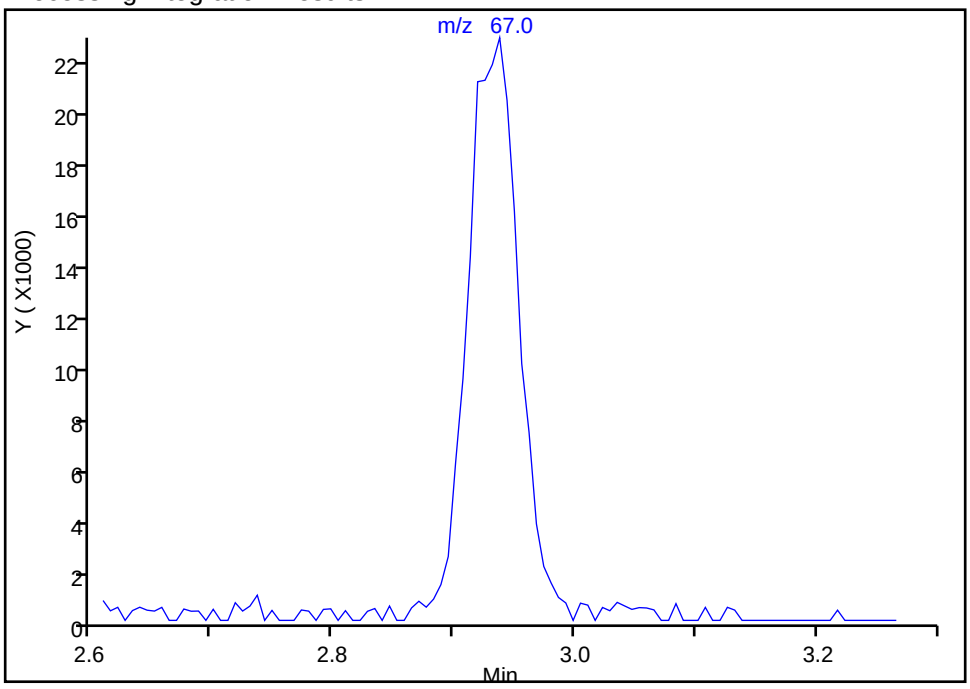
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D
Injection Date: 27-Aug-2019 14:31:30 Instrument ID: HP5973F
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 55 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

16 Dichlorofluoromethane, CAS: 75-43-4

Signal: 1

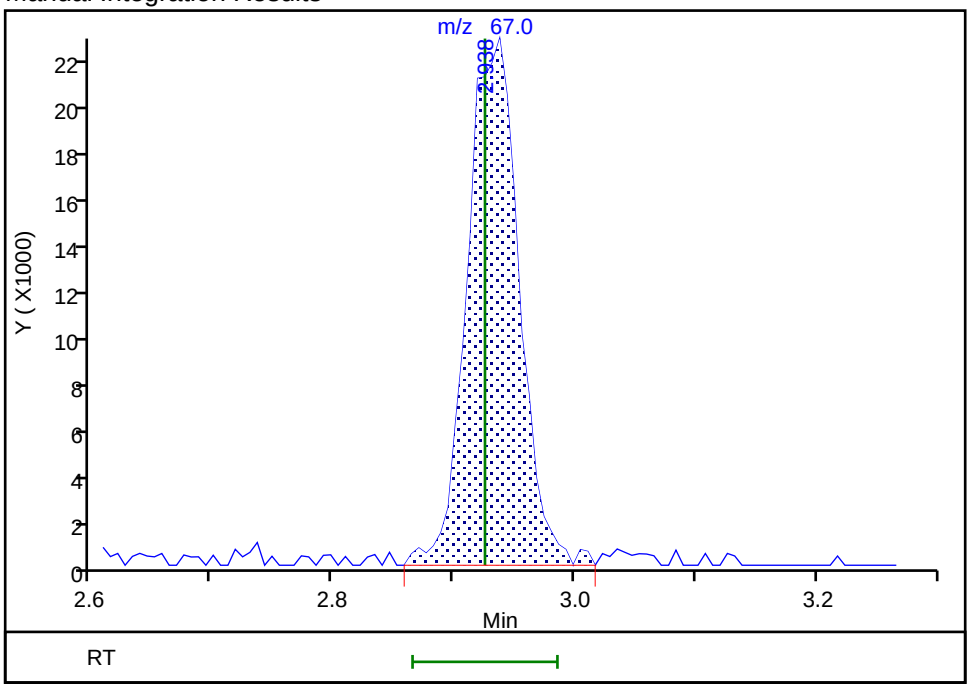
Not Detected
Expected RT: 2.93

Processing Integration Results



Manual Integration Results

RT: 2.94
Area: 67563
Amount: 10.630701
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 16:09:30
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo

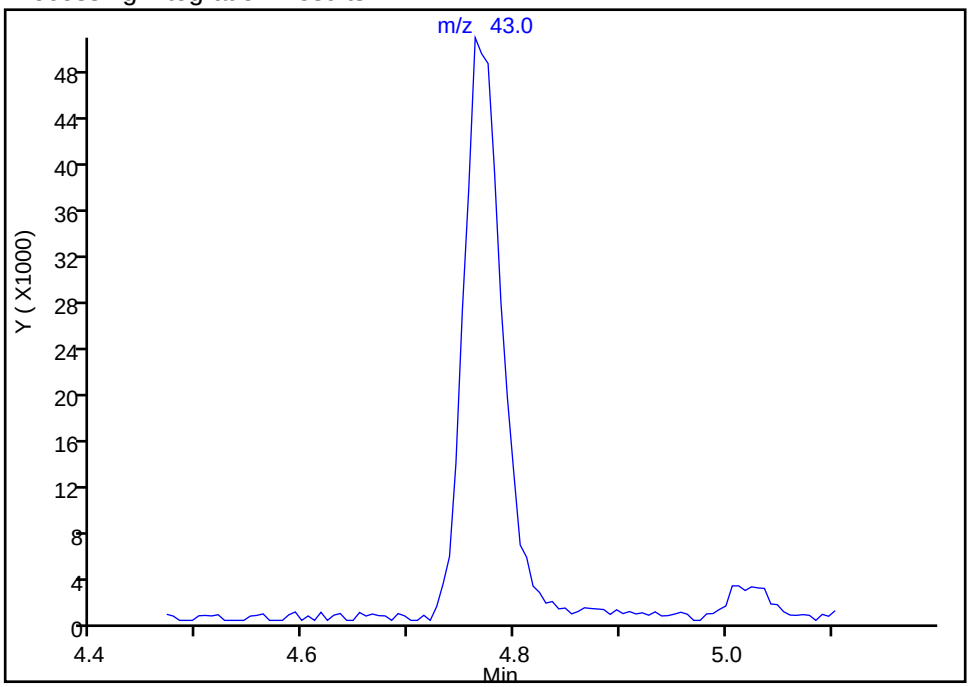
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D
Injection Date: 27-Aug-2019 14:31:30 Instrument ID: HP5973F
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 55 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 2-Butanone (MEK), CAS: 78-93-3

Signal: 1

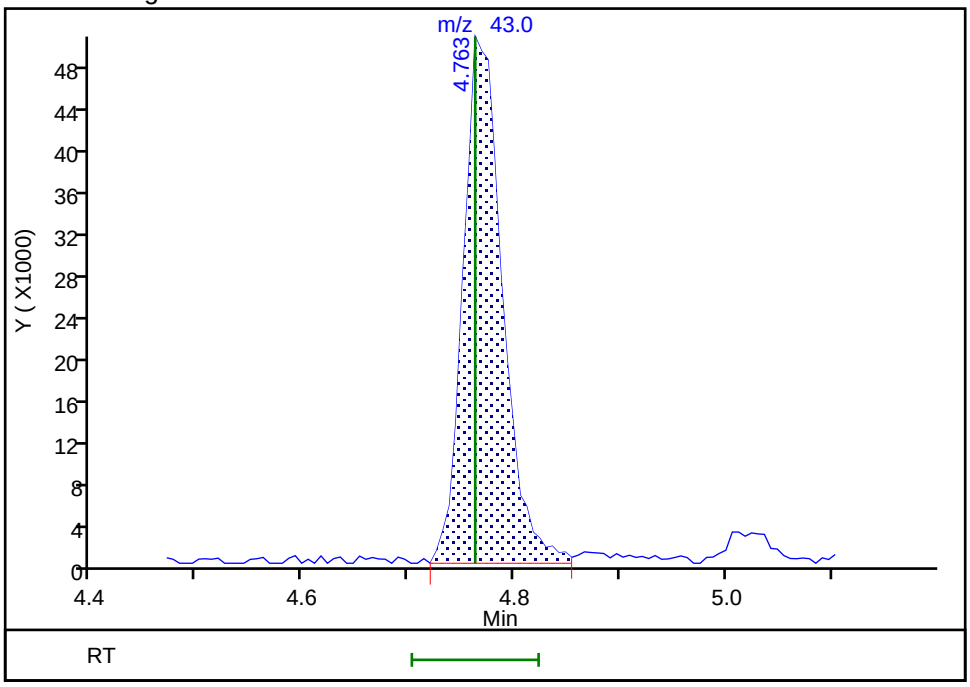
Not Detected
Expected RT: 4.76

Processing Integration Results



Manual Integration Results

RT: 4.76
Area: 131774
Amount: 49.382994
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 16:09:43
Audit Action: Assigned Compound ID Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

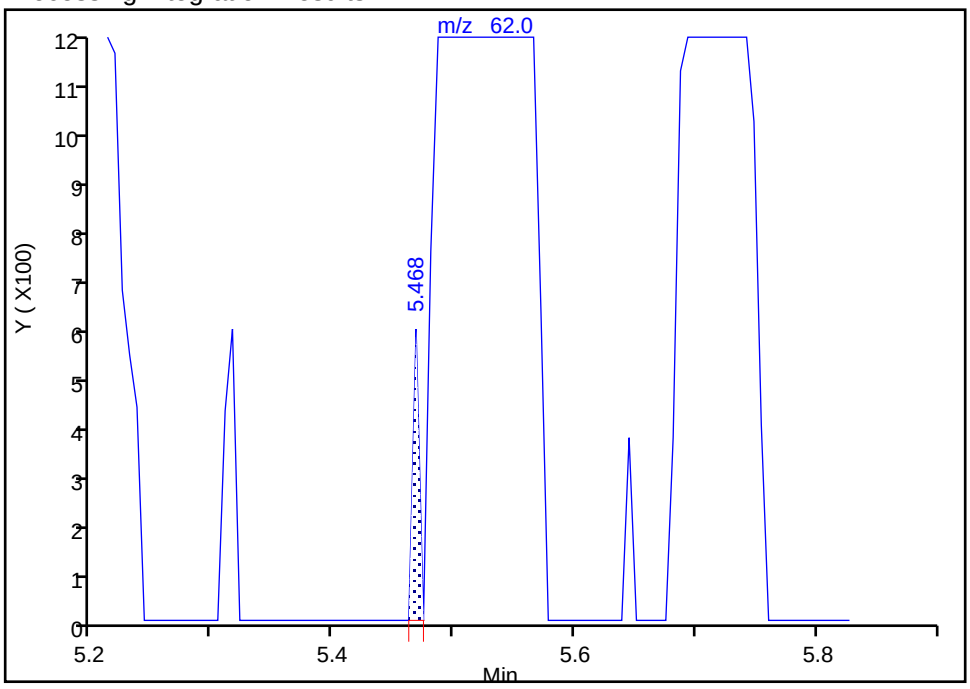
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D
Injection Date: 27-Aug-2019 14:31:30 Instrument ID: HP5973F
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 55 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

58 1,2-Dichloroethane, CAS: 107-06-2

Signal: 1

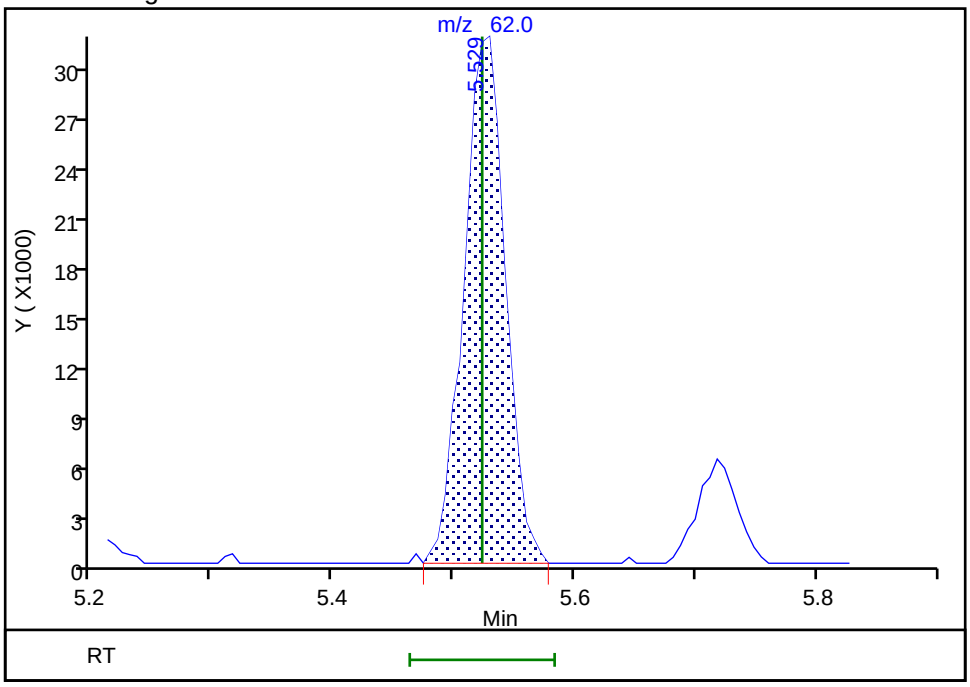
Processing Integration Results

RT: 5.47
Area: 205
Amount: 0.033056
Amount Units: ug/kg



Manual Integration Results

RT: 5.53
Area: 74695
Amount: 10.162517
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 16:09:54
Audit Action: Assigned Compound ID Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo

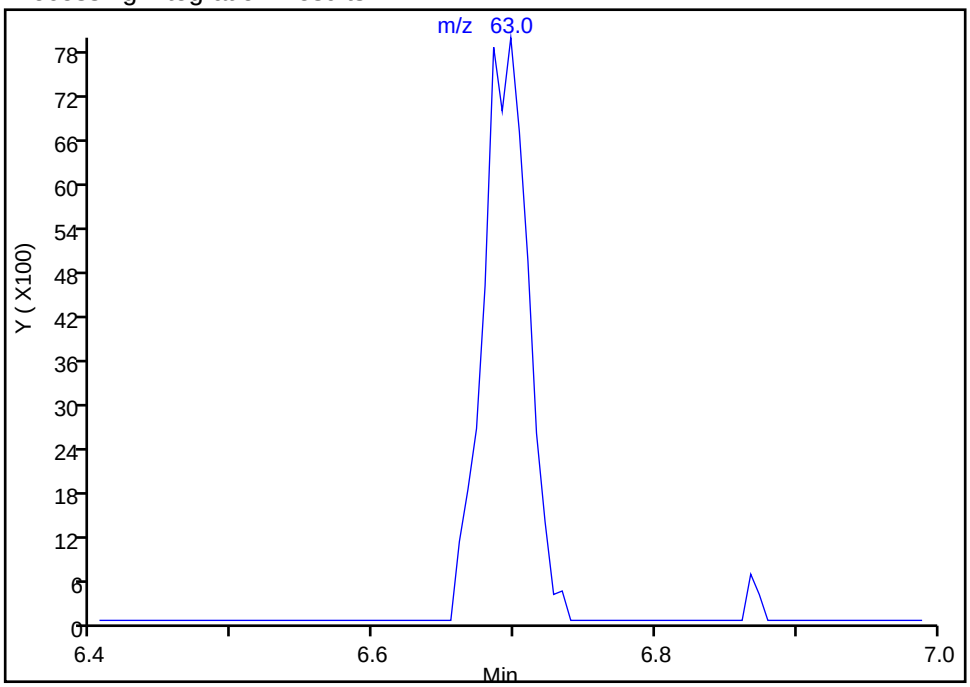
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1719.D
Injection Date: 27-Aug-2019 14:31:30 Instrument ID: HP5973F
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 55 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

69 2-Chloroethyl vinyl ether, CAS: 110-75-8

Signal: 1

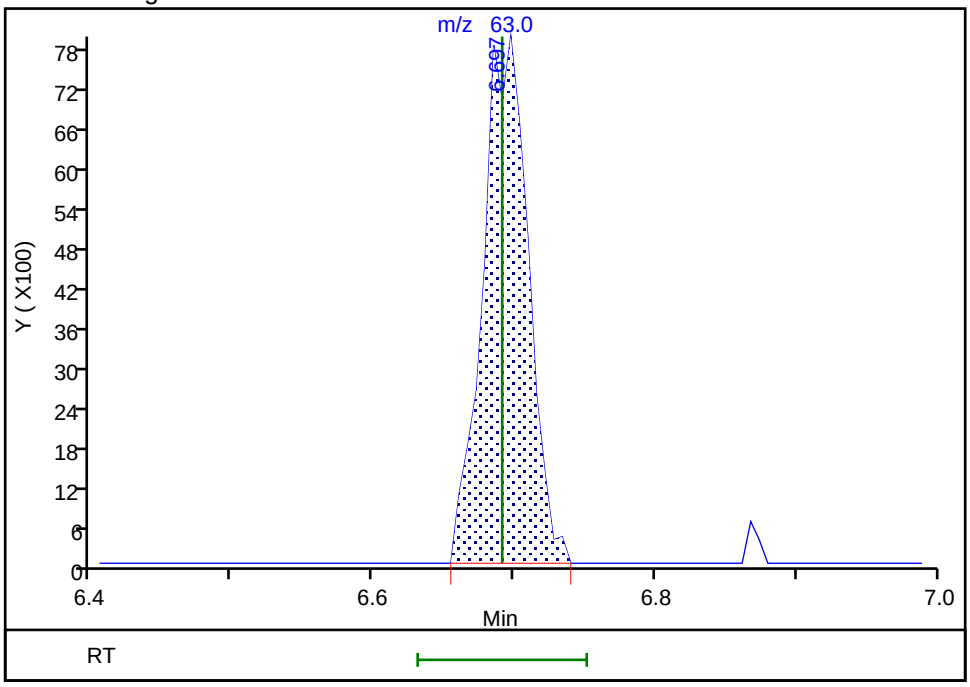
Not Detected
Expected RT: 6.69

Processing Integration Results



Manual Integration Results

RT: 6.70
Area: 17980
Amount: 9.715531
Amount Units: ug/kg



Reviewer: HillL, 27-Aug-2019 16:10:13
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1720.D
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 27-Aug-2019 14:57:30 ALS Bottle#: 56 Worklist Smp#: 7
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 4
Misc. Info.: 480-0083694-007
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:34 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 16:11:04

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.717	5.718	-0.001	99	180567	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	87	365868	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.864	10.865	-0.001	95	349137	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	93	217128	50.0	50.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	99	132456	50.0	49.7	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	94	890860	50.0	50.7	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	88	262220	50.0	50.2	
10 Dichlorodifluoromethane	85	2.116	2.122	-0.006	99	129502	20.0	19.9	
12 Chloromethane	50	2.292	2.293	-0.001	99	93860	20.0	19.8	
13 Vinyl chloride	62	2.396	2.396	0.000	99	76515	20.0	19.6	
151 Butadiene	54	2.408	2.408	0.000	97	77342	20.0	18.7	
14 Bromomethane	94	2.700	2.700	0.000	93	48566	20.0	19.4	
15 Chloroethane	64	2.773	2.779	-0.006	96	40973	20.0	18.6	
16 Dichlorofluoromethane	67	2.925	2.925	0.000	99	128806	20.0	20.3	
17 Trichlorofluoromethane	101	2.980	2.980	0.000	97	139676	20.0	19.1	
18 Ethyl ether	59	3.181	3.175	0.006	94	98772	20.0	20.1	
20 Acrolein	56	3.320	3.327	-0.007	98	59956	100.0	97.1	
21 1,1,2-Trichloro-1,2,2-trif	101	3.375	3.382	-0.007	91	95646	20.0	19.6	
22 1,1-Dichloroethene	96	3.412	3.406	0.006	99	93210	20.0	19.5	
23 Acetone	43	3.436	3.436	0.000	100	175650	100.0	93.0	
25 Iodomethane	142	3.564	3.564	0.000	98	177564	20.0	20.2	
26 Carbon disulfide	76	3.631	3.631	0.000	99	335786	20.0	19.6	
27 Methyl acetate	43	3.667	3.674	-0.007	99	158749	40.0	38.0	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	90	189832	20.0	19.6	
30 Methylene Chloride	84	3.789	3.795	-0.006	97	118767	20.0	19.6	
31 2-Methyl-2-propanol	59	3.819	3.820	-0.001	97	114516	200.0	193.4	
32 Methyl tert-butyl ether	73	3.959	3.960	-0.001	98	273984	20.0	19.8	
33 Acrylonitrile	53	3.978	3.984	-0.006	100	406649	200.0	202.0	
34 trans-1,2-Dichloroethene	96	3.996	3.996	0.000	99	111489	20.0	20.4	
35 Hexane	57	4.148	4.154	-0.006	95	187554	20.0	19.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.312	4.306	0.006	97	448676	40.0	40.6	
39 1,1-Dichloroethane	63	4.330	4.331	-0.001	97	195346	20.0	19.9	
43 2-Butanone (MEK)	43	4.768	4.763	0.005	100	264720	100.0	99.4	
45 cis-1,2-Dichloroethene	96	4.793	4.787	0.006	84	119674	20.0	20.1	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	68	147184	20.0	19.7	
48 Chlorobromomethane	128	4.993	5.000	-0.007	96	58893	20.0	20.3	
49 Tetrahydrofuran	42	5.024	5.018	0.006	62	68190	40.0	39.0	
50 Chloroform	83	5.030	5.030	0.000	96	187432	20.0	19.8	
51 1,1,1-Trichloroethane	97	5.200	5.201	-0.001	98	156774	20.0	19.8	
52 Cyclohexane	56	5.237	5.237	0.000	91	197294	20.0	19.8	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	92	145086	20.0	19.7	
53 Isobutyl alcohol	43	5.328	5.328	0.000	89	135944	500.0	496.8	
55 Carbon tetrachloride	117	5.334	5.335	-0.001	95	126699	20.0	19.6	
57 Benzene	78	5.504	5.505	-0.001	97	438332	20.0	19.9	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	97	148973	20.0	20.3	
59 n-Heptane	43	5.614	5.614	0.000	95	193823	20.0	20.1	
62 Trichloroethene	95	6.034	6.034	0.000	99	111965	20.0	19.9	
64 Methylcyclohexane	83	6.192	6.192	0.000	91	184636	20.0	19.5	
65 1,2-Dichloropropane	63	6.241	6.247	-0.006	94	108960	20.0	19.6	
66 1,4-Dioxane	88	6.344	6.338	0.006	92	23511	400.0	412.5	
67 Dibromomethane	93	6.374	6.375	-0.001	96	60822	20.0	20.3	
68 Dichlorobromomethane	83	6.484	6.478	0.006	98	118966	20.0	19.7	
69 2-Chloroethyl vinyl ether	63	6.691	6.691	0.000	92	36205	20.0	19.6	
72 cis-1,3-Dichloropropene	75	6.873	6.874	-0.001	95	159672	20.0	20.3	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	522209	100.0	101.5	
74 Toluene	92	7.184	7.184	0.000	99	283469	20.0	20.7	
77 trans-1,3-Dichloropropene	75	7.384	7.385	-0.001	96	139775	20.0	20.3	
75 Ethyl methacrylate	69	7.390	7.391	-0.001	90	124572	20.0	21.0	
79 1,1,2-Trichloroethane	83	7.585	7.585	0.000	92	71267	20.0	20.0	
81 Tetrachloroethene	166	7.719	7.719	0.000	93	112885	20.0	20.2	
82 1,3-Dichloropropane	76	7.749	7.750	-0.001	98	156974	20.0	20.9	
80 2-Hexanone	43	7.762	7.762	0.000	97	370874	100.0	102.7	
83 Chlorodibromomethane	129	7.999	7.999	0.000	90	78821	20.0	19.8	
84 Ethylene Dibromide	107	8.133	8.133	0.000	100	89053	20.0	20.7	
87 Chlorobenzene	112	8.601	8.601	0.000	94	300689	20.0	20.4	
88 Ethylbenzene	91	8.668	8.668	0.000	98	504297	20.0	20.4	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	43	94031	20.0	20.6	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	100	201514	20.0	20.5	
91 o-Xylene	106	9.215	9.216	-0.001	96	195247	20.0	20.7	
92 Styrene	104	9.240	9.234	0.006	94	317197	20.0	20.3	
95 Bromoform	173	9.495	9.490	0.005	96	42560	20.0	18.7	
94 Isopropylbenzene	105	9.574	9.575	-0.001	96	483620	20.0	19.7	
97 1,1,2,2-Tetrachloroethane	83	9.909	9.909	0.000	95	109670	20.0	20.1	
101 Bromobenzene	156	9.939	9.940	-0.001	93	125924	20.0	20.3	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.952	0.000	67	37218	20.0	19.4	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	87	35902	20.0	20.3	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	591432	20.0	20.2	
103 2-Chlorotoluene	126	10.110	10.104	0.006	97	121566	20.0	20.0	
102 1,3,5-Trimethylbenzene	105	10.140	10.141	-0.001	94	417542	20.0	20.1	
105 4-Chlorotoluene	126	10.207	10.201	0.006	97	127936	20.0	20.3	
106 tert-Butylbenzene	134	10.457	10.457	0.000	93	94574	20.0	20.4	
107 1,2,4-Trimethylbenzene	105	10.505	10.506	-0.001	95	423169	20.0	20.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.657	10.658	-0.001	94	537492	20.0	20.5	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	98	461080	20.0	20.3	
111 1,3-Dichlorobenzene	146	10.809	10.810	-0.001	97	239924	20.0	20.1	
113 1,4-Dichlorobenzene	146	10.882	10.883	-0.001	94	243844	20.0	20.4	
115 n-Butylbenzene	91	11.144	11.144	0.000	97	409019	20.0	20.3	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	97	232042	20.0	20.3	
117 1,2-Dibromo-3-Chloropropan	75	11.886	11.880	0.006	80	17446	20.0	18.4	
119 1,2,4-Trichlorobenzene	180	12.561	12.562	-0.001	95	149826	20.0	19.9	
120 Hexachlorobutadiene	225	12.677	12.671	0.006	97	84322	20.0	20.3	
121 Naphthalene	128	12.805	12.805	0.000	97	366259	20.0	19.8	
122 1,2,3-Trichlorobenzene	180	13.024	13.030	-0.006	96	142060	20.0	20.4	
S 123 Total BTEX	1				0			102.2	
S 124 Xylenes, Total	1				0			41.2	
S 125 1,2-Dichloroethene, Total	1				0			40.5	
S 126 1,3-Dichloropropene, Total	1				0			40.6	

Reagents:

8260 CORP mix_00164	Amount Added: 10.00	Units: uL	
GAS CORP mix_00358	Amount Added: 10.00	Units: uL	
F 8260 IS/SS_00094	Amount Added: 1.00	Units: uL	Run Reagent

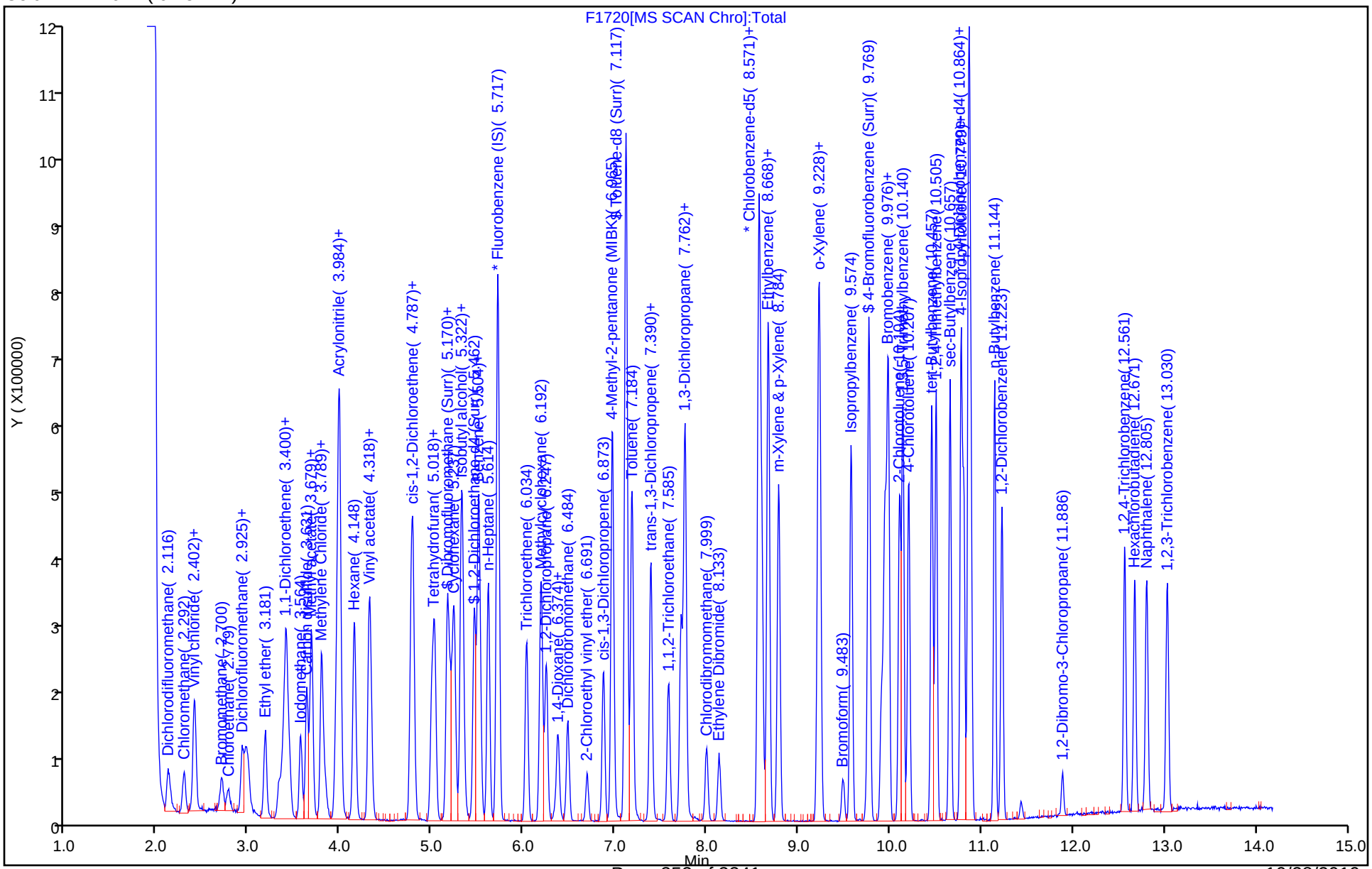
Report Date: 28-Aug-2019 10:38:37 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1720.D

Injection Date:	27-Aug-2019 14:57:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC 4			Worklist Smp#:	7
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	56
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1721.D
Lims ID: ICIS 5
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 27-Aug-2019 15:22:30 ALS Bottle#: 57 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: ICIS 5
Misc. Info.: 480-0083694-008
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:39 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 16:11:38

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	184748	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.571	0.000	86	392274	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.865	10.865	0.000	95	364064	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	93	228465	50.0	51.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	98	137206	50.0	50.3	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	941071	50.0	50.0	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	88	274473	50.0	49.0	
10 Dichlorodifluoromethane	85	2.122	2.122	0.000	100	344365	50.0	51.7	
12 Chloromethane	50	2.293	2.293	0.000	98	220793	50.0	45.5	
13 Vinyl chloride	62	2.396	2.396	0.000	99	196800	50.0	49.3	
151 Butadiene	54	2.408	2.408	0.000	94	203847	50.0	48.2	
14 Bromomethane	94	2.700	2.700	0.000	95	113590	50.0	44.5	
15 Chloroethane	64	2.779	2.779	0.000	99	104450	50.0	46.3	
16 Dichlorofluoromethane	67	2.925	2.925	0.000	98	303769	50.0	46.8	
17 Trichlorofluoromethane	101	2.980	2.980	0.000	99	363354	50.0	48.5	
18 Ethyl ether	59	3.175	3.175	0.000	95	235819	50.0	47.0	
20 Acrolein	56	3.327	3.327	0.000	98	150941	250.0	239.0	
21 1,1,2-Trichloro-1,2,2-trif	101	3.382	3.382	0.000	94	253788	50.0	50.8	
22 1,1-Dichloroethene	96	3.406	3.406	0.000	99	240640	50.0	49.2	
23 Acetone	43	3.436	3.436	0.000	100	445141	250.0	230.3	
25 Iodomethane	142	3.564	3.564	0.000	99	438074	50.0	48.6	
26 Carbon disulfide	76	3.631	3.631	0.000	99	851654	50.0	48.5	
27 Methyl acetate	43	3.674	3.674	0.000	98	406821	100.0	95.2	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	88	479499	50.0	48.3	
30 Methylene Chloride	84	3.795	3.795	0.000	97	278998	50.0	45.0	
31 2-Methyl-2-propanol	59	3.820	3.820	0.000	97	299080	500.0	493.7	
32 Methyl tert-butyl ether	73	3.960	3.960	0.000	97	690327	50.0	48.7	
33 Acrylonitrile	53	3.984	3.984	0.000	100	1002439	500.0	486.8	
34 trans-1,2-Dichloroethene	96	3.996	3.996	0.000	98	270941	50.0	48.5	
35 Hexane	57	4.154	4.154	0.000	94	458593	50.0	46.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.306	4.306	0.000	97	1125460	100.0	99.4	
39 1,1-Dichloroethane	63	4.331	4.331	0.000	97	475220	50.0	47.3	
43 2-Butanone (MEK)	43	4.763	4.763	0.000	100	664516	250.0	244.0	
45 cis-1,2-Dichloroethene	96	4.787	4.787	0.000	85	289966	50.0	47.5	
44 2,2-Dichloropropane	77	4.793	4.793	0.000	70	370001	50.0	48.5	
48 Chlorobromomethane	128	5.000	5.000	0.000	97	141074	50.0	47.5	
49 Tetrahydrofuran	42	5.018	5.018	0.000	91	172192	100.0	96.2	
50 Chloroform	83	5.030	5.030	0.000	95	464697	50.0	48.0	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	402134	50.0	49.7	
52 Cyclohexane	56	5.237	5.237	0.000	92	500739	50.0	49.1	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	94	364697	50.0	48.3	
53 Isobutyl alcohol	43	5.328	5.328	0.000	94	360131	1250.0	1286.3	
55 Carbon tetrachloride	117	5.335	5.335	0.000	92	329173	50.0	49.7	
57 Benzene	78	5.505	5.505	0.000	97	1058968	50.0	47.0	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	97	352944	50.0	47.0	
59 n-Heptane	43	5.614	5.614	0.000	94	485123	50.0	49.2	
62 Trichloroethene	95	6.034	6.034	0.000	98	274581	50.0	47.6	
64 Methylcyclohexane	83	6.192	6.192	0.000	91	479042	50.0	49.5	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	96	273692	50.0	48.2	
66 1,4-Dioxane	88	6.338	6.338	0.000	96	60008	1000.0	982.1	
67 Dibromomethane	93	6.375	6.375	0.000	96	149393	50.0	48.8	
68 Dichlorobromomethane	83	6.478	6.478	0.000	99	313526	50.0	50.8	
69 2-Chloroethyl vinyl ether	63	6.691	6.691	0.000	92	94404	50.0	50.0	
72 cis-1,3-Dichloropropene	75	6.874	6.874	0.000	94	401686	50.0	49.9	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	1346832	250.0	244.1	
74 Toluene	92	7.184	7.184	0.000	99	710367	50.0	48.3	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	96	376026	50.0	51.0	
75 Ethyl methacrylate	69	7.391	7.391	0.000	91	329428	50.0	51.8	
79 1,1,2-Trichloroethane	83	7.585	7.585	0.000	93	181628	50.0	47.6	
81 Tetrachloroethene	166	7.719	7.719	0.000	95	284049	50.0	47.4	
82 1,3-Dichloropropane	76	7.750	7.750	0.000	92	378659	50.0	47.1	
80 2-Hexanone	43	7.762	7.762	0.000	96	964056	250.0	249.0	
83 Chlorodibromomethane	129	7.999	7.999	0.000	90	229307	50.0	53.6	
84 Ethylene Dibromide	107	8.133	8.133	0.000	99	230349	50.0	49.9	
87 Chlorobenzene	112	8.601	8.601	0.000	95	744122	50.0	47.1	
88 Ethylbenzene	91	8.668	8.668	0.000	98	1240620	50.0	46.8	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	95	246331	50.0	50.4	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	100	502801	50.0	47.8	
91 o-Xylene	106	9.216	9.216	0.000	96	481918	50.0	47.6	
92 Styrene	104	9.234	9.234	0.000	95	811947	50.0	48.4	
95 Bromoform	173	9.490	9.490	0.000	97	126703	50.0	51.9	
94 Isopropylbenzene	105	9.575	9.575	0.000	96	1235649	50.0	48.3	
97 1,1,2,2-Tetrachloroethane	83	9.909	9.909	0.000	96	283804	50.0	49.8	
101 Bromobenzene	156	9.940	9.940	0.000	96	309169	50.0	47.9	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.952	0.000	70	101690	50.0	50.9	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	83	89002	50.0	48.2	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	1457200	50.0	47.8	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	298839	50.0	47.2	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	0.000	94	1051734	50.0	48.5	
105 4-Chlorotoluene	126	10.201	10.201	0.000	98	305870	50.0	46.6	
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	232354	50.0	48.1	
107 1,2,4-Trimethylbenzene	105	10.506	10.506	0.000	96	1040921	50.0	47.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	94	1325647	50.0	48.5	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	97	1143623	50.0	48.2	
111 1,3-Dichlorobenzene	146	10.810	10.810	0.000	97	580244	50.0	46.7	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	94	576429	50.0	46.2	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	1012287	50.0	48.3	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	98	563591	50.0	47.2	
117 1,2-Dibromo-3-Chloropropan	75	11.880	11.880	0.000	85	47827	50.0	48.4	
119 1,2,4-Trichlorobenzene	180	12.562	12.562	0.000	95	362462	50.0	46.2	
120 Hexachlorobutadiene	225	12.671	12.671	0.000	98	208760	50.0	48.2	
121 Naphthalene	128	12.805	12.805	0.000	97	930432	50.0	48.2	
122 1,2,3-Trichlorobenzene	180	13.030	13.030	0.000	95	344883	50.0	47.5	

Reagents:

8260 CORP mix_00164	Amount Added: 25.00	Units: uL	
GAS CORP mix_00358	Amount Added: 25.00	Units: uL	
F 8260 IS/SS_00094	Amount Added: 1.00	Units: uL	Run Reagent

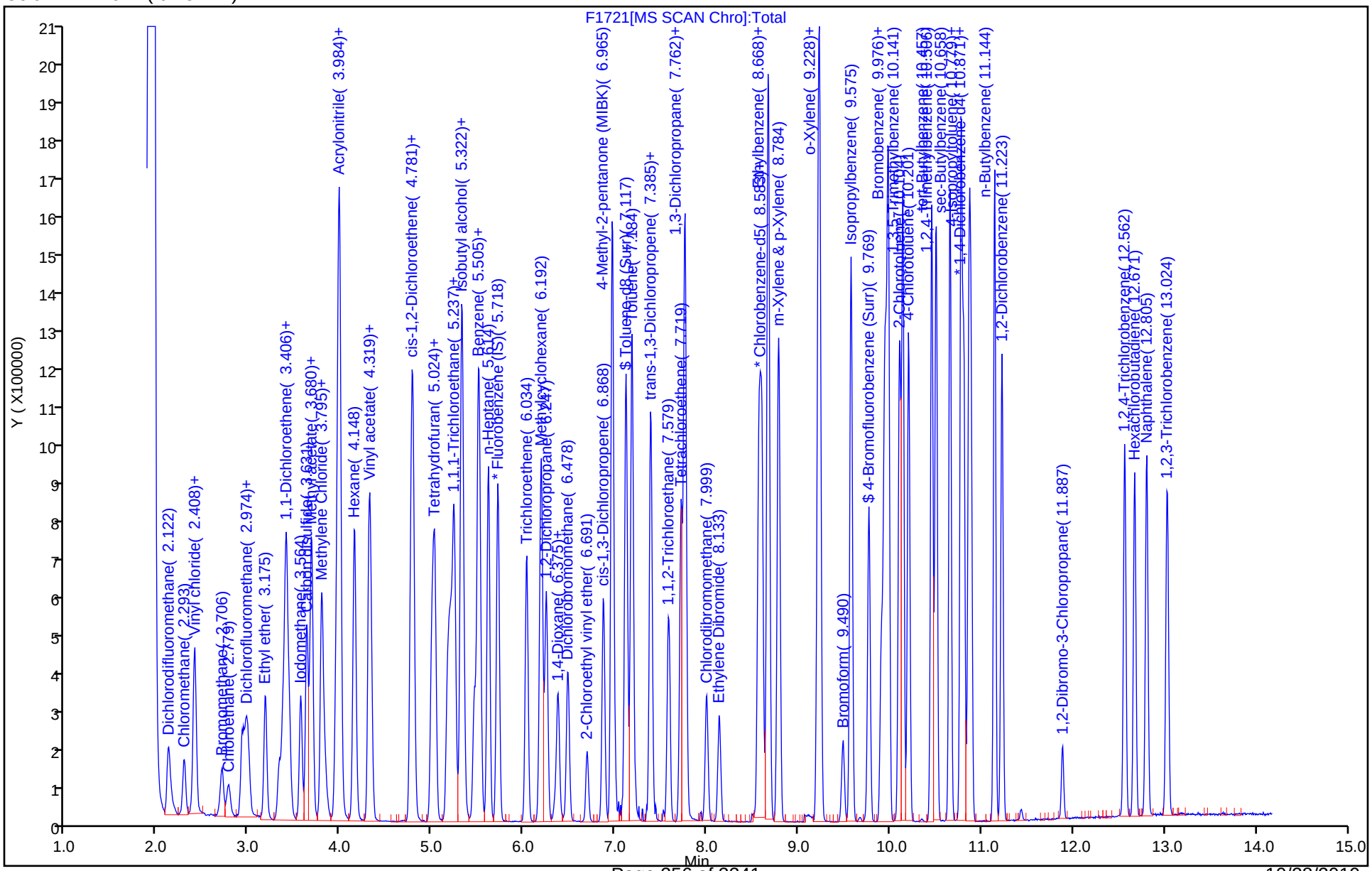
Report Date: 28-Aug-2019 10:38:42 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1721.D

Injection Date:	27-Aug-2019 15:22:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	ICIS 5			Worklist Smp#:	8
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	57
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1722.D
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 27-Aug-2019 15:48:30 ALS Bottle#: 58 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 6
Misc. Info.: 480-0083694-009
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:45 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 16:24:16

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	186009	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.571	0.000	85	386382	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.858	10.865	-0.007	95	361433	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	92	221113	50.0	49.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.456	5.462	-0.006	98	139008	50.0	50.6	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	923690	50.0	49.8	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	88	274538	50.0	49.7	
10 Dichlorodifluoromethane	85	2.122	2.122	0.000	100	650426	100.0	97.0	
12 Chloromethane	50	2.293	2.293	0.000	99	435827	100.0	89.3	
13 Vinyl chloride	62	2.396	2.396	0.000	98	380030	100.0	94.6	
151 Butadiene	54	2.408	2.408	0.000	93	397457	100.0	93.4	
14 Bromomethane	94	2.700	2.700	0.000	94	225795	100.0	87.8	
15 Chloroethane	64	2.773	2.779	-0.006	98	207421	100.0	91.4	
16 Dichlorofluoromethane	67	2.925	2.925	0.000	99	595313	100.0	91.1	
17 Trichlorofluoromethane	101	2.974	2.980	-0.006	99	714854	100.0	94.7	
18 Ethyl ether	59	3.175	3.175	0.000	94	468917	100.0	92.8	
20 Acrolein	56	3.327	3.327	0.000	99	288472	500.0	453.7	
21 1,1,2-Trichloro-1,2,2-trif	101	3.382	3.382	0.000	95	476026	100.0	94.7	
22 1,1-Dichloroethene	96	3.406	3.406	0.000	98	445040	100.0	90.3	
23 Acetone	43	3.436	3.436	0.000	100	844665	500.0	434.0	
25 Iodomethane	142	3.564	3.564	0.000	99	826825	100.0	91.2	
26 Carbon disulfide	76	3.631	3.631	0.000	99	1636608	100.0	92.6	
27 Methyl acetate	43	3.668	3.674	-0.006	98	781730	200.0	181.6	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	87	903712	100.0	90.4	
30 Methylene Chloride	84	3.789	3.795	-0.006	97	533186	100.0	85.3	
31 2-Methyl-2-propanol	59	3.820	3.820	0.000	98	588460	1000.0	964.8	
32 Methyl tert-butyl ether	73	3.960	3.960	0.000	97	1333633	100.0	93.5	
33 Acrylonitrile	53	3.978	3.984	-0.006	99	1901055	1000.0	916.9	
34 trans-1,2-Dichloroethene	96	3.996	3.996	0.000	98	509187	100.0	90.5	
35 Hexane	57	4.148	4.154	-0.006	94	877026	100.0	88.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.306	4.306	0.000	97	2201283	200.0	193.2	
39 1,1-Dichloroethane	63	4.331	4.331	0.000	97	906050	100.0	89.7	
43 2-Butanone (MEK)	43	4.763	4.763	0.000	100	1278022	500.0	466.0	
45 cis-1,2-Dichloroethene	96	4.787	4.787	0.000	84	561551	100.0	91.5	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	69	716297	100.0	93.3	
48 Chlorobromomethane	128	4.994	5.000	-0.006	98	272159	100.0	91.0	
49 Tetrahydrofuran	42	5.018	5.018	0.000	95	329911	200.0	183.1	
50 Chloroform	83	5.030	5.030	0.000	96	890290	100.0	91.4	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	781742	100.0	95.9	
52 Cyclohexane	56	5.237	5.237	0.000	92	943522	100.0	91.9	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	94	692287	100.0	91.1	
53 Isobutyl alcohol	43	5.328	5.328	0.000	95	695737	2500.0	2468.2	
55 Carbon tetrachloride	117	5.335	5.335	0.000	94	655578	100.0	98.4	
57 Benzene	78	5.505	5.505	0.000	97	2022855	100.0	89.3	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	97	695090	100.0	92.0	
59 n-Heptane	43	5.614	5.614	0.000	94	915865	100.0	92.2	
62 Trichloroethene	95	6.028	6.034	-0.006	99	531081	100.0	91.4	
64 Methylcyclohexane	83	6.192	6.192	0.000	92	907480	100.0	93.1	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	96	510023	100.0	89.2	
66 1,4-Dioxane	88	6.338	6.338	0.000	95	116800	2000.0	1940.6	
67 Dibromomethane	93	6.375	6.375	0.000	97	294600	100.0	95.6	
68 Dichlorobromomethane	83	6.484	6.478	0.006	99	631450	100.0	101.6	
69 2-Chloroethyl vinyl ether	63	6.697	6.691	0.006	94	182975	100.0	96.2	
72 cis-1,3-Dichloropropene	75	6.874	6.874	0.000	94	799985	100.0	98.7	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	2550365	500.0	469.3	
74 Toluene	92	7.184	7.184	0.000	99	1299244	100.0	89.7	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	95	725189	100.0	99.9	
75 Ethyl methacrylate	69	7.391	7.391	0.000	91	628643	100.0	100.3	
79 1,1,2-Trichloroethane	83	7.579	7.585	-0.006	93	353039	100.0	94.0	
81 Tetrachloroethene	166	7.719	7.719	0.000	97	530363	100.0	89.8	
82 1,3-Dichloropropane	76	7.750	7.750	0.000	94	724962	100.0	91.5	
80 2-Hexanone	43	7.762	7.762	0.000	96	1820403	500.0	477.4	
83 Chlorodibromomethane	129	7.999	7.999	0.000	90	449608	100.0	106.7	
84 Ethylene Dibromide	107	8.133	8.133	0.000	99	438870	100.0	96.6	
87 Chlorobenzene	112	8.601	8.601	0.000	94	1405752	100.0	90.3	
88 Ethylbenzene	91	8.668	8.668	0.000	98	2341515	100.0	89.7	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	95	477478	100.0	99.2	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	99	957718	100.0	92.4	
91 o-Xylene	106	9.216	9.216	0.000	97	917031	100.0	92.0	
92 Styrene	104	9.234	9.234	0.000	95	1529258	100.0	92.5	
95 Bromoform	173	9.490	9.490	0.000	96	263635	100.0	109.7	
94 Isopropylbenzene	105	9.575	9.575	0.000	96	2339984	100.0	92.2	
97 1,1,2,2-Tetrachloroethane	83	9.909	9.909	0.000	96	533485	100.0	94.2	
101 Bromobenzene	156	9.940	9.940	0.000	96	591487	100.0	92.2	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.952	0.000	70	198352	100.0	100.0	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	83	175326	100.0	95.6	
99 N-Propylbenzene	91	9.982	9.982	0.000	98	2761611	100.0	91.3	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	568837	100.0	90.6	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	0.000	94	2011626	100.0	93.4	
105 4-Chlorotoluene	126	10.207	10.201	0.006	98	588306	100.0	90.2	
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	443318	100.0	92.4	
107 1,2,4-Trimethylbenzene	105	10.506	10.506	0.000	95	2013112	100.0	93.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	95	2498984	100.0	92.0	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	97	2167482	100.0	92.0	
111 1,3-Dichlorobenzene	146	10.804	10.810	-0.006	97	1116209	100.0	90.5	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	94	1119164	100.0	90.3	
115 n-Butylbenzene	91	11.144	11.144	0.000	97	1964862	100.0	94.4	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	97	1084543	100.0	91.6	
117 1,2-Dibromo-3-Chloropropan	75	11.887	11.880	0.007	83	102740	100.0	104.7	
119 1,2,4-Trichlorobenzene	180	12.562	12.562	0.000	95	727436	100.0	93.5	
120 Hexachlorobutadiene	225	12.671	12.671	0.000	98	413542	100.0	96.2	
121 Naphthalene	128	12.805	12.805	0.000	97	1886700	100.0	98.4	
122 1,2,3-Trichlorobenzene	180	13.030	13.030	0.000	97	679819	100.0	94.2	
S 123 Total BTEX	1				0			453.1	
S 124 Xylenes, Total	1				0			184.3	
S 125 1,2-Dichloroethene, Total	1				0			181.9	
S 126 1,3-Dichloropropene, Total	1				0			198.5	

Reagents:

8260 CORP mix_00164	Amount Added: 50.00	Units: uL	
GAS CORP mix_00358	Amount Added: 50.00	Units: uL	
F 8260 IS/SS_00094	Amount Added: 1.00	Units: uL	Run Reagent

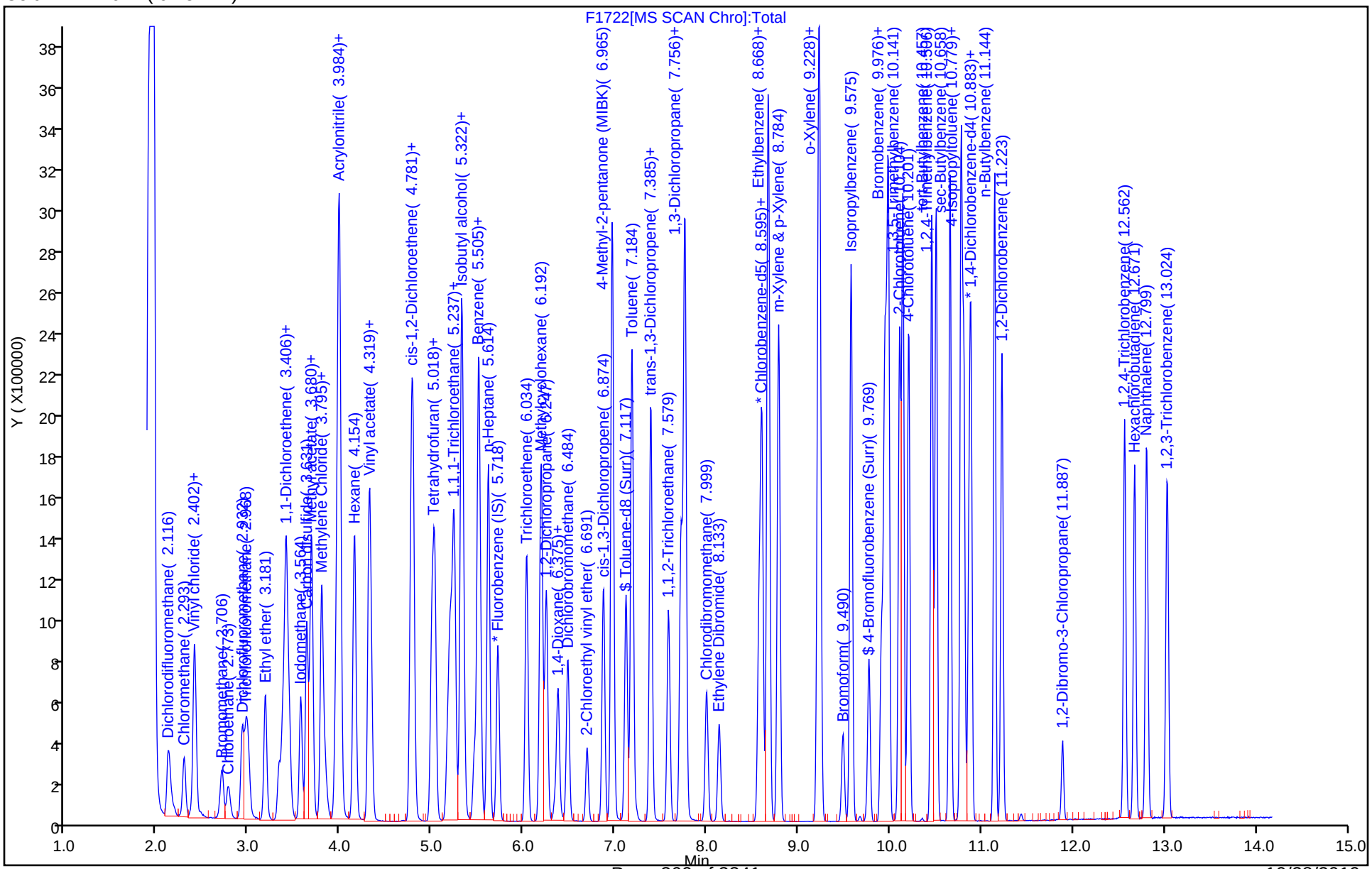
Report Date: 28-Aug-2019 10:38:48 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1722.D

Injection Date:	27-Aug-2019 15:48:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC 6			Worklist Smp#:	9
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	58
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1723.D
Lims ID: IC 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 27-Aug-2019 16:13:30 ALS Bottle#: 59 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 7
Misc. Info.: 480-0083694-010
Operator ID: LH Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:51 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 16:24:57

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	98	190356	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.565	8.571	-0.006	87	387157	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.864	10.865	-0.001	95	361334	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	92	222776	50.0	48.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.456	5.462	-0.006	99	138465	50.0	49.3	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	922835	50.0	49.7	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	87	278987	50.0	50.4	
10 Dichlorodifluoromethane	85	2.116	2.122	-0.006	100	1218570	200.0	177.6	
12 Chloromethane	50	2.293	2.293	0.000	100	884877	200.0	177.1	
13 Vinyl chloride	62	2.396	2.396	0.000	99	778452	200.0	189.4	
151 Butadiene	54	2.408	2.408	0.000	91	805198	200.0	184.9	
14 Bromomethane	94	2.700	2.700	0.000	93	470818	200.0	178.8	
15 Chloroethane	64	2.773	2.779	-0.006	98	421906	200.0	181.6	
16 Dichlorofluoromethane	67	2.925	2.925	0.000	98	1183727	200.0	177.1	
17 Trichlorofluoromethane	101	2.974	2.980	-0.006	99	1424876	200.0	184.4	
18 Ethyl ether	59	3.175	3.175	0.000	94	962637	200.0	186.1	
20 Acrolein	56	3.327	3.327	0.000	100	629314	1000.0	967.1	
21 1,1,2-Trichloro-1,2,2-trif	101	3.382	3.382	0.000	94	930919	200.0	181.0	
22 1,1-Dichloroethene	96	3.406	3.406	0.000	99	904054	200.0	179.3	
23 Acetone	43	3.436	3.436	0.000	100	1888823	1000.0	948.4	
25 Iodomethane	142	3.564	3.564	0.000	99	1686451	200.0	181.8	
26 Carbon disulfide	76	3.631	3.631	0.000	99	3258835	200.0	180.2	
27 Methyl acetate	43	3.668	3.674	-0.006	98	1695720	400.0	385.0	
28 3-Chloro-1-propene	41	3.686	3.686	0.000	87	1799226	200.0	175.9	
30 Methylene Chloride	84	3.789	3.795	-0.006	97	1060027	200.0	165.8	
31 2-Methyl-2-propanol	59	3.820	3.820	0.000	98	1417068	2000.0	2270.3	
32 Methyl tert-butyl ether	73	3.960	3.960	0.000	97	2770172	200.0	189.7	
33 Acrylonitrile	53	3.978	3.984	-0.006	99	3928188	2000.0	1851.3	
34 trans-1,2-Dichloroethene	96	3.996	3.996	0.000	98	1025075	200.0	177.9	
35 Hexane	57	4.148	4.154	-0.006	94	1702693	200.0	167.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.306	4.306	0.000	97	4465086	400.0	382.9	
39 1,1-Dichloroethane	63	4.331	4.331	0.000	97	1818739	200.0	175.9	
43 2-Butanone (MEK)	43	4.763	4.763	0.000	100	2792761	1000.0	995.1	
45 cis-1,2-Dichloroethene	96	4.787	4.787	0.000	85	1122929	200.0	178.7	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	70	1475917	200.0	187.8	
48 Chlorobromomethane	128	4.994	5.000	-0.006	98	556383	200.0	181.8	
49 Tetrahydrofuran	42	5.012	5.018	-0.006	90	738473	400.0	400.4	
50 Chloroform	83	5.030	5.030	0.000	96	1813384	200.0	182.0	
51 1,1,1-Trichloroethane	97	5.195	5.201	-0.006	98	1608688	200.0	192.8	
52 Cyclohexane	56	5.237	5.237	0.000	92	1878698	200.0	178.8	
54 1,1-Dichloropropene	75	5.316	5.316	0.000	95	1388023	200.0	178.5	
53 Isobutyl alcohol	43	5.328	5.328	0.000	90	1591155	5000.0	5515.9	
55 Carbon tetrachloride	117	5.334	5.335	-0.001	96	1378101	200.0	202.1	
57 Benzene	78	5.505	5.505	0.000	98	4015310	200.0	173.1	
58 1,2-Dichloroethane	62	5.523	5.523	0.000	97	1428602	200.0	184.8	
59 n-Heptane	43	5.614	5.614	0.000	94	1767813	200.0	173.8	
62 Trichloroethene	95	6.034	6.034	0.000	98	1082039	200.0	182.1	
64 Methylcyclohexane	83	6.192	6.192	0.000	92	1803213	200.0	180.8	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	95	1063187	200.0	181.8	
66 1,4-Dioxane	88	6.338	6.338	0.000	95	265399	4000.0	4400.8	
67 Dibromomethane	93	6.375	6.375	0.000	97	608235	200.0	192.9	
68 Dichlorobromomethane	83	6.478	6.478	0.000	99	1340276	200.0	210.7	
69 2-Chloroethyl vinyl ether	63	6.691	6.691	0.000	93	408972	200.0	210.1	
72 cis-1,3-Dichloropropene	75	6.868	6.874	-0.006	95	1673428	200.0	201.7	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	96	5326932	1000.0	978.3	
74 Toluene	92	7.184	7.184	0.000	99	2598462	200.0	179.1	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	98	1529205	200.0	210.2	
75 Ethyl methacrylate	69	7.391	7.391	0.000	91	1339327	200.0	213.3	
79 1,1,2-Trichloroethane	83	7.579	7.585	-0.006	92	731143	200.0	194.3	
81 Tetrachloroethene	166	7.719	7.719	0.000	97	1082054	200.0	182.8	
82 1,3-Dichloropropane	76	7.750	7.750	0.000	93	1465314	200.0	184.6	
80 2-Hexanone	43	7.762	7.762	0.000	95	3911478	1000.0	1023.7	
83 Chlorodibromomethane	129	7.999	7.999	0.000	90	1010761	200.0	239.4	
84 Ethylene Dibromide	107	8.133	8.133	0.000	99	930507	200.0	204.4	
87 Chlorobenzene	112	8.601	8.601	0.000	94	2789407	200.0	178.9	
88 Ethylbenzene	91	8.668	8.668	0.000	98	4582561	200.0	175.2	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	95	982766	200.0	203.7	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	99	1934235	200.0	186.2	
91 o-Xylene	106	9.216	9.216	0.000	97	1813838	200.0	181.6	
92 Styrene	104	9.234	9.234	0.000	94	3029727	200.0	182.9	
95 Bromoform	173	9.483	9.490	-0.007	96	620464	200.0	257.6	
94 Isopropylbenzene	105	9.575	9.575	0.000	97	4541157	200.0	179.0	
97 1,1,2,2-Tetrachloroethane	83	9.909	9.909	0.000	96	1142872	200.0	201.9	
101 Bromobenzene	156	9.940	9.940	0.000	95	1177536	200.0	183.6	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.952	0.000	72	433331	200.0	218.5	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	87	369727	200.0	201.6	
99 N-Propylbenzene	91	9.982	9.982	0.000	98	5284286	200.0	174.8	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	1135622	200.0	180.8	
102 1,3,5-Trimethylbenzene	105	10.141	10.141	-0.001	94	3929210	200.0	182.5	
105 4-Chlorotoluene	126	10.207	10.201	0.006	98	1185440	200.0	181.9	
106 tert-Butylbenzene	134	10.457	10.457	0.000	91	890323	200.0	185.6	
107 1,2,4-Trimethylbenzene	105	10.506	10.506	0.000	95	3918322	200.0	181.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	95	4804163	200.0	176.9	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	96	4169776	200.0	177.1	
111 1,3-Dichlorobenzene	146	10.804	10.810	-0.006	97	2192603	200.0	177.8	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	93	2204803	200.0	178.0	
115 n-Butylbenzene	91	11.144	11.144	0.000	96	3764045	200.0	180.8	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	96	2149607	200.0	181.6	
117 1,2-Dibromo-3-Chloropropan	75	11.880	11.880	0.000	89	236208	200.0	240.7	
119 1,2,4-Trichlorobenzene	180	12.562	12.562	0.000	95	1453542	200.0	186.8	
120 Hexachlorobutadiene	225	12.671	12.671	0.000	98	823581	200.0	191.6	
121 Naphthalene	128	12.805	12.805	0.000	97	3894892	200.0	203.2	
122 1,2,3-Trichlorobenzene	180	13.030	13.030	0.000	96	1381429	200.0	191.5	
S 123 Total BTEX	1				0			895.2	
S 124 Xylenes, Total	1				0			367.7	
S 125 1,2-Dichloroethene, Total	1				0			356.7	
S 126 1,3-Dichloropropene, Total	1				0			411.9	

Reagents:

8260 CORP mix_00164	Amount Added: 100.00	Units: uL	
GAS CORP mix_00358	Amount Added: 100.00	Units: uL	
F 8260 IS/SS_00094	Amount Added: 1.00	Units: uL	Run Reagent

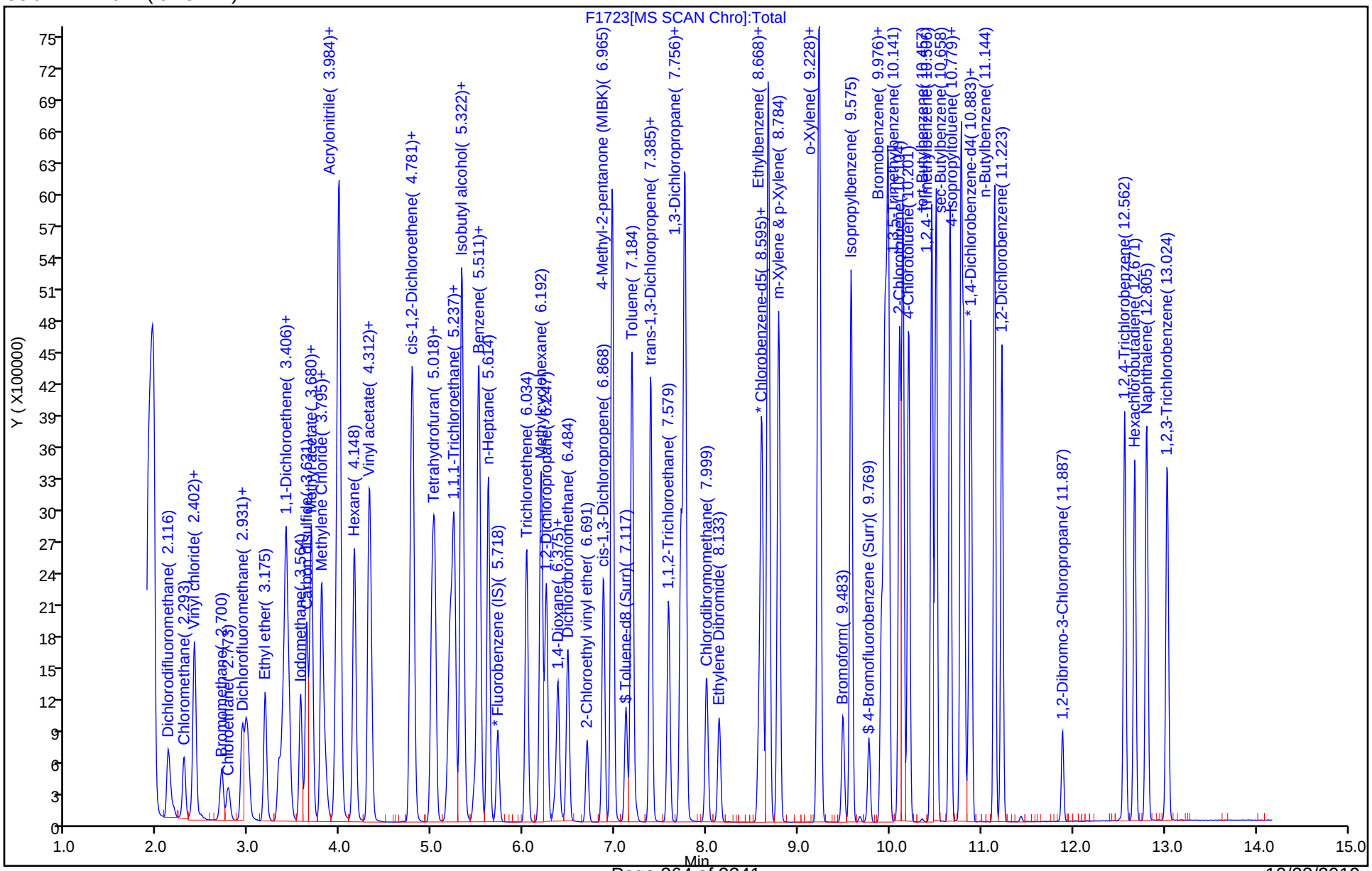
Report Date: 28-Aug-2019 10:38:54 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1723.D

Injection Date:	27-Aug-2019 16:13:30	Instrument ID:	HP5973F	Operator ID:	LH
Lims ID:	IC 7			Worklist Smp#:	10
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	59
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-493257/8	P0066.D
Level 2	IC 480-493257/9	P0067.D
Level 3	IC 480-493257/10	P0068.D
Level 4	IC 480-493257/11	P0069.D
Level 5	ICIS 480-493257/12	P0070.D
Level 6	IC 480-493257/13	P0071.D
Level 7	IC 480-493257/14	P0072.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Dichlorodifluoromethane	+++++ 0.9458	1.2088 1.1328	1.1040	1.0466	1.1263	Ave		1.0940			0.1000	8.2		20.0			
Chloromethane	+++++ 1.4473	1.7357 1.6024	1.5125	1.5741	1.5331	Ave		1.5675			0.1000	6.3		20.0			
Vinyl chloride	1.4680 1.1380	1.2471 1.2877	1.2167	1.2131	1.2434	Ave		1.2591			0.1000	8.2		20.0			
Butadiene	1.5054 1.1337	1.4192 1.3298	1.3000	1.2958	1.3216	Ave		1.3294				8.7		20.0			
Bromomethane	+++++ 0.9583	1.2224 1.0253	1.0686	1.0428	1.0722	Ave		1.0649			0.1000	8.2		20.0			
Chloroethane	+++++ 0.7746	0.8669 0.8415	0.8321	0.7693	0.8183	Ave		0.8171			0.1000	4.7		20.0			
Dichlorofluoromethane	+++++ 1.8025	1.9654 1.9947	1.9290	1.8662	2.0004	Ave		1.9264				4.1		20.0			
Trichlorofluoromethane	+++++ 1.5579	1.9236 1.7584	1.7193	1.7121	1.7859	Ave		1.7429			0.1000	6.8		20.0			
Allyl chloride	+++++ 0.4121	0.6084 0.4530	0.5540	0.4310	0.4402	Lin1	0.8007	0.4317							0.9960		0.9900
Ethyl ether	1.5687 1.1002	1.2389 1.1451	1.2051	1.1079	1.1697	Ave		1.2194				13.3		20.0			
Acrolein	0.1531 0.1950	0.2031 0.2006	0.2063	0.1834	0.1954	Ave		0.1910				9.6		20.0			
1,1,2-Trichloro-1,2,2-trifluoroethane	+++++ 0.9242	1.0840 0.9746	1.0895	0.9439	1.0400	Ave		1.0094			0.1000	7.1		20.0			
1,1-Dichloroethene	+++++ 0.8930	1.0044 0.9327	1.0034	0.8971	0.9931	Ave		0.9539			0.1000	5.5		20.0			
Acetone	+++++ 0.4540	0.4628 0.4631	0.4654	0.4348	0.4704	Ave		0.4584			0.1000	2.8		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Iodomethane	+++++ 1.9475	2.0473 2.0118	2.0778	1.9522	2.0635	Ave		2.0167				2.8		20.0			
Carbon disulfide	+++++ 3.0722	3.4970 3.2516	3.3303	3.0697	3.3772	Ave		3.2663			0.1000	5.2		20.0			
Methyl acetate	1.2293 0.9693	0.9545 1.0021	0.9522	0.9292	1.0070	Ave		1.0062			0.1000	10.2		20.0			
Methylene Chloride	+++++ 1.2915	2.1813 1.2976	1.7757	1.4614	1.4193	Lin1	4.6708	1.2714			0.1000				0.9990		0.9900
2-Methyl-2-propanol	+++++ 0.1320	0.0894 0.1461	0.1044	0.1068	0.1274	Lin1	-3.802	0.1421							0.9960		0.9900
Methyl tert-butyl ether	+++++ 3.5451	3.4526 3.7732	3.4623	3.4675	3.7867	Ave		3.5812			0.1000	4.4		20.0			
trans-1,2-Dichloroethene	1.5686 1.1331	1.1617 1.1713	1.2172	1.0841	1.2654	Ave		1.2288			0.1000	13.1		20.0			
Acrylonitrile	0.6695 0.4945	0.4710 0.5023	0.4778	0.4873	0.5131	Ave		0.5165				13.3		20.0			
Hexane	+++++ 1.7123	2.1319 1.7506	1.9524	1.6983	1.9726	Ave		1.8697				9.4		20.0			
1,1-Dichloroethane	+++++ 2.2056	2.4282 2.2938	2.2758	2.1354	2.3630	Ave		2.2836			0.2000	4.6		20.0			
Vinyl acetate	2.7123 2.7875	2.1563 2.9874	2.2039	2.2931	2.7016	Ave		2.5489				12.8		20.0			
2,2-Dichloropropane	+++++ 0.9980	1.0363 1.0847	0.9772	0.9335	1.0654	Ave		1.0158				5.6		20.0			
cis-1,2-Dichloroethene	+++++ 1.3521	1.3677 1.3759	1.3799	1.3103	1.4090	Ave		1.3658			0.1000	2.4		20.0			
2-Butanone (MEK)	0.7814 0.6756	0.6290 0.6869	0.6151	0.6208	0.6995	Ave		0.6726			0.1000	8.7		20.0			
Chlorobromomethane	+++++ 0.7184	0.7150 0.7217	0.7429	0.6747	0.7466	Ave		0.7199				3.6		20.0			
Tetrahydrofuran	0.5195 0.4339	0.3911 0.4409	0.3959	0.4089	0.4481	Ave		0.4340				10.1		20.0			
Chloroform	+++++ 2.1554	2.4119 2.2114	2.2311	2.1285	2.2768	Ave		2.2359			0.2000	4.5		20.0			
1,1,1-Trichloroethane	+++++ 1.6219	1.7841 1.7149	1.7324	1.5626	1.7981	Ave		1.7024			0.1000	5.4		20.0			
Cyclohexane	+++++ 1.9780	2.2524 2.0791	2.0766	1.9129	2.2343	Ave		2.0889			0.1000	6.5		20.0			
Carbon tetrachloride	+++++ 1.3874	1.5758 1.5133	1.3852	1.3015	1.5033	Ave		1.4444			0.1000	7.1		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,1-Dichloropropene	+++++ 1.4504	1.6622 1.5087	1.5255	1.4281	1.5859	Ave		1.5268				5.7		20.0			
Benzene	+++++ 4.7673	5.1983 4.9356	4.7815	4.5583	5.0514	Ave		4.8821			0.5000	4.7		20.0			
Isobutyl alcohol	+++++ 0.0601	0.0344 0.0653	0.0415	0.0432	0.0556	Lin1	-5.405	0.0639							0.9960		0.9900
1,2-Dichloroethane	+++++ 1.7477	1.8217 1.8172	1.8670	1.7961	1.8620	Ave		1.8186			0.1000	2.4		20.0			
n-Heptane	+++++ 1.9352	2.3361 2.0288	2.2316	1.9085	2.1733	Ave		2.1023				8.2		20.0			
Trichloroethene	+++++ 1.1686	1.3042 1.2180	1.2755	1.1365	1.2956	Ave		1.2331			0.2000	5.7		20.0			
Methylcyclohexane	+++++ 1.7703	1.9573 1.8713	2.0164	1.7929	2.0166	Ave		1.9042			0.1000	5.7		20.0			
1,2-Dichloropropane	+++++ 1.3114	1.4130 1.3522	1.3427	1.2170	1.3686	Ave		1.3341			0.1000	5.0		20.0			
Dibromomethane	+++++ 0.7496	0.7436 0.7687	0.7353	0.7459	0.7745	Ave		0.7529			0.1000	2.0		20.0			
1,4-Dioxane	0.0052 0.0064	0.0054 0.0063	0.0050	0.0052	0.0064	Ave		0.0057				11.0		20.0			
Bromodichloromethane	2.0492 1.6566	1.7422 1.7417	1.6739	1.5610	1.7278	Ave		1.7361			0.2000	8.8		20.0			
2-Chloroethyl vinyl ether	0.8340 0.7788	0.7488 0.8235	0.6763	0.7206	0.8041	Ave		0.7695				7.5		20.0			
cis-1,3-Dichloropropene	2.1967 1.9984	1.8303 2.0853	1.9225	1.8043	2.0297	Ave		1.9810			0.2000	7.1		20.0			
4-Methyl-2-pentanone (MIBK)	0.8108 0.6979	0.6165 0.7293	0.6350	0.6184	0.6950	Ave		0.6861			0.1000	10.3		20.0			
Toluene	+++++ 1.4482	1.5460 1.4997	1.5250	1.4146	1.5205	Ave		1.4923			0.4000	3.4		20.0			
trans-1,3-Dichloropropene	0.8735 0.8571	0.7971 0.9113	0.7778	0.7576	0.8369	Ave		0.8302			0.1000	6.7		20.0			
Ethyl methacrylate	0.6404 0.7022	0.5348 0.7397	0.5673	0.5592	0.6872	Ave		0.6330				12.7		20.0			
1,1,2-Trichloroethane	+++++ 0.4268	0.4473 0.4376	0.4290	0.4139	0.4292	Ave		0.4306			0.1000	2.6		20.0			
Tetrachloroethene	+++++ 0.6135	0.6904 0.6316	0.6484	0.6015	0.6551	Ave		0.6401			0.2000	5.0		20.0			
1,3-Dichloropropane	+++++ 0.8698	0.9110 0.8945	0.8631	0.8261	0.8886	Ave		0.8755				3.4		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
2-Hexanone	0.5212 0.4737	0.3932 0.4939	0.4287	0.4219	0.4749	Ave		0.4582			0.1000	9.8		20.0			
Dibromochloromethane	0.7482 0.6361	0.6636 0.6712	0.5804	0.5708	0.6362	Ave		0.6438			0.1000	9.3		20.0			
1,2-Dibromoethane	0.6361 0.5441	0.5491 0.5500	0.5259	0.5105	0.5462	Ave		0.5517				7.2		20.0			
Chlorobenzene	2.1932 1.7097	1.8334 1.7505	1.7507	1.6929	1.7708	Ave		1.8145			0.5000	9.5		20.0			
Ethylbenzene	3.2454 2.6714	2.7825 2.8194	2.7128	2.4571	2.7637	Ave		2.7789			0.1000	8.6		20.0			
1,1,1,2-Tetrachloroethane	0.7347 0.6090	0.5706 0.6408	0.5580	0.5625	0.6130	Ave		0.6127				10.1		20.0			
m,p-Xylene	+++++ 1.0645	1.1424 1.1040	1.1215	1.0382	1.1341	Ave		1.1008			0.1000	3.7		20.0			
o-Xylene	+++++ 1.0580	1.1180 1.1070	1.1017	1.0176	1.1145	Ave		1.0861			0.3000	3.7		20.0			
Styrene	+++++ 1.8293	1.9155 1.9208	1.8186	1.7500	1.9082	Ave		1.8570			0.3000	3.7		20.0			
Bromoform	0.4176 0.3929	0.3273 0.4255	0.3311	0.3441	0.3717	Ave		0.3729			0.1000	10.8		20.0			
Isopropylbenzene	3.1643 2.6370	2.6784 2.7447	2.4989	2.4657	2.6996	Ave		2.6984			0.1000	8.5		20.0			
Bromobenzene	0.8671 0.7603	0.7777 0.7658	0.7489	0.7187	0.7718	Ave		0.7729				5.9		20.0			
1,1,2,2-Tetrachloroethane	0.7993 0.6793	0.6635 0.6698	0.6601	0.6299	0.6941	Ave		0.6851			0.3000	7.9		20.0			
N-Propylbenzene	+++++ 3.1165	3.2644 3.2594	3.1018	2.9400	3.2709	Ave		3.1588				4.2		20.0			
1,2,3-Trichloropropane	0.2187 0.2087	0.1871 0.2086	0.1936	0.1833	0.2092	Ave		0.2013				6.6		20.0			
trans-1,4-Dichloro-2-butene	0.2507 0.2466	0.1978 0.2565	0.2046	0.2097	0.2356	Ave		0.2288				10.6		20.0			
2-Chlorotoluene	+++++ 0.6745	0.6679 0.6826	0.6870	0.6710	0.6933	Ave		0.6794				1.5		20.0			
1,3,5-Trimethylbenzene	+++++ 2.2885	2.2644 2.3587	2.1798	2.1273	2.3425	Ave		2.2602				4.0		20.0			
4-Chlorotoluene	0.7946 0.6923	0.7592 0.7166	0.6910	0.6724	0.7355	Ave		0.7231				6.0		20.0			
tert-Butylbenzene	+++++ 0.5070	0.5436 0.5254	0.5089	0.5073	0.5398	Ave		0.5220				3.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,2,4-Trimethylbenzene	+++++ 2.3319	2.2524 2.4524	2.2665	2.2276	2.4389	Ave		2.3283				4.2		20.0			
sec-Butylbenzene	3.4918 2.8672	2.9084 2.9977	2.8122	2.6909	2.9966	Ave		2.9664				8.6		20.0			
1,3-Dichlorobenzene	+++++ 1.4122	1.5098 1.4813	1.4272	1.4307	1.5067	Ave		1.4613			0.6000	3.0		20.0			
4-Isopropyltoluene	3.1797 2.5788	2.5850 2.7361	2.5965	2.4584	2.6982	Ave		2.6904				8.7		20.0			
1,4-Dichlorobenzene	+++++ 1.4201	1.5026 1.4644	1.5057	1.3874	1.4728	Ave		1.4588			0.5000	3.2		20.0			
n-Butylbenzene	2.7234 2.1873	2.2788 2.3253	2.1679	2.0691	2.3801	Ave		2.3046				9.2		20.0			
1,2-Dichlorobenzene	1.7790 1.4320	1.4457 1.4692	1.4437	1.4058	1.4688	Ave		1.4920			0.4000	8.6		20.0			
1,2-Dibromo-3-Chloropropane	0.1200 0.1145	0.1123 0.1226	0.0892	0.0913	0.1130	Ave		0.1090			0.0500	12.3		20.0			
1,2,4-Trichlorobenzene	+++++ 0.9320	0.9149 0.9517	0.8850	0.9025	1.0037	Ave		0.9316			0.2000	4.5		20.0			
Hexachlorobutadiene	1.3863 0.9025	1.0004 0.9370	0.9363	0.8813	1.0479	Lin1	0.7425	0.9298							0.9970		0.9900
Naphthalene	5.5105 4.7748	4.2049 4.9859	4.2984	4.3860	5.0306	Ave		4.7416				10.0		20.0			
1,2,3-Trichlorobenzene	+++++ 1.7981	1.8114 1.8586	1.7644	1.7992	1.9968	Ave		1.8381				4.5		20.0			
Dibromofluoromethane (Surr)	1.3440 1.2288	1.2791 1.2727	1.2631	1.2630	1.3111	Ave		1.2802				2.9		20.0			
1,2-Dichloroethane-d4 (Surr)	0.7452 0.6640	0.6661 0.6806	0.6564	0.6773	0.7132	Ave		0.6861				4.7		20.0			
Toluene-d8 (Surr)	2.6402 2.3780	2.4275 2.5050	2.4202	2.3854	2.4836	Ave		2.4628				3.7		20.0			
4-Bromofluorobenzene (Surr)	0.8090 0.7508	0.7602 0.7987	0.7642	0.7552	0.7993	Ave		0.7767				3.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-493257/8	P0066.D
Level 2	IC 480-493257/9	P0067.D
Level 3	IC 480-493257/10	P0068.D
Level 4	IC 480-493257/11	P0069.D
Level 5	ICIS 480-493257/12	P0070.D
Level 6	IC 480-493257/13	P0071.D
Level 7	IC 480-493257/14	P0072.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dichlorodifluoromethane	FB	Ave	+++++ 353365	20755 813154	38243	73324	194694	+++++ 100	5.00 200	10.0	20.0	50.0
Chloromethane	FB	Ave	+++++ 540742	29803 1150261	52392	110275	265023	+++++ 100	5.00 200	10.0	20.0	50.0
Vinyl chloride	FB	Ave	11603 425170	21413 924398	42146	84985	214937	2.50 100	5.00 200	10.0	20.0	50.0
Butadiene	FB	Ave	11899 423574	24368 954585	45032	90776	228467	2.50 100	5.00 200	10.0	20.0	50.0
Bromomethane	FB	Ave	+++++ 358028	20989 735995	37018	73056	185342	+++++ 100	5.00 200	10.0	20.0	50.0
Chloroethane	FB	Ave	+++++ 289407	14885 604036	28826	53894	141454	+++++ 100	5.00 200	10.0	20.0	50.0
Dichlorofluoromethane	FB	Ave	+++++ 673442	33747 1431903	66821	130741	345798	+++++ 100	5.00 200	10.0	20.0	50.0
Trichlorofluoromethane	FB	Ave	+++++ 582071	33029 1262234	59556	119946	308726	+++++ 100	5.00 200	10.0	20.0	50.0
Allyl chloride	FB	Lin1	+++++ 153959	10446 325173	19191	30191	76089	+++++ 100	5.00 200	10.0	20.0	50.0
Ethyl ether	FB	Ave	12399 411057	21272 821987	41746	77616	202206	2.50 100	5.00 200	10.0	20.0	50.0
Acrolein	FB	Ave	6052 364233	17435 720147	35734	64251	168923	12.5 500	25.0 1000	50.0	100	250
1,1,2-Trichloro-1,2,2-trifluoroethane	FB	Ave	+++++ 345296	18613 699589	37742	66123	179776	+++++ 100	5.00 200	10.0	20.0	50.0
1,1-Dichloroethene	FB	Ave	+++++ 333645	17245 669495	34757	62847	171670	+++++ 100	5.00 200	10.0	20.0	50.0
Acetone	FB	Ave	+++++ 848068	39731 1662094	80604	152287	406588	+++++ 500	25.0 1000	50.0	100	250
Iodomethane	FB	Ave	+++++ 727613	35153 1444118	71975	136767	356720	+++++ 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Carbon disulfide	FB	Ave	+++++ 1147818	60045 2334131	115364	215052	583808	+++++ 100	5.00 200	10.0	20.0	50.0
Methyl acetate	FB	Ave	19433 724317	32777 1438676	65968	130194	348156	5.00 200	10.0 400	20.0	40.0	100
Methylene Chloride	FB	Lin1	+++++ 482538	37453 931436	61511	102382	245352	+++++ 100	5.00 200	10.0	20.0	50.0
2-Methyl-2-propanol	FB	Lin1	+++++ 493256	15356 1048991	36167	74814	220248	+++++ 1000	50.0 2000	100	200	500
Methyl tert-butyl ether	FB	Ave	+++++ 1324499	59282 2708546	119936	242924	654598	+++++ 100	5.00 200	10.0	20.0	50.0
trans-1,2-Dichloroethene	FB	Ave	12398 423327	19947 840836	42165	75948	218752	2.50 100	5.00 200	10.0	20.0	50.0
Acrylonitrile	FB	Ave	52916 1847454	80879 3605661	165510	341406	886915	25.0 1000	50.0 2000	100	200	500
Hexane	FB	Ave	+++++ 639724	36606 1256616	67632	118975	340994	+++++ 100	5.00 200	10.0	20.0	50.0
1,1-Dichloroethane	FB	Ave	+++++ 824058	41693 1646604	78834	149601	408480	+++++ 100	5.00 200	10.0	20.0	50.0
Vinyl acetate	FB	Ave	42876 2082893	74049 4288998	152691	321292	934051	5.00 200	10.0 400	20.0	40.0	100
2,2-Dichloropropane	FB	Ave	+++++ 372867	17793 778645	33849	65396	184169	+++++ 100	5.00 200	10.0	20.0	50.0
cis-1,2-Dichloroethene	FB	Ave	+++++ 505180	23484 987704	47799	91793	243566	+++++ 100	5.00 200	10.0	20.0	50.0
2-Butanone (MEK)	FB	Ave	30882 1262061	54004 2465443	106530	217460	604618	12.5 500	25.0 1000	50.0	100	250
Chlorobromomethane	FB	Ave	+++++ 268412	12276 518086	25735	47268	129070	+++++ 100	5.00 200	10.0	20.0	50.0
Tetrahydrofuran	FB	Ave	8212 324252	13431 632955	27428	57287	154926	5.00 200	10.0 400	20.0	40.0	100
Chloroform	FB	Ave	+++++ 805299	41413 1587449	77285	149114	393592	+++++ 100	5.00 200	10.0	20.0	50.0
1,1,1-Trichloroethane	FB	Ave	+++++ 605974	30634 1231050	60012	109469	310842	+++++ 100	5.00 200	10.0	20.0	50.0
Cyclohexane	FB	Ave	+++++ 739002	38675 1492440	71935	134014	386234	+++++ 100	5.00 200	10.0	20.0	50.0
Carbon tetrachloride	FB	Ave	+++++ 518336	27057 1086333	47984	91180	259874	+++++ 100	5.00 200	10.0	20.0	50.0
1,1-Dichloropropene	FB	Ave	+++++ 541887	28540 1082978	52844	100048	274149	+++++ 100	5.00 200	10.0	20.0	50.0
Benzene	FB	Ave	+++++ 1781129	89256 3542988	165634	319336	873222	+++++ 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Isobutyl alcohol	FB	Lin1	+++++ 560997	14748 1171754	35977	75590	240457	+++++ 2500	125 5000	250	500	1250
1,2-Dichloroethane	FB	Ave	+++++ 652969	31279 1304478	64673	125825	321875	+++++ 100	5.00 200	10.0	20.0	50.0
n-Heptane	FB	Ave	+++++ 723001	40112 1456356	77305	133700	375701	+++++ 100	5.00 200	10.0	20.0	50.0
Trichloroethene	FB	Ave	+++++ 436618	22393 874298	44183	79621	223974	+++++ 100	5.00 200	10.0	20.0	50.0
Methylcyclohexane	FB	Ave	+++++ 661427	33608 1343300	69849	125606	348610	+++++ 100	5.00 200	10.0	20.0	50.0
1,2-Dichloropropane	FB	Ave	+++++ 489940	24262 970629	46513	85261	236580	+++++ 100	5.00 200	10.0	20.0	50.0
Dibromomethane	FB	Ave	+++++ 280047	12768 551786	25470	52252	133894	+++++ 100	5.00 200	10.0	20.0	50.0
1,4-Dioxane	CBNZ d5	Ave	1713 97256	3875 187832	7237	15495	46908	50.0 2000	100 4000	200	400	1000
Bromodichloromethane	FB	Ave	16197 618939	29914 1250265	57984	109358	298686	2.50 100	5.00 200	10.0	20.0	50.0
2-Chloroethyl vinyl ether	FB	Ave	6592 290979	12857 591145	23427	50485	139005	2.50 100	5.00 200	10.0	20.0	50.0
cis-1,3-Dichloropropene	FB	Ave	17363 746644	31426 1496903	66597	126402	350873	2.50 100	5.00 200	10.0	20.0	50.0
4-Methyl-2-pentanone (MIBK)	CBNZ d5	Ave	66567 2665541	109783 5395119	229254	457304	1271067	12.5 500	25.0 1000	50.0	100	250
Toluene	CBNZ d5	Ave	+++++ 1106240	55061 2218883	110112	209222	556167	+++++ 100	5.00 200	10.0	20.0	50.0
trans-1,3-Dichloropropene	CBNZ d5	Ave	14342 654707	28387 1348329	56164	112050	306115	2.50 100	5.00 200	10.0	20.0	50.0
Ethyl methacrylate	CBNZ d5	Ave	10515 536447	19046 1094390	40959	82710	251374	2.50 100	5.00 200	10.0	20.0	50.0
1,1,2-Trichloroethane	CBNZ d5	Ave	+++++ 326051	15930 647417	30977	61224	156983	+++++ 100	5.00 200	10.0	20.0	50.0
Tetrachloroethene	CBNZ d5	Ave	+++++ 468629	24588 934399	46815	88971	239607	+++++ 100	5.00 200	10.0	20.0	50.0
1,3-Dichloropropane	CBNZ d5	Ave	+++++ 664417	32446 1323376	62322	122187	325039	+++++ 100	5.00 200	10.0	20.0	50.0
2-Hexanone	CBNZ d5	Ave	42791 1809117	70024 3653379	154787	312036	868440	12.5 500	25.0 1000	50.0	100	250
Dibromochloromethane	CBNZ d5	Ave	12285 485949	23633 993080	41905	84427	232706	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dibromoethane	CBNZ d5	Ave	10445 415657	19556 813722	37976	75499	199777	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Chlorobenzene	CBNZ d5	Ave	36011 1306028	65295 2589947	126405	250395	647712	2.50 100	5.00 200	10.0	20.0	50.0
Ethylbenzene	CBNZ d5	Ave	53288 2040703	99095 4171339	195879	363423	1010888	2.50 100	5.00 200	10.0	20.0	50.0
1,1,1,2-Tetrachloroethane	CBNZ d5	Ave	12064 465204	20321 948042	40290	83198	224206	2.50 100	5.00 200	10.0	20.0	50.0
m,p-Xylene	CBNZ d5	Ave	+++++ 813173	40684 1633370	80974	153556	414825	+++++ 100	5.00 200	10.0	20.0	50.0
o-Xylene	CBNZ d5	Ave	+++++ 808227	39817 1637870	79546	150504	407645	+++++ 100	5.00 200	10.0	20.0	50.0
Styrene	CBNZ d5	Ave	+++++ 1397374	68218 2841800	131308	258836	697967	+++++ 100	5.00 200	10.0	20.0	50.0
Bromoform	CBNZ d5	Ave	6857 300115	11657 629545	23908	50899	135957	2.50 100	5.00 200	10.0	20.0	50.0
Isopropylbenzene	DCBd 4	Ave	52706 1982635	96663 4074047	183143	363893	984949	2.50 100	5.00 200	10.0	20.0	50.0
Bromobenzene	DCBd 4	Ave	14442 571609	28068 1136716	54887	106067	281604	2.50 100	5.00 200	10.0	20.0	50.0
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	13313 510751	23946 994125	48375	92957	253244	2.50 100	5.00 200	10.0	20.0	50.0
N-Propylbenzene	DCBd 4	Ave	+++++ 2343126	117812 4838018	227330	433878	1193375	+++++ 100	5.00 200	10.0	20.0	50.0
1,2,3-Trichloropropane	DCBd 4	Ave	3642 156897	6754 309563	14187	27058	76339	2.50 100	5.00 200	10.0	20.0	50.0
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	4176 185377	7138 380715	14997	30950	85952	2.50 100	5.00 200	10.0	20.0	50.0
2-Chlorotoluene	DCBd 4	Ave	+++++ 507155	24103 1013153	50352	99030	252947	+++++ 100	5.00 200	10.0	20.0	50.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	+++++ 1720620	81721 3501084	159755	313952	854649	+++++ 100	5.00 200	10.0	20.0	50.0
4-Chlorotoluene	DCBd 4	Ave	13236 520472	27401 1063651	50644	99236	268330	2.50 100	5.00 200	10.0	20.0	50.0
tert-Butylbenzene	DCBd 4	Ave	+++++ 381198	19618 779844	37297	74873	196945	+++++ 100	5.00 200	10.0	20.0	50.0
1,2,4-Trimethylbenzene	DCBd 4	Ave	+++++ 1753253	81290 3640137	166108	328755	889823	+++++ 100	5.00 200	10.0	20.0	50.0
sec-Butylbenzene	DCBd 4	Ave	58161 2155678	104965 4449541	206101	397118	1093318	2.50 100	5.00 200	10.0	20.0	50.0
1,3-Dichlorobenzene	DCBd 4	Ave	+++++ 1061742	54490 2198660	104598	211150	549706	+++++ 100	5.00 200	10.0	20.0	50.0
4-Isopropyltoluene	DCBd 4	Ave	52962 1938878	93293 4061147	190292	362811	984439	2.50 100	5.00 200	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 493257

SDG No.:

Instrument ID: HP5973P GC Column: ZB-624 (20) ID: 0.18(mm) Heated Purge: (Y/N) Y

Calibration Start Date: 09/20/2019 19:03 Calibration End Date: 09/20/2019 21:30 Calibration ID: 37767

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
1,4-Dichlorobenzene	DCBd 4	Ave	+++++ 1067674	54228 2173671	110351	204747	537333	+++++ 100	5.00 200	10.0	20.0	50.0
n-Butylbenzene	DCBd 4	Ave	45362 1644521	82241 3451485	158883	305363	868373	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dichlorobenzene	DCBd 4	Ave	29631 1076646	52175 2180702	105807	207467	535879	2.50 100	5.00 200	10.0	20.0	50.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Ave	1998 86064	4052 182030	6537	13467	41227	2.50 100	5.00 200	10.0	20.0	50.0
1,2,4-Trichlorobenzene	DCBd 4	Ave	+++++ 700683	33017 1412628	64861	133194	366214	+++++ 100	5.00 200	10.0	20.0	50.0
Hexachlorobutadiene	FB	Lin1	10957 337188	17177 672626	32435	61739	181143	2.50 100	5.00 200	10.0	20.0	50.0
Naphthalene	FB	Ave	43555 1783933	72200 3579106	148897	307266	869632	2.50 100	5.00 200	10.0	20.0	50.0
1,2,3-Trichlorobenzene	FB	Ave	+++++ 671784	31103 1334199	61121	126047	345183	+++++ 100	5.00 200	10.0	20.0	50.0
Dibromofluoromethane (Surr)	FB	Ave	212460 229551	219624 228394	218765	221199	226642	50.0 50.0	50.0 50.0	50.0	50.0	50.0
1,2-Dichloroethane-d4 (Surr)	FB	Ave	117804 124048	114366 122133	113689	118618	123290	50.0 50.0	50.0 50.0	50.0	50.0	50.0
Toluene-d8 (Surr)	CBNZ d5	Ave	867025 908272	864527 926548	873765	882030	908427	50.0 50.0	50.0 50.0	50.0	50.0	50.0
4-Bromofluorobenzene (Surr)	CBNZ d5	Ave	265659 286751	270724 295428	275876	279231	292362	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Lims ID: IC
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 20-Sep-2019 19:03:30 ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC
Misc. Info.: 480-0084332-008
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:40:30 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:31:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	158081	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	328391	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	333128	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	92	212460	50.0	52.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	98	117804	50.0	54.3	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	94	867025	50.0	53.6	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	93	265659	50.0	52.1	
10 Dichlorodifluoromethane	85	1.313	1.307	0.006	67	12031	2.50	3.48	
11 Chloromethane	50	1.502	1.496	0.006	97	16408	2.50	3.31	
17 Vinyl chloride	62	1.605	1.593	0.012	82	11603	2.50	2.91	
149 Butadiene	54	1.599	1.599	0.000	89	11899	2.50	2.83	
12 Bromomethane	94	1.928	1.897	0.031	60	12385	2.50	3.68	
13 Chloroethane	64	1.995	1.988	0.006	94	8302	2.50	3.21	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	92	19576	2.50	3.21	
14 Trichlorofluoromethane	101	2.250	2.244	0.006	77	18299	2.50	3.32	
28 3-Chloro-1-propene	41	2.262	2.256	0.006	40	7411	2.50	3.57	
20 Ethyl ether	59	2.512	2.512	0.000	99	12399	2.50	3.22	
22 Acrolein	56	2.706	2.700	0.006	97	6052	12.5	10.0	
16 1,1,2-Trichloro-1,2,2-trif	101	2.743	2.737	0.006	82	12283	2.50	3.85	
25 1,1-Dichloroethene	96	2.755	2.749	0.006	94	10106	2.50	3.35	
24 Acetone	43	2.871	2.864	0.007	98	26560	12.5	18.3	
18 Iodomethane	142	2.925	2.925	0.000	89	22322	2.50	3.50	
27 Carbon disulfide	76	2.962	2.980	-0.018	93	33864	2.50	3.28	
30 Methyl acetate	43	3.169	3.169	0.000	99	19433	5.00	6.11	
31 Methylene Chloride	84	3.266	3.272	-0.006	98	31058	2.50	4.05	
33 2-Methyl-2-propanol	59	3.448	3.442	0.006	96	10675	25.0	50.5	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	97	36346	2.50	3.21	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	95	12398	2.50	3.19	a
34 Acrylonitrile	53	3.564	3.558	0.006	98	52916	25.0	32.4	
36 Hexane	57	3.692	3.692	0.000	93	24245	2.50	4.10	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	22234	2.50	3.08	
38 Vinyl acetate	43	3.978	3.978	0.000	98	42876	5.00	5.32	
45 2,2-Dichloropropane	77	4.446	4.452	-0.006	86	10684	2.50	3.33	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	76	13070	2.50	3.03	a
44 2-Butanone (MEK)	43	4.531	4.525	0.006	98	30882	12.5	14.5	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	7405	2.50	3.25	
51 Tetrahydrofuran	42	4.750	4.744	0.006	89	8212	5.00	5.98	
49 Chloroform	83	4.811	4.805	0.006	96	24774	2.50	3.50	M
54 Cyclohexane	56	4.915	4.915	0.000	95	23453	2.50	3.55	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	77	17422	2.50	3.24	
55 Carbon tetrachloride	117	5.055	5.055	0.000	93	15013	2.50	3.29	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	91	15392	2.50	3.19	
57 Benzene	78	5.280	5.274	0.006	55	50179	2.50	3.25	
53 Isobutyl alcohol	43	5.298	5.298	0.000	90	9868	62.5	133.5	
60 1,2-Dichloroethane	62	5.353	5.347	0.006	94	17682	2.50	3.08	
59 n-Heptane	43	5.444	5.450	-0.006	94	24582	2.50	3.70	
62 Trichloroethene	95	5.894	5.888	0.006	94	12724	2.50	3.26	
64 Methylcyclohexane	83	5.998	6.004	-0.006	94	21816	2.50	3.62	
63 1,2-Dichloropropane	63	6.144	6.137	0.007	85	13394	2.50	3.18	
69 Dibromomethane	93	6.277	6.271	0.006	93	7377	2.50	3.10	
68 1,4-Dioxane	88	6.283	6.283	0.000	34	1713	50.0	45.6	a
70 Dichlorobromomethane	83	6.429	6.423	0.006	95	16197	2.50	2.95	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	87	6592	2.50	2.71	
73 cis-1,3-Dichloropropene	75	6.849	6.843	0.006	87	17363	2.50	2.77	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	98	66567	12.5	14.8	
76 Toluene	92	7.135	7.129	0.006	97	33802	2.50	3.45	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	94	14342	2.50	2.63	
77 Ethyl methacrylate	69	7.451	7.458	-0.007	91	10515	2.50	2.53	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	90	8704	2.50	3.08	
80 Tetrachloroethene	166	7.664	7.664	0.000	93	14917	2.50	3.55	
82 1,3-Dichloropropane	76	7.768	7.774	-0.006	94	19812	2.50	3.45	
83 2-Hexanone	43	7.835	7.835	0.000	98	42791	12.5	14.2	
81 Chlorodibromomethane	129	8.005	8.005	0.000	88	12285	2.50	2.91	
85 Ethylene Dibromide	107	8.121	8.115	0.006	97	10445	2.50	2.88	
87 Chlorobenzene	112	8.589	8.589	0.000	96	36011	2.50	3.02	
89 Ethylbenzene	91	8.674	8.674	0.000	98	53288	2.50	2.92	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	44	12064	2.50	3.00	
90 m-Xylene & p-Xylene	106	8.796	8.802	-0.006	98	23406	2.50	3.24	
93 o-Xylene	106	9.228	9.228	0.000	97	21625	2.50	3.03	
94 Styrene	104	9.258	9.258	0.000	95	37190	2.50	3.05	
92 Bromoform	173	9.508	9.514	-0.006	95	6857	2.50	2.80	
95 Isopropylbenzene	105	9.611	9.611	0.000	97	52706	2.50	2.93	
100 Bromobenzene	156	9.958	9.958	0.000	91	14442	2.50	2.80	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	93	13313	2.50	2.92	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	66453	2.50	3.16	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	67	3642	2.50	2.72	
98 trans-1,4-Dichloro-2-buten	53	10.055	10.061	-0.006	2	4176	2.50	2.74	a
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	13945	2.50	3.08	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	96	46333	2.50	3.08	
105 4-Chlorotoluene	126	10.250	10.250	0.000	96	13236	2.50	2.75	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	10293	2.50	2.96	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	97	48100	2.50	3.10	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	58161	2.50	2.94	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	73	30353	2.50	3.12	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	52962	2.50	2.95	
111 1,4-Dichlorobenzene	146	10.956	10.962	-0.006	95	31538	2.50	3.24	
115 n-Butylbenzene	91	11.260	11.254	0.006	97	45362	2.50	2.95	
116 1,2-Dichlorobenzene	146	11.308	11.308	0.000	95	29631	2.50	2.98	
117 1,2-Dibromo-3-Chloropropan	75	12.051	12.038	0.013	73	1998	2.50	2.75	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	93	19698	2.50	3.17	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	95	10957	2.50	2.93	
121 Naphthalene	128	12.927	12.927	0.000	97	43555	2.50	2.91	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	91	18684	2.50	3.22	
S 123 1,2-Dichloroethene, Total	1				0			6.22	
S 124 1,3-Dichloropropene, Total	1				0			5.40	
S 125 Total BTEX	1				0			15.9	
S 126 Xylenes, Total	1				0			6.27	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added:	2.50	Units: uL	
GAS CORP mix_00361	Amount Added:	2.50	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

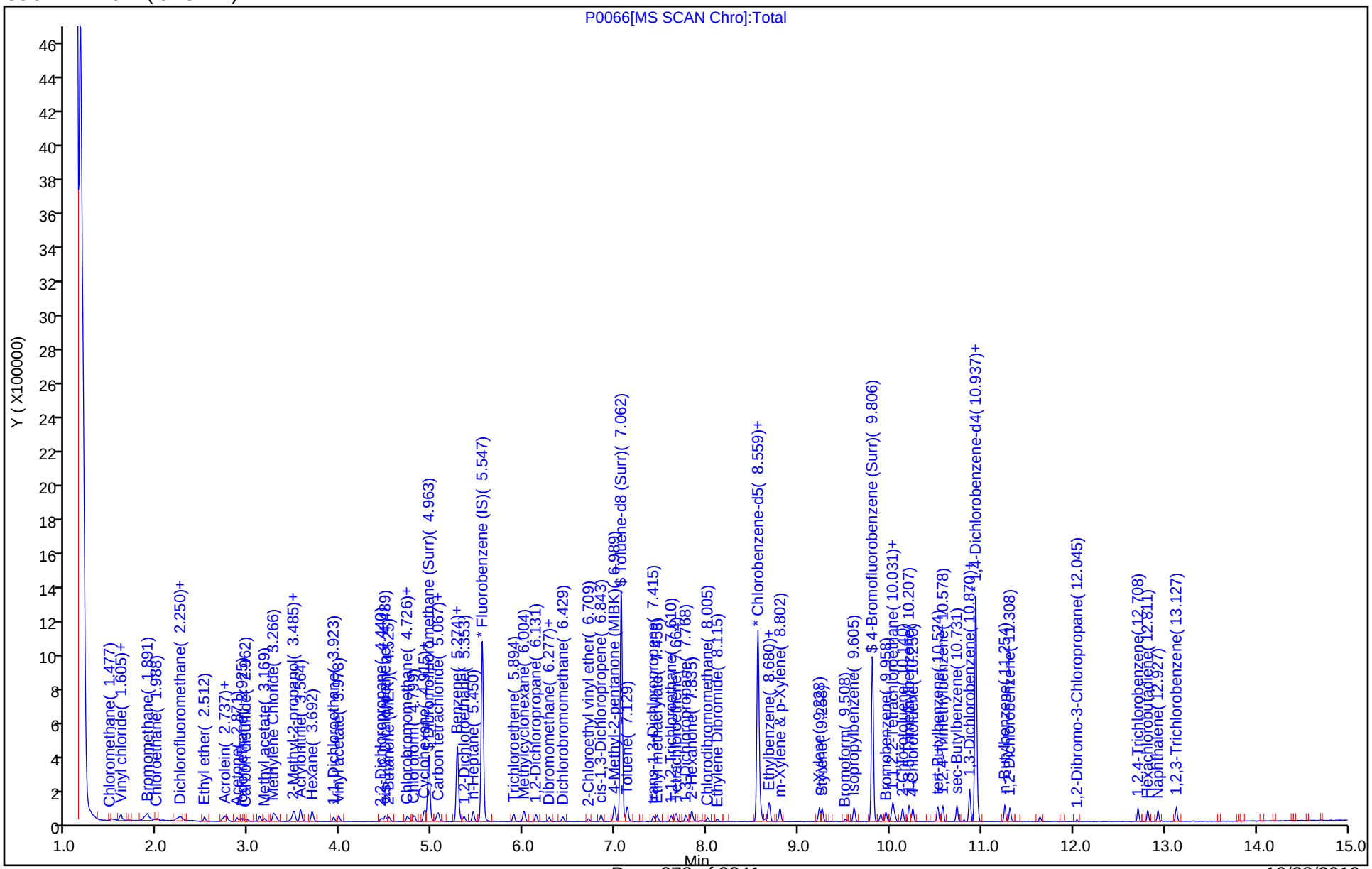
Report Date: 23-Sep-2019 11:40:34 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D

Injection Date:	20-Sep-2019 19:03:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC			Worklist Smp#:	8
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

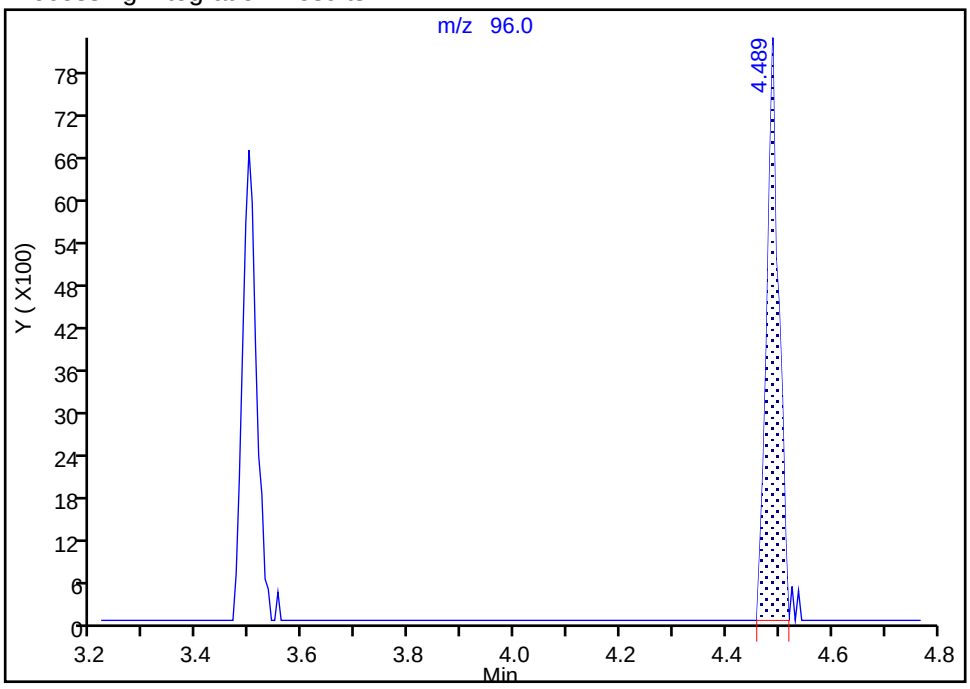
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Injection Date: 20-Sep-2019 19:03:30 Instrument ID: HP5973P
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

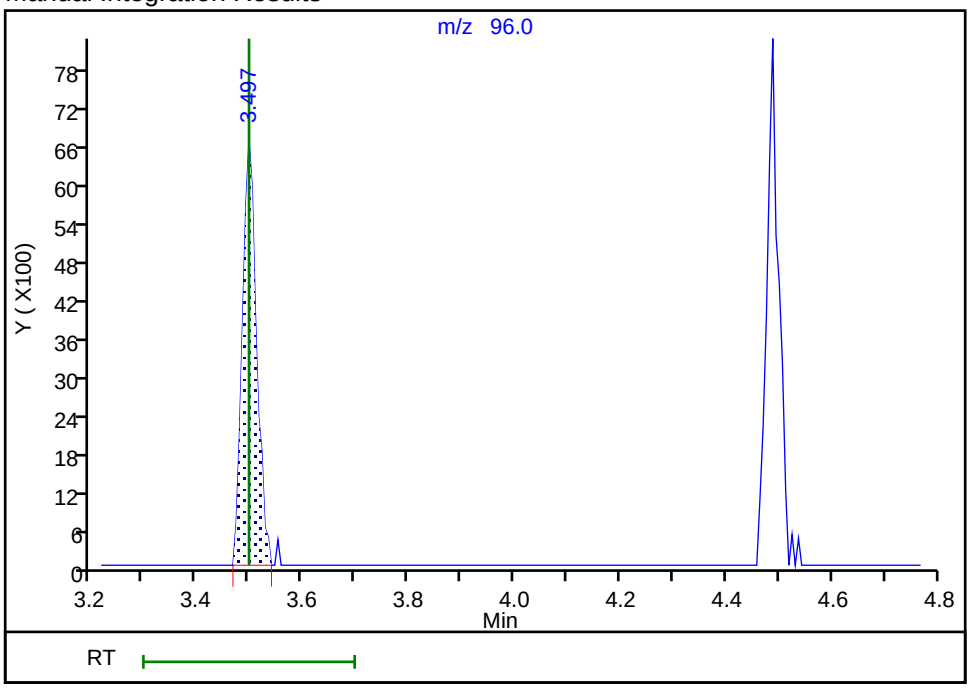
Processing Integration Results

RT: 4.49
Area: 13070
Amount: 2.992765
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 12398
Amount: 3.191314
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:30:57
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

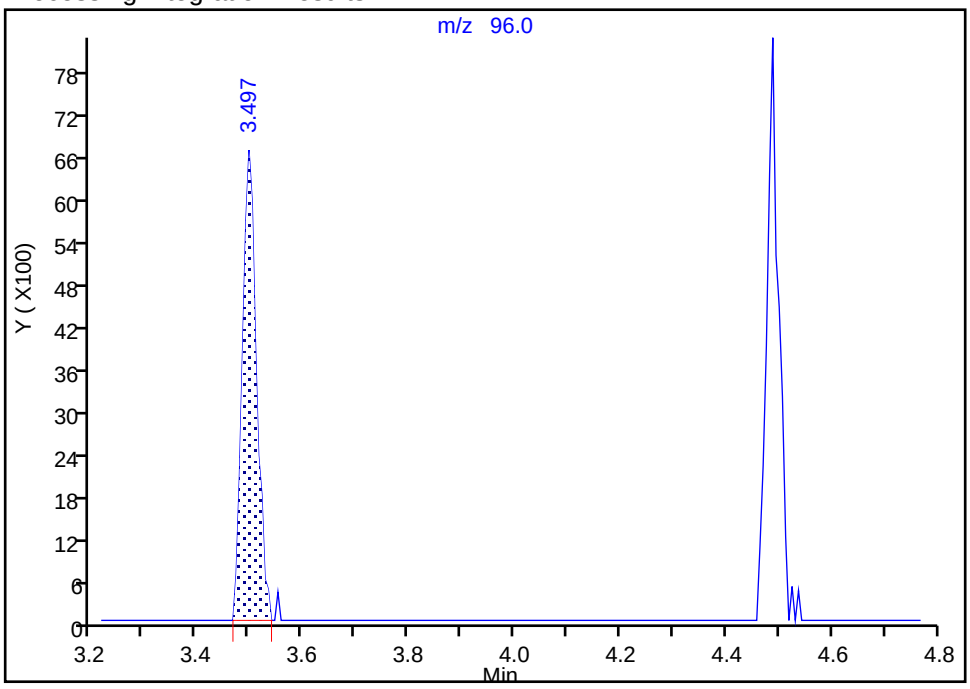
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Injection Date: 20-Sep-2019 19:03:30 Instrument ID: HP5973P
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

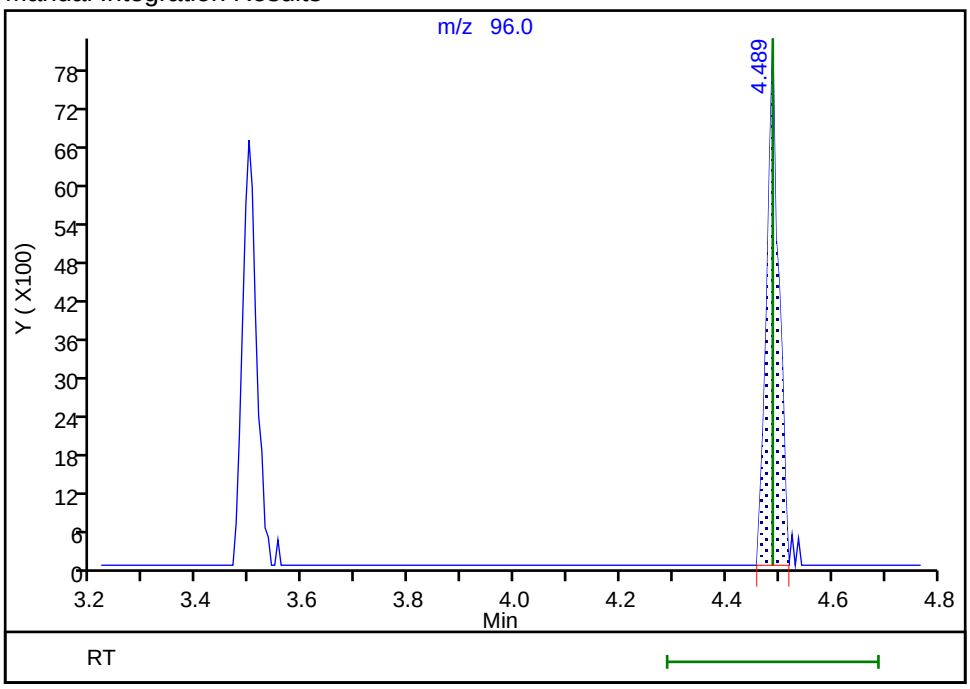
Processing Integration Results

RT: 3.50
Area: 12398
Amount: 3.291403
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 13070
Amount: 3.026729
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:31:03
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

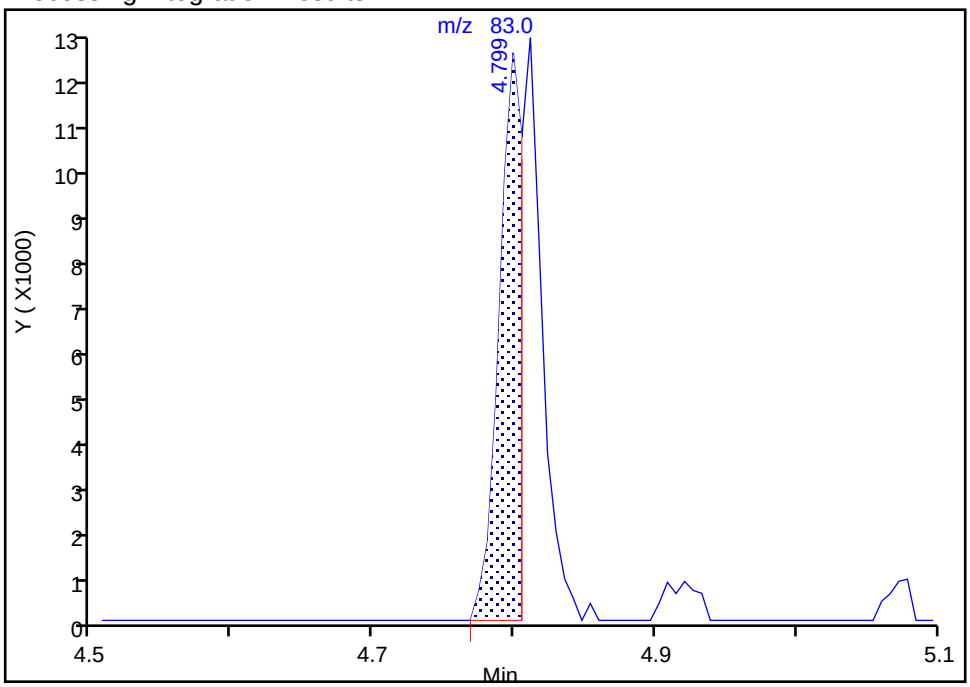
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Injection Date: 20-Sep-2019 19:03:30 Instrument ID: HP5973P
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

49 Chloroform, CAS: 67-66-3

Signal: 1

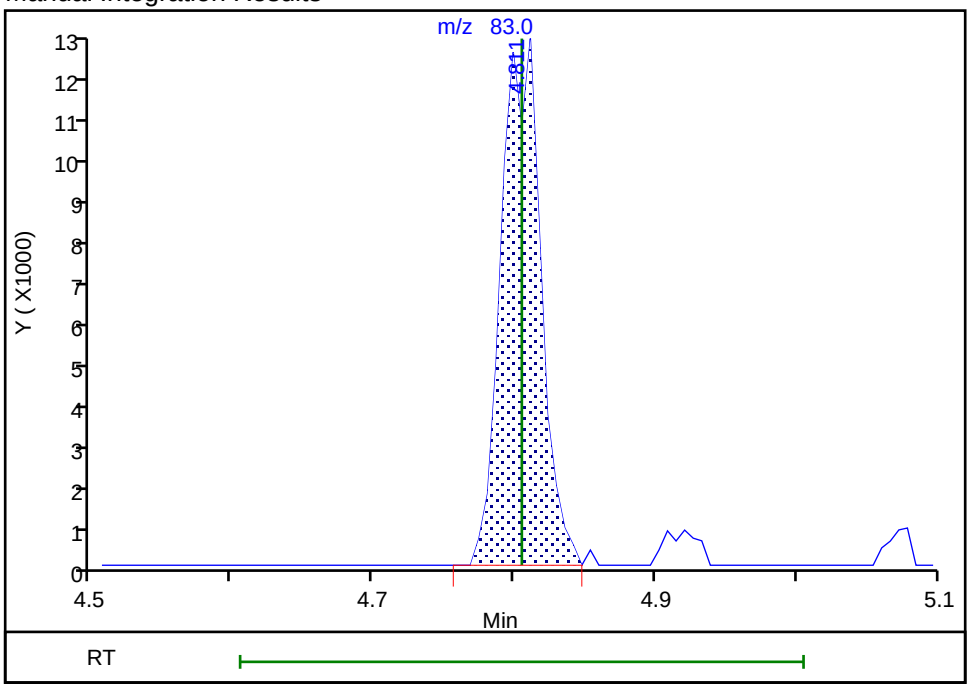
Processing Integration Results

RT: 4.80
Area: 14573
Amount: 2.114534
Amount Units: ug/L



Manual Integration Results

RT: 4.81
Area: 24774
Amount: 3.504633
Amount Units: ug/L



Reviewer: HillL, 21-Sep-2019 19:31:05
Audit Action: Manually Integrated Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

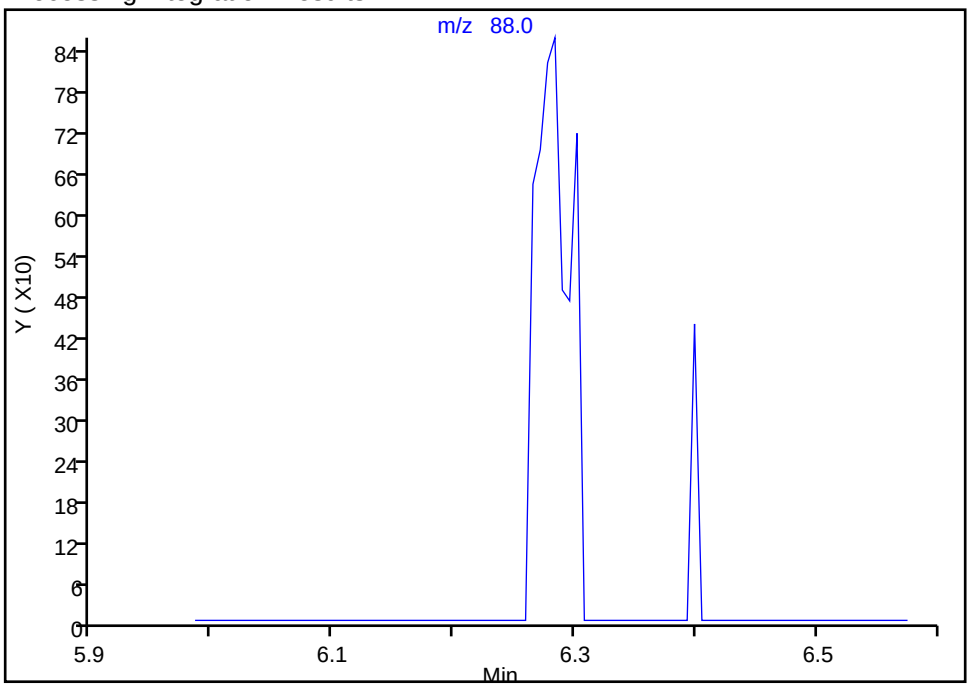
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Injection Date: 20-Sep-2019 19:03:30 Instrument ID: HP5973P
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

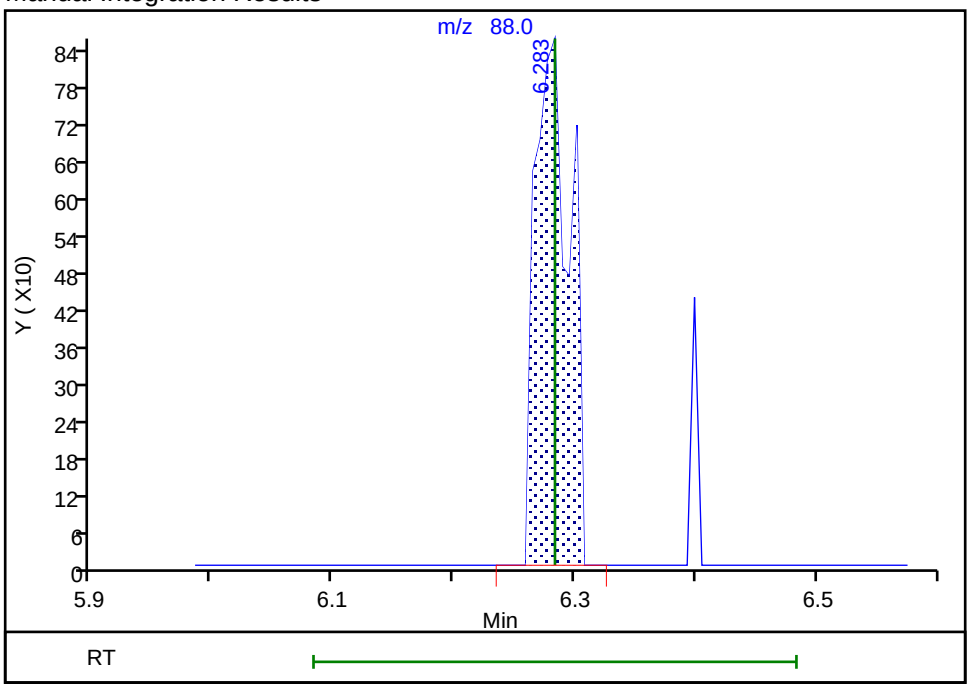
Not Detected
Expected RT: 6.28

Processing Integration Results



Manual Integration Results

RT: 6.28
Area: 1713
Amount: 45.606643
Amount Units: ug/L



Reviewer: HillL, 21-Sep-2019 19:31:19
Audit Action: Assigned Compound ID Audit Reason: Poor chromatography

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

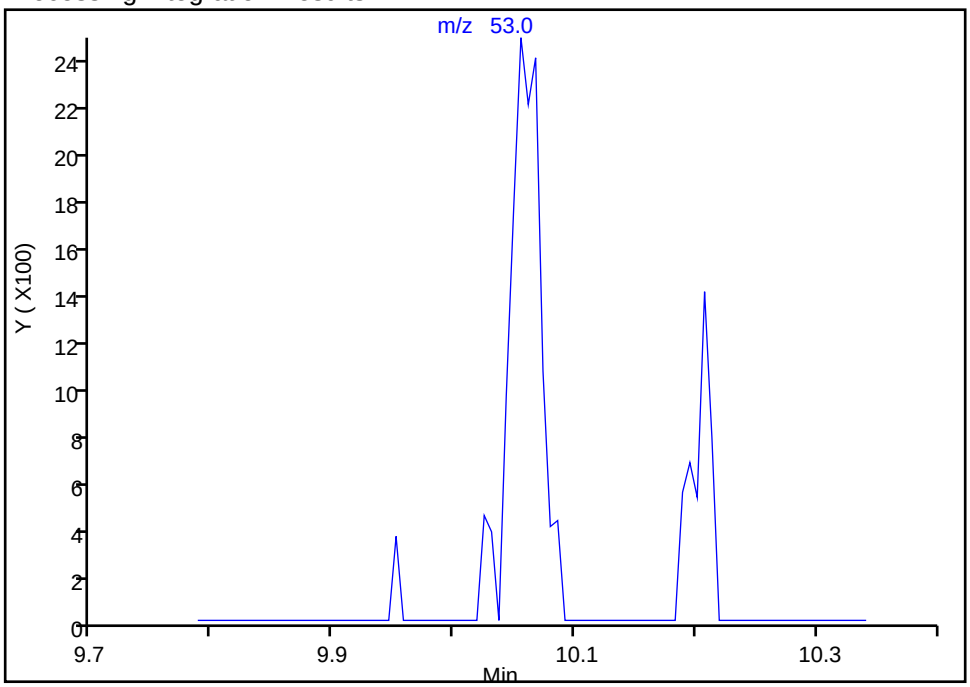
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0066.D
Injection Date: 20-Sep-2019 19:03:30 Instrument ID: HP5973P
Lims ID: IC
Client ID:
Operator ID: LH ALS Bottle#: 2 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

98 trans-1,4-Dichloro-2-butene, CAS: 110-57-6

Signal: 1

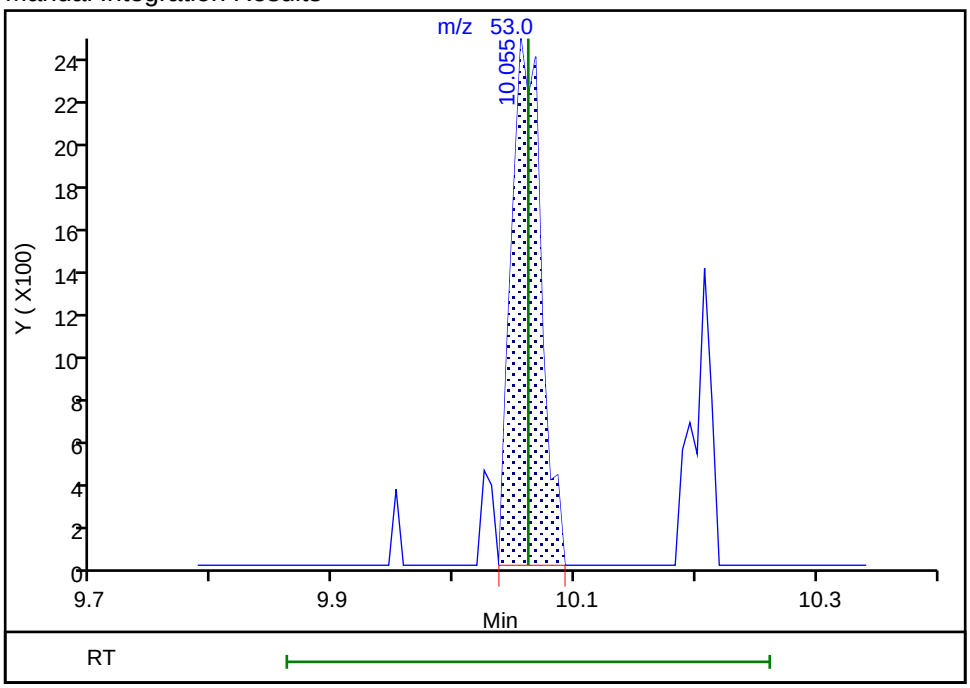
Not Detected
Expected RT: 10.06

Processing Integration Results



Manual Integration Results

RT: 10.06
Area: 4176
Amount: 2.739653
Amount Units: ug/L



Reviewer: HillL, 21-Sep-2019 19:31:35
Audit Action: Assigned Compound ID Audit Reason: Poor chromatography

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0067.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 20-Sep-2019 19:28:30 ALS Bottle#: 3 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 2
Misc. Info.: 480-0084332-009
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:40:39 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:32:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	171703	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	356141	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	360899	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	92	219624	50.0	50.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	95	114366	50.0	48.5	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	95	864527	50.0	49.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	94	270724	50.0	48.9	
10 Dichlorodifluoromethane	85	1.313	1.307	0.006	97	20755	5.00	5.52	
11 Chloromethane	50	1.496	1.496	0.000	97	29803	5.00	5.54	
17 Vinyl chloride	62	1.599	1.593	0.006	66	21413	5.00	4.95	
149 Butadiene	54	1.605	1.599	0.006	96	24368	5.00	5.34	
12 Bromomethane	94	1.922	1.897	0.025	86	20989	5.00	5.74	
13 Chloroethane	64	1.995	1.988	0.007	93	14885	5.00	5.30	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	96	33747	5.00	5.10	
14 Trichlorofluoromethane	101	2.250	2.244	0.006	89	33029	5.00	5.52	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	66	10446	5.00	5.19	
20 Ethyl ether	59	2.512	2.512	0.000	98	21272	5.00	5.08	
22 Acrolein	56	2.706	2.700	0.006	96	17435	25.0	26.6	
16 1,1,2-Trichloro-1,2,2-trif	101	2.743	2.737	0.006	91	18613	5.00	5.37	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	98	17245	5.00	5.26	
24 Acetone	43	2.871	2.864	0.007	100	39731	25.0	25.2	
18 Iodomethane	142	2.919	2.925	-0.006	95	35153	5.00	5.08	
27 Carbon disulfide	76	2.980	2.980	0.000	95	60045	5.00	5.35	
30 Methyl acetate	43	3.169	3.169	0.000	100	32777	10.0	9.49	
31 Methylene Chloride	84	3.272	3.272	0.000	97	37453	5.00	4.90	
33 2-Methyl-2-propanol	59	3.449	3.442	0.007	97	15356	50.0	58.2	
32 Methyl tert-butyl ether	73	3.473	3.479	-0.006	98	59282	5.00	4.82	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	97	19947	5.00	4.73	a
34 Acrylonitrile	53	3.564	3.558	0.006	99	80879	50.0	45.6	
36 Hexane	57	3.692	3.692	0.000	95	36606	5.00	5.70	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	96	41693	5.00	5.32	
38 Vinyl acetate	43	3.978	3.978	0.000	97	74049	10.0	8.46	
45 2,2-Dichloropropane	77	4.452	4.452	0.000	86	17793	5.00	5.10	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	82	23484	5.00	5.01	a
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	54004	25.0	23.4	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	12276	5.00	4.97	
51 Tetrahydrofuran	42	4.750	4.744	0.006	93	13431	10.0	9.01	
49 Chloroform	83	4.805	4.805	0.000	96	41413	5.00	5.39	
54 Cyclohexane	56	4.921	4.915	0.006	97	38675	5.00	5.39	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	94	30634	5.00	5.24	
55 Carbon tetrachloride	117	5.055	5.055	0.000	96	27057	5.00	5.45	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	90	28540	5.00	5.44	
57 Benzene	78	5.274	5.274	0.000	59	89256	5.00	5.32	
53 Isobutyl alcohol	43	5.298	5.298	0.000	52	14748	125.0	151.8	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	95	31279	5.00	5.01	
59 n-Heptane	43	5.444	5.450	-0.006	94	40112	5.00	5.56	
62 Trichloroethene	95	5.888	5.888	0.000	92	22393	5.00	5.29	
64 Methylcyclohexane	83	6.004	6.004	0.000	93	33608	5.00	5.14	
63 1,2-Dichloropropane	63	6.137	6.137	0.000	91	24262	5.00	5.30	
69 Dibromomethane	93	6.277	6.271	0.006	93	12768	5.00	4.94	
68 1,4-Dioxane	88	6.290	6.283	0.007	39	3875	100.0	95.1	
70 Dichlorobromomethane	83	6.430	6.423	0.007	96	29914	5.00	5.02	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	94	12857	5.00	4.87	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	86	31426	5.00	4.62	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	98	109783	25.0	22.5	
76 Toluene	92	7.129	7.129	0.000	96	55061	5.00	5.18	
78 trans-1,3-Dichloropropene	75	7.421	7.415	0.006	95	28387	5.00	4.80	
77 Ethyl methacrylate	69	7.452	7.458	-0.006	95	19046	5.00	4.22	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	92	15930	5.00	5.19	
80 Tetrachloroethene	166	7.664	7.664	0.000	94	24588	5.00	5.39	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	94	32446	5.00	5.20	
83 2-Hexanone	43	7.835	7.835	0.000	98	70024	25.0	21.5	
81 Chlorodibromomethane	129	8.005	8.005	0.000	87	23633	5.00	5.15	
85 Ethylene Dibromide	107	8.115	8.115	0.000	96	19556	5.00	4.98	
87 Chlorobenzene	112	8.589	8.589	0.000	94	65295	5.00	5.05	
89 Ethylbenzene	91	8.674	8.674	0.000	98	99095	5.00	5.01	
88 1,1,1,2-Tetrachloroethane	131	8.687	8.686	0.000	91	20321	5.00	4.66	
90 m-Xylene & p-Xylene	106	8.796	8.802	-0.006	98	40684	5.00	5.19	
93 o-Xylene	106	9.234	9.228	0.006	96	39817	5.00	5.15	
94 Styrene	104	9.264	9.258	0.006	96	68218	5.00	5.16	
92 Bromoform	173	9.520	9.514	0.006	94	11657	5.00	4.39	
95 Isopropylbenzene	105	9.611	9.611	0.000	95	96663	5.00	4.96	
100 Bromobenzene	156	9.958	9.958	0.000	92	28068	5.00	5.03	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	93	23946	5.00	4.84	
99 N-Propylbenzene	91	10.031	10.031	0.000	98	117812	5.00	5.17	
101 1,2,3-Trichloropropane	110	10.043	10.049	-0.006	90	6754	5.00	4.65	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	67	7138	5.00	4.32	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	24103	5.00	4.92	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	81721	5.00	5.01	
105 4-Chlorotoluene	126	10.250	10.250	0.000	97	27401	5.00	5.25	
106 tert-Butylbenzene	134	10.524	10.524	0.000	93	19618	5.00	5.21	
107 1,2,4-Trimethylbenzene	105	10.579	10.578	0.000	97	81290	5.00	4.84	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	104965	5.00	4.90	
110 1,3-Dichlorobenzene	146	10.871	10.870	0.001	75	54490	5.00	5.17	
112 4-Isopropyltoluene	119	10.871	10.870	0.001	97	93293	5.00	4.80	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	54228	5.00	5.15	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	82241	5.00	4.94	
116 1,2-Dichlorobenzene	146	11.309	11.308	0.001	97	52175	5.00	4.84	
117 1,2-Dibromo-3-Chloropropan	75	12.039	12.038	0.001	71	4052	5.00	5.15	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	94	33017	5.00	4.91	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	93	17177	5.00	4.58	
121 Naphthalene	128	12.927	12.927	0.000	96	72200	5.00	4.43	
122 1,2,3-Trichlorobenzene	180	13.128	13.127	0.001	90	31103	5.00	4.93	
S 123 1,2-Dichloroethene, Total	1				0			9.73	
S 124 1,3-Dichloropropene, Total	1				0			9.42	
S 125 Total BTEX	1				0			25.8	
S 126 Xylenes, Total	1				0			10.3	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added:	5.00	Units: uL	
GAS CORP mix_00361	Amount Added:	5.00	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

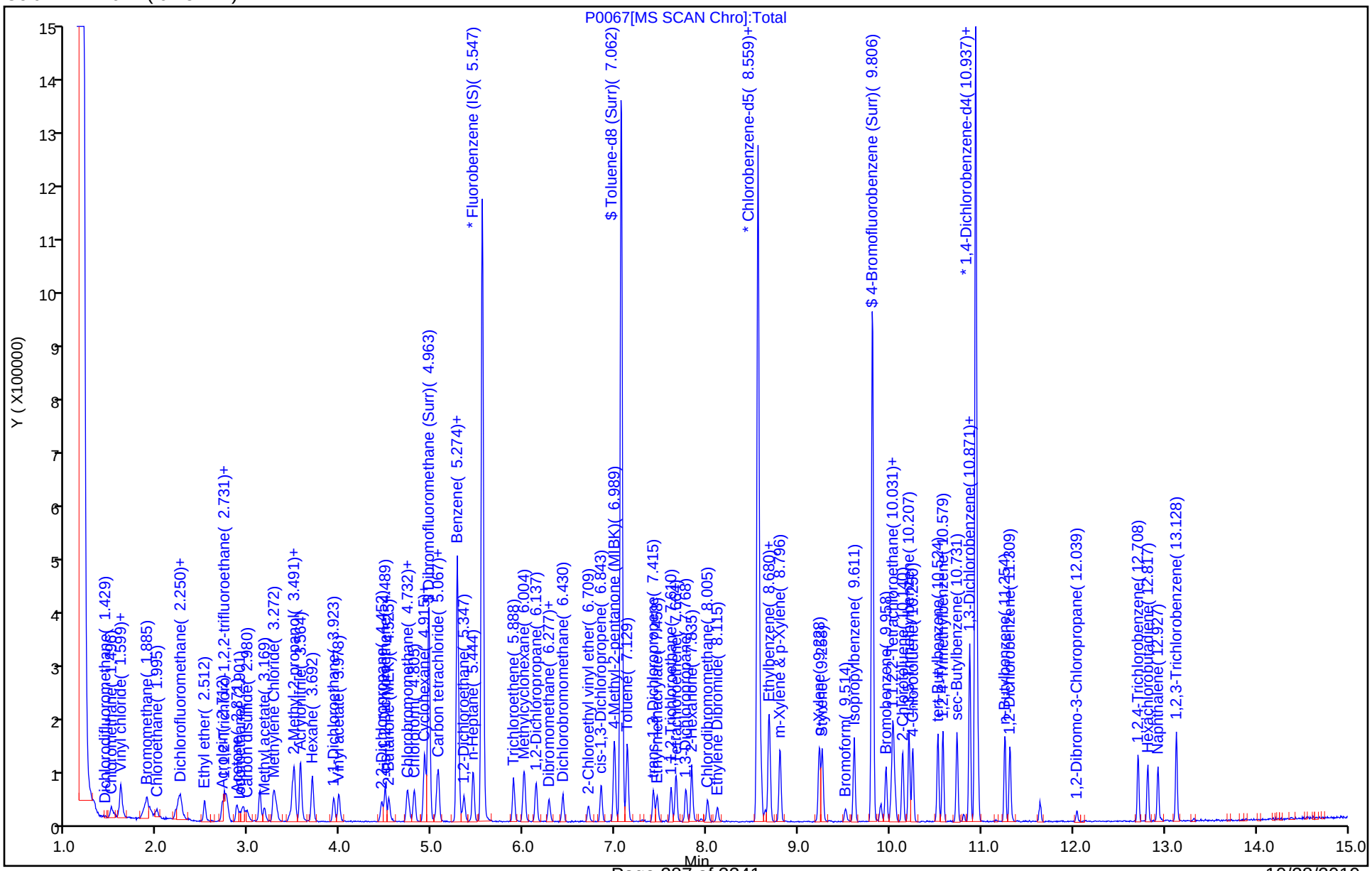
Report Date: 23-Sep-2019 11:40:42 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0067.D

Injection Date:	20-Sep-2019 19:28:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC 2			Worklist Smp#:	9
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

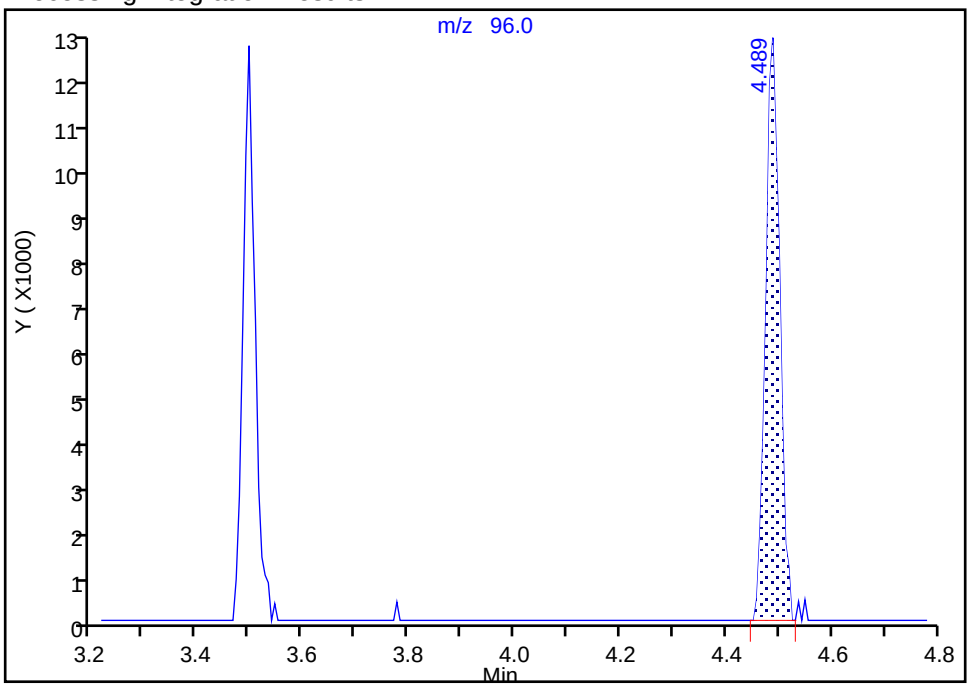
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0067.D
Injection Date: 20-Sep-2019 19:28:30 Instrument ID: HP5973P
Lims ID: IC 2
Client ID:
Operator ID: LH ALS Bottle#: 3 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

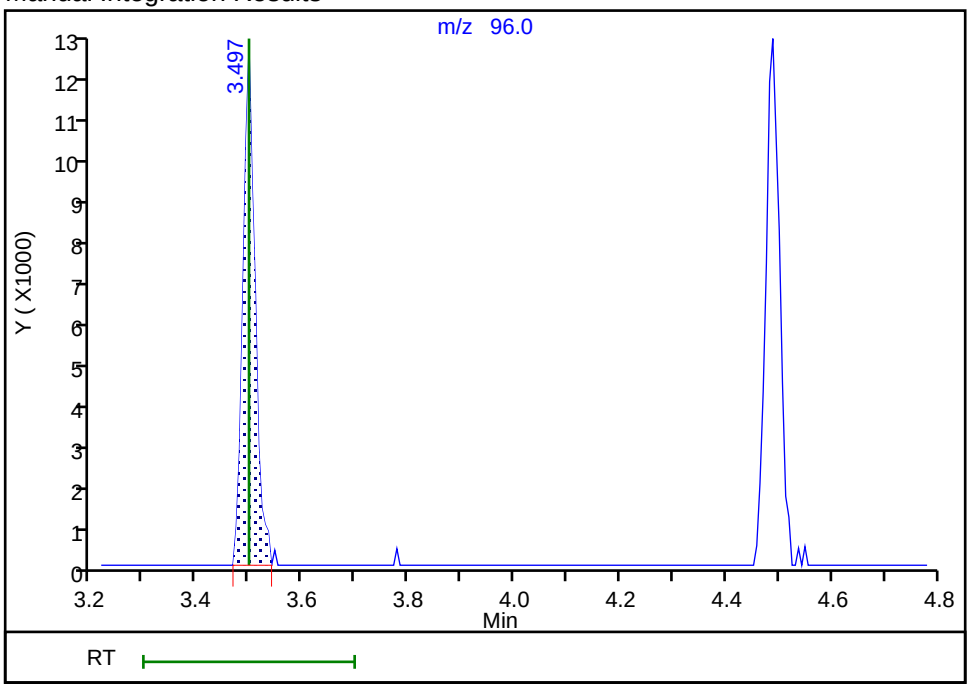
Processing Integration Results

RT: 4.49
Area: 23484
Amount: 4.994667
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 19947
Amount: 4.727127
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:31:35
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

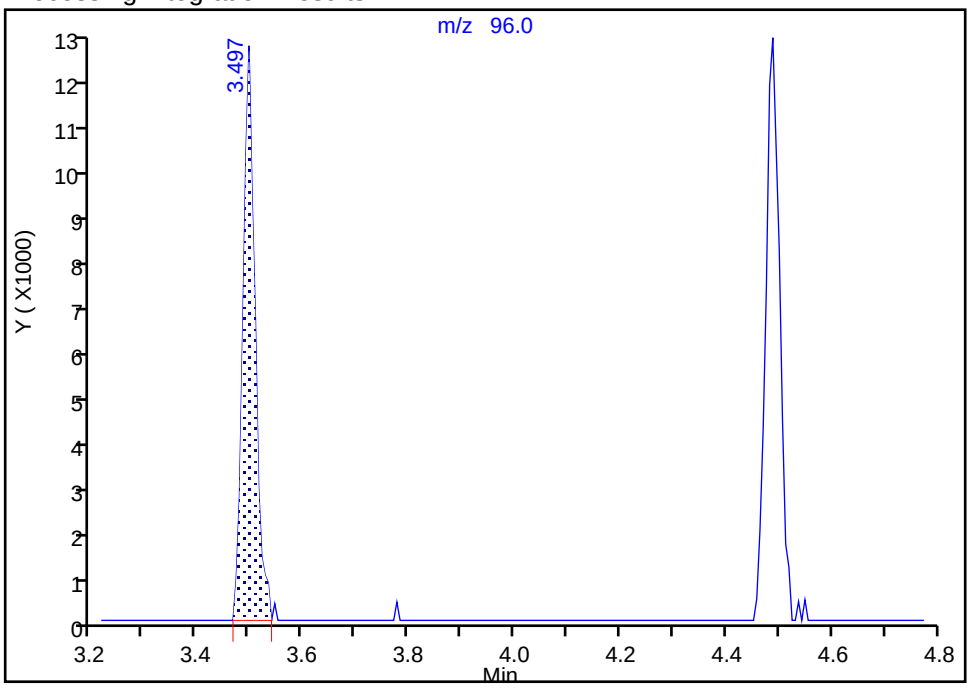
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0067.D
Injection Date: 20-Sep-2019 19:28:30 Instrument ID: HP5973P
Lims ID: IC 2
Client ID:
Operator ID: LH ALS Bottle#: 3 Worklist Smp#: 9
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

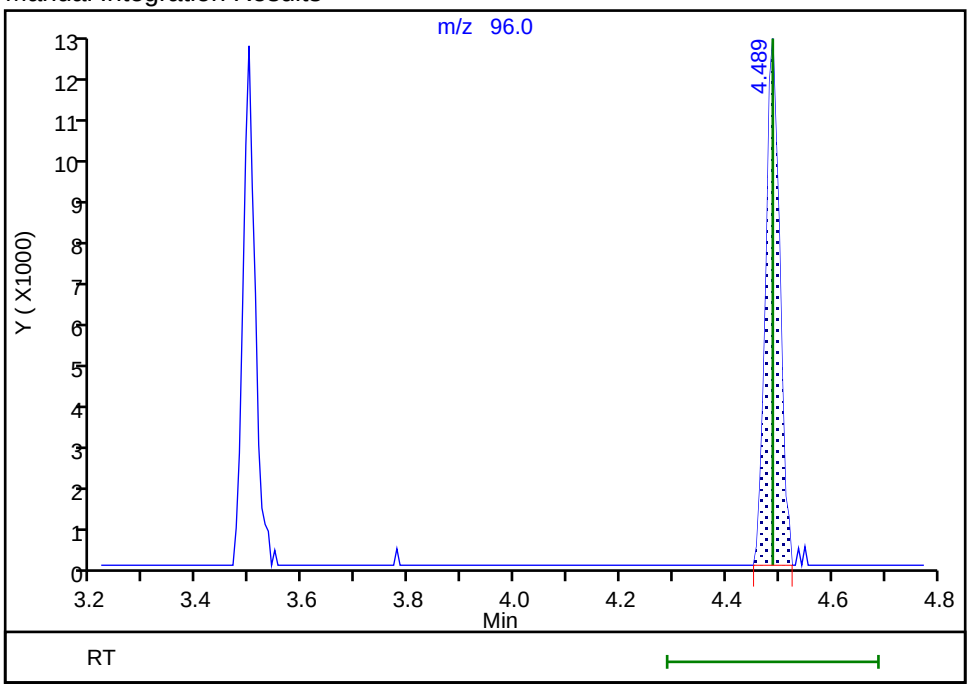
Processing Integration Results

RT: 3.50
Area: 19947
Amount: 4.875384
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 23484
Amount: 5.006933
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:31:41
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0068.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 20-Sep-2019 19:52:30 ALS Bottle#: 4 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 3
Misc. Info.: 480-0084332-010
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:40:46 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:32:49

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	173202	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	361023	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	366445	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	93	218765	50.0	49.3	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	89	113689	50.0	47.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	873765	50.0	49.1	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	93	275876	50.0	49.2	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	38243	10.0	10.1	
11 Chloromethane	50	1.496	1.496	0.000	99	52392	10.0	9.65	
17 Vinyl chloride	62	1.593	1.593	0.000	69	42146	10.0	9.66	
149 Butadiene	54	1.599	1.599	0.000	97	45032	10.0	9.78	
12 Bromomethane	94	1.891	1.897	-0.006	87	37018	10.0	10.0	
13 Chloroethane	64	1.988	1.988	0.000	97	28826	10.0	10.2	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	95	66821	10.0	10.0	
14 Trichlorofluoromethane	101	2.250	2.244	0.006	83	59556	10.0	9.86	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	62	19191	10.0	11.0	
20 Ethyl ether	59	2.518	2.512	0.006	95	41746	10.0	9.88	
22 Acrolein	56	2.700	2.700	0.000	98	35734	50.0	54.0	
16 1,1,2-Trichloro-1,2,2-trif	101	2.737	2.737	0.000	79	37742	10.0	10.8	
25 1,1-Dichloroethene	96	2.755	2.749	0.006	96	34757	10.0	10.5	
24 Acetone	43	2.864	2.864	0.000	99	80604	50.0	50.8	
18 Iodomethane	142	2.925	2.925	0.000	100	71975	10.0	10.3	
27 Carbon disulfide	76	2.968	2.980	-0.012	98	115364	10.0	10.2	
30 Methyl acetate	43	3.163	3.169	-0.006	100	65968	20.0	18.9	
31 Methylene Chloride	84	3.278	3.272	0.006	98	61511	10.0	10.3	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	97	36167	100.0	100.2	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	119936	10.0	9.67	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	96	42165	10.0	9.91	a
34 Acrylonitrile	53	3.558	3.558	0.000	98	165510	100.0	92.5	
36 Hexane	57	3.692	3.692	0.000	96	67632	10.0	10.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.929	3.923	0.006	97	78834	10.0	9.97	
38 Vinyl acetate	43	3.978	3.978	0.000	98	152691	20.0	17.3	
45 2,2-Dichloropropane	77	4.446	4.452	-0.006	83	33849	10.0	9.62	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	82	47799	10.0	10.1	a
44 2-Butanone (MEK)	43	4.531	4.525	0.006	98	106530	50.0	45.7	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	25735	10.0	10.3	
51 Tetrahydrofuran	42	4.744	4.744	0.000	91	27428	20.0	18.2	
49 Chloroform	83	4.805	4.805	0.000	95	77285	10.0	9.98	
54 Cyclohexane	56	4.921	4.915	0.006	95	71935	10.0	9.94	
52 1,1,1-Trichloroethane	97	4.921	4.915	0.006	91	60012	10.0	10.2	
55 Carbon tetrachloride	117	5.049	5.055	-0.007	93	47984	10.0	9.59	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	92	52844	10.0	10.0	
57 Benzene	78	5.274	5.274	0.000	77	165634	10.0	9.79	
53 Isobutyl alcohol	43	5.298	5.298	0.000	88	35977	250.0	247.2	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	95	64673	10.0	10.3	
59 n-Heptane	43	5.444	5.450	-0.006	97	77305	10.0	10.6	
62 Trichloroethene	95	5.888	5.888	0.000	93	44183	10.0	10.3	
64 Methylcyclohexane	83	6.004	6.004	0.000	95	69849	10.0	10.6	
63 1,2-Dichloropropane	63	6.131	6.137	-0.006	85	46513	10.0	10.1	
69 Dibromomethane	93	6.277	6.271	0.006	92	25470	10.0	9.77	
68 1,4-Dioxane	88	6.290	6.283	0.007	38	7237	200.0	175.3	
70 Dichlorobromomethane	83	6.423	6.423	0.000	96	57984	10.0	9.64	
71 2-Chloroethyl vinyl ether	63	6.709	6.703	0.006	92	23427	10.0	8.79	
73 cis-1,3-Dichloropropene	75	6.849	6.843	0.006	91	66597	10.0	9.70	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	229254	50.0	46.3	
76 Toluene	92	7.129	7.129	0.000	98	110112	10.0	10.2	
78 trans-1,3-Dichloropropene	75	7.421	7.415	0.006	98	56164	10.0	9.37	
77 Ethyl methacrylate	69	7.458	7.458	0.000	97	40959	10.0	8.96	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	93	30977	10.0	9.96	
80 Tetrachloroethene	166	7.664	7.664	0.000	94	46815	10.0	10.1	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	62322	10.0	9.86	
83 2-Hexanone	43	7.835	7.835	0.000	99	154787	50.0	46.8	
81 Chlorodibromomethane	129	8.005	8.005	0.000	89	41905	10.0	9.01	
85 Ethylene Dibromide	107	8.115	8.115	0.000	99	37976	10.0	9.53	
87 Chlorobenzene	112	8.589	8.589	0.000	96	126405	10.0	9.65	
89 Ethylbenzene	91	8.674	8.674	0.000	99	195879	10.0	9.76	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	92	40290	10.0	9.11	
90 m-Xylene & p-Xylene	106	8.802	8.802	0.000	99	80974	10.0	10.2	
93 o-Xylene	106	9.228	9.228	0.000	96	79546	10.0	10.1	
94 Styrene	104	9.258	9.258	0.000	94	131308	10.0	9.79	
92 Bromoform	173	9.514	9.514	0.000	93	23908	10.0	8.88	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	183143	10.0	9.26	
100 Bromobenzene	156	9.958	9.958	0.000	92	54887	10.0	9.69	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	95	48375	10.0	9.63	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	227330	10.0	9.82	
101 1,2,3-Trichloropropane	110	10.037	10.049	-0.012	88	14187	10.0	9.62	
98 trans-1,4-Dichloro-2-buten	53	10.055	10.061	-0.006	70	14997	10.0	8.94	
103 2-Chlorotoluene	126	10.140	10.140	0.000	97	50352	10.0	10.1	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	96	159755	10.0	9.64	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	50644	10.0	9.56	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	37297	10.0	9.75	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	97	166108	10.0	9.73	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	206101	10.0	9.48	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	73	104598	10.0	9.77	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	98	190292	10.0	9.65	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	96	110351	10.0	10.3	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	158883	10.0	9.41	
116 1,2-Dichlorobenzene	146	11.309	11.308	0.000	97	105807	10.0	9.68	
117 1,2-Dibromo-3-Chloropropan	75	12.039	12.038	0.001	81	6537	10.0	8.19	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	94	64861	10.0	9.50	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	96	32435	10.0	9.27	
121 Naphthalene	128	12.927	12.927	0.000	97	148897	10.0	9.07	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	94	61121	10.0	9.60	
S 123 1,2-Dichloroethene, Total	1				0			20.0	
S 124 1,3-Dichloropropene, Total	1				0			19.1	
S 125 Total BTEX	1				0			50.1	
S 126 Xylenes, Total	1				0			20.3	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added:	10.00	Units: uL	
GAS CORP mix_00361	Amount Added:	10.00	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

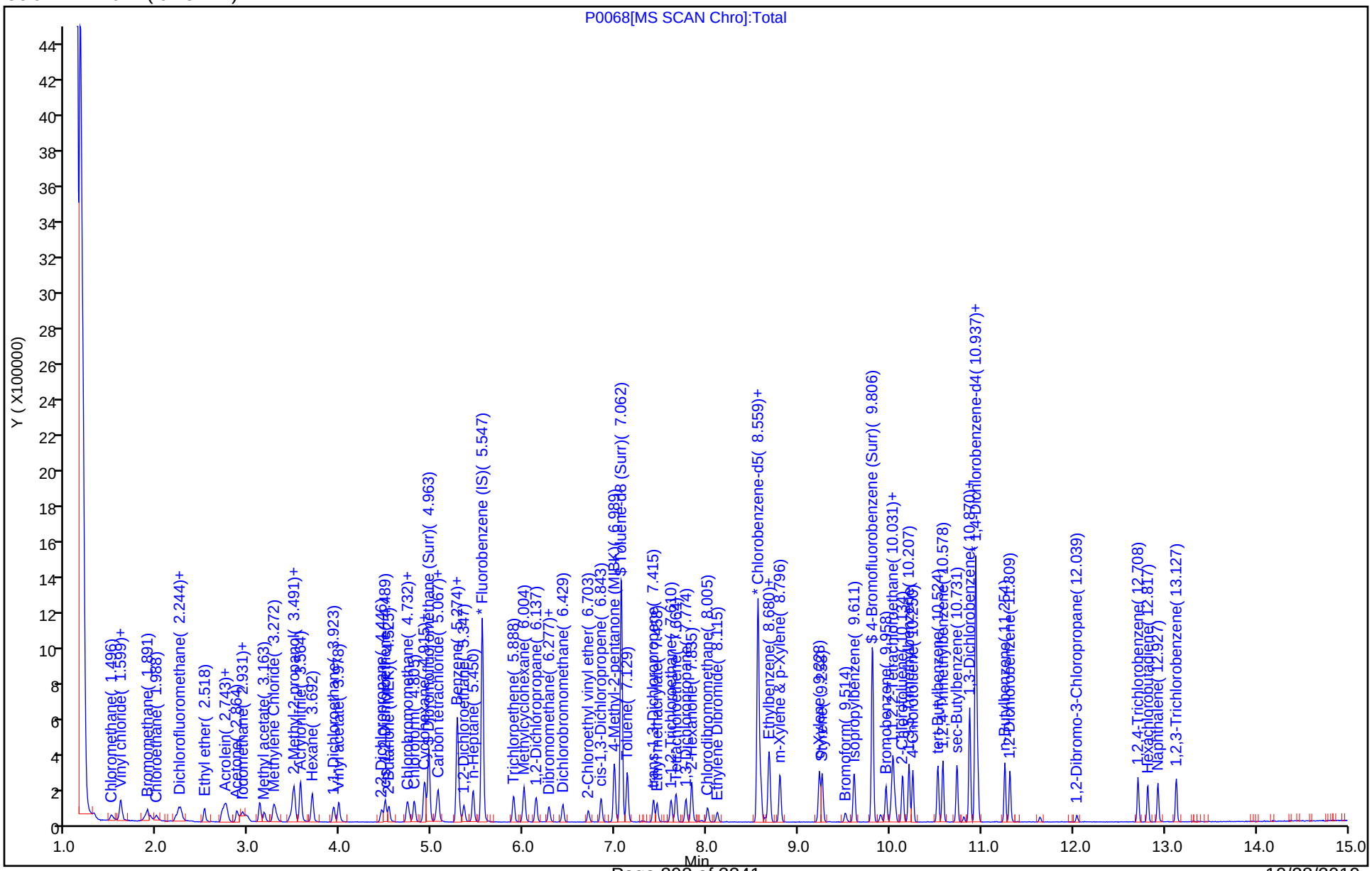
Report Date: 23-Sep-2019 11:40:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0068.D

Injection Date:	20-Sep-2019 19:52:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC 3			Worklist Smp#:	10
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

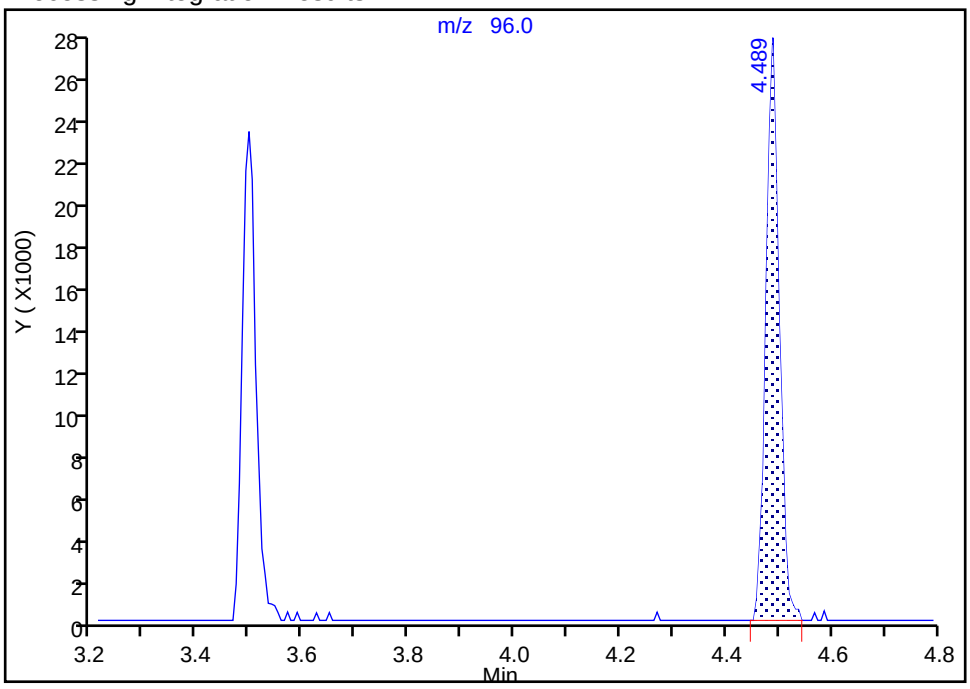
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0068.D
Injection Date: 20-Sep-2019 19:52:30 Instrument ID: HP5973P
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 4 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

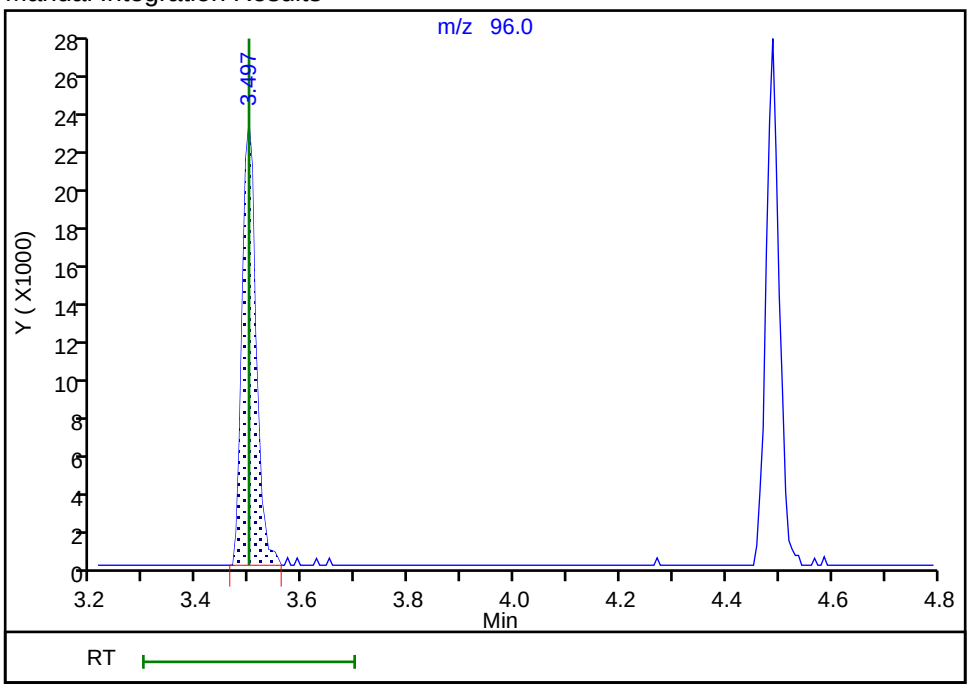
Processing Integration Results

RT: 4.49
Area: 47799
Amount: 10.299459
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 42165
Amount: 9.905965
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:32:09
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

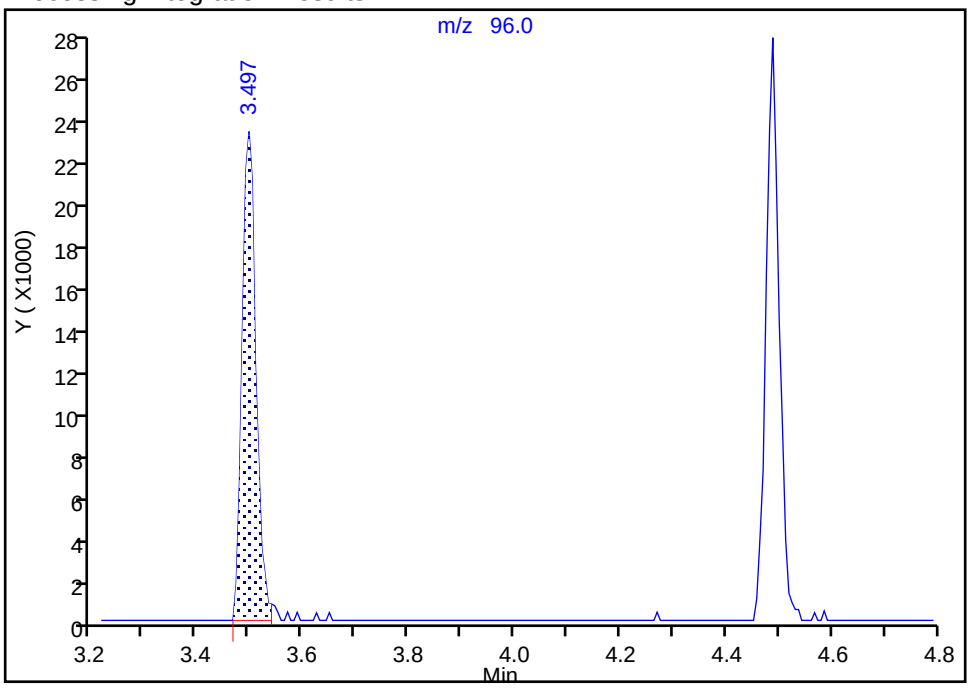
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0068.D
Injection Date: 20-Sep-2019 19:52:30 Instrument ID: HP5973P
Lims ID: IC 3
Client ID:
Operator ID: LH ALS Bottle#: 4 Worklist Smp#: 10
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

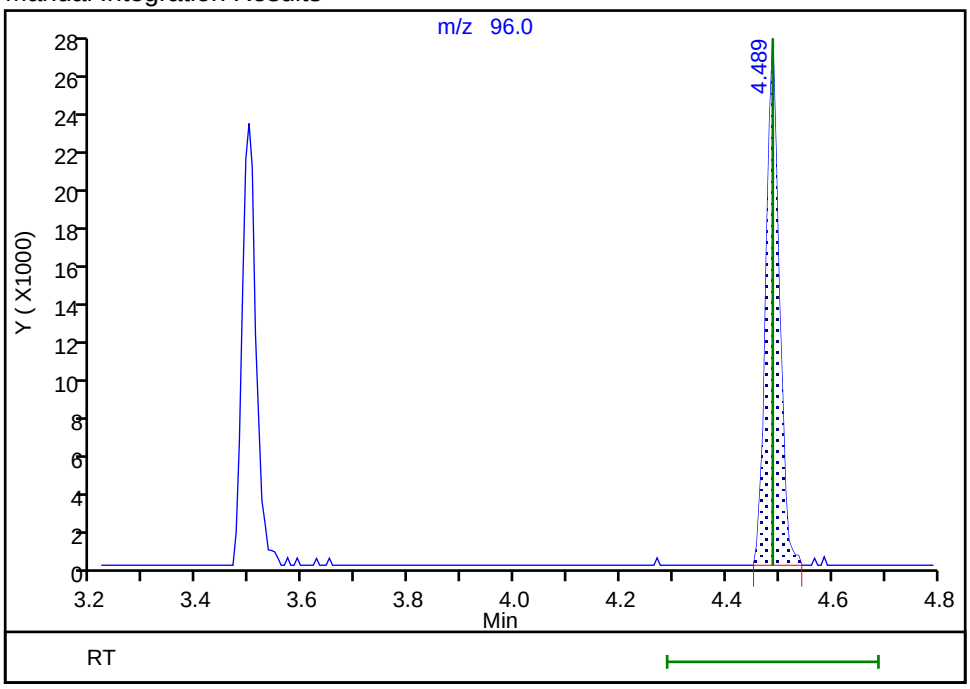
Processing Integration Results

RT: 3.50
Area: 41775
Amount: 9.838631
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 47799
Amount: 10.102840
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:32:14
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0069.D
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 20-Sep-2019 20:17:30 ALS Bottle#: 5 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 4
Misc. Info.: 480-0084332-011
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:40:53 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:33:18

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	175141	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	369762	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	368950	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	93	221199	50.0	49.3	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	78	118618	50.0	49.4	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	94	882030	50.0	48.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	94	279231	50.0	48.6	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	98	73324	20.0	19.1	
11 Chloromethane	50	1.496	1.496	0.000	99	110275	20.0	20.1	
17 Vinyl chloride	62	1.593	1.593	0.000	75	84985	20.0	19.3	
149 Butadiene	54	1.599	1.599	0.000	92	90776	20.0	19.5	
12 Bromomethane	94	1.891	1.897	-0.006	94	73056	20.0	19.6	
13 Chloroethane	64	1.982	1.988	-0.006	96	53894	20.0	18.8	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	96	130741	20.0	19.4	
14 Trichlorofluoromethane	101	2.238	2.244	-0.006	94	119946	20.0	19.6	
28 3-Chloro-1-propene	41	2.250	2.256	-0.006	77	30191	20.0	18.1	
20 Ethyl ether	59	2.512	2.512	0.000	94	77616	20.0	18.2	
22 Acrolein	56	2.700	2.700	0.000	99	64251	100.0	96.0	
16 1,1,2-Trichloro-1,2,2-trif	101	2.737	2.737	0.000	79	66123	20.0	18.7	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	95	62847	20.0	18.8	
24 Acetone	43	2.865	2.864	0.001	99	152287	100.0	94.8	
18 Iodomethane	142	2.919	2.925	-0.006	99	136767	20.0	19.4	
27 Carbon disulfide	76	2.968	2.980	-0.012	99	215052	20.0	18.8	
30 Methyl acetate	43	3.169	3.169	0.000	99	130194	40.0	36.9	
31 Methylene Chloride	84	3.278	3.272	0.006	98	102382	20.0	19.3	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	91	74814	200.0	177.1	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	242924	20.0	19.4	
35 trans-1,2-Dichloroethene	96	3.491	3.497	-0.006	97	75948	20.0	17.6	a
34 Acrylonitrile	53	3.558	3.558	0.000	99	341406	200.0	188.7	
36 Hexane	57	3.692	3.692	0.000	97	118975	20.0	18.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	149601	20.0	18.7	
38 Vinyl acetate	43	3.978	3.978	0.000	98	321292	40.0	36.0	
45 2,2-Dichloropropane	77	4.446	4.452	-0.006	88	65396	20.0	18.4	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	83	91793	20.0	19.2	a
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	217460	100.0	92.3	
50 Chlorobromomethane	128	4.726	4.726	0.000	95	47268	20.0	18.7	
51 Tetrahydrofuran	42	4.744	4.744	0.000	90	57287	40.0	37.7	
49 Chloroform	83	4.805	4.805	0.000	96	149114	20.0	19.0	
54 Cyclohexane	56	4.915	4.915	0.000	96	134014	20.0	18.3	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	92	109469	20.0	18.4	
55 Carbon tetrachloride	117	5.055	5.055	0.000	86	91180	20.0	18.0	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	89	100048	20.0	18.7	
57 Benzene	78	5.274	5.274	0.000	92	319336	20.0	18.7	
53 Isobutyl alcohol	43	5.298	5.298	0.000	89	75590	500.0	422.4	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	96	125825	20.0	19.8	
59 n-Heptane	43	5.444	5.450	-0.006	96	133700	20.0	18.2	
62 Trichloroethene	95	5.888	5.888	0.000	93	79621	20.0	18.4	
64 Methylcyclohexane	83	6.004	6.004	0.000	96	125606	20.0	18.8	
63 1,2-Dichloropropane	63	6.131	6.137	-0.006	86	85261	20.0	18.2	
69 Dibromomethane	93	6.277	6.271	0.006	95	52252	20.0	19.8	
68 1,4-Dioxane	88	6.277	6.283	-0.006	40	15495	400.0	366.4	
70 Dichlorobromomethane	83	6.423	6.423	0.000	97	109358	20.0	18.0	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	92	50485	20.0	18.7	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	89	126402	20.0	18.2	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	457304	100.0	90.1	
76 Toluene	92	7.129	7.129	0.000	97	209222	20.0	19.0	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	96	112050	20.0	18.3	
77 Ethyl methacrylate	69	7.458	7.458	0.000	96	82710	20.0	17.7	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	92	61224	20.0	19.2	
80 Tetrachloroethene	166	7.664	7.664	0.000	94	88971	20.0	18.8	
82 1,3-Dichloropropane	76	7.768	7.774	-0.006	97	122187	20.0	18.9	
83 2-Hexanone	43	7.835	7.835	0.000	99	312036	100.0	92.1	
81 Chlorodibromomethane	129	8.005	8.005	0.000	90	84427	20.0	17.7	
85 Ethylene Dibromide	107	8.115	8.115	0.000	98	75499	20.0	18.5	
87 Chlorobenzene	112	8.589	8.589	0.000	96	250395	20.0	18.7	
89 Ethylbenzene	91	8.674	8.674	0.000	98	363423	20.0	17.7	
88 1,1,1,2-Tetrachloroethane	131	8.687	8.686	0.001	93	83198	20.0	18.4	
90 m-Xylene & p-Xylene	106	8.796	8.802	-0.006	99	153556	20.0	18.9	
93 o-Xylene	106	9.228	9.228	0.000	97	150504	20.0	18.7	
94 Styrene	104	9.258	9.258	0.000	95	258836	20.0	18.8	
92 Bromoform	173	9.514	9.514	0.000	96	50899	20.0	18.5	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	363893	20.0	18.3	
100 Bromobenzene	156	9.958	9.958	0.000	94	106067	20.0	18.6	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	94	92957	20.0	18.4	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	433878	20.0	18.6	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	27058	20.0	18.2	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	76	30950	20.0	18.3	
103 2-Chlorotoluene	126	10.140	10.140	0.000	97	99030	20.0	19.8	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	96	313952	20.0	18.8	
105 4-Chlorotoluene	126	10.250	10.250	0.000	97	99236	20.0	18.6	
106 tert-Butylbenzene	134	10.524	10.524	0.000	93	74873	20.0	19.4	
107 1,2,4-Trimethylbenzene	105	10.579	10.578	0.000	98	328755	20.0	19.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	397118	20.0	18.1	
110 1,3-Dichlorobenzene	146	10.871	10.870	0.001	74	211150	20.0	19.6	
112 4-Isopropyltoluene	119	10.871	10.870	0.001	98	362811	20.0	18.3	
111 1,4-Dichlorobenzene	146	10.956	10.962	-0.006	97	204747	20.0	19.0	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	305363	20.0	18.0	
116 1,2-Dichlorobenzene	146	11.315	11.308	0.007	98	207467	20.0	18.8	
117 1,2-Dibromo-3-Chloropropan	75	12.045	12.038	0.007	80	13467	20.0	16.7	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	94	133194	20.0	19.4	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	95	61739	20.0	18.2	
121 Naphthalene	128	12.927	12.927	0.000	97	307266	20.0	18.5	
122 1,2,3-Trichlorobenzene	180	13.128	13.127	0.001	96	126047	20.0	19.6	
S 123 1,2-Dichloroethene, Total	1				0			36.8	
S 124 1,3-Dichloropropene, Total	1				0			36.5	
S 125 Total BTEX	1				0			92.9	
S 126 Xylenes, Total	1				0			37.6	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added:	10.00	Units: uL	
GAS CORP mix_00361	Amount Added:	10.00	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

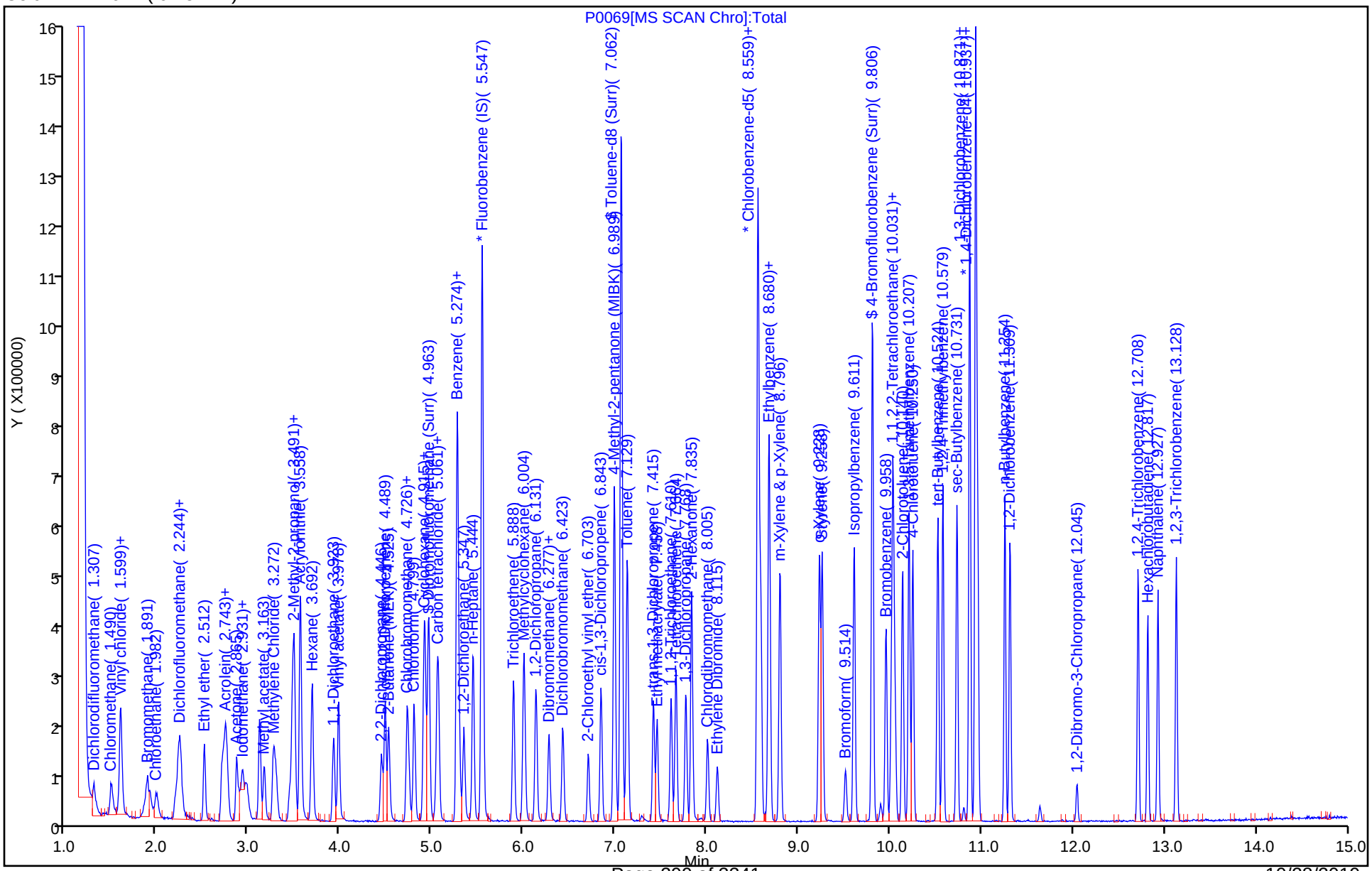
Report Date: 23-Sep-2019 11:40:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0069.D

Injection Date:	20-Sep-2019 20:17:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC 4			Worklist Smp#:	11
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

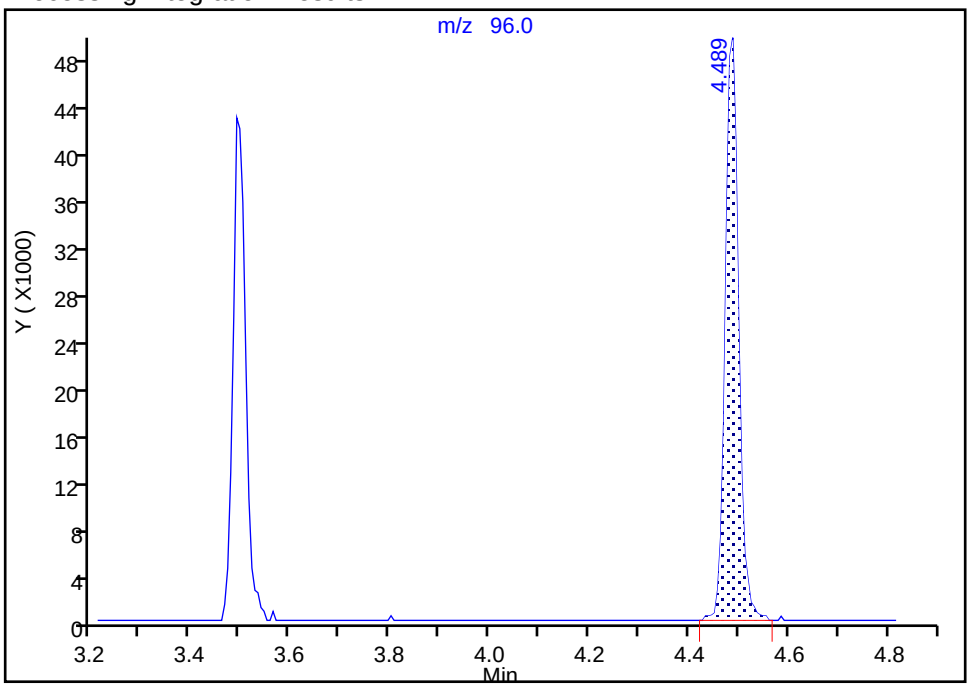
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0069.D
Injection Date: 20-Sep-2019 20:17:30 Instrument ID: HP5973P
Lims ID: IC 4
Client ID:
Operator ID: LH ALS Bottle#: 5 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

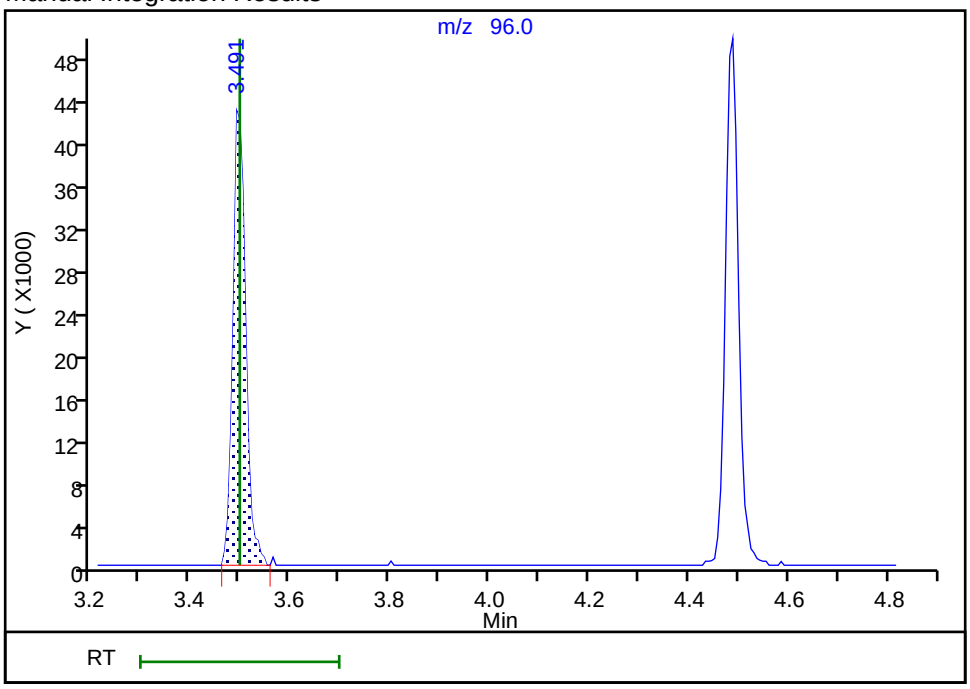
Processing Integration Results

RT: 4.49
Area: 92066
Amount: 19.964471
Amount Units: ug/L



Manual Integration Results

RT: 3.49
Area: 75948
Amount: 17.645180
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:32:40
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

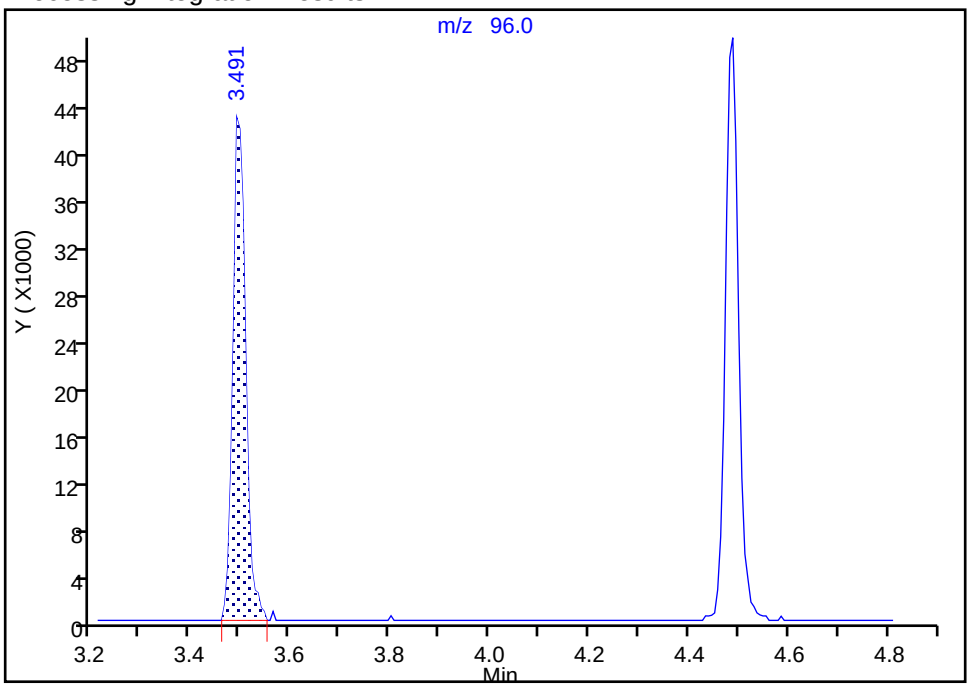
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0069.D
Injection Date: 20-Sep-2019 20:17:30 Instrument ID: HP5973P
Lims ID: IC 4
Client ID:
Operator ID: LH ALS Bottle#: 5 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

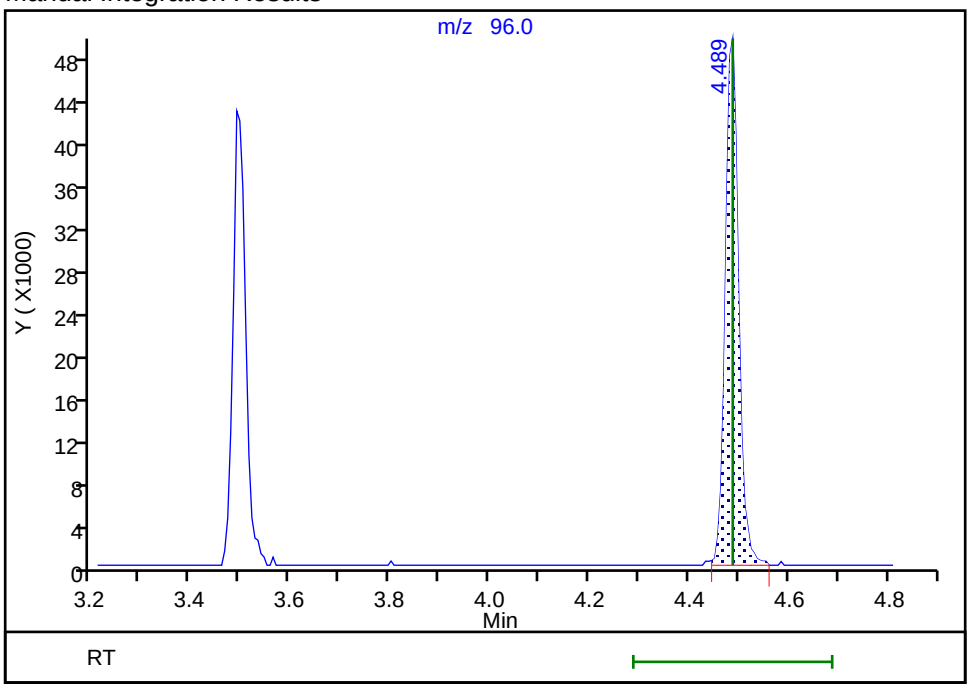
Processing Integration Results

RT: 3.49
Area: 75948
Amount: 17.280248
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 91793
Amount: 19.186657
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:32:46
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0070.D
Lims ID: ICIS 5
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 20-Sep-2019 20:41:30 ALS Bottle#: 6 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: ICIS 5
Misc. Info.: 480-0084332-012
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:41:02 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 23-Sep-2019 11:29:49

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	172868	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	365773	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	364850	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.957	4.957	0.000	93	226642	50.0	51.2	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	51	123290	50.0	52.0	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	95	908427	50.0	50.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.806	9.806	0.000	91	292362	50.0	51.5	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	98	194694	50.0	51.5	
11 Chloromethane	50	1.496	1.496	0.000	99	265023	50.0	48.9	
17 Vinyl chloride	62	1.593	1.593	0.000	73	214937	50.0	49.4	
149 Butadiene	54	1.599	1.599	0.000	95	228467	50.0	49.7	
12 Bromomethane	94	1.897	1.897	0.000	91	185342	50.0	50.3	
13 Chloroethane	64	1.988	1.988	0.000	97	141454	50.0	50.1	
19 Dichlorofluoromethane	67	2.238	2.238	0.000	98	345798	50.0	51.9	
14 Trichlorofluoromethane	101	2.244	2.244	0.000	98	308726	50.0	51.2	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	88	76089	50.0	49.1	
20 Ethyl ether	59	2.512	2.512	0.000	97	202206	50.0	48.0	
22 Acrolein	56	2.700	2.700	0.000	99	168923	250.0	255.8	
16 1,1,2-Trichloro-1,2,2-trif	101	2.737	2.737	0.000	93	179776	50.0	51.5	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	96	171670	50.0	52.1	
24 Acetone	43	2.864	2.864	0.000	98	406588	250.0	256.5	
18 Iodomethane	142	2.925	2.925	0.000	100	356720	50.0	51.2	
27 Carbon disulfide	76	2.980	2.980	0.000	99	583808	50.0	51.7	
30 Methyl acetate	43	3.169	3.169	0.000	99	348156	100.0	100.1	
31 Methylene Chloride	84	3.272	3.272	0.000	98	245352	50.0	52.1	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	96	220248	500.0	475.1	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	654598	50.0	52.9	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	96	218752	50.0	51.5	a
34 Acrylonitrile	53	3.558	3.558	0.000	98	886915	500.0	496.7	
36 Hexane	57	3.692	3.692	0.000	97	340994	50.0	52.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	408480	50.0	51.7	
38 Vinyl acetate	43	3.978	3.978	0.000	98	934051	100.0	106.0	
45 2,2-Dichloropropane	77	4.452	4.452	0.000	89	184169	50.0	52.4	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	243566	50.0	51.6	a
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	604618	250.0	260.0	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	129070	50.0	51.9	
51 Tetrahydrofuran	42	4.744	4.744	0.000	92	154926	100.0	103.2	
49 Chloroform	83	4.805	4.805	0.000	96	393592	50.0	50.9	
54 Cyclohexane	56	4.915	4.915	0.000	96	386234	50.0	53.5	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	97	310842	50.0	52.8	
55 Carbon tetrachloride	117	5.055	5.055	0.000	96	259874	50.0	52.0	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	91	274149	50.0	51.9	
57 Benzene	78	5.274	5.274	0.000	96	873222	50.0	51.7	
53 Isobutyl alcohol	43	5.298	5.298	0.000	94	240457	1250.0	1173.3	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	96	321875	50.0	51.2	
59 n-Heptane	43	5.450	5.450	0.000	95	375701	50.0	51.7	
62 Trichloroethene	95	5.888	5.888	0.000	95	223974	50.0	52.5	
64 Methylcyclohexane	83	6.004	6.004	0.000	95	348610	50.0	53.0	
63 1,2-Dichloropropane	63	6.137	6.137	0.000	90	236580	50.0	51.3	
69 Dibromomethane	93	6.271	6.271	0.000	92	133894	50.0	51.4	
68 1,4-Dioxane	88	6.283	6.283	0.000	41	46908	1000.0	1121.2	
70 Dichlorobromomethane	83	6.423	6.423	0.000	97	298686	50.0	49.8	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	93	139005	50.0	52.3	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	350873	50.0	51.2	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	1271067	250.0	253.2	
76 Toluene	92	7.129	7.129	0.000	97	556167	50.0	50.9	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	306115	50.0	50.4	
77 Ethyl methacrylate	69	7.458	7.458	0.000	94	251374	50.0	54.3	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	92	156983	50.0	49.8	
80 Tetrachloroethene	166	7.664	7.664	0.000	97	239607	50.0	51.2	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	325039	50.0	50.7	
83 2-Hexanone	43	7.835	7.835	0.000	99	868440	250.0	259.1	
81 Chlorodibromomethane	129	8.005	8.005	0.000	91	232706	50.0	49.4	
85 Ethylene Dibromide	107	8.115	8.115	0.000	98	199777	50.0	49.5	
87 Chlorobenzene	112	8.589	8.589	0.000	95	647712	50.0	48.8	
89 Ethylbenzene	91	8.674	8.674	0.000	99	1010888	50.0	49.7	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	93	224206	50.0	50.0	
90 m-Xylene & p-Xylene	106	8.802	8.802	0.000	99	414825	50.0	51.5	
93 o-Xylene	106	9.228	9.228	0.000	98	407645	50.0	51.3	
94 Styrene	104	9.258	9.258	0.000	96	697967	50.0	51.4	
92 Bromoform	173	9.514	9.514	0.000	96	135957	50.0	49.8	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	984949	50.0	50.0	
100 Bromobenzene	156	9.958	9.958	0.000	92	281604	50.0	49.9	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	95	253244	50.0	50.7	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	1193375	50.0	51.8	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	76339	50.0	52.0	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	86	85952	50.0	51.5	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	252947	50.0	51.0	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	854649	50.0	51.8	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	268330	50.0	50.9	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	196945	50.0	51.7	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	98	889823	50.0	52.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	1093318	50.0	50.5	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	73	549706	50.0	51.6	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	984439	50.0	50.1	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	537333	50.0	50.5	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	868373	50.0	51.6	
116 1,2-Dichlorobenzene	146	11.308	11.308	0.000	98	535879	50.0	49.2	
117 1,2-Dibromo-3-Chloropropan	75	12.038	12.038	0.000	84	41227	50.0	51.8	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	94	366214	50.0	53.9	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	97	181143	50.0	55.5	
121 Naphthalene	128	12.927	12.927	0.000	97	869632	50.0	53.0	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	95	345183	50.0	54.3	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added:	25.00	Units: uL	
GAS CORP mix_00361	Amount Added:	25.00	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

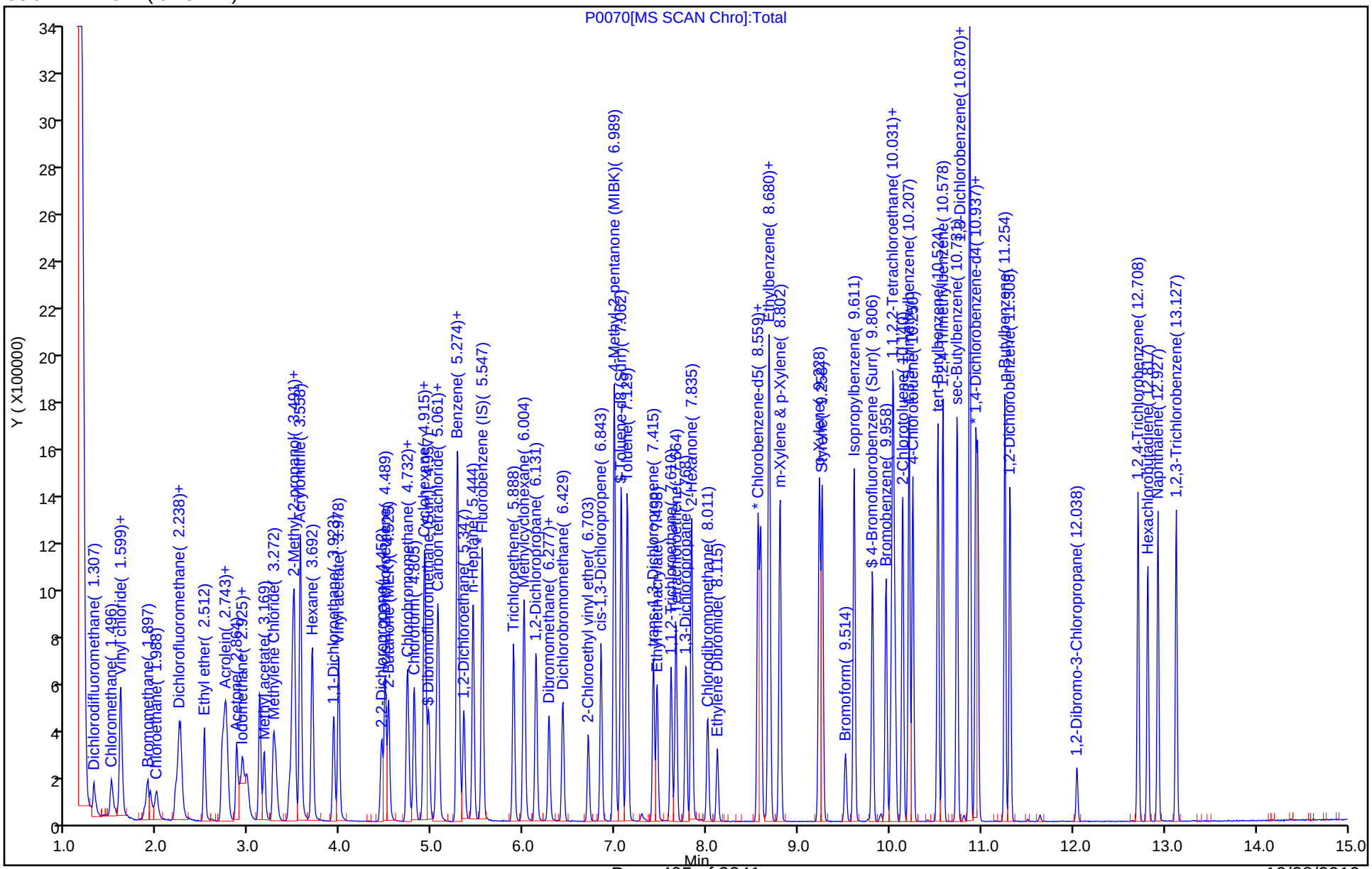
Report Date: 23-Sep-2019 11:41:06 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0070.D

Injection Date:	20-Sep-2019 20:41:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	ICIS 5			Worklist Smp#:	12
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

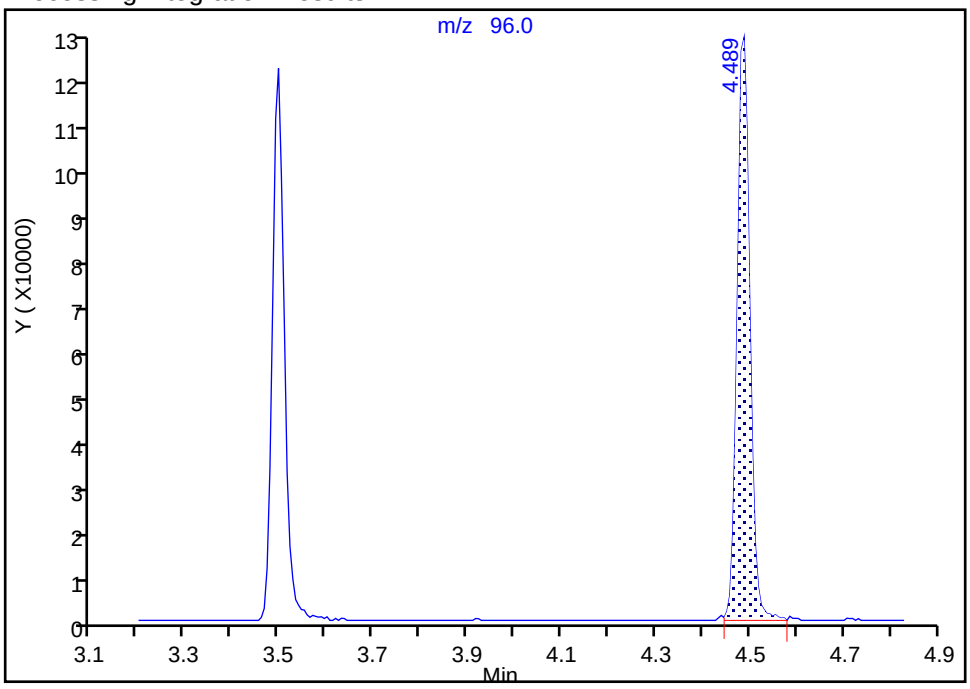
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0070.D
Injection Date: 20-Sep-2019 20:41:30 Instrument ID: HP5973P
Lims ID: ICIS 5
Client ID:
Operator ID: LH ALS Bottle#: 6 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

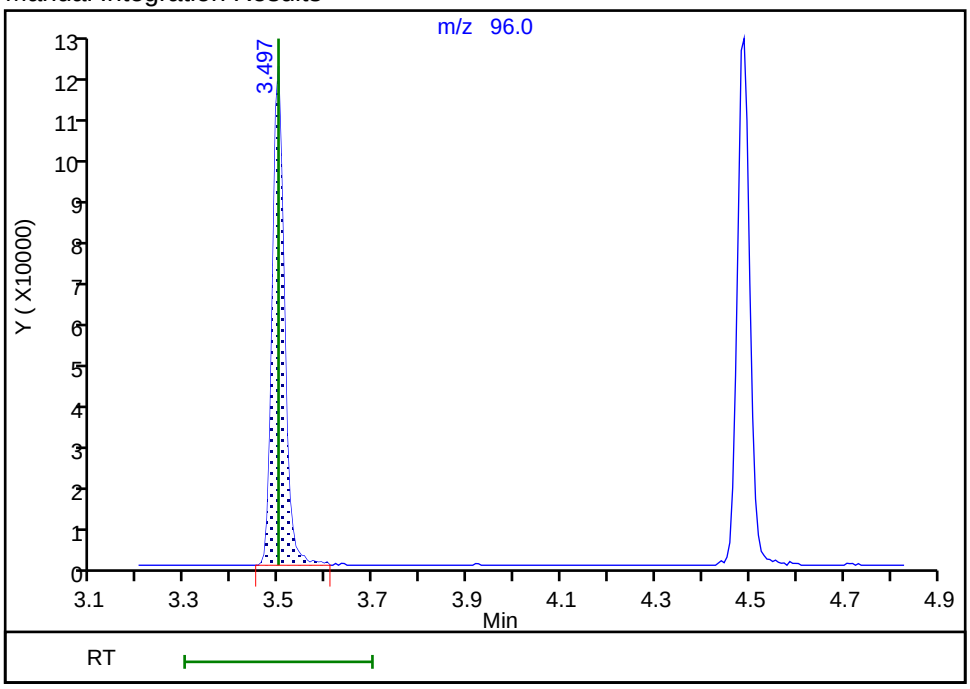
Processing Integration Results

RT: 4.49
Area: 243566
Amount: 50.254962
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 218752
Amount: 51.491436
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:29:30
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

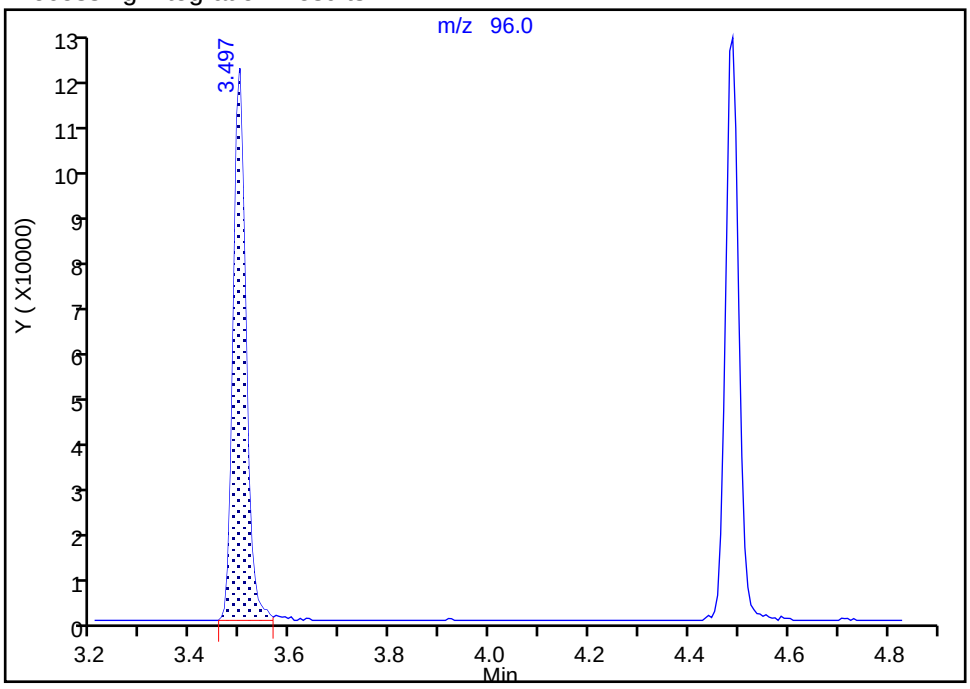
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0070.D
Injection Date: 20-Sep-2019 20:41:30 Instrument ID: HP5973P
Lims ID: ICIS 5
Client ID:
Operator ID: LH ALS Bottle#: 6 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

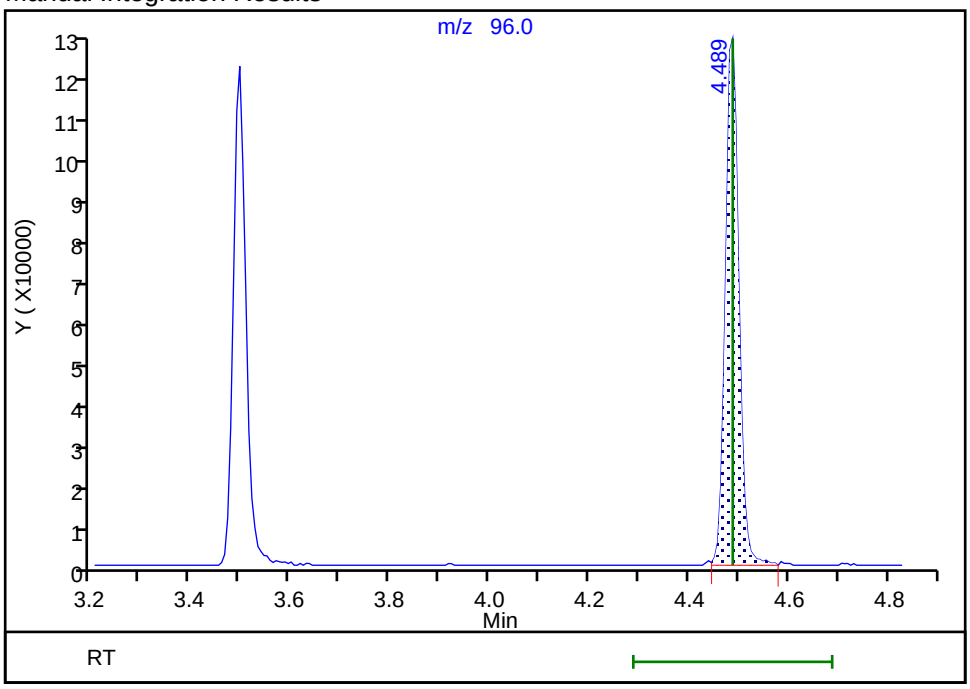
Processing Integration Results

RT: 3.50
Area: 217032
Amount: 53.844967
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 243566
Amount: 51.579798
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:29:23
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0071.D
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 20-Sep-2019 21:06:30 ALS Bottle#: 7 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 6
Misc. Info.: 480-0084332-013
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:41:11 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:34:24

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	186807	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	89	381949	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	375922	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	93	229551	50.0	48.0	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	42	124048	50.0	48.4	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	908272	50.0	48.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	94	286751	50.0	48.3	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	353365	100.0	86.5	
11 Chloromethane	50	1.496	1.496	0.000	99	540742	100.0	92.3	
17 Vinyl chloride	62	1.593	1.593	0.000	96	425170	100.0	90.4	
149 Butadiene	54	1.599	1.599	0.000	94	423574	100.0	85.3	
12 Bromomethane	94	1.897	1.897	0.000	92	358028	100.0	90.0	
13 Chloroethane	64	1.995	1.988	0.007	97	289407	100.0	94.8	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	97	673442	100.0	93.6	
14 Trichlorofluoromethane	101	2.244	2.244	0.000	91	582071	100.0	89.4	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	89	153959	100.0	93.6	
20 Ethyl ether	59	2.512	2.512	0.000	97	411057	100.0	90.2	
22 Acrolein	56	2.706	2.700	0.006	99	364233	500.0	510.4	
16 1,1,2-Trichloro-1,2,2-trif	101	2.737	2.737	0.000	91	345296	100.0	91.6	
25 1,1-Dichloroethene	96	2.755	2.749	0.006	95	333645	100.0	93.6	
24 Acetone	43	2.864	2.864	0.000	98	848068	500.0	495.2	
18 Iodomethane	142	2.919	2.925	-0.006	99	727613	100.0	96.6	
27 Carbon disulfide	76	2.974	2.980	-0.006	99	1147818	100.0	94.1	
30 Methyl acetate	43	3.169	3.169	0.000	99	724317	200.0	192.7	
31 Methylene Chloride	84	3.272	3.272	0.000	99	482538	100.0	97.9	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	98	493256	1000.0	955.9	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	99	1324499	100.0	99.0	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	95	423327	100.0	92.2	a
34 Acrylonitrile	53	3.564	3.558	0.006	99	1847454	1000.0	957.4	
36 Hexane	57	3.692	3.692	0.000	96	639724	100.0	91.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	824058	100.0	96.6	
38 Vinyl acetate	43	3.978	3.978	0.000	97	2082893	200.0	218.7	
45 2,2-Dichloropropane	77	4.452	4.452	0.000	88	372867	100.0	98.2	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	505180	100.0	99.0	a
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	1262061	500.0	502.2	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	268412	100.0	99.8	
51 Tetrahydrofuran	42	4.744	4.744	0.000	90	324252	200.0	200.0	
49 Chloroform	83	4.805	4.805	0.000	96	805299	100.0	96.4	
54 Cyclohexane	56	4.921	4.915	0.006	95	739002	100.0	94.7	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	96	605974	100.0	95.3	
55 Carbon tetrachloride	117	5.055	5.055	0.000	96	518336	100.0	96.0	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	90	541887	100.0	95.0	
57 Benzene	78	5.274	5.274	0.000	98	1781129	100.0	97.6	
53 Isobutyl alcohol	43	5.298	5.298	0.000	93	560997	2500.0	2435.1	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	96	652969	100.0	96.1	
59 n-Heptane	43	5.450	5.450	0.000	96	723001	100.0	92.1	
62 Trichloroethene	95	5.888	5.888	0.000	95	436618	100.0	94.8	
64 Methylcyclohexane	83	6.004	6.004	0.000	96	661427	100.0	93.0	
63 1,2-Dichloropropane	63	6.137	6.137	0.000	90	489940	100.0	98.3	
69 Dibromomethane	93	6.271	6.271	0.000	94	280047	100.0	99.6	
68 1,4-Dioxane	88	6.277	6.283	-0.006	41	97256	2000.0	2226.2	
70 Dichlorobromomethane	83	6.429	6.423	0.006	97	618939	100.0	95.4	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	94	290979	100.0	101.2	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	746644	100.0	100.9	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	2665541	500.0	508.6	
76 Toluene	92	7.129	7.129	0.000	97	1106240	100.0	97.0	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	654707	100.0	103.2	
77 Ethyl methacrylate	69	7.458	7.458	0.000	95	536447	100.0	110.9	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	93	326051	100.0	99.1	
80 Tetrachloroethene	166	7.664	7.664	0.000	95	468629	100.0	95.8	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	664417	100.0	99.3	
83 2-Hexanone	43	7.835	7.835	0.000	99	1809117	500.0	516.8	
81 Chlorodibromomethane	129	8.011	8.005	0.006	90	485949	100.0	98.8	
85 Ethylene Dibromide	107	8.115	8.115	0.000	98	415657	100.0	98.6	
87 Chlorobenzene	112	8.589	8.589	0.000	94	1306028	100.0	94.2	
89 Ethylbenzene	91	8.680	8.674	0.006	99	2040703	100.0	96.1	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	94	465204	100.0	99.4	
90 m-Xylene & p-Xylene	106	8.796	8.802	-0.006	100	813173	100.0	96.7	
93 o-Xylene	106	9.228	9.228	0.000	98	808227	100.0	97.4	
94 Styrene	104	9.258	9.258	0.000	95	1397374	100.0	98.5	
92 Bromoform	173	9.514	9.514	0.000	96	300115	100.0	105.4	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	1982635	100.0	97.7	
100 Bromobenzene	156	9.958	9.958	0.000	93	571609	100.0	98.4	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	94	510751	100.0	99.2	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	2343126	100.0	98.7	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	156897	100.0	103.7	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	83	185377	100.0	107.8	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	507155	100.0	99.3	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	1720620	100.0	101.3	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	520472	100.0	95.7	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	381198	100.0	97.1	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	98	1753253	100.0	100.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.731	10.731	0.000	94	2155678	100.0	96.7	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	72	1061742	100.0	96.6	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	1938878	100.0	95.9	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	1067674	100.0	97.3	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	1644521	100.0	94.9	
116 1,2-Dichlorobenzene	146	11.308	11.308	0.000	97	1076646	100.0	96.0	
117 1,2-Dibromo-3-Chloropropan	75	12.045	12.038	0.007	82	86064	100.0	105.0	
119 1,2,4-Trichlorobenzene	180	12.708	12.708	0.000	95	700683	100.0	100.0	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	97	337188	100.0	96.3	
121 Naphthalene	128	12.927	12.927	0.000	97	1783933	100.0	100.7	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	96	671784	100.0	97.8	
S 123 1,2-Dichloroethene, Total	1				0			191.2	
S 124 1,3-Dichloropropene, Total	1				0			204.1	
S 125 Total BTEX	1				0			484.9	
S 126 Xylenes, Total	1				0			194.1	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added: 50.00	Units: uL		
GAS CORP mix_00361	Amount Added: 50.00	Units: uL		
P 8260 IS_00399	Amount Added: 1.00	Units: uL	Run Reagent	
P 8260 Surr._00360	Amount Added: 1.00	Units: uL	Run Reagent	

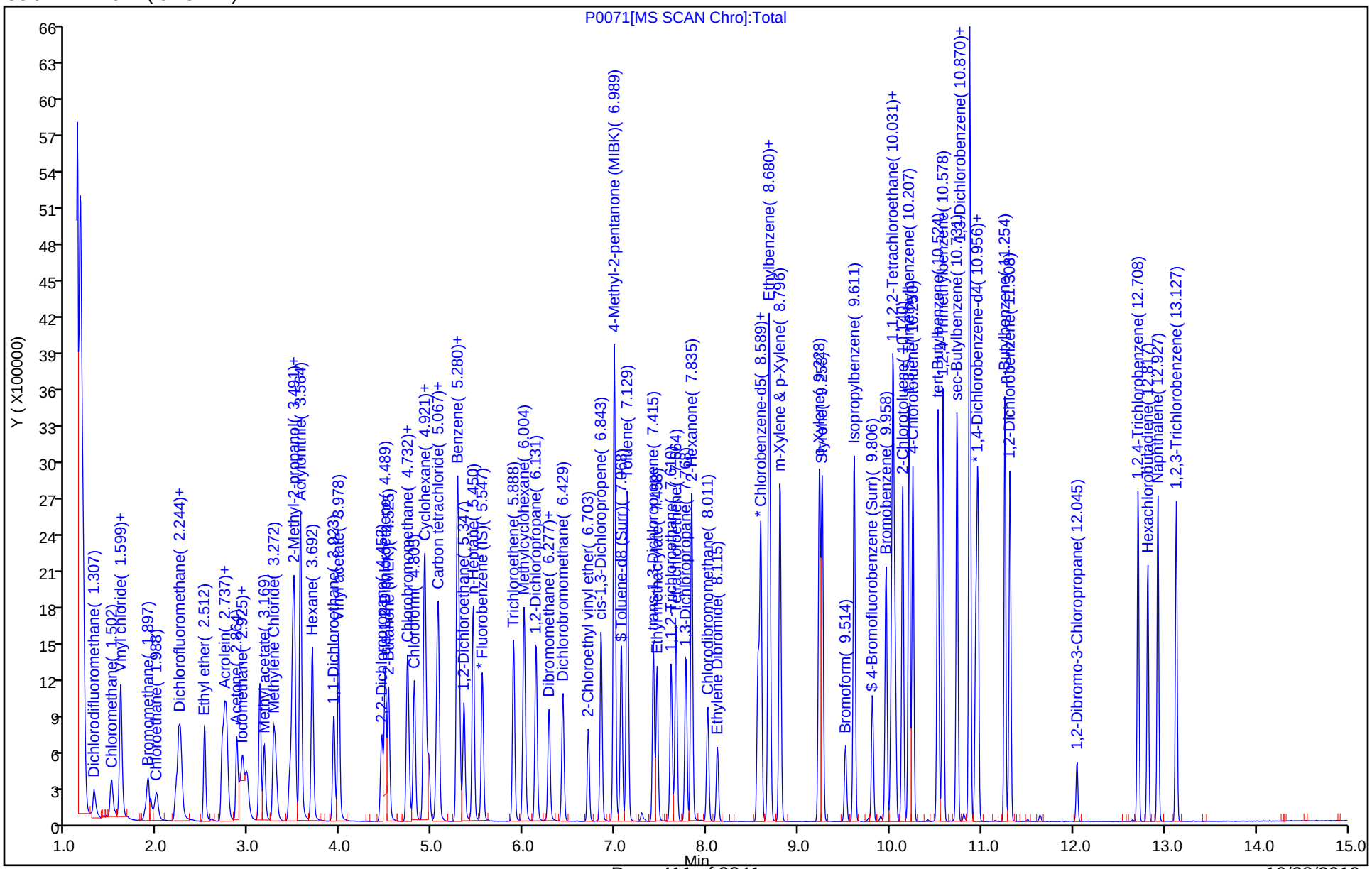
Report Date: 23-Sep-2019 11:41:14 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0071.D

Injection Date:	20-Sep-2019 21:06:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC 6			Worklist Smp#:	13
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

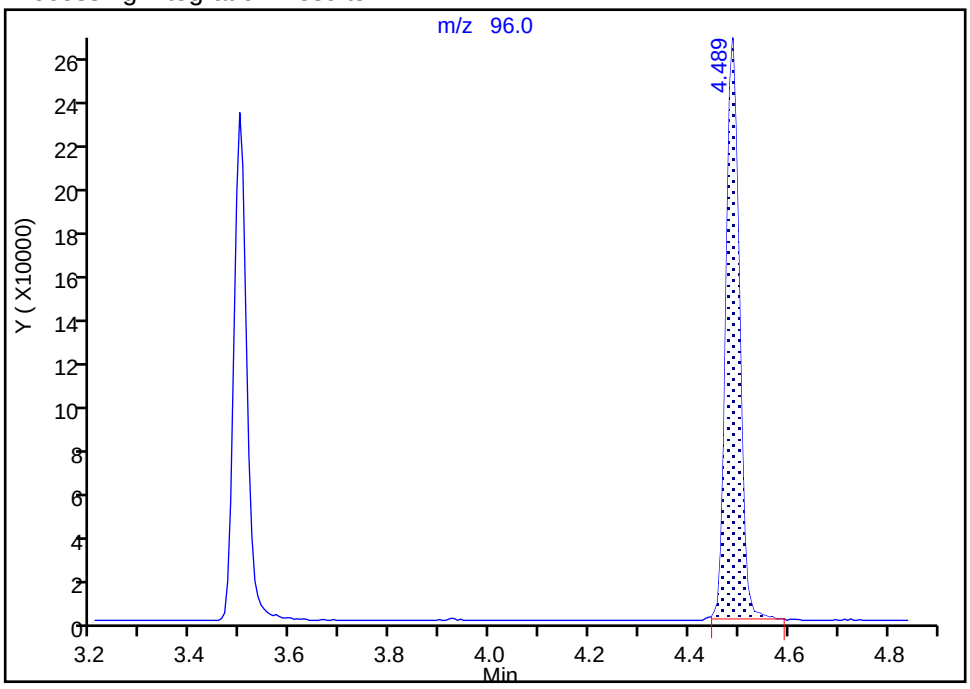
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0071.D
Injection Date: 20-Sep-2019 21:06:30 Instrument ID: HP5973P
Lims ID: IC 6
Client ID:
Operator ID: LH ALS Bottle#: 7 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

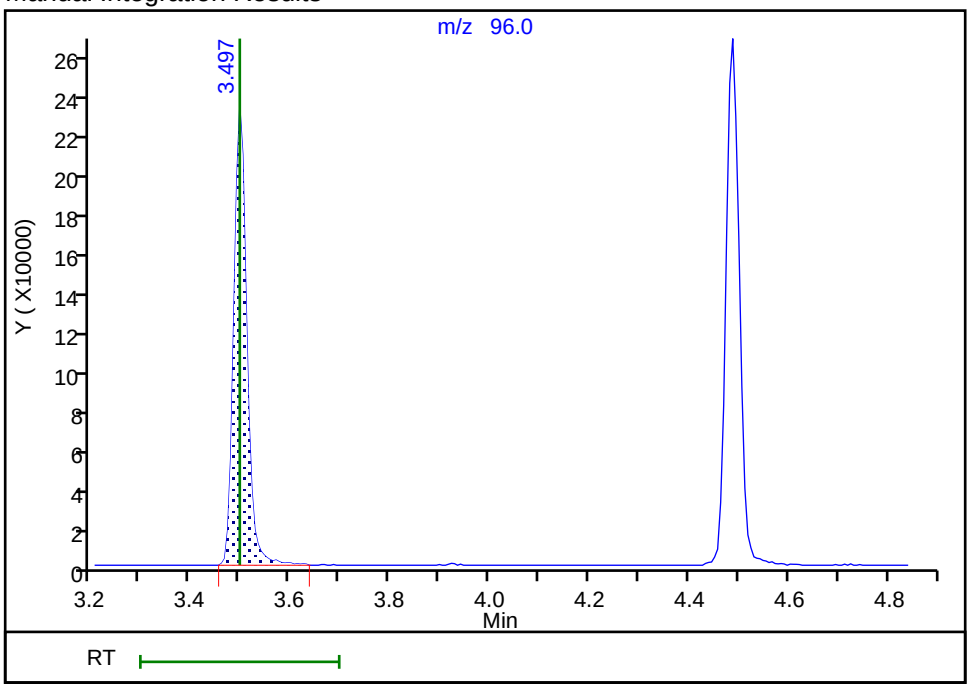
Processing Integration Results

RT: 4.49
Area: 498876
Amount: 104.0222
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 423327
Amount: 92.210506
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:33:21
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

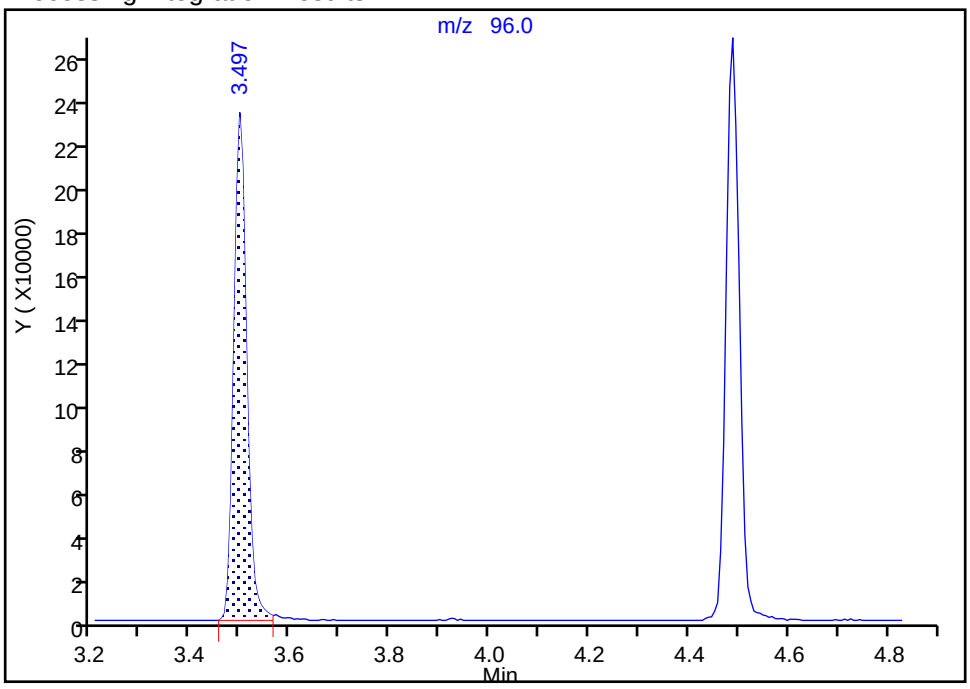
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0071.D
Injection Date: 20-Sep-2019 21:06:30 Instrument ID: HP5973P
Lims ID: IC 6
Client ID:
Operator ID: LH ALS Bottle#: 7 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

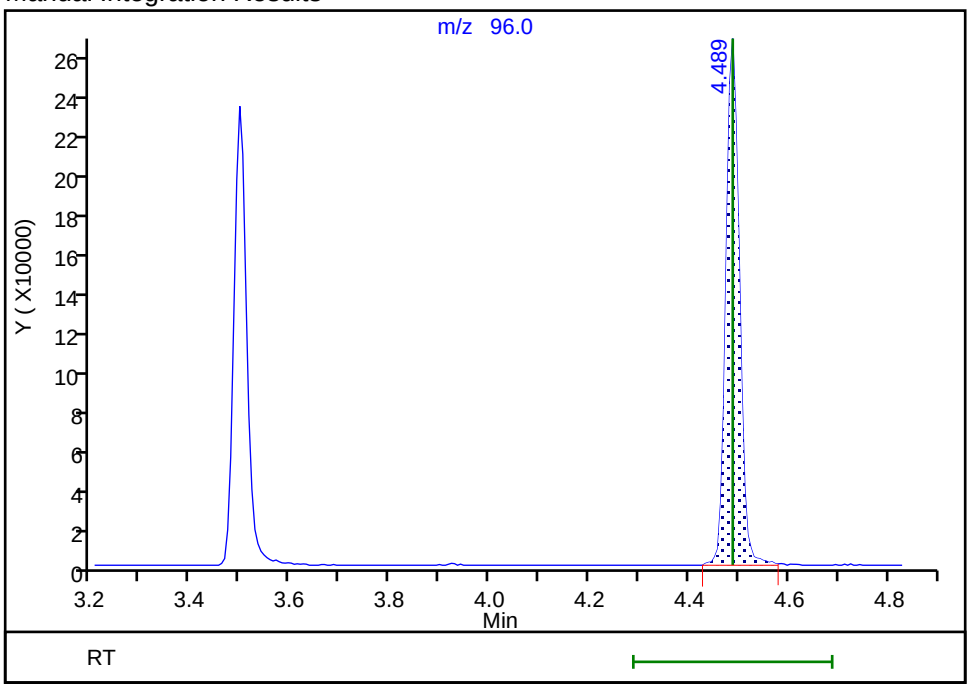
Processing Integration Results

RT: 3.50
Area: 418883
Amount: 86.749232
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 505180
Amount: 98.998948
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:33:25
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0072.D
Lims ID: IC 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 20-Sep-2019 21:30:30 ALS Bottle#: 8 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: IC 7
Misc. Info.: 480-0084332-014
Operator ID: LH Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 11:41:18 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX1012

First Level Reviewer: HillL Date: 21-Sep-2019 19:35:00

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	179460	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	86	369881	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	96	371077	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.957	0.006	93	228394	50.0	49.7	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.274	-0.001	38	122133	50.0	49.6	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	95	926548	50.0	50.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.806	0.006	92	295428	50.0	51.4	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	813154	200.0	207.1	
11 Chloromethane	50	1.496	1.496	0.000	99	1150261	200.0	204.5	
17 Vinyl chloride	62	1.593	1.593	0.000	98	924398	200.0	204.5	
149 Butadiene	54	1.599	1.599	0.000	96	954585	200.0	200.1	
12 Bromomethane	94	1.891	1.897	-0.006	91	735995	200.0	192.6	
13 Chloroethane	64	1.988	1.988	0.000	97	604036	200.0	206.0	
19 Dichlorofluoromethane	67	2.238	2.238	0.000	97	1431903	200.0	207.1	
14 Trichlorofluoromethane	101	2.244	2.244	0.000	98	1262234	200.0	201.8	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	95	325173	200.0	208.0	
20 Ethyl ether	59	2.512	2.512	0.000	97	821987	200.0	187.8	
22 Acrolein	56	2.706	2.700	0.006	100	720147	1000.0	1050.5	
16 1,1,2-Trichloro-1,2,2-trif	101	2.737	2.737	0.000	94	699589	200.0	193.1	
25 1,1-Dichloroethene	96	2.755	2.749	0.006	96	669495	200.0	195.5	
24 Acetone	43	2.864	2.864	0.000	98	1662094	1000.0	1010.2	
18 Iodomethane	142	2.925	2.925	0.000	100	1444118	200.0	199.5	
27 Carbon disulfide	76	2.974	2.980	-0.006	100	2334131	200.0	199.1	
30 Methyl acetate	43	3.162	3.169	-0.007	99	1438676	400.0	398.4	
31 Methylene Chloride	84	3.272	3.272	0.000	97	931436	200.0	200.4	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	95	1048991	2000.0	2083.5	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	2708546	200.0	210.7	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	96	840836	200.0	190.7	a
34 Acrylonitrile	53	3.564	3.558	0.006	99	3605661	2000.0	1945.0	
36 Hexane	57	3.692	3.692	0.000	95	1256616	200.0	187.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	1646604	200.0	200.9	
38 Vinyl acetate	43	3.978	3.978	0.000	97	4288998	400.0	468.8	
45 2,2-Dichloropropane	77	4.452	4.452	0.000	90	778645	200.0	213.6	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	987704	200.0	201.5	a
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	2465443	1000.0	1021.2	
50 Chlorobromomethane	128	4.726	4.726	0.000	95	518086	200.0	200.5	
51 Tetrahydrofuran	42	4.738	4.744	-0.006	90	632955	400.0	406.3	
49 Chloroform	83	4.805	4.805	0.000	96	1587449	200.0	197.8	
54 Cyclohexane	56	4.921	4.915	0.006	96	1492440	200.0	199.1	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	97	1231050	200.0	201.5	
55 Carbon tetrachloride	117	5.054	5.055	-0.001	96	1086333	200.0	209.5	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	90	1082978	200.0	197.6	
57 Benzene	78	5.273	5.274	-0.001	98	3542988	200.0	202.2	
53 Isobutyl alcohol	43	5.298	5.298	0.000	93	1171754	5000.0	5195.1	
60 1,2-Dichloroethane	62	5.346	5.347	-0.001	96	1304478	200.0	199.8	
59 n-Heptane	43	5.450	5.450	0.000	96	1456356	200.0	193.0	
62 Trichloroethene	95	5.888	5.888	0.000	95	874298	200.0	197.5	
64 Methylcyclohexane	83	6.004	6.004	0.000	96	1343300	200.0	196.5	
63 1,2-Dichloropropane	63	6.137	6.137	0.000	90	970629	200.0	202.7	
69 Dibromomethane	93	6.271	6.271	0.000	94	551786	200.0	204.2	
68 1,4-Dioxane	88	6.277	6.283	-0.006	41	187832	4000.0	4439.9	
70 Dichlorobromomethane	83	6.429	6.423	0.006	98	1250265	200.0	200.6	
71 2-Chloroethyl vinyl ether	63	6.703	6.703	0.000	94	591145	200.0	214.0	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	1496903	200.0	210.5	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	5395119	1000.0	1062.9	
76 Toluene	92	7.135	7.129	0.006	97	2218883	200.0	201.0	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	1348329	200.0	219.5	
77 Ethyl methacrylate	69	7.457	7.458	-0.001	95	1094390	200.0	233.7	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	92	647417	200.0	203.2	
80 Tetrachloroethene	166	7.664	7.664	0.000	96	934399	200.0	197.3	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	1323376	200.0	204.3	
83 2-Hexanone	43	7.835	7.835	0.000	99	3653379	1000.0	1077.8	
81 Chlorodibromomethane	129	8.011	8.005	0.006	90	993080	200.0	208.5	
85 Ethylene Dibromide	107	8.115	8.115	0.000	99	813722	200.0	199.4	
87 Chlorobenzene	112	8.589	8.589	0.000	94	2589947	200.0	193.0	
89 Ethylbenzene	91	8.680	8.674	0.006	99	4171339	200.0	202.9	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	94	948042	200.0	209.2	
90 m-Xylene & p-Xylene	106	8.802	8.802	0.000	100	1633370	200.0	200.6	
93 o-Xylene	106	9.228	9.228	0.000	98	1637870	200.0	203.8	
94 Styrene	104	9.258	9.258	0.000	96	2841800	200.0	206.9	
92 Bromoform	173	9.514	9.514	0.000	96	629545	200.0	228.2	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	4074047	200.0	203.4	
100 Bromobenzene	156	9.958	9.958	0.000	93	1136716	200.0	198.2	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	93	994125	200.0	195.5	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	4838018	200.0	206.4	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	92	309563	200.0	207.2	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	82	380715	200.0	224.2	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	1013153	200.0	200.9	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	96	3501084	200.0	208.7	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	1063651	200.0	198.2	
106 tert-Butylbenzene	134	10.524	10.524	0.000	95	779844	200.0	201.3	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	98	3640137	200.0	210.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.730	10.731	-0.001	95	4449541	200.0	202.1	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	76	2198660	200.0	202.7	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	4061147	200.0	203.4	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	2173671	200.0	200.8	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	3451485	200.0	201.8	
116 1,2-Dichlorobenzene	146	11.314	11.308	0.006	97	2180702	200.0	196.9	
117 1,2-Dibromo-3-Chloropropan	75	12.045	12.038	0.006	83	182030	200.0	225.1	
119 1,2,4-Trichlorobenzene	180	12.714	12.708	0.006	94	1412628	200.0	204.3	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	97	672626	200.0	200.7	
121 Naphthalene	128	12.927	12.927	0.000	97	3579106	200.0	210.3	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	96	1334199	200.0	202.2	
S 123 1,2-Dichloroethene, Total	1				0			392.1	
S 124 1,3-Dichloropropene, Total	1				0			430.1	
S 125 Total BTEX	1				0			1010.5	
S 126 Xylenes, Total	1				0			404.4	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

8260 CORP mix_00166	Amount Added: 100.00	Units: uL	
GAS CORP mix_00361	Amount Added: 100.00	Units: uL	
P 8260 IS_00399	Amount Added: 1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added: 1.00	Units: uL	Run Reagent

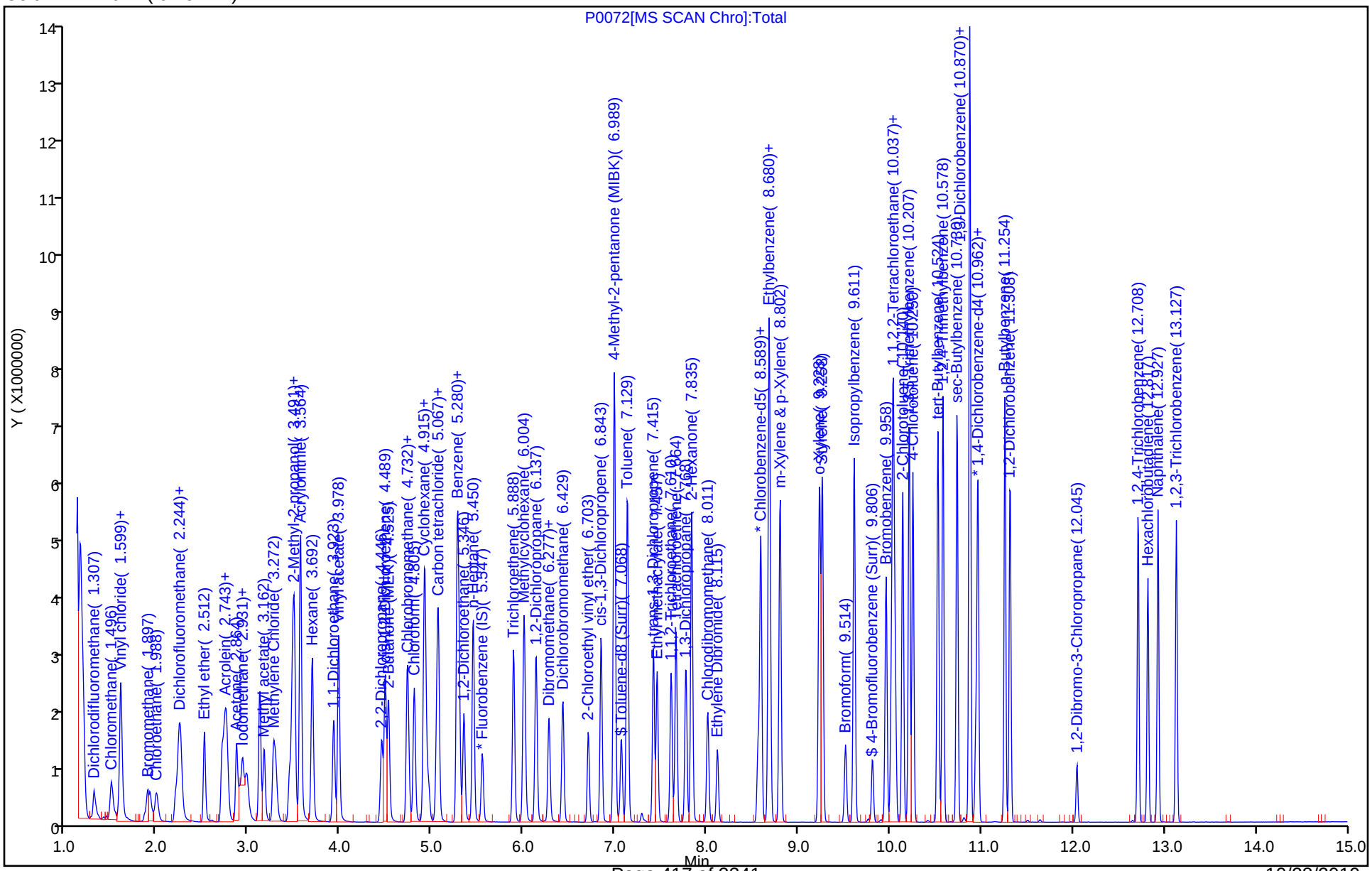
Report Date: 23-Sep-2019 11:41:21 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0072.D

Injection Date:	20-Sep-2019 21:30:30	Instrument ID:	HP5973P	Operator ID:	LH
Lims ID:	IC 7			Worklist Smp#:	14
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

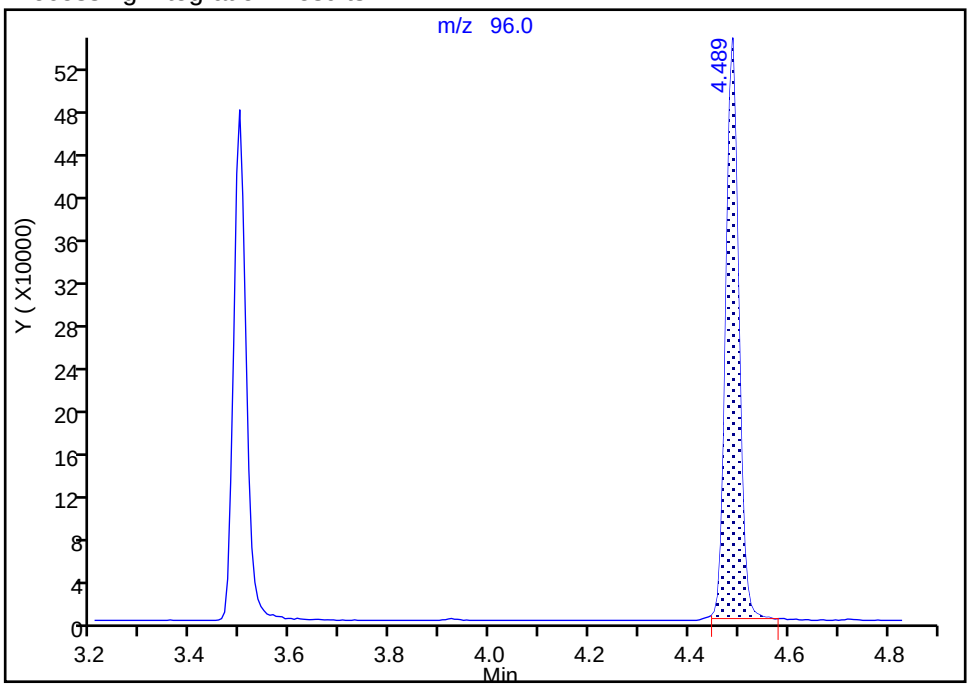
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0072.D
Injection Date: 20-Sep-2019 21:30:30 Instrument ID: HP5973P
Lims ID: IC 7
Client ID:
Operator ID: LH ALS Bottle#: 8 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

35 trans-1,2-Dichloroethene, CAS: 156-60-5

Signal: 1

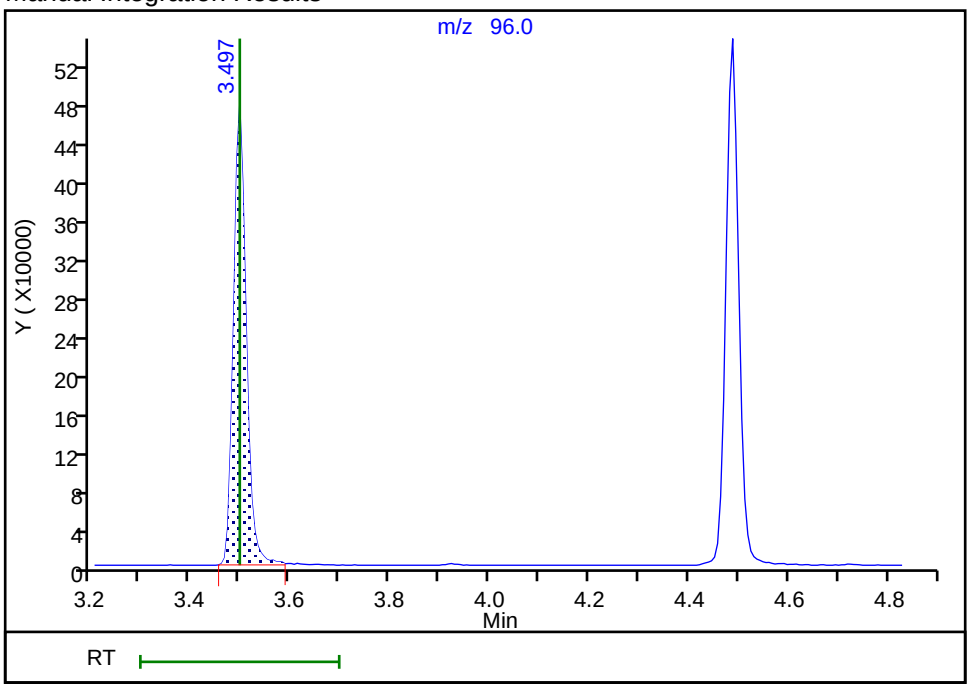
Processing Integration Results

RT: 4.49
Area: 971375
Amount: 215.6904
Amount Units: ug/L



Manual Integration Results

RT: 3.50
Area: 840836
Amount: 190.6519
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:33:52
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

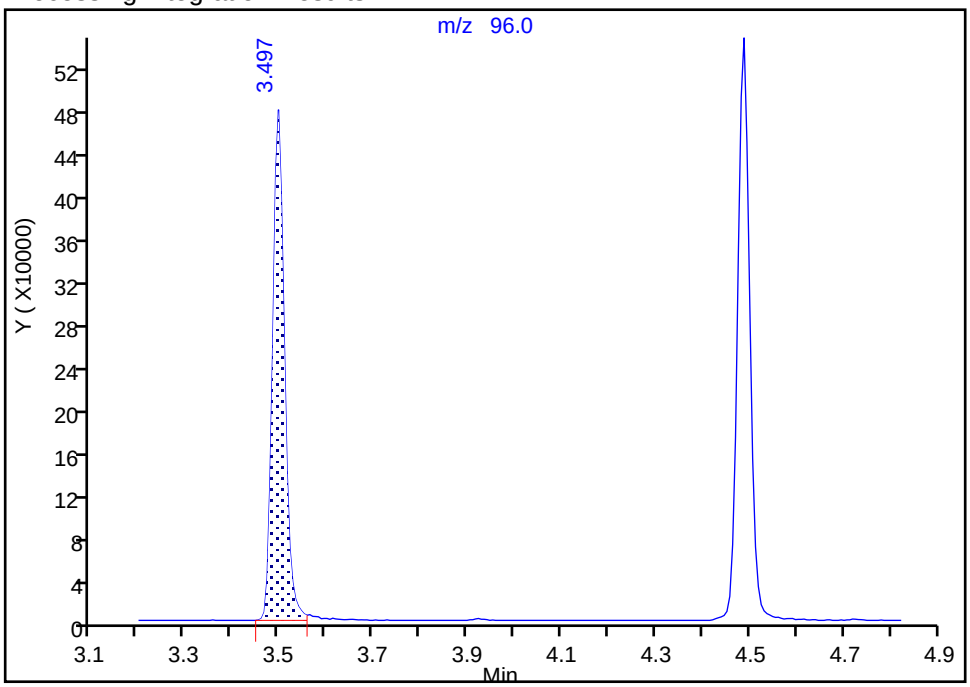
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0072.D
Injection Date: 20-Sep-2019 21:30:30 Instrument ID: HP5973P
Lims ID: IC 7
Client ID:
Operator ID: LH ALS Bottle#: 8 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

43 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

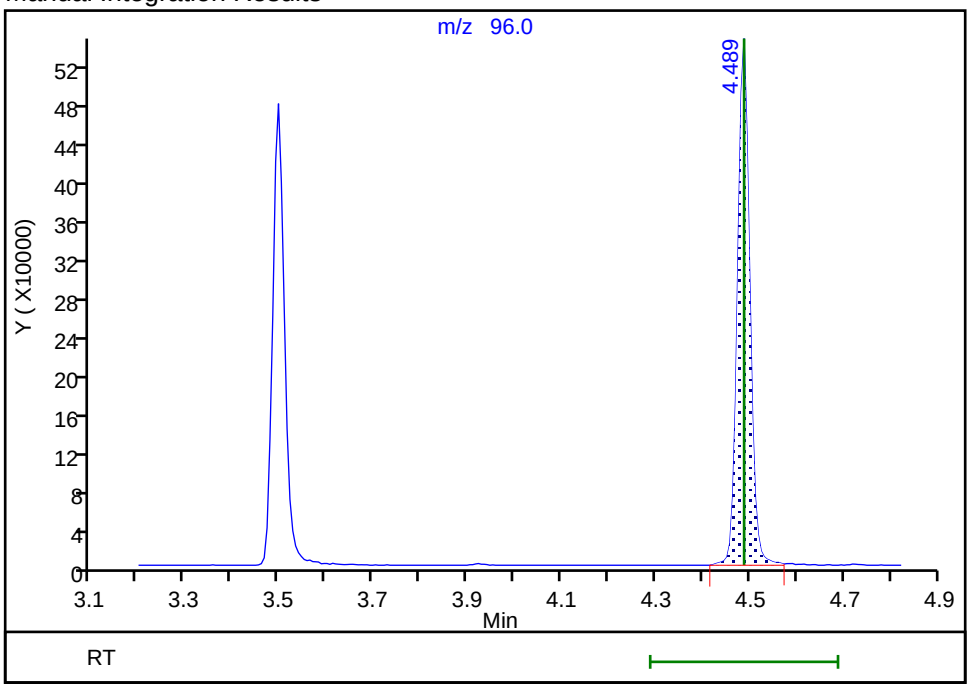
Processing Integration Results

RT: 3.50
Area: 837391
Amount: 175.2990
Amount Units: ug/L



Manual Integration Results

RT: 4.49
Area: 987704
Amount: 201.4822
Amount Units: ug/L



Reviewer: HillL, 23-Sep-2019 11:33:57
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493944/3 Calibration Date: 09/25/2019 09:29

Instrument ID: HP5973F Calib Start Date: 08/27/2019 13:41

GC Column: ZB-624 (30) VOA ID: 0.25(mm) Calib End Date: 08/27/2019 16:13

Lab File ID: F2442.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	1.802	1.502	0.1000	41.7	50.0	-16.6	50.0
Chloromethane	Ave	1.313	1.307	0.1000	49.8	50.0	-0.4	20.0
Butadiene	Ave	1.144	1.334		58.3	50.0	16.7	20.0
Vinyl chloride	Ave	1.080	1.244	0.1000	57.6	50.0	15.2	20.0
Bromomethane	Ave	0.6916	0.6901	0.1000	49.9	50.0	-0.2	50.0
Chloroethane	Ave	0.6101	0.6434	0.1000	52.7	50.0	5.5	50.0
Dichlorofluoromethane	Ave	1.756	2.032		57.9	50.0	15.7	20.0
Trichlorofluoromethane	Ave	2.030	2.413	0.1000	59.4	50.0	18.9	20.0
Ethyl ether	Ave	1.359	1.381		50.8	50.0	1.6	20.0
Acrolein	Ave	0.1709	0.2288		335	250	33.9	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	1.351	1.527	0.1000	56.5	50.0	13.0	20.0
1,1-Dichloroethene	Ave	1.324	1.405	0.1000	53.0	50.0	6.1	20.0
Acetone	Ave	0.5231	0.5070	0.1000	242	250	-3.1	50.0
Iodomethane	Ave	2.437	2.497		51.2	50.0	2.5	20.0
Carbon disulfide	Ave	4.750	4.711	0.1000	49.6	50.0	-0.8	20.0
Methyl acetate	Ave	1.157	1.108	0.1000	95.7	100	-4.3	50.0
Allyl chloride	Ave	2.687	2.700		50.2	50.0	0.5	20.0
Methylene Chloride	Ave	1.679	1.669	0.1000	49.7	50.0	-0.6	20.0
2-Methyl-2-propanol	Ave	0.1640	0.1572		479	500	-4.1	50.0
Methyl tert-butyl ether	Ave	3.835	3.841	0.1000	50.1	50.0	0.1	20.0
Acrylonitrile	Ave	0.5573	0.5239		470	500	-6.0	20.0
trans-1,2-Dichloroethene	Ave	1.513	1.650	0.1000	54.5	50.0	9.1	20.0
Hexane	Ave	2.679	2.690		50.2	50.0	0.4	20.0
Vinyl acetate	Ave	3.063	3.173		104	100	3.6	20.0
1,1-Dichloroethane	Ave	2.716	2.821	0.2000	51.9	50.0	3.9	20.0
2-Butanone (MEK)	Ave	0.7372	0.7120	0.1000	241	250	-3.4	20.0
2,2-Dichloropropane	Ave	2.064	2.208		53.5	50.0	7.0	20.0
cis-1,2-Dichloroethene	Ave	1.650	1.730	0.1000	52.4	50.0	4.8	20.0
Chlorobromomethane	Ave	0.8039	0.8257		51.4	50.0	2.7	20.0
Tetrahydrofuran	Ave	0.4844	0.4448		91.8	100	-8.2	20.0
Chloroform	Ave	2.618	2.853	0.2000	54.5	50.0	9.0	20.0
1,1,1-Trichloroethane	Ave	2.192	2.444	0.1000	55.8	50.0	11.5	20.0
Cyclohexane	Ave	2.760	2.793	0.1000	50.6	50.0	1.2	20.0
1,1-Dichloropropene	Ave	2.042	2.255		55.2	50.0	10.4	20.0
Isobutyl alcohol	Ave	0.0758	0.0677		1120	1250	-10.6	50.0
Carbon tetrachloride	Ave	1.791	2.177	0.1000	60.8	50.0	21.6*	20.0
Benzene	Ave	6.092	6.338	0.5000	52.0	50.0	4.0	20.0
1,2-Dichloroethane	Ave	2.031	2.100	0.1000	51.7	50.0	3.4	20.0
n-Heptane	Ave	2.671	2.867		53.7	50.0	7.3	20.0
Trichloroethene	Ave	1.561	1.662	0.2000	53.2	50.0	6.5	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493944/3 Calibration Date: 09/25/2019 09:29

Instrument ID: HP5973F Calib Start Date: 08/27/2019 13:41

GC Column: ZB-624 (30) VOA ID: 0.25(mm) Calib End Date: 08/27/2019 16:13

Lab File ID: F2442.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Methylcyclohexane	Ave	2.620	2.840	0.1000	54.2	50.0	8.4	20.0
1,2-Dichloropropane	Ave	1.536	1.537	0.1000	50.0	50.0	0.0	20.0
1,4-Dioxane	Ave	0.0078	0.0068		871	1000	-12.9	50.0
Dibromomethane	Ave	0.8283	0.8744	0.1000	52.8	50.0	5.6	20.0
Bromodichloromethane	Ave	1.671	1.991	0.2000	59.6	50.0	19.2	20.0
2-Chloroethyl vinyl ether	Ave	0.5113	0.4303		42.1	50.0	-15.8	20.0
cis-1,3-Dichloropropene	Ave	2.179	2.422	0.2000	55.6	50.0	11.1	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.7032	0.6393	0.1000	227	250	-9.1	20.0
Toluene	Ave	1.874	1.869	0.4000	49.9	50.0	-0.3	20.0
trans-1,3-Dichloropropene	Ave	0.9397	1.012	0.1000	53.9	50.0	7.7	20.0
Ethyl methacrylate	Ave	0.8109	0.7704		47.5	50.0	-5.0	20.0
1,1,2-Trichloroethane	Ave	0.4860	0.4716	0.1000	48.5	50.0	-3.0	20.0
Tetrachloroethene	Ave	0.7646	0.8108	0.2000	53.0	50.0	6.0	20.0
1,3-Dichloropropane	Ave	1.025	0.9898		48.3	50.0	-3.4	20.0
2-Hexanone	Ave	0.4934	0.4674	0.1000	237	250	-5.3	20.0
Dibromochloromethane	Ave	0.5452	0.6704	0.1000	61.5	50.0	23.0*	20.0
1,2-Dibromoethane	Ave	0.5879	0.5869		49.9	50.0	-0.2	20.0
Chlorobenzene	Ave	2.014	2.013	0.5000	50.0	50.0	-0.0	20.0
Ethylbenzene	Ave	3.378	3.423	0.1000	50.7	50.0	1.3	20.0
1,1,1,2-Tetrachloroethane	Ave	0.6229	0.6722		54.0	50.0	7.9	20.0
m,p-Xylene	Ave	1.342	1.381	0.1000	51.5	50.0	3.0	20.0
o-Xylene	Ave	1.290	1.278	0.3000	49.5	50.0	-1.0	20.0
Styrene	Ave	2.140	2.119	0.3000	49.5	50.0	-0.9	20.0
Bromoform	Ave	0.3111	0.3791	0.1000	60.9	50.0	21.9	50.0
Isopropylbenzene	Ave	3.511	3.462	0.1000	49.3	50.0	-1.4	20.0
1,1,2,2-Tetrachloroethane	Ave	0.7832	0.7284	0.3000	46.5	50.0	-7.0	20.0
Bromobenzene	Ave	0.8873	0.8631		48.6	50.0	-2.7	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2744	0.2673		48.7	50.0	-2.6	50.0
1,2,3-Trichloropropane	Ave	0.2537	0.2355		46.4	50.0	-7.2	20.0
N-Propylbenzene	Ave	4.184	4.189		50.1	50.0	0.1	20.0
2-Chlorotoluene	Ave	0.8690	0.8396		48.3	50.0	-3.4	20.0
1,3,5-Trimethylbenzene	Ave	2.979	2.995		50.3	50.0	0.5	20.0
4-Chlorotoluene	Ave	0.9020	0.8977		49.8	50.0	-0.5	20.0
tert-Butylbenzene	Ave	0.6639	0.6609		49.8	50.0	-0.5	20.0
1,2,4-Trimethylbenzene	Ave	2.995	2.982		49.8	50.0	-0.4	20.0
sec-Butylbenzene	Ave	3.757	3.781		50.3	50.0	0.6	20.0
4-Isopropyltoluene	Ave	3.258	3.272		50.2	50.0	0.4	20.0
1,3-Dichlorobenzene	Ave	1.706	1.683	0.6000	49.3	50.0	-1.4	20.0
1,4-Dichlorobenzene	Ave	1.714	1.675	0.5000	48.9	50.0	-2.3	20.0
n-Butylbenzene	Ave	2.881	2.935		50.9	50.0	1.9	20.0
1,2-Dichlorobenzene	Ave	1.638	1.577	0.4000	48.1	50.0	-3.7	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493944/3 Calibration Date: 09/25/2019 09:29

Instrument ID: HP5973F Calib Start Date: 08/27/2019 13:41

GC Column: ZB-624 (30) VOA ID: 0.25(mm) Calib End Date: 08/27/2019 16:13

Lab File ID: F2442.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dibromo-3-Chloropropane	Ave	0.1358	0.1236	0.0500	45.5	50.0	-9.0	50.0
1,2,4-Trichlorobenzene	Ave	1.077	1.016	0.2000	47.2	50.0	-5.6	20.0
Hexachlorobutadiene	Ave	0.5949	0.5884		49.5	50.0	-1.1	20.0
Naphthalene	Ave	2.653	2.300		43.3	50.0	-13.3	20.0
1,2,3-Trichlorobenzene	Ave	0.998	0.9020		45.2	50.0	-9.6	20.0
Dibromofluoromethane (Surr)	Ave	1.202	1.348		56.1	50.0	12.2	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.7378	0.7560		51.2	50.0	2.5	20.0
Toluene-d8 (Surr)	Ave	2.400	2.366		49.3	50.0	-1.4	20.0
4-Bromofluorobenzene (Surr)	Ave	0.7143	0.7240		50.7	50.0	1.4	20.0

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2442.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 25-Sep-2019 09:29:30 ALS Bottle#: 1 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: CCVIS
Misc. Info.: 480-0084450-003
Operator ID: CDC Instrument ID: HP5973F
Sublist: chrom-F-8260 SOIL*sub27

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 11:32:16 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 11:32:16

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.724	5.724	0.000	99	173464	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.571	0.000	87	376558	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.864	10.864	0.000	95	362344	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.170	5.170	0.000	93	233823	50.0	56.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	99	131131	50.0	51.2	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	890945	50.0	49.3	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	89	272641	50.0	50.7	
10 Dichlorodifluoromethane	85	2.128	2.128	0.000	100	260560	50.0	41.7	
12 Chloromethane	50	2.323	2.323	0.000	99	226702	50.0	49.8	
151 Butadiene	54	2.426	2.426	0.000	92	231428	50.0	58.3	
13 Vinyl chloride	62	2.426	2.426	0.000	85	215817	50.0	57.6	
14 Bromomethane	94	2.718	2.718	0.000	94	119709	50.0	49.9	
15 Chloroethane	64	2.791	2.791	0.000	98	111609	50.0	52.7	
16 Dichlorofluoromethane	67	2.950	2.950	0.000	98	352531	50.0	57.9	
17 Trichlorofluoromethane	101	2.998	2.998	0.000	97	418597	50.0	59.4	
18 Ethyl ether	59	3.187	3.187	0.000	94	239514	50.0	50.8	
20 Acrolein	56	3.333	3.333	0.000	100	198444	250.0	334.7	
21 1,1,2-Trichloro-1,2,2-trif	101	3.388	3.388	0.000	94	264949	50.0	56.5	
22 1,1-Dichloroethene	96	3.418	3.418	0.000	97	243720	50.0	53.0	
23 Acetone	43	3.448	3.448	0.000	100	439761	250.0	242.3	
25 Iodomethane	142	3.576	3.576	0.000	99	433138	50.0	51.2	
26 Carbon disulfide	76	3.643	3.643	0.000	99	817128	50.0	49.6	
27 Methyl acetate	43	3.680	3.680	0.000	98	384241	100.0	95.7	
28 3-Chloro-1-propene	41	3.692	3.692	0.000	88	468271	50.0	50.2	
30 Methylene Chloride	84	3.801	3.801	0.000	95	289435	50.0	49.7	
31 2-Methyl-2-propanol	59	3.832	3.832	0.000	98	272698	500.0	479.4	
32 Methyl tert-butyl ether	73	3.966	3.966	0.000	97	666192	50.0	50.1	
33 Acrylonitrile	53	3.990	3.990	0.000	100	908712	500.0	470.0	
34 trans-1,2-Dichloroethene	96	4.002	4.002	0.000	99	286268	50.0	54.5	
35 Hexane	57	4.160	4.160	0.000	94	466582	50.0	50.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
37 Vinyl acetate	43	4.318	4.318	0.000	97	1100736	100.0	103.6	
39 1,1-Dichloroethane	63	4.337	4.337	0.000	97	489372	50.0	51.9	
43 2-Butanone (MEK)	43	4.769	4.769	0.000	100	617516	250.0	241.4	
45 cis-1,2-Dichloroethene	96	4.793	4.793	0.000	84	300137	50.0	52.4	
44 2,2-Dichloropropane	77	4.793	4.793	0.000	82	382945	50.0	53.5	
48 Chlorobromomethane	128	5.000	5.000	0.000	97	143224	50.0	51.4	
49 Tetrahydrofuran	42	5.018	5.018	0.000	91	154301	100.0	91.8	
50 Chloroform	83	5.030	5.030	0.000	96	494850	50.0	54.5	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	423915	50.0	55.8	
52 Cyclohexane	56	5.243	5.243	0.000	92	484448	50.0	50.6	
54 1,1-Dichloropropene	75	5.322	5.322	0.000	94	391129	50.0	55.2	
53 Isobutyl alcohol	43	5.334	5.334	0.000	91	293648	1250.0	1117.1	
55 Carbon tetrachloride	117	5.340	5.340	0.000	96	377630	50.0	60.8	
57 Benzene	78	5.511	5.511	0.000	96	1099338	50.0	52.0	
58 1,2-Dichloroethane	62	5.529	5.529	0.000	98	364355	50.0	51.7	
59 n-Heptane	43	5.614	5.614	0.000	94	497349	50.0	53.7	
62 Trichloroethene	95	6.034	6.034	0.000	98	288347	50.0	53.2	
64 Methylcyclohexane	83	6.192	6.192	0.000	91	492639	50.0	54.2	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	95	266639	50.0	50.0	
66 1,4-Dioxane	88	6.338	6.338	0.000	95	51103	1000.0	871.2	
67 Dibromomethane	93	6.375	6.375	0.000	96	151675	50.0	52.8	
68 Dichlorobromomethane	83	6.484	6.484	0.000	99	345296	50.0	59.6	
69 2-Chloroethyl vinyl ether	63	6.697	6.697	0.000	93	74634	50.0	42.1	
72 cis-1,3-Dichloropropene	75	6.874	6.874	0.000	95	420125	50.0	55.6	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.965	0.000	97	1203669	250.0	227.3	
74 Toluene	92	7.184	7.184	0.000	98	703731	50.0	49.9	
77 trans-1,3-Dichloropropene	75	7.385	7.385	0.000	98	381141	50.0	53.9	
75 Ethyl methacrylate	69	7.391	7.391	0.000	91	290080	50.0	47.5	
79 1,1,2-Trichloroethane	83	7.579	7.579	0.000	92	177587	50.0	48.5	
81 Tetrachloroethene	166	7.719	7.719	0.000	96	305306	50.0	53.0	
82 1,3-Dichloropropane	76	7.756	7.756	0.000	95	372730	50.0	48.3	
80 2-Hexanone	43	7.762	7.762	0.000	97	880030	250.0	236.8	
83 Chlorodibromomethane	129	7.999	7.999	0.000	89	252453	50.0	61.5	
84 Ethylene Dibromide	107	8.133	8.133	0.000	98	221001	50.0	49.9	
87 Chlorobenzene	112	8.601	8.601	0.000	95	758016	50.0	50.0	
88 Ethylbenzene	91	8.668	8.668	0.000	98	1288872	50.0	50.7	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	95	253121	50.0	54.0	
90 m-Xylene & p-Xylene	106	8.784	8.784	0.000	100	520120	50.0	51.5	
91 o-Xylene	106	9.216	9.216	0.000	97	481221	50.0	49.5	
92 Styrene	104	9.234	9.234	0.000	94	798075	50.0	49.5	
95 Bromoform	173	9.489	9.489	0.000	96	142757	50.0	60.9	
94 Isopropylbenzene	105	9.575	9.575	0.000	96	1254347	50.0	49.3	
97 1,1,2,2-Tetrachloroethane	83	9.903	9.903	0.000	95	263937	50.0	46.5	
101 Bromobenzene	156	9.940	9.940	0.000	94	312754	50.0	48.6	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.952	0.000	73	96851	50.0	48.7	
100 1,2,3-Trichloropropane	110	9.964	9.964	0.000	84	85326	50.0	46.4	
99 N-Propylbenzene	91	9.982	9.982	0.000	98	1517710	50.0	50.1	
103 2-Chlorotoluene	126	10.104	10.104	0.000	97	304205	50.0	48.3	
102 1,3,5-Trimethylbenzene	105	10.140	10.140	0.000	94	1085191	50.0	50.3	
105 4-Chlorotoluene	126	10.201	10.201	0.000	98	325260	50.0	49.8	
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	239478	50.0	49.8	
107 1,2,4-Trimethylbenzene	105	10.505	10.505	0.000	95	1080494	50.0	49.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
109 sec-Butylbenzene	105	10.658	10.658	0.000	95	1369918	50.0	50.3	
110 4-Isopropyltoluene	119	10.779	10.779	0.000	97	1185651	50.0	50.2	
111 1,3-Dichlorobenzene	146	10.804	10.804	0.000	98	609705	50.0	49.3	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	94	607023	50.0	48.9	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	1063537	50.0	50.9	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	97	571426	50.0	48.1	
117 1,2-Dibromo-3-Chloropropan	75	11.886	11.886	0.000	86	44784	50.0	45.5	
119 1,2,4-Trichlorobenzene	180	12.562	12.562	0.000	94	368141	50.0	47.2	
120 Hexachlorobutadiene	225	12.671	12.671	0.000	98	213217	50.0	49.5	
121 Naphthalene	128	12.805	12.805	0.000	97	833209	50.0	43.3	
122 1,2,3-Trichlorobenzene	180	13.030	13.030	0.000	95	326827	50.0	45.2	

Reagents:

8260 CORP mix_00166	Amount Added: 25.00	Units: uL	
GAS CORP mix_00362	Amount Added: 25.00	Units: uL	
F 8260 IS/SS_00095	Amount Added: 1.00	Units: uL	Run Reagent

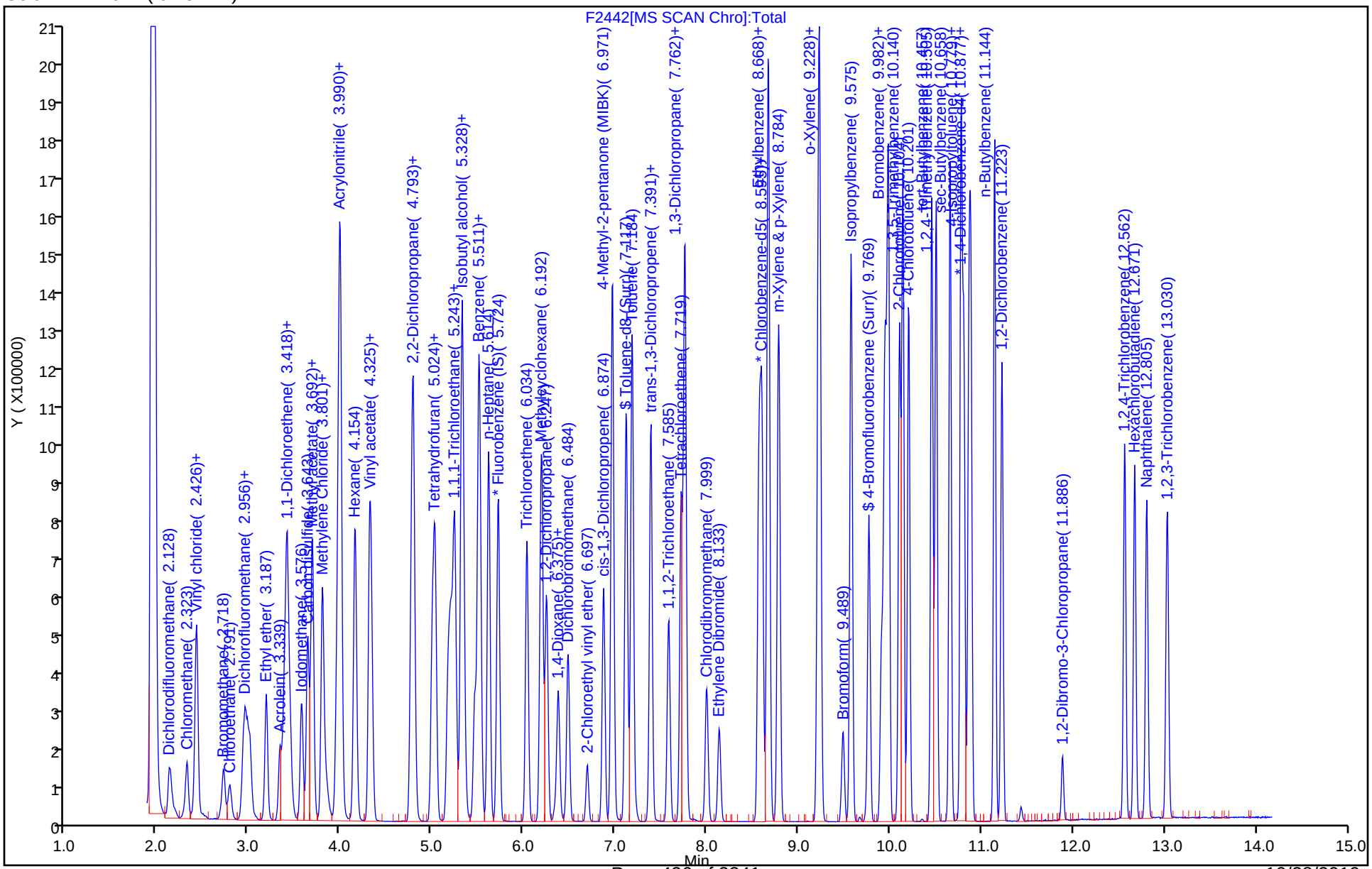
Report Date: 25-Sep-2019 11:32:18 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2442.D

Injection Date:	25-Sep-2019 09:29:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493547/3 Calibration Date: 09/23/2019 13:43

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0094.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	1.094	1.090	0.1000	49.8	50.0	-0.4	50.0
Chloromethane	Ave	1.568	1.470	0.1000	46.9	50.0	-6.2	20.0
Butadiene	Ave	1.329	1.294		48.7	50.0	-2.7	20.0
Vinyl chloride	Ave	1.259	1.245	0.1000	49.4	50.0	-1.1	20.0
Bromomethane	Ave	1.065	0.9293	0.1000	43.6	50.0	-12.7	50.0
Chloroethane	Ave	0.8171	0.7839	0.1000	48.0	50.0	-4.1	50.0
Dichlorofluoromethane	Ave	1.926	1.878		48.7	50.0	-2.5	20.0
Trichlorofluoromethane	Ave	1.743	1.798	0.1000	51.6	50.0	3.2	20.0
Allyl chloride	Lin1		0.4344		48.5	50.0	-3.1	20.0
Ethyl ether	Ave	1.219	1.082		44.4	50.0	-11.3	20.0
Acrolein	Ave	0.1910	0.1798		235	250	-5.9	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	1.009	1.118	0.1000	55.4	50.0	10.8	20.0
1,1-Dichloroethene	Ave	0.9539	1.016	0.1000	53.3	50.0	6.5	20.0
Acetone	Ave	0.4584	0.4307	0.1000	235	250	-6.0	50.0
Iodomethane	Ave	2.017	2.066		51.2	50.0	2.4	20.0
Carbon disulfide	Ave	3.266	3.398	0.1000	52.0	50.0	4.0	20.0
Methyl acetate	Ave	1.006	0.8609	0.1000	85.6	100	-14.4	50.0
Methylene Chloride	Lin1		1.315	0.1000	48.0	50.0	-3.9	20.0
2-Methyl-2-propanol	Lin1		0.1054		398	500	-20.5	50.0
Methyl tert-butyl ether	Ave	3.581	3.474	0.1000	48.5	50.0	-3.0	20.0
trans-1,2-Dichloroethene	Ave	1.229	1.184	0.1000	48.2	50.0	-3.6	20.0
Acrylonitrile	Ave	0.5165	0.4524		438	500	-12.4	20.0
Hexane	Ave	1.870	2.065		55.2	50.0	10.4	20.0
1,1-Dichloroethane	Ave	2.284	2.228	0.2000	48.8	50.0	-2.4	20.0
Vinyl acetate	Ave	2.549	2.453		96.2	100	-3.8	20.0
2,2-Dichloropropane	Ave	1.016	1.091		53.7	50.0	7.4	20.0
cis-1,2-Dichloroethene	Ave	1.366	1.329	0.1000	48.7	50.0	-2.7	20.0
2-Butanone (MEK)	Ave	0.6726	0.6197	0.1000	230	250	-7.9	20.0
Chlorobromomethane	Ave	0.7199	0.6899		47.9	50.0	-4.2	20.0
Tetrahydrofuran	Ave	0.4340	0.4046		93.2	100	-6.8	20.0
Chloroform	Ave	2.236	2.134	0.2000	47.7	50.0	-4.6	20.0
1,1,1-Trichloroethane	Ave	1.702	1.772	0.1000	52.1	50.0	4.1	20.0
Cyclohexane	Ave	2.089	2.340	0.1000	56.0	50.0	12.0	20.0
Carbon tetrachloride	Ave	1.444	1.571	0.1000	54.4	50.0	8.8	20.0
1,1-Dichloropropene	Ave	1.527	1.619		53.0	50.0	6.0	20.0
Benzene	Ave	4.882	4.811	0.5000	49.3	50.0	-1.5	20.0
Isobutyl alcohol	Lin1		0.0447		959	1250	-23.3	50.0
1,2-Dichloroethane	Ave	1.819	1.704	0.1000	46.8	50.0	-6.3	20.0
n-Heptane	Ave	2.102	2.358		56.1	50.0	12.1	20.0
Trichloroethene	Ave	1.233	1.228	0.2000	49.8	50.0	-0.4	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493547/3 Calibration Date: 09/23/2019 13:43

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0094.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Methylcyclohexane	Ave	1.904	2.138	0.1000	56.1	50.0	12.3	20.0
1,2-Dichloropropane	Ave	1.334	1.267	0.1000	47.5	50.0	-5.0	20.0
1,4-Dioxane	Ave	0.0057	0.0058		1010	1000	1.2	50.0
Dibromomethane	Ave	0.7529	0.7163	0.1000	47.6	50.0	-4.9	20.0
Bromodichloromethane	Ave	1.736	1.605	0.2000	46.2	50.0	-7.5	20.0
2-Chloroethyl vinyl ether	Ave	0.7695	0.7204		46.8	50.0	-6.4	20.0
cis-1,3-Dichloropropene	Ave	1.981	1.915	0.2000	48.3	50.0	-3.3	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.6861	0.6340	0.1000	231	250	-7.6	20.0
Toluene	Ave	1.492	1.479	0.4000	49.6	50.0	-0.9	20.0
trans-1,3-Dichloropropene	Ave	0.8302	0.8028	0.1000	48.4	50.0	-3.3	20.0
Ethyl methacrylate	Ave	0.6330	0.5987		47.3	50.0	-5.4	20.0
1,1,2-Trichloroethane	Ave	0.4306	0.4022	0.1000	46.7	50.0	-6.6	20.0
Tetrachloroethene	Ave	0.6401	0.7009	0.2000	54.8	50.0	9.5	20.0
1,3-Dichloropropane	Ave	0.8755	0.8343		47.6	50.0	-4.7	20.0
2-Hexanone	Ave	0.4582	0.4256	0.1000	232	250	-7.1	20.0
Dibromochloromethane	Ave	0.6438	0.5939	0.1000	46.1	50.0	-7.7	20.0
1,2-Dibromoethane	Ave	0.5517	0.5149		46.7	50.0	-6.7	20.0
Chlorobenzene	Ave	1.814	1.708	0.5000	47.1	50.0	-5.9	20.0
Ethylbenzene	Ave	2.779	2.732	0.1000	49.2	50.0	-1.7	20.0
1,1,1,2-Tetrachloroethane	Ave	0.6127	0.5869		47.9	50.0	-4.2	20.0
m,p-Xylene	Ave	1.101	1.080	0.1000	49.1	50.0	-1.9	20.0
o-Xylene	Ave	1.086	1.071	0.3000	49.3	50.0	-1.4	20.0
Styrene	Ave	1.857	1.836	0.3000	49.4	50.0	-1.1	20.0
Bromoform	Ave	0.3729	0.3578	0.1000	48.0	50.0	-4.1	50.0
Isopropylbenzene	Ave	2.698	2.740	0.1000	50.8	50.0	1.5	20.0
Bromobenzene	Ave	0.7729	0.7282		47.1	50.0	-5.8	20.0
1,1,2,2-Tetrachloroethane	Ave	0.6851	0.6158	0.3000	44.9	50.0	-10.1	20.0
N-Propylbenzene	Ave	3.159	3.277		51.9	50.0	3.7	20.0
1,2,3-Trichloropropane	Ave	0.2013	0.1887		46.9	50.0	-6.3	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2288	0.2251		49.2	50.0	-1.6	50.0
2-Chlorotoluene	Ave	0.6794	0.6801		50.1	50.0	0.1	20.0
1,3,5-Trimethylbenzene	Ave	2.260	2.335		51.6	50.0	3.3	20.0
4-Chlorotoluene	Ave	0.7231	0.6923		47.9	50.0	-4.3	20.0
tert-Butylbenzene	Ave	0.5220	0.5449		52.2	50.0	4.4	20.0
1,2,4-Trimethylbenzene	Ave	2.328	2.373		51.0	50.0	1.9	20.0
sec-Butylbenzene	Ave	2.966	3.047		51.4	50.0	2.7	20.0
1,3-Dichlorobenzene	Ave	1.461	1.460	0.6000	50.0	50.0	-0.0	20.0
4-Isopropyltoluene	Ave	2.690	2.751		51.1	50.0	2.2	20.0
1,4-Dichlorobenzene	Ave	1.459	1.433	0.5000	49.1	50.0	-1.8	20.0
n-Butylbenzene	Ave	2.305	2.428		52.7	50.0	5.4	20.0
1,2-Dichlorobenzene	Ave	1.492	1.421	0.4000	47.6	50.0	-4.8	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493547/3 Calibration Date: 09/23/2019 13:43

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0094.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dibromo-3-Chloropropane	Ave	0.1090	0.1069	0.0500	49.1	50.0	-1.9	50.0
1,2,4-Trichlorobenzene	Ave	0.9316	1.009	0.2000	54.2	50.0	8.3	20.0
Hexachlorobutadiene	Lin1		1.081		57.3	50.0	14.7	20.0
Naphthalene	Ave	4.742	4.559		48.1	50.0	-3.8	20.0
1,2,3-Trichlorobenzene	Ave	1.838	1.843		50.1	50.0	0.3	20.0
Dibromofluoromethane (Surr)	Ave	1.280	1.343		52.5	50.0	4.9	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.6861	0.7239		52.8	50.0	5.5	20.0
Toluene-d8 (Surr)	Ave	2.463	2.502		50.8	50.0	1.6	20.0
4-Bromofluorobenzene (Surr)	Ave	0.7767	0.8026		51.7	50.0	3.3	20.0

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0094.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 23-Sep-2019 13:43:30 ALS Bottle#: 1 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: CCVIS
Misc. Info.: 480-0084382-003
Operator ID: CDC Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 15:04:15 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0334

First Level Reviewer: cwiklinc Date: 23-Sep-2019 15:04:15

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	209273	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	427045	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	94	429172	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	281063	50.0	52.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	53	151483	50.0	52.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	95	1068633	50.0	50.8	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	92	342735	50.0	51.7	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	228146	50.0	49.8	
11 Chloromethane	50	1.502	1.502	0.000	99	307653	50.0	46.9	
149 Butadiene	54	1.599	1.599	0.000	95	270779	50.0	48.7	
17 Vinyl chloride	62	1.599	1.599	0.000	70	260544	50.0	49.4	
12 Bromomethane	94	1.897	1.897	0.000	92	194472	50.0	43.6	
13 Chloroethane	64	1.988	1.988	0.000	96	164043	50.0	48.0	
19 Dichlorofluoromethane	67	2.238	2.238	0.000	97	393004	50.0	48.7	
14 Trichlorofluoromethane	101	2.244	2.244	0.000	94	376256	50.0	51.6	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	92	90902	50.0	48.5	
20 Ethyl ether	59	2.518	2.518	0.000	96	226357	50.0	44.4	
22 Acrolein	56	2.706	2.706	0.000	99	188155	250.0	235.4	
16 1,1,2-Trichloro-1,2,2-trif	101	2.730	2.730	0.000	93	233964	50.0	55.4	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	96	212652	50.0	53.3	
24 Acetone	43	2.864	2.864	0.000	99	450639	250.0	234.9	
18 Iodomethane	142	2.925	2.925	0.000	98	432322	50.0	51.2	
27 Carbon disulfide	76	2.974	2.974	0.000	99	711158	50.0	52.0	
30 Methyl acetate	43	3.168	3.168	0.000	99	360324	100.0	85.6	
31 Methylene Chloride	84	3.272	3.272	0.000	98	275181	50.0	48.0	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	93	220522	500.0	397.5	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	727106	50.0	48.5	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	96	247878	50.0	48.2	
34 Acrylonitrile	53	3.564	3.564	0.000	98	946738	500.0	437.9	
36 Hexane	57	3.692	3.692	0.000	95	432157	50.0	55.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	98	466235	50.0	48.8	
38 Vinyl acetate	43	3.978	3.978	0.000	97	1026587	100.0	96.2	
45 2,2-Dichloropropane	77	4.452	4.452	0.000	88	228241	50.0	53.7	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	278152	50.0	48.7	
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	648412	250.0	230.3	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	144368	50.0	47.9	
51 Tetrahydrofuran	42	4.744	4.744	0.000	91	169355	100.0	93.2	
49 Chloroform	83	4.805	4.805	0.000	97	446538	50.0	47.7	
52 1,1,1-Trichloroethane	97	4.914	4.914	0.000	96	370870	50.0	52.1	
54 Cyclohexane	56	4.921	4.921	0.000	96	489687	50.0	56.0	
55 Carbon tetrachloride	117	5.054	5.054	0.000	95	328778	50.0	54.4	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	91	338710	50.0	53.0	
57 Benzene	78	5.273	5.273	0.000	96	1006829	50.0	49.3	
53 Isobutyl alcohol	43	5.298	5.298	0.000	91	233795	1250.0	959.0	
60 1,2-Dichloroethane	62	5.346	5.346	0.000	97	356502	50.0	46.8	
59 n-Heptane	43	5.450	5.450	0.000	97	493367	50.0	56.1	
62 Trichloroethene	95	5.888	5.888	0.000	95	257011	50.0	49.8	
64 Methylcyclohexane	83	6.003	6.003	0.000	95	447380	50.0	56.1	
63 1,2-Dichloropropane	63	6.131	6.131	0.000	89	265197	50.0	47.5	
69 Dibromomethane	93	6.277	6.277	0.000	95	149909	50.0	47.6	
68 1,4-Dioxane	88	6.277	6.277	0.000	40	49453	1000.0	1012.5	M
70 Dichlorobromomethane	83	6.429	6.429	0.000	97	335915	50.0	46.2	
71 2-Chloroethyl vinyl ether	63	6.709	6.709	0.000	93	150749	50.0	46.8	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	400754	50.0	48.3	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	1353820	250.0	231.0	
76 Toluene	92	7.129	7.129	0.000	97	631604	50.0	49.6	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	342839	50.0	48.4	
77 Ethyl methacrylate	69	7.457	7.457	0.000	95	255689	50.0	47.3	
79 1,1,2-Trichloroethane	83	7.609	7.609	0.000	92	171760	50.0	46.7	
80 Tetrachloroethene	166	7.664	7.664	0.000	97	299312	50.0	54.8	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	96	356302	50.0	47.6	
83 2-Hexanone	43	7.835	7.835	0.000	99	908663	250.0	232.2	
81 Chlorodibromomethane	129	8.011	8.011	0.000	90	253621	50.0	46.1	
85 Ethylene Dibromide	107	8.114	8.114	0.000	97	219868	50.0	46.7	
87 Chlorobenzene	112	8.589	8.589	0.000	95	729398	50.0	47.1	
89 Ethylbenzene	91	8.674	8.674	0.000	99	1166623	50.0	49.2	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	94	250627	50.0	47.9	
90 m-Xylene & p-Xylene	106	8.802	8.802	0.000	99	461215	50.0	49.1	
93 o-Xylene	106	9.228	9.228	0.000	98	457387	50.0	49.3	
94 Styrene	104	9.258	9.258	0.000	96	783982	50.0	49.4	
92 Bromoform	173	9.514	9.514	0.000	96	152777	50.0	48.0	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	1175929	50.0	50.8	
100 Bromobenzene	156	9.958	9.958	0.000	93	312517	50.0	47.1	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	93	264295	50.0	44.9	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	1406406	50.0	51.9	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	80980	50.0	46.9	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	84	96592	50.0	49.2	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	291882	50.0	50.1	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	1002024	50.0	51.6	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	297111	50.0	47.9	
106 tert-Butylbenzene	134	10.524	10.524	0.000	93	233863	50.0	52.2	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	97	1018405	50.0	51.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.730	10.730	0.000	95	1307533	50.0	51.4	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	1180538	50.0	51.1	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	72	626776	50.0	50.0	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	615031	50.0	49.1	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	1042204	50.0	52.7	
116 1,2-Dichlorobenzene	146	11.314	11.314	0.000	97	609732	50.0	47.6	
117 1,2-Dibromo-3-Chloropropan	75	12.044	12.044	0.000	83	45891	50.0	49.1	
119 1,2,4-Trichlorobenzene	180	12.714	12.714	0.000	93	433137	50.0	54.2	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	97	226245	50.0	57.3	
121 Naphthalene	128	12.927	12.927	0.000	97	954088	50.0	48.1	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	96	385783	50.0	50.1	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8260 CORP mix_00166	Amount Added:	25.00	Units: uL	
GAS CORP mix_00361	Amount Added:	25.00	Units: uL	
P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

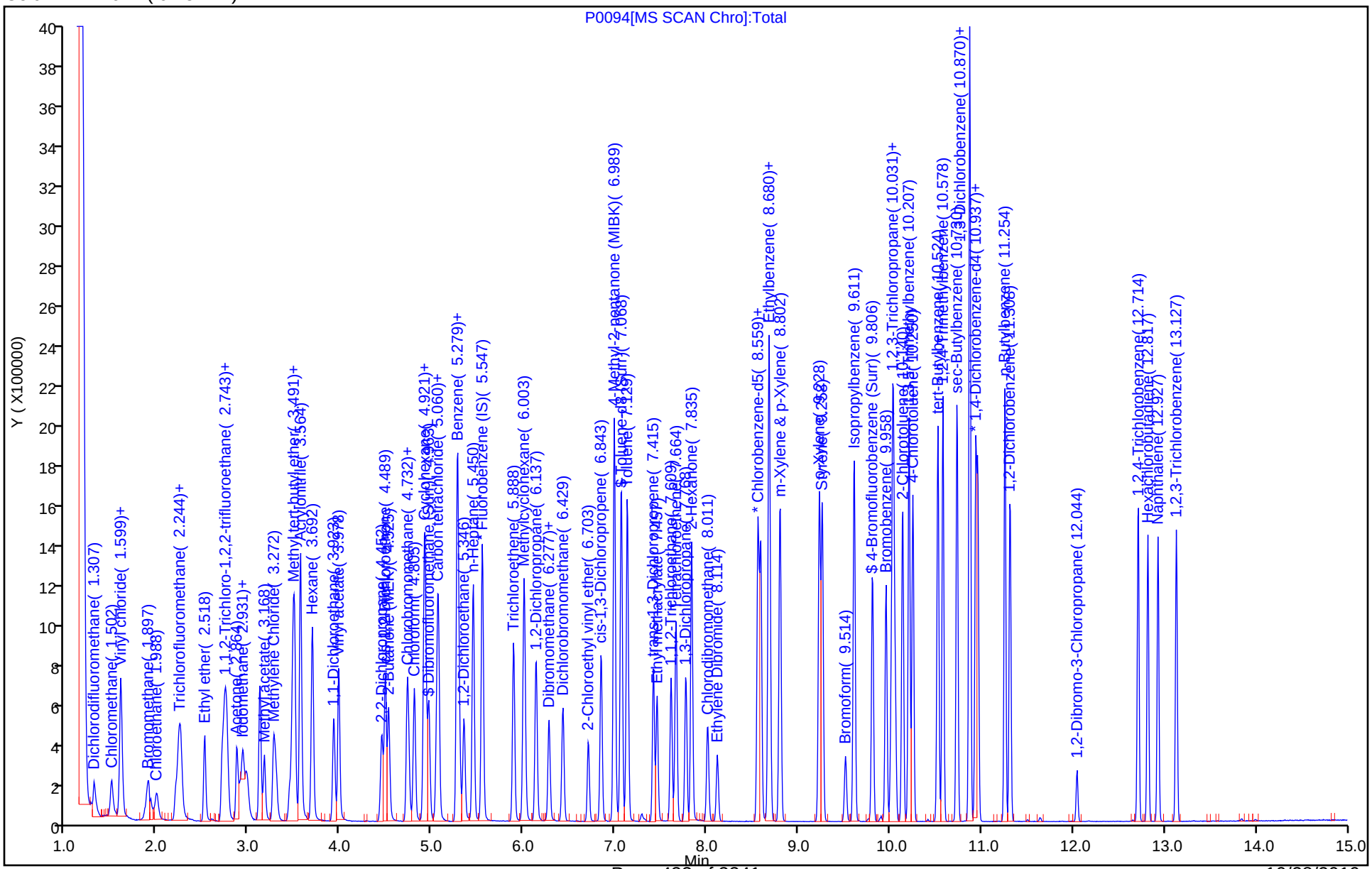
Report Date: 23-Sep-2019 15:04:19 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0094.D

Injection Date:	23-Sep-2019 13:43:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

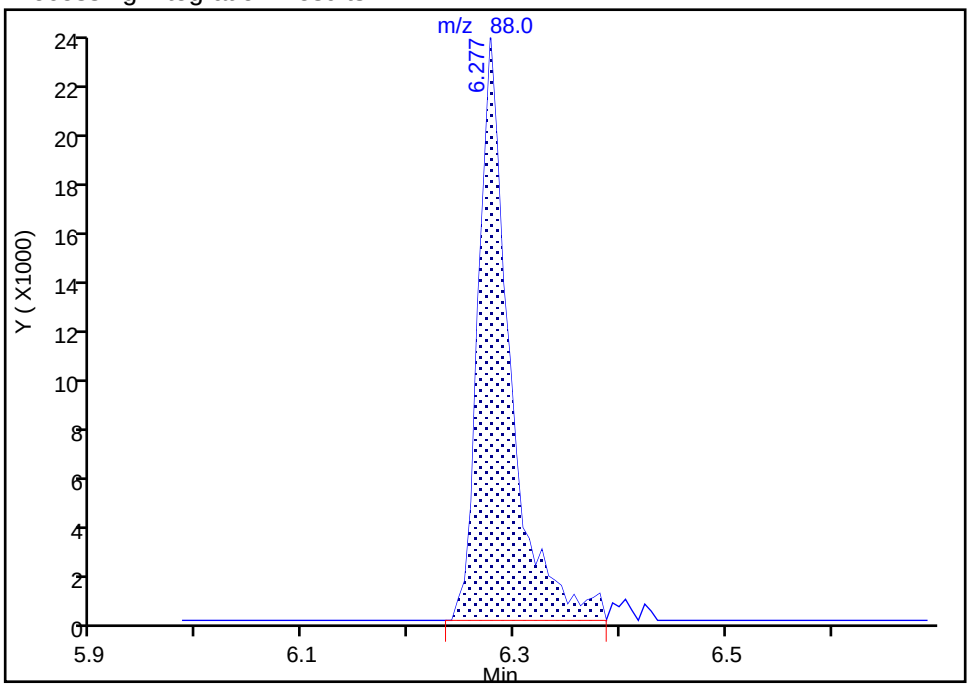
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0094.D
Injection Date: 23-Sep-2019 13:43:30 Instrument ID: HP5973P
Lims ID: CCVIS
Client ID:
Operator ID: CDC ALS Bottle#: 1 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

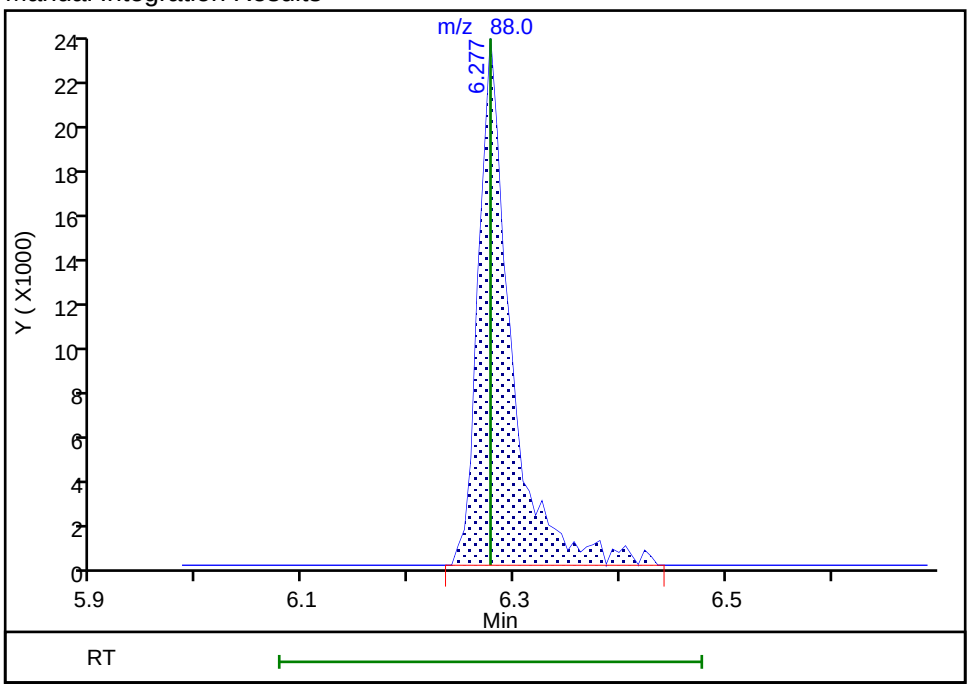
Processing Integration Results

RT: 6.28
Area: 48176
Amount: 986.3228
Amount Units: ug/L



Manual Integration Results

RT: 6.28
Area: 49453
Amount: 1012.4673
Amount Units: ug/L



Reviewer: cwiklinc, 23-Sep-2019 15:03:59
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493693/3 Calibration Date: 09/24/2019 10:12

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0122.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	1.094	1.093	0.1000	50.0	50.0	-0.0	50.0
Chloromethane	Ave	1.568	1.629	0.1000	51.9	50.0	3.9	20.0
Vinyl chloride	Ave	1.259	1.326	0.1000	52.7	50.0	5.3	20.0
Butadiene	Ave	1.329	1.410		53.0	50.0	6.0	20.0
Bromomethane	Ave	1.065	1.112	0.1000	52.2	50.0	4.5	50.0
Chloroethane	Ave	0.8171	0.8386	0.1000	51.3	50.0	2.6	50.0
Dichlorofluoromethane	Ave	1.926	2.110		54.8	50.0	9.5	20.0
Trichlorofluoromethane	Ave	1.743	1.960	0.1000	56.2	50.0	12.5	20.0
Allyl chloride	Lin1		0.4539		50.7	50.0	1.4	20.0
Ethyl ether	Ave	1.219	1.213		49.7	50.0	-0.5	20.0
Acrolein	Ave	0.1910	0.2174		285	250	13.8	50.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	1.009	1.231	0.1000	61.0	50.0	22.0*	20.0
1,1-Dichloroethene	Ave	0.9539	1.102	0.1000	57.8	50.0	15.5	20.0
Acetone	Ave	0.4584	0.5029	0.1000	274	250	9.7	50.0
Iodomethane	Ave	2.017	2.168		53.8	50.0	7.5	20.0
Carbon disulfide	Ave	3.266	3.607	0.1000	55.2	50.0	10.4	20.0
Methyl acetate	Ave	1.006	1.013	0.1000	101	100	0.7	50.0
Methylene Chloride	Lin1		1.419	0.1000	52.1	50.0	4.3	20.0
2-Methyl-2-propanol	Lin1		0.1132		425	500	-15.0	50.0
Methyl tert-butyl ether	Ave	3.581	3.743	0.1000	52.3	50.0	4.5	20.0
trans-1,2-Dichloroethene	Ave	1.229	1.295	0.1000	52.7	50.0	5.4	20.0
Acrylonitrile	Ave	0.5165	0.5337		517	500	3.3	20.0
Hexane	Ave	1.870	2.167		58.0	50.0	15.9	20.0
1,1-Dichloroethane	Ave	2.284	2.388	0.2000	52.3	50.0	4.6	20.0
Vinyl acetate	Ave	2.549	2.712		106	100	6.4	20.0
2,2-Dichloropropane	Ave	1.016	1.164		57.3	50.0	14.6	20.0
cis-1,2-Dichloroethene	Ave	1.366	1.423	0.1000	52.1	50.0	4.2	20.0
2-Butanone (MEK)	Ave	0.6726	0.7201	0.1000	268	250	7.1	20.0
Chlorobromomethane	Ave	0.7199	0.7374		51.2	50.0	2.4	20.0
Tetrahydrofuran	Ave	0.4340	0.4554		105	100	4.9	20.0
Chloroform	Ave	2.236	2.319	0.2000	51.8	50.0	3.7	20.0
1,1,1-Trichloroethane	Ave	1.702	1.933	0.1000	56.8	50.0	13.5	20.0
Cyclohexane	Ave	2.089	2.499	0.1000	59.8	50.0	19.6	20.0
Carbon tetrachloride	Ave	1.444	1.647	0.1000	57.0	50.0	14.0	20.0
1,1-Dichloropropene	Ave	1.527	1.738		56.9	50.0	13.8	20.0
Benzene	Ave	4.882	5.142	0.5000	52.7	50.0	5.3	20.0
Isobutyl alcohol	Lin1		0.0528		1120	1250	-10.7	50.0
1,2-Dichloroethane	Ave	1.819	1.864	0.1000	51.2	50.0	2.5	20.0
n-Heptane	Ave	2.102	2.543		60.5	50.0	20.9*	20.0
Trichloroethene	Ave	1.233	1.306	0.2000	53.0	50.0	5.9	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493693/3 Calibration Date: 09/24/2019 10:12

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0122.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Methylcyclohexane	Ave	1.904	2.267	0.1000	59.5	50.0	19.0	20.0
1,2-Dichloropropane	Ave	1.334	1.372	0.1000	51.4	50.0	2.8	20.0
Dibromomethane	Ave	0.7529	0.7860	0.1000	52.2	50.0	4.4	20.0
1,4-Dioxane	Ave	0.0057	0.0060		1050	1000	5.0	50.0
Bromodichloromethane	Ave	1.736	1.720	0.2000	49.5	50.0	-0.9	20.0
2-Chloroethyl vinyl ether	Ave	0.7695	0.8025		52.1	50.0	4.3	20.0
cis-1,3-Dichloropropene	Ave	1.981	2.042	0.2000	51.6	50.0	3.1	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.6861	0.7066	0.1000	257	250	3.0	20.0
Toluene	Ave	1.492	1.510	0.4000	50.6	50.0	1.2	20.0
trans-1,3-Dichloropropene	Ave	0.8302	0.8150	0.1000	49.1	50.0	-1.8	20.0
Ethyl methacrylate	Ave	0.6330	0.6226		49.2	50.0	-1.6	20.0
1,1,2-Trichloroethane	Ave	0.4306	0.4336	0.1000	50.3	50.0	0.7	20.0
Tetrachloroethene	Ave	0.6401	0.7128	0.2000	55.7	50.0	11.4	20.0
1,3-Dichloropropane	Ave	0.8755	0.8728		49.8	50.0	-0.3	20.0
2-Hexanone	Ave	0.4582	0.4821	0.1000	263	250	5.2	20.0
Dibromochloromethane	Ave	0.6438	0.6253	0.1000	48.6	50.0	-2.9	20.0
1,2-Dibromoethane	Ave	0.5517	0.5300		48.0	50.0	-3.9	20.0
Chlorobenzene	Ave	1.814	1.729	0.5000	47.6	50.0	-4.7	20.0
Ethylbenzene	Ave	2.779	2.818	0.1000	50.7	50.0	1.4	20.0
1,1,1,2-Tetrachloroethane	Ave	0.6127	0.6073		49.6	50.0	-0.9	20.0
m,p-Xylene	Ave	1.101	1.142	0.1000	51.9	50.0	3.8	20.0
o-Xylene	Ave	1.086	1.117	0.3000	51.4	50.0	2.9	20.0
Styrene	Ave	1.857	1.868	0.3000	50.3	50.0	0.6	20.0
Bromoform	Ave	0.3729	0.3816	0.1000	51.2	50.0	2.3	50.0
Isopropylbenzene	Ave	2.698	2.815	0.1000	52.2	50.0	4.3	20.0
Bromobenzene	Ave	0.7729	0.7551		48.8	50.0	-2.3	20.0
1,1,2,2-Tetrachloroethane	Ave	0.6851	0.6695	0.3000	48.9	50.0	-2.3	20.0
N-Propylbenzene	Ave	3.159	3.327		52.7	50.0	5.3	20.0
1,2,3-Trichloropropane	Ave	0.2013	0.2046		50.8	50.0	1.6	20.0
trans-1,4-Dichloro-2-butene	Ave	0.2288	0.2457		53.7	50.0	7.4	50.0
2-Chlorotoluene	Ave	0.6794	0.6895		50.7	50.0	1.5	20.0
1,3,5-Trimethylbenzene	Ave	2.260	2.392		52.9	50.0	5.8	20.0
4-Chlorotoluene	Ave	0.7231	0.7265		50.2	50.0	0.5	20.0
tert-Butylbenzene	Ave	0.5220	0.5536		53.0	50.0	6.0	20.0
1,2,4-Trimethylbenzene	Ave	2.328	2.424		52.1	50.0	4.1	20.0
sec-Butylbenzene	Ave	2.966	3.151		53.1	50.0	6.2	20.0
1,3-Dichlorobenzene	Ave	1.461	1.482	0.6000	50.7	50.0	1.4	20.0
4-Isopropyltoluene	Ave	2.690	2.825		52.5	50.0	5.0	20.0
1,4-Dichlorobenzene	Ave	1.459	1.483	0.5000	50.8	50.0	1.6	20.0
n-Butylbenzene	Ave	2.305	2.502		54.3	50.0	8.6	20.0
1,2-Dichlorobenzene	Ave	1.492	1.465	0.4000	49.1	50.0	-1.8	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-493693/3 Calibration Date: 09/24/2019 10:12

Instrument ID: HP5973P Calib Start Date: 09/20/2019 19:03

GC Column: ZB-624 (20) ID: 0.18(mm) Calib End Date: 09/20/2019 21:30

Lab File ID: P0122.D Conc. Units: ug/L Heated Purge: (Y/N) Y

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2-Dibromo-3-Chloropropane	Ave	0.1090	0.1062	0.0500	48.7	50.0	-2.6	50.0
1,2,4-Trichlorobenzene	Ave	0.9316	0.9892	0.2000	53.1	50.0	6.2	20.0
Hexachlorobutadiene	Lin1		1.148		61.0	50.0	21.9*	20.0
Naphthalene	Ave	4.742	5.048		53.2	50.0	6.5	20.0
1,2,3-Trichlorobenzene	Ave	1.838	2.030		55.2	50.0	10.5	20.0
Dibromofluoromethane (Surr)	Ave	1.280	1.351		52.8	50.0	5.6	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.6861	0.7137		52.0	50.0	4.0	20.0
Toluene-d8 (Surr)	Ave	2.463	2.443		49.6	50.0	-0.8	20.0
4-Bromofluorobenzene (Surr)	Ave	0.7767	0.8148		52.4	50.0	4.9	20.0

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0122.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 24-Sep-2019 10:12:30 ALS Bottle#: 1 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: CCVIS
Misc. Info.: 480-0084410-003
Operator ID: CDC Instrument ID: HP5973P
Sublist: chrom-P-8260SOIL*sub12

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 13:15:32 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 13:15:32

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	171716	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	368191	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	373898	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	232054	50.0	52.8	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.274	0.000	51	122546	50.0	52.0	
$ 5 Toluene-d8 (Surr)	98	7.062	7.062	0.000	94	899484	50.0	49.6	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	94	300001	50.0	52.4	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	98	187712	50.0	50.0	
11 Chloromethane	50	1.490	1.490	0.000	99	279648	50.0	51.9	
17 Vinyl chloride	62	1.587	1.587	0.000	68	227767	50.0	52.7	
149 Butadiene	54	1.593	1.593	0.000	96	242062	50.0	53.0	
12 Bromomethane	94	1.885	1.885	0.000	91	191023	50.0	52.2	
13 Chloroethane	64	1.976	1.976	0.000	97	143993	50.0	51.3	
19 Dichlorofluoromethane	67	2.226	2.226	0.000	95	362350	50.0	54.8	
14 Trichlorofluoromethane	101	2.238	2.238	0.000	77	336618	50.0	56.2	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	89	77943	50.0	50.7	
20 Ethyl ether	59	2.512	2.512	0.000	97	208319	50.0	49.7	
22 Acrolein	56	2.700	2.700	0.000	98	186631	250.0	284.5	
16 1,1,2-Trichloro-1,2,2-trif	101	2.718	2.718	0.000	91	211427	50.0	61.0	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	96	189227	50.0	57.8	
24 Acetone	43	2.864	2.864	0.000	99	431796	250.0	274.3	
18 Iodomethane	142	2.913	2.913	0.000	99	372273	50.0	53.8	
27 Carbon disulfide	76	2.950	2.950	0.000	99	619411	50.0	55.2	
30 Methyl acetate	43	3.163	3.163	0.000	100	347922	100.0	100.7	
31 Methylene Chloride	84	3.266	3.266	0.000	97	243656	50.0	52.1	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	95	194317	500.0	424.9	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	99	642729	50.0	52.3	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	96	222308	50.0	52.7	
34 Acrylonitrile	53	3.558	3.558	0.000	100	916473	500.0	516.7	
36 Hexane	57	3.692	3.692	0.000	96	372118	50.0	58.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	410087	50.0	52.3	
38 Vinyl acetate	43	3.978	3.978	0.000	98	931505	100.0	106.4	
45 2,2-Dichloropropane	77	4.446	4.446	0.000	87	199890	50.0	57.3	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	244415	50.0	52.1	
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	618268	250.0	267.6	
50 Chlorobromomethane	128	4.726	4.726	0.000	95	126621	50.0	51.2	
51 Tetrahydrofuran	42	4.738	4.738	0.000	90	156409	100.0	104.9	
49 Chloroform	83	4.805	4.805	0.000	96	398123	50.0	51.8	
52 1,1,1-Trichloroethane	97	4.915	4.915	0.000	97	331915	50.0	56.8	
54 Cyclohexane	56	4.921	4.921	0.000	96	429064	50.0	59.8	
55 Carbon tetrachloride	117	5.048	5.048	0.000	95	282818	50.0	57.0	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	90	298482	50.0	56.9	
57 Benzene	78	5.274	5.274	0.000	96	883010	50.0	52.7	
53 Isobutyl alcohol	43	5.292	5.292	0.000	92	226450	1250.0	1116.8	
60 1,2-Dichloroethane	62	5.347	5.347	0.000	96	320037	50.0	51.2	
59 n-Heptane	43	5.450	5.450	0.000	97	436602	50.0	60.5	
62 Trichloroethene	95	5.888	5.888	0.000	95	224262	50.0	53.0	
64 Methylcyclohexane	83	6.004	6.004	0.000	96	389229	50.0	59.5	
63 1,2-Dichloropropane	63	6.131	6.131	0.000	89	235559	50.0	51.4	
69 Dibromomethane	93	6.271	6.271	0.000	95	134974	50.0	52.2	
68 1,4-Dioxane	88	6.277	6.277	0.000	41	44229	1000.0	1050.3	M
70 Dichlorobromomethane	83	6.423	6.423	0.000	96	295336	50.0	49.5	
71 2-Chloroethyl vinyl ether	63	6.709	6.709	0.000	93	137808	50.0	52.1	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	350724	50.0	51.6	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	1300761	250.0	257.4	
76 Toluene	92	7.129	7.129	0.000	97	556103	50.0	50.6	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	300069	50.0	49.1	
77 Ethyl methacrylate	69	7.458	7.458	0.000	97	229240	50.0	49.2	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.000	93	159659	50.0	50.3	
80 Tetrachloroethene	166	7.664	7.664	0.000	97	262455	50.0	55.7	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	321341	50.0	49.8	
83 2-Hexanone	43	7.835	7.835	0.000	99	887549	250.0	263.0	
81 Chlorodibromomethane	129	8.011	8.011	0.000	90	230229	50.0	48.6	
85 Ethylene Dibromide	107	8.115	8.115	0.000	98	195144	50.0	48.0	
87 Chlorobenzene	112	8.589	8.589	0.000	94	636548	50.0	47.6	
89 Ethylbenzene	91	8.674	8.674	0.000	99	1037502	50.0	50.7	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	94	223591	50.0	49.6	
90 m-Xylene & p-Xylene	106	8.796	8.796	0.000	99	420534	50.0	51.9	
93 o-Xylene	106	9.228	9.228	0.000	98	411400	50.0	51.4	
94 Styrene	104	9.258	9.258	0.000	96	687763	50.0	50.3	
92 Bromoform	173	9.514	9.514	0.000	96	140513	50.0	51.2	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	1052610	50.0	52.2	
100 Bromobenzene	156	9.958	9.958	0.000	91	282330	50.0	48.8	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.000	95	250308	50.0	48.9	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	1243796	50.0	52.7	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	91	76503	50.0	50.8	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	85	91872	50.0	53.7	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	257801	50.0	50.7	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	894363	50.0	52.9	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	271637	50.0	50.2	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	206973	50.0	53.0	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	98	906512	50.0	52.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
109 sec-Butylbenzene	105	10.730	10.730	0.000	94	1178287	50.0	53.1	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	1056444	50.0	52.5	
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	71	554272	50.0	50.7	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	94	554377	50.0	50.8	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	935400	50.0	54.3	
116 1,2-Dichlorobenzene	146	11.308	11.308	0.000	98	547806	50.0	49.1	
117 1,2-Dibromo-3-Chloropropan	75	12.038	12.038	0.000	81	39702	50.0	48.7	
119 1,2,4-Trichlorobenzene	180	12.714	12.714	0.000	95	369869	50.0	53.1	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	98	197200	50.0	61.0	
121 Naphthalene	128	12.927	12.927	0.000	97	866826	50.0	53.2	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	96	348667	50.0	55.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

8260 CORP mix_00166	Amount Added: 25.00	Units: uL	
GAS CORP mix_00362	Amount Added: 25.00	Units: uL	
P 8260 IS_00399	Amount Added: 1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added: 1.00	Units: uL	Run Reagent

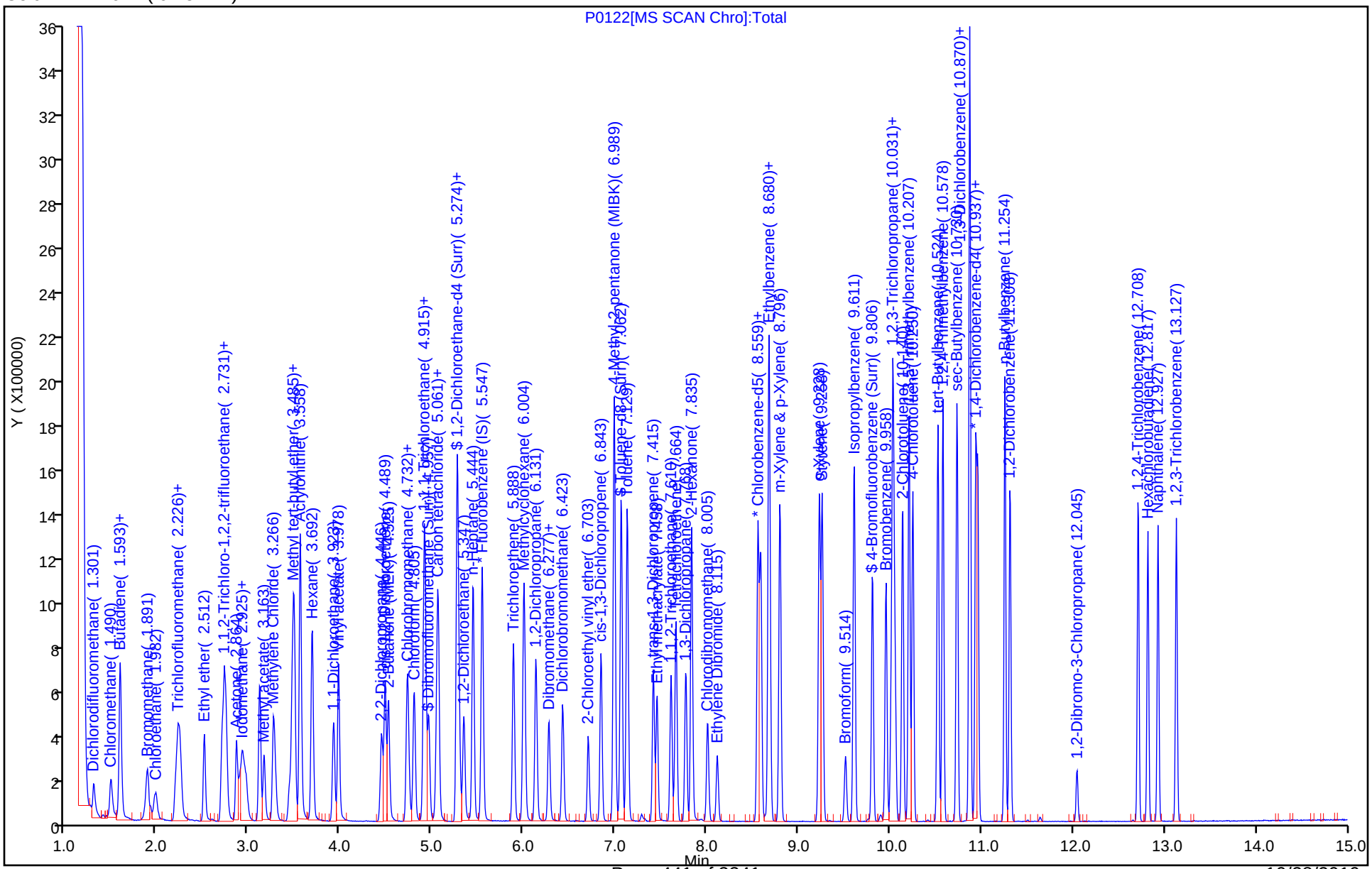
Report Date: 24-Sep-2019 13:15:35 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0122.D

Injection Date:	24-Sep-2019 10:12:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

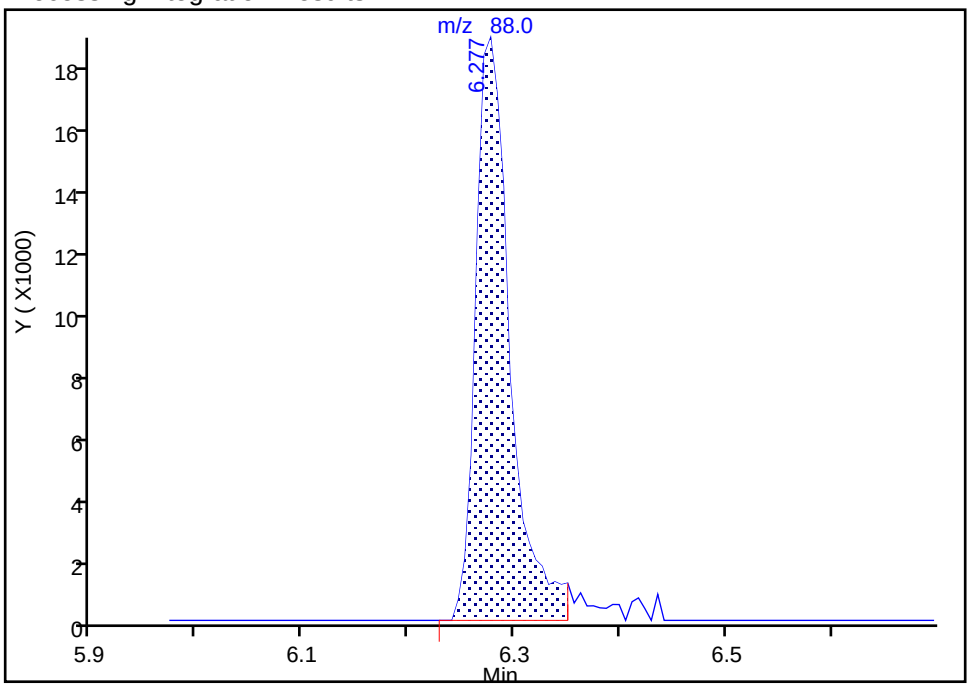
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0122.D
Injection Date: 24-Sep-2019 10:12:30 Instrument ID: HP5973P
Lims ID: CCVIS
Client ID:
Operator ID: CDC ALS Bottle#: 1 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

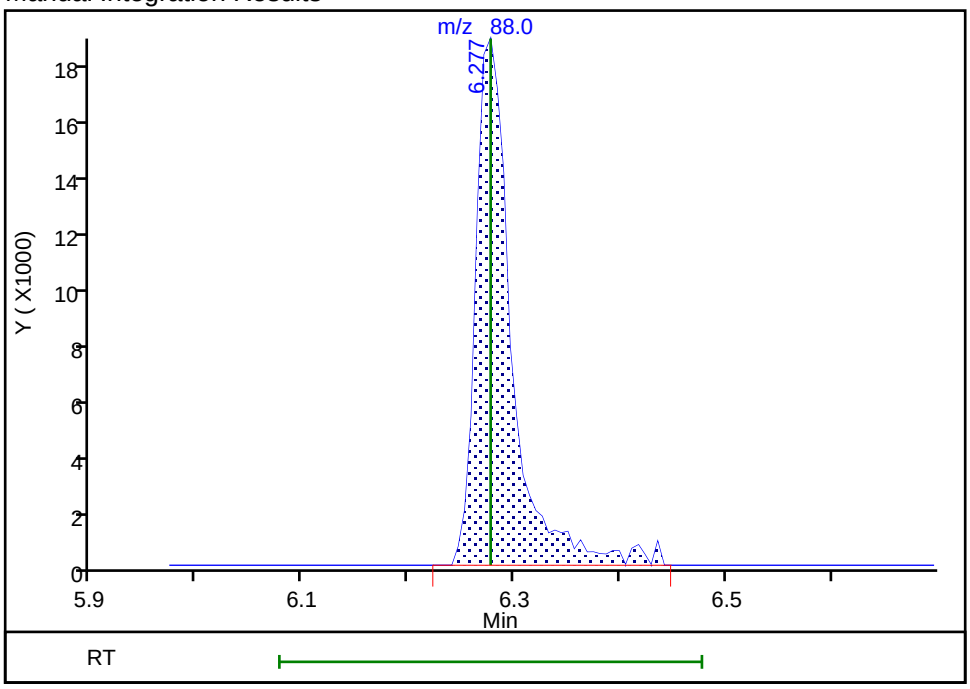
Processing Integration Results

RT: 6.28
Area: 41801
Amount: 992.6028
Amount Units: ug/L



Manual Integration Results

RT: 6.28
Area: 44229
Amount: 1050.2579
Amount Units: ug/L



Reviewer: cwiklinc, 24-Sep-2019 13:13:50
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1714.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 27-Aug-2019 12:21:30 ALS Bottle#: 50 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Sample Info: BFB
Misc. Info.: 480-0083694-002
Operator ID: LH Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 28-Aug-2019 10:38:56 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0305

First Level Reviewer: HillL Date: 27-Aug-2019 12:26:32

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
$ 61 BFB	95	5.935	5.935	0.000	0	200071	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

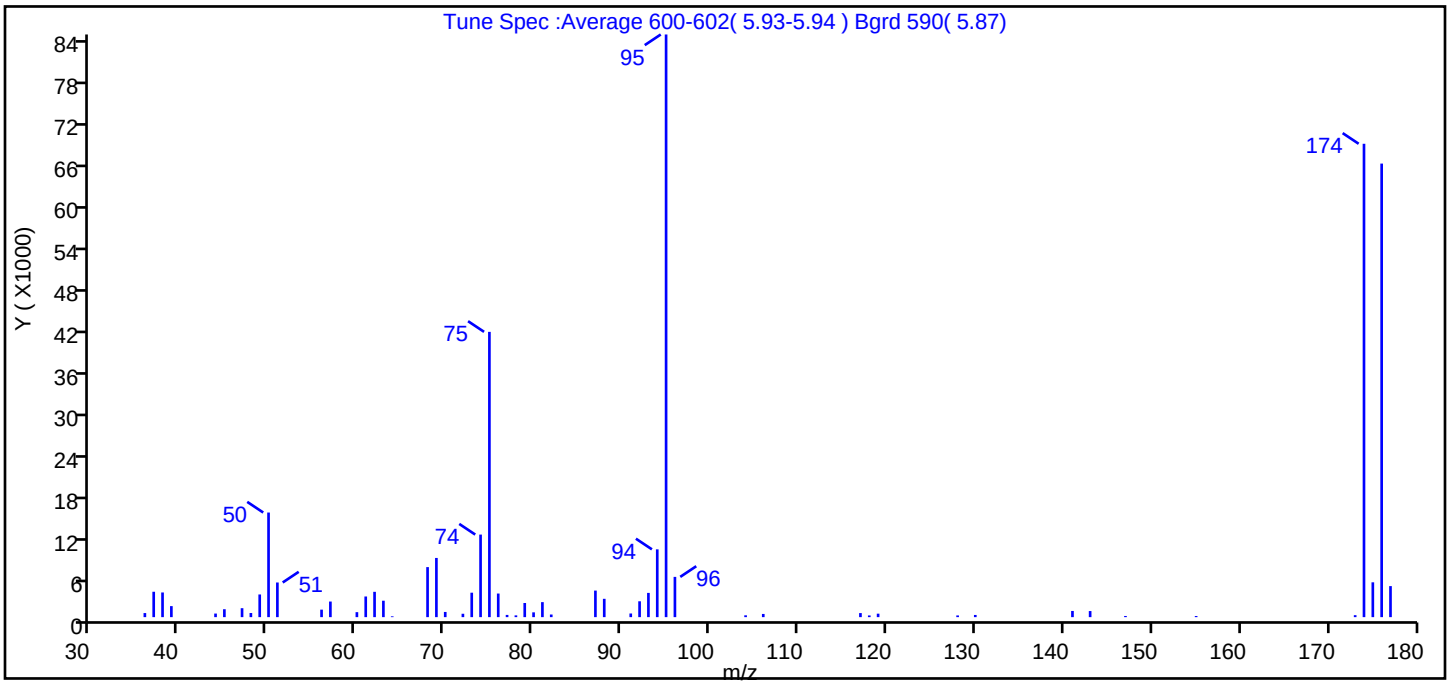
BFB_WRK_00092 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1714.D
Injection Date: 27-Aug-2019 12:21:30 Instrument ID: HP5973F
Lims ID: BFB
Client ID:
Operator ID: LH ALS Bottle#: 50 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Tune Method: BFB Method 8260

$ 61 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	18.0
75	30 to 60% of m/z 95	49.0
96	5 to 9% of m/z 95	6.9
173	Less than 2% of m/z 174	0.3 (0.4)
174	50 to 120% of m/z 95	81.2
175	5 to 9% of m/z 174	6.0 (7.4)
176	Greater than 95% but less than 101% of m/z 174	77.8 (95.8)
177	5 to 9% of m/z 176	5.3 (6.8)

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1714.D\F-8260 SOIL.rslt\spectra.d
Injection Date: 27-Aug-2019 12:21:30
Spectrum: Tune Spec :Average 600-602(5.93-5.94) Bgrd 590(5.87)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	589	61.00	2979	79.00	2039	117.00	586
37.00	3661	62.00	3651	80.00	692	118.00	245
38.00	3558	63.00	2369	81.00	2163	119.00	501
39.00	1590	64.00	116	82.00	380	128.00	246
44.00	517	68.00	7215	87.00	3829	130.00	315
45.00	1142	69.00	8536	88.00	2643	141.00	892
47.00	1291	70.00	749	91.00	527	143.00	878
48.00	595	72.00	489	92.00	2288	147.00	168
49.00	3270	73.00	3526	93.00	3496	155.00	161
50.00	15085	74.00	11905	94.00	9775	173.00	283
51.00	4997	75.00	41136	95.00	84016	174.00	68256
56.00	1081	76.00	3404	96.00	5806	175.00	5021
57.00	2250	77.00	321	104.00	264	176.00	65400
60.00	719	78.00	256	106.00	461	177.00	4476

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2441.D				
Lims ID:	BFB				
Client ID:					
Sample Type:	BFB				
Inject. Date:	25-Sep-2019 08:55:30	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	1.0 uL	Dil. Factor:	1.0000		
Sample Info:	BFB				
Misc. Info.:	480-0084450-002				
Operator ID:	CDC	Instrument ID:	HP5973F		
Method:	\\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m				
Limit Group:	MV - 8260C ICAL				
Last Update:	25-Sep-2019 09:05:59	Calib Date:	27-Aug-2019 19:36:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D				
Column 1 :	ZB-624 (0.25 mm)		Det: MS SCAN		
Process Host:	CTX0335				
First Level Reviewer: cwiklinc		Date:	25-Sep-2019 09:05:59		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
$ 61 BFB	95	5.905	5.905	0.000	0	56375	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

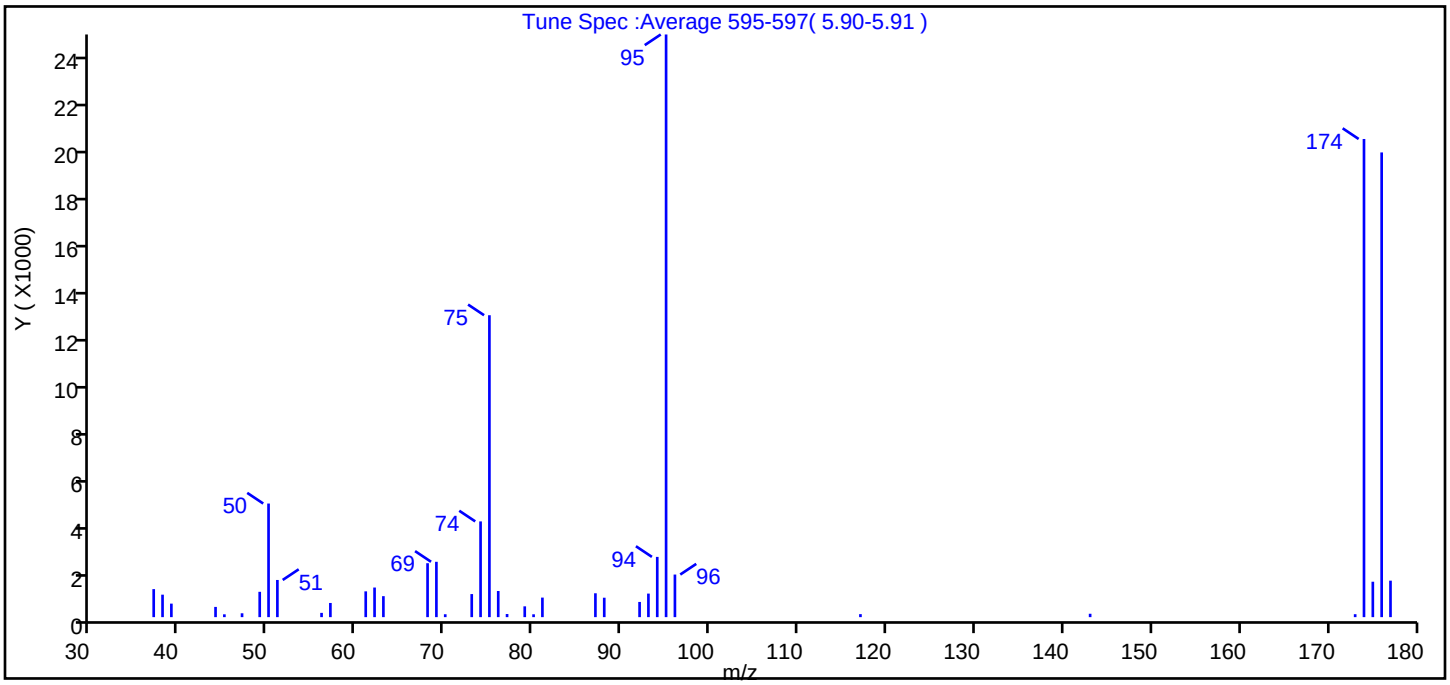
BFB_WRK_00092 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2441.D
Injection Date: 25-Sep-2019 08:55:30 Instrument ID: HP5973F
Lims ID: BFB
Client ID:
Operator ID: CDC ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Tune Method: BFB Method 8260

$ 61 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	19.5
75	30 to 60% of m/z 95	51.8
96	5 to 9% of m/z 95	7.3
173	Less than 2% of m/z 174	0.5 (0.6)
174	50 to 120% of m/z 95	82.1
175	5 to 9% of m/z 174	6.1 (7.4)
176	Greater than 95% but less than 101% of m/z 174	79.8 (97.2)
177	5 to 9% of m/z 176	6.3 (7.8)

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2441.D\F-8260 SOIL.rslt\spectra.d
Injection Date: 25-Sep-2019 08:55:30
Spectrum: Tune Spec :Average 595-597(5.90-5.91)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 39

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1167	57.00	590	76.00	1088	95.00	24264
38.00	936	61.00	1074	77.00	130	96.00	1774
39.00	563	62.00	1233	79.00	450	117.00	125
44.00	426	63.00	874	80.00	119	143.00	141
45.00	118	68.00	2246	81.00	814	173.00	123
47.00	161	69.00	2305	87.00	994	174.00	19912
49.00	1055	70.00	121	88.00	809	175.00	1475
50.00	4731	73.00	961	92.00	633	176.00	19352
51.00	1548	74.00	3987	93.00	981	177.00	1519
56.00	178	75.00	12573	94.00	2509		

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0064.D
Lims ID: BFB
Client ID:
Sample Type: BFB
Inject. Date: 20-Sep-2019 18:09:30 ALS Bottle#: 64 Worklist Smp#: 6
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Sample Info: BFB
Misc. Info.: 480-0084332-006
Operator ID: LH Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 15:14:58 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0334

First Level Reviewer: cwiklinc Date: 23-Sep-2019 15:14:58

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
$ 21 BFB	95	3.830	3.830	0.000	0	139834	NR	NR	a

QC Flag Legend

Processing Flags
NR - Missing Quant Standard
Review Flags
a - User Assigned ID

Reagents:

BFB_WRK_00092 Amount Added: 1.00 Units: uL

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

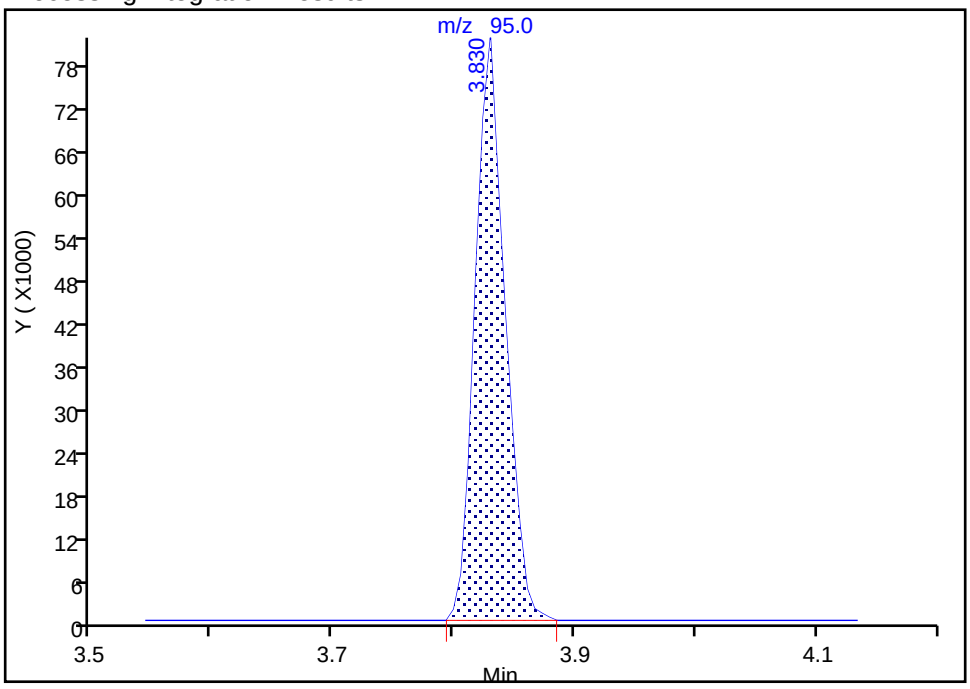
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0064.D
Injection Date: 20-Sep-2019 18:09:30 Instrument ID: HP5973P
Lims ID: BFB
Client ID:
Operator ID: LH ALS Bottle#: 64 Worklist Smp#: 6
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

$ 21 BFB, CAS: 460-00-4

Signal: 1

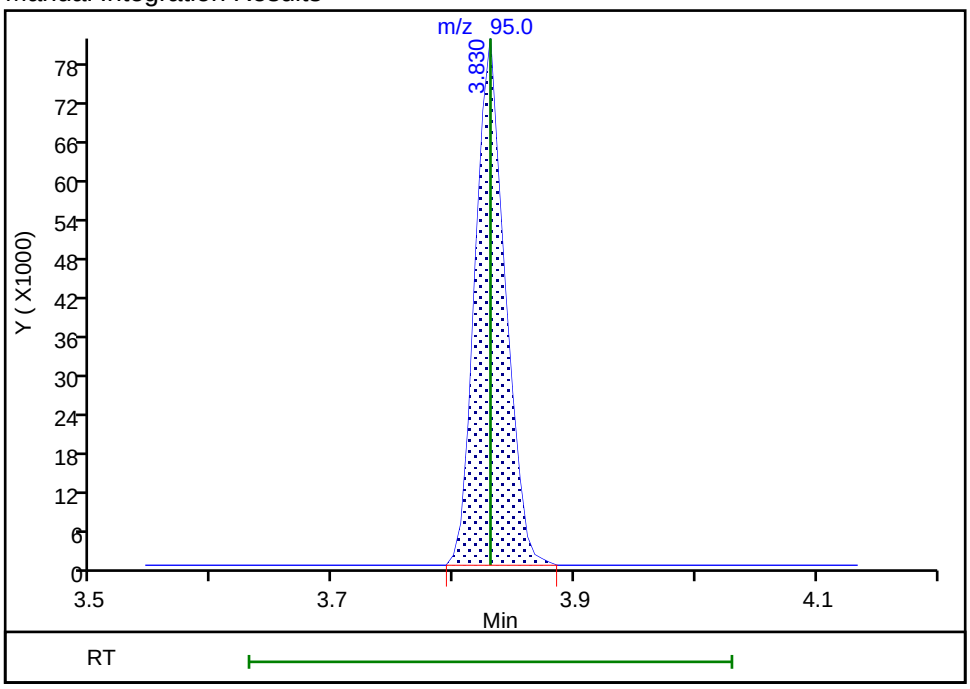
Processing Integration Results

RT: 3.83
Area: 139834
Amount: 0
Amount Units: ug/L



Manual Integration Results

RT: 3.83
Area: 139834
Amount: 0
Amount Units: ug/L



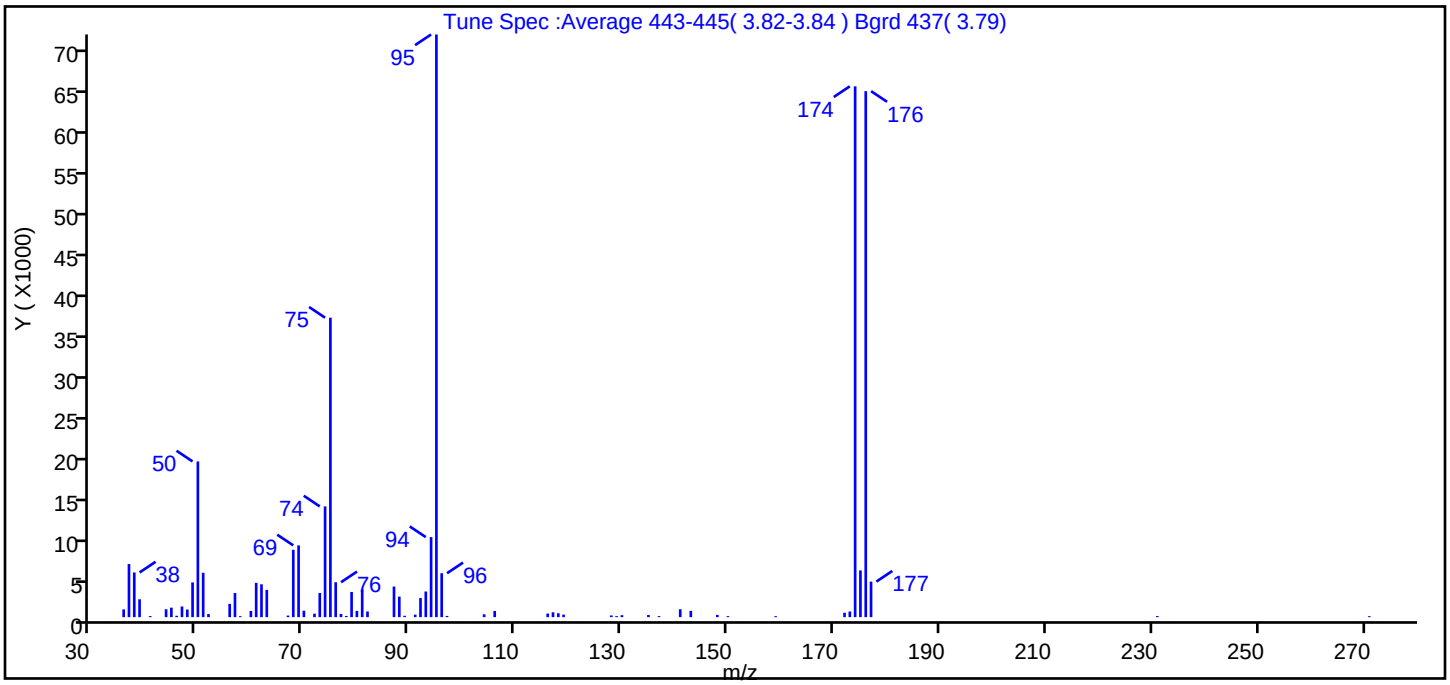
Reviewer: HillL, 20-Sep-2019 18:14:37
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0064.D
Injection Date: 20-Sep-2019 18:09:30 Instrument ID: HP5973P
Lims ID: BFB
Client ID:
Operator ID: LH ALS Bottle#: 64 Worklist Smp#: 6
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Tune Method: BFB Method 8260

$ 21 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	26.7
75	30 to 60% of m/z 95	51.4
96	5 to 9% of m/z 95	7.5
173	Less than 2% of m/z 174	1.0 (1.1)
174	50 to 120% of m/z 95	91.1
175	5 to 9% of m/z 174	8.0 (8.8)
176	Greater than 95% but less than 101% of m/z 174	90.3 (99.1)
177	5 to 9% of m/z 176	6.1 (6.8)

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0064.D\P-8260SOIL.rslt\spectra.d
Injection Date: 20-Sep-2019 18:09:30
Spectrum: Tune Spec :Average 443-445(3.82-3.84) Bgrd 437(3.79)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 70

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	949	61.00	4198	87.00	3746	130.00	242
37.00	6499	62.00	4018	88.00	2510	135.00	264
38.00	5470	63.00	3336	89.00	166	137.00	124
39.00	2187	67.00	191	91.00	302	141.00	967
41.00	130	68.00	8239	92.00	2336	143.00	767
44.00	971	69.00	8782	93.00	3140	148.00	275
45.00	1160	70.00	784	94.00	9795	150.00	124
46.00	168	72.00	421	95.00	71304	159.00	120
47.00	1303	73.00	2953	96.00	5373	172.00	534
48.00	929	74.00	13553	97.00	147	173.00	691
49.00	4251	75.00	36648	104.00	347	174.00	64960
50.00	19056	76.00	4272	106.00	755	175.00	5719
51.00	5433	77.00	388	116.00	438	176.00	64368
52.00	376	78.00	149	117.00	595	177.00	4350
56.00	1622	79.00	3083	118.00	477	231.00	132
57.00	2957	80.00	760	119.00	310	271.00	117
58.00	117	81.00	3366	128.00	209		
60.00	759	82.00	693	129.00	126		

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0093.D				
Lims ID:	BFB				
Client ID:					
Sample Type:	BFB				
Inject. Date:	23-Sep-2019 13:11:30	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	1.0 uL	Dil. Factor:	1.0000		
Sample Info:	BFB				
Misc. Info.:	480-0084382-002				
Operator ID:	CDC	Instrument ID:	HP5973P		
Method:	\\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m				
Limit Group:	MV - 8260C ICAL				
Last Update:	23-Sep-2019 13:28:02	Calib Date:	21-Sep-2019 00:46:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D				
Column 1 :	ZB-624 (0.25 mm)		Det: MS SCAN		
Process Host:	CTX0334				
First Level Reviewer: cwiklinc		Date:	23-Sep-2019 13:28:02		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
$ 21 BFB	95	3.787	3.787	0.000	0	136875	NR	NR	

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

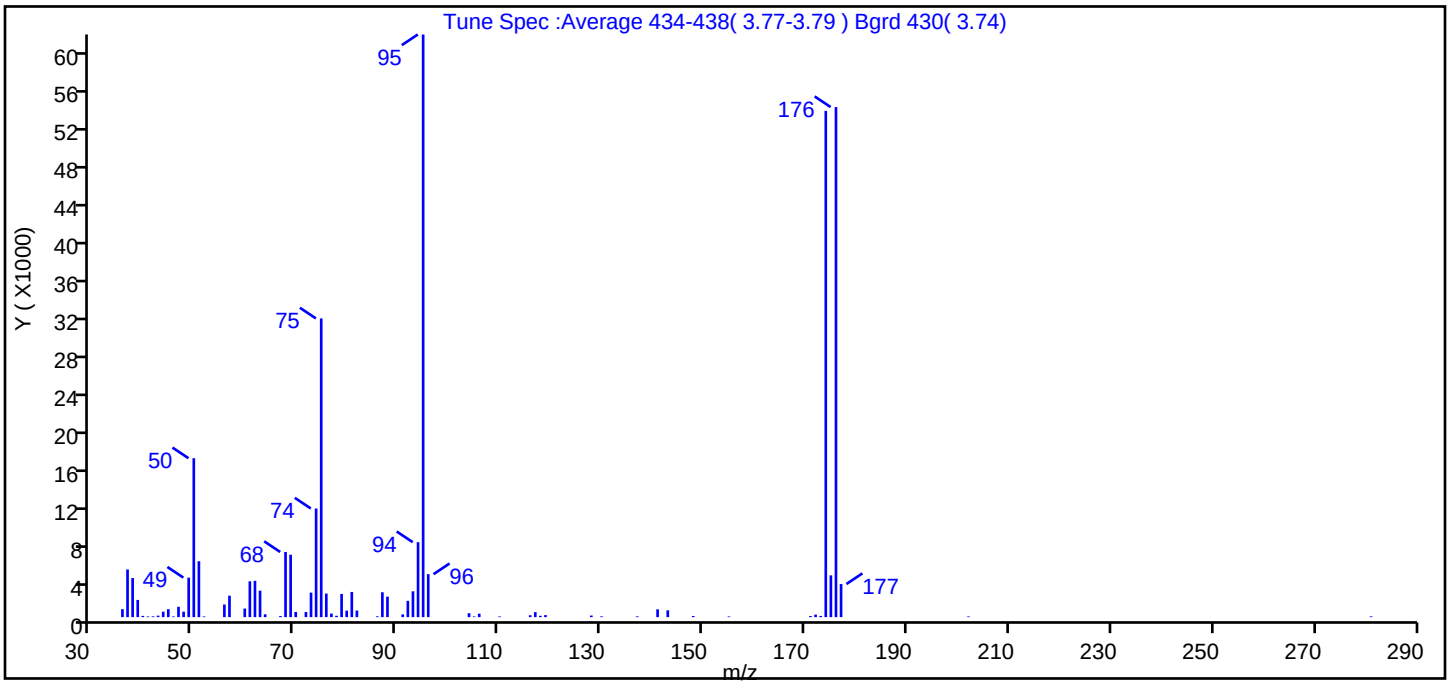
BFB_WRK_00092 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0093.D
Injection Date: 23-Sep-2019 13:11:30 Instrument ID: HP5973P
Lims ID: BFB
Client ID:
Operator ID: CDC ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Tune Method: BFB Method 8260

$ 21 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	27.3
75	30 to 60% of m/z 95	51.3
96	5 to 9% of m/z 95	7.4
173	Less than 2% of m/z 174	0.2 (0.2)
174	50 to 120% of m/z 95	86.9
175	5 to 9% of m/z 174	7.2 (8.3)
176	Greater than 95% but less than 101% of m/z 174	87.5 (100.7)
177	5 to 9% of m/z 176	5.7 (6.5)

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0093.D\P-8260SOIL.rslt\spectra.d
Injection Date: 23-Sep-2019 13:11:30
Spectrum: Tune Spec :Average 434-438(3.77-3.79) Bgrd 430(3.74)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	845	57.00	2263	80.00	682	118.00	144
37.00	5031	60.00	905	81.00	2657	119.00	216
38.00	4123	61.00	3781	82.00	697	128.00	169
39.00	1815	62.00	3828	86.00	86	130.00	82
40.00	132	63.00	2792	87.00	2624	137.00	85
41.00	72	64.00	301	88.00	2160	141.00	824
42.00	82	67.00	113	91.00	289	143.00	719
43.00	160	68.00	6870	92.00	1720	148.00	117
44.00	574	69.00	6582	93.00	2727	155.00	72
45.00	838	70.00	549	94.00	7907	171.00	117
46.00	74	72.00	538	95.00	61448	172.00	265
47.00	1092	73.00	2585	96.00	4535	173.00	126
48.00	579	74.00	11459	104.00	413	174.00	53392
49.00	4167	75.00	31504	105.00	73	175.00	4406
50.00	16760	76.00	2488	106.00	368	176.00	53792
51.00	5895	77.00	375	110.00	76	177.00	3492
52.00	74	78.00	144	116.00	200	202.00	74
56.00	1330	79.00	2447	117.00	529	281.00	82

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0121.D				
Lims ID:	BFB				
Client ID:					
Sample Type:	BFB				
Inject. Date:	24-Sep-2019 09:41:30	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	1.0 uL	Dil. Factor:	1.0000		
Sample Info:	BFB				
Misc. Info.:	480-0084410-002				
Operator ID:	CDC	Instrument ID:	HP5973P		
Method:	\\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m				
Limit Group:	MV - 8260C ICAL				
Last Update:	24-Sep-2019 09:48:26	Calib Date:	21-Sep-2019 00:46:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D				
Column 1 :	ZB-624 (0.25 mm)		Det: MS SCAN		
Process Host:	CTX0332				
First Level Reviewer: cwiklinc		Date:	24-Sep-2019 09:48:26		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
$ 21 BFB	95	3.788	3.788	0.000	0	126670	NR	NR	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

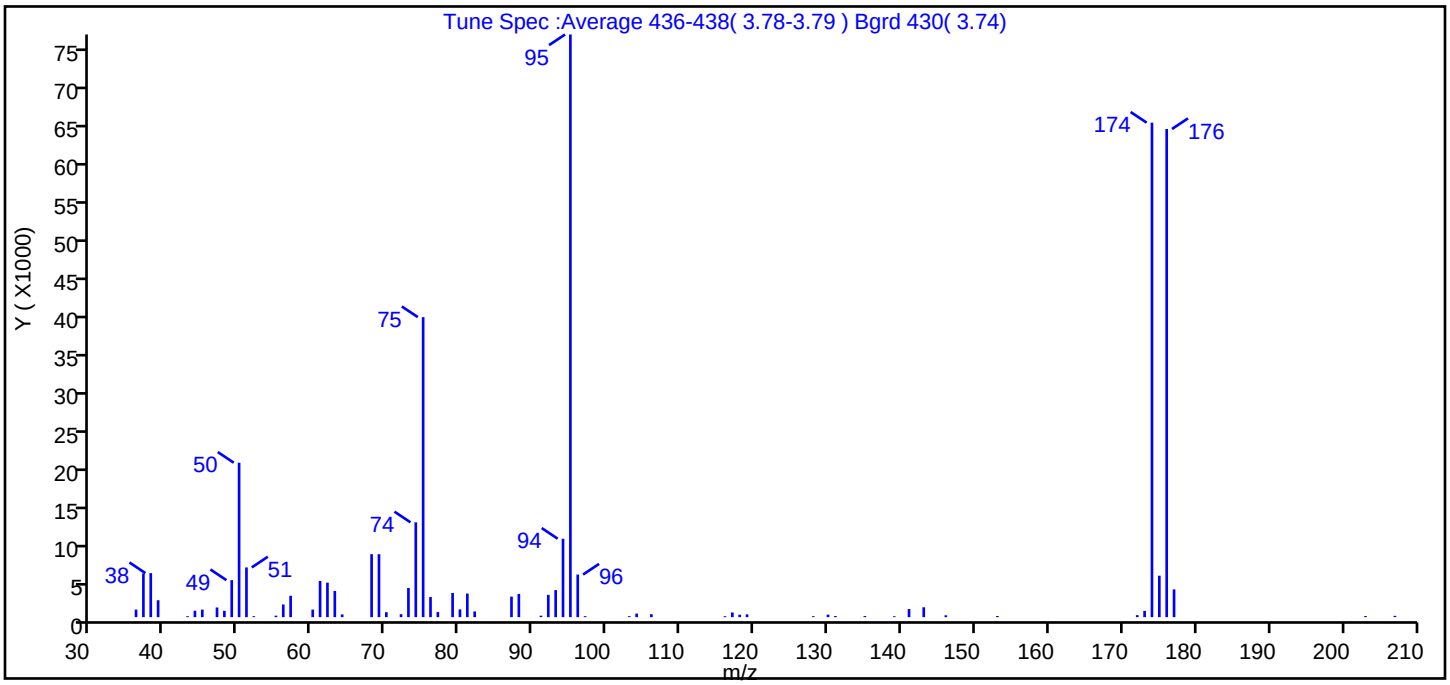
BFB_WRK_00092 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0121.D
Injection Date: 24-Sep-2019 09:41:30 Instrument ID: HP5973P
Lims ID: BFB
Client ID:
Operator ID: CDC ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Tune Method: BFB Method 8260

$ 21 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	26.5
75	30 to 60% of m/z 95	51.5
96	5 to 9% of m/z 95	7.3
173	Less than 2% of m/z 174	1.1 (1.3)
174	50 to 120% of m/z 95	84.9
175	5 to 9% of m/z 174	7.1 (8.4)
176	Greater than 95% but less than 101% of m/z 174	83.8 (98.7)
177	5 to 9% of m/z 176	4.8 (5.7)

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0121.D\P-8260SOIL.rslt\spectra.d
Injection Date: 24-Sep-2019 09:41:30
Spectrum: Tune Spec :Average 436-438(3.78-3.79) Bgrd 430(3.74)
Base Peak: 95.00
Minimum % Base Peak: 0
Number of Points: 67

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	993	61.00	4750	87.00	2695	130.00	327
37.00	5747	62.00	4526	88.00	3046	131.00	152
38.00	5778	63.00	3438	91.00	190	135.00	148
39.00	2220	64.00	359	92.00	2923	139.00	117
43.00	122	68.00	8267	93.00	3548	141.00	1063
44.00	844	69.00	8263	94.00	10295	143.00	1295
45.00	986	70.00	647	95.00	76488	146.00	242
47.00	1270	72.00	389	96.00	5592	153.00	151
48.00	830	73.00	3827	97.00	130	172.00	264
49.00	4859	74.00	12448	103.00	125	173.00	820
50.00	20272	75.00	39384	104.00	465	174.00	64912
51.00	6527	76.00	2640	106.00	386	175.00	5441
52.00	125	77.00	670	116.00	124	176.00	64080
55.00	196	79.00	3171	117.00	614	177.00	3643
56.00	1664	80.00	1018	118.00	319	203.00	145
57.00	2802	81.00	3095	119.00	369	207.00	173
60.00	990	82.00	748	128.00	122		

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493565/2-A

Matrix: Solid Lab File ID: P0098.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 15:37

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND		5.0	0.36
75-34-3	1,1-Dichloroethane	ND		5.0	0.61
75-35-4	1,1-Dichloroethene	ND		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	ND		5.0	0.96
95-50-1	1,2-Dichlorobenzene	ND		5.0	0.39
107-06-2	1,2-Dichloroethane	ND		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	ND		5.0	0.32
541-73-1	1,3-Dichlorobenzene	ND		5.0	0.26
106-46-7	1,4-Dichlorobenzene	ND		5.0	0.70
123-91-1	1,4-Dioxane	ND		100	22
78-93-3	2-Butanone (MEK)	ND		25	1.8
67-64-1	Acetone	ND		25	4.2
71-43-2	Benzene	ND		5.0	0.25
56-23-5	Carbon tetrachloride	ND		5.0	0.48
108-90-7	Chlorobenzene	ND		5.0	0.66
67-66-3	Chloroform	ND		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	ND		5.0	0.64
100-41-4	Ethylbenzene	ND		5.0	0.35
1634-04-4	Methyl tert-butyl ether	ND		5.0	0.49
75-09-2	Methylene Chloride	ND		5.0	2.3
104-51-8	n-Butylbenzene	ND		5.0	0.44
103-65-1	N-Propylbenzene	ND		5.0	0.40
135-98-8	sec-Butylbenzene	ND		5.0	0.44
127-18-4	Tetrachloroethene	ND		5.0	0.67
108-88-3	Toluene	ND		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	ND		5.0	0.52
79-01-6	Trichloroethene	ND		5.0	1.1
75-01-4	Vinyl chloride	ND		5.0	0.61
1330-20-7	Xylenes, Total	ND		10	0.84
98-06-6	tert-Butylbenzene	ND		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493565/2-A

Matrix: Solid Lab File ID: P0098.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 15:37

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102		64-126
460-00-4	4-Bromofluorobenzene (Surr)	105		72-126
2037-26-5	Toluene-d8 (Surr)	96		71-125
1868-53-7	Dibromofluoromethane (Surr)	99		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0098.D
Lims ID: MB 480-493565/2-A
Client ID:
Sample Type: MB
Inject. Date: 23-Sep-2019 15:37:30 ALS Bottle#: 5 Worklist Smp#: 7
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: MB
Misc. Info.: 480-0084382-007
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 16:13:06 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0334

First Level Reviewer: cwiklinc Date: 23-Sep-2019 16:13:06

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	183763	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	383643	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	395484	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	232353	50.0	49.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.273	0.000	99	128081	50.0	50.8	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	911632	50.0	48.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	95	311646	50.0	52.3	
10 Dichlorodifluoromethane	85		1.307					ND	
15 Chlorodifluoromethane	51		1.331					ND	
11 Chloromethane	50		1.502					ND	
17 Vinyl chloride	62		1.599					ND	
149 Butadiene	54		1.599					ND	
12 Bromomethane	94		1.897					ND	
13 Chloroethane	64		1.988					ND	
19 Dichlorofluoromethane	67		2.238					ND	
14 Trichlorofluoromethane	101		2.244					ND	
28 3-Chloro-1-propene	41		2.256					ND	
20 Ethyl ether	59		2.518					ND	
146 Ethanol	45		2.536					ND	
26 Propene oxide	58		2.603					ND	
22 Acrolein	56		2.706					ND	
16 1,1,2-Trichloro-1,2,2-trif	101		2.730					ND	
25 1,1-Dichloroethene	96		2.749					ND	
24 Acetone	43		2.864					ND	
18 Iodomethane	142		2.925					ND	
27 Carbon disulfide	76		2.974					ND	
23 Isopropyl alcohol	45		3.053					ND	
30 Methyl acetate	43		3.168					ND	
29 Acetonitrile	40		3.187					ND	
31 Methylene Chloride	84		3.272					ND	
33 2-Methyl-2-propanol	59		3.442					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
32 Methyl tert-butyl ether	73		3.479					ND	
35 trans-1,2-Dichloroethene	96		3.497					ND	
34 Acrylonitrile	53		3.564					ND	
36 Hexane	57	3.692	3.692	0.000	76	4448		0.6473	
40 1,1-Dichloroethane	63		3.923					ND	
37 Isopropyl ether	45		3.929					ND	
133 Halothane	117		3.966					ND	
38 Vinyl acetate	43		3.978					ND	
41 2-Chloro-1,3-butadiene	53		3.984					ND	
39 1,1-Dimethoxyethane	75		4.008					ND	
145 t-Amyl alcohol	59		4.276					ND	
42 Tert-butyl ethyl ether	59		4.276					ND	
45 2,2-Dichloropropane	77		4.452					ND	
43 cis-1,2-Dichloroethene	96		4.489					ND	
44 2-Butanone (MEK)	43		4.525					ND	
46 Ethyl acetate	43		4.550					ND	
47 Propionitrile	54		4.635					ND	
50 Chlorobromomethane	128		4.726					ND	
51 Tetrahydrofuran	42		4.744					ND	
48 Methacrylonitrile	41		4.744					ND	
49 Chloroform	83	4.811	4.805	0.006	37	2162		0.2631	
52 1,1,1-Trichloroethane	97		4.914					ND	
54 Cyclohexane	56		4.921					ND	
55 Carbon tetrachloride	117		5.054					ND	
56 1,1-Dichloropropene	75		5.067					ND	
150 Isooctane	57		5.261					ND	
57 Benzene	78		5.273					ND	
53 Isobutyl alcohol	43		5.298					ND	
60 1,2-Dichloroethane	62		5.346					ND	
58 Tert-amyl methyl ether	73		5.347					ND	
59 n-Heptane	43		5.450					ND	
1 1,4-Difluorobenzene	114		5.657					ND	
135 2,4,4-Trimethyl-1-pentene	55		5.772					ND	
62 Trichloroethene	95		5.888					ND	
61 n-Butanol	56		5.918					ND	
64 Methylcyclohexane	83		6.003					ND	
66 2-Methylthiophene	97		6.004					ND	
134 2,4,4-Trimethyl-2-pentene	97		6.004					ND	
67 3-Methylthiophene	97		6.004					ND	
136 Ethyl acrylate	55		6.010					ND	
63 1,2-Dichloropropane	63		6.131					ND	
65 Methyl methacrylate	41		6.229					ND	
69 Dibromomethane	93		6.277					ND	
68 1,4-Dioxane	88		6.277					ND	
70 Dichlorobromomethane	83		6.429					ND	
72 2-Nitropropane	43		6.685					ND	
71 2-Chloroethyl vinyl ether	63		6.709					ND	
74 Epichlorohydrin	57		6.801					ND	
73 cis-1,3-Dichloropropene	75		6.843					ND	
75 4-Methyl-2-pentanone (MIBK	43		6.989					ND	U
76 Toluene	92		7.129					ND	
78 trans-1,3-Dichloropropene	75		7.415					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
77 Ethyl methacrylate	69		7.457					ND	
79 1,1,2-Trichloroethane	83		7.609					ND	
80 Tetrachloroethene	166		7.664					ND	
82 1,3-Dichloropropane	76		7.774					ND	
83 2-Hexanone	43		7.835					ND	
156 n-Butyl acetate	43		7.938					ND	
81 Chlorodibromomethane	129		8.011					ND	
85 Ethylene Dibromide	107		8.114					ND	
144 1-Chlorohexane	55	8.559	8.534	0.025	33	9491		0.0271	
84 3-Chlorobenzotrifluoride	180		8.553					ND	
87 Chlorobenzene	112		8.589					ND	
86 4-Chlorobenzotrifluoride	180		8.613					ND	
89 Ethylbenzene	91		8.674					ND	
88 1,1,1,2-Tetrachloroethane	131		8.686					ND	
90 m-Xylene & p-Xylene	106		8.802					ND	
93 o-Xylene	106		9.228					ND	
94 Styrene	104		9.258					ND	
92 Bromoform	173		9.514					ND	
91 2-Chlorobenzotrifluoride	180		9.538					ND	
95 Isopropylbenzene	105		9.611					ND	
96 Cyclohexanone	55		9.788					ND	
100 Bromobenzene	156		9.958					ND	
97 1,1,2,2-Tetrachloroethane	83		10.013					ND	
99 N-Propylbenzene	91		10.031					ND	
101 1,2,3-Trichloropropane	110		10.049					ND	
98 trans-1,4-Dichloro-2-buten	53		10.061					ND	
103 2-Chlorotoluene	126		10.140					ND	
104 3-Chlorotoluene	126		10.201					ND	
102 1,3,5-Trimethylbenzene	105		10.207					ND	
105 4-Chlorotoluene	126		10.250					ND	
106 tert-Butylbenzene	134		10.524					ND	
107 1,2,4-Trimethylbenzene	105		10.578					ND	
108 Pentachloroethane	167		10.591					ND	
109 sec-Butylbenzene	105		10.730					ND	
110 1,3-Dichlorobenzene	146		10.870					ND	
112 4-Isopropyltoluene	119		10.870					ND	
114 Dicyclopentadiene	66	10.937	10.937	0.000	44	9869		0.4007	
111 1,4-Dichlorobenzene	146		10.962					ND	
113 1,2,3-Trimethylbenzene	105		10.986					ND	
148 Benzyl chloride	126		11.108					ND	
115 n-Butylbenzene	91		11.254					ND	
116 1,2-Dichlorobenzene	146		11.314					ND	
117 1,2-Dibromo-3-Chloropropan	75		12.044					ND	
118 1,3,5-Trichlorobenzene	180		12.166					ND	
119 1,2,4-Trichlorobenzene	180		12.714					ND	
120 Hexachlorobutadiene	225		12.817					ND	
121 Naphthalene	128		12.927					ND	
122 1,2,3-Trichlorobenzene	180		13.127					ND	
147 2-Methylnaphthalene	142	13.839	13.839	0.000	83	2528		0.2370	
155 Ethylene oxide TIC	1		0.000					ND	
154 1-Bromopropane TIC	1		0.000					ND	
153 Propene oxide TIC	1		0.000					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
131 Methyl acrylate	1		0.000					ND	
157 1-Chloro-1-fluoroethane TI	1		0.000					ND	
129 Hexachloroethane	117		0.000					ND	
132 cis-1,4-Dichloro-2-butene	88		0.000					ND	
130 Nitrobenzene	77		0.000					ND	
S 125 Total BTEX	1		30.000					ND	
S 126 Xylenes, Total	1		30.000					ND	
S 123 1,2-Dichloroethene, Total	1		30.000					ND	
S 124 1,3-Dichloropropene, Total	1		30.000					ND	
S 158 Trihalomethanes, Total	1		0.000					ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

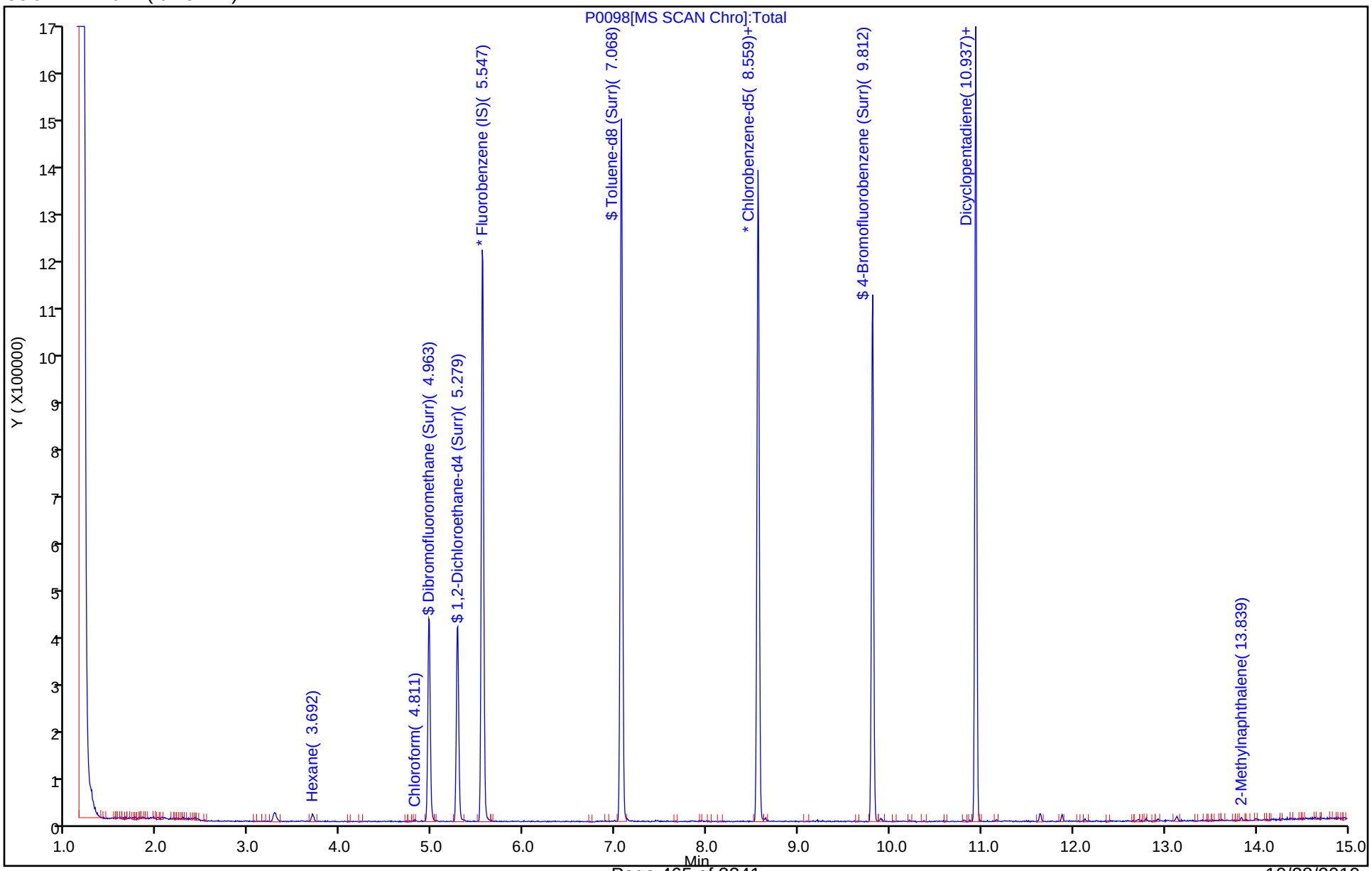
Report Date: 23-Sep-2019 16:13:08 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0098.D

Injection Date:	23-Sep-2019 15:37:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	MB 480-493565/2-A			Worklist Smp#:	7
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493743/2-A

Matrix: Solid Lab File ID: P0126.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 12:05

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND		5.0	0.36
75-34-3	1,1-Dichloroethane	ND		5.0	0.61
75-35-4	1,1-Dichloroethene	ND		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	ND		5.0	0.96
95-50-1	1,2-Dichlorobenzene	ND		5.0	0.39
107-06-2	1,2-Dichloroethane	ND		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	ND		5.0	0.32
541-73-1	1,3-Dichlorobenzene	ND		5.0	0.26
106-46-7	1,4-Dichlorobenzene	ND		5.0	0.70
123-91-1	1,4-Dioxane	ND		100	22
78-93-3	2-Butanone (MEK)	ND		25	1.8
67-64-1	Acetone	ND		25	4.2
71-43-2	Benzene	ND		5.0	0.25
56-23-5	Carbon tetrachloride	ND		5.0	0.48
108-90-7	Chlorobenzene	ND		5.0	0.66
67-66-3	Chloroform	ND		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	ND		5.0	0.64
100-41-4	Ethylbenzene	ND		5.0	0.35
1634-04-4	Methyl tert-butyl ether	ND		5.0	0.49
75-09-2	Methylene Chloride	ND		5.0	2.3
104-51-8	n-Butylbenzene	ND		5.0	0.44
103-65-1	N-Propylbenzene	ND		5.0	0.40
135-98-8	sec-Butylbenzene	ND		5.0	0.44
127-18-4	Tetrachloroethene	ND		5.0	0.67
108-88-3	Toluene	ND		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	ND		5.0	0.52
79-01-6	Trichloroethene	ND		5.0	1.1
75-01-4	Vinyl chloride	ND		5.0	0.61
1330-20-7	Xylenes, Total	ND		10	0.84
98-06-6	tert-Butylbenzene	ND		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493743/2-A

Matrix: Solid Lab File ID: P0126.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 12:05

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	109		64-126
460-00-4	4-Bromofluorobenzene (Surr)	105		72-126
2037-26-5	Toluene-d8 (Surr)	96		71-125
1868-53-7	Dibromofluoromethane (Surr)	104		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0126.D
Lims ID: MB 480-493743/2-A
Client ID:
Sample Type: MB
Inject. Date: 24-Sep-2019 12:05:30 ALS Bottle#: 5 Worklist Smp#: 7
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: MB
Misc. Info.: 480-0084410-007
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 13:29:46 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 13:29:46

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	98	166121	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	88	360198	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	371150	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	92	221670	50.0	52.1	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.273	5.274	-0.001	98	124160	50.0	54.5	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	94	855116	50.0	48.2	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	292814	50.0	52.3	
10 Dichlorodifluoromethane	85		1.307					ND	
15 Chlorodifluoromethane	51		1.331					ND	
11 Chloromethane	50		1.490					ND	
17 Vinyl chloride	62		1.587					ND	
149 Butadiene	54		1.593					ND	
12 Bromomethane	94		1.885					ND	
13 Chloroethane	64		1.976					ND	
19 Dichlorofluoromethane	67		2.226					ND	
14 Trichlorofluoromethane	101		2.238					ND	
28 3-Chloro-1-propene	41		2.256					ND	
20 Ethyl ether	59		2.512					ND	
146 Ethanol	45		2.536					ND	
26 Propene oxide	58		2.603					ND	
22 Acrolein	56		2.700					ND	
16 1,1,2-Trichloro-1,2,2-trif	101		2.718					ND	
25 1,1-Dichloroethene	96		2.749					ND	
24 Acetone	43		2.864					ND	
18 Iodomethane	142		2.913					ND	
27 Carbon disulfide	76		2.950					ND	
23 Isopropyl alcohol	45		3.053					ND	
30 Methyl acetate	43		3.163					ND	
29 Acetonitrile	40		3.187					ND	
31 Methylene Chloride	84		3.266					ND	
33 2-Methyl-2-propanol	59		3.442					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
32 Methyl tert-butyl ether	73		3.479					ND	
35 trans-1,2-Dichloroethene	96		3.497					ND	
34 Acrylonitrile	53		3.558					ND	
36 Hexane	57	3.692	3.692	0.000	90	9766		1.57	
40 1,1-Dichloroethane	63		3.923					ND	
37 Isopropyl ether	45		3.929					ND	
133 Halothane	117		3.966					ND	
38 Vinyl acetate	43		3.978					ND	
41 2-Chloro-1,3-butadiene	53		3.984					ND	
39 1,1-Dimethoxyethane	75		4.008					ND	
145 t-Amyl alcohol	59		4.276					ND	
42 Tert-butyl ethyl ether	59		4.276					ND	
45 2,2-Dichloropropane	77		4.446					ND	
43 cis-1,2-Dichloroethene	96		4.489					ND	
44 2-Butanone (MEK)	43		4.525					ND	
46 Ethyl acetate	43		4.550					ND	
47 Propionitrile	54		4.635					ND	
50 Chlorobromomethane	128		4.726					ND	
51 Tetrahydrofuran	42		4.738					ND	
48 Methacrylonitrile	41		4.744					ND	
49 Chloroform	83		4.805					ND	
52 1,1,1-Trichloroethane	97		4.915					ND	
54 Cyclohexane	56		4.921					ND	
55 Carbon tetrachloride	117		5.048					ND	
56 1,1-Dichloropropene	75		5.067					ND	
150 Isooctane	57		5.261					ND	
57 Benzene	78		5.274					ND	
53 Isobutyl alcohol	43		5.292					ND	
60 1,2-Dichloroethane	62		5.347					ND	
58 Tert-amyl methyl ether	73		5.347					ND	
59 n-Heptane	43		5.450					ND	
1 1,4-Difluorobenzene	114		5.657					ND	
135 2,4,4-Trimethyl-1-pentene	55		5.772					ND	
62 Trichloroethene	95		5.888					ND	
61 n-Butanol	56		5.918					ND	
64 Methylcyclohexane	83		6.004					ND	
134 2,4,4-Trimethyl-2-pentene	97		6.004					ND	
66 2-Methylthiophene	97		6.004					ND	
67 3-Methylthiophene	97		6.004					ND	
136 Ethyl acrylate	55		6.010					ND	
63 1,2-Dichloropropane	63		6.131					ND	
65 Methyl methacrylate	41		6.229					ND	
69 Dibromomethane	93		6.271					ND	
68 1,4-Dioxane	88		6.277					ND	
70 Dichlorobromomethane	83		6.423					ND	
72 2-Nitropropane	43		6.685					ND	
71 2-Chloroethyl vinyl ether	63		6.709					ND	
74 Epichlorohydrin	57		6.801					ND	
73 cis-1,3-Dichloropropene	75		6.843					ND	
75 4-Methyl-2-pentanone (MIBK	43		6.989					ND	U
76 Toluene	92		7.129					ND	
78 trans-1,3-Dichloropropene	75		7.415					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
77 Ethyl methacrylate	69		7.458					ND	
79 1,1,2-Trichloroethane	83		7.610					ND	
80 Tetrachloroethene	166		7.664					ND	
82 1,3-Dichloropropane	76		7.774					ND	
83 2-Hexanone	43		7.835					ND	
156 n-Butyl acetate	43		7.938					ND	
81 Chlorodibromomethane	129		8.011					ND	
85 Ethylene Dibromide	107		8.115					ND	
144 1-Chlorohexane	55	8.553	8.534	0.019	33	8491		0.004657	
84 3-Chlorobenzotrifluoride	180		8.553					ND	
87 Chlorobenzene	112		8.589					ND	
86 4-Chlorobenzotrifluoride	180		8.613					ND	
89 Ethylbenzene	91		8.674					ND	
88 1,1,1,2-Tetrachloroethane	131		8.686					ND	
90 m-Xylene & p-Xylene	106		8.796					ND	
93 o-Xylene	106		9.228					ND	
94 Styrene	104		9.258					ND	
92 Bromoform	173		9.514					ND	
91 2-Chlorobenzotrifluoride	180		9.538					ND	
95 Isopropylbenzene	105		9.611					ND	
96 Cyclohexanone	55		9.788					ND	
100 Bromobenzene	156		9.958					ND	
97 1,1,2,2-Tetrachloroethane	83		10.013					ND	
99 N-Propylbenzene	91		10.031					ND	
101 1,2,3-Trichloropropane	110		10.049					ND	
98 trans-1,4-Dichloro-2-buten	53		10.061					ND	
103 2-Chlorotoluene	126		10.140					ND	
104 3-Chlorotoluene	126		10.201					ND	
102 1,3,5-Trimethylbenzene	105		10.207					ND	
105 4-Chlorotoluene	126		10.250					ND	
106 tert-Butylbenzene	134		10.524					ND	
107 1,2,4-Trimethylbenzene	105		10.578					ND	
108 Pentachloroethane	167		10.591					ND	
109 sec-Butylbenzene	105		10.730					ND	
112 4-Isopropyltoluene	119		10.870					ND	
110 1,3-Dichlorobenzene	146		10.870					ND	
114 Dicyclopentadiene	66	10.937	10.937	0.000	44	9874		0.4272	
111 1,4-Dichlorobenzene	146		10.962					ND	
113 1,2,3-Trimethylbenzene	105		10.986					ND	
148 Benzyl chloride	126		11.108					ND	
115 n-Butylbenzene	91		11.254					ND	
116 1,2-Dichlorobenzene	146		11.308					ND	
117 1,2-Dibromo-3-Chloropropan	75		12.038					ND	
118 1,3,5-Trichlorobenzene	180		12.166					ND	
119 1,2,4-Trichlorobenzene	180		12.714					ND	
120 Hexachlorobutadiene	225		12.817					ND	
121 Naphthalene	128		12.927					ND	
122 1,2,3-Trichlorobenzene	180		13.127					ND	
147 2-Methylnaphthalene	142		13.839					ND	
154 1-Bromopropane TIC	1		0.000					ND	
153 Propene oxide TIC	1		0.000					ND	
155 Ethylene oxide TIC	1		0.000					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
131 Methyl acrylate	1		0.000					ND	
132 cis-1,4-Dichloro-2-butene	88		0.000					ND	
129 Hexachloroethane	117		0.000					ND	
130 Nitrobenzene	77		0.000					ND	
157 1-Chloro-1-fluoroethane TI	1		0.000					ND	
S 123 1,2-Dichloroethene, Total	1		30.000					ND	
S 124 1,3-Dichloropropene, Total	1		30.000					ND	
S 125 Total BTEX	1		30.000					ND	
S 126 Xylenes, Total	1		30.000					ND	
S 158 Trihalomethanes, Total	1		0.000					ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

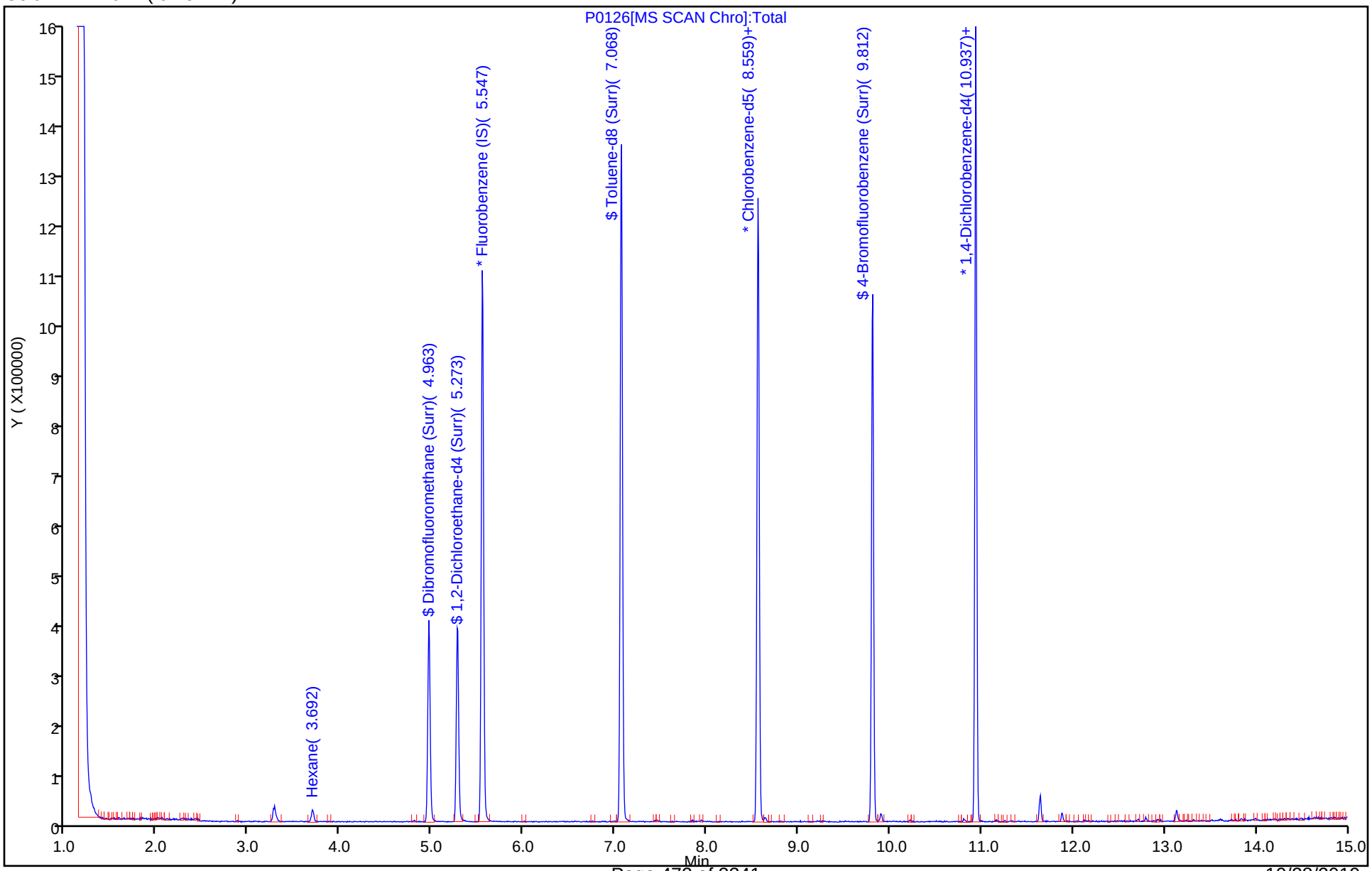
Report Date: 24-Sep-2019 13:29:48 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0126.D

Injection Date:	24-Sep-2019 12:05:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	MB 480-493743/2-A			Worklist Smp#:	7
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493988/3-A

Matrix: Solid Lab File ID: F2447.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/25/2019 11:56

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	ND		5.0	0.36
75-34-3	1,1-Dichloroethane	ND		5.0	0.61
75-35-4	1,1-Dichloroethene	ND		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	ND		5.0	0.96
95-50-1	1,2-Dichlorobenzene	ND		5.0	0.39
107-06-2	1,2-Dichloroethane	ND		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	ND		5.0	0.32
541-73-1	1,3-Dichlorobenzene	ND		5.0	0.26
106-46-7	1,4-Dichlorobenzene	ND		5.0	0.70
123-91-1	1,4-Dioxane	ND		100	22
78-93-3	2-Butanone (MEK)	ND		25	1.8
67-64-1	Acetone	ND		25	4.2
71-43-2	Benzene	ND		5.0	0.25
56-23-5	Carbon tetrachloride	ND		5.0	0.48
108-90-7	Chlorobenzene	ND		5.0	0.66
67-66-3	Chloroform	ND		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	ND		5.0	0.64
100-41-4	Ethylbenzene	ND		5.0	0.35
1634-04-4	Methyl tert-butyl ether	ND		5.0	0.49
75-09-2	Methylene Chloride	ND		5.0	2.3
104-51-8	n-Butylbenzene	ND		5.0	0.44
103-65-1	N-Propylbenzene	ND		5.0	0.40
135-98-8	sec-Butylbenzene	ND		5.0	0.44
127-18-4	Tetrachloroethene	ND		5.0	0.67
108-88-3	Toluene	ND		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	ND		5.0	0.52
79-01-6	Trichloroethene	ND		5.0	1.1
75-01-4	Vinyl chloride	ND		5.0	0.61
1330-20-7	Xylenes, Total	ND		10	0.84
98-06-6	tert-Butylbenzene	ND		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493988/3-A

Matrix: Solid Lab File ID: F2447.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/25/2019 11:56

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		64-126
460-00-4	4-Bromofluorobenzene (Surr)	99		72-126
2037-26-5	Toluene-d8 (Surr)	97		71-125
1868-53-7	Dibromofluoromethane (Surr)	107		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2447.D
Lims ID: MB 480-493988/3-A
Client ID:
Sample Type: MB
Inject. Date: 25-Sep-2019 11:56:30 ALS Bottle#: 6 Worklist Smp#: 8
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: MB
Misc. Info.: 480-0084450-008
Operator ID: CDC Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 12:34:03 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 12:34:03

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	193091	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	86	414883	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.864	10.864	0.000	95	393243	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.170	5.164	0.006	93	247197	50.0	53.3	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	98	147581	50.0	51.8	
$ 5 Toluene-d8 (Surr)	98	7.117	7.122	0.000	93	963109	50.0	48.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.776	0.000	91	293034	50.0	49.4	
10 Dichlorodifluoromethane	85		2.128					ND	
11 Chlorodifluoromethane	51		2.134					ND	
12 Chloromethane	50		2.323					ND	
13 Vinyl chloride	62		2.426					ND	
151 Butadiene	54		2.426					ND	
14 Bromomethane	94		2.718					ND	
15 Chloroethane	64		2.791					ND	
16 Dichlorofluoromethane	67		2.950					ND	
17 Trichlorofluoromethane	101		2.998					ND	
148 Ethanol	45		3.120					ND	
18 Ethyl ether	59		3.187					ND	
19 Propene oxide	58		3.272					ND	
20 Acrolein	56		3.333					ND	
21 1,1,2-Trichloro-1,2,2-trif	101		3.388					ND	
22 1,1-Dichloroethene	96		3.418					ND	
23 Acetone	43		3.448					ND	
24 Isopropyl alcohol	45	3.534	3.509	0.025	95	8267		18.8	
25 Iodomethane	142		3.576					ND	
26 Carbon disulfide	76		3.643					ND	
27 Methyl acetate	43		3.680					ND	
29 Acetonitrile	40		3.686					ND	
28 3-Chloro-1-propene	41		3.692					ND	
30 Methylene Chloride	84		3.801					ND	
31 2-Methyl-2-propanol	59		3.832					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
32 Methyl tert-butyl ether	73		3.966					ND	
33 Acrylonitrile	53		3.990					ND	
34 trans-1,2-Dichloroethene	96		4.002					ND	
35 Hexane	57	4.160	4.160	0.000	91	10965		1.06	
134 Halothane	117		4.270					ND	
36 Isopropyl ether	45		4.300					ND	
37 Vinyl acetate	43		4.318					ND	
39 1,1-Dichloroethane	63		4.337					ND	
38 1,1-Dimethoxyethane	75		4.361					ND	
40 2-Chloro-1,3-butadiene	53		4.391					ND	
41 Tert-butyl ethyl ether	59		4.586					ND	
43 2-Butanone (MEK)	43		4.769					ND	
42 Ethyl acetate	43		4.769					ND	
45 cis-1,2-Dichloroethene	96		4.793					ND	
44 2,2-Dichloropropane	77		4.793					ND	
46 Propionitrile	54		4.848					ND	
47 Methacrylonitrile	41		4.957					ND	
48 Chlorobromomethane	128		5.000					ND	
49 Tetrahydrofuran	42		5.018					ND	
50 Chloroform	83	5.036	5.030	0.006	79	2523		0.2496	
51 1,1,1-Trichloroethane	97		5.201					ND	
52 Cyclohexane	56		5.243					ND	
54 1,1-Dichloropropene	75		5.322					ND	
53 Isobutyl alcohol	43		5.334					ND	
55 Carbon tetrachloride	117		5.340					ND	
147 t-Amyl alcohol	59		5.414					ND	
152 Isooctane	57		5.493					ND	
57 Benzene	78		5.511					ND	
56 Tert-amyl methyl ether	73		5.523					ND	
58 1,2-Dichloroethane	62		5.529					ND	
59 n-Heptane	43		5.614					ND	
1 1,4-Difluorobenzene	114		5.779					ND	
60 n-Butanol	56		5.876					ND	
136 2,4,4-Trimethyl-1-pentene	57		5.931					ND	
62 Trichloroethene	95		6.034					ND	
137 Ethyl acrylate	55		6.046					ND	
135 2,4,4-Trimethyl-2-pentene	97		6.119					ND	
64 Methylcyclohexane	83		6.192					ND	
65 1,2-Dichloropropane	63		6.247					ND	
63 Methyl methacrylate	41		6.253					ND	
66 1,4-Dioxane	88		6.338					ND	
67 Dibromomethane	93		6.375					ND	
68 Dichlorobromomethane	83		6.484					ND	
70 2-Nitropropane	43		6.685					ND	
69 2-Chloroethyl vinyl ether	63		6.697					ND	
71 Epichlorohydrin	57		6.801					ND	
72 cis-1,3-Dichloropropene	75		6.874					ND	
73 4-Methyl-2-pentanone (MIBK	43		6.965					ND	
74 Toluene	92		7.184					ND	
76 2-Methylthiophene	97		7.318					ND	
77 trans-1,3-Dichloropropene	75		7.385					ND	
75 Ethyl methacrylate	69		7.391					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
78 3-Methylthiophene	97		7.470					ND	
79 1,1,2-Trichloroethane	83		7.579					ND	
81 Tetrachloroethene	166		7.719					ND	
82 1,3-Dichloropropane	76		7.756					ND	
80 2-Hexanone	43		7.762					ND	
155 n-Butyl acetate	43		7.841					ND	
83 Chlorodibromomethane	129		7.999					ND	
84 Ethylene Dibromide	107		8.133					ND	
85 3-Chlorobenzotrifluoride	180		8.492					ND	
146 1-Chlorohexane	55		8.498					ND	
86 4-Chlorobenzotrifluoride	180		8.547					ND	
87 Chlorobenzene	112		8.601					ND	
88 Ethylbenzene	91		8.668					ND	
89 1,1,1,2-Tetrachloroethane	131		8.674					ND	
90 m-Xylene & p-Xylene	106		8.784					ND	
91 o-Xylene	106		9.216					ND	
92 Styrene	104		9.234					ND	
93 2-Chlorobenzotrifluoride	180		9.471					ND	
95 Bromoform	173		9.489					ND	
94 Isopropylbenzene	105		9.575					ND	
96 Cyclohexanone	55		9.739					ND	
97 1,1,2,2-Tetrachloroethane	83		9.903					ND	
101 Bromobenzene	156		9.940					ND	
98 trans-1,4-Dichloro-2-buten	53		9.952					ND	
100 1,2,3-Trichloropropane	110		9.964					ND	
99 N-Propylbenzene	91		9.982					ND	
103 2-Chlorotoluene	126		10.104					ND	
102 1,3,5-Trimethylbenzene	105		10.140					ND	
104 3-Chlorotoluene	126		10.159					ND	
105 4-Chlorotoluene	126		10.201					ND	
106 tert-Butylbenzene	134		10.457					ND	
107 1,2,4-Trimethylbenzene	105		10.505					ND	
108 Pentachloroethane	167		10.518					ND	
109 sec-Butylbenzene	105		10.658					ND	
110 4-Isopropyltoluene	119		10.779					ND	
111 1,3-Dichlorobenzene	146		10.804					ND	
113 1,4-Dichlorobenzene	146		10.883					ND	
114 Dicyclopentadiene	66		10.889					ND	U
112 1,2,3-Trimethylbenzene	105		10.901					ND	
150 Benzyl chloride	126		11.004					ND	
115 n-Butylbenzene	91		11.144					ND	
116 1,2-Dichlorobenzene	146		11.223					ND	
117 1,2-Dibromo-3-Chloropropan	75		11.886					ND	
118 1,3,5-Trichlorobenzene	180		12.026					ND	
119 1,2,4-Trichlorobenzene	180		12.562					ND	
120 Hexachlorobutadiene	225		12.671					ND	
121 Naphthalene	128		12.805					ND	
122 1,2,3-Trichlorobenzene	180		13.030					ND	
149 2-Methylnaphthalene	142	13.930	13.930	-0.001	87	2199		0.1980	
145 Ethylene oxide TIC	1		0.000					ND	
143 Propene oxide TIC	1		0.000					ND	
156 1-Chloro-1-fluoroethane TI	1		0.000					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
144 1-Bromopropane TIC	1		0.000					ND	
S 125 1,2-Dichloroethene, Total	1		30.000					ND	
S 126 1,3-Dichloropropene, Total	1		30.000					ND	
S 123 Total BTEX	1		30.000					ND	
S 124 Xylenes, Total	1		30.000					ND	
S 157 Trihalomethanes, Total	1		0.000					ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

F 8260 IS/SS_00095 Amount Added: 1.00 Units: uL Run Reagent

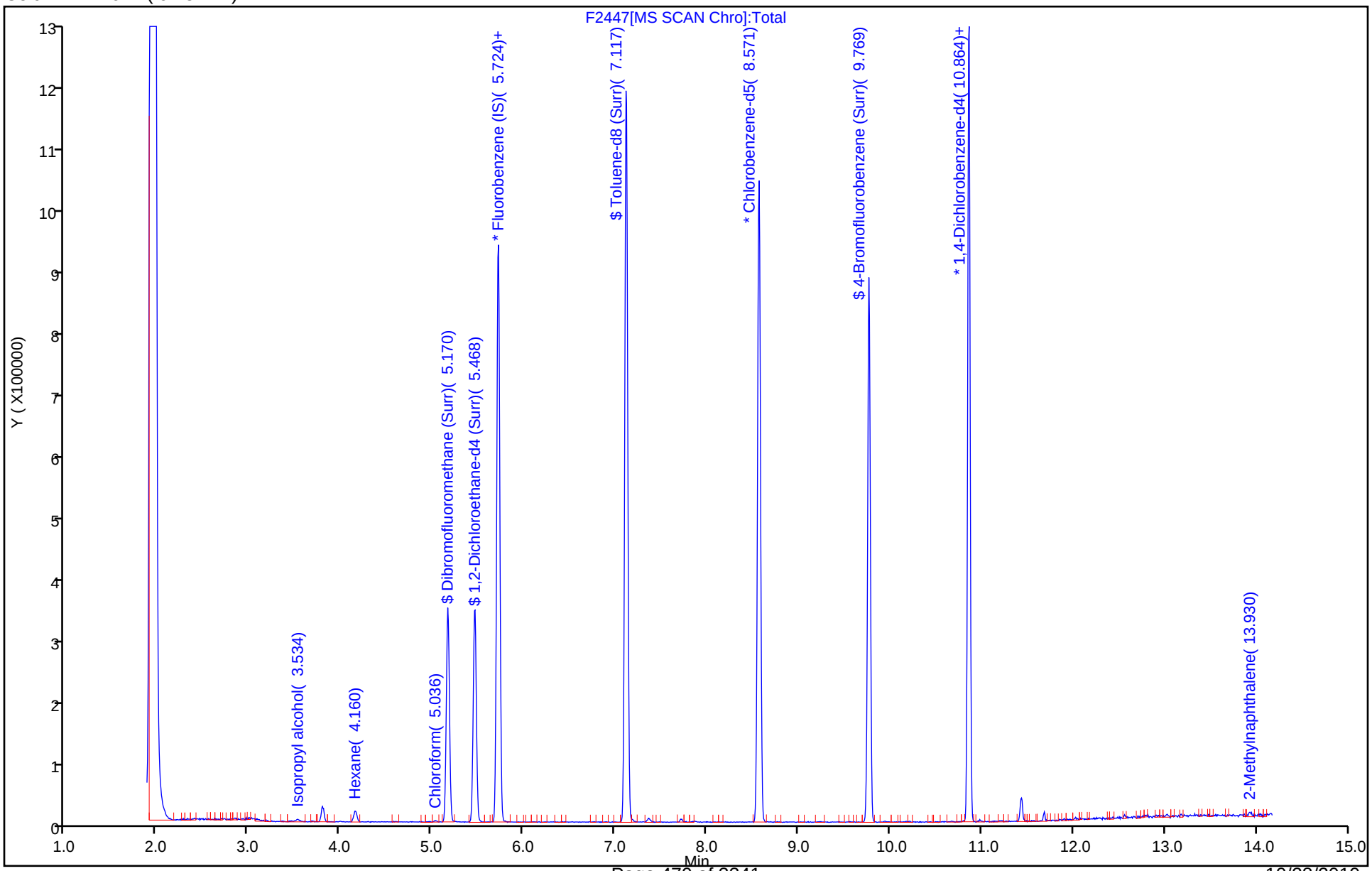
Report Date: 25-Sep-2019 12:34:05 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2447.D

Injection Date:	25-Sep-2019 11:56:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	MB 480-493988/3-A			Worklist Smp#:	8
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493565/1-A

Matrix: Solid Lab File ID: P0096.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 14:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	60.8		5.0	0.36
75-34-3	1,1-Dichloroethane	55.4		5.0	0.61
75-35-4	1,1-Dichloroethene	61.4		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	54.9		5.0	0.96
95-50-1	1,2-Dichlorobenzene	49.6		5.0	0.39
107-06-2	1,2-Dichloroethane	51.0		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	56.2		5.0	0.32
541-73-1	1,3-Dichlorobenzene	53.0		5.0	0.26
106-46-7	1,4-Dichlorobenzene	53.0		5.0	0.70
123-91-1	1,4-Dioxane	1090		100	22
78-93-3	2-Butanone (MEK)	255		25	1.8
67-64-1	Acetone	258		25	4.2
71-43-2	Benzene	55.7		5.0	0.25
56-23-5	Carbon tetrachloride	62.7		5.0	0.48
108-90-7	Chlorobenzene	50.9		5.0	0.66
67-66-3	Chloroform	54.4		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	54.8		5.0	0.64
100-41-4	Ethylbenzene	54.7		5.0	0.35
1634-04-4	Methyl tert-butyl ether	52.8		5.0	0.49
75-09-2	Methylene Chloride	51.9		5.0	2.3
104-51-8	n-Butylbenzene	58.3		5.0	0.44
103-65-1	N-Propylbenzene	57.9		5.0	0.40
135-98-8	sec-Butylbenzene	57.1		5.0	0.44
127-18-4	Tetrachloroethene	58.5		5.0	0.67
108-88-3	Toluene	53.2		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	56.7		5.0	0.52
79-01-6	Trichloroethene	57.2		5.0	1.1
75-01-4	Vinyl chloride	57.8		5.0	0.61
1330-20-7	Xylenes, Total	110		10	0.84
98-06-6	tert-Butylbenzene	56.1		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493565/1-A

Matrix: Solid Lab File ID: P0096.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/23/2019 14:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493547 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		64-126
460-00-4	4-Bromofluorobenzene (Surr)	103		72-126
2037-26-5	Toluene-d8 (Surr)	97		71-125
1868-53-7	Dibromofluoromethane (Surr)	101		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0096.D
Lims ID: LCS 480-493565/1-A
Client ID:
Sample Type: LCS
Inject. Date: 23-Sep-2019 14:48:30 ALS Bottle#: 3 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: LCS
Misc. Info.: 480-0084382-005
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 23-Sep-2019 15:08:20 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0334

First Level Reviewer: cwiklinc Date: 23-Sep-2019 15:08:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	194467	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	87	410323	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	414461	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	251000	50.0	50.4	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.274	5.273	0.001	49	129461	50.0	48.5	
$ 5 Toluene-d8 (Surr)	98	7.068	7.068	0.000	94	983011	50.0	48.6	
$ 6 4-Bromofluorobenzene (Surr	174	9.812	9.812	0.000	93	328400	50.0	51.5	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	245192	50.0	57.6	
11 Chloromethane	50	1.496	1.502	-0.006	99	330859	50.0	54.3	
17 Vinyl chloride	62	1.593	1.599	-0.006	97	283251	50.0	57.8	
149 Butadiene	54	1.599	1.599	0.000	94	312273	50.0	60.4	
12 Bromomethane	94	1.897	1.897	0.000	91	219296	50.0	52.9	
13 Chloroethane	64	1.988	1.988	0.000	97	174511	50.0	54.9	
19 Dichlorofluoromethane	67	2.232	2.238	-0.006	97	429393	50.0	57.3	
14 Trichlorofluoromethane	101	2.238	2.244	-0.006	95	421047	50.0	62.1	
28 3-Chloro-1-propene	41	2.256	2.256	0.000	90	99158	50.0	57.2	
20 Ethyl ether	59	2.512	2.518	-0.006	96	225816	50.0	47.6	
22 Acrolein	56	2.700	2.706	-0.006	99	195974	250.0	263.8	
16 1,1,2-Trichloro-1,2,2-trif	101	2.731	2.730	0.001	93	257048	50.0	65.5	
25 1,1-Dichloroethene	96	2.743	2.749	-0.006	95	227725	50.0	61.4	
24 Acetone	43	2.864	2.864	0.000	98	459513	250.0	257.7	
18 Iodomethane	142	2.919	2.925	-0.006	100	445199	50.0	56.8	
27 Carbon disulfide	76	2.974	2.974	0.000	99	764732	50.0	60.2	
30 Methyl acetate	43	3.169	3.168	0.001	99	379101	100.0	96.9	
31 Methylene Chloride	84	3.272	3.272	0.000	98	274566	50.0	51.9	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	98	262702	500.0	502.1	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	98	736088	50.0	52.8	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	95	270950	50.0	56.7	
34 Acrylonitrile	53	3.558	3.564	-0.006	99	976654	500.0	486.2	
36 Hexane	57	3.692	3.692	0.000	96	461668	50.0	63.5	
40 1,1-Dichloroethane	63	3.923	3.923	0.000	97	491998	50.0	55.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
38 Vinyl acetate	43	3.978	3.978	0.000	97	1095441	100.0	110.5	
45 2,2-Dichloropropane	77	4.446	4.452	-0.006	88	252912	50.0	64.0	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	81	291197	50.0	54.8	
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	667175	250.0	255.0	
50 Chlorobromomethane	128	4.726	4.726	0.000	96	144690	50.0	51.7	
51 Tetrahydrofuran	42	4.744	4.744	0.000	91	168865	100.0	100.0	
49 Chloroform	83	4.805	4.805	0.000	96	473290	50.0	54.4	
52 1,1,1-Trichloroethane	97	4.915	4.914	0.001	97	402464	50.0	60.8	
54 Cyclohexane	56	4.921	4.921	0.000	96	529795	50.0	65.2	
55 Carbon tetrachloride	117	5.055	5.054	0.001	96	351979	50.0	62.7	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	91	364039	50.0	61.3	
57 Benzene	78	5.274	5.273	0.001	97	1057325	50.0	55.7	
53 Isobutyl alcohol	43	5.298	5.298	0.000	93	274797	1250.0	1190.6	
60 1,2-Dichloroethane	62	5.347	5.346	0.001	96	360739	50.0	51.0	
59 n-Heptane	43	5.450	5.450	0.000	97	534769	50.0	65.4	
62 Trichloroethene	95	5.888	5.888	0.000	95	274355	50.0	57.2	
64 Methylcyclohexane	83	6.004	6.003	0.001	95	490578	50.0	66.2	
63 1,2-Dichloropropane	63	6.131	6.131	0.000	91	273701	50.0	52.7	
69 Dibromomethane	93	6.271	6.277	-0.006	94	150209	50.0	51.3	
68 1,4-Dioxane	88	6.277	6.277	0.000	42	50951	1000.0	1085.6	M
70 Dichlorobromomethane	83	6.429	6.429	0.000	97	343726	50.0	50.9	
71 2-Chloroethyl vinyl ether	63	6.703	6.709	-0.006	93	156357	50.0	52.2	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	410798	50.0	53.3	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	1416908	250.0	251.6	
76 Toluene	92	7.129	7.129	0.000	97	651019	50.0	53.2	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	96	359848	50.0	52.8	
77 Ethyl methacrylate	69	7.458	7.458	0.001	96	269520	50.0	51.9	
79 1,1,2-Trichloroethane	83	7.610	7.610	0.001	92	175885	50.0	49.8	
80 Tetrachloroethene	166	7.664	7.664	0.000	97	307344	50.0	58.5	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	358950	50.0	50.0	
83 2-Hexanone	43	7.835	7.835	0.000	99	966181	250.0	256.9	
81 Chlorodibromomethane	129	8.005	8.011	-0.006	90	259696	50.0	49.2	
85 Ethylene Dibromide	107	8.115	8.115	0.001	97	223032	50.0	49.3	
87 Chlorobenzene	112	8.589	8.589	0.000	95	757398	50.0	50.9	
89 Ethylbenzene	91	8.674	8.674	0.000	99	1247713	50.0	54.7	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	94	259593	50.0	51.6	
90 m-Xylene & p-Xylene	106	8.796	8.802	-0.006	100	501737	50.0	55.5	
93 o-Xylene	106	9.228	9.228	0.000	98	484151	50.0	54.3	
94 Styrene	104	9.258	9.258	0.000	96	798567	50.0	52.4	
92 Bromoform	173	9.514	9.514	0.000	95	158783	50.0	51.9	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	1261323	50.0	56.4	
100 Bromobenzene	156	9.958	9.958	0.000	94	310656	50.0	48.5	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	0.001	93	272956	50.0	48.1	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	1515618	50.0	57.9	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	83659	50.0	50.1	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	88	104892	50.0	55.3	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	309877	50.0	55.0	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	1053049	50.0	56.2	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	314864	50.0	52.5	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	242809	50.0	56.1	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	97	1060466	50.0	54.9	
109 sec-Butylbenzene	105	10.731	10.731	0.001	95	1402926	50.0	57.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	70	641724	50.0	53.0	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	1273166	50.0	57.1	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	97	640586	50.0	53.0	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	1113149	50.0	58.3	
116 1,2-Dichlorobenzene	146	11.308	11.315	-0.006	97	613727	50.0	49.6	
117 1,2-Dibromo-3-Chloropropan	75	12.045	12.045	0.001	82	45327	50.0	50.2	
119 1,2,4-Trichlorobenzene	180	12.714	12.714	0.000	94	432166	50.0	56.0	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	97	237238	50.0	64.8	
121 Naphthalene	128	12.927	12.927	0.000	97	974969	50.0	52.9	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	96	400236	50.0	56.0	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

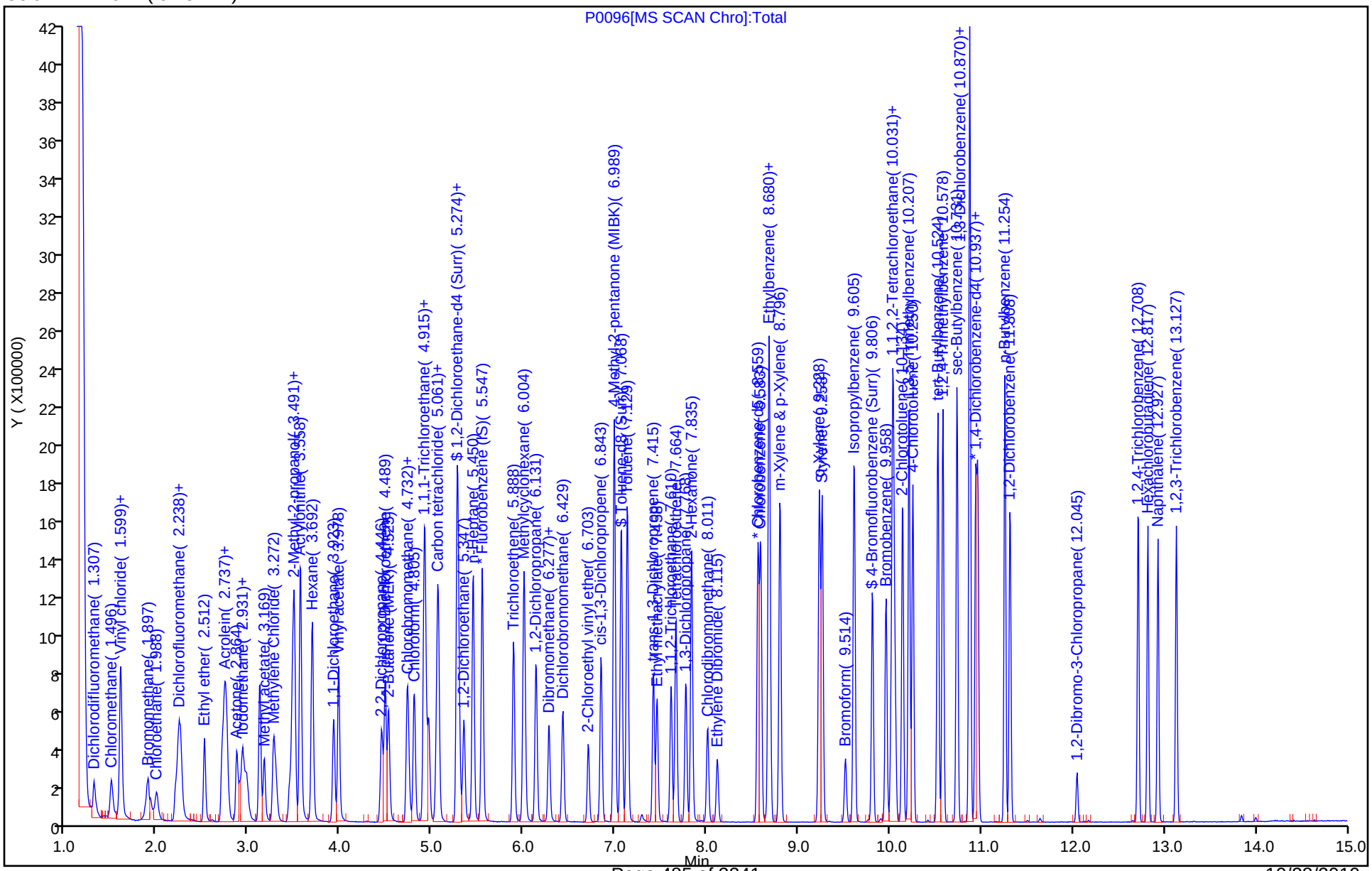
Report Date: 23-Sep-2019 15:08:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0096.D

Injection Date:	23-Sep-2019 14:48:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	LCS 480-493565/1-A			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

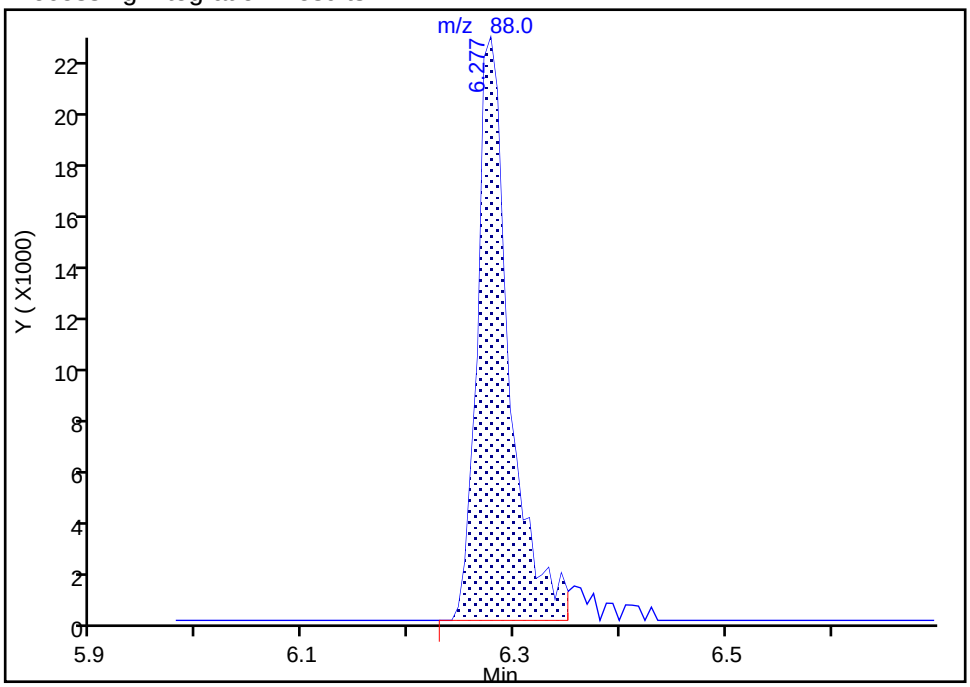
Data File: \\chromna\Buffalo\ChromData\HP5973P\20190923-84382.b\P0096.D
Injection Date: 23-Sep-2019 14:48:30 Instrument ID: HP5973P
Lims ID: LCS 480-493565/1-A
Client ID:
Operator ID: CDC ALS Bottle#: 3 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: P-8260SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

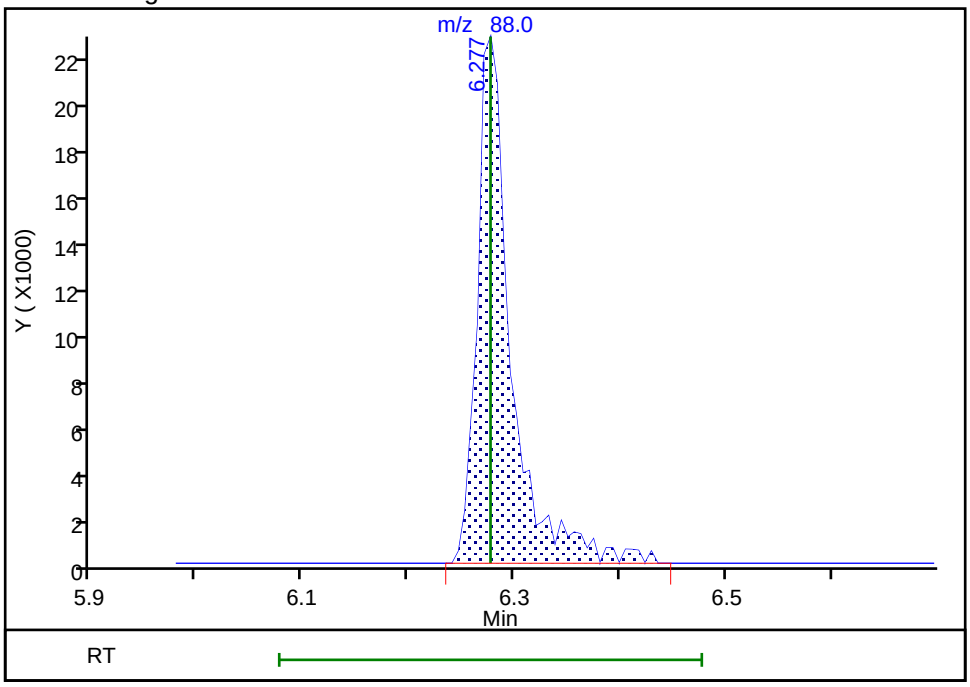
Processing Integration Results

RT: 6.28
Area: 48040
Amount: 1023.6209
Amount Units: ug/L



Manual Integration Results

RT: 6.28
Area: 50951
Amount: 1085.6475
Amount Units: ug/L



Reviewer: cwiklinc, 23-Sep-2019 15:08:02
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493743/1-A

Matrix: Solid Lab File ID: P0124.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 11:16

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	60.2		5.0	0.36
75-34-3	1,1-Dichloroethane	55.5		5.0	0.61
75-35-4	1,1-Dichloroethene	59.3		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	55.3		5.0	0.96
95-50-1	1,2-Dichlorobenzene	50.1		5.0	0.39
107-06-2	1,2-Dichloroethane	51.7		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	56.4		5.0	0.32
541-73-1	1,3-Dichlorobenzene	52.9		5.0	0.26
106-46-7	1,4-Dichlorobenzene	53.1		5.0	0.70
123-91-1	1,4-Dioxane	960		100	22
78-93-3	2-Butanone (MEK)	241		25	1.8
67-64-1	Acetone	249		25	4.2
71-43-2	Benzene	55.1		5.0	0.25
56-23-5	Carbon tetrachloride	62.1		5.0	0.48
108-90-7	Chlorobenzene	50.5		5.0	0.66
67-66-3	Chloroform	53.8		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	54.1		5.0	0.64
100-41-4	Ethylbenzene	54.4		5.0	0.35
1634-04-4	Methyl tert-butyl ether	51.3		5.0	0.49
75-09-2	Methylene Chloride	52.6		5.0	2.3
104-51-8	n-Butylbenzene	58.5		5.0	0.44
103-65-1	N-Propylbenzene	56.1		5.0	0.40
135-98-8	sec-Butylbenzene	57.2		5.0	0.44
127-18-4	Tetrachloroethene	60.7		5.0	0.67
108-88-3	Toluene	53.7		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	56.1		5.0	0.52
79-01-6	Trichloroethene	55.4		5.0	1.1
75-01-4	Vinyl chloride	57.6		5.0	0.61
1330-20-7	Xylenes, Total	109		10	0.84
98-06-6	tert-Butylbenzene	56.9		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493743/1-A

Matrix: Solid Lab File ID: P0124.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/24/2019 11:16

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493693 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102		64-126
460-00-4	4-Bromofluorobenzene (Surr)	105		72-126
2037-26-5	Toluene-d8 (Surr)	102		71-125
1868-53-7	Dibromofluoromethane (Surr)	102		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0124.D
Lims ID: LCS 480-493743/1-A
Client ID:
Sample Type: LCS
Inject. Date: 24-Sep-2019 11:16:30 ALS Bottle#: 3 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: LCS
Misc. Info.: 480-0084410-005
Operator ID: CDC Instrument ID: HP5973P

Method: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P-8260SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 24-Sep-2019 13:26:39 Calib Date: 21-Sep-2019 00:46:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973P\20190920-84332.b\P0080.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0332

First Level Reviewer: cwiklinc Date: 24-Sep-2019 13:26:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
* 151 Fluorobenzene (IS)	70	5.547	5.547	0.000	99	172309	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.559	8.559	0.000	86	360756	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.937	10.937	0.000	95	367499	50.0	50.0	
$ 152 Dibromofluoromethane (Surr	113	4.963	4.963	0.000	93	224585	50.0	50.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.279	5.274	0.005	50	120316	50.0	50.9	
$ 5 Toluene-d8 (Surr)	98	7.068	7.062	0.006	95	904170	50.0	50.9	
$ 6 4-Bromofluorobenzene (Surr	174	9.806	9.812	-0.006	91	293769	50.0	52.4	
10 Dichlorodifluoromethane	85	1.307	1.307	0.000	99	202321	50.0	53.7	
11 Chloromethane	50	1.496	1.490	0.006	99	281179	50.0	52.1	
17 Vinyl chloride	62	1.593	1.587	0.006	70	249773	50.0	57.6	
149 Butadiene	54	1.599	1.593	0.006	95	265748	50.0	58.0	
12 Bromomethane	94	1.897	1.885	0.012	93	195098	50.0	53.2	
13 Chloroethane	64	1.988	1.976	0.012	97	164866	50.0	58.5	
19 Dichlorofluoromethane	67	2.232	2.226	0.006	95	394761	50.0	59.5	
14 Trichlorofluoromethane	101	2.238	2.238	0.000	78	373092	50.0	62.1	
28 3-Chloro-1-propene	41	2.262	2.256	0.006	88	77347	50.0	50.1	
20 Ethyl ether	59	2.518	2.512	0.006	97	201492	50.0	47.9	
22 Acrolein	56	2.706	2.700	0.006	99	176959	250.0	268.8	
16 1,1,2-Trichloro-1,2,2-trif	101	2.724	2.718	0.006	93	220960	50.0	63.5	
25 1,1-Dichloroethene	96	2.749	2.749	0.000	97	195066	50.0	59.3	
24 Acetone	43	2.870	2.864	0.006	98	392618	250.0	248.5	
18 Iodomethane	142	2.907	2.913	-0.006	99	386779	50.0	55.7	
27 Carbon disulfide	76	2.962	2.950	0.012	100	666032	50.0	59.2	
30 Methyl acetate	43	3.168	3.163	0.005	100	327784	100.0	94.5	
31 Methylene Chloride	84	3.272	3.266	0.006	98	246410	50.0	52.6	
33 2-Methyl-2-propanol	59	3.442	3.442	0.000	94	193304	500.0	421.5	
32 Methyl tert-butyl ether	73	3.479	3.479	0.000	99	632872	50.0	51.3	
35 trans-1,2-Dichloroethene	96	3.497	3.497	0.000	95	237431	50.0	56.1	
34 Acrylonitrile	53	3.564	3.558	0.006	98	831449	500.0	467.1	
36 Hexane	57	3.692	3.692	0.000	96	402713	50.0	62.5	
40 1,1-Dichloroethane	63	3.929	3.923	0.006	97	436428	50.0	55.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
38 Vinyl acetate	43	3.978	3.978	0.000	97	939335	100.0	106.9	
45 2,2-Dichloropropane	77	4.452	4.446	0.006	87	224749	50.0	64.2	
43 cis-1,2-Dichloroethene	96	4.489	4.489	0.000	82	254561	50.0	54.1	
44 2-Butanone (MEK)	43	4.525	4.525	0.000	98	559472	250.0	241.4	
50 Chlorobromomethane	128	4.726	4.726	0.000	95	130200	50.0	52.5	
51 Tetrahydrofuran	42	4.744	4.738	0.006	90	149334	100.0	99.8	
49 Chloroform	83	4.805	4.805	0.000	96	414693	50.0	53.8	
52 1,1,1-Trichloroethane	97	4.921	4.915	0.006	97	353424	50.0	60.2	
54 Cyclohexane	56	4.921	4.921	0.000	95	453286	50.0	63.0	
55 Carbon tetrachloride	117	5.054	5.048	0.006	95	309152	50.0	62.1	
56 1,1-Dichloropropene	75	5.067	5.067	0.000	90	320921	50.0	61.0	
57 Benzene	78	5.273	5.274	-0.001	97	926855	50.0	55.1	
53 Isobutyl alcohol	43	5.298	5.292	0.006	91	215290	1250.0	1062.5	
60 1,2-Dichloroethane	62	5.346	5.347	-0.001	96	323793	50.0	51.7	
59 n-Heptane	43	5.450	5.450	0.000	96	460666	50.0	63.6	
62 Trichloroethene	95	5.888	5.888	0.000	94	235237	50.0	55.4	
64 Methylcyclohexane	83	6.003	6.004	-0.001	96	419272	50.0	63.9	
63 1,2-Dichloropropane	63	6.137	6.131	0.006	89	243874	50.0	53.0	
69 Dibromomethane	93	6.277	6.271	0.006	92	131628	50.0	50.7	
68 1,4-Dioxane	88	6.277	6.277	0.000	40	39629	1000.0	960.4	
70 Dichlorobromomethane	83	6.429	6.423	0.006	97	306956	50.0	51.3	
71 2-Chloroethyl vinyl ether	63	6.703	6.709	-0.006	93	130256	50.0	49.1	
73 cis-1,3-Dichloropropene	75	6.843	6.843	0.000	90	359792	50.0	52.7	
75 4-Methyl-2-pentanone (MIBK	43	6.989	6.989	0.000	99	1197838	250.0	242.0	
76 Toluene	92	7.129	7.129	0.000	97	578143	50.0	53.7	
78 trans-1,3-Dichloropropene	75	7.415	7.415	0.000	97	308704	50.0	51.5	
77 Ethyl methacrylate	69	7.457	7.458	-0.001	95	226964	50.0	49.7	
79 1,1,2-Trichloroethane	83	7.609	7.610	-0.001	93	154986	50.0	49.9	
80 Tetrachloroethene	166	7.664	7.664	0.000	96	280218	50.0	60.7	
82 1,3-Dichloropropane	76	7.774	7.774	0.000	97	316369	50.0	50.1	
83 2-Hexanone	43	7.835	7.835	0.000	99	797671	250.0	241.3	
81 Chlorodibromomethane	129	8.011	8.011	0.000	90	227744	50.0	49.0	
85 Ethylene Dibromide	107	8.114	8.115	-0.001	97	192980	50.0	48.5	
87 Chlorobenzene	112	8.589	8.589	0.000	94	661345	50.0	50.5	
89 Ethylbenzene	91	8.680	8.674	0.006	99	1091466	50.0	54.4	
88 1,1,1,2-Tetrachloroethane	131	8.686	8.686	0.000	93	232658	50.0	52.6	
90 m-Xylene & p-Xylene	106	8.802	8.796	0.006	100	430987	50.0	54.3	
93 o-Xylene	106	9.228	9.228	0.000	97	424764	50.0	54.2	
94 Styrene	104	9.258	9.258	0.000	96	703384	50.0	52.5	
92 Bromoform	173	9.514	9.514	0.000	93	133112	50.0	49.5	
95 Isopropylbenzene	105	9.611	9.611	0.000	96	1104374	50.0	55.7	
100 Bromobenzene	156	9.958	9.958	0.000	92	283796	50.0	50.0	
97 1,1,2,2-Tetrachloroethane	83	10.013	10.013	-0.001	95	235544	50.0	46.8	
99 N-Propylbenzene	91	10.031	10.031	0.000	99	1302179	50.0	56.1	
101 1,2,3-Trichloropropane	110	10.049	10.049	0.000	90	73741	50.0	49.8	
98 trans-1,4-Dichloro-2-buten	53	10.061	10.061	0.000	81	85552	50.0	50.9	
103 2-Chlorotoluene	126	10.140	10.140	0.000	96	272103	50.0	54.5	
102 1,3,5-Trimethylbenzene	105	10.207	10.207	0.000	95	937328	50.0	56.4	
105 4-Chlorotoluene	126	10.250	10.250	0.000	98	280022	50.0	52.7	
106 tert-Butylbenzene	134	10.524	10.524	0.000	94	218354	50.0	56.9	
107 1,2,4-Trimethylbenzene	105	10.578	10.578	0.000	98	946716	50.0	55.3	
109 sec-Butylbenzene	105	10.730	10.730	0.000	94	1248108	50.0	57.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/L	OnCol Amt ug/L	Flags
110 1,3-Dichlorobenzene	146	10.870	10.870	0.000	70	568223	50.0	52.9	
112 4-Isopropyltoluene	119	10.870	10.870	0.000	97	1121180	50.0	56.7	
111 1,4-Dichlorobenzene	146	10.962	10.962	0.000	95	569558	50.0	53.1	
115 n-Butylbenzene	91	11.254	11.254	0.000	98	991359	50.0	58.5	
116 1,2-Dichlorobenzene	146	11.308	11.308	0.000	97	549631	50.0	50.1	
117 1,2-Dibromo-3-Chloropropan	75	12.044	12.038	0.006	82	38835	50.0	48.5	
119 1,2,4-Trichlorobenzene	180	12.714	12.714	0.000	95	386003	50.0	56.4	
120 Hexachlorobutadiene	225	12.817	12.817	0.000	96	210163	50.0	64.8	
121 Naphthalene	128	12.927	12.927	0.000	97	840413	50.0	51.4	
122 1,2,3-Trichlorobenzene	180	13.127	13.127	0.000	95	352619	50.0	55.7	

Reagents:

P 8260 IS_00399	Amount Added:	1.00	Units: uL	Run Reagent
P 8260 Surr._00360	Amount Added:	1.00	Units: uL	Run Reagent

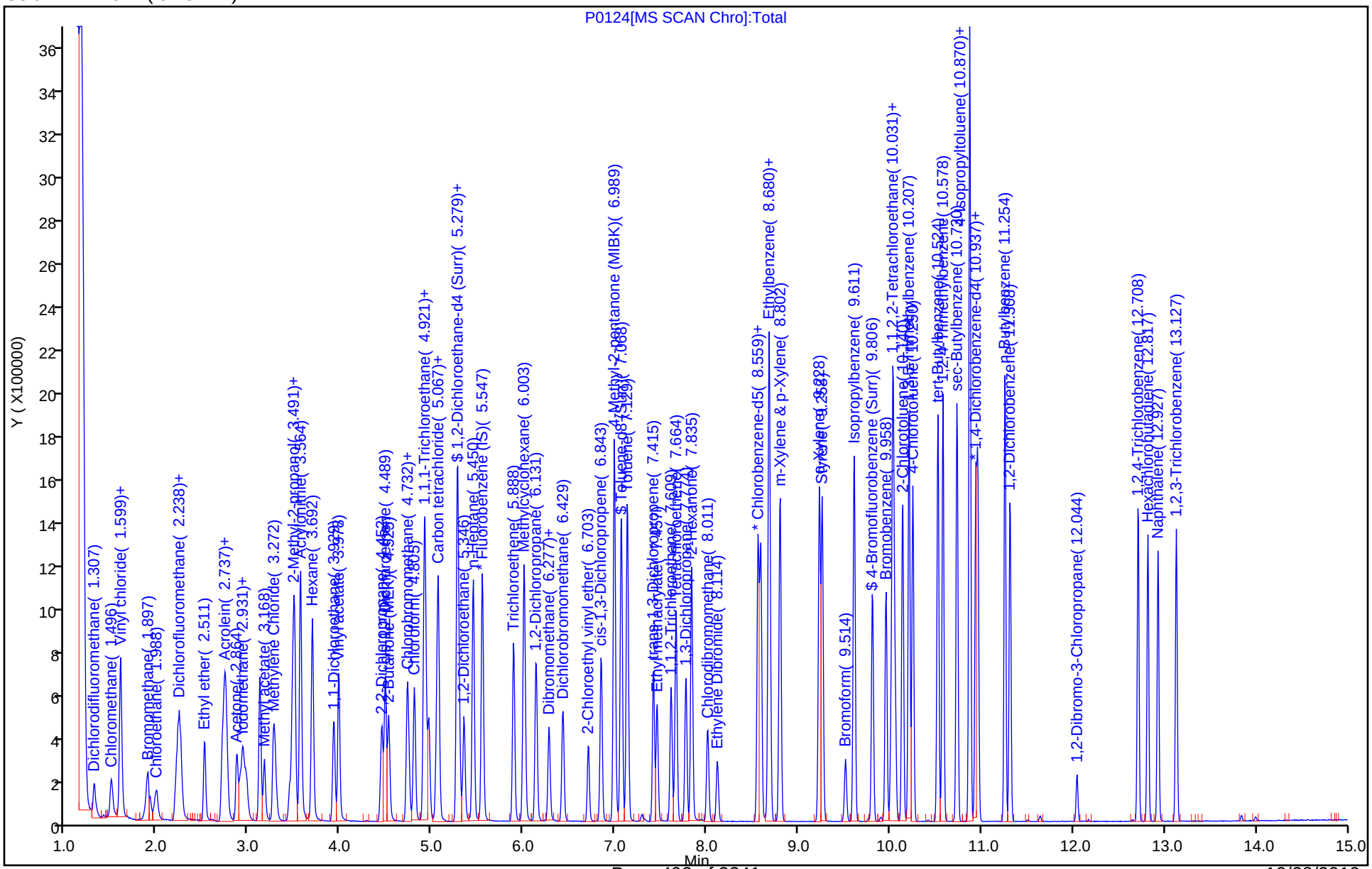
Report Date: 24-Sep-2019 13:26:41 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973P\20190924-84410.b\P0124.D

Injection Date:	24-Sep-2019 11:16:30	Instrument ID:	HP5973P	Operator ID:	CDC
Lims ID:	LCS 480-493743/1-A			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	P-8260SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493988/1-A

Matrix: Solid Lab File ID: F2444.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/25/2019 10:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	57.7		5.0	0.36
75-34-3	1,1-Dichloroethane	53.9		5.0	0.61
75-35-4	1,1-Dichloroethene	53.1		5.0	0.61
95-63-6	1,2,4-Trimethylbenzene	51.7		5.0	0.96
95-50-1	1,2-Dichlorobenzene	49.8		5.0	0.39
107-06-2	1,2-Dichloroethane	52.5		5.0	0.25
108-67-8	1,3,5-Trimethylbenzene	52.4		5.0	0.32
541-73-1	1,3-Dichlorobenzene	51.9		5.0	0.26
106-46-7	1,4-Dichlorobenzene	50.2		5.0	0.70
123-91-1	1,4-Dioxane	902		100	22
78-93-3	2-Butanone (MEK)	445		25	1.8
67-64-1	Acetone	253		25	4.2
71-43-2	Benzene	52.4		5.0	0.25
56-23-5	Carbon tetrachloride	63.2		5.0	0.48
108-90-7	Chlorobenzene	51.8		5.0	0.66
67-66-3	Chloroform	54.5		5.0	0.31
156-59-2	cis-1,2-Dichloroethene	53.6		5.0	0.64
100-41-4	Ethylbenzene	52.4		5.0	0.35
1634-04-4	Methyl tert-butyl ether	50.9		5.0	0.49
75-09-2	Methylene Chloride	49.9		5.0	2.3
104-51-8	n-Butylbenzene	54.5		5.0	0.44
103-65-1	N-Propylbenzene	53.0		5.0	0.40
135-98-8	sec-Butylbenzene	53.6		5.0	0.44
127-18-4	Tetrachloroethene	57.0		5.0	0.67
108-88-3	Toluene	51.3		5.0	0.38
156-60-5	trans-1,2-Dichloroethene	55.1		5.0	0.52
79-01-6	Trichloroethene	54.8		5.0	1.1
75-01-4	Vinyl chloride	57.1		5.0	0.61
1330-20-7	Xylenes, Total	105		10	0.84
98-06-6	tert-Butylbenzene	51.6		5.0	0.52

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493988/1-A

Matrix: Solid Lab File ID: F2444.D

Analysis Method: 8260C Date Collected:

Sample wt/vol: 5(g) Date Analyzed: 09/25/2019 10:39

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	113		64-126
460-00-4	4-Bromofluorobenzene (Surr)	98		72-126
2037-26-5	Toluene-d8 (Surr)	97		71-125
1868-53-7	Dibromofluoromethane (Surr)	107		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2444.D
Lims ID: LCS 480-493988/1-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Sep-2019 10:39:30 ALS Bottle#: 3 Worklist Smp#: 5
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: LCS
Misc. Info.: 480-0084450-005
Operator ID: CDC Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 11:41:07 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0335

First Level Reviewer: cwiklinc Date: 25-Sep-2019 11:44:19

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	167185	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.565	8.565	0.000	86	366990	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.865	10.864	0.001	93	345304	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.164	0.000	93	214834	50.0	53.5	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	95	139626	50.0	56.6	
$ 5 Toluene-d8 (Surr)	98	7.117	7.117	0.000	93	852193	50.0	48.4	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.769	0.000	88	257422	50.0	49.1	
10 Dichlorodifluoromethane	85	2.122	2.128	-0.006	70	252440	50.0	41.9	
11 Chlorodifluoromethane	51	2.129	2.134	-0.006	98	385869	50.0	62.8	
12 Chloromethane	50	2.311	2.323	-0.012	99	213834	50.0	48.7	
13 Vinyl chloride	62	2.414	2.426	-0.012	83	206164	50.0	57.1	
151 Butadiene	54	2.414	2.426	-0.012	91	226149	50.0	59.1	
14 Bromomethane	94	2.706	2.718	-0.012	94	116551	50.0	50.4	
15 Chloroethane	64	2.786	2.791	-0.005	99	110013	50.0	53.9	
16 Dichlorofluoromethane	67	2.938	2.950	-0.012	98	337900	50.0	57.6	
17 Trichlorofluoromethane	101	2.980	2.998	-0.018	98	401655	50.0	59.2	
148 Ethanol	45	3.181	3.181	0.061	94	295863	2000.0	4822.8	M
18 Ethyl ether	59	3.181	3.187	-0.006	94	229065	50.0	50.4	
19 Propene oxide	58	3.266	3.272	-0.006	95	305499	NC	NC	
20 Acrolein	56	3.327	3.333	-0.006	99	187562	250.0	328.2	
21 1,1,2-Trichloro-1,2,2-trif	101	3.388	3.388	0.000	93	250463	50.0	55.4	
22 1,1-Dichloroethene	96	3.406	3.418	-0.012	99	235110	50.0	53.1	
23 Acetone	43	3.436	3.448	-0.012	100	443209	250.0	253.4	
24 Isopropyl alcohol	45	3.509	3.509	0.000	97	172037	500.0	452.6	
25 Iodomethane	142	3.564	3.576	-0.012	99	422785	50.0	51.9	
26 Carbon disulfide	76	3.631	3.643	-0.012	99	805302	50.0	50.7	
27 Methyl acetate	43	3.668	3.680	-0.012	99	363362	100.0	93.9	
29 Acetonitrile	40	3.680	3.686	-0.006	82	211415	500.0	544.5	
28 3-Chloro-1-propene	41	3.686	3.692	-0.006	88	757416	50.0	84.3	
30 Methylene Chloride	84	3.795	3.801	-0.006	96	280395	50.0	49.9	
31 2-Methyl-2-propanol	59	3.826	3.832	-0.006	100	267423	500.0	487.8	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
32 Methyl tert-butyl ether	73	3.960	3.966	-0.006	96	652509	50.0	50.9	
33 Acrylonitrile	53	3.978	3.990	-0.012	100	872655	500.0	468.3	
34 trans-1,2-Dichloroethene	96	3.996	4.002	-0.006	99	278650	50.0	55.1	
35 Hexane	57	4.154	4.160	-0.006	94	456218	50.0	50.9	
134 Halothane	117	4.270	4.270	0.000	94	233527	50.0	67.1	
36 Isopropyl ether	45	4.294	4.300	-0.006	86	992568	50.0	56.6	
37 Vinyl acetate	43	4.306	4.318	-0.012	97	1560307	100.0	152.3	
39 1,1-Dichloroethane	63	4.331	4.337	-0.006	96	489776	50.0	53.9	
38 1,1-Dimethoxyethane	75	4.361	4.361	0.000	92	80905	250.0	247.4	a
40 2-Chloro-1,3-butadiene	53	4.392	4.391	0.001	92	522174	50.0	65.4	
41 Tert-butyl ethyl ether	59	4.586	4.586	0.000	98	870809	50.0	55.1	
43 2-Butanone (MEK)	43	4.769	4.769	0.000	95	1096900	250.0	445.0	
42 Ethyl acetate	43	4.769	4.768	0.000	95	1096900	100.0	222.9	a
45 cis-1,2-Dichloroethene	96	4.787	4.793	-0.006	85	295743	50.0	53.6	
44 2,2-Dichloropropane	77	4.787	4.793	-0.006	86	382112	50.0	55.4	
46 Propionitrile	54	4.842	4.848	-0.006	99	366464	500.0	495.4	
47 Methacrylonitrile	41	4.957	4.957	0.000	93	1624451	500.0	542.2	
48 Chlorobromomethane	128	5.000	5.000	0.000	91	135900	50.0	50.6	
49 Tetrahydrofuran	42	5.018	5.018	0.000	89	152171	100.0	93.9	
50 Chloroform	83	5.030	5.030	0.000	94	476898	50.0	54.5	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	422840	50.0	57.7	
52 Cyclohexane	56	5.237	5.243	-0.006	91	480646	50.0	52.1	
54 1,1-Dichloropropene	75	5.316	5.322	-0.006	95	389291	50.0	57.0	
53 Isobutyl alcohol	43	5.328	5.334	-0.006	86	267259	1250.0	1054.9	
55 Carbon tetrachloride	117	5.335	5.340	-0.005	96	378244	50.0	63.2	
147 t-Amyl alcohol	59	5.420	5.413	0.006	90	239803	500.0	566.8	
152 Isooctane	57	5.487	5.492	-0.006	96	1257548	50.0	66.5	
57 Benzene	78	5.505	5.511	-0.006	96	1068131	50.0	52.4	
56 Tert-amyl methyl ether	73	5.523	5.523	0.000	98	742793	50.0	58.8	
58 1,2-Dichloroethane	62	5.523	5.529	-0.006	93	356582	50.0	52.5	
59 n-Heptane	43	5.614	5.614	0.000	93	488618	50.0	54.7	
1 1,4-Difluorobenzene	114	5.779	5.779	0.000	94	934519	50.0	63.6	
60 n-Butanol	56	5.882	5.876	0.006	92	167403	1250.0	1114.8	
136 2,4,4-Trimethyl-1-pentene	57	5.931	5.930	0.000	98	855904	NC	NC	
62 Trichloroethene	95	6.028	6.034	-0.006	98	285983	50.0	54.8	
137 Ethyl acrylate	55	6.046	6.046	0.000	99	311184	50.0	52.8	
135 2,4,4-Trimethyl-2-pentene	97	6.119	6.119	0.000	82	641290	NC	NC	
64 Methylcyclohexane	83	6.192	6.192	0.000	87	493923	50.0	56.4	
65 1,2-Dichloropropane	63	6.247	6.247	0.000	91	260092	50.0	50.6	
63 Methyl methacrylate	41	6.253	6.253	0.000	95	630103	100.0	147.5	
66 1,4-Dioxane	88	6.344	6.338	0.006	93	51545	1000.0	901.7	
67 Dibromomethane	93	6.375	6.374	0.000	96	146741	50.0	53.0	
68 Dichlorobromomethane	83	6.484	6.484	0.000	99	337947	50.0	60.5	
70 2-Nitropropane	43	6.685	6.681	0.000	82	177551	100.0	241.0	
69 2-Chloroethyl vinyl ether	63	6.691	6.697	-0.006	77	91653	50.0	53.6	
71 Epichlorohydrin	57	6.801	6.800	0.000	99	259021	500.0	562.2	
72 cis-1,3-Dichloropropene	75	6.868	6.873	-0.006	95	428257	50.0	58.8	
73 4-Methyl-2-pentanone (MIBK	43	6.965	6.964	0.000	97	1164369	250.0	225.6	
74 Toluene	92	7.178	7.183	-0.006	99	706088	50.0	51.3	
77 trans-1,3-Dichloropropene	75	7.385	7.384	0.000	95	380518	50.0	55.2	
75 Ethyl methacrylate	69	7.391	7.390	0.000	90	294951	50.0	49.6	
79 1,1,2-Trichloroethane	83	7.579	7.579	0.000	93	176212	50.0	49.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
81 Tetrachloroethene	166	7.719	7.719	0.000	98	320018	50.0	57.0	
82 1,3-Dichloropropane	76	7.750	7.755	-0.006	93	366356	50.0	48.7	
80 2-Hexanone	43	7.762	7.761	0.000	97	852011	250.0	235.2	
155 n-Butyl acetate	43	7.847	7.841	0.006	99	413445	50.0	52.9	
83 Chlorodibromomethane	129	7.993	7.999	-0.006	90	246079	50.0	61.5	
84 Ethylene Dibromide	107	8.133	8.132	0.000	99	219442	50.0	50.9	
85 3-Chlorobenzotrifluoride	180	8.492	8.487	0.000	92	465689	50.0	66.2	
146 1-Chlorohexane	55	8.498	8.498	0.000	98	307992	50.0	62.7	
86 4-Chlorobenzotrifluoride	180	8.547	8.541	0.000	94	435992	50.0	66.5	
87 Chlorobenzene	112	8.601	8.601	0.000	95	765649	50.0	51.8	
88 Ethylbenzene	91	8.668	8.668	0.000	98	1300145	50.0	52.4	
89 1,1,1,2-Tetrachloroethane	131	8.674	8.674	0.000	96	254229	50.0	55.6	
90 m-Xylene & p-Xylene	106	8.784	8.783	0.000	100	523061	50.0	53.1	
91 o-Xylene	106	9.216	9.215	0.000	97	487301	50.0	51.5	
92 Styrene	104	9.234	9.234	0.000	95	803088	50.0	51.1	
93 2-Chlorobenzotrifluoride	180	9.471	9.466	0.000	95	430897	50.0	61.3	
95 Bromoform	173	9.484	9.489	-0.005	96	140362	50.0	61.5	
94 Isopropylbenzene	105	9.575	9.569	0.000	96	1269749	50.0	52.4	
96 Cyclohexanone	55	9.739	9.733	0.000	93	95460	500.0	550.3	
97 1,1,2,2-Tetrachloroethane	83	9.903	9.897	0.000	95	255817	50.0	47.3	
101 Bromobenzene	156	9.940	9.934	0.000	94	310551	50.0	50.7	
98 trans-1,4-Dichloro-2-buten	53	9.952	9.946	0.000	72	95929	50.0	50.6	
100 1,2,3-Trichloropropane	110	9.964	9.958	0.000	89	82823	50.0	47.3	
99 N-Propylbenzene	91	9.982	9.976	0.000	99	1532375	50.0	53.0	
103 2-Chlorotoluene	126	10.104	10.098	0.000	97	303728	50.0	50.6	
102 1,3,5-Trimethylbenzene	105	10.141	10.134	0.001	94	1077968	50.0	52.4	
104 3-Chlorotoluene	126	10.159	10.153	0.000	97	386141	50.0	64.6	
105 4-Chlorotoluene	126	10.207	10.195	0.006	98	333458	50.0	53.5	
106 tert-Butylbenzene	134	10.457	10.451	0.000	92	236506	50.0	51.6	
107 1,2,4-Trimethylbenzene	105	10.506	10.499	0.001	96	1068525	50.0	51.7	
108 Pentachloroethane	167	10.518	10.511	0.000	91	174643	50.0	94.7	
109 sec-Butylbenzene	105	10.658	10.651	0.000	94	1391854	50.0	53.6	
110 4-Isopropyltoluene	119	10.779	10.773	0.000	97	1214990	50.0	54.0	
111 1,3-Dichlorobenzene	146	10.804	10.797	0.000	97	612005	50.0	51.9	
113 1,4-Dichlorobenzene	146	10.883	10.876	0.000	93	594307	50.0	50.2	
114 Dicyclopentadiene	66	10.889	10.882	0.000	97	1260999	50.0	56.0	
112 1,2,3-Trimethylbenzene	105	10.901	10.894	0.000	97	1155449	50.0	56.6	
150 Benzyl chloride	126	10.998	10.998	-0.006	99	125261	50.0	81.0	
115 n-Butylbenzene	91	11.144	11.138	0.000	97	1084271	50.0	54.5	
116 1,2-Dichlorobenzene	146	11.223	11.217	0.000	98	563180	50.0	49.8	
117 1,2-Dibromo-3-Chloropropan	75	11.880	11.879	-0.006	86	43874	50.0	46.8	
118 1,3,5-Trichlorobenzene	180	12.026	12.019	0.000	97	456336	50.0	59.8	
119 1,2,4-Trichlorobenzene	180	12.562	12.554	0.000	95	368164	50.0	49.5	
120 Hexachlorobutadiene	225	12.671	12.664	0.000	98	218836	50.0	53.3	
121 Naphthalene	128	12.805	12.797	0.000	97	838514	50.0	45.8	
122 1,2,3-Trichlorobenzene	180	13.030	13.022	0.000	96	331317	50.0	48.1	
149 2-Methylnaphthalene	142	13.931	13.922	0.000	93	590111	50.0	60.5	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

F 8260 IS/SS_00095 Amount Added: 1.00 Units: uL Run Reagent

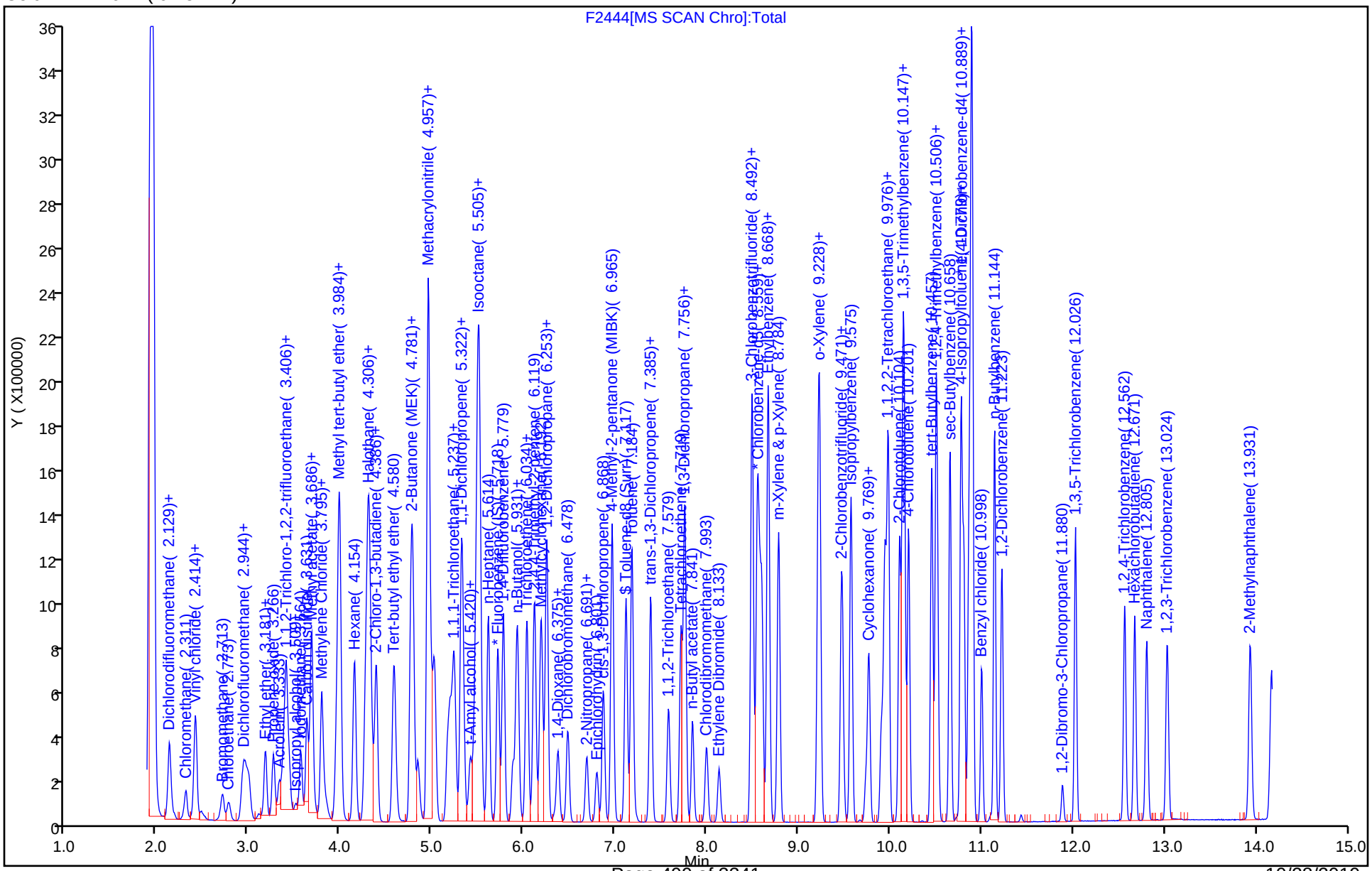
Report Date: 25-Sep-2019 11:44:22 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2444.D

Injection Date:	25-Sep-2019 10:39:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	LCS 480-493988/1-A			Worklist Smp#:	5
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 MS Lab Sample ID: 480-159547-24 MS

Matrix: Solid Lab File ID: F2466.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.11(g) Date Analyzed: 09/25/2019 20:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	52.7		5.3	0.38
75-34-3	1,1-Dichloroethane	48.7		5.3	0.64
75-35-4	1,1-Dichloroethene	48.4		5.3	0.65
95-63-6	1,2,4-Trimethylbenzene	44.0		5.3	1.0
95-50-1	1,2-Dichlorobenzene	39.3		5.3	0.41
107-06-2	1,2-Dichloroethane	42.9		5.3	0.27
108-67-8	1,3,5-Trimethylbenzene	44.8		5.3	0.34
541-73-1	1,3-Dichlorobenzene	41.1		5.3	0.27
106-46-7	1,4-Dichlorobenzene	40.3		5.3	0.74
123-91-1	1,4-Dioxane	482		110	23
78-93-3	2-Butanone (MEK)	142		26	1.9
67-64-1	Acetone	143		26	4.4
71-43-2	Benzene	48.4		5.3	0.26
56-23-5	Carbon tetrachloride	56.0		5.3	0.51
108-90-7	Chlorobenzene	44.8		5.3	0.70
67-66-3	Chloroform	50.3		5.3	0.33
156-59-2	cis-1,2-Dichloroethene	48.6		5.3	0.68
100-41-4	Ethylbenzene	46.6		5.3	0.36
1634-04-4	Methyl tert-butyl ether	40.4		5.3	0.52
75-09-2	Methylene Chloride	46.4		5.3	2.4
104-51-8	n-Butylbenzene	40.6		5.3	0.46
103-65-1	N-Propylbenzene	44.8		5.3	0.42
135-98-8	sec-Butylbenzene	44.0		5.3	0.46
127-18-4	Tetrachloroethene	48.0		5.3	0.71
108-88-3	Toluene	46.5		5.3	0.40
156-60-5	trans-1,2-Dichloroethene	50.0		5.3	0.55
79-01-6	Trichloroethene	47.8		5.3	1.2
75-01-4	Vinyl chloride	51.6		5.3	0.64
1330-20-7	Xylenes, Total	90.4		11	0.89
98-06-6	tert-Butylbenzene	45.4		5.3	0.55

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 MS Lab Sample ID: 480-159547-24 MS

Matrix: Solid Lab File ID: F2466.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.11(g) Date Analyzed: 09/25/2019 20:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	85		64-126
460-00-4	4-Bromofluorobenzene (Surr)	97		72-126
2037-26-5	Toluene-d8 (Surr)	100		71-125
1868-53-7	Dibromofluoromethane (Surr)	104		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2466.D
Lims ID: 480-159547-A-24-C MS
Client ID:
Sample Type: MS
Inject. Date: 25-Sep-2019 20:11:30 ALS Bottle#: 19 Worklist Smp#: 27
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-24-C MS
Misc. Info.: 480-0084450-027
Operator ID: CDC Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 25-Sep-2019 18:45:56 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0325

First Level Reviewer: cwiklinc Date: 26-Sep-2019 08:40:35

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.718	5.718	0.000	99	163060	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	87	338981	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.858	10.864	-0.006	95	316623	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.164	5.170	0.000	93	203399	50.0	51.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	99	102287	50.0	42.5	
$ 5 Toluene-d8 (Surr)	98	7.117	7.122	0.000	93	814177	50.0	50.0	
$ 6 4-Bromofluorobenzene (Surr	174	9.770	9.776	0.001	88	236029	50.0	48.7	
13 Vinyl chloride	62	2.421	2.426	-0.005	85	171796	50.0	48.8	
22 1,1-Dichloroethene	96	3.412	3.418	-0.006	99	197814	50.0	45.8	
23 Acetone	43	3.443	3.448	-0.005	99	230076	250.0	134.9	
30 Methylene Chloride	84	3.795	3.801	-0.006	96	240491	50.0	43.9	
32 Methyl tert-butyl ether	73	3.966	3.966	0.000	97	478010	50.0	38.2	
34 trans-1,2-Dichloroethene	96	4.002	4.002	0.000	99	233594	50.0	47.3	
39 1,1-Dichloroethane	63	4.337	4.337	0.000	97	407927	50.0	46.0	
43 2-Butanone (MEK)	43	4.769	4.769	0.000	100	322202	250.0	134.0	
45 cis-1,2-Dichloroethene	96	4.793	4.793	0.000	84	247692	50.0	46.0	
50 Chloroform	83	5.030	5.030	0.000	95	406414	50.0	47.6	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	98	356342	50.0	49.9	
55 Carbon tetrachloride	117	5.335	5.340	-0.005	97	309278	50.0	53.0	
57 Benzene	78	5.505	5.511	-0.006	96	909659	50.0	45.8	
58 1,2-Dichloroethane	62	5.523	5.529	-0.006	97	268862	50.0	40.6	
62 Trichloroethene	95	6.034	6.034	0.000	98	230067	50.0	45.2	
66 1,4-Dioxane	88	6.344	6.343	0.006	95	24104	1000.0	456.5	
74 Toluene	92	7.184	7.189	0.000	98	558880	50.0	44.0	
81 Tetrachloroethene	166	7.719	7.725	0.000	97	235516	50.0	45.4	
87 Chlorobenzene	112	8.601	8.607	0.000	95	578982	50.0	42.4	
88 Ethylbenzene	91	8.668	8.674	0.000	98	1009900	50.0	44.1	
90 m-Xylene & p-Xylene	106	8.784	8.790	0.000	100	392987		43.2	
91 o-Xylene	106	9.216	9.222	0.000	97	369940		42.3	
99 N-Propylbenzene	91	9.982	9.982	0.000	99	1123001	50.0	42.4	
102 1,3,5-Trimethylbenzene	105	10.141	10.140	0.001	94	799478	50.0	42.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	180471	50.0	42.9	
107 1,2,4-Trimethylbenzene	105	10.506	10.505	0.001	95	790679	50.0	41.7	
109 sec-Butylbenzene	105	10.658	10.658	0.000	95	990202	50.0	41.6	
111 1,3-Dichlorobenzene	146	10.804	10.804	0.000	97	420409	50.0	38.9	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	94	413630	50.0	38.1	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	701113	50.0	38.4	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	97	385784	50.0	37.2	
S 124 Xylenes, Total	1				0			85.5	

Reagents:

F 8260 IS/SS_00095 Amount Added: 1.00 Units: uL Run Reagent

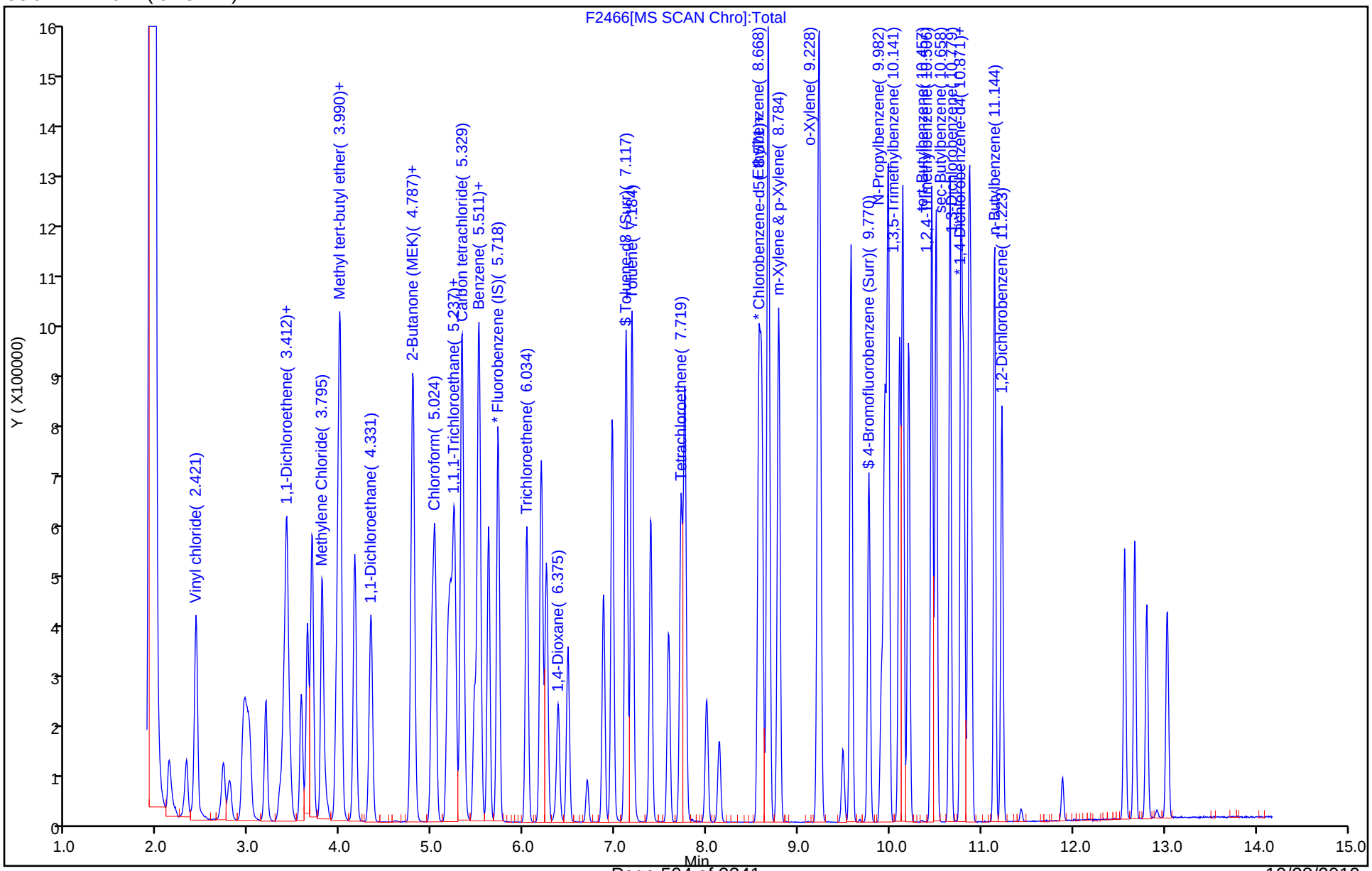
Report Date: 26-Sep-2019 08:40:35 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2466.D

Injection Date:	25-Sep-2019 20:11:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	480-159547-A-24-C MS			Worklist Smp#:	27
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	19
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 MSD Lab Sample ID: 480-159547-24 MSD

Matrix: Solid Lab File ID: F2467.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.02(g) Date Analyzed: 09/25/2019 20:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-55-6	1,1,1-Trichloroethane	50.7		5.4	0.39
75-34-3	1,1-Dichloroethane	47.2		5.4	0.66
75-35-4	1,1-Dichloroethene	45.5		5.4	0.66
95-63-6	1,2,4-Trimethylbenzene	43.3		5.4	1.0
95-50-1	1,2-Dichlorobenzene	38.6		5.4	0.42
107-06-2	1,2-Dichloroethane	42.1		5.4	0.27
108-67-8	1,3,5-Trimethylbenzene	44.2		5.4	0.35
541-73-1	1,3-Dichlorobenzene	40.8		5.4	0.28
106-46-7	1,4-Dichlorobenzene	40.0		5.4	0.75
123-91-1	1,4-Dioxane	492		110	23
78-93-3	2-Butanone (MEK)	137		27	2.0
67-64-1	Acetone	138		27	4.5
71-43-2	Benzene	46.9		5.4	0.26
56-23-5	Carbon tetrachloride	53.1		5.4	0.52
108-90-7	Chlorobenzene	45.3		5.4	0.71
67-66-3	Chloroform	49.7		5.4	0.33
156-59-2	cis-1,2-Dichloroethene	48.2		5.4	0.69
100-41-4	Ethylbenzene	46.0		5.4	0.37
1634-04-4	Methyl tert-butyl ether	39.4		5.4	0.53
75-09-2	Methylene Chloride	45.1		5.4	2.5
104-51-8	n-Butylbenzene	39.1		5.4	0.47
103-65-1	N-Propylbenzene	43.5		5.4	0.43
135-98-8	sec-Butylbenzene	42.8		5.4	0.47
127-18-4	Tetrachloroethene	47.0		5.4	0.72
108-88-3	Toluene	46.7		5.4	0.41
156-60-5	trans-1,2-Dichloroethene	48.4		5.4	0.56
79-01-6	Trichloroethene	47.7		5.4	1.2
75-01-4	Vinyl chloride	51.0		5.4	0.66
1330-20-7	Xylenes, Total	92.0		11	0.90
98-06-6	tert-Butylbenzene	43.8		5.4	0.56

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-GRAB 4 MSD Lab Sample ID: 480-159547-24 MSD

Matrix: Solid Lab File ID: F2467.D

Analysis Method: 8260C Date Collected: 09/16/2019 13:43

Sample wt/vol: 5.02(g) Date Analyzed: 09/25/2019 20:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (30) VOA ID: 0.25(mm)

% Moisture: 7.4 Level: (low/med) Low

Analysis Batch No.: 493944 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	86		64-126
460-00-4	4-Bromofluorobenzene (Surr)	99		72-126
2037-26-5	Toluene-d8 (Surr)	101		71-125
1868-53-7	Dibromofluoromethane (Surr)	102		60-140

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2467.D
Lims ID: 480-159547-A-24-D MSD
Client ID:
Sample Type: MSD
Inject. Date: 25-Sep-2019 20:36:30 ALS Bottle#: 20 Worklist Smp#: 28
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 480-159547-A-24-D MSD
Misc. Info.: 480-0084450-028
Operator ID: CDC Instrument ID: HP5973F

Method: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F-8260 SOIL.m
Limit Group: MV - 8260C ICAL
Last Update: 26-Sep-2019 08:42:43 Calib Date: 27-Aug-2019 19:36:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973F\20190827-83694.b\F1731.D

Column 1 : ZB-624 (0.25 mm) Det: MS SCAN
Process Host: CTX0325

First Level Reviewer: cwiklinc Date: 26-Sep-2019 08:42:43

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
* 153 Fluorobenzene (IS)	70	5.724	5.718	0.006	99	168172	50.0	50.0	
* 2 Chlorobenzene-d5	82	8.571	8.565	0.006	87	344273	50.0	50.0	
* 3 1,4-Dichlorobenzene-d4	152	10.864	10.864	0.000	95	324246	50.0	50.0	
$ 154 Dibromofluoromethane (Surr	113	5.170	5.170	0.006	93	205745	50.0	50.9	
$ 4 1,2-Dichloroethane-d4 (Sur	67	5.462	5.462	0.000	99	106693	50.0	43.0	
$ 5 Toluene-d8 (Surr)	98	7.117	7.122	0.000	93	836925	50.0	50.7	
$ 6 4-Bromofluorobenzene (Surr	174	9.769	9.776	0.000	88	243332	50.0	49.5	
13 Vinyl chloride	62	2.427	2.426	0.000	97	172084	50.0	47.4	
22 1,1-Dichloroethene	96	3.418	3.418	0.000	99	188642	50.0	42.3	
23 Acetone	43	3.449	3.448	0.001	100	225185	250.0	128.0	
30 Methylene Chloride	84	3.801	3.801	0.000	96	237027	50.0	42.0	
32 Methyl tert-butyl ether	73	3.966	3.966	0.000	97	472035	50.0	36.6	
34 trans-1,2-Dichloroethene	96	4.002	4.002	0.000	99	228980	50.0	45.0	
39 1,1-Dichloroethane	63	4.337	4.337	0.000	97	401285	50.0	43.9	
43 2-Butanone (MEK)	43	4.775	4.769	0.006	100	316558	250.0	127.7	
45 cis-1,2-Dichloroethene	96	4.793	4.793	0.000	84	248735	50.0	44.8	
50 Chloroform	83	5.036	5.030	0.006	95	406953	50.0	46.2	
51 1,1,1-Trichloroethane	97	5.201	5.201	0.000	97	347353	50.0	47.1	
55 Carbon tetrachloride	117	5.341	5.340	0.001	98	297484	50.0	49.4	
57 Benzene	78	5.511	5.511	0.000	97	894038	50.0	43.6	
58 1,2-Dichloroethane	62	5.529	5.529	0.000	97	267180	50.0	39.1	
62 Trichloroethene	95	6.034	6.034	0.000	98	232967	50.0	44.4	
66 1,4-Dioxane	88	6.344	6.344	0.006	94	24531	1000.0	457.4	M
74 Toluene	92	7.184	7.189	0.000	98	559759	50.0	43.4	
81 Tetrachloroethene	166	7.719	7.725	0.000	96	229983	50.0	43.7	
87 Chlorobenzene	112	8.601	8.607	0.000	95	584195	50.0	42.1	
88 Ethylbenzene	91	8.668	8.674	0.000	98	995009	50.0	42.8	
90 m-Xylene & p-Xylene	106	8.784	8.790	0.000	100	399829		43.3	
91 o-Xylene	106	9.216	9.222	0.000	96	375254		42.2	
99 N-Propylbenzene	91	9.982	9.982	0.000	98	1096465	50.0	40.4	
102 1,3,5-Trimethylbenzene	105	10.140	10.140	0.000	94	794672	50.0	41.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/kg	OnCol Amt ug/kg	Flags
106 tert-Butylbenzene	134	10.457	10.457	0.000	92	175206	50.0	40.7	
107 1,2,4-Trimethylbenzene	105	10.506	10.505	0.001	95	782072	50.0	40.3	
109 sec-Butylbenzene	105	10.658	10.658	0.000	94	968346	50.0	39.7	
111 1,3-Dichlorobenzene	146	10.804	10.804	0.000	97	419474	50.0	37.9	
113 1,4-Dichlorobenzene	146	10.883	10.883	0.000	94	413765	50.0	37.2	
115 n-Butylbenzene	91	11.144	11.144	0.000	98	678959	50.0	36.3	
116 1,2-Dichlorobenzene	146	11.223	11.223	0.000	98	381563	50.0	35.9	
S 124 Xylenes, Total	1				0			85.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

F 8260 IS/SS_00095 Amount Added: 1.00 Units: uL Run Reagent

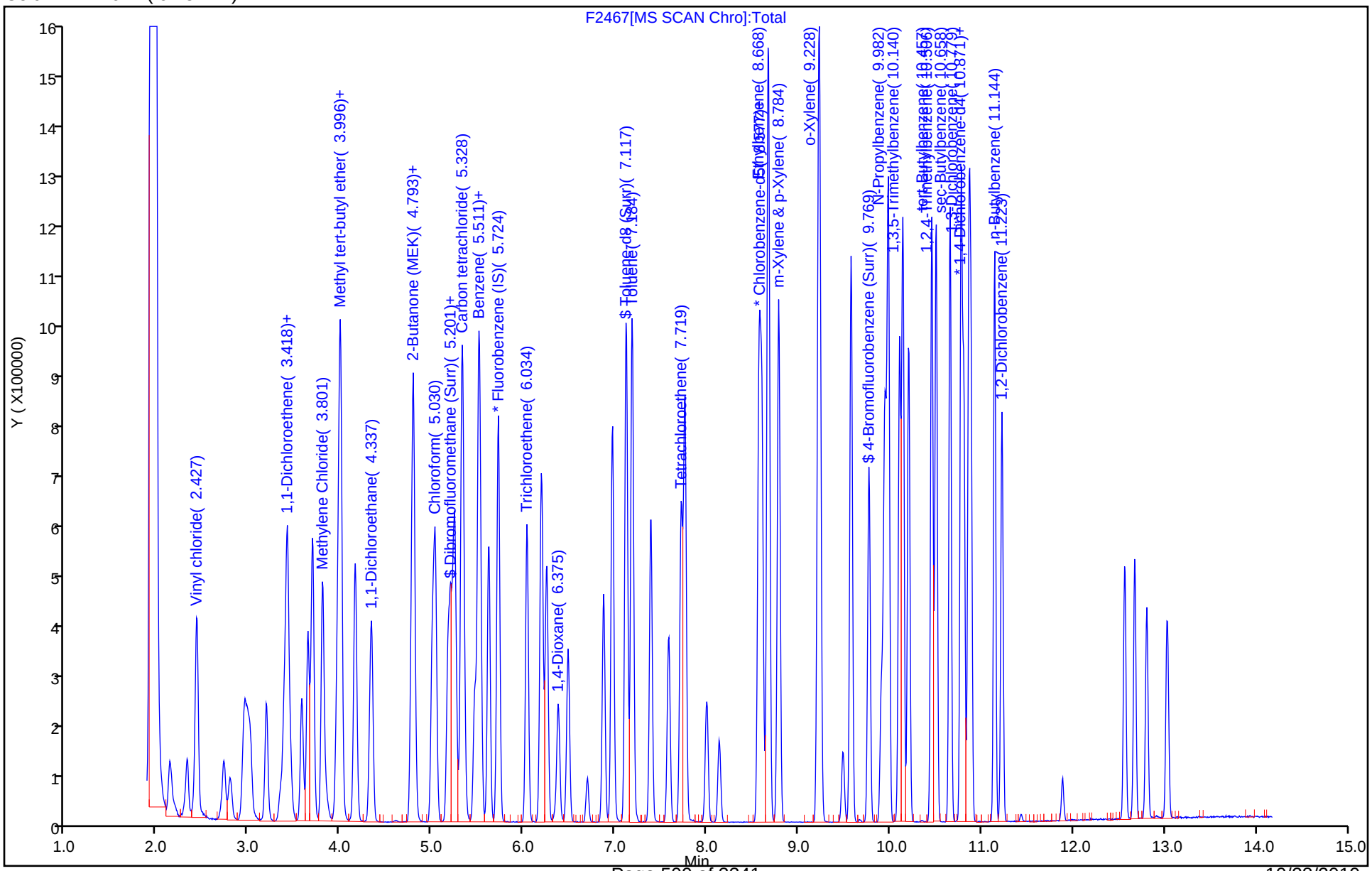
Report Date: 26-Sep-2019 08:42:43 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2467.D

Injection Date:	25-Sep-2019 20:36:30	Instrument ID:	HP5973F	Operator ID:	CDC
Lims ID:	480-159547-A-24-D MSD			Worklist Smp#:	28
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	20
Method:	F-8260 SOIL	Limit Group:	MV - 8260C ICAL		

Column: ZB-624 (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

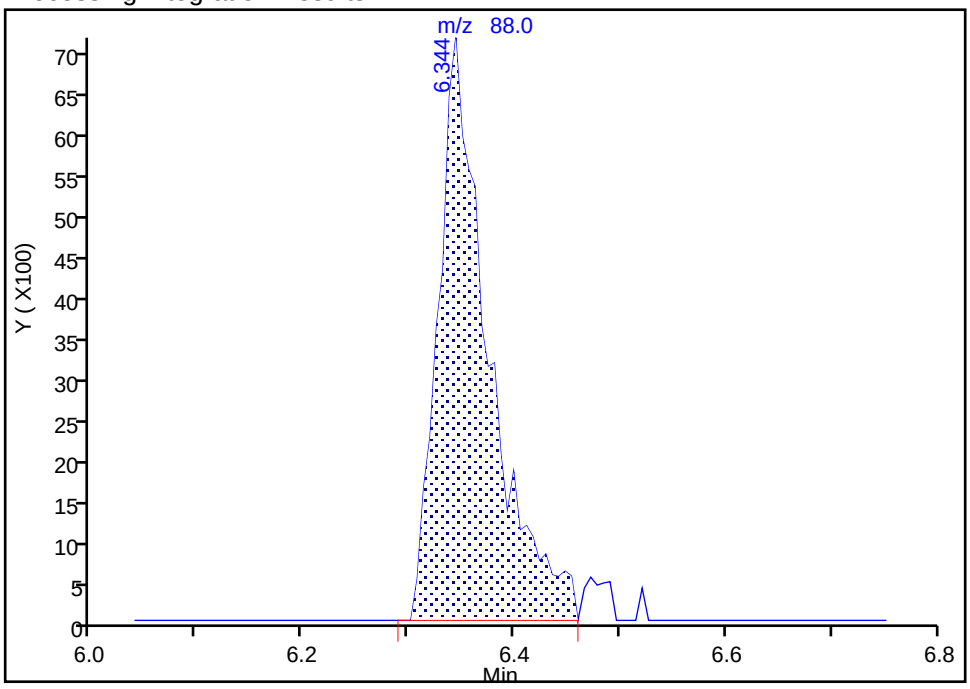
Data File: \\chromna\Buffalo\ChromData\HP5973F\20190925-84450.b\F2467.D
Injection Date: 25-Sep-2019 20:36:30 Instrument ID: HP5973F
Lims ID: 480-159547-A-24-D MSD
Client ID:
Operator ID: CDC ALS Bottle#: 20 Worklist Smp#: 28
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: F-8260 SOIL Limit Group: MV - 8260C ICAL
Column: ZB-624 (0.25 mm) Detector MS SCAN

66 1,4-Dioxane, CAS: 123-91-1

Signal: 1

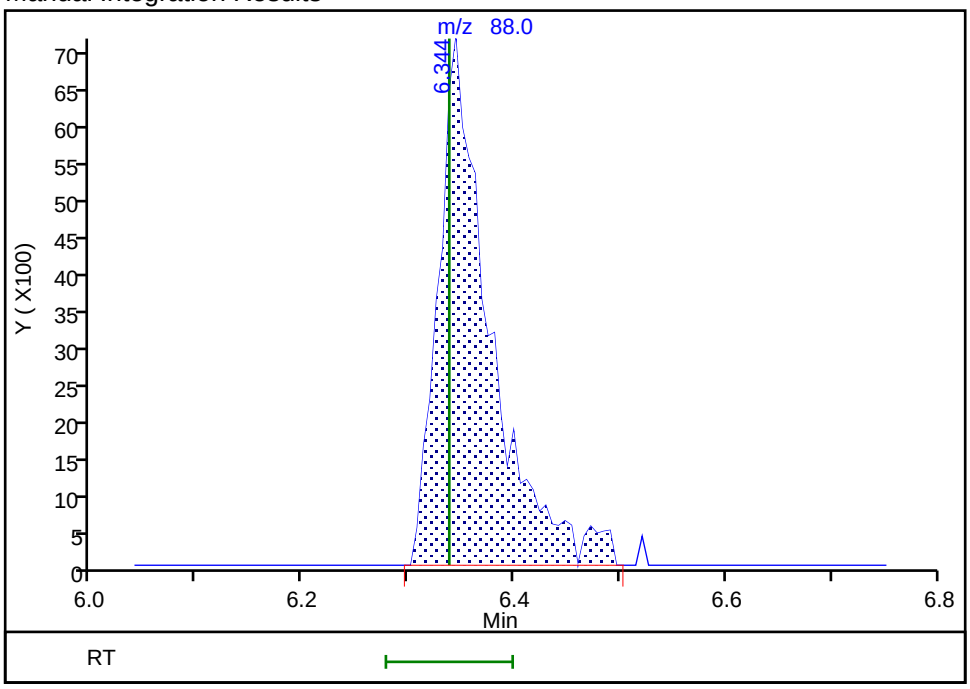
Processing Integration Results

RT: 6.34
Area: 23694
Amount: 441.8310
Amount Units: ug/kg



Manual Integration Results

RT: 6.34
Area: 24531
Amount: 457.4388
Amount Units: ug/kg



Reviewer: cwiklinc, 26-Sep-2019 08:42:27
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973F Start Date: 08/27/2019 12:21

Analysis Batch Number: 489014 End Date: 08/27/2019 21:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 480-489014/2		08/27/2019 12:21	1	F1714.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/4		08/27/2019 13:41	1	F1717.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/5		08/27/2019 14:06	1	F1718.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/6		08/27/2019 14:31	1	F1719.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/7		08/27/2019 14:57	1	F1720.D	ZB-624 (30) VOA 0.25(mm)
ICIS 480-489014/8		08/27/2019 15:22	1	F1721.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/9		08/27/2019 15:48	1	F1722.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/10		08/27/2019 16:13	1	F1723.D	ZB-624 (30) VOA 0.25(mm)
IC 480-489014/12		08/27/2019 17:04	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/13		08/27/2019 17:29	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/14		08/27/2019 17:55	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/15		08/27/2019 18:20	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/16		08/27/2019 18:45	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/17		08/27/2019 19:11	1		ZB-624 (30) VOA 0.25(mm)
IC 480-489014/18		08/27/2019 19:36	1		ZB-624 (30) VOA 0.25(mm)
ICV 480-489014/22		08/27/2019 21:18	1		ZB-624 (30) VOA 0.25(mm)
ICV 480-489014/23		08/27/2019 21:43	1		ZB-624 (30) VOA 0.25(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973F Start Date: 09/25/2019 08:55

Analysis Batch Number: 493944 End Date: 09/25/2019 20:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 480-493944/2		09/25/2019 08:55	1	F2441.D	ZB-624 (30) VOA 0.25(mm)
CCVIS 480-493944/3		09/25/2019 09:29	1	F2442.D	ZB-624 (30) VOA 0.25(mm)
CCV 480-493944/4		09/25/2019 10:14	1		ZB-624 (30) VOA 0.25(mm)
LCS 480-493988/1-A		09/25/2019 10:39	1	F2444.D	ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 11:05	1		ZB-624 (30) VOA 0.25(mm)
MB 480-493988/3-A		09/25/2019 11:56	1	F2447.D	ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 13:00	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 13:25	1		ZB-624 (30) VOA 0.25(mm)
480-159547-24		09/25/2019 13:51	1	F2451.D	ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 14:16	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 14:41	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 15:07	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 15:32	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 15:57	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 16:23	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 16:48	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 17:14	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 17:39	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 18:04	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 18:30	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 18:55	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 19:20	1		ZB-624 (30) VOA 0.25(mm)
ZZZZZ		09/25/2019 19:46	1		ZB-624 (30) VOA 0.25(mm)
480-159547-24 MS		09/25/2019 20:11	1	F2466.D	ZB-624 (30) VOA 0.25(mm)
480-159547-24 MSD		09/25/2019 20:36	1	F2467.D	ZB-624 (30) VOA 0.25(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973P Start Date: 09/20/2019 18:09

Analysis Batch Number: 493257 End Date: 09/21/2019 02:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 480-493257/6		09/20/2019 18:09	1	P0064.D	ZB-624 (20) 0.18(mm)
IC 480-493257/8		09/20/2019 19:03	1	P0066.D	ZB-624 (20) 0.18(mm)
IC 480-493257/9		09/20/2019 19:28	1	P0067.D	ZB-624 (20) 0.18(mm)
IC 480-493257/10		09/20/2019 19:52	1	P0068.D	ZB-624 (20) 0.18(mm)
IC 480-493257/11		09/20/2019 20:17	1	P0069.D	ZB-624 (20) 0.18(mm)
ICIS 480-493257/12		09/20/2019 20:41	1	P0070.D	ZB-624 (20) 0.18(mm)
IC 480-493257/13		09/20/2019 21:06	1	P0071.D	ZB-624 (20) 0.18(mm)
IC 480-493257/14		09/20/2019 21:30	1	P0072.D	ZB-624 (20) 0.18(mm)
IC 480-493257/16		09/20/2019 22:19	1		ZB-624 (20) 0.18(mm)
IC 480-493257/17		09/20/2019 22:43	1		ZB-624 (20) 0.18(mm)
IC 480-493257/18		09/20/2019 23:08	1		ZB-624 (20) 0.18(mm)
IC 480-493257/19		09/20/2019 23:33	1		ZB-624 (20) 0.18(mm)
IC 480-493257/20		09/20/2019 23:57	1		ZB-624 (20) 0.18(mm)
IC 480-493257/21		09/21/2019 00:21	1		ZB-624 (20) 0.18(mm)
IC 480-493257/22		09/21/2019 00:46	1		ZB-624 (20) 0.18(mm)
MDLV 480-493257/24		09/21/2019 01:35	1		ZB-624 (20) 0.18(mm)
MDLV 480-493257/25		09/21/2019 01:59	1		ZB-624 (20) 0.18(mm)
ICV 480-493257/26		09/21/2019 02:24	1		ZB-624 (20) 0.18(mm)
ICV 480-493257/27		09/21/2019 02:48	1		ZB-624 (20) 0.18(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973P Start Date: 09/23/2019 13:11

Analysis Batch Number: 493547 End Date: 09/23/2019 23:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 480-493547/2		09/23/2019 13:11	1	P0093.D	ZB-624 (20) 0.18(mm)
CCVIS 480-493547/3		09/23/2019 13:43	1	P0094.D	ZB-624 (20) 0.18(mm)
CCV 480-493547/4		09/23/2019 14:08	1		ZB-624 (20) 0.18(mm)
LCS 480-493565/1-A		09/23/2019 14:48	1	P0096.D	ZB-624 (20) 0.18(mm)
MB 480-493565/2-A		09/23/2019 15:37	1	P0098.D	ZB-624 (20) 0.18(mm)
480-159547-1		09/23/2019 16:28	1	P0099.D	ZB-624 (20) 0.18(mm)
480-159547-2		09/23/2019 16:52	1	P0100.D	ZB-624 (20) 0.18(mm)
480-159547-3		09/23/2019 17:17	1	P0101.D	ZB-624 (20) 0.18(mm)
480-159547-4		09/23/2019 17:41	1	P0102.D	ZB-624 (20) 0.18(mm)
480-159547-5		09/23/2019 18:06	1	P0103.D	ZB-624 (20) 0.18(mm)
480-159547-6		09/23/2019 18:30	1	P0104.D	ZB-624 (20) 0.18(mm)
480-159547-9		09/23/2019 18:55	1	P0105.D	ZB-624 (20) 0.18(mm)
480-159547-10		09/23/2019 19:19	1	P0106.D	ZB-624 (20) 0.18(mm)
480-159547-11		09/23/2019 19:44	1	P0107.D	ZB-624 (20) 0.18(mm)
480-159547-12		09/23/2019 20:08	1	P0108.D	ZB-624 (20) 0.18(mm)
480-159547-13		09/23/2019 20:33	1	P0109.D	ZB-624 (20) 0.18(mm)
480-159547-14		09/23/2019 20:58	1	P0110.D	ZB-624 (20) 0.18(mm)
480-159547-15		09/23/2019 21:23	1	P0111.D	ZB-624 (20) 0.18(mm)
480-159547-16		09/23/2019 21:47	1	P0112.D	ZB-624 (20) 0.18(mm)
480-159547-17		09/23/2019 22:12	1	P0113.D	ZB-624 (20) 0.18(mm)
480-159547-21		09/23/2019 22:37	1	P0114.D	ZB-624 (20) 0.18(mm)
480-159547-22		09/23/2019 23:01	1	P0115.D	ZB-624 (20) 0.18(mm)
480-159547-23		09/23/2019 23:26	1	P0116.D	ZB-624 (20) 0.18(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973P Start Date: 09/24/2019 09:41

Analysis Batch Number: 493693 End Date: 09/24/2019 19:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 480-493693/2		09/24/2019 09:41	1	P0121.D	ZB-624 (20) 0.18(mm)
CCVIS 480-493693/3		09/24/2019 10:12	1	P0122.D	ZB-624 (20) 0.18(mm)
CCV 480-493693/4		09/24/2019 10:52	1		ZB-624 (20) 0.18(mm)
LCS 480-493743/1-A		09/24/2019 11:16	1	P0124.D	ZB-624 (20) 0.18(mm)
MB 480-493743/2-A		09/24/2019 12:05	1	P0126.D	ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 13:04	1		ZB-624 (20) 0.18(mm)
480-159547-25		09/24/2019 13:29	1	P0128.D	ZB-624 (20) 0.18(mm)
480-159547-26		09/24/2019 13:53	1	P0129.D	ZB-624 (20) 0.18(mm)
480-159547-27		09/24/2019 14:18	1	P0130.D	ZB-624 (20) 0.18(mm)
480-159547-28		09/24/2019 14:42	1	P0131.D	ZB-624 (20) 0.18(mm)
480-159547-29		09/24/2019 15:07	1	P0132.D	ZB-624 (20) 0.18(mm)
480-159547-33		09/24/2019 15:31	1	P0133.D	ZB-624 (20) 0.18(mm)
480-159547-34		09/24/2019 15:55	1	P0134.D	ZB-624 (20) 0.18(mm)
480-159547-35		09/24/2019 16:20	1	P0135.D	ZB-624 (20) 0.18(mm)
480-159547-36		09/24/2019 16:44	1	P0136.D	ZB-624 (20) 0.18(mm)
480-159547-37		09/24/2019 17:09	1	P0137.D	ZB-624 (20) 0.18(mm)
480-159547-38		09/24/2019 17:34	1	P0138.D	ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 17:59	1		ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 18:24	1		ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 18:49	1		ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 19:14	1		ZB-624 (20) 0.18(mm)
ZZZZZ		09/24/2019 19:38	1		ZB-624 (20) 0.18(mm)

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493565 Batch Start Date: 09/23/19 13:58 Batch Analyst: Cwiklinski, Charles D

Batch Method: 5035A_L Batch End Date: 09/23/19 16:58

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	8260 CORP mix 00166	GAS CORP mix 00362
LCS 480-493565/1		5035A_L, 8260C		25.12 g	30.12 g	5 g	5 mL	2.5 uL	2.5 uL
MB 480-493565/2		5035A_L, 8260C		25.22 g	30.22 g	5 g	5 mL		
480-159547-A-1	RUSSO-TS-GRAB 1	5035A_L, 8260C	T	24.96 g	29.97 g	5.01 g	5 mL		
480-159547-A-2	RUSSO-TS-GRAB 2	5035A_L, 8260C	T	25.15 g	30.15 g	5 g	5 mL		
480-159547-A-3	RUSSO-TS-GRAB 3	5035A_L, 8260C	T	25.05 g	30.05 g	5 g	5 mL		
480-159547-A-4	RUSSO-TS-GRAB 4	5035A_L, 8260C	T	25.05 g	30.13 g	5.08 g	5 mL		
480-159547-A-5	RUSSO-TS-GRAB 5	5035A_L, 8260C	T	25.06 g	30.16 g	5.1 g	5 mL		
480-159547-A-6	RUSSO-TS-GRAB 6	5035A_L, 8260C	T	24.56 g	29.58 g	5.02 g	5 mL		
480-159547-A-9	RUSSO-CF-GRAB 1	5035A_L, 8260C	T	25.09 g	30.23 g	5.14 g	5 mL		
480-159547-A-10	RUSSO-CF-GRAB 2	5035A_L, 8260C	T	24.99 g	30.15 g	5.16 g	5 mL		
480-159547-A-11	RUSSO-CF-GRAB 3	5035A_L, 8260C	T	25.19 g	30.35 g	5.16 g	5 mL		
480-159547-A-12	RUSSO-CF-GRAB 4	5035A_L, 8260C	T	25.18 g	30.40 g	5.22 g	5 mL		
480-159547-A-13	RUSSO-CF-GRAB 5	5035A_L, 8260C	T	24.96 g	29.96 g	5 g	5 mL		
480-159547-A-14	RUSSO-CF-GRAB 6	5035A_L, 8260C	T	25.10 g	30.25 g	5.15 g	5 mL		
480-159547-A-15	RUSSO-CF-GRAB 7	5035A_L, 8260C	T	25.18 g	30.29 g	5.11 g	5 mL		
480-159547-A-16	RUSSO-CF-GRAB 8	5035A_L, 8260C	T	24.98 g	30.20 g	5.22 g	5 mL		
480-159547-A-17	RUSSO-CF-GRAB 9	5035A_L, 8260C	T	25.26 g	30.26 g	5 g	5 mL		
480-159547-A-21	GERNATT-CF-GRAB 1	5035A_L, 8260C	T	25.06 g	30.17 g	5.11 g	5 mL		
480-159547-A-22	GERNATT-CF-GRAB 2	5035A_L, 8260C	T	25.16 g	30.19 g	5.03 g	5 mL		
480-159547-A-23	GERNATT-CF-GRAB 3	5035A_L, 8260C	T	25.26 g	30.32 g	5.06 g	5 mL		

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493565 Batch Start Date: 09/23/19 13:58 Batch Analyst: Cwiklinski, Charles D

Batch Method: 5035A_L Batch End Date: 09/23/19 16:58

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
LCS 480-493565/1		5035A_L, 8260C							
MB 480-493565/2		5035A_L, 8260C							
480-159547-A-1	RUSSO-TS-GRAB 1	5035A_L, 8260C	T	bulk					
480-159547-A-2	RUSSO-TS-GRAB 2	5035A_L, 8260C	T	bulk					
480-159547-A-3	RUSSO-TS-GRAB 3	5035A_L, 8260C	T	bulk					
480-159547-A-4	RUSSO-TS-GRAB 4	5035A_L, 8260C	T	bulk					
480-159547-A-5	RUSSO-TS-GRAB 5	5035A_L, 8260C	T	bulk					
480-159547-A-6	RUSSO-TS-GRAB 6	5035A_L, 8260C	T	bulk					
480-159547-A-9	RUSSO-CF-GRAB 1	5035A_L, 8260C	T	bulk					
480-159547-A-10	RUSSO-CF-GRAB 2	5035A_L, 8260C	T	bulk					
480-159547-A-11	RUSSO-CF-GRAB 3	5035A_L, 8260C	T	bulk					
480-159547-A-12	RUSSO-CF-GRAB 4	5035A_L, 8260C	T	bulk					
480-159547-A-13	RUSSO-CF-GRAB 5	5035A_L, 8260C	T	bulk					
480-159547-A-14	RUSSO-CF-GRAB 6	5035A_L, 8260C	T	bulk					
480-159547-A-15	RUSSO-CF-GRAB 7	5035A_L, 8260C	T	bulk					
480-159547-A-16	RUSSO-CF-GRAB 8	5035A_L, 8260C	T	bulk					
480-159547-A-17	RUSSO-CF-GRAB 9	5035A_L, 8260C	T	bulk					
480-159547-A-21	GERNATT-CF-GRAB 1	5035A_L, 8260C	T	bulk					
480-159547-A-22	GERNATT-CF-GRAB 2	5035A_L, 8260C	T	bulk					
480-159547-A-23	GERNATT-CF-GRAB 3	5035A_L, 8260C	T	bulk					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493565 Batch Start Date: 09/23/19 13:58 Batch Analyst: Cwiklinski, Charles D

Batch Method: 5035A_L Batch End Date: 09/23/19 16:58

Batch Notes	
Balance ID	b202613314
Batch Comment	sand_00010

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493743 Batch Start Date: 09/24/19 10:38 Batch Analyst: Cwiklinski, Charles D

Batch Method: 5035A_L Batch End Date: 09/24/19 13:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	8260 CORP mix 00166	GAS CORP mix 00362
LCS 480-493743/1		5035A_L, 8260C		25.23 g	30.23 g	5 g	5 mL	2.5 uL	2.5 uL
MB 480-493743/2		5035A_L, 8260C		25.09 g	30.09 g	5 g	5 mL		
480-159547-A-25	GERNATT-CF-GRAB 5	5035A_L, 8260C	T	25.33 g	30.45 g	5.12 g	5 mL		
480-159547-A-26	GERNATT-CF-GRAB 6	5035A_L, 8260C	T	25.36 g	30.47 g	5.11 g	5 mL		
480-159547-A-27	GERNATT-CF-GRAB 7	5035A_L, 8260C	T	24.97 g	30.07 g	5.1 g	5 mL		
480-159547-A-28	GERNATT-CF-GRAB 8	5035A_L, 8260C	T	25.37 g	30.47 g	5.1 g	5 mL		
480-159547-A-29	GERNATT-CF-GRAB 9	5035A_L, 8260C	T	24.92 g	29.94 g	5.02 g	5 mL		
480-159547-A-33	GERNATT-TS-GRAB 1	5035A_L, 8260C	T	25.16 g	30.24 g	5.08 g	5 mL		
480-159547-A-34	GERNATT-TS-GRAB 2	5035A_L, 8260C	T	25.00 g	30.09 g	5.09 g	5 mL		
480-159547-A-35	GERNATT-TS-GRAB 3	5035A_L, 8260C	T	25.05 g	30.15 g	5.1 g	5 mL		
480-159547-A-36	GERNATT-TS-GRAB 4	5035A_L, 8260C	T	25.27 g	30.27 g	5 g	5 mL		
480-159547-A-37	GERNATT-TS-GRAB 5	5035A_L, 8260C	T	25.12 g	30.15 g	5.03 g	5 mL		
480-159547-A-38	GERNATT-TS-GRAB 6	5035A_L, 8260C	T	25.42 g	30.45 g	5.03 g	5 mL		

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
LCS 480-493743/1		5035A_L, 8260C							
MB 480-493743/2		5035A_L, 8260C							
480-159547-A-25	GERNATT-CF-GRAB 5	5035A_L, 8260C	T	bulk					
480-159547-A-26	GERNATT-CF-GRAB 6	5035A_L, 8260C	T	bulk					
480-159547-A-27	GERNATT-CF-GRAB 7	5035A_L, 8260C	T	bulk					
480-159547-A-28	GERNATT-CF-GRAB 8	5035A_L, 8260C	T	bulk					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493743 Batch Start Date: 09/24/19 10:38 Batch Analyst: Cwiklinski, Charles D

Batch Method: 5035A_L Batch End Date: 09/24/19 13:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
480-159547-A-29	GERNATT-CF-GRAB 9	5035A_L, 8260C	T	bulk					
480-159547-A-33	GERNATT-TS-GRAB 1	5035A_L, 8260C	T	bulk					
480-159547-A-34	GERNATT-TS-GRAB 2	5035A_L, 8260C	T	bulk					
480-159547-A-35	GERNATT-TS-GRAB 3	5035A_L, 8260C	T	bulk					
480-159547-A-36	GERNATT-TS-GRAB 4	5035A_L, 8260C	T	bulk					
480-159547-A-37	GERNATT-TS-GRAB 5	5035A_L, 8260C	T	bulk					
480-159547-A-38	GERNATT-TS-GRAB 6	5035A_L, 8260C	T	bulk					

Batch Notes	
Balance ID	b202613314
Batch Comment	sand_00010

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493988 Batch Start Date: 09/25/19 10:16 Batch Analyst: Dahn, William J

Batch Method: 5035A_L Batch End Date: 09/25/19 13:16

Lab Sample ID	Client Sample ID	Method Chain	Basis	TareWeight	Vial&SampleWt	InitialAmount	FinalAmount	3_MCP_Add_WRK 00219	8260 CORP mix 00166
LCS 480-493988/1		5035A_L, 8260C		24.87 g	29.87 g	5 g	5 mL	2.5 uL	2.5 uL
MB 480-493988/3		5035A_L, 8260C		24.96 g	29.96 g	5 g	5 mL		
480-159547-A-24	GERNATT-CF-GRAB 4	5035A_L, 8260C	T	24.88 g	30.01 g	5.13 g	5 mL		
480-159547-A-24 MS	GERNATT-CF-GRAB 4	5035A_L, 8260C	T	25.04 g	30.15 g	5.11 g	5 mL		2.5 uL
480-159547-A-24 MSD	GERNATT-CF-GRAB 4	5035A_L, 8260C	T	24.94 g	29.96 g	5.02 g	5 mL		2.5 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	ADD CORP mix 00091	GAS CORP mix 00362	AnalysisComment			
LCS 480-493988/1		5035A_L, 8260C		2.5 uL	2.5 uL				
MB 480-493988/3		5035A_L, 8260C							
480-159547-A-24	GERNATT-CF-GRAB 4	5035A_L, 8260C	T			Bulk Confirm IS Out			
480-159547-A-24 MS	GERNATT-CF-GRAB 4	5035A_L, 8260C	T		2.5 uL	Batch QC			
480-159547-A-24 MSD	GERNATT-CF-GRAB 4	5035A_L, 8260C	T		2.5 uL	Batch QC			

Batch Notes	
Balance ID	B202613314
Batch Comment	Sand_00010

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method 8270D

Semivolatile Organic Compounds (GC/MS) by Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	2FP #	PHL #	NBZ #	FBP #	TBP #	TPHd14 #
RUSSO-TS-COMP 1	480-159547-7	77	83	87	86	99	99
RUSSO-TS-COMP 2	480-159547-8	79	86	90	84	103	102
RUSSO-CF-COMP 1	480-159547-18	81	88	94	90	110	111
RUSSO-CF-COMP 2	480-159547-19	77	82	90	85	100	105
RUSSO-CF-COMP 3	480-159547-20	76	83	84	86	100	104
GERNATT-CF-COMP 1	480-159547-30	77	86	91	84	99	104
GERNATT-CF-COMP 2	480-159547-31	82	89	91	90	102	105
GERNATT-CF-COMP 3	480-159547-32	73	80	87	81	94	101
GERNATT-TS-COMP 1	480-159547-39	74	84	88	87	101	101
GERNATT-TS-COMP 2	480-159547-40	77	89	88	87	110	99
	MB 480-494075/1-A	83	91	96	91	98	104
	LCS 480-494075/2-A	78	87	96	89	115	109

	QC LIMITS
2FP = 2-Fluorophenol (Surr)	52-120
PHL = Phenol-d5 (Surr)	54-120
NBZ = Nitrobenzene-d5 (Surr)	53-120
FBP = 2-Fluorobiphenyl	60-120
TBP = 2,4,6-Tribromophenol (Surr)	54-120
TPHd14 = p-Terphenyl-d14 (Surr)	79-130

Column to be used to flag recovery values

FORM II 8270D

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: V3140350.D

Lab ID: LCS 480-494075/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Acenaphthene	1670	1510	91	62-120	
Acenaphthylene	1670	1570	94	58-121	
Anthracene	1670	1770	107	62-120	
Benzo[a]anthracene	1670	1630	98	65-120	
Benzo[a]pyrene	1670	1560	94	64-120	
Benzo[b]fluoranthene	1670	1830	110	64-120	
Benzo[g,h,i]perylene	1670	1590	95	45-145	
Benzo[k]fluoranthene	1670	1640	99	65-120	
Chrysene	1670	1660	100	64-120	
Dibenz(a,h)anthracene	1670	1640	99	54-132	
Dibenzofuran	1670	1550	93	63-120	
Fluoranthene	1670	1840	110	62-120	
Fluorene	1670	1590	95	63-120	
Hexachlorobenzene	1670	1730	104	60-120	
Indeno[1,2,3-cd]pyrene	1670	1640	98	56-134	
2-Methylphenol	1670	1480	89	54-120	
Methylphenol, 3 & 4	1670	1540	93	55-120	
Naphthalene	1670	1430	86	55-120	
1,4-Dioxane	1670	651	39	23-120	
Pentachlorophenol	3330	2900	87	51-120	
Phenanthrene	1670	1710	103	60-120	
Phenol	1670	1410	85	53-120	
Pyrene	1670	1760	106	61-133	

Column to be used to flag recovery and RPD values

FORM III 8270D

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: V3140349.D Lab Sample ID: MB 480-494075/1-A

Matrix: Solid Date Extracted: 09/25/2019 14:37

Instrument ID: HP5973V Date Analyzed: 09/26/2019 16:52

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-494075/2-A	V3140350.D	09/26/2019 17:17
RUSSO-TS-COMP 1	480-159547-7	V3140357.D	09/26/2019 20:15
RUSSO-TS-COMP 2	480-159547-8	V3140358.D	09/26/2019 20:40
RUSSO-CF-COMP 1	480-159547-18	V3140359.D	09/26/2019 21:05
RUSSO-CF-COMP 2	480-159547-19	V3140360.D	09/26/2019 21:30
RUSSO-CF-COMP 3	480-159547-20	V3140361.D	09/26/2019 21:56
GERNATT-CF-COMP 1	480-159547-30	V3140362.D	09/26/2019 22:21
GERNATT-CF-COMP 2	480-159547-31	V3140363.D	09/26/2019 22:47
GERNATT-CF-COMP 3	480-159547-32	V3140364.D	09/26/2019 23:13
GERNATT-TS-COMP 1	480-159547-39	V3140365.D	09/26/2019 23:38
GERNATT-TS-COMP 2	480-159547-40	V3140366.D	09/27/2019 00:03

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: V3139712.D DFTPP Injection Date: 08/21/2019

Instrument ID: HP5973V DFTPP Injection Time: 16:49

Analysis Batch No.: 488167

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	52.9	
68	Less than 2% of mass 69	0.2	(0.3) 1
69	Mass 69 Relative abundance	48.0	
70	Less than 2% of mass 69	0.2	(0.5) 1
127	10-80% of Base Peak	50.7	
197	Less than 2% of mass 198	0.0	
198	Base peak	100.0	
199	5-9% of mass 198	6.9	
275	10-60% of Base Peak	21.6	
365	Greater than 1% of mass 198	2.2	
441	present but less than 24% of mass 442	8.4	(14.8) 2
442	Greater than 50% of mass 198	56.7	
443	15-24% of mass 442	12.5	(22.1) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-488167/2	V3139713.D	08/21/2019	17:15
	IC 480-488167/3	V3139714.D	08/21/2019	17:40
	IC 480-488167/4	V3139715.D	08/21/2019	18:05
	IC 480-488167/5	V3139716.D	08/21/2019	18:30
	ICIS 480-488167/6	V3139717.D	08/21/2019	18:55
	IC 480-488167/7	V3139718.D	08/21/2019	19:20
	IC 480-488167/8	V3139719.D	08/21/2019	19:45
	IC 480-488167/9	V3139720.D	08/21/2019	20:10

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab File ID: V3140346.D DFTPP Injection Date: 09/26/2019

Instrument ID: HP5973V DFTPP Injection Time: 15:36

Analysis Batch No.: 494348

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10-80% of Base Peak	47.7	
68	Less than 2% of mass 69	0.0	(0.0) 1
69	Mass 69 Relative abundance	44.4	
70	Less than 2% of mass 69	0.0	(0.0) 1
127	10-80% of Base Peak	50.3	
197	Less than 2% of mass 198	0.0	
198	Base peak	100.0	
199	5-9% of mass 198	6.9	
275	10-60% of Base Peak	25.1	
365	Greater than 1% of mass 198	3.4	
441	present but less than 24% of mass 442	11.0	(15.4) 2
442	Greater than 50% of mass 198	71.5	
443	15-24% of mass 442	14.2	(19.9) 2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-494348/3	V3140347.D	09/26/2019	16:02
	MB 480-494075/1-A	V3140349.D	09/26/2019	16:52
	LCS 480-494075/2-A	V3140350.D	09/26/2019	17:17
RUSSO-TS-COMP 1	480-159547-7	V3140357.D	09/26/2019	20:15
RUSSO-TS-COMP 2	480-159547-8	V3140358.D	09/26/2019	20:40
RUSSO-CF-COMP 1	480-159547-18	V3140359.D	09/26/2019	21:05
RUSSO-CF-COMP 2	480-159547-19	V3140360.D	09/26/2019	21:30
RUSSO-CF-COMP 3	480-159547-20	V3140361.D	09/26/2019	21:56
GERNATT-CF-COMP 1	480-159547-30	V3140362.D	09/26/2019	22:21
GERNATT-CF-COMP 2	480-159547-31	V3140363.D	09/26/2019	22:47
GERNATT-CF-COMP 3	480-159547-32	V3140364.D	09/26/2019	23:13
GERNATT-TS-COMP 1	480-159547-39	V3140365.D	09/26/2019	23:38
GERNATT-TS-COMP 2	480-159547-40	V3140366.D	09/27/2019	00:03

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-488167/6 Date Analyzed: 08/21/2019 18:55

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm)

Lab File ID (Standard): V3139717.D Heated Purge: (Y/N) N

Calibration ID: 37480

		DCBd4		NPT		ANT	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		194878	5.80	675608	7.35	335379	9.41
UPPER LIMIT		389756	6.30	1351216	7.85	670758	9.91
LOWER LIMIT		97439	5.30	337804	6.85	167690	8.91
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494348/3		179575	5.67	662032	7.22	362537	9.28

DCBd4 = 1,4-Dichlorobenzene-d4
NPT = Naphthalene-d8
ANT = Acenaphthene-d10

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-488167/6 Date Analyzed: 08/21/2019 18:55

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm)

Lab File ID (Standard): V3139717.D Heated Purge: (Y/N) N

Calibration ID: 37480

		PHN		CRY		PRY	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		563550	11.02	500895	13.40	578574	14.58
UPPER LIMIT		1127100	11.52	1001790	13.90	1157148	15.08
LOWER LIMIT		281775	10.52	250448	12.90	289287	14.08
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494348/3		642976	10.90	603352	13.29	686989	14.45

PHN = Phenanthrene-d10
CRY = Chrysene-d12
PRY = Perylene-d12

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494348/3 Date Analyzed: 09/26/2019 16:02

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm)

Lab File ID (Standard): V3140347.D Heated Purge: (Y/N) N

Calibration ID: 37541

		DCBd4		NPT		ANT	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		179575	5.67	662032	7.22	362537	9.28
UPPER LIMIT		359150	6.17	1324064	7.72	725074	9.78
LOWER LIMIT		89788	5.17	331016	6.72	181269	8.78
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-494075/1-A		177150	5.67	653677	7.22	352239	9.28
LCS 480-494075/2-A		179767	5.67	650548	7.22	358028	9.28
480-159547-7	RUSSO-TS-COMP 1	169992	5.67	621931	7.22	335757	9.28
480-159547-8	RUSSO-TS-COMP 2	168163	5.67	616987	7.22	335387	9.28
480-159547-18	RUSSO-CF-COMP 1	182534	5.67	650268	7.22	348673	9.28
480-159547-19	RUSSO-CF-COMP 2	185204	5.67	661615	7.22	358246	9.28
480-159547-20	RUSSO-CF-COMP 3	174229	5.67	635998	7.22	337338	9.28
480-159547-30	GERNATT-CF-COMP 1	175111	5.67	640647	7.22	350819	9.28
480-159547-31	GERNATT-CF-COMP 2	173277	5.67	644888	7.22	344947	9.28
480-159547-32	GERNATT-CF-COMP 3	173162	5.67	618435	7.22	341733	9.28
480-159547-39	GERNATT-TS-COMP 1	163337	5.67	587545	7.22	313397	9.28
480-159547-40	GERNATT-TS-COMP 2	168316	5.67	609615	7.22	323950	9.28

DCBd4 = 1,4-Dichlorobenzene-d4
NPT = Naphthalene-d8
ANT = Acenaphthene-d10

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494348/3 Date Analyzed: 09/26/2019 16:02

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm)

Lab File ID (Standard): V3140347.D Heated Purge: (Y/N) N

Calibration ID: 37541

		PHN		CRY		PRY	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		642976	10.90	603352	13.29	686989	14.45
UPPER LIMIT		1285952	11.40	1206704	13.79	1373978	14.95
LOWER LIMIT		321488	10.40	301676	12.79	343495	13.95
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-494075/1-A		644194	10.90	574592	13.28	616410	14.45
LCS 480-494075/2-A		613578	10.90	553918	13.29	602218	14.45
480-159547-7	RUSSO-TS-COMP 1	603755	10.90	549014	13.28	618562	14.45
480-159547-8	RUSSO-TS-COMP 2	579090	10.90	508917	13.28	577792	14.44
480-159547-18	RUSSO-CF-COMP 1	607459	10.90	517184	13.28	566935	14.44
480-159547-19	RUSSO-CF-COMP 2	613849	10.90	523313	13.28	572653	14.44
480-159547-20	RUSSO-CF-COMP 3	600851	10.90	524092	13.28	593396	14.44
480-159547-30	GERNATT-CF-COMP 1	611776	10.90	541107	13.28	612371	14.44
480-159547-31	GERNATT-CF-COMP 2	617661	10.90	538552	13.28	596797	14.44
480-159547-32	GERNATT-CF-COMP 3	589207	10.90	519259	13.28	627587	14.44
480-159547-39	GERNATT-TS-COMP 1	558869	10.90	508844	13.28	604484	14.44
480-159547-40	GERNATT-TS-COMP 2	559225	10.90	524430	13.28	591450	14.44

PHN = Phenanthrene-d10
CRY = Chrysene-d12
PRY = Perylene-d12

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 | Lab Sample ID: 480-159547-7

Matrix: Solid | Lab File ID: V3140357.D

Analysis Method: 8270D | Date Collected: 09/16/2019 09:35

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.10(g) | Date Analyzed: 09/26/2019 20:15

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 21.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		220	32
208-96-8	Acenaphthylene	ND		220	28
120-12-7	Anthracene	ND		220	53
56-55-3	Benzo[a]anthracene	ND		220	22
50-32-8	Benzo[a]pyrene	ND		220	32
205-99-2	Benzo[b]fluoranthene	ND		220	34
191-24-2	Benzo[g,h,i]perylene	ND		220	23
207-08-9	Benzo[k]fluoranthene	ND		220	28
218-01-9	Chrysene	ND		220	48
53-70-3	Dibenz(a,h)anthracene	ND		220	38
132-64-9	Dibenzofuran	ND		220	25
206-44-0	Fluoranthene	34	J	220	23
86-73-7	Fluorene	ND		220	25
118-74-1	Hexachlorobenzene	ND		220	29
193-39-5	Indeno[1,2,3-cd]pyrene	ND		220	27
95-48-7	2-Methylphenol	ND		220	25
106-44-5	Methylphenol, 3 & 4	ND		420	25
91-20-3	Naphthalene	ND		220	28
123-91-1	1,4-Dioxane	ND		250	70
87-86-5	Pentachlorophenol	ND		420	220
85-01-8	Phenanthrene	ND		220	32
108-95-2	Phenol	ND		220	33
129-00-0	Pyrene	26	J	220	25

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	86		60-120
367-12-4	2-Fluorophenol (Surr)	77		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	87		53-120
4165-62-2	Phenol-d5 (Surr)	83		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	99		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	99		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140357.D
Lims ID: 480-159547-E-7-G
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 26-Sep-2019 20:15:30 ALS Bottle#: 13 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-013
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:36:39 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:36:39

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	169992	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	621931	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	93	335757	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	603755	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	549014	40.0	
* 6 Perylene-d12	264	14.448	14.454	-0.006	98	618562	40.0	
$ 7 2-Fluorophenol	112	3.929	3.929	0.000	93	169571	30.6	
$ 8 Phenol-d5	99	5.244	5.244	0.000	96	218019	33.4	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	202836	34.8	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	416305	34.3	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	92	53284	39.7	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	454832	39.7	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178	10.922	10.922	-0.006	93	7764	0.4531	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202	12.044	12.044	-0.006	97	13862	0.8128	
204 Pyrene	202	12.242	12.242	-0.005	97	10970	0.6042	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252	14.149	14.149	-0.005	92	12766	0.7209	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252	14.400	14.406	-0.005	73	5399	0.3804	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276	15.356	15.361	-0.016	87	5008	0.4001	
228 Dibenz(a,h)anthracene	278		15.372				ND	U
229 Benzo[g,h,i]perylene	276	15.618	15.617	-0.011	57	4424	0.3115	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

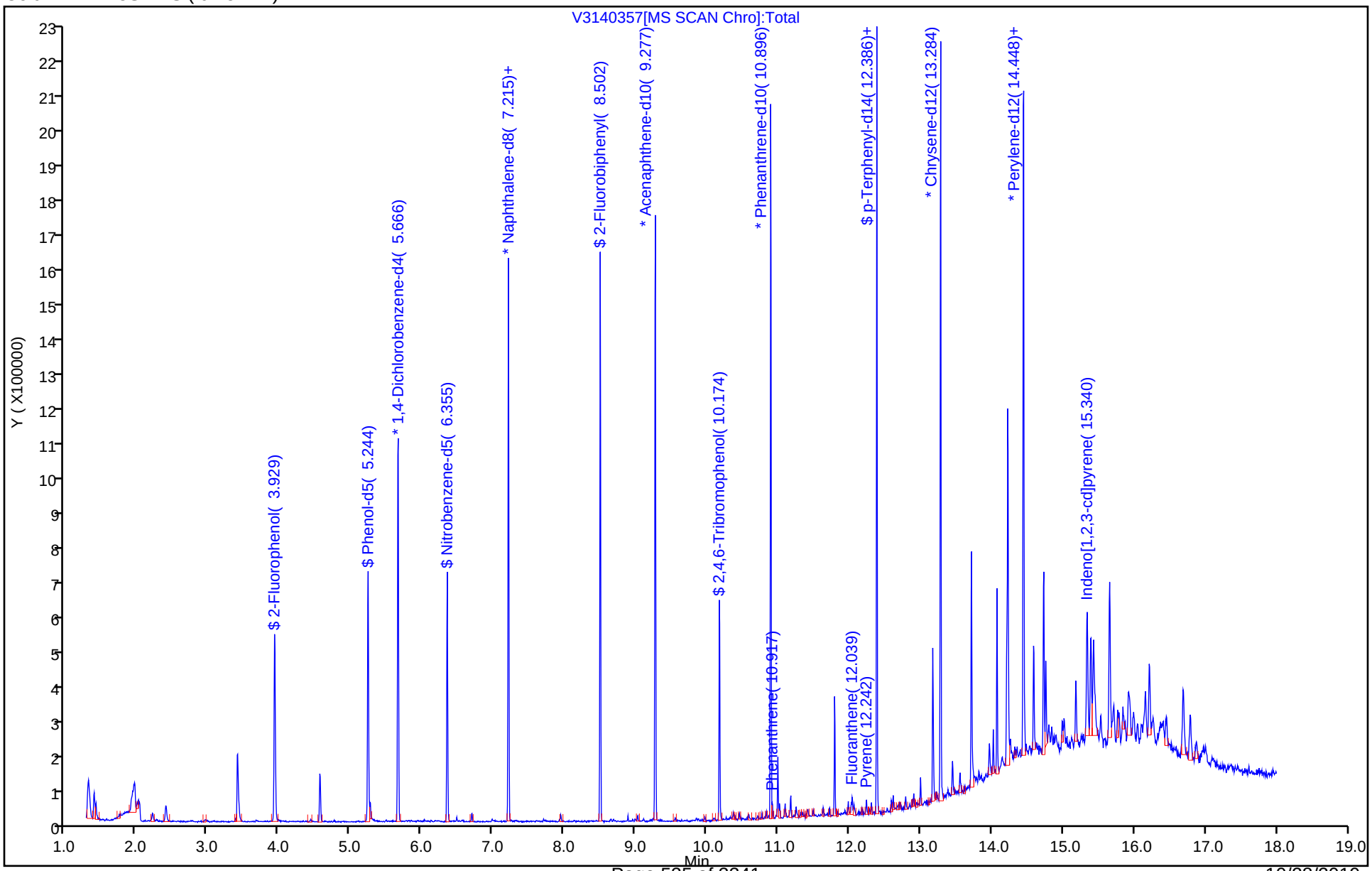
Report Date: 28-Sep-2019 11:36:39 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140357.D

Injection Date:	26-Sep-2019 20:15:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-7-G	Lab Sample ID:	480-159547-7	Worklist Smp#:	13
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

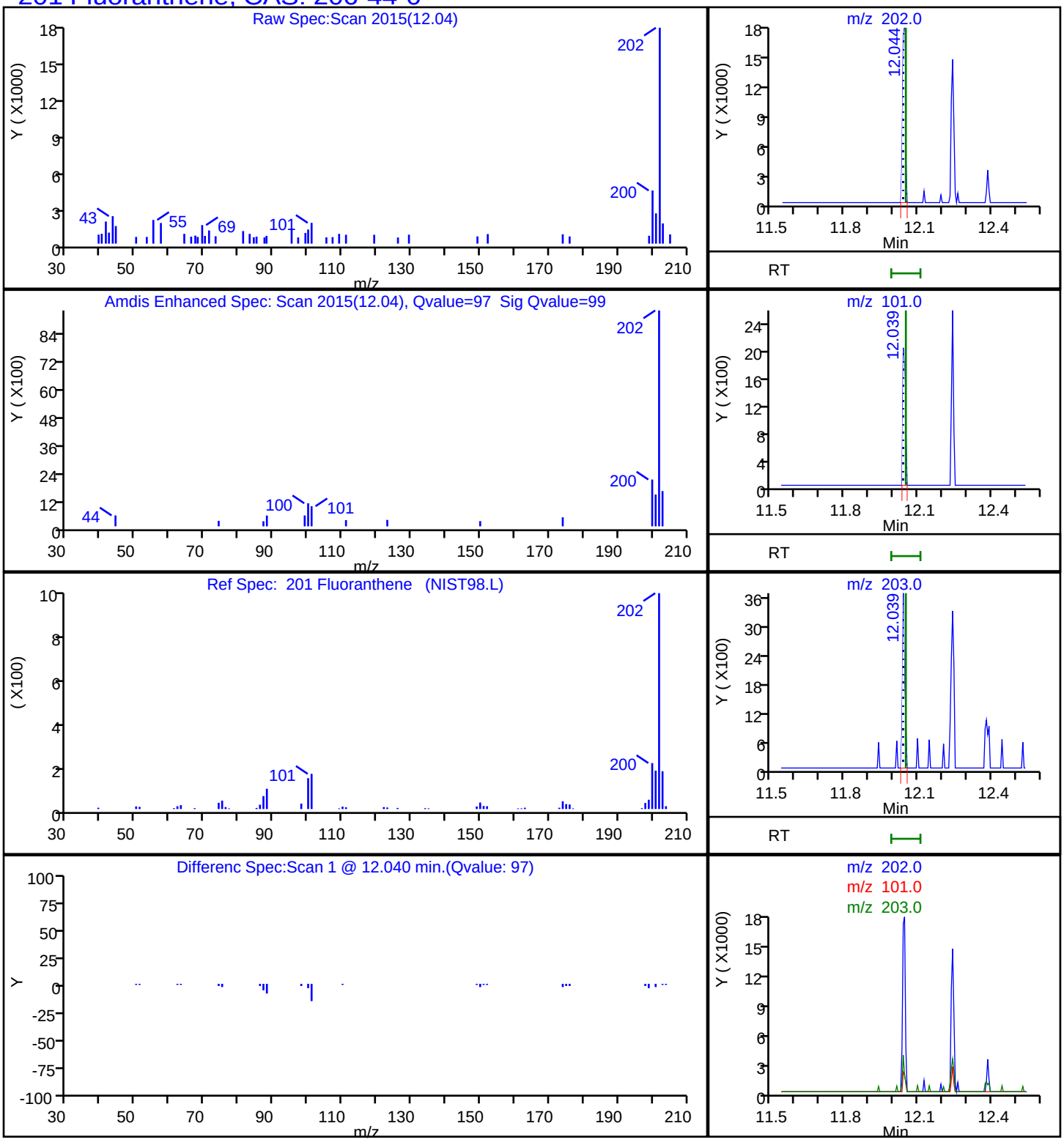
Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140357.D				
Injection Date:	26-Sep-2019 20:15:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-7-G	Lab Sample ID:	480-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	PJQ	ALS Bottle#:	13	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

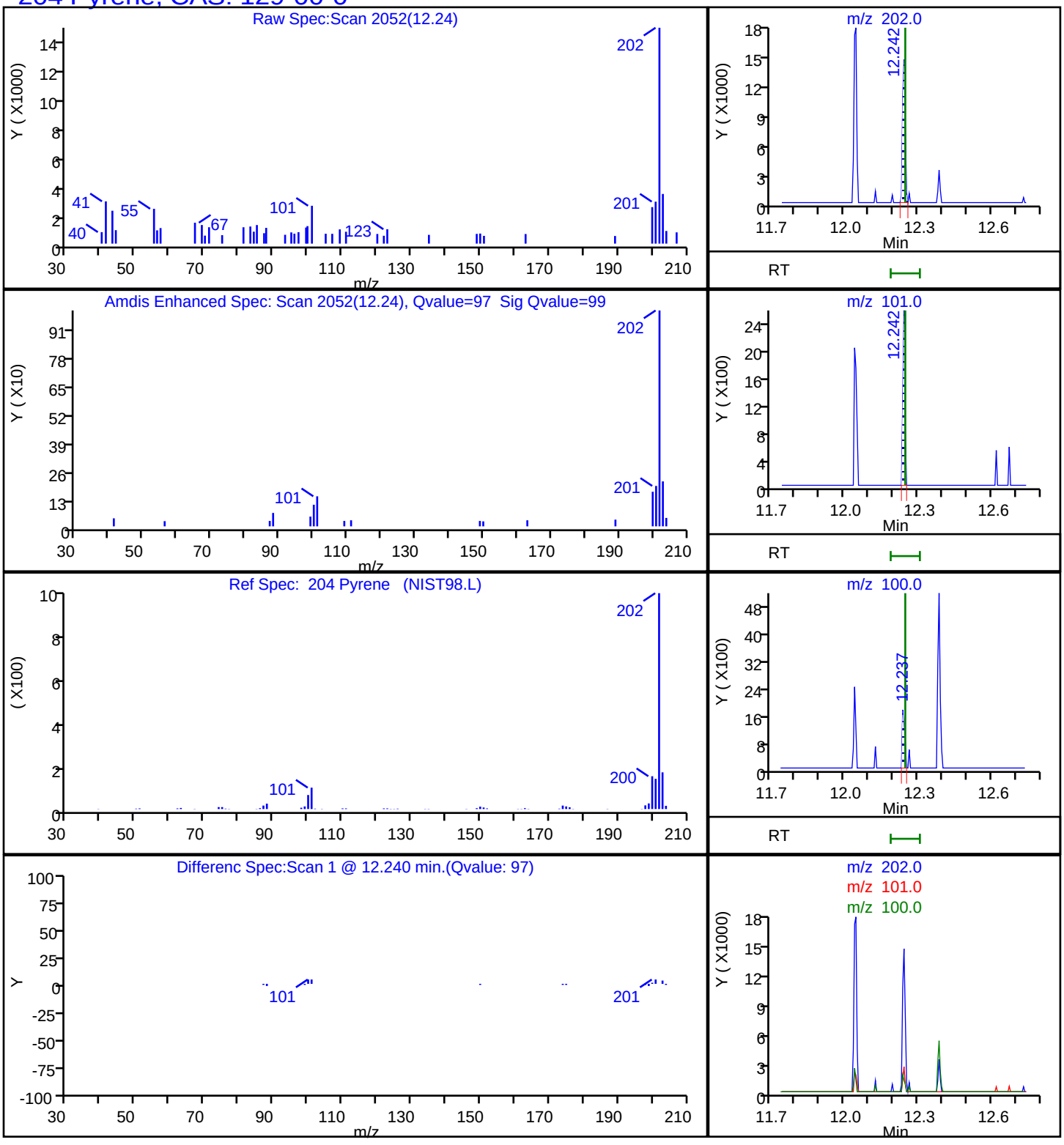
201 Fluoranthene, CAS: 206-44-0



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140357.D				
Injection Date:	26-Sep-2019 20:15:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-7-G	Lab Sample ID:	480-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	PJQ	ALS Bottle#:	13	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

204 Pyrene, CAS: 129-00-0



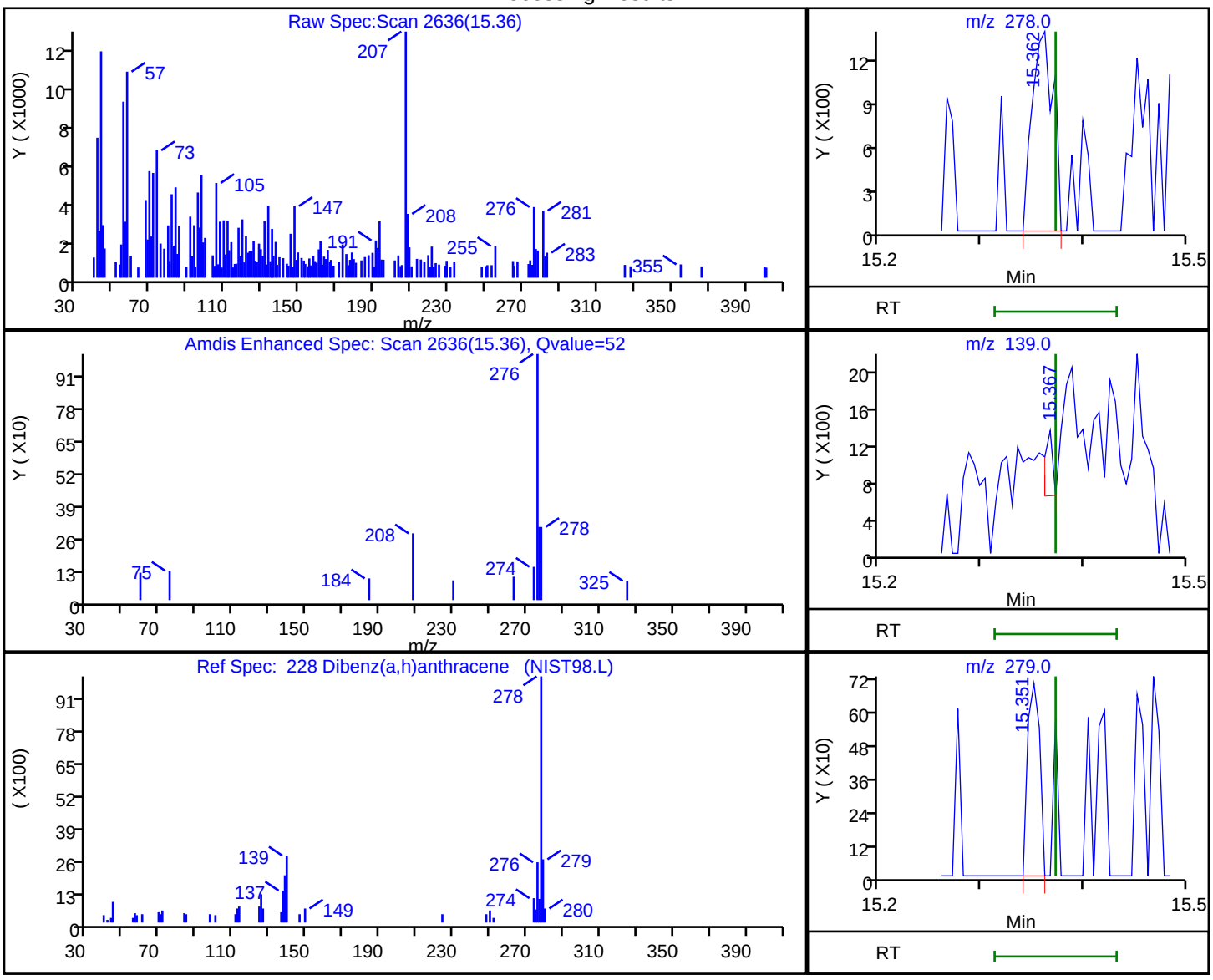
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140357.D				
Injection Date:	26-Sep-2019 20:15:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-7-G	Lab Sample ID:	480-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	PJQ	ALS Bottle#:	13	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

228 Dibenz(a,h)anthracene, CAS: 53-70-3

Processing Results



RT	Mass	Response	Amount
15.36	278.00	1951	0.209096
15.37	139.00	353	
15.35	279.00	584	

Reviewer: quirkp, 28-Sep-2019 11:35:53

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 | Lab Sample ID: 480-159547-8

Matrix: Solid | Lab File ID: V3140358.D

Analysis Method: 8270D | Date Collected: 09/16/2019 09:40

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.43(g) | Date Analyzed: 09/26/2019 20:40

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 27.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		230	34
208-96-8	Acenaphthylene	ND		230	30
120-12-7	Anthracene	ND		230	57
56-55-3	Benzo[a]anthracene	ND		230	23
50-32-8	Benzo[a]pyrene	ND		230	34
205-99-2	Benzo[b]fluoranthene	ND		230	37
191-24-2	Benzo[g,h,i]perylene	ND		230	25
207-08-9	Benzo[k]fluoranthene	ND		230	30
218-01-9	Chrysene	ND		230	52
53-70-3	Dibenz(a,h)anthracene	ND		230	41
132-64-9	Dibenzofuran	ND		230	27
206-44-0	Fluoranthene	47	J	230	25
86-73-7	Fluorene	ND		230	27
118-74-1	Hexachlorobenzene	ND		230	31
193-39-5	Indeno[1,2,3-cd]pyrene	ND		230	29
95-48-7	2-Methylphenol	ND		230	27
106-44-5	Methylphenol, 3 & 4	ND		450	27
91-20-3	Naphthalene	ND		230	30
123-91-1	1,4-Dioxane	ND		270	75
87-86-5	Pentachlorophenol	ND		450	230
85-01-8	Phenanthrene	34	J	230	34
108-95-2	Phenol	ND		230	35
129-00-0	Pyrene	37	J	230	27

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	84		60-120
367-12-4	2-Fluorophenol (Surr)	79		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	90		53-120
4165-62-2	Phenol-d5 (Surr)	86		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	102		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	103		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D
Lims ID: 480-159547-E-8-A
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 26-Sep-2019 20:40:30 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-014
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:37:54 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:37:54

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	168163	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	616987	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	335387	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	579090	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	508917	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	577792	40.0	
$ 7 2-Fluorophenol	112	3.935	3.929	0.006	95	173088	31.6	
$ 8 Phenol-d5	99	5.244	5.244	0.000	96	221791	34.3	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	207198	35.8	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	406514	33.5	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	92	52837	41.0	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	432540	40.7	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178	10.917	10.922	-0.011	97	12181	0.7412	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202	12.039	12.044	-0.011	96	16991	1.04	
204 Pyrene	202	12.242	12.242	-0.005	97	13701	0.8140	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228	13.305	13.305	-0.005	94	8164	0.5329	
221 Benzo[b]fluoranthene	252	14.144	14.149	-0.010	93	11027	0.6666	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252	14.400	14.406	-0.005	47	7115	0.5043	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276	15.356	15.361	-0.016	91	5186	0.4259	
228 Dibenz(a,h)anthracene	278		15.372				ND	U
229 Benzo[g,h,i]perylene	276	15.613	15.617	-0.016	51	4726	0.3462	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

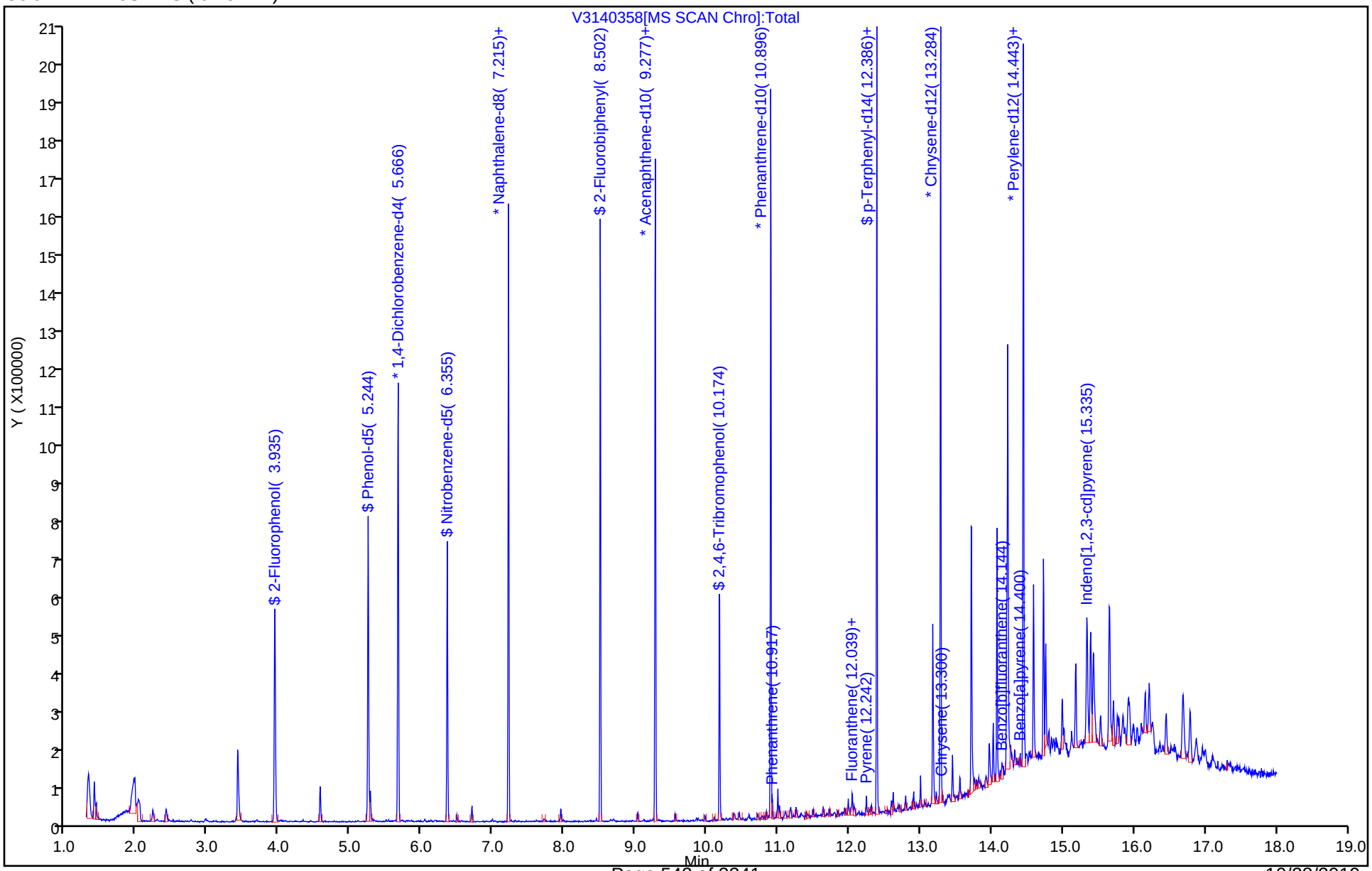
Report Date: 28-Sep-2019 11:37:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D

Injection Date:	26-Sep-2019 20:40:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-8-A	Lab Sample ID:	480-159547-8	Worklist Smp#:	14
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

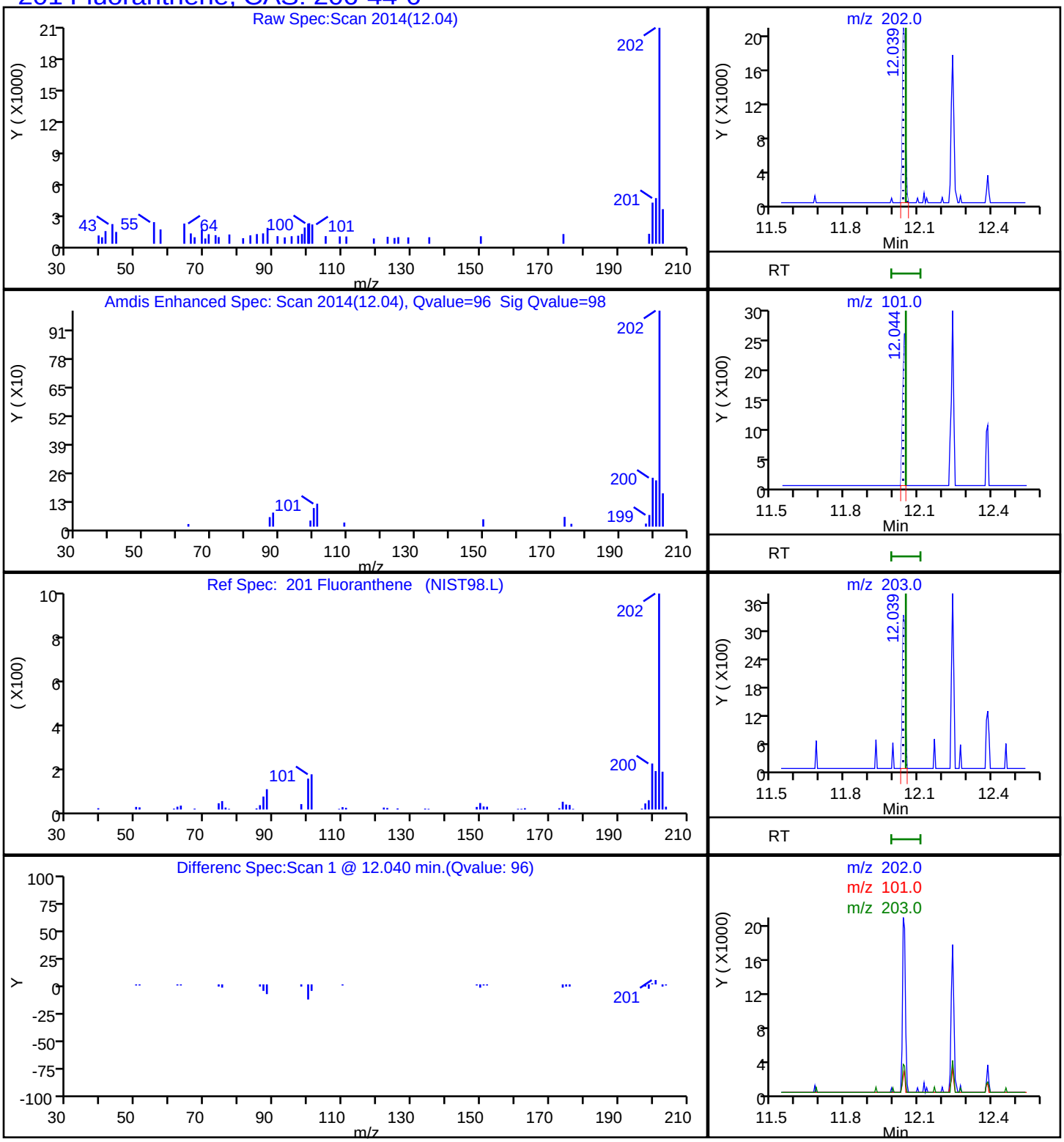
Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D				
Injection Date:	26-Sep-2019 20:40:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-8-A	Lab Sample ID:	480-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

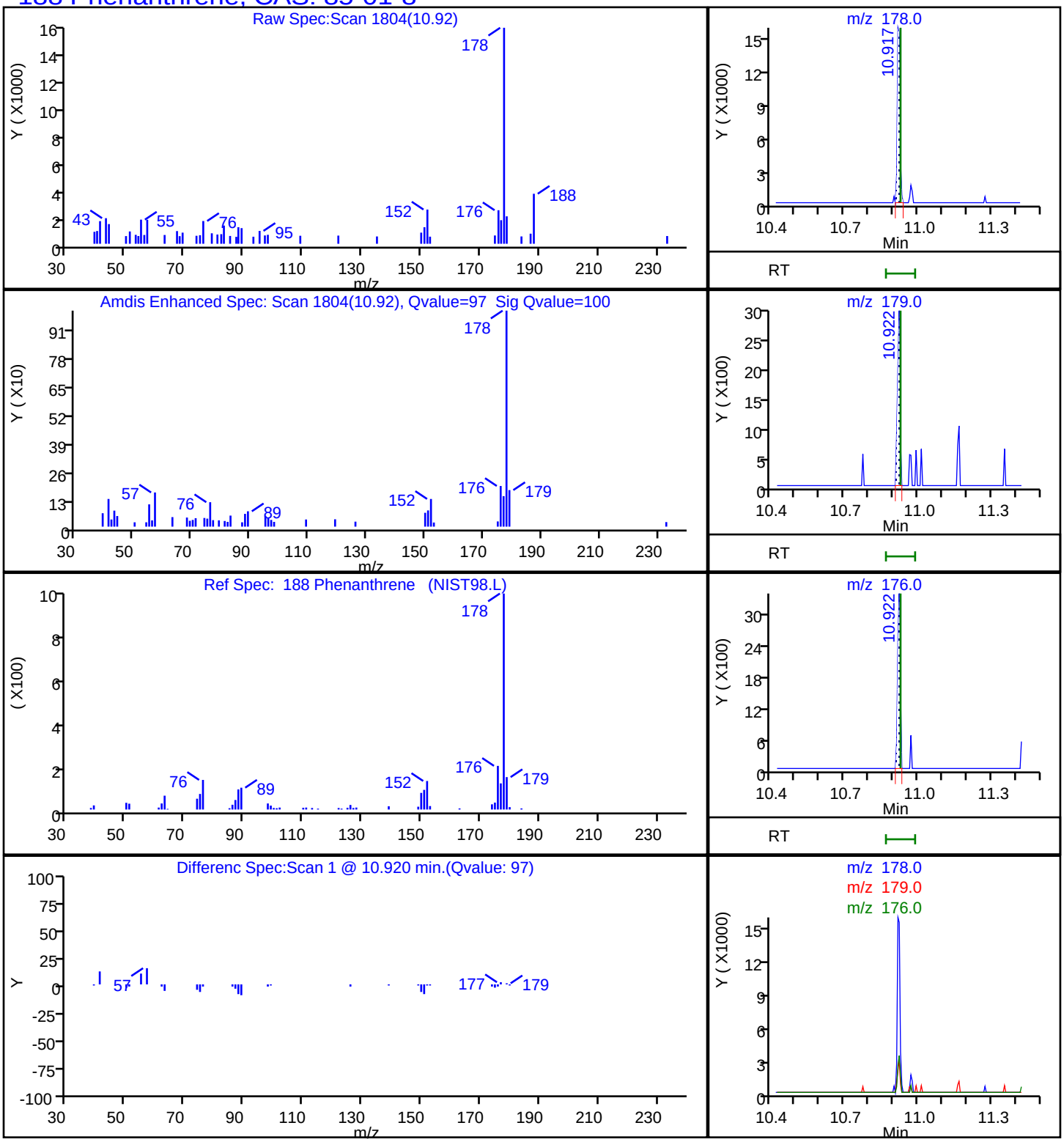
201 Fluoranthene, CAS: 206-44-0



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D				
Injection Date:	26-Sep-2019 20:40:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-8-A	Lab Sample ID:	480-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

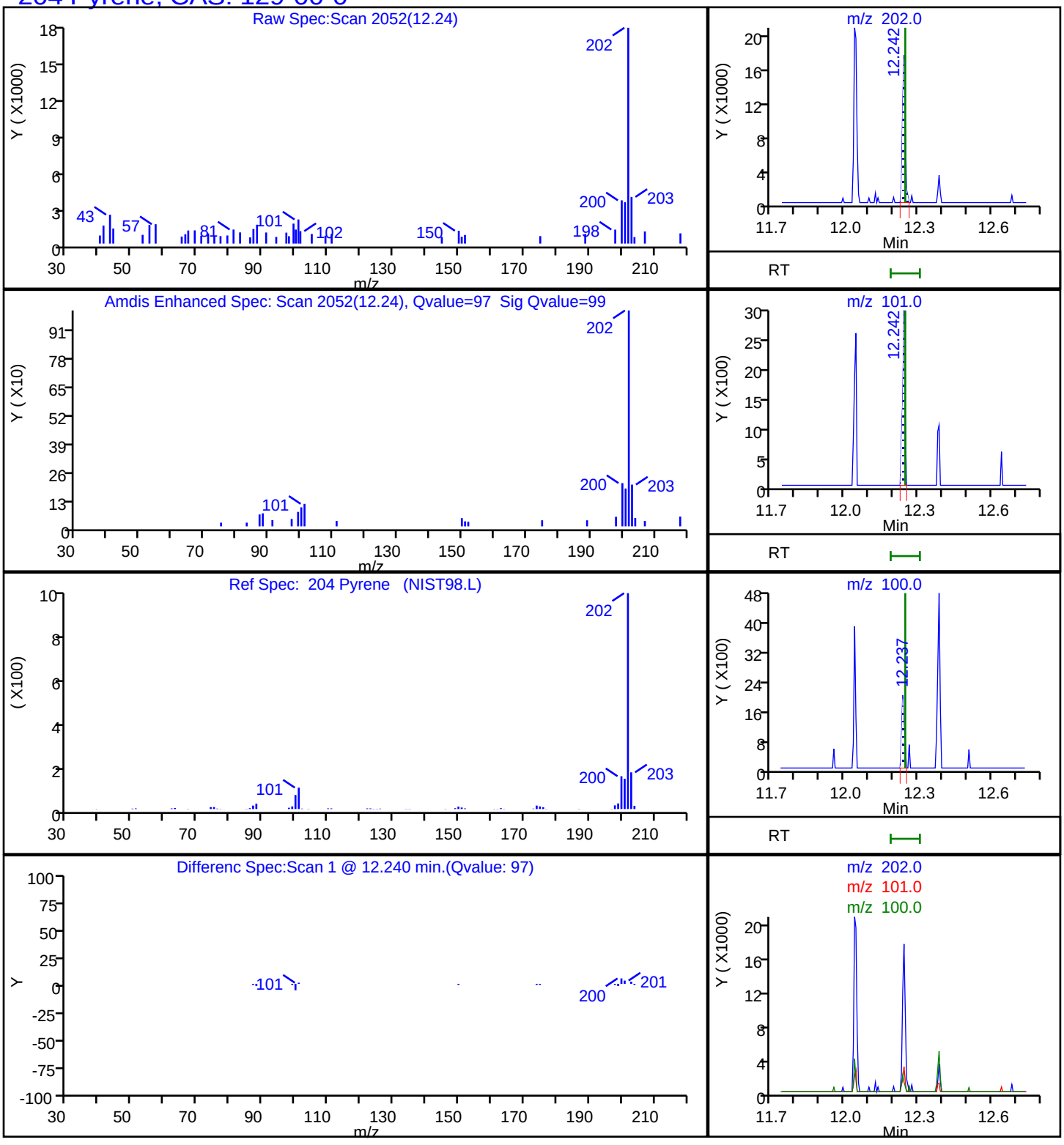
188 Phenanthrene, CAS: 85-01-8



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D				
Injection Date:	26-Sep-2019 20:40:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-8-A	Lab Sample ID:	480-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

204 Pyrene, CAS: 129-00-0



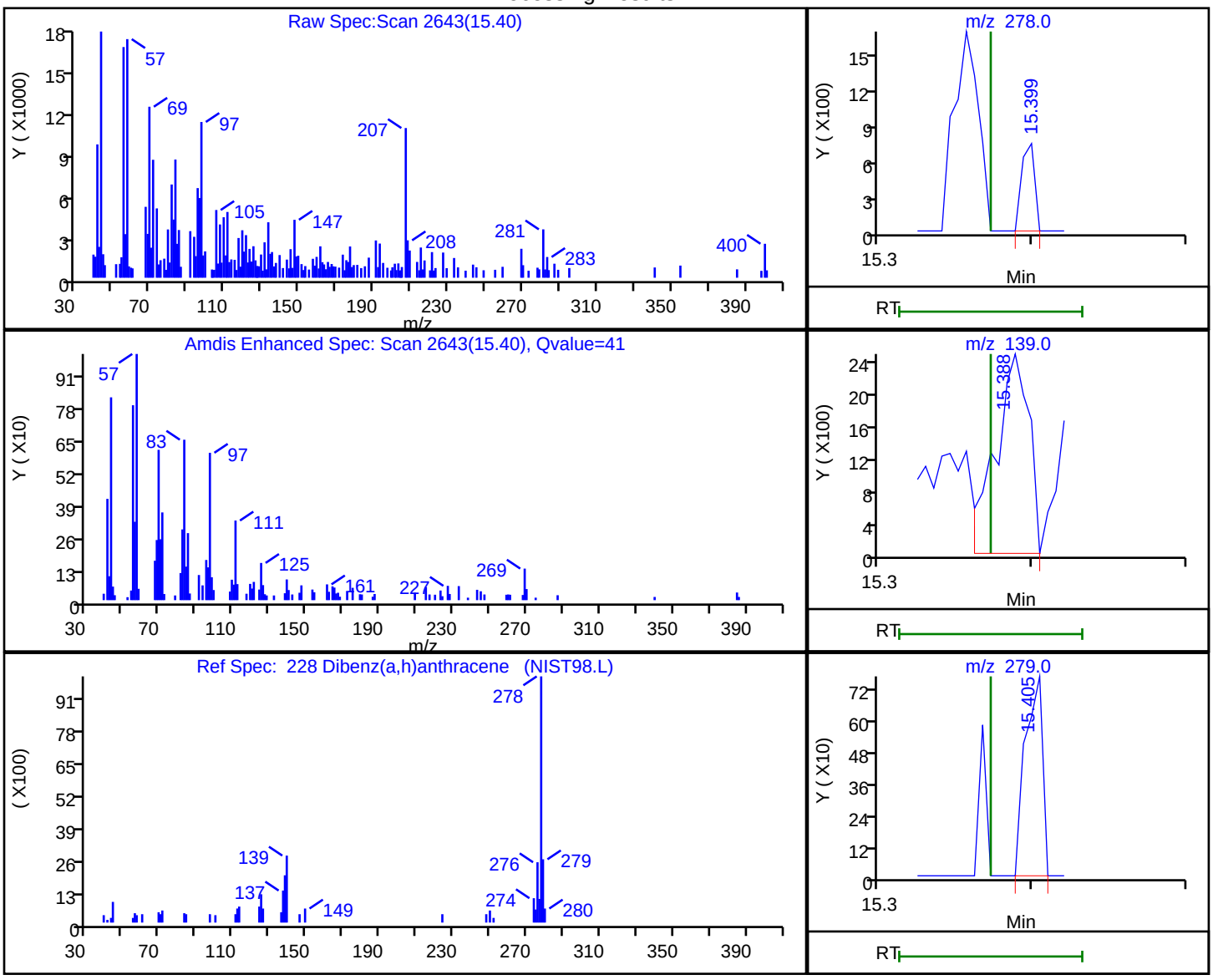
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140358.D				
Injection Date:	26-Sep-2019 20:40:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-8-A	Lab Sample ID:	480-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	14	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

228 Dibenz(a,h)anthracene, CAS: 53-70-3

Processing Results



RT	Mass	Response	Amount
15.40	278.00	431	0.122722
15.39	139.00	3798	
15.40	279.00	603	

Reviewer: quirkp, 28-Sep-2019 11:37:03

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 | Lab Sample ID: 480-159547-18

Matrix: Solid | Lab File ID: V3140359.D

Analysis Method: 8270D | Date Collected: 09/16/2019 11:50

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.34(g) | Date Analyzed: 09/26/2019 21:05

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 11.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		190	28
208-96-8	Acenaphthylene	ND		190	25
120-12-7	Anthracene	ND		190	47
56-55-3	Benzo[a]anthracene	ND		190	19
50-32-8	Benzo[a]pyrene	ND		190	28
205-99-2	Benzo[b]fluoranthene	ND		190	30
191-24-2	Benzo[g,h,i]perylene	ND		190	20
207-08-9	Benzo[k]fluoranthene	ND		190	25
218-01-9	Chrysene	ND		190	42
53-70-3	Dibenz(a,h)anthracene	ND		190	33
132-64-9	Dibenzofuran	ND		190	22
206-44-0	Fluoranthene	ND		190	20
86-73-7	Fluorene	ND		190	22
118-74-1	Hexachlorobenzene	ND		190	26
193-39-5	Indeno[1,2,3-cd]pyrene	ND		190	23
95-48-7	2-Methylphenol	ND		190	22
106-44-5	Methylphenol, 3 & 4	ND		370	22
91-20-3	Naphthalene	ND		190	25
123-91-1	1,4-Dioxane	ND		220	61
87-86-5	Pentachlorophenol	ND		370	190
85-01-8	Phenanthrene	ND		190	28
108-95-2	Phenol	ND		190	29
129-00-0	Pyrene	ND		190	22

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	90		60-120
367-12-4	2-Fluorophenol (Surr)	81		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	94		53-120
4165-62-2	Phenol-d5 (Surr)	88		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	111		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	110		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140359.D
Lims ID: 480-159547-E-18-A
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 26-Sep-2019 21:05:30 ALS Bottle#: 15 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-015
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:38:26 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:38:26

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	182534	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	650268	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	93	348673	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	607459	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	99	517184	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	566935	40.0	
$ 7 2-Fluorophenol	112	3.935	3.929	0.006	94	193536	32.6	
$ 8 Phenol-d5	99	5.244	5.244	0.000	96	246815	35.2	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	228692	37.5	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	454907	36.1	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	91	59512	43.9	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	478432	44.3	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178		10.928				ND	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202		12.050				ND	
204 Pyrene	202		12.247				ND	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252		14.154				ND	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252		14.405				ND	U

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

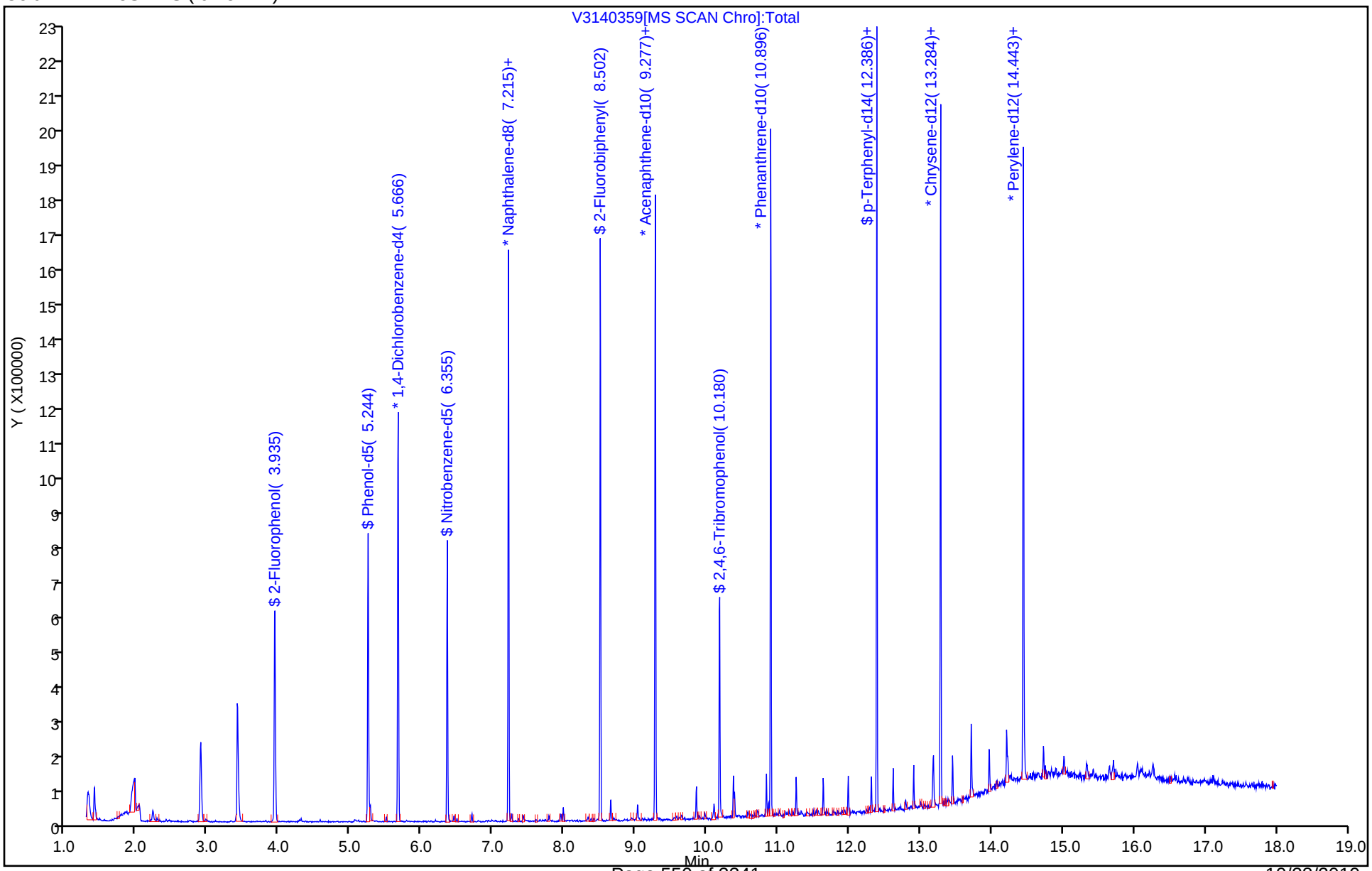
Report Date: 28-Sep-2019 11:38:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140359.D

Injection Date:	26-Sep-2019 21:05:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-18-A	Lab Sample ID:	480-159547-18	Worklist Smp#:	15
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	15
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



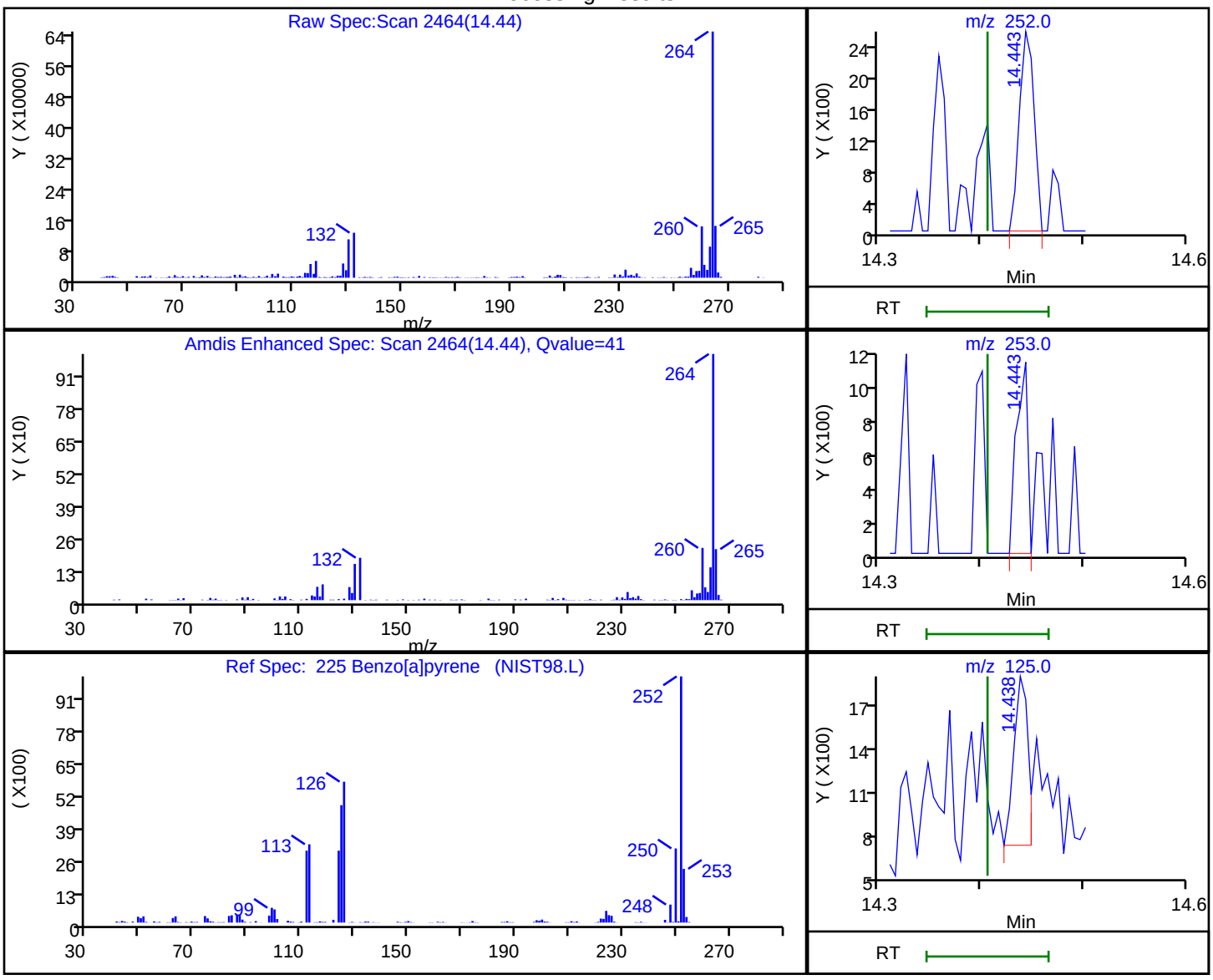
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140359.D				
Injection Date:	26-Sep-2019 21:05:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-18-A	Lab Sample ID:	480-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	PJQ	ALS Bottle#:	15	Worklist Smp#:	15
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.44	252.00	2586	0.236477
14.44	253.00	836	
14.44	125.00	1040	

Reviewer: quirkp, 28-Sep-2019 11:38:07

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 | Lab Sample ID: 480-159547-19

Matrix: Solid | Lab File ID: V3140360.D

Analysis Method: 8270D | Date Collected: 09/16/2019 11:52

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.28(g) | Date Analyzed: 09/26/2019 21:30

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 9.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		190	27
208-96-8	Acenaphthylene	ND		190	24
120-12-7	Anthracene	ND		190	46
56-55-3	Benzo[a]anthracene	ND		190	19
50-32-8	Benzo[a]pyrene	ND		190	27
205-99-2	Benzo[b]fluoranthene	ND		190	30
191-24-2	Benzo[g,h,i]perylene	ND		190	20
207-08-9	Benzo[k]fluoranthene	ND		190	24
218-01-9	Chrysene	ND		190	42
53-70-3	Dibenz(a,h)anthracene	ND		190	33
132-64-9	Dibenzofuran	ND		190	22
206-44-0	Fluoranthene	20	J	190	20
86-73-7	Fluorene	ND		190	22
118-74-1	Hexachlorobenzene	ND		190	25
193-39-5	Indeno[1,2,3-cd]pyrene	ND		190	23
95-48-7	2-Methylphenol	ND		190	22
106-44-5	Methylphenol, 3 & 4	ND		360	22
91-20-3	Naphthalene	ND		190	24
123-91-1	1,4-Dioxane	ND		220	60
87-86-5	Pentachlorophenol	ND		360	190
85-01-8	Phenanthrene	ND		190	27
108-95-2	Phenol	ND		190	28
129-00-0	Pyrene	ND		190	22

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	85		60-120
367-12-4	2-Fluorophenol (Surr)	77		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	90		53-120
4165-62-2	Phenol-d5 (Surr)	82		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	105		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	100		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140360.D
Lims ID: 480-159547-E-19-A
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 26-Sep-2019 21:30:30 ALS Bottle#: 16 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-016
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:39:01 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:39:01

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	185204	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	661615	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	358246	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	613849	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	523313	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	99	572653	40.0	
$ 7 2-Fluorophenol	112	3.929	3.929	0.000	94	184836	30.6	
$ 8 Phenol-d5	99	5.244	5.244	0.000	94	234294	32.9	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	223291	36.0	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	438371	33.9	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	92	54856	40.2	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	459025	42.0	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178	10.922	10.922	-0.006	93	5182	0.2975	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202	12.044	12.044	-0.006	95	9414	0.5429	
204 Pyrene	202	12.242	12.242	-0.005	97	7320	0.4229	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252		14.154				ND	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252	14.400	14.406	-0.005	68	2896	0.2536	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276	15.613	15.617	-0.016	93	2965	0.2450	

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

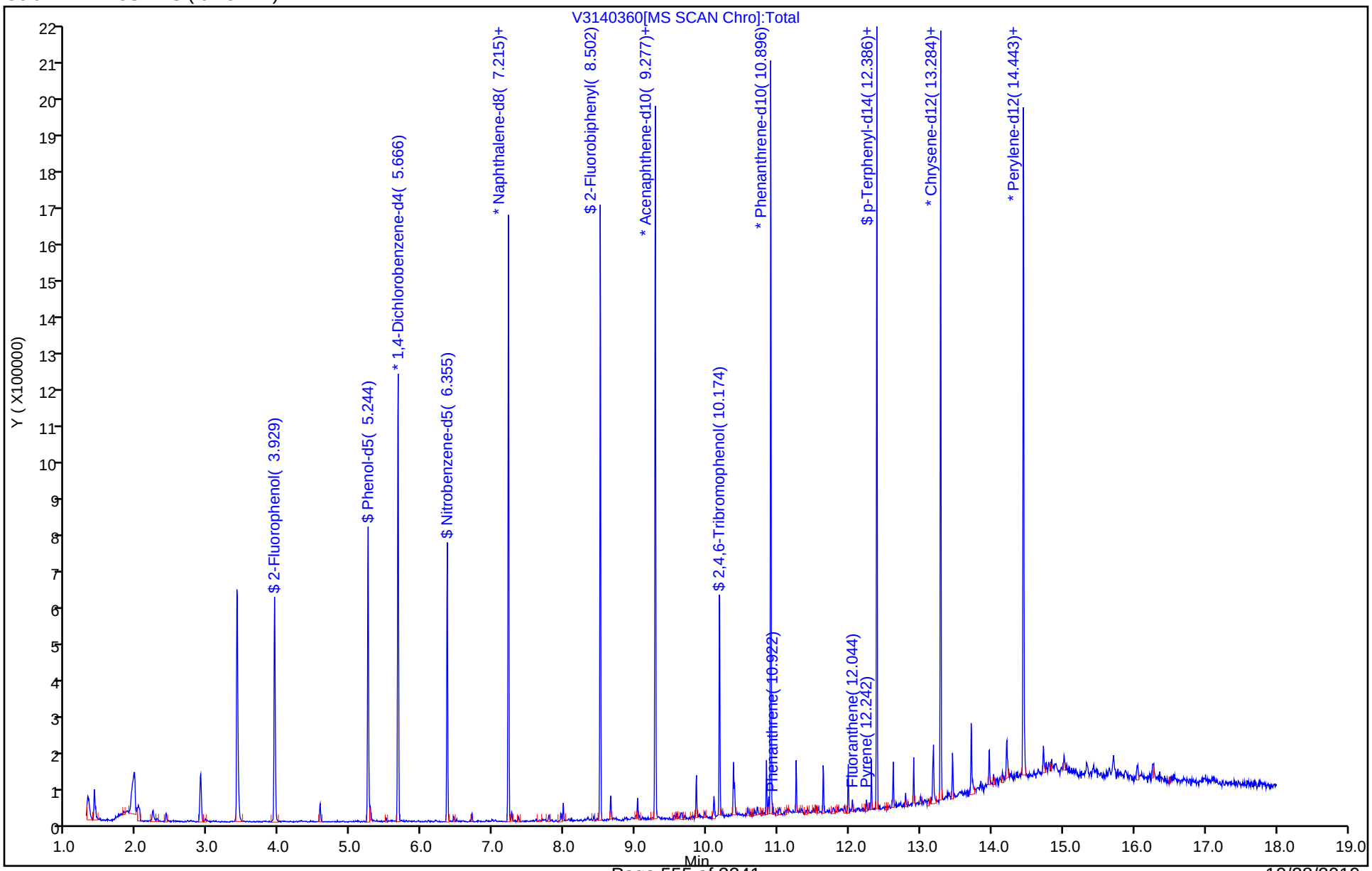
Report Date: 28-Sep-2019 11:39:01 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140360.D

Injection Date:	26-Sep-2019 21:30:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-19-A	Lab Sample ID:	480-159547-19	Worklist Smp#:	16
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	16
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

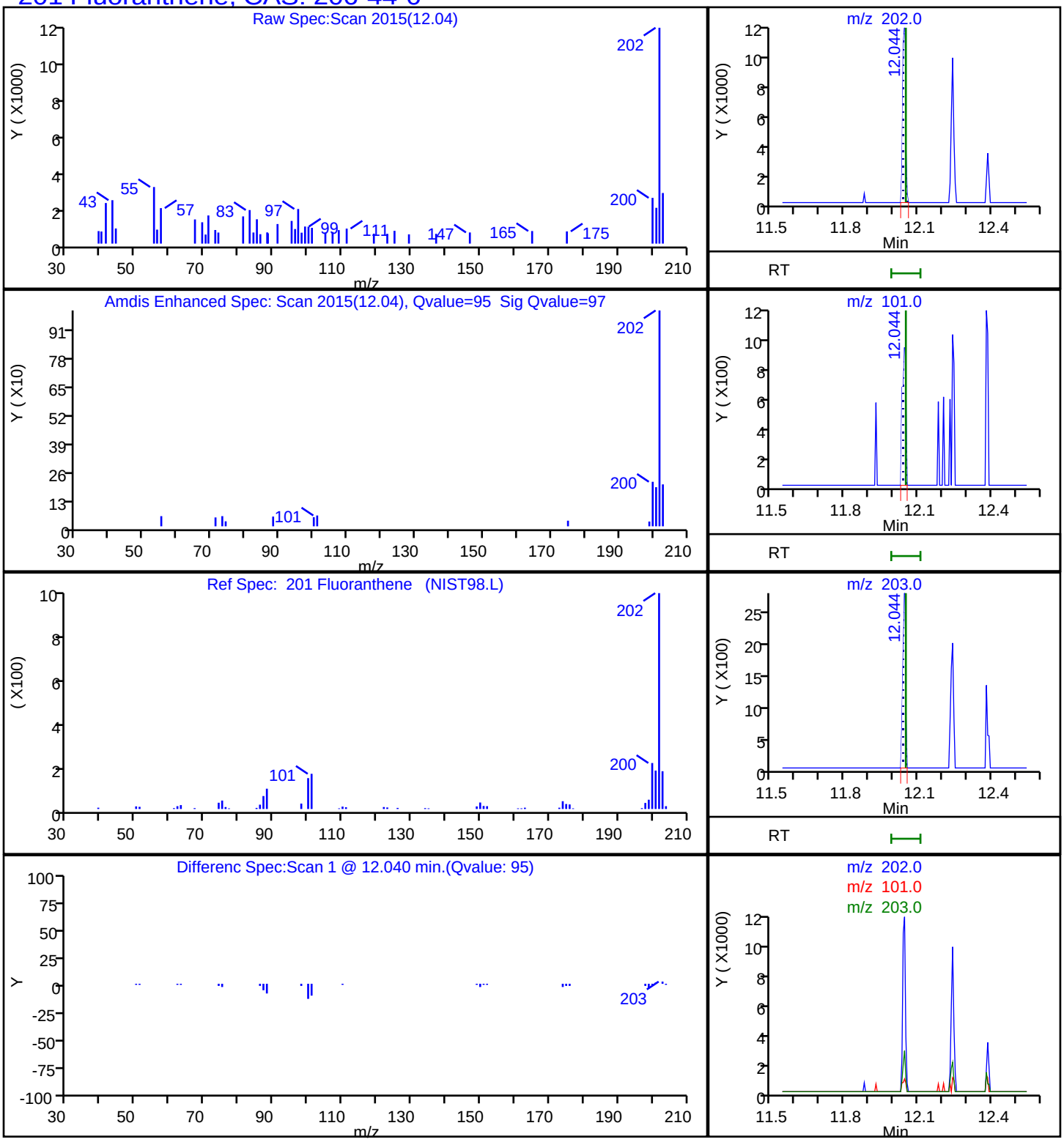
Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140360.D				
Injection Date:	26-Sep-2019 21:30:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-19-A	Lab Sample ID:	480-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	16	Worklist Smp#:	16
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

201 Fluoranthene, CAS: 206-44-0



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 | Lab Sample ID: 480-159547-20

Matrix: Solid | Lab File ID: V3140361.D

Analysis Method: 8270D | Date Collected: 09/16/2019 11:55

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.88(g) | Date Analyzed: 09/26/2019 21:56

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 10.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		180	27
208-96-8	Acenaphthylene	ND		180	24
120-12-7	Anthracene	ND		180	45
56-55-3	Benzo[a]anthracene	ND		180	18
50-32-8	Benzo[a]pyrene	ND		180	27
205-99-2	Benzo[b]fluoranthene	ND		180	29
191-24-2	Benzo[g,h,i]perylene	ND		180	19
207-08-9	Benzo[k]fluoranthene	ND		180	24
218-01-9	Chrysene	ND		180	41
53-70-3	Dibenz(a,h)anthracene	ND		180	32
132-64-9	Dibenzofuran	ND		180	22
206-44-0	Fluoranthene	ND		180	19
86-73-7	Fluorene	ND		180	22
118-74-1	Hexachlorobenzene	ND		180	25
193-39-5	Indeno[1,2,3-cd]pyrene	ND		180	23
95-48-7	2-Methylphenol	ND		180	22
106-44-5	Methylphenol, 3 & 4	ND		360	22
91-20-3	Naphthalene	ND		180	24
123-91-1	1,4-Dioxane	ND		220	60
87-86-5	Pentachlorophenol	ND		360	180
85-01-8	Phenanthrene	ND		180	27
108-95-2	Phenol	ND		180	28
129-00-0	Pyrene	ND		180	22

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	86		60-120
367-12-4	2-Fluorophenol (Surr)	76		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	84		53-120
4165-62-2	Phenol-d5 (Surr)	83		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	104		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	100		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140361.D
Lims ID: 480-159547-F-20-A
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 26-Sep-2019 21:56:30 ALS Bottle#: 17 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-017
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:40:24 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:40:24

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
*	1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	174229	40.0	
*	2 Naphthalene-d8	136	7.215	7.215	0.000	100	635998	40.0	
*	3 Acenaphthene-d10	164	9.277	9.277	0.000	95	337338	40.0	
*	4 Phenanthrene-d10	188	10.896	10.901	-0.005	98	600851	40.0	
*	5 Chrysene-d12	240	13.284	13.289	-0.005	100	524092	40.0	
*	6 Perylene-d12	264	14.443	14.454	-0.011	98	593396	40.0	
$	7 2-Fluorophenol	112	3.929	3.929	0.000	94	173050	30.5	
$	8 Phenol-d5	99	5.244	5.244	0.000	95	221430	33.1	
$	9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	199336	33.5	
$	10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	417035	34.2	
$	11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	92	53454	40.0	
$	12 p-Terphenyl-d14	244	12.386	12.386	-0.005	100	456180	41.7	
	68 1,4-Dioxane	88		1.632				ND	
	81 Phenol	94		5.260				ND	
	92 2-Methylphenol	108		6.023				ND	
	96 4-Methylphenol	108		6.221				ND	
	118 Naphthalene	128		7.242				ND	
	150 Acenaphthylene	152		9.111				ND	
	152 Acenaphthene	153		9.320				ND	
	155 Dibenzofuran	168		9.517				ND	
	162 Fluorene	166		9.913				ND	
	179 Hexachlorobenzene	284		10.522				ND	
	183 Pentachlorophenol	266		10.730				ND	
	188 Phenanthrene	178		10.928				ND	
	189 Anthracene	178		10.976				ND	
	201 Fluoranthene	202		12.050				ND	
	204 Pyrene	202		12.247				ND	
	217 Benzo[a]anthracene	228		13.278				ND	
	218 Chrysene	228		13.310				ND	
	221 Benzo[b]fluoranthene	252		14.154				ND	
	222 Benzo[k]fluoranthene	252		14.176				ND	
	225 Benzo[a]pyrene	252		14.405				ND	U

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

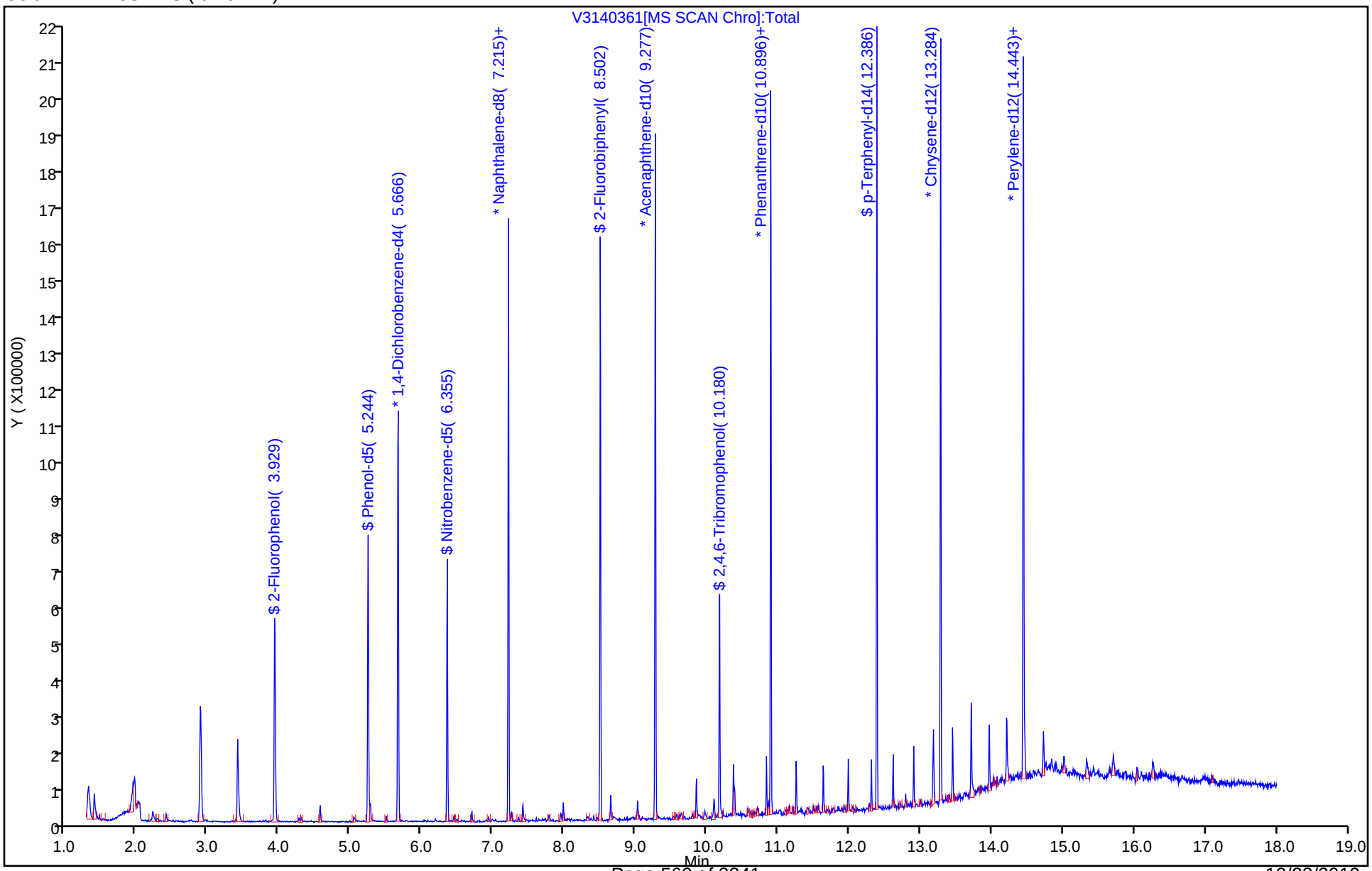
Report Date: 28-Sep-2019 11:40:24 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140361.D

Injection Date:	26-Sep-2019 21:56:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-F-20-A	Lab Sample ID:	480-159547-20	Worklist Smp#:	17
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	17
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



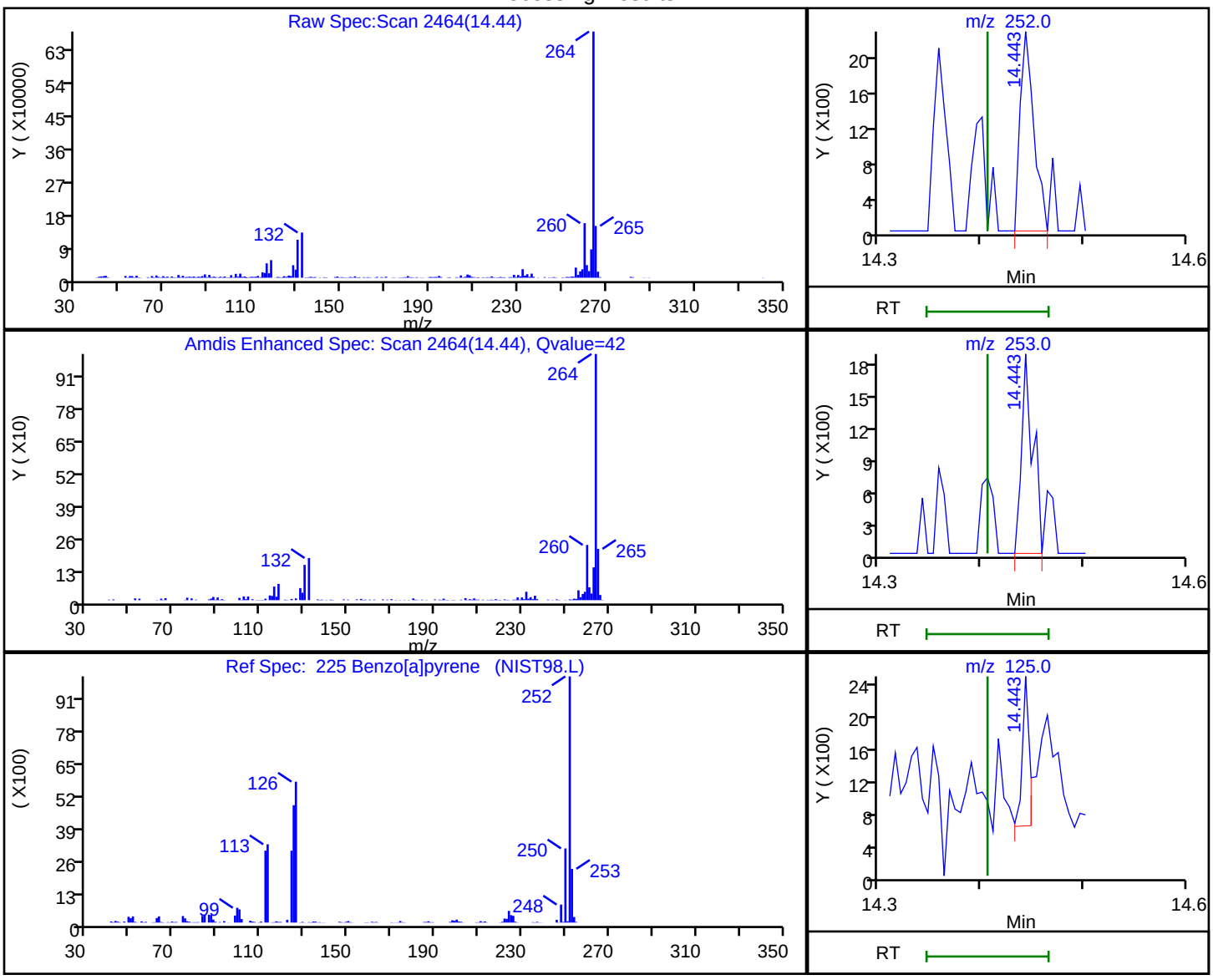
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140361.D				
Injection Date:	26-Sep-2019 21:56:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-F-20-A	Lab Sample ID:	480-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	PJQ	ALS Bottle#:	17	Worklist Smp#:	17
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.44	252.00	2104	0.201392
14.44	253.00	1418	
14.44	125.00	882	

Reviewer: quirkp, 28-Sep-2019 11:39:16

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: V3140362.D

Analysis Method: 8270D Date Collected: 09/16/2019 13:50

Extract. Method: 3550C Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.20(g) Date Analyzed: 09/26/2019 22:21

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 1(uL) Level: (low/med) Low

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		180	27
208-96-8	Acenaphthylene	ND		180	23
120-12-7	Anthracene	ND		180	45
56-55-3	Benzo[a]anthracene	ND		180	18
50-32-8	Benzo[a]pyrene	ND		180	27
205-99-2	Benzo[b]fluoranthene	ND		180	29
191-24-2	Benzo[g,h,i]perylene	ND		180	19
207-08-9	Benzo[k]fluoranthene	ND		180	23
218-01-9	Chrysene	ND		180	41
53-70-3	Dibenz(a,h)anthracene	ND		180	32
132-64-9	Dibenzofuran	ND		180	21
206-44-0	Fluoranthene	ND		180	19
86-73-7	Fluorene	ND		180	21
118-74-1	Hexachlorobenzene	ND		180	25
193-39-5	Indeno[1,2,3-cd]pyrene	ND		180	22
95-48-7	2-Methylphenol	ND		180	21
106-44-5	Methylphenol, 3 & 4	ND		350	21
91-20-3	Naphthalene	ND		180	23
123-91-1	1,4-Dioxane	ND		210	59
87-86-5	Pentachlorophenol	ND		350	180
85-01-8	Phenanthrene	ND		180	27
108-95-2	Phenol	ND		180	28
129-00-0	Pyrene	ND		180	21

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	84		60-120
367-12-4	2-Fluorophenol (Surr)	77		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	91		53-120
4165-62-2	Phenol-d5 (Surr)	86		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	104		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	99		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140362.D
Lims ID: 480-159547-F-30-A
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 26-Sep-2019 22:21:30 ALS Bottle#: 18 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-018
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:40:52 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:40:51

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	175111	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	640647	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	350819	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	611776	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	541107	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	612371	40.0	
$ 7 2-Fluorophenol	112	3.935	3.929	0.006	94	176310	30.9	
$ 8 Phenol-d5	99	5.244	5.244	0.000	95	230939	34.3	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	217958	36.3	
$ 10 2-Fluorobiphenyl	172	8.503	8.508	-0.005	100	428359	33.8	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	91	53999	39.7	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	469782	41.6	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178		10.928				ND	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202		12.050				ND	
204 Pyrene	202		12.247				ND	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252		14.154				ND	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252		14.405				ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

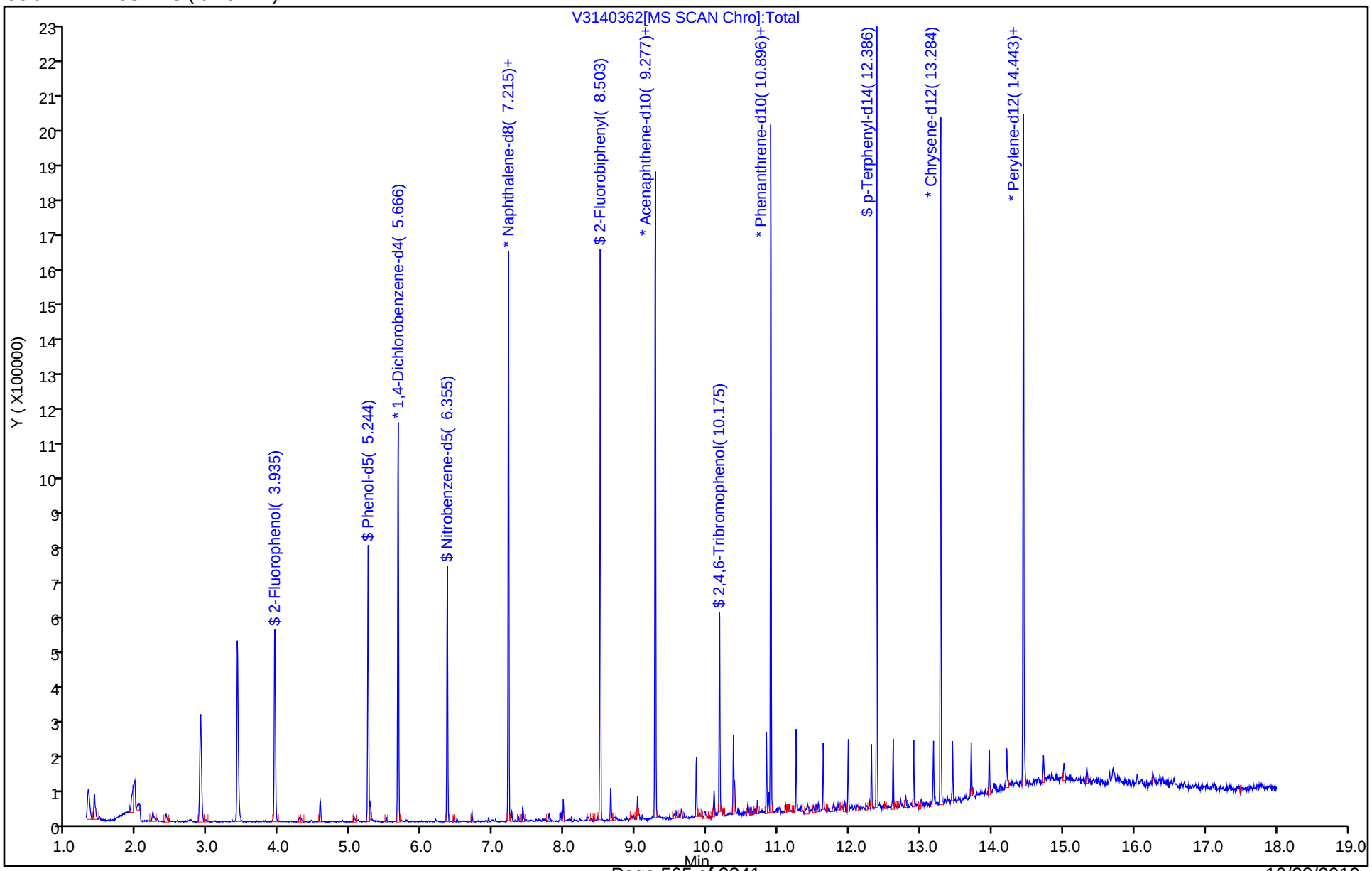
Report Date: 28-Sep-2019 11:40:52 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140362.D

Injection Date:	26-Sep-2019 22:21:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-F-30-A	Lab Sample ID:	480-159547-30	Worklist Smp#:	18
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 | Lab Sample ID: 480-159547-31

Matrix: Solid | Lab File ID: V3140363.D

Analysis Method: 8270D | Date Collected: 09/16/2019 13:53

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.32(g) | Date Analyzed: 09/26/2019 22:47

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 5.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		180	26
208-96-8	Acenaphthylene	ND		180	23
120-12-7	Anthracene	ND		180	44
56-55-3	Benzo[a]anthracene	ND		180	18
50-32-8	Benzo[a]pyrene	ND		180	26
205-99-2	Benzo[b]fluoranthene	ND		180	28
191-24-2	Benzo[g,h,i]perylene	ND		180	19
207-08-9	Benzo[k]fluoranthene	ND		180	23
218-01-9	Chrysene	ND		180	40
53-70-3	Dibenz(a,h)anthracene	ND		180	32
132-64-9	Dibenzofuran	ND		180	21
206-44-0	Fluoranthene	ND		180	19
86-73-7	Fluorene	ND		180	21
118-74-1	Hexachlorobenzene	ND		180	24
193-39-5	Indeno[1,2,3-cd]pyrene	ND		180	22
95-48-7	2-Methylphenol	ND		180	21
106-44-5	Methylphenol, 3 & 4	ND		350	21
91-20-3	Naphthalene	ND		180	23
123-91-1	1,4-Dioxane	ND		210	58
87-86-5	Pentachlorophenol	ND		350	180
85-01-8	Phenanthrene	ND		180	26
108-95-2	Phenol	ND		180	27
129-00-0	Pyrene	ND		180	21

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	90		60-120
367-12-4	2-Fluorophenol (Surr)	82		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	91		53-120
4165-62-2	Phenol-d5 (Surr)	89		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	105		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	102		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140363.D
Lims ID: 480-159547-E-31-C
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 26-Sep-2019 22:47:30 ALS Bottle#: 19 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-019
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:41:20 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:41:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	173277	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	644888	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	344947	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	617661	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	538552	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	596797	40.0	
$ 7 2-Fluorophenol	112	3.935	3.929	0.006	95	184867	32.8	
$ 8 Phenol-d5	99	5.244	5.244	0.000	95	237581	35.7	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	220743	36.5	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	446498	35.8	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	93	55868	40.7	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	100	472101	42.0	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178		10.928				ND	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202		12.050				ND	
204 Pyrene	202		12.247				ND	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252		14.154				ND	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252		14.405				ND	U

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

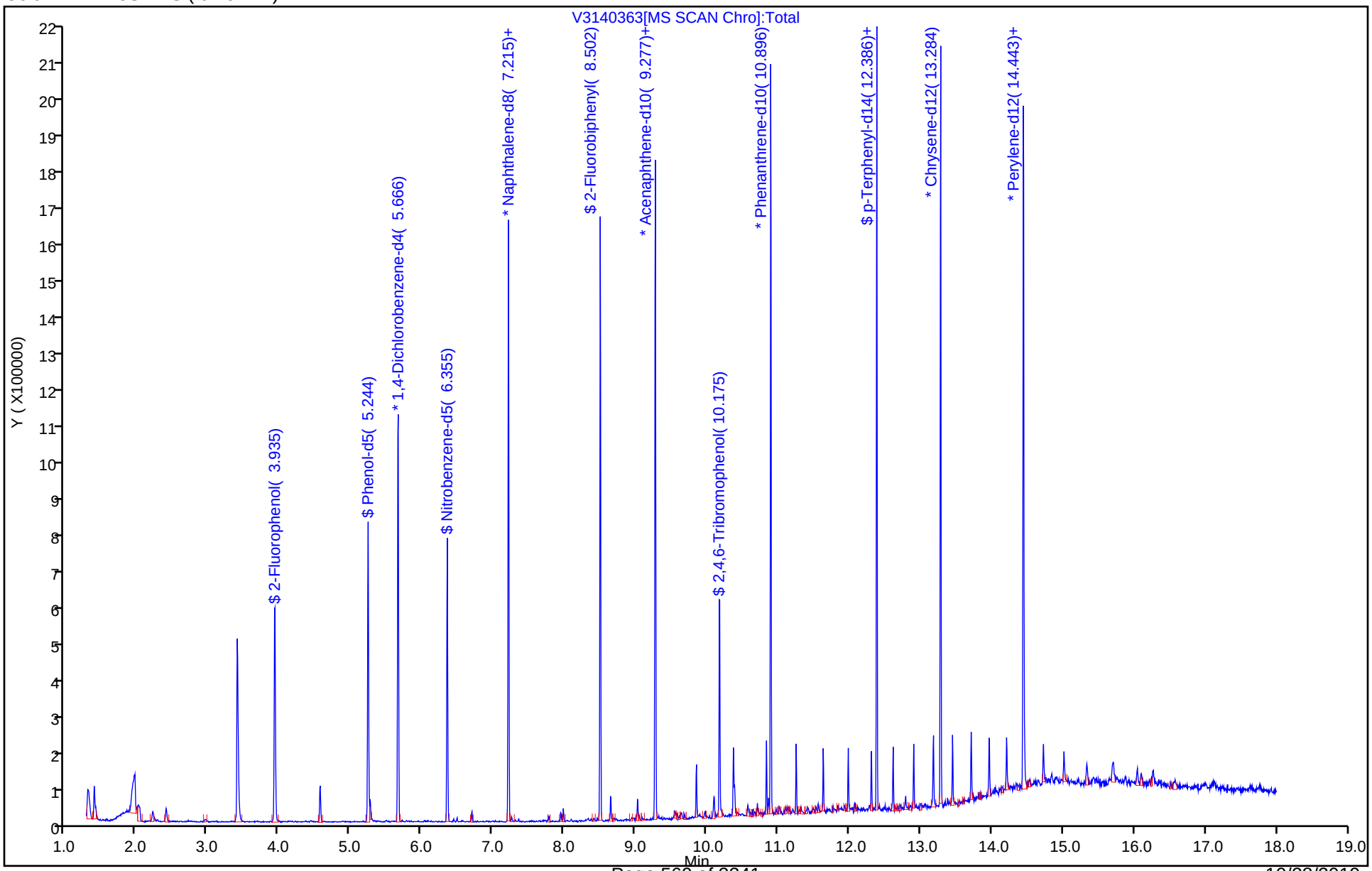
Report Date: 28-Sep-2019 11:41:20 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140363.D

Injection Date:	26-Sep-2019 22:47:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-31-C	Lab Sample ID:	480-159547-31	Worklist Smp#:	19
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	19
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



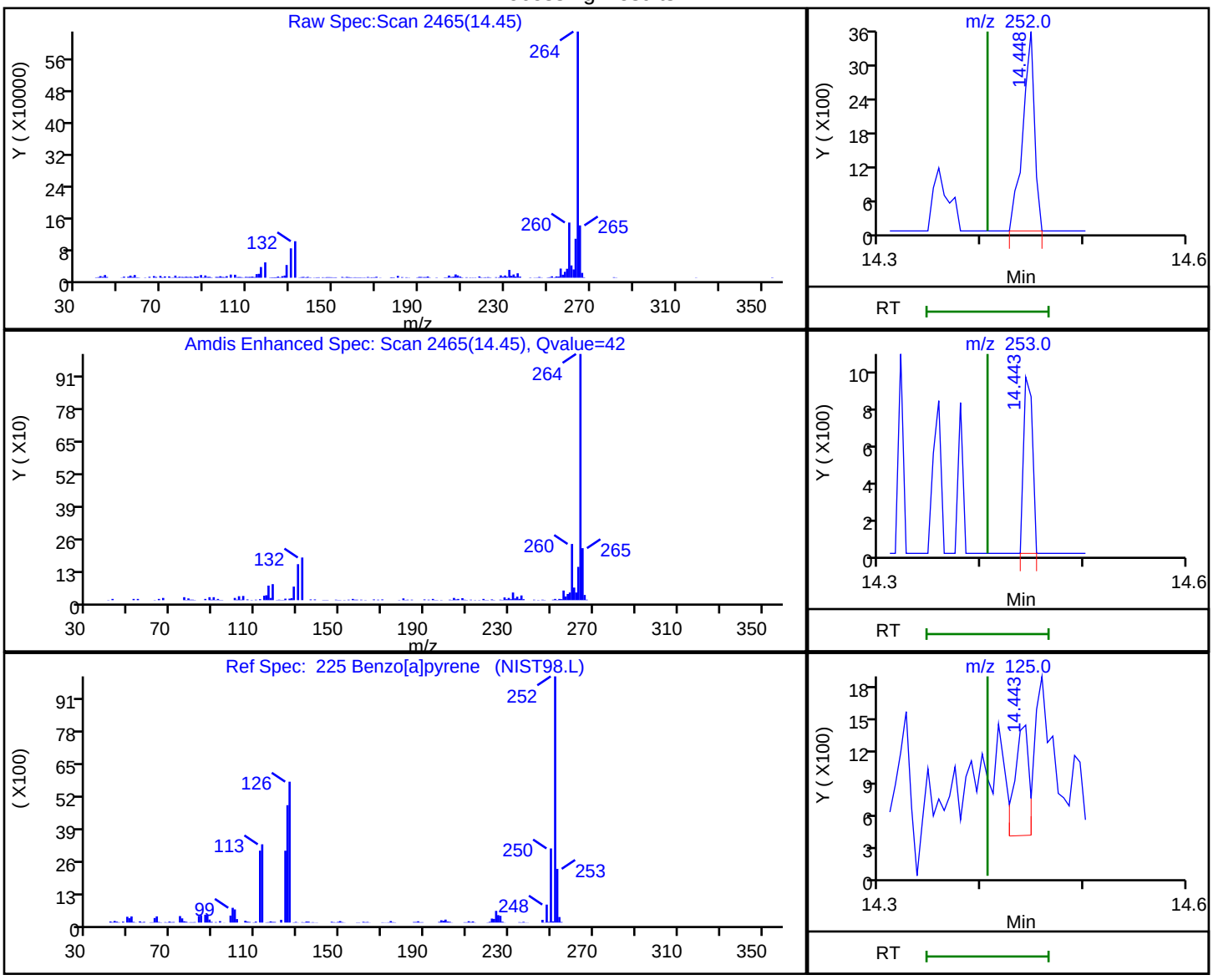
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140363.D				
Injection Date:	26-Sep-2019 22:47:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-31-C	Lab Sample ID:	480-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	19	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.45	252.00	2857	0.244278
14.44	253.00	582	
14.44	125.00	1033	

Reviewer: quirkp, 28-Sep-2019 11:41:03

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 | Lab Sample ID: 480-159547-32

Matrix: Solid | Lab File ID: V3140364.D

Analysis Method: 8270D | Date Collected: 09/16/2019 13:57

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.40(g) | Date Analyzed: 09/26/2019 23:13

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 7.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		180	27
208-96-8	Acenaphthylene	ND		180	23
120-12-7	Anthracene	ND		180	45
56-55-3	Benzo[a]anthracene	ND		180	18
50-32-8	Benzo[a]pyrene	ND		180	27
205-99-2	Benzo[b]fluoranthene	ND		180	29
191-24-2	Benzo[g,h,i]perylene	ND		180	19
207-08-9	Benzo[k]fluoranthene	ND		180	23
218-01-9	Chrysene	ND		180	40
53-70-3	Dibenz(a,h)anthracene	ND		180	32
132-64-9	Dibenzofuran	ND		180	21
206-44-0	Fluoranthene	ND		180	19
86-73-7	Fluorene	ND		180	21
118-74-1	Hexachlorobenzene	ND		180	24
193-39-5	Indeno[1,2,3-cd]pyrene	ND		180	22
95-48-7	2-Methylphenol	ND		180	21
106-44-5	Methylphenol, 3 & 4	ND		350	21
91-20-3	Naphthalene	ND		180	23
123-91-1	1,4-Dioxane	ND		210	58
87-86-5	Pentachlorophenol	ND		350	180
85-01-8	Phenanthrene	ND		180	27
108-95-2	Phenol	ND		180	28
129-00-0	Pyrene	ND		180	21

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	81		60-120
367-12-4	2-Fluorophenol (Surr)	73		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	87		53-120
4165-62-2	Phenol-d5 (Surr)	80		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	101		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	94		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140364.D
Lims ID: 480-159547-F-32-A
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 26-Sep-2019 23:13:30 ALS Bottle#: 20 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-020
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:41:51 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:41:51

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	173162	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	618435	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	341733	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	98	589207	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	99	519259	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	627587	40.0	
$ 7 2-Fluorophenol	112	3.929	3.929	0.000	94	165548	29.4	
$ 8 Phenol-d5	99	5.238	5.244	-0.006	94	213386	32.1	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	202297	34.9	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	401657	32.5	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	91	49238	37.7	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	436969	40.3	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178		10.928				ND	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202		12.050				ND	
204 Pyrene	202		12.247				ND	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252		14.154				ND	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252		14.405				ND	U

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

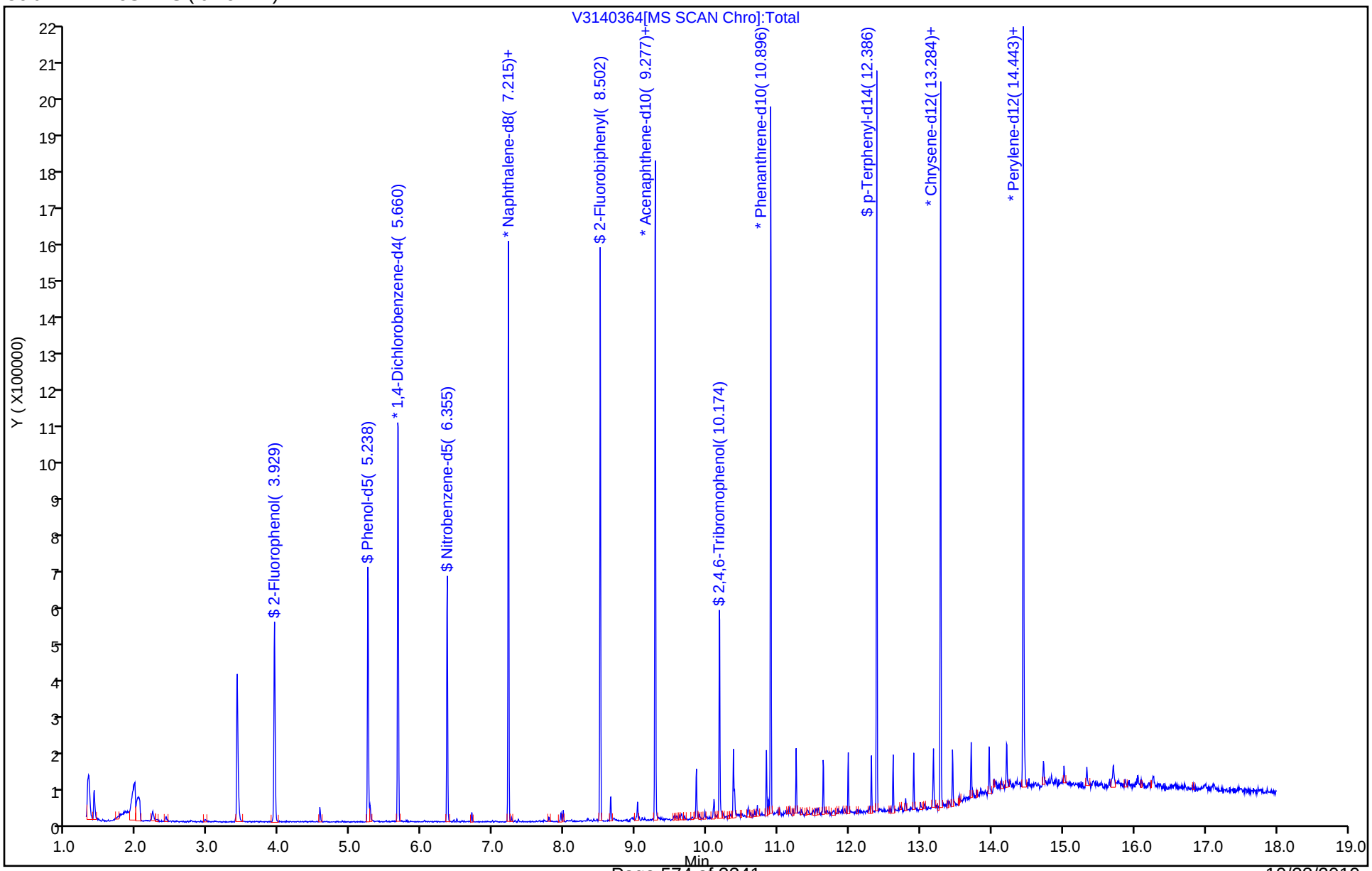
Report Date: 28-Sep-2019 11:41:51 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140364.D

Injection Date:	26-Sep-2019 23:13:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-F-32-A	Lab Sample ID:	480-159547-32	Worklist Smp#:	20
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	20
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



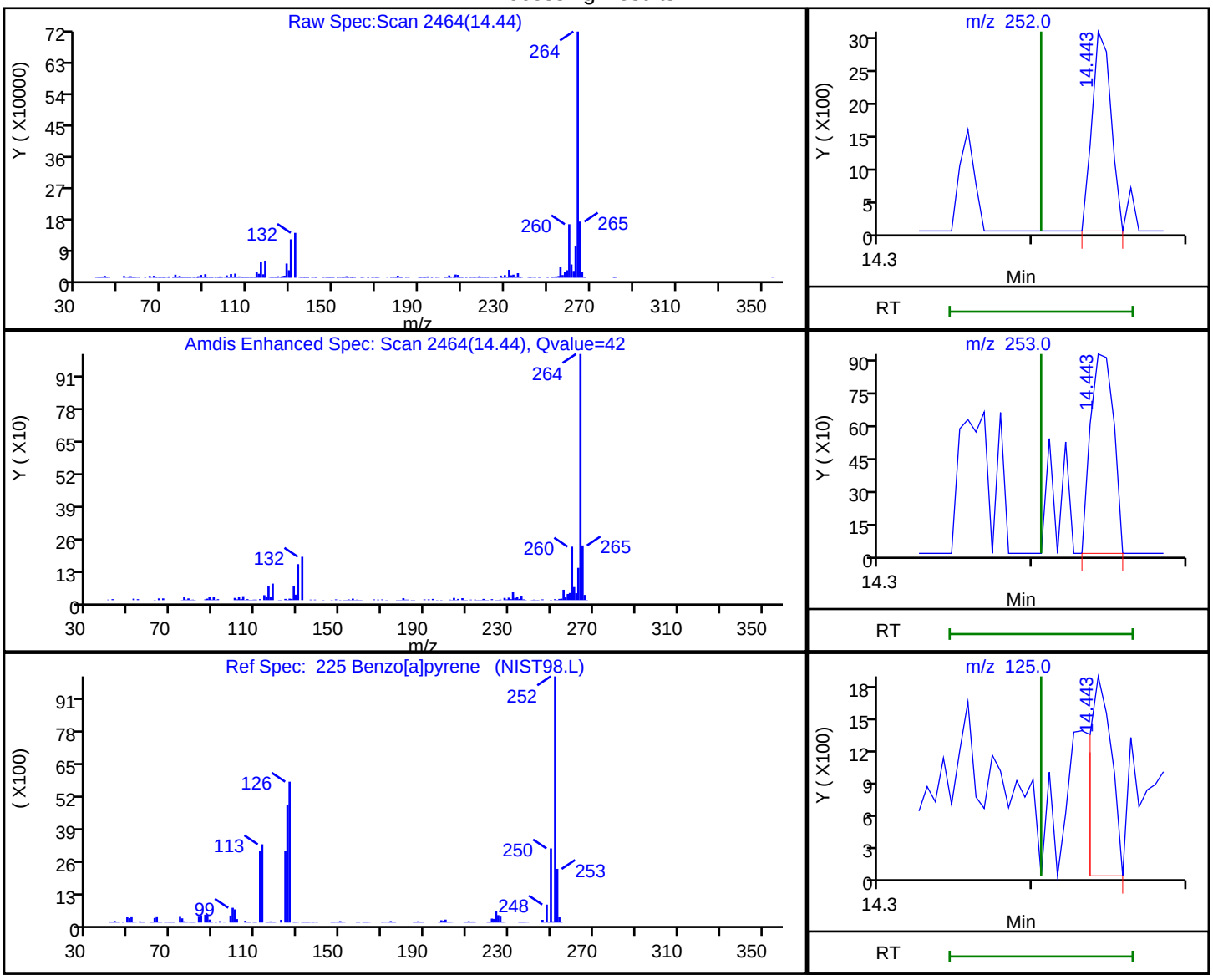
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140364.D				
Injection Date:	26-Sep-2019 23:13:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-F-32-A	Lab Sample ID:	480-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	PJQ	ALS Bottle#:	20	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.44	252.00	2634	0.223891
14.44	253.00	972	
14.44	125.00	1826	

Reviewer: quirkp, 28-Sep-2019 11:41:32

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 | Lab Sample ID: 480-159547-39

Matrix: Solid | Lab File ID: V3140365.D

Analysis Method: 8270D | Date Collected: 09/16/2019 14:30

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.19(g) | Date Analyzed: 09/26/2019 23:38

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 11.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		190	28
208-96-8	Acenaphthylene	ND		190	25
120-12-7	Anthracene	ND		190	47
56-55-3	Benzo[a]anthracene	ND		190	19
50-32-8	Benzo[a]pyrene	ND		190	28
205-99-2	Benzo[b]fluoranthene	ND		190	30
191-24-2	Benzo[g,h,i]perylene	ND		190	20
207-08-9	Benzo[k]fluoranthene	ND		190	25
218-01-9	Chrysene	ND		190	43
53-70-3	Dibenz(a,h)anthracene	ND		190	34
132-64-9	Dibenzofuran	ND		190	22
206-44-0	Fluoranthene	ND		190	20
86-73-7	Fluorene	ND		190	22
118-74-1	Hexachlorobenzene	ND		190	26
193-39-5	Indeno[1,2,3-cd]pyrene	ND		190	24
95-48-7	2-Methylphenol	ND		190	22
106-44-5	Methylphenol, 3 & 4	ND		370	22
91-20-3	Naphthalene	ND		190	25
123-91-1	1,4-Dioxane	ND		220	62
87-86-5	Pentachlorophenol	ND		370	190
85-01-8	Phenanthrene	ND		190	28
108-95-2	Phenol	ND		190	29
129-00-0	Pyrene	ND		190	22

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	87		60-120
367-12-4	2-Fluorophenol (Surr)	74		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	88		53-120
4165-62-2	Phenol-d5 (Surr)	84		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	101		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	101		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140365.D
Lims ID: 480-159547-E-39-A
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 26-Sep-2019 23:38:30 ALS Bottle#: 21 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-021
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:42:57 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:42:57

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	163337	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	587545	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	313397	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	558869	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	508844	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	604484	40.0	
$ 7 2-Fluorophenol	112	3.930	3.929	0.001	95	158490	29.8	
$ 8 Phenol-d5	99	5.244	5.244	0.000	95	210786	33.6	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	192840	35.0	
$ 10 2-Fluorobiphenyl	172	8.503	8.508	-0.005	100	395591	34.9	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	89	50225	40.4	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	427543	40.2	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178	10.917	10.922	-0.011	90	3367	0.2123	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202	12.044	12.044	-0.006	95	5547	0.3514	
204 Pyrene	202	12.242	12.242	-0.005	96	4267	0.2536	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252	14.144	14.149	-0.010	63	4947	0.2858	
222 Benzo[k]fluoranthene	252		14.176				ND	
225 Benzo[a]pyrene	252		14.405				ND	U

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276		15.629				ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

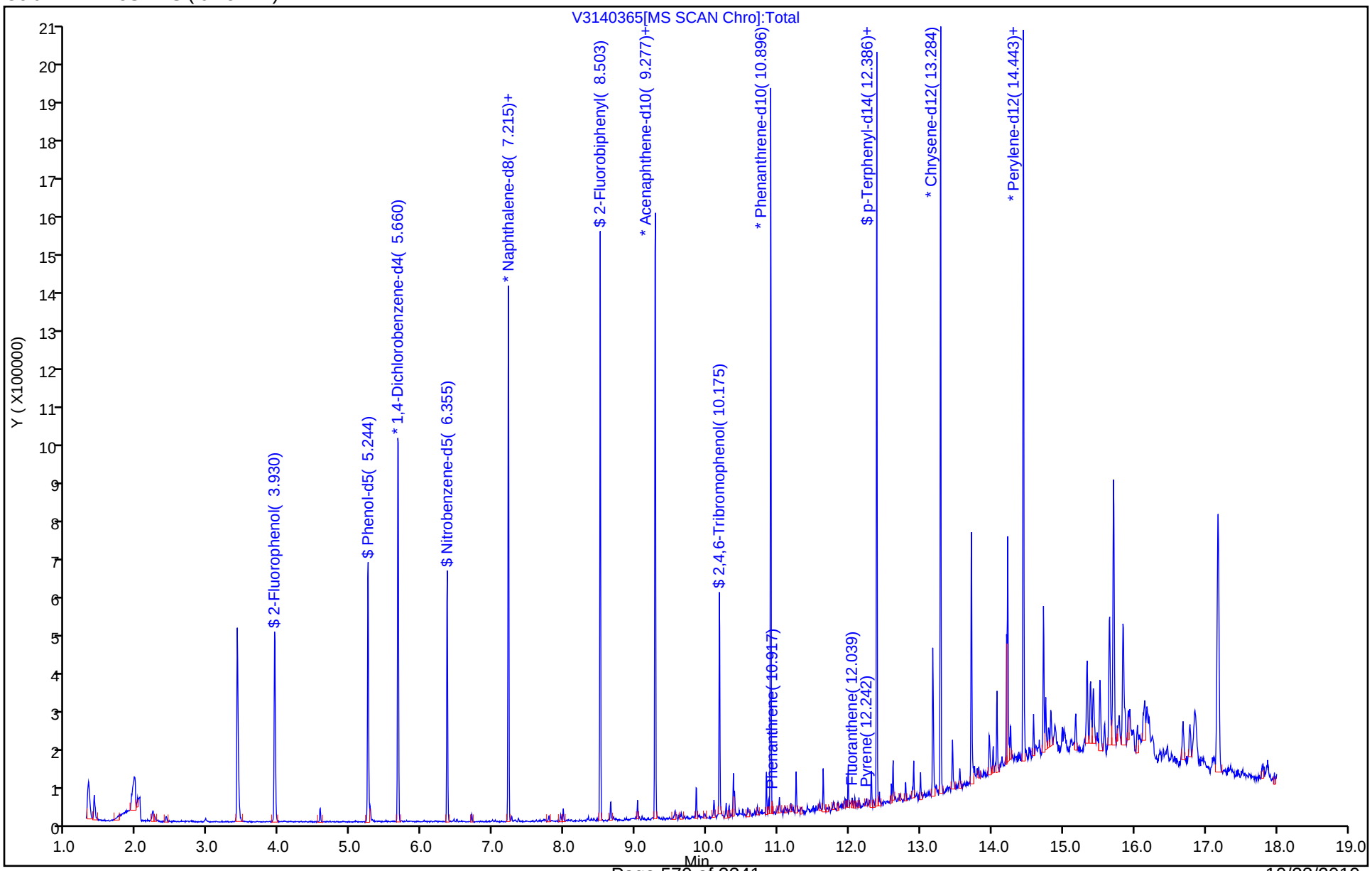
Report Date: 28-Sep-2019 11:42:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140365.D

Injection Date:	26-Sep-2019 23:38:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-E-39-A	Lab Sample ID:	480-159547-39	Worklist Smp#:	21
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	21
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



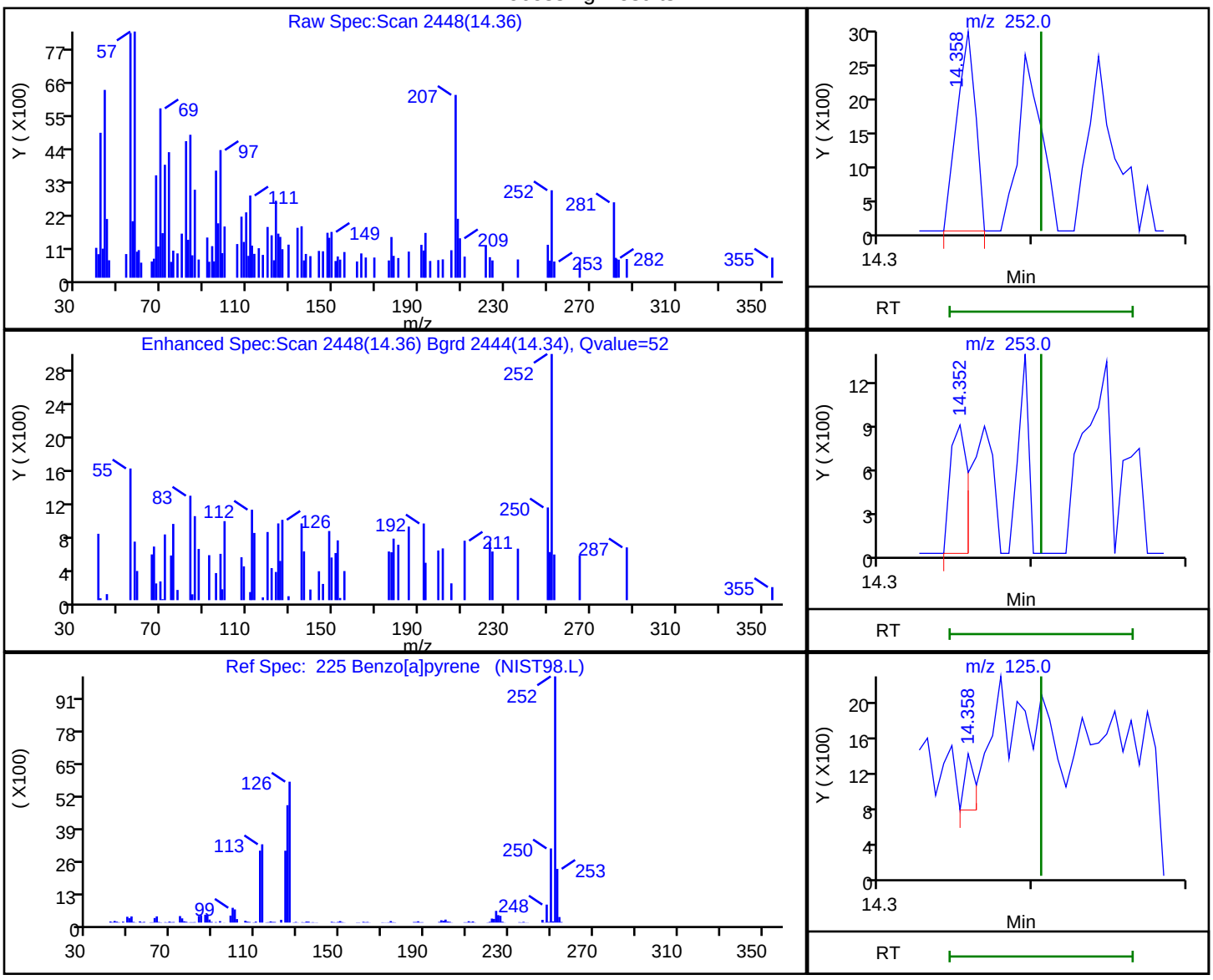
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140365.D				
Injection Date:	26-Sep-2019 23:38:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-E-39-A	Lab Sample ID:	480-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	PJQ	ALS Bottle#:	21	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.36	252.00	2483	0.220803
14.35	253.00	686	
14.36	125.00	293	

Reviewer: quirkp, 28-Sep-2019 11:42:26

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 | Lab Sample ID: 480-159547-40

Matrix: Solid | Lab File ID: V3140366.D

Analysis Method: 8270D | Date Collected: 09/16/2019 14:35

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.32(g) | Date Analyzed: 09/27/2019 00:03

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: 13.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		190	28
208-96-8	Acenaphthylene	ND		190	25
120-12-7	Anthracene	ND		190	48
56-55-3	Benzo[a]anthracene	ND		190	19
50-32-8	Benzo[a]pyrene	ND		190	28
205-99-2	Benzo[b]fluoranthene	ND		190	31
191-24-2	Benzo[g,h,i]perylene	ND		190	20
207-08-9	Benzo[k]fluoranthene	ND		190	25
218-01-9	Chrysene	ND		190	43
53-70-3	Dibenz(a,h)anthracene	ND		190	34
132-64-9	Dibenzofuran	ND		190	23
206-44-0	Fluoranthene	ND		190	20
86-73-7	Fluorene	ND		190	23
118-74-1	Hexachlorobenzene	ND		190	26
193-39-5	Indeno[1,2,3-cd]pyrene	ND		190	24
95-48-7	2-Methylphenol	ND		190	23
106-44-5	Methylphenol, 3 & 4	ND		380	23
91-20-3	Naphthalene	ND		190	25
123-91-1	1,4-Dioxane	ND		230	63
87-86-5	Pentachlorophenol	ND		380	190
85-01-8	Phenanthrene	ND		190	28
108-95-2	Phenol	ND		190	30
129-00-0	Pyrene	ND		190	23

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	87		60-120
367-12-4	2-Fluorophenol (Surr)	77		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	88		53-120
4165-62-2	Phenol-d5 (Surr)	89		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	99		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	110		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140366.D
Lims ID: 480-159547-D-40-A
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 00:03:30 ALS Bottle#: 22 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-022
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:44:02 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:44:02

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	168316	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	609615	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	93	323950	40.0	
* 4 Phenanthrene-d10	188	10.896	10.901	-0.005	97	559225	40.0	
* 5 Chrysene-d12	240	13.284	13.289	-0.005	100	524430	40.0	
* 6 Perylene-d12	264	14.443	14.454	-0.011	98	591450	40.0	
$ 7 2-Fluorophenol	112	3.935	3.929	0.006	95	167759	30.6	
$ 8 Phenol-d5	99	5.244	5.244	0.000	94	229490	35.5	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	201258	35.2	
$ 10 2-Fluorobiphenyl	172	8.502	8.508	-0.006	100	405962	34.7	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	91	54919	44.1	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	431931	39.5	
68 1,4-Dioxane	88		1.632				ND	
81 Phenol	94		5.260				ND	
92 2-Methylphenol	108		6.023				ND	
96 4-Methylphenol	108		6.221				ND	
118 Naphthalene	128		7.242				ND	
150 Acenaphthylene	152		9.111				ND	
152 Acenaphthene	153		9.320				ND	
155 Dibenzofuran	168		9.517				ND	
162 Fluorene	166		9.913				ND	
179 Hexachlorobenzene	284		10.522				ND	
183 Pentachlorophenol	266		10.730				ND	
188 Phenanthrene	178	10.922	10.922	-0.006	92	4808	0.3029	
189 Anthracene	178		10.976				ND	
201 Fluoranthene	202	12.039	12.044	-0.011	95	7551	0.4780	
204 Pyrene	202	12.242	12.242	-0.005	95	5636	0.3250	
217 Benzo[a]anthracene	228		13.278				ND	
218 Chrysene	228		13.310				ND	
221 Benzo[b]fluoranthene	252	14.149	14.149	-0.005	58	6387	0.3772	M
222 Benzo[k]fluoranthene	252		14.176				ND	MU
225 Benzo[a]pyrene	252	14.395	14.406	-0.010	79	3622	0.2905	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/uL	Flags
227 Indeno[1,2,3-cd]pyrene	276		15.372				ND	
228 Dibenz(a,h)anthracene	278		15.372				ND	
229 Benzo[g,h,i]perylene	276	15.613	15.617	-0.016	88	3419	0.2653	

QC Flag Legend

Review Flags

M - Manually Integrated

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

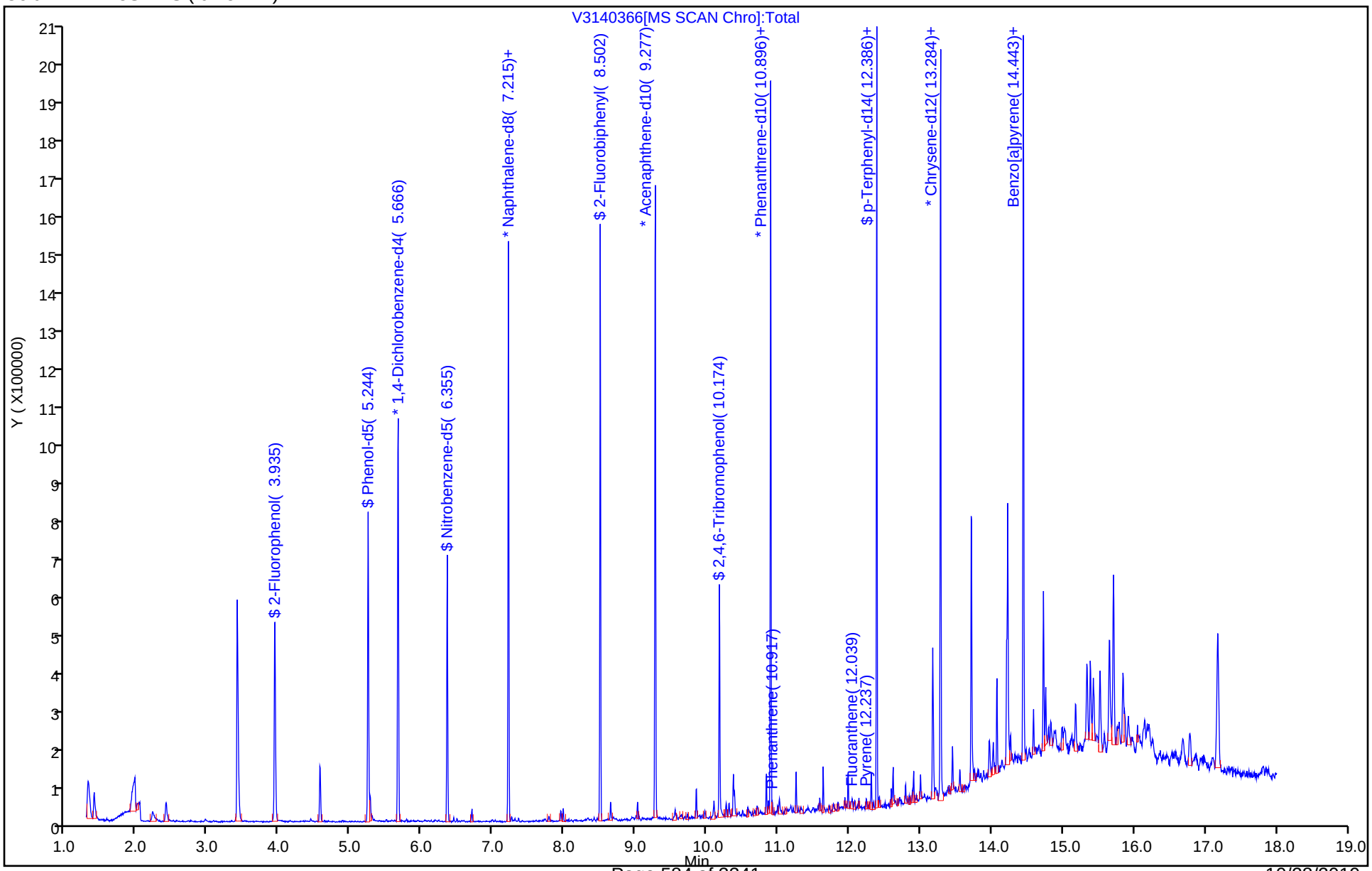
Report Date: 28-Sep-2019 11:44:03 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140366.D

Injection Date:	27-Sep-2019 00:03:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	480-159547-D-40-A	Lab Sample ID:	480-159547-40	Worklist Smp#:	22
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	22
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

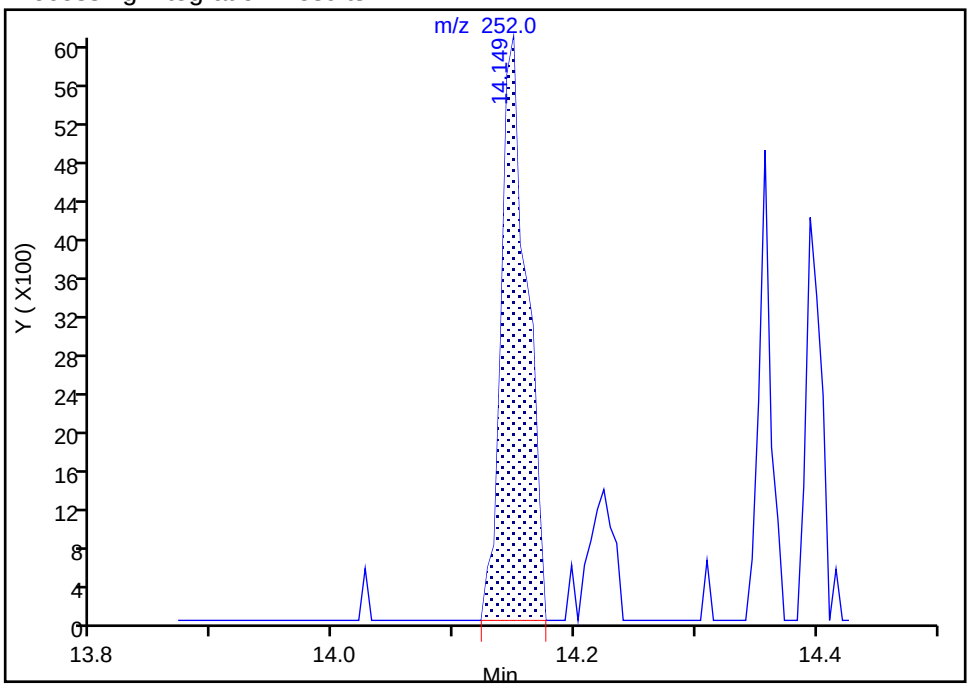
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140366.D				
Injection Date:	27-Sep-2019 00:03:30	Instrument ID:	HP5973V		
Lims ID:	480-159547-D-40-A	Lab Sample ID:	480-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	PJQ	ALS Bottle#:	22	Worklist Smp#:	22
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

221 Benzo[b]fluoranthene, CAS: 205-99-2

Signal: 1

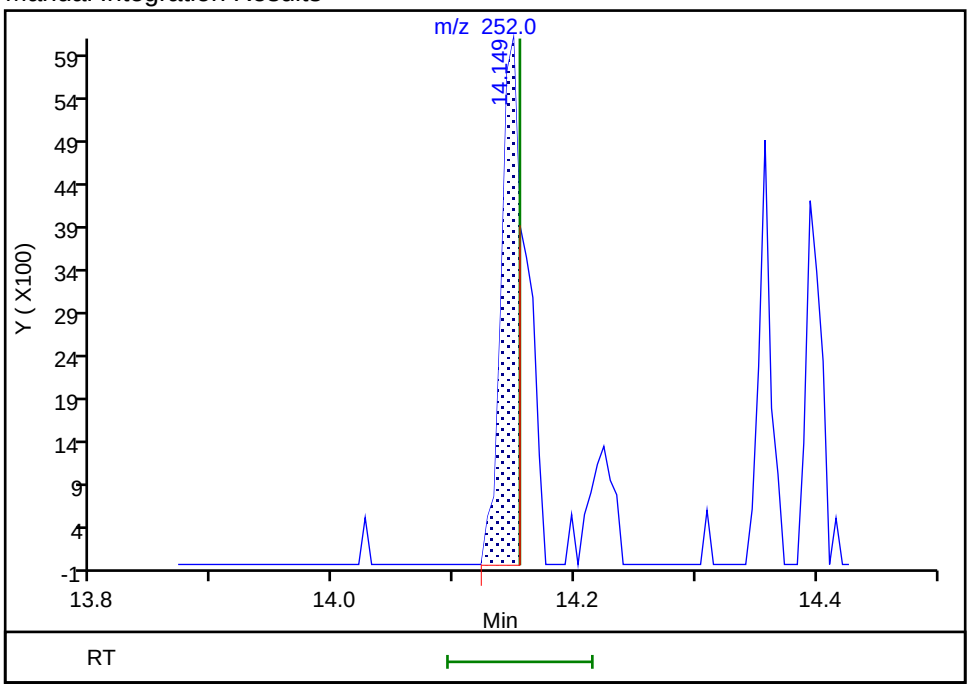
Processing Integration Results

RT: 14.15
Area: 8891
Amount: 0.525061
Amount Units: ng/uL



Manual Integration Results

RT: 14.15
Area: 6387
Amount: 0.377186
Amount Units: ng/uL



Reviewer: quirkp, 28-Sep-2019 11:43:26

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-488167/2	V3139713.D
Level 2	IC 480-488167/3	V3139714.D
Level 3	IC 480-488167/4	V3139715.D
Level 4	IC 480-488167/5	V3139716.D
Level 5	ICIS 480-488167/6	V3139717.D
Level 6	IC 480-488167/7	V3139718.D
Level 7	IC 480-488167/8	V3139719.D
Level 8	IC 480-488167/9	V3139720.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	0.6060	0.6292 0.5838	0.6524 0.5901	0.6501	0.6411	Ave		0.6218			0.0100	4.6		20.0			
N-Nitrosodimethylamine	0.8476	0.8784 0.8337	0.8989 0.8592	0.9007	0.9285	Ave		0.8781			0.0100	3.8		20.0			
Pyridine	1.1162	1.0724 1.0723	1.1165 1.0993	1.2271	1.2084	Ave		1.1303			0.0100	5.5		20.0			
Benzaldehyde	1.0044	1.1084 +++++	1.0732 +++++	1.1722	1.0856	Ave		1.0888			0.0100	5.6		20.0			
Phenol	1.7869	1.6801 1.7390	1.7880 1.7644	1.9169	1.8769	Ave		1.7932			0.8000	4.5		20.0			
Aniline	2.0762	1.9705 2.0135	2.1115 2.0336	2.2295	2.1482	Ave		2.0833			0.0100	4.2		20.0			
Bis(2-chloroethyl)ether	1.3001	1.3172 1.2594	1.3854 1.2672	1.3916	1.3531	Ave		1.3248			0.7000	4.0		20.0			
2-Chlorophenol	1.4238	1.3038 1.3748	1.3630 1.3988	1.4638	1.4819	Ave		1.4014			0.8000	4.4		20.0			
n-Decane	1.8901	1.8323 1.8045	1.9189 1.8024	2.0625	2.0264	Ave		1.9053			0.0100	5.5		20.0			
1,3-Dichlorobenzene	1.6261	1.5947 1.5577	1.6788 1.5720	1.7297	1.7166	Ave		1.6394			0.0100	4.2		20.0			
1,4-Dichlorobenzene	1.6466	1.6580 1.5751	1.7105 1.5839	1.7992	1.7327	Ave		1.6723			0.0100	4.8		20.0			
Benzyl alcohol	0.9108	0.7433 0.8783	0.8116 0.9205	0.9081	0.9151	Lin2	-0.437	0.9132			0.0100	2.0			1.0000		0.9900
1,2-Dichlorobenzene	1.5242	1.5044 1.4714	1.6003 1.4797	1.6585	1.6130	Ave		1.5502			0.0100	4.7		20.0			
Indene	0.5597	0.5996 +++++	0.6376 +++++	0.6738	0.6246	Ave		0.6191			0.0100	6.9		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
2-Methylphenol	1.2413	1.1453 1.2112	1.2492 1.2295	1.2905	1.2825	Ave		1.2356			0.7000	3.9		20.0			
bis (2-chloroisopropyl) ether	2.5963	2.7335 2.5022	2.7225 2.4988	2.8230	2.7228	Ave		2.6570			0.0100	4.7		20.0			
Acetophenone	1.7718	1.6756 1.7429	1.7281 1.7351	1.8770	1.8190	Ave		1.7642			0.0100	3.7		20.0			
N-Nitrosodi-n-propylamine	0.9561	0.8386 0.9507	0.9516 0.9732	0.9829	0.9708	Ave		0.9463			0.5000	5.2		20.0			
Methylphenol, 3 & 4	1.2814	1.1407 1.2351	1.2400 1.2835	1.3152	1.2987	Ave		1.2564			0.6000	4.7		20.0			
Hexachloroethane	0.5664	0.5983 0.5549	0.5724 0.5722	0.5971	0.5958	Ave		0.5796			0.3000	3.0		20.0			
Nitrobenzene	0.3987	0.3259 0.3999	0.3635 0.3949	0.4158	0.4135	Lin2	-0.203	0.4077			0.2000	2.8			0.9990		0.9900
Isophorone	0.7004	0.6335 0.6875	0.6667 0.6785	0.7281	0.7093	Ave		0.6863			0.4000	4.5		20.0			
2-Nitrophenol	0.1905	0.1394 0.1954	0.1369 0.1997	0.1688	0.1841	Lin2	-0.153	0.1888			0.1000	7.4			0.9940		0.9900
2,4-Dimethylphenol	0.3650	0.3134 0.3651	0.3453 0.3636	0.3859	0.3756	Ave		0.3591			0.2000	6.6		20.0			
Bis(2-chloroethoxy)methane	0.4093	0.3861 0.4098	0.4085 0.4000	0.4460	0.4237	Ave		0.4119			0.3000	4.6		20.0			
Benzoic acid	0.2015	+++++ 0.2270	0.0636 0.2469	0.1406	0.1808	Lin1	-3.505	0.2346			0.0100	17.6			0.9900		0.9900
2,4-Dichlorophenol	0.3157	0.2466 0.3141	0.2862 0.3120	0.3249	0.3238	Lin2	-0.182	0.3214			0.2000	2.5			0.9990		0.9900
1,2,4-Trichlorobenzene	0.3518	0.3615 0.3436	0.3600 0.3389	0.3878	0.3707	Ave		0.3592			0.0100	4.6		20.0			
Naphthalene	1.0573 1.0454	1.1184 0.9684	1.1374 0.8722	1.1920	1.1246	Ave		1.0644			0.7000	9.7		20.0			
4-Chloroaniline	0.4332	0.3903 0.4276	0.4130 0.4168	0.4618	0.4438	Ave		0.4266			0.0100	5.4		20.0			
2,6-Dichlorophenol	0.3101	0.2615 0.3088	0.2806 0.3039	0.3266	0.3155	Ave		0.3010			0.0100	7.4		20.0			
Hexachlorobutadiene	0.1819	0.1664 0.1821	0.1752 0.1803	0.1915	0.1861	Ave		0.1805			0.0100	4.4		20.0			
Caprolactam	0.0993	0.0608 0.1033	0.0709 0.1016	0.0891	0.0993	Lin2	-0.108	0.1000			0.0100	5.1			0.9970		0.9900
4-Chloro-3-methylphenol	0.2959	0.2193 0.2982	0.2356 0.3024	0.2922	0.2929	Lin2	-0.220	0.2986			0.2000	3.3			0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
2-Methylnaphthalene	0.6109 0.7125	0.7086 0.6873	0.7365 0.6502	0.7884	0.7418	Ave		0.7045			0.4000	7.9		20.0			
1-Methylnaphthalene	0.6163 0.6622	0.6522 0.6398	0.6773 0.6121	0.7279	0.6857	Ave		0.6592			0.0100	5.8		20.0			
Hexachlorocyclopentadiene	0.3954	0.2326 0.3979	0.2818 0.4000	0.3622	0.4132	Lin2	-0.454	0.3999			0.0500	4.6			0.9980		0.9900
1,2,4,5-Tetrachlorobenzene	0.6124	0.5987 0.5925	0.6846 0.5927	0.6723	0.6575	Ave		0.6301			0.0100	6.4		20.0			
2,4,6-Trichlorophenol	0.3908	0.2759 0.3967	0.3121 0.4051	0.3844	0.4054	Lin2	-0.337	0.4008			0.2000	3.1			0.9990		0.9900
2,4,5-Trichlorophenol	0.4261	0.2528 0.4250	0.3561 0.4284	0.3947	0.4296	Lin2	-0.433	0.4306			0.2000	2.2			0.9990		0.9900
Biphenyl	1.6050	1.6902 1.4990	1.7486 1.3647	1.8295	1.7383	Ave		1.6393			0.0100	9.9		20.0			
2-Chloronaphthalene	1.2533	1.2781 1.2086	1.3113 1.1687	1.3878	1.3538	Ave		1.2802			0.8000	6.1		20.0			
2-Nitroaniline	0.3791	0.2110 0.3860	0.2712 0.3949	0.3311	0.3771	Lin2	-0.455	0.3811			0.0100	4.7			0.9980		0.9900
Dimethyl phthalate	1.3483	1.2751 1.3087	1.2757 1.2402	1.4459	1.4158	Ave		1.3300			0.0100	5.8		20.0			
1,3-Dinitrobenzene	0.1165	0.0482 0.1259	0.0625 0.1306	0.0956	0.1045	Lin1	-0.278	0.1254			0.0100	15.0			0.9950		0.9900
2,6-Dinitrotoluene	0.3223	0.1857 0.3299	0.2184 0.3347	0.3020	0.3214	Lin2	-0.391	0.3267			0.2000	5.0			0.9970		0.9900
Acenaphthylene	1.6077 1.8489	1.7284 1.7502	1.9296 1.6053	2.0763	2.0210	Ave		1.8209			0.9000	9.8		20.0			
3-Nitroaniline	0.3497	0.2055 0.3582	0.2428 0.3655	0.3237	0.3505	Lin2	-0.412	0.3547			0.0100	4.8			0.9970		0.9900
Acenaphthene	1.1768 1.2329	1.2473 1.2032	1.3227 1.1593	1.3677	1.3214	Ave		1.2539			0.9000	6.0		20.0			
2,4-Dinitrophenol	0.1765	+++++ 0.1906	0.0691 0.2105	0.1220	0.1650	Lin1	-1.803	0.2003			0.0100	16.2			0.9920		0.9900
4-Nitrophenol	0.1722	0.0859 0.1824	0.1027 0.1906	0.1556	0.1700	Lin2	-0.517	0.1771			0.0100	8.1			0.9930		0.9900
2,4-Dinitrotoluene	0.4202	0.2279 0.4387	0.2793 0.4478	0.3775	0.4220	Lin2	-0.555	0.4286			0.2000	5.9			0.9960		0.9900
Dibenzofuran	1.7157	1.7702 1.6373	1.8263 1.5084	1.9489	1.8330	Ave		1.7485			0.8000	8.3		20.0			
2,3,4,6-Tetrachlorophenol	0.3034	0.1770 0.3121	0.2079 0.3204	0.2831	0.2987	Lin2	-0.363	0.3080			0.0100	5.2			0.9970		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Diethyl phthalate	1.3150	1.1267 1.2839	1.1978 1.2537	1.3737	1.3580	Ave		1.2727			0.0100	6.9		20.0			
Hexadecane	1.0308	0.9608 1.0061	1.0370 0.9529	1.0928	1.0816	Ave		1.0231			0.0100	5.3		20.0			
Fluorene	1.3374 1.3654	1.3928 1.3306	1.4404 1.2497	1.5183	1.4750	Ave		1.3887			0.9000	6.3		20.0			
4-Chlorophenyl phenyl ether	0.6562	0.6897 0.6483	0.6751 0.6457	0.7176	0.6968	Ave		0.6756			0.4000	4.0		20.0			
4-Nitroaniline	0.3559	0.1938 0.3602	0.2243 0.3743	0.3194	0.3557	Lin2	-0.465	0.3583			0.0100	6.6			0.9950		0.9900
4,6-Dinitro-2-methylphenol	0.1245	0.0510 0.1307	0.0625 0.1408	0.0975	0.1165	Lin1	-0.611	0.1338			0.0100	16.1			0.9950		0.9900
Diphenylamine	0.6953	0.6365 0.6812	0.6817 0.6590	0.7513	0.7404	Ave		0.6922			0.0100	6.0		20.0			
N-Nitrosodiphenylamine	0.5945	0.5442 0.5824	0.5829 0.5634	0.6424	0.6330	Ave		0.5918			0.0100	6.0		20.0			
1,2-Diphenylhydrazine	1.3856	1.2935 1.3474	1.3520 1.2707	1.5034	1.4631	Ave		1.3737			0.0100	6.2		20.0			
trans-Azobenzene	0.8119	0.7401 0.7781	0.8132 0.7332	0.8835	0.8707	Ave		0.8044			0.0100	7.3		20.0			
4-Bromophenyl phenyl ether	0.2182	0.1927 0.2147	0.2095 0.2159	0.2244	0.2244	Ave		0.2143			0.1000	5.1		20.0			
Hexachlorobenzene	0.2111	0.2061 0.2135	0.2185 0.2153	0.2278	0.2223	Ave		0.2164			0.1000	3.3		20.0			
Atrazine	0.3659	0.2601 0.3652	0.2920 0.3605	0.3592	0.3660	Lin2	-0.286	0.3669			0.0100	2.6			0.9990		0.9900
Pentachlorophenol	0.1236	0.0484 0.1245	0.0679 0.1320	0.1102	0.1251	Lin2	-0.426	0.1257			0.0500	7.0			0.9950		0.9900
n-Octadecane	0.5997	0.5179 0.5675	0.5730 0.5414	0.6369	0.6300	Ave		0.5809			0.0100	7.6		20.0			
Phenanthrene	1.1553 1.1053	1.1720 1.0235	1.2152 0.9300	1.2684	1.2118	Ave		1.1352			0.7000	9.8		20.0			
Anthracene	1.0263 1.1439	1.1103 1.0490	1.1859 0.9399	1.2978	1.2474	Ave		1.1251			0.7000	10.6		20.0			
Carbazole	1.0372	0.9977 0.9623	1.0575 0.9027	1.1661	1.1124	Ave		1.0337			0.0100	8.6		20.0			
Di-n-butyl phthalate	1.2122	0.9466 1.1016	1.0307 +++++	1.2751	1.2678	Lin2	-0.717	1.2216			0.0100	6.7			0.9950		0.9900
Fluoranthene	0.9874 1.1751	1.0956 1.0713	1.1765 0.9605	1.3320	1.2414	Ave		1.1300			0.6000	11.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5		B	M1	M2								
Benzidine	0.7191	0.4116 0.6870	0.5233 0.6025	0.6962	0.7442	Lin2	-0.741	0.7001			0.0100	7.8			0.9930		0.9900
Pyrene	1.1906 1.3100	1.3171 1.2312	1.4999 1.0893	1.4902	1.4548	Ave		1.3229			0.6000	11.3		20.0			
Butyl benzyl phthalate	0.6189	0.3670 0.6297	0.4614 0.6030	0.5875	0.6287	Lin2	-0.675	0.6238			0.0100	2.9			0.9990		0.9900
3,3'-Dichlorobenzidine	0.4671	0.2460 0.4635	0.3270 0.4563	0.4370	0.4709	Lin2	-0.583	0.4677			0.0100	3.1			0.9990		0.9900
Benzo[a]anthracene	1.2075 1.2580	1.2037 1.2080	1.3071 1.1075	1.3494	1.3294	Ave		1.2463			0.8000	6.5		20.0			
Bis(2-ethylhexyl) phthalate	0.9209	0.5650 0.9046	0.6864 0.8329	0.8511	0.9127	Lin2	-0.872	0.8974			0.0100	4.3			0.9980		0.9900
Chrysene	1.1718 1.1546	1.2678 1.1120	1.3290 1.0219	1.3130	1.2635	Ave		1.2042			0.7000	8.9		20.0			
Di-n-octyl phthalate	1.5351	0.9356 1.4566	1.0621 +++++	1.4060	1.5651	Lin2	-1.594	1.5103			0.0100	6.0			0.9960		0.9900
Benzo[b]fluoranthene	1.0776 1.2766	1.1042 1.0851	1.1329 1.0317	1.2148	1.2388	Ave		1.1452			0.7000	7.7		20.0			
Benzo[k]fluoranthene	1.2820 1.1418	1.3115 1.1457	1.4315 1.0010	1.4945	1.3341	Ave		1.2678			0.7000	12.9		20.0			
Benzo[a]pyrene	0.9861 1.1449	1.0434 1.0712	1.1662 +++++	1.2311	1.2171	Lin2	-0.091	1.1580			0.7000	6.0			0.9970		0.9900
Indeno[1,2,3-cd]pyrene	0.9448 1.3662	1.1390 1.3376	1.3213 1.3575	1.4198	1.4249	Lin2	-0.222	1.3637			0.5000	5.1			0.9980		0.9900
Dibenz(a,h)anthracene	0.9150 1.1196	0.9972 1.0835	1.0805 1.0527	1.1928	1.1918	Lin2	-0.107	1.1152			0.4000	5.7			0.9970		0.9900
Benzo[g,h,i]perylene	1.0395 1.1917	1.0541 1.1711	1.1446 1.1692	1.2353	1.2593	Lin2	-0.083	1.1863			0.5000	4.8			0.9980		0.9900
2-Fluorophenol (Surr)	1.3196	1.2002 1.2712	1.2835 1.3014	1.3551	1.3866	Ave		1.3025			0.0100	4.6		20.0			
Phenol-d5 (Surr)	1.5378	1.3982 1.4947	1.5585 1.5488	1.5992	1.6226	Ave		1.5371			0.0100	4.8		20.0			
Nitrobenzene-d5 (Surr)	0.3737	0.2866 0.3771	0.3404 0.3786	0.3665	0.3856	Lin2	-0.231	0.3813			0.0100	1.4			1.0000		0.9900
2-Fluorobiphenyl	1.4175	1.4615 1.3644	1.5092 1.2692	1.5679	1.5304	Ave		1.4457			0.0100	7.2		20.0			
2,4,6-Tribromophenol (Surr)	0.0891	0.0523 0.0929	0.0652 0.0961	0.0796	0.0919	Lin2	-0.106	0.0916			0.0100	5.3			0.9970		0.9900
p-Terphenyl-d14 (Surr)	0.8149	0.7850 0.8159	0.8996 0.7570	0.8873	0.8858	Ave		0.8351			0.0100	6.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-488167/2	V3139713.D
Level 2	IC 480-488167/3	V3139714.D
Level 3	IC 480-488167/4	V3139715.D
Level 4	IC 480-488167/5	V3139716.D
Level 5	ICIS 480-488167/6	V3139717.D
Level 6	IC 480-488167/7	V3139718.D
Level 7	IC 480-488167/8	V3139719.D
Level 8	IC 480-488167/9	V3139720.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
1,4-Dioxane	DCBd 4	Ave	229688	8075 339574	16448 511771	56049	156174	80.0	2.50 120	5.00 160	20.0	50.0
N-Nitrosodimethylamine	DCBd 4	Ave	321233	11273 484953	22663 745161	77654	226177	80.0	2.50 120	5.00 160	20.0	50.0
Pyridine	DCBd 4	Ave	846084	27526 1247467	56298 1906779	211577	588745	160	5.00 240	10.0 320	40.0	100
Benzaldehyde	DCBd 4	Ave	380664	14225 +++++	27055 +++++	101056	264453	80.0	2.50 +++++	5.00 +++++	20.0	50.0
Phenol	DCBd 4	Ave	677245	21561 1011549	45077 1530292	165260	457203	80.0	2.50 120	5.00 160	20.0	50.0
Aniline	DCBd 4	Ave	786886	25288 1171237	53232 1763730	192213	523300	80.0	2.50 120	5.00 160	20.0	50.0
Bis(2-chloroethyl)ether	DCBd 4	Ave	492721	16904 732563	34927 1099028	119969	329615	80.0	2.50 120	5.00 160	20.0	50.0
2-Chlorophenol	DCBd 4	Ave	539599	16732 799699	34362 1213208	126200	360989	80.0	2.50 120	5.00 160	20.0	50.0
n-Decane	DCBd 4	Ave	716348	23515 1049681	48378 1563207	177816	493629	80.0	2.50 120	5.00 160	20.0	50.0
1,3-Dichlorobenzene	DCBd 4	Ave	616300	20465 906119	42324 1363362	149118	418153	80.0	2.50 120	5.00 160	20.0	50.0
1,4-Dichlorobenzene	DCBd 4	Ave	624041	21278 916192	43122 1373734	155111	422081	80.0	2.50 120	5.00 160	20.0	50.0
Benzyl alcohol	DCBd 4	Lin2	345177	9539 510892	20460 798384	78288	222904	80.0	2.50 120	5.00 160	20.0	50.0
1,2-Dichlorobenzene	DCBd 4	Ave	577664	19306 855921	40345 1283342	142984	392933	80.0	2.50 120	5.00 160	20.0	50.0
Indene	NPT	Ave	2233967	82841 +++++	169370 +++++	601918	1582361	240	7.50 +++++	15.0 +++++	60.0	150
2-Methylphenol	DCBd 4	Ave	470448	14698 704524	31493 1066375	111255	312421	80.0	2.50 120	5.00 160	20.0	50.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
bis (2-chloroisopropyl) ether	DCBd 4	Ave	983977	35080 1455477	68636 2167209	243379	663271	80.0	2.50 120	5.00 160	20.0	50.0
Acetophenone	DCBd 4	Ave	671490	21503 1013809	43566 1504863	161816	443099	80.0	2.50 120	5.00 160	20.0	50.0
N-Nitrosodi-n-propylamine	DCBd 4	Ave	362374	10762 553028	23991 844068	84736	236494	80.0	2.50 120	5.00 160	20.0	50.0
Methylphenol, 3 & 4	DCBd 4	Ave	485656	14639 718471	31261 1113199	113388	316357	80.0	2.50 120	5.00 160	20.0	50.0
Hexachloroethane	DCBd 4	Ave	214671	7678 322793	14430 496255	51475	145141	80.0	2.50 120	5.00 160	20.0	50.0
Nitrobenzene	NPT	Lin2	530373	15009 807243	32182 1219879	123829	349245	80.0	2.50 120	5.00 160	20.0	50.0
Isophorone	NPT	Ave	931812	29172 1387776	59036 2095976	216833	599019	80.0	2.50 120	5.00 160	20.0	50.0
2-Nitrophenol	NPT	Lin2	253374	6418 394522	12120 616900	50254	155494	80.0	2.50 120	5.00 160	20.0	50.0
2,4-Dimethylphenol	NPT	Ave	485636	14432 737033	30571 1123345	114918	317212	80.0	2.50 120	5.00 160	20.0	50.0
Bis(2-chloroethoxy)methane	NPT	Ave	544517	17778 827110	36168 1235696	132818	357853	80.0	2.50 120	5.00 160	20.0	50.0
Benzoic acid	NPT	Lin1	804117	+++++ 1374733	16898 2288192	125616	458154	240	+++++ 360	15.0 480	60.0	150
2,4-Dichlorophenol	NPT	Lin2	419971	11358 633949	25340 963795	96753	273436	80.0	2.50 120	5.00 160	20.0	50.0
1,2,4-Trichlorobenzene	NPT	Ave	468024	16648 693475	31877 1046976	115485	313084	80.0	2.50 120	5.00 160	20.0	50.0
Naphthalene	NPT	Ave	9468 1390684	51502 1954659	100709 2694213	354964	949704	0.500 80.0	2.50 120	5.00 160	20.0	50.0
4-Chloroaniline	NPT	Ave	576277	17973 863189	36571 1287542	137510	374831	80.0	2.50 120	5.00 160	20.0	50.0
2,6-Dichlorophenol	NPT	Ave	412574	12041 623344	24849 938678	97271	266457	80.0	2.50 120	5.00 160	20.0	50.0
Hexachlorobutadiene	NPT	Ave	242053	7665 367649	15516 557037	57020	157141	80.0	2.50 120	5.00 160	20.0	50.0
Caprolactam	NPT	Lin2	132153	2799 208458	6275 313764	26522	83848	80.0	2.50 120	5.00 160	20.0	50.0
4-Chloro-3-methylphenol	NPT	Lin2	393696	10099 601884	20864 934191	87019	247363	80.0	2.50 120	5.00 160	20.0	50.0
2-Methylnaphthalene	NPT	Ave	5471 947928	32633 1387253	65211 2008547	234774	626430	0.500 80.0	2.50 120	5.00 160	20.0	50.0
1-Methylnaphthalene	NPT	Ave	5519 880925	30036 1291440	59975 1890865	216773	579056	0.500 80.0	2.50 120	5.00 160	20.0	50.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Hexachlorocyclopentadiene	ANT	Lin2	271604	5512 423608	12418 651282	54952	173204	80.0	2.50 120	5.00 160	20.0	50.0
1,2,4,5-Tetrachlorobenzene	ANT	Ave	420699	14185 630693	30173 965178	101991	275643	80.0	2.50 120	5.00 160	20.0	50.0
2,4,6-Trichlorophenol	ANT	Lin2	268449	6538 422322	13754 659614	58313	169965	80.0	2.50 120	5.00 160	20.0	50.0
2,4,5-Trichlorophenol	ANT	Lin2	292680	5990 452371	15696 697523	59871	180098	80.0	2.50 120	5.00 160	20.0	50.0
Biphenyl	ANT	Ave	1102466	40048 1595656	77067 2222174	277551	728731	80.0	2.50 120	5.00 160	20.0	50.0
2-Chloronaphthalene	ANT	Ave	860889	30283 1286569	57792 1902976	210535	567547	80.0	2.50 120	5.00 160	20.0	50.0
2-Nitroaniline	ANT	Lin2	260432	4999 410845	11952 643045	50222	158093	80.0	2.50 120	5.00 160	20.0	50.0
Dimethyl phthalate	ANT	Ave	926191	30212 1393080	56224 2019376	219356	593553	80.0	2.50 120	5.00 160	20.0	50.0
1,3-Dinitrobenzene	NPT	Lin1	154975	2220 254151	5530 403593	28481	88291	80.0	2.50 120	5.00 160	20.0	50.0
2,6-Dinitrotoluene	ANT	Lin2	221372	4399 351214	9624 544989	45815	134738	80.0	2.50 120	5.00 160	20.0	50.0
Acenaphthylene	ANT	Ave	7357 1270027	40953 1863087	85042 2613919	314988	847240	0.500 80.0	2.50 120	5.00 160	20.0	50.0
3-Nitroaniline	ANT	Lin2	240195	4869 381315	10702 595148	49104	146956	80.0	2.50 120	5.00 160	20.0	50.0
Acenaphthene	ANT	Ave	5385 846931	29553 1280828	58295 1887724	207493	553948	0.500 80.0	2.50 120	5.00 160	20.0	50.0
2,4-Dinitrophenol	ANT	Lin1	242529	+++++ 405706	6094 685463	37010	138331	160	+++++ 240	10.0 320	40.0	100
4-Nitrophenol	ANT	Lin2	236512	4072 388342	9052 620873	47207	142567	160	5.00 240	10.0 320	40.0	100
2,4-Dinitrotoluene	ANT	Lin2	288631	5401 467003	12310 729103	57266	176894	80.0	2.50 120	5.00 160	20.0	50.0
Dibenzofuran	ANT	Ave	1178561	41944 1742847	80491 2456093	295664	768445	80.0	2.50 120	5.00 160	20.0	50.0
2,3,4,6-Tetrachlorophenol	ANT	Lin2	208422	4193 332175	9162 521704	42948	125233	80.0	2.50 120	5.00 160	20.0	50.0
Diethyl phthalate	ANT	Ave	903283	26695 1366659	52793 2041360	208395	569297	80.0	2.50 120	5.00 160	20.0	50.0
Hexadecane	ANT	Ave	708089	22765 1070934	45705 1551668	165779	453447	80.0	2.50 120	5.00 160	20.0	50.0
Fluorene	ANT	Ave	6120 937924	33001 1416374	63482 2034864	230333	618372	0.500 80.0	2.50 120	5.00 160	20.0	50.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
4-Chlorophenyl phenyl ether	ANT	Ave	450765	16341 690112	29752 1051481	108863	292114	80.0	2.50 120	5.00 160	20.0	50.0
4-Nitroaniline	ANT	Lin2	244470	4592 383446	9885 609493	48462	149124	80.0	2.50 120	5.00 160	20.0	50.0
4,6-Dinitro-2-methylphenol	PHN	Lin1	291919	4227 481802	9161 794582	50331	164101	160	5.00 240	10.0 320	40.0	100
Diphenylamine	PHN	Ave	696927	22536 1073534	42710 1590001	165818	445917	68.4	2.14 103	4.28 137	17.1	42.8
N-Nitrosodiphenylamine	PHN	Ave	696927	22536 1073534	42710 1590001	165818	445917	80.0	2.50 120	5.00 160	20.0	50.0
1,2-Diphenylhydrazine	ANT	Ave	951771	30649 1434289	59585 2069128	228068	613353	80.0	2.50 120	5.00 160	20.0	50.0
trans-Azobenzene	PHN	Ave	951771	30649 1434289	59585 2069128	228068	613353	80.0	2.50 120	5.00 160	20.0	50.0
4-Bromophenyl phenyl ether	PHN	Ave	255752	7981 395772	15353 609143	57932	158074	80.0	2.50 120	5.00 160	20.0	50.0
Hexachlorobenzene	PHN	Ave	247522	8536 393617	16008 607637	58796	156608	80.0	2.50 120	5.00 160	20.0	50.0
Atrazine	ANT	Lin2	251339	6164 388736	12870 587020	54500	153441	80.0	2.50 120	5.00 160	20.0	50.0
Pentachlorophenol	PHN	Lin2	289670	4009 458922	9951 745164	56895	176211	160	5.00 240	10.0 320	40.0	100
n-Octadecane	PHN	Ave	703029	21448 1046098	41985 1527736	164396	443761	80.0	2.50 120	5.00 160	20.0	50.0
Phenanthrene	PHN	Ave	8934 1295730	48536 1886639	89044 2624364	327419	853636	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Anthracene	PHN	Ave	7936 1340960	45981 1933647	86895 2652384	335009	878726	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Carbazole	PHN	Ave	1215840	41317 1773805	77486 2547328	301011	783618	80.0	2.50 120	5.00 160	20.0	50.0
Di-n-butyl phthalate	PHN	Lin2	1421069	39202 2030677	75522 +++++	329155	893084	80.0	2.50 120	5.00 +++++	20.0	50.0
Fluoranthene	PHN	Ave	7635 1377541	45372 1974687	86204 2710431	343848	874491	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Benzidine	CRY	Lin2	787194	15339 1101143	31738 1545435	171830	465950	80.0	2.50 120	5.00 160	20.0	50.0
Pyrene	CRY	Ave	8187 1433989	49085 1973550	90964 2794147	367782	910875	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Butyl benzyl phthalate	CRY	Lin2	677425	13676 1009281	27984 1546866	144997	393640	80.0	2.50 120	5.00 160	20.0	50.0
3,3'-Dichlorobenzidine	CRY	Lin2	511278	9168 743024	19833 1170487	107847	294856	80.0	2.50 120	5.00 160	20.0	50.0

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 488167

SDG No.:

Instrument ID: HP5973V GC Column: RXI-5Sil MS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/21/2019 17:15 Calibration End Date: 08/21/2019 20:10 Calibration ID: 37480

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Benzo[a]anthracene	CRY	Ave	8303 1377032	44861 1936324	79271 2840808	333045	832380	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Bis(2-ethylhexyl) phthalate	CRY	Lin2	 1007992	21057 1450007	41629 2136635	210051	571489	 80.0	2.50 120	5.00 160	20.0	50.0
Chrysene	CRY	Ave	8058 1263844	47247 1782488	80595 2621372	324057	791112	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Di-n-octyl phthalate	CRY	Lin2	 1680388	34867 2334869	64411 +++++	347009	979957	 80.0	2.50 120	5.00 +++++	20.0	50.0
Benzo[b]fluoranthene	PRY	Ave	7578 1617136	44728 2090629	73900 3284534	337034	895897	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Benzo[k]fluoranthene	PRY	Ave	9015 1446464	53128 2207374	93378 3186924	414646	964839	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Benzo[a]pyrene	PRY	Lin2	6934 1450300	42265 2063857	76072 +++++	341566	880209	0.500 80.0	2.50 120	5.00 +++++	20.0	50.0
Indeno[1,2,3-cd]pyrene	PRY	Lin2	6644 1730683	46140 2576947	86188 4321854	393905	1030546	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Dibenz(a,h)anthracene	PRY	Lin2	6434 1418294	40397 2087480	70483 3351303	330925	861928	0.500 80.0	2.50 120	5.00 160	20.0	50.0
Benzo[g,h,i]perylene	PRY	Lin2	7310 1509618	42700 2256220	74666 3722338	342729	910766	0.500 80.0	2.50 120	5.00 160	20.0	50.0
2-Fluorophenol (Surr)	DCBd 4	Ave	 500144	15402 739421	32357 1128688	116823	337773	 80.0	2.50 120	5.00 160	20.0	50.0
Phenol-d5 (Surr)	DCBd 4	Ave	 582829	17944 869446	39291 1343236	137871	395250	 80.0	2.50 120	5.00 160	20.0	50.0
Nitrobenzene-d5 (Surr)	NPT	Lin2	 497134	13198 761142	30145 1169692	109147	325612	 80.0	2.50 120	5.00 160	20.0	50.0
2-Fluorobiphenyl	ANT	Ave	 973671	34628 1452341	66516 2066705	237862	641573	 80.0	2.50 120	5.00 160	20.0	50.0
2,4,6-Tribromophenol (Surr)	PHN	Lin2	 104500	2165 171240	4778 271089	20546	64714	 80.0	2.50 120	5.00 160	20.0	50.0
p-Terphenyl-d14 (Surr)	CRY	Ave	 891999	29254 1307773	54555 1941804	218984	554626	 80.0	2.50 120	5.00 160	20.0	50.0

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139713.D
Lims ID: IC L1 0.5
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 21-Aug-2019 17:15:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-002
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:46:50 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:21:44

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.805	5.804	0.001	97	198890	40.0	40.0	
* 2 Naphthalene-d8	136	7.348	7.354	-0.006	100	716411	40.0	40.0	
* 3 Acenaphthene-d10	164	9.411	9.410	0.001	94	366080	40.0	40.0	
* 4 Phenanthrene-d10	188	11.019	11.018	0.001	98	618624	40.0	40.0	
* 5 Chrysene-d12	240	13.396	13.401	-0.005	99	550109	40.0	40.0	
* 6 Perylene-d12	264	14.576	14.576	0.000	97	562564	40.0	40.0	
118 Naphthalene	128	7.375	7.375	0.000	97	9468	0.5000	0.4966	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	92	5471	0.5000	0.4336	
251 1-Methylnaphthalene	142	8.310	8.310	0.000	85	5519	0.5000	0.4675	
150 Acenaphthylene	152	9.240	9.245	-0.005	97	7357	0.5000	0.4415	
152 Acenaphthene	153	9.448	9.448	0.000	95	5385	0.5000	0.4692	
162 Fluorene	166	10.041	10.041	0.000	97	6120	0.5000	0.4815	
188 Phenanthrene	178	11.040	11.045	-0.005	95	8934	0.5000	0.5089	
189 Anthracene	178	11.088	11.093	-0.005	94	7936	0.5000	0.4561	
201 Fluoranthene	202	12.156	12.162	-0.006	95	7635	0.5000	0.4369	
204 Pyrene	202	12.354	12.359	-0.005	98	8187	0.5000	0.4500	
217 Benzo[a]anthracene	228	13.391	13.390	0.000	97	8303	0.5000	0.4844	
218 Chrysene	228	13.417	13.423	-0.005	97	8058	0.5000	0.4866	
221 Benzo[b]fluoranthene	252	14.261	14.267	-0.006	98	7578	0.5000	0.4705	
222 Benzo[k]fluoranthene	252	14.283	14.288	-0.005	96	9015	0.5000	0.5056	
225 Benzo[a]pyrene	252	14.528	14.534	-0.006	76	6934	0.5000	0.5047	
227 Indeno[1,2,3-cd]pyrene	276	15.527	15.533	-0.006	87	6644	0.5000	0.5091	
228 Dibenz(a,h)anthracene	278	15.533	15.543	-0.010	87	6434	0.5000	0.5062	
229 Benzo[g,h,i]perylene	276	15.795	15.805	-0.010	95	7310	0.5000	0.5085	

Reagents:

MB_LIST1_WRK_00727 Amount Added: 1.00 Units: mL
MB_INTSTD_STK_00061 Amount Added: 20.00 Units: uL Run Reagent

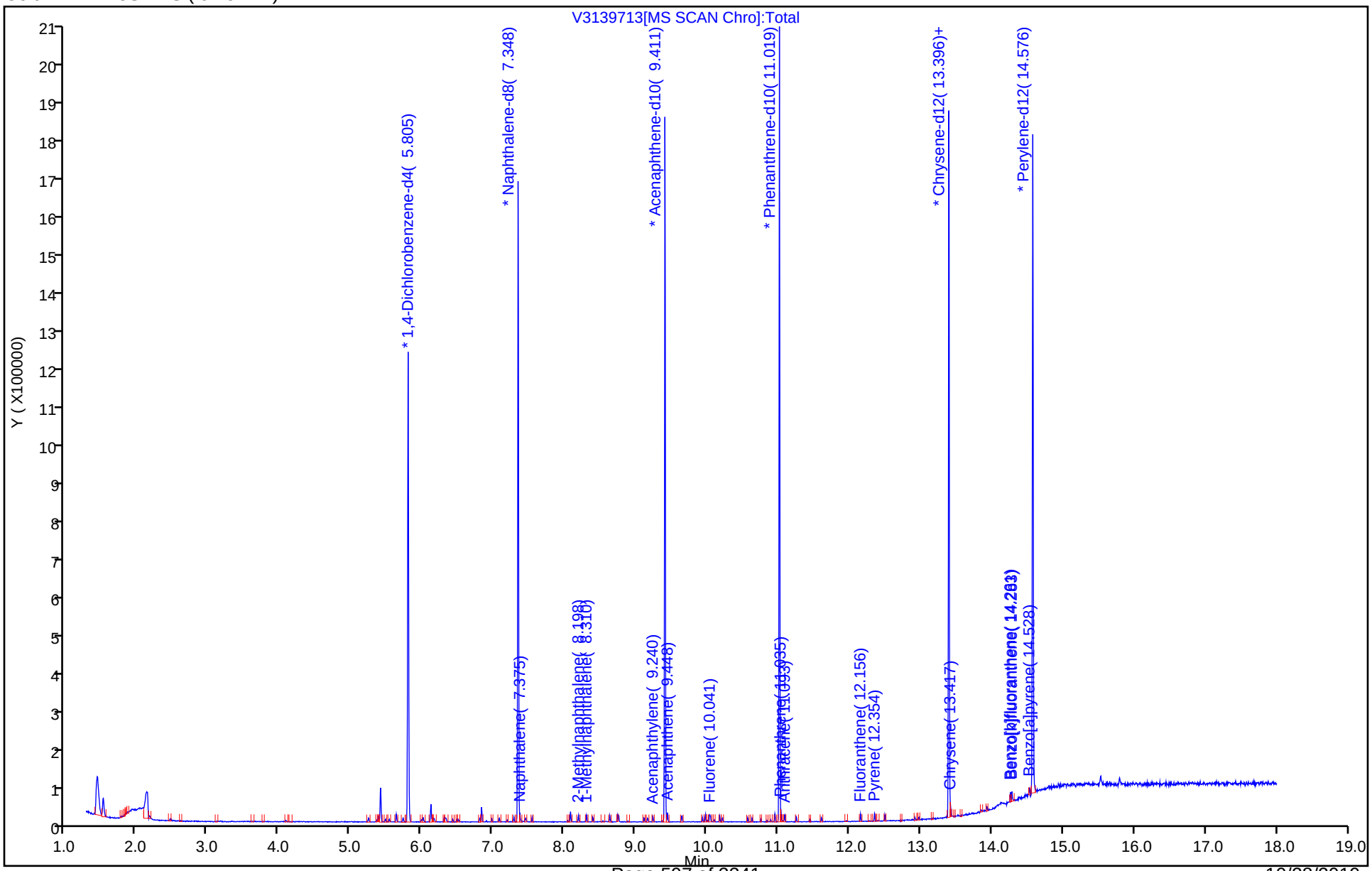
Report Date: 22-Aug-2019 12:46:51 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139713.D

Injection Date:	21-Aug-2019 17:15:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 0.5			Worklist Smp#:	2
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D
Lims ID: IC L1 2.5
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 21-Aug-2019 17:40:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-003
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:46:57 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:23:10

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
*	1 1,4-Dichlorobenzene-d4	152	5.805	5.804	0.001	96	205333	40.0	40.0	
*	2 Naphthalene-d8	136	7.348	7.354	-0.006	100	736809	40.0	40.0	
*	3 Acenaphthene-d10	164	9.411	9.410	0.001	94	379105	40.0	40.0	
*	4 Phenanthrene-d10	188	11.019	11.018	0.001	97	662594	40.0	40.0	
*	5 Chrysene-d12	240	13.401	13.401	0.000	99	596292	40.0	40.0	
*	6 Perylene-d12	264	14.577	14.576	0.001	97	648137	40.0	40.0	
$	7 2-Fluorophenol	112	4.090	4.079	0.011	94	15402	2.50	2.30	
$	8 Phenol-d5	99	5.372	5.372	0.000	98	17944	2.50	2.27	
$	9 Nitrobenzene-d5	82	6.488	6.488	0.000	91	13198	2.50	2.48	
$	10 2-Fluorobiphenyl	172	8.636	8.641	-0.005	99	34628	2.50	2.53	
$	11 2,4,6-Tribromophenol	330	10.303	10.308	-0.005	86	2165	2.50	2.59	
$	12 p-Terphenyl-d14	244	12.498	12.504	-0.006	99	29254	2.50	2.35	a
	68 1,4-Dioxane	88	1.777	1.766	0.011	92	8075	2.50	2.53	
	69 N-Nitrosodimethylamine	42	2.092	2.076	0.016	90	11273	2.50	2.50	
	70 Pyridine	52	2.156	2.129	0.027	86	27526	5.00	4.74	
	80 Benzaldehyde	77	5.249	5.244	0.005	95	14225	2.50	2.55	
	81 Phenol	94	5.388	5.388	0.000	86	21561	2.50	2.34	
	82 Aniline	93	5.393	5.393	0.000	85	25288	2.50	2.36	
	83 Bis(2-chloroethyl)ether	93	5.484	5.484	0.000	94	16904	2.50	2.49	
	84 2-Chlorophenol	128	5.543	5.543	0.000	98	16732	2.50	2.33	
	263 n-Decane	57	5.639	5.639	0.000	95	23515	2.50	2.40	
	87 1,3-Dichlorobenzene	146	5.735	5.735	0.000	98	20465	2.50	2.43	
	88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	94	21278	2.50	2.48	a
	90 Benzyl alcohol	108	5.992	5.991	0.001	91	9539	2.50	2.51	
	91 1,2-Dichlorobenzene	146	6.018	6.018	0.000	96	19306	2.50	2.43	
	248 Indene	115	6.125	6.130	-0.005	90	82841	7.50	7.26	
	92 2-Methylphenol	108	6.146	6.146	0.000	91	14698	2.50	2.32	
	93 2,2'-oxybis[1-chloropropan	45	6.168	6.168	0.000	93	35080	2.50	2.57	
	94 Acetophenone	105	6.312	6.312	0.000	95	21503	2.50	2.37	
	95 N-Nitrosodi-n-propylamine	70	6.328	6.328	0.000	92	10762	2.50	2.22	
	96 4-Methylphenol	108	6.339	6.344	-0.005	97	14639	2.50	2.27	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	94	7678	2.50	2.58	
102 Nitrobenzene	77	6.510	6.515	-0.005	93	15009	2.50	2.50	
106 Isophorone	82	6.809	6.814	-0.005	98	29172	2.50	2.31	
107 2-Nitrophenol	139	6.900	6.905	-0.005	92	6418	2.50	2.66	
108 2,4-Dimethylphenol	107	6.980	6.980	0.000	92	14432	2.50	2.18	
111 Bis(2-chloroethoxy)methane	93	7.087	7.087	0.000	96	17778	2.50	2.34	
115 Benzoic acid	105	7.065	7.177	-0.112	0	4439	7.50	16.0	M
114 2,4-Dichlorophenol	162	7.194	7.199	-0.005	92	11358	2.50	2.48	
117 1,2,4-Trichlorobenzene	180	7.290	7.290	0.000	93	16648	2.50	2.52	
118 Naphthalene	128	7.375	7.375	0.000	97	51502	2.50	2.63	
119 4-Chloroaniline	127	7.450	7.455	-0.005	97	17973	2.50	2.29	
122 2,6-Dichlorophenol	162	7.461	7.466	-0.005	95	12041	2.50	2.17	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	95	7665	2.50	2.31	
124 Caprolactam	113	7.829	7.877	-0.048	73	2799	2.50	2.60	
129 4-Chloro-3-methylphenol	107	8.043	8.048	-0.005	95	10099	2.50	2.57	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	92	32633	2.50	2.51	
251 1-Methylnaphthalene	142	8.310	8.310	0.000	94	30036	2.50	2.47	
134 Hexachlorocyclopentadiene	237	8.396	8.401	-0.005	88	5512	2.50	2.59	
135 1,2,4,5-Tetrachlorobenzene	216	8.401	8.401	0.000	97	14185	2.50	2.38	
137 2,4,6-Trichlorophenol	196	8.540	8.540	0.000	91	6538	2.50	2.56	
138 2,4,5-Trichlorophenol	196	8.577	8.582	-0.005	91	5990	2.50	2.47	
140 1,1'-Biphenyl	154	8.748	8.748	0.000	95	40048	2.50	2.58	
141 2-Chloronaphthalene	162	8.759	8.764	-0.005	94	30283	2.50	2.50	
143 2-Nitroaniline	65	8.887	8.892	-0.005	79	4999	2.50	2.58	
146 Dimethyl phthalate	163	9.117	9.122	-0.005	98	30212	2.50	2.40	
148 1,3-Dinitrobenzene	168	9.133	9.138	-0.005	77	2220	2.50	3.18	
149 2,6-Dinitrotoluene	165	9.176	9.181	-0.005	92	4399	2.50	2.62	
150 Acenaphthylene	152	9.240	9.245	-0.005	98	40953	2.50	2.37	
151 3-Nitroaniline	138	9.368	9.373	-0.005	88	4869	2.50	2.61	a
152 Acenaphthene	153	9.448	9.448	0.000	93	29553	2.50	2.49	
153 2,4-Dinitrophenol	184	9.491	9.496	-0.005	83	2125	5.00	10.1	
154 4-Nitrophenol	109	9.592	9.597	-0.005	93	4072	5.00	5.34	
156 2,4-Dinitrotoluene	165	9.640	9.646	-0.006	95	5401	2.50	2.62	a
155 Dibenzofuran	168	9.651	9.651	0.000	96	41944	2.50	2.53	
158 2,3,4,6-Tetrachlorophenol	232	9.806	9.806	0.000	70	4193	2.50	2.62	
161 Diethyl phthalate	149	9.939	9.945	-0.006	97	26695	2.50	2.21	
256 Hexadecane	57	9.982	9.982	0.000	91	22765	2.50	2.35	
162 Fluorene	166	10.041	10.041	0.000	95	33001	2.50	2.51	
163 4-Chlorophenyl phenyl ethe	204	10.052	10.052	0.000	88	16341	2.50	2.55	
164 4-Nitroaniline	138	10.062	10.073	-0.011	81	4592	2.50	2.65	
165 4,6-Dinitro-2-methylphenol	198	10.100	10.110	-0.010	82	4227	5.00	6.47	
169 Diphenylamine	169	10.180	10.185	-0.005	96	22536	2.14	1.97	
168 N-Nitrosodiphenylamine	169	10.180	10.185	-0.005	99	22536	2.50	2.30	
170 1,2-Diphenylhydrazine	77	10.223	10.223	0.001	99	30649	2.50	2.35	
171 Azobenzene	77	10.223	10.223	0.001	99	30649	2.50	2.30	
175 4-Bromophenyl phenyl ether	248	10.575	10.575	0.000	67	7981	2.50	2.25	
179 Hexachlorobenzene	284	10.634	10.639	-0.005	92	8536	2.50	2.38	
180 Atrazine	200	10.757	10.762	-0.005	86	6164	2.50	2.55	
183 Pentachlorophenol	266	10.842	10.842	0.000	79	4009	5.00	5.31	
265 n-Octadecane	57	10.954	10.960	-0.006	92	21448	2.50	2.23	
188 Phenanthrene	178	11.040	11.045	-0.005	97	48536	2.50	2.58	
189 Anthracene	178	11.088	11.093	-0.005	97	45981	2.50	2.47	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.254	11.259	-0.005	95	41317	2.50	2.41	
195 Di-n-butyl phthalate	149	11.606	11.611	-0.005	99	39202	2.50	2.52	
201 Fluoranthene	202	12.156	12.162	-0.006	98	45372	2.50	2.42	
202 Benzidine	184	12.279	12.285	-0.006	99	15339	2.50	2.53	
204 Pyrene	202	12.354	12.359	-0.005	97	49085	2.50	2.49	
210 Butyl benzyl phthalate	149	12.920	12.920	0.000	97	13676	2.50	2.55	
215 3,3'-Dichlorobenzidine	252	13.369	13.369	0.000	73	9168	2.50	2.56	
217 Benzo[a]anthracene	228	13.391	13.390	0.001	97	44861	2.50	2.41	
216 Bis(2-ethylhexyl) phthalat	149	13.407	13.412	-0.005	97	21057	2.50	2.55	
218 Chrysene	228	13.417	13.423	-0.005	97	47247	2.50	2.63	
220 Di-n-octyl phthalate	149	13.930	13.935	-0.005	99	34867	2.50	2.60	
221 Benzo[b]fluoranthene	252	14.261	14.267	-0.006	97	44728	2.50	2.41	
222 Benzo[k]fluoranthene	252	14.283	14.288	-0.005	99	53128	2.50	2.59	
225 Benzo[a]pyrene	252	14.528	14.534	-0.006	79	42265	2.50	2.33	
227 Indeno[1,2,3-cd]pyrene	276	15.527	15.533	-0.006	95	46140	2.50	2.25	
228 Dibenz(a,h)anthracene	278	15.533	15.543	-0.010	89	40397	2.50	2.33	
229 Benzo[g,h,i]perylene	276	15.795	15.805	-0.010	96	42700	2.50	2.29	
S 232 Total Cresols	1				0			4.59	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MB_LIST1_WRK_00728	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

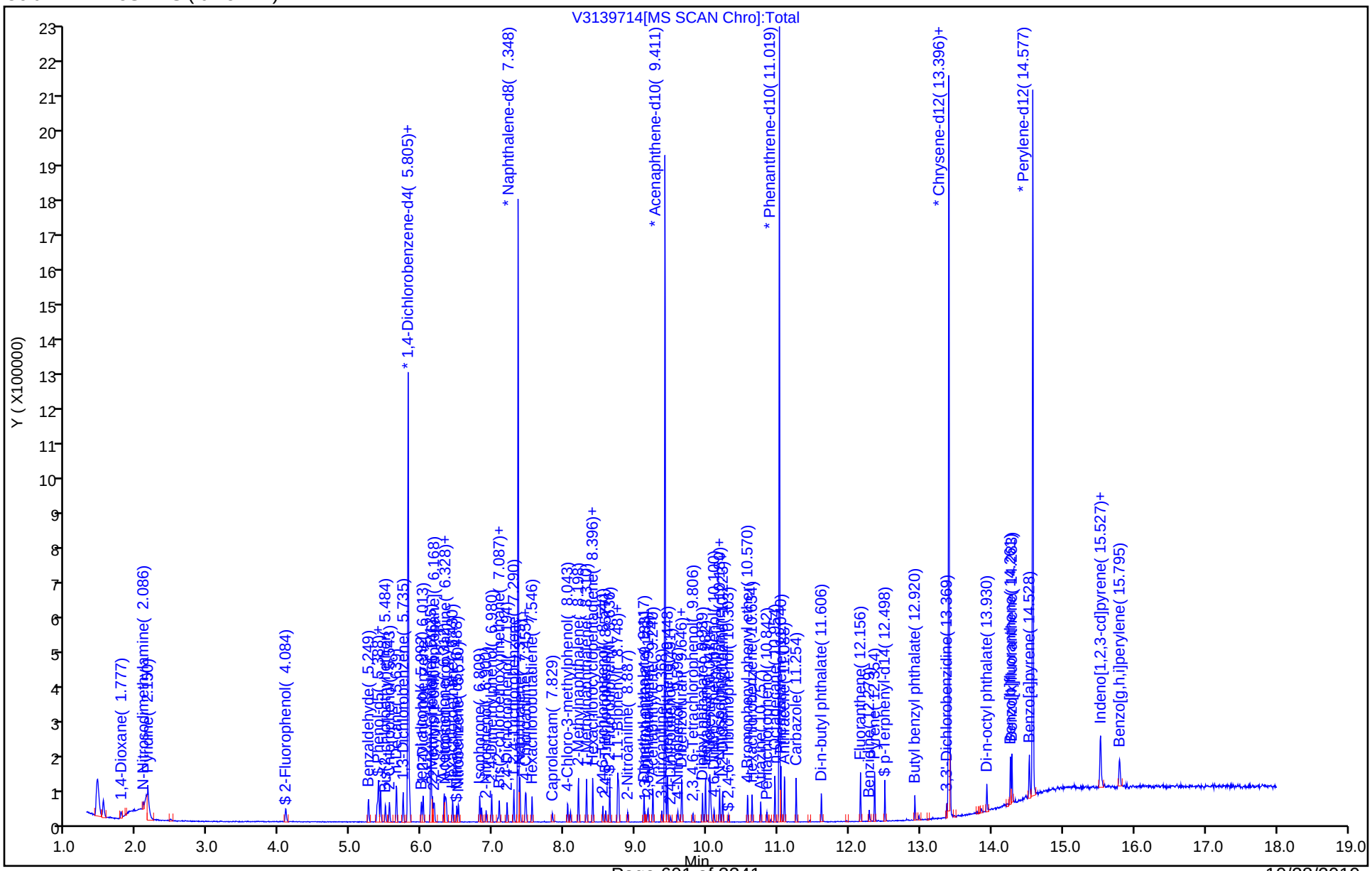
Report Date: 22-Aug-2019 12:46:58 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D

Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 2.5			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

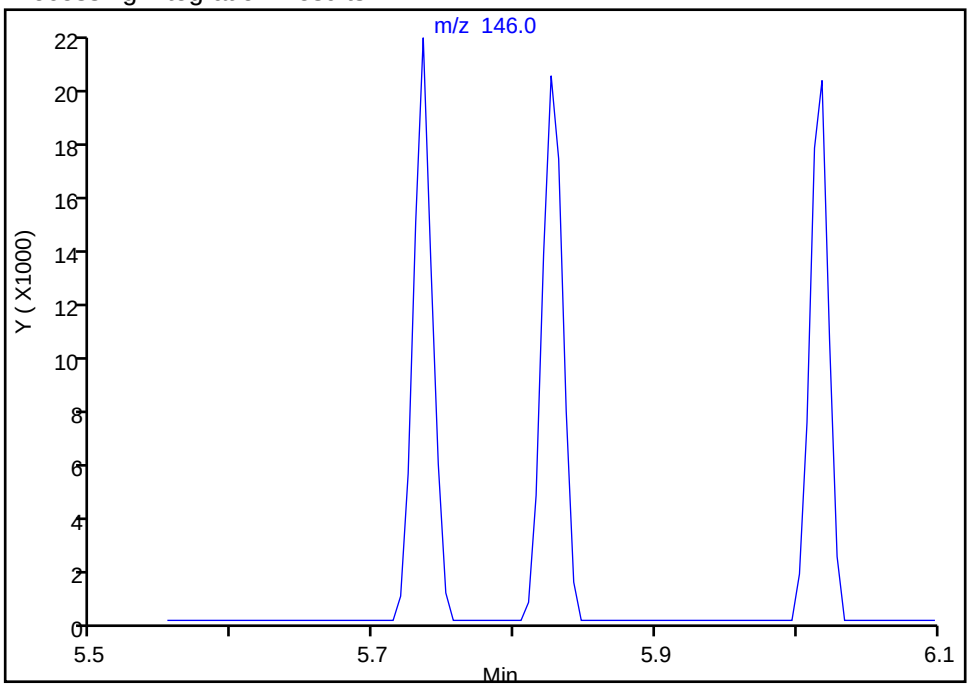
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D				
Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 2.5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

88 1,4-Dichlorobenzene, CAS: 106-46-7

Signal: 1

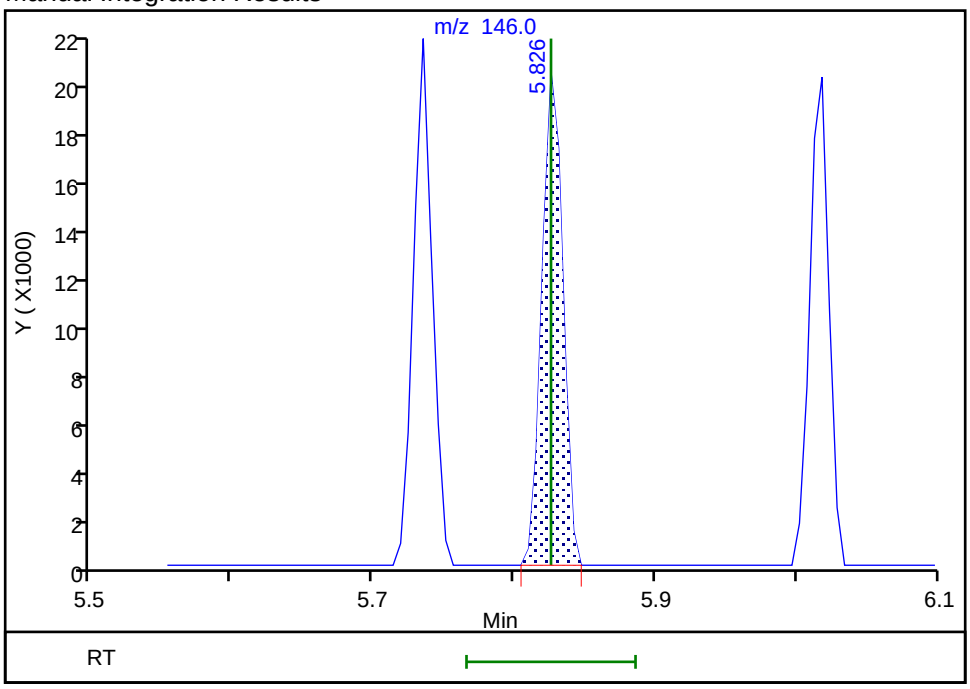
Not Detected
Expected RT: 5.83

Processing Integration Results



Manual Integration Results

RT: 5.83
Area: 21278
Amount: 2.478704
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:22:10
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

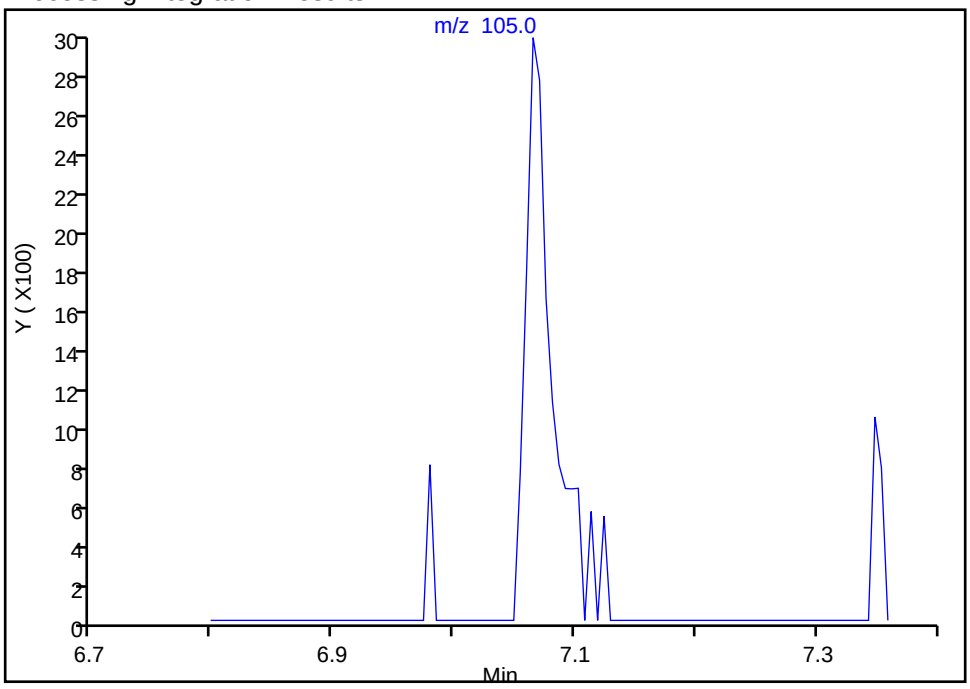
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D				
Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 2.5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

115 Benzoic acid, CAS: 65-85-0

Signal: 1

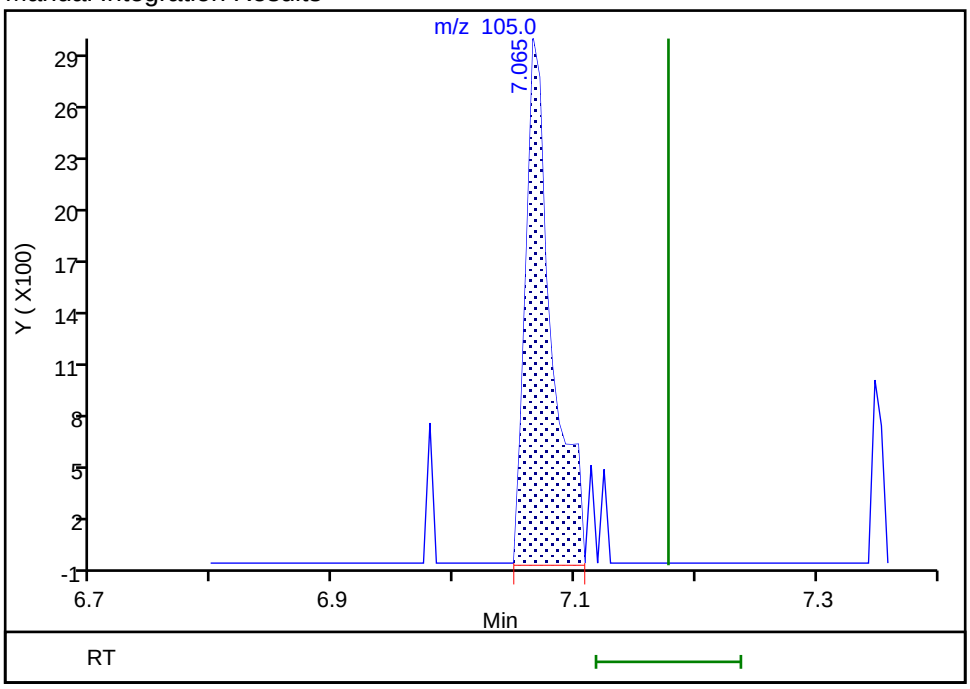
Not Detected
Expected RT: 7.18

Processing Integration Results



Manual Integration Results

RT: 7.07
Area: 4439
Amount: 15.968086
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:22:28
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

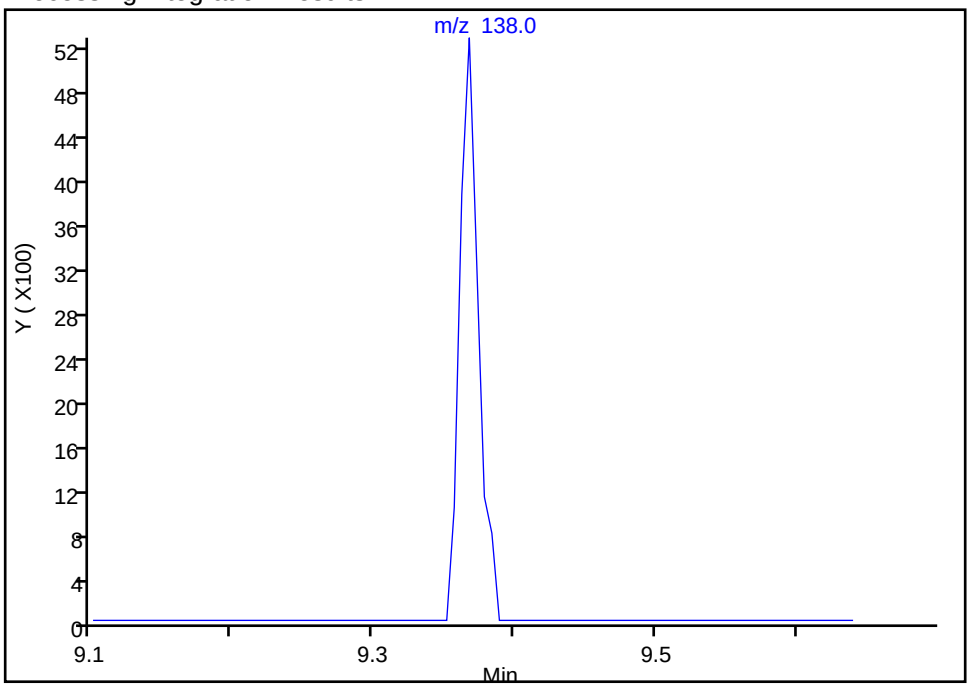
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D				
Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 2.5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

151 3-Nitroaniline, CAS: 99-09-2

Signal: 1

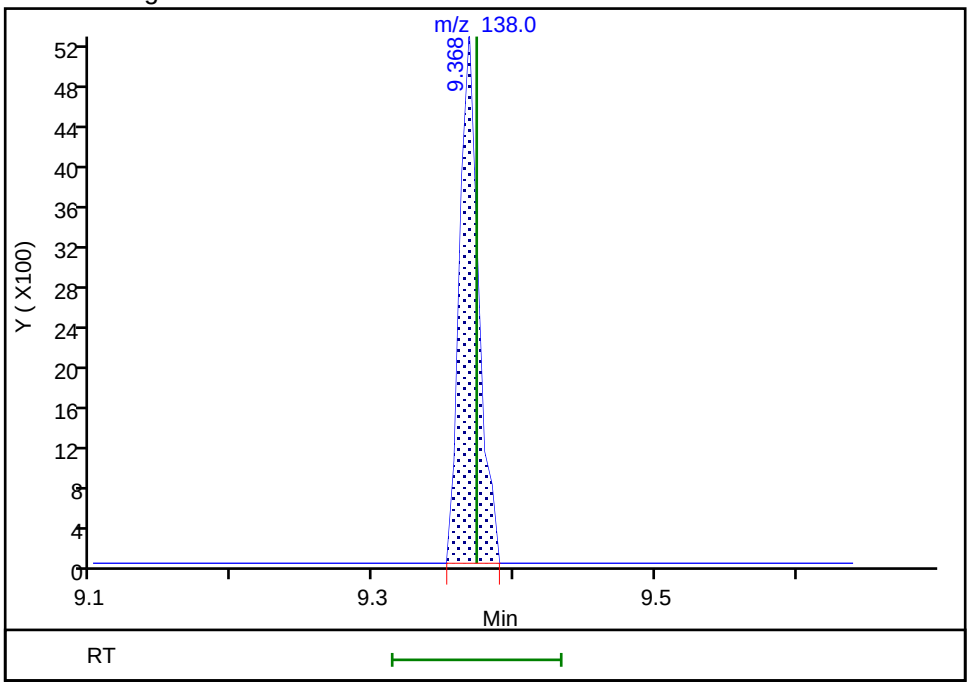
Not Detected
Expected RT: 9.37

Processing Integration Results



Manual Integration Results

RT: 9.37
Area: 4869
Amount: 2.609309
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:22:38
Audit Action: Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

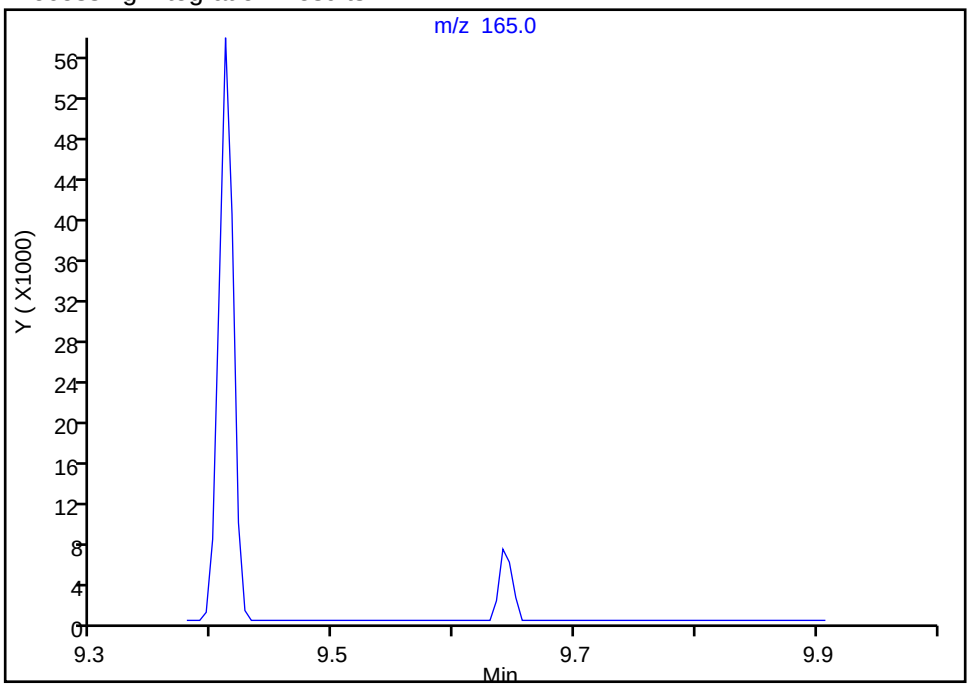
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D				
Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 2.5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

156 2,4-Dinitrotoluene, CAS: 121-14-2

Signal: 1

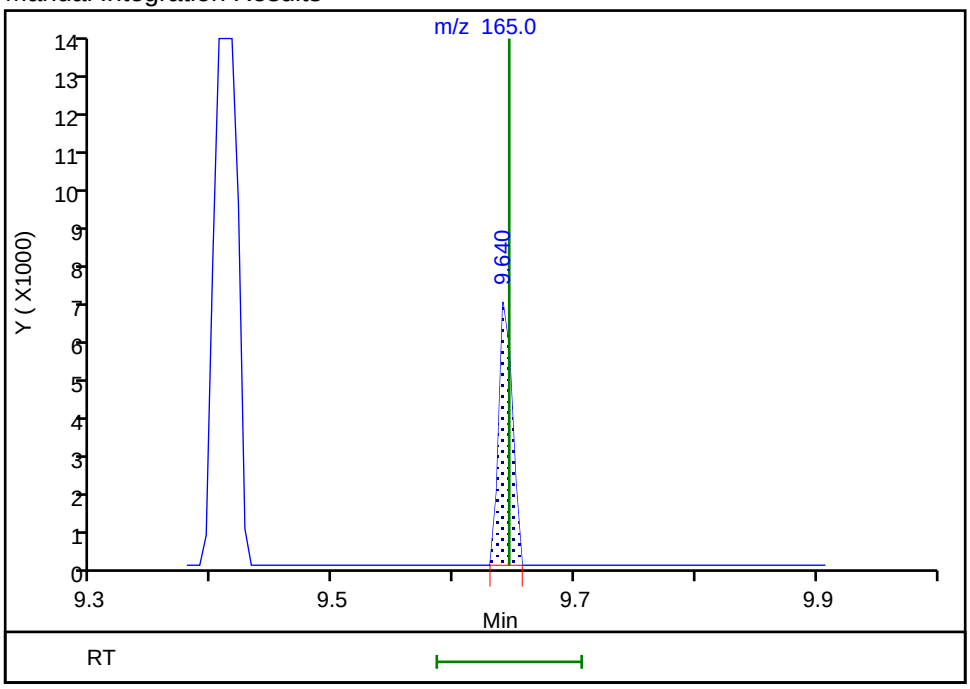
Not Detected
Expected RT: 9.65

Processing Integration Results



Manual Integration Results

RT: 9.64
Area: 5401
Amount: 2.623928
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:22:45
Audit Action: Assigned Compound ID Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

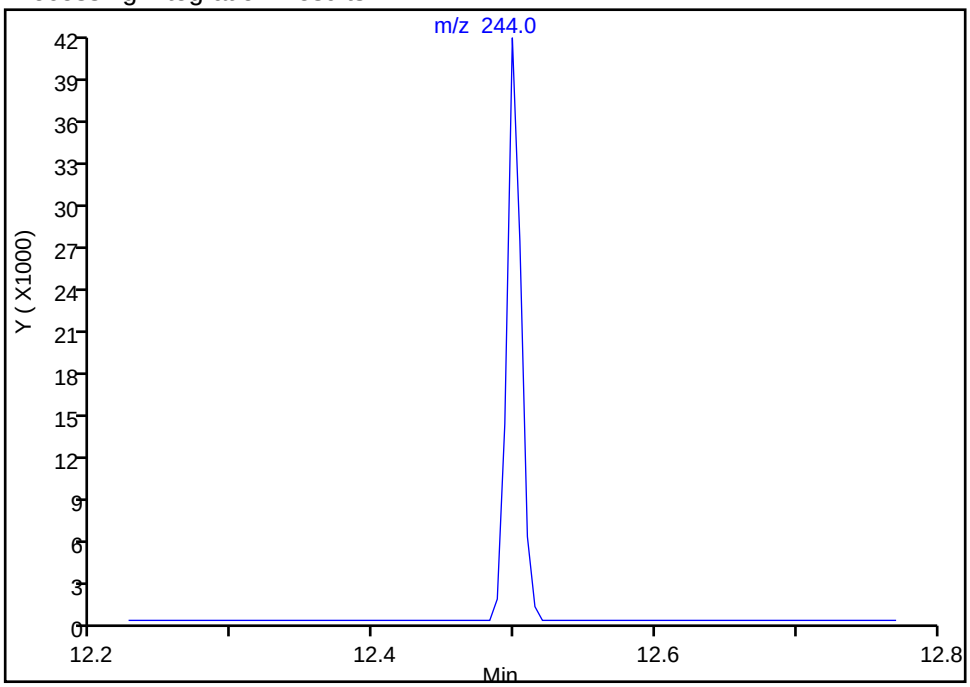
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139714.D				
Injection Date:	21-Aug-2019 17:40:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 2.5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	3	Worklist Smp#:	3
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

$ 12 p-Terphenyl-d14, CAS: 1718-51-0

Signal: 1

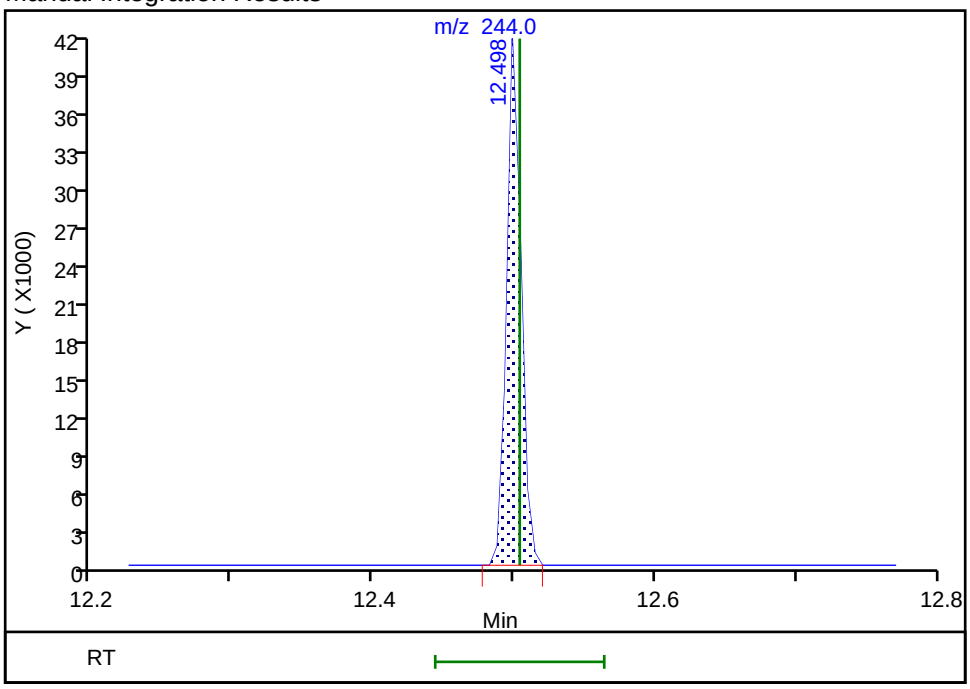
Processing Integration Results

Not Detected
Expected RT: 12.50



Manual Integration Results

RT: 12.50
Area: 29254
Amount: 2.350021
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:22:00
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139715.D
Lims ID: IC L1 5
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 21-Aug-2019 18:05:30 ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-004
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:47:09 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:24:36

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
*	1 1,4-Dichlorobenzene-d4	152	5.805	5.804	0.001	96	201686	40.0	40.0	
*	2 Naphthalene-d8	136	7.348	7.354	-0.006	100	708364	40.0	40.0	
*	3 Acenaphthene-d10	164	9.411	9.410	0.001	93	352587	40.0	40.0	
*	4 Phenanthrene-d10	188	11.019	11.018	0.001	97	586184	40.0	40.0	
*	5 Chrysene-d12	240	13.396	13.401	-0.005	99	485160	40.0	40.0	
*	6 Perylene-d12	264	14.576	14.576	0.000	97	521855	40.0	40.0	
$	7 2-Fluorophenol	112	4.079	4.079	0.000	94	32357	5.00	4.93	
$	8 Phenol-d5	99	5.366	5.372	-0.006	98	39291	5.00	5.07	
$	9 Nitrobenzene-d5	82	6.488	6.488	0.000	90	30145	5.00	5.07	
$	10 2-Fluorobiphenyl	172	8.636	8.641	-0.005	99	66516	5.00	5.22	
$	11 2,4,6-Tribromophenol	330	10.303	10.308	-0.005	91	4778	5.00	4.72	
$	12 p-Terphenyl-d14	244	12.498	12.504	-0.006	99	54555	5.00	5.39	
	68 1,4-Dioxane	88	1.760	1.766	-0.006	96	16448	5.00	5.25	
	69 N-Nitrosodimethylamine	42	2.070	2.076	-0.006	90	22663	5.00	5.12	
	70 Pyridine	52	2.134	2.129	0.005	85	56298	10.0	9.88	
	80 Benzaldehyde	77	5.244	5.244	0.000	94	27055	5.00	4.93	
	81 Phenol	94	5.382	5.388	-0.006	94	45077	5.00	4.99	
	82 Aniline	93	5.388	5.393	-0.005	95	53232	5.00	5.07	
	83 Bis(2-chloroethyl)ether	93	5.484	5.484	0.000	96	34927	5.00	5.23	
	84 2-Chlorophenol	128	5.543	5.543	0.000	98	34362	5.00	4.86	
	263 n-Decane	57	5.639	5.639	0.000	96	48378	5.00	5.04	
	87 1,3-Dichlorobenzene	146	5.730	5.735	-0.005	99	42324	5.00	5.12	
	88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	93	43122	5.00	5.11	
	90 Benzyl alcohol	108	5.992	5.991	0.001	93	20460	5.00	4.92	
	91 1,2-Dichlorobenzene	146	6.013	6.018	-0.005	98	40345	5.00	5.16	
	248 Indene	115	6.125	6.130	-0.005	90	169370	15.0	15.4	
	92 2-Methylphenol	108	6.146	6.146	0.000	90	31493	5.00	5.05	
	93 2,2'-oxybis[1-chloropropan	45	6.168	6.168	0.000	93	68636	5.00	5.12	
	94 Acetophenone	105	6.307	6.312	-0.005	95	43566	5.00	4.90	
	95 N-Nitrosodi-n-propylamine	70	6.323	6.328	-0.005	91	23991	5.00	5.03	
	96 4-Methylphenol	108	6.339	6.344	-0.005	95	31261	5.00	4.93	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	93	14430	5.00	4.94	
102 Nitrobenzene	77	6.510	6.515	-0.005	91	32182	5.00	4.96	
106 Isophorone	82	6.809	6.814	-0.005	99	59036	5.00	4.86	
107 2-Nitrophenol	139	6.900	6.905	-0.005	94	12120	5.00	4.44	
108 2,4-Dimethylphenol	107	6.980	6.980	0.000	94	30571	5.00	4.81	
111 Bis(2-chloroethoxy)methane	93	7.087	7.087	0.000	97	36168	5.00	4.96	
115 Benzoic acid	105	7.076	7.177	-0.101	0	16898	15.0	19.0	M
114 2,4-Dichlorophenol	162	7.194	7.199	-0.005	92	25340	5.00	5.02	
117 1,2,4-Trichlorobenzene	180	7.290	7.290	0.000	94	31877	5.00	5.01	
118 Naphthalene	128	7.375	7.375	0.000	97	100709	5.00	5.34	
119 4-Chloroaniline	127	7.450	7.455	-0.005	96	36571	5.00	4.84	
122 2,6-Dichlorophenol	162	7.461	7.466	-0.005	97	24849	5.00	4.66	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	96	15516	5.00	4.85	
124 Caprolactam	113	7.835	7.877	-0.042	77	6275	5.00	4.63	
129 4-Chloro-3-methylphenol	107	8.043	8.048	-0.005	93	20864	5.00	4.68	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	93	65211	5.00	5.23	
251 1-Methylnaphthalene	142	8.310	8.310	0.000	94	59975	5.00	5.14	
134 Hexachlorocyclopentadiene	237	8.396	8.401	-0.005	93	12418	5.00	4.66	
135 1,2,4,5-Tetrachlorobenzene	216	8.401	8.401	0.000	97	30173	5.00	5.43	
137 2,4,6-Trichlorophenol	196	8.540	8.540	0.000	92	13754	5.00	4.73	
138 2,4,5-Trichlorophenol	196	8.582	8.582	0.000	97	15696	5.00	5.14	M
140 1,1'-Biphenyl	154	8.748	8.748	0.000	96	77067	5.00	5.33	
141 2-Chloronaphthalene	162	8.764	8.764	0.000	95	57792	5.00	5.12	
143 2-Nitroaniline	65	8.887	8.892	-0.005	79	11952	5.00	4.75	
146 Dimethyl phthalate	163	9.117	9.122	-0.005	99	56224	5.00	4.80	
148 1,3-Dinitrobenzene	168	9.138	9.138	0.000	82	5530	5.00	4.71	
149 2,6-Dinitrotoluene	165	9.175	9.181	-0.006	91	9624	5.00	4.54	
150 Acenaphthylene	152	9.245	9.245	0.000	98	85042	5.00	5.30	
151 3-Nitroaniline	138	9.368	9.373	-0.005	92	10702	5.00	4.58	
152 Acenaphthene	153	9.448	9.448	0.000	93	58295	5.00	5.27	
153 2,4-Dinitrophenol	184	9.491	9.496	-0.005	83	6094	10.0	12.5	
154 4-Nitrophenol	109	9.587	9.597	-0.010	95	9052	10.0	8.72	
156 2,4-Dinitrotoluene	165	9.646	9.646	0.000	90	12310	5.00	4.55	a
155 Dibenzofuran	168	9.651	9.651	0.000	97	80491	5.00	5.22	
158 2,3,4,6-Tetrachlorophenol	232	9.806	9.806	0.000	73	9162	5.00	4.55	
161 Diethyl phthalate	149	9.939	9.945	-0.006	98	52793	5.00	4.71	
256 Hexadecane	57	9.982	9.982	0.000	90	45705	5.00	5.07	
162 Fluorene	166	10.036	10.041	-0.005	94	63482	5.00	5.19	
163 4-Chlorophenyl phenyl ethe	204	10.052	10.052	0.000	90	29752	5.00	5.00	
164 4-Nitroaniline	138	10.062	10.073	-0.011	83	9885	5.00	4.43	
165 4,6-Dinitro-2-methylphenol	198	10.100	10.110	-0.010	80	9161	10.0	9.24	
169 Diphenylamine	169	10.180	10.185	-0.005	94	42710	4.28	4.21	
168 N-Nitrosodiphenylamine	169	10.180	10.185	-0.005	98	42710	5.00	4.92	
170 1,2-Diphenylhydrazine	77	10.223	10.223	0.001	99	59585	5.00	4.92	
171 Azobenzene	77	10.223	10.223	0.001	98	59585	5.00	5.05	
175 4-Bromophenyl phenyl ether	248	10.575	10.575	0.000	68	15353	5.00	4.89	
179 Hexachlorobenzene	284	10.634	10.639	-0.005	93	16008	5.00	5.05	
180 Atrazine	200	10.757	10.762	-0.005	89	12870	5.00	4.76	
183 Pentachlorophenol	266	10.842	10.842	0.000	90	9951	10.0	8.79	
265 n-Octadecane	57	10.954	10.960	-0.006	93	41985	5.00	4.93	
188 Phenanthrene	178	11.040	11.045	-0.005	97	89044	5.00	5.35	
189 Anthracene	178	11.093	11.093	0.000	97	86895	5.00	5.27	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.254	11.259	-0.005	96	77486	5.00	5.12	
195 Di-n-butyl phthalate	149	11.606	11.611	-0.005	99	75522	5.00	4.81	
201 Fluoranthene	202	12.156	12.162	-0.006	97	86204	5.00	5.21	
202 Benzidine	184	12.279	12.285	-0.006	99	31738	5.00	4.80	
204 Pyrene	202	12.354	12.359	-0.005	98	90964	5.00	5.67	
210 Butyl benzyl phthalate	149	12.920	12.920	0.000	97	27984	5.00	4.78	
215 3,3'-Dichlorobenzidine	252	13.369	13.369	0.000	74	19833	5.00	4.74	
217 Benzo[a]anthracene	228	13.391	13.390	0.000	98	79271	5.00	5.24	
216 Bis(2-ethylhexyl) phthalat	149	13.407	13.412	-0.005	96	41629	5.00	4.80	
218 Chrysene	228	13.417	13.423	-0.005	97	80595	5.00	5.52	
220 Di-n-octyl phthalate	149	13.930	13.935	-0.005	99	64411	5.00	4.57	
221 Benzo[b]fluoranthene	252	14.261	14.267	-0.006	98	73900	5.00	4.95	
222 Benzo[k]fluoranthene	252	14.283	14.288	-0.005	99	93378	5.00	5.65	
225 Benzo[a]pyrene	252	14.528	14.534	-0.006	78	76072	5.00	5.11	
227 Indeno[1,2,3-cd]pyrene	276	15.522	15.533	-0.011	97	86188	5.00	5.01	
228 Dibenz(a,h)anthracene	278	15.533	15.543	-0.010	90	70483	5.00	4.94	
229 Benzo[g,h,i]perylene	276	15.795	15.805	-0.011	95	74666	5.00	4.89	
S 232 Total Cresols	1				0			9.99	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MB_LIST1_WRK_00730	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

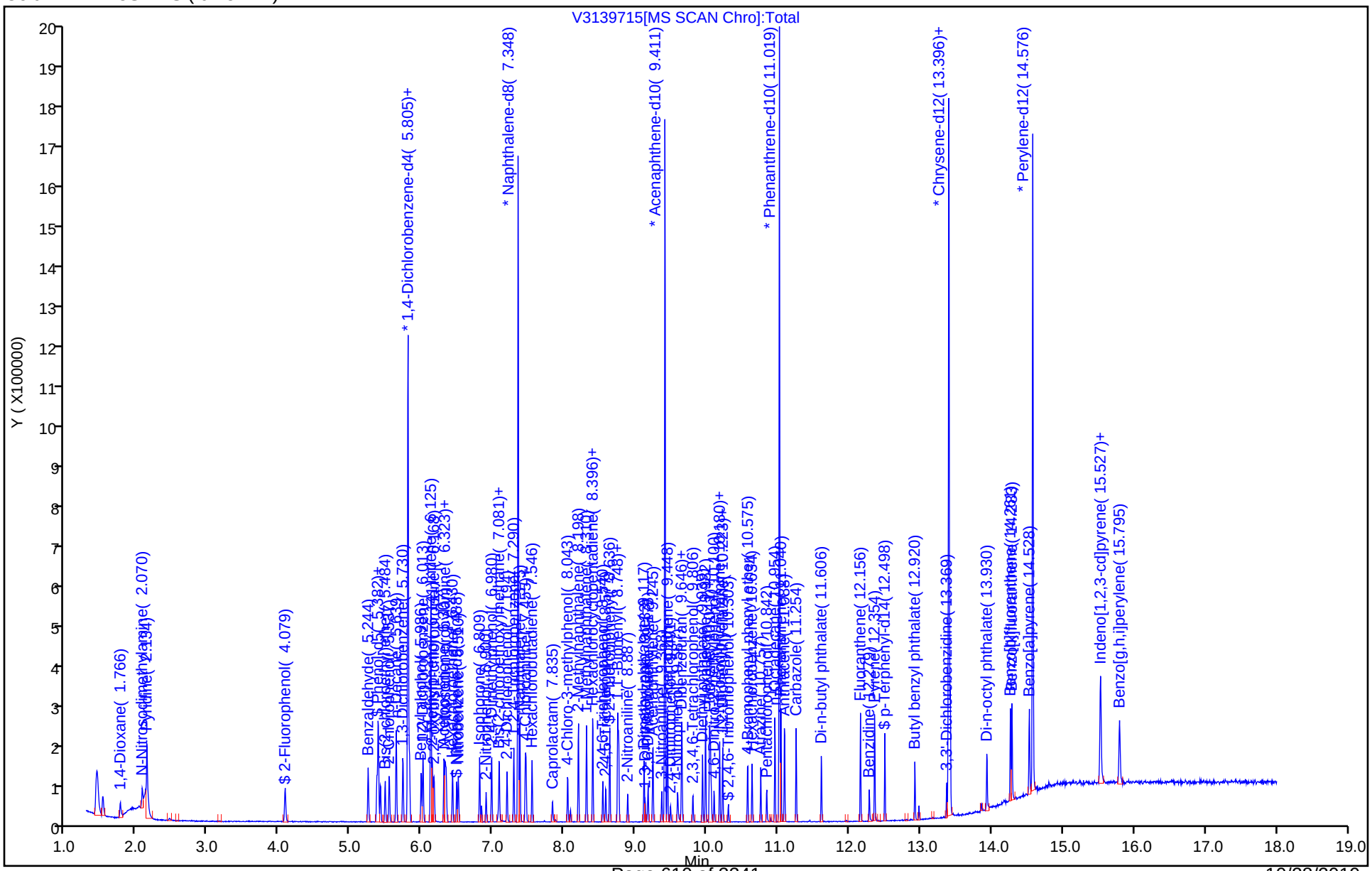
Report Date: 22-Aug-2019 12:47:11 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139715.D

Injection Date:	21-Aug-2019 18:05:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 5			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

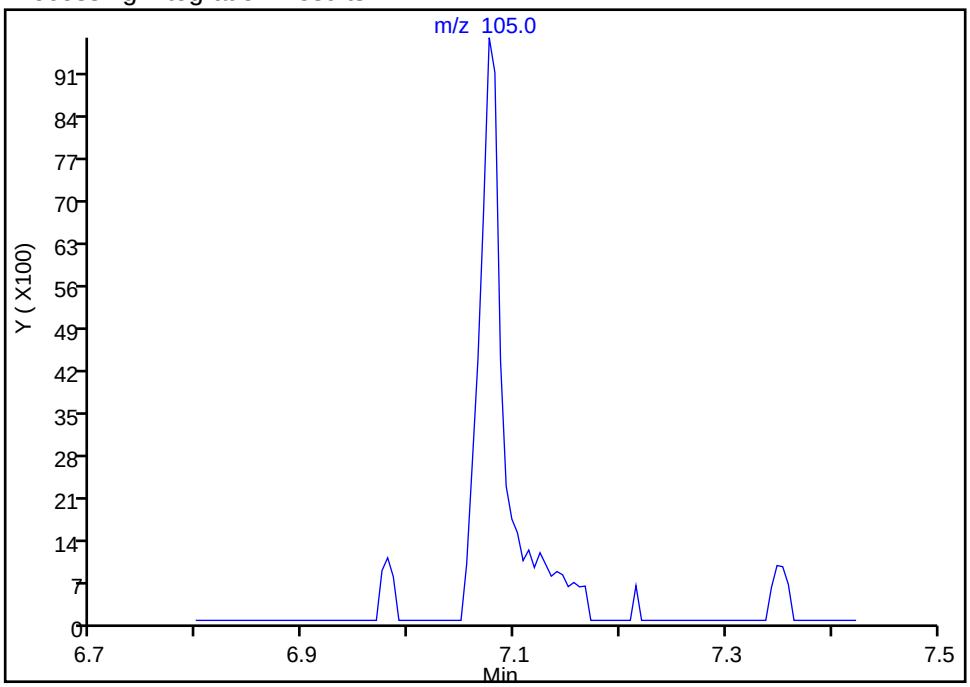
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139715.D				
Injection Date:	21-Aug-2019 18:05:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

115 Benzoic acid, CAS: 65-85-0

Signal: 1

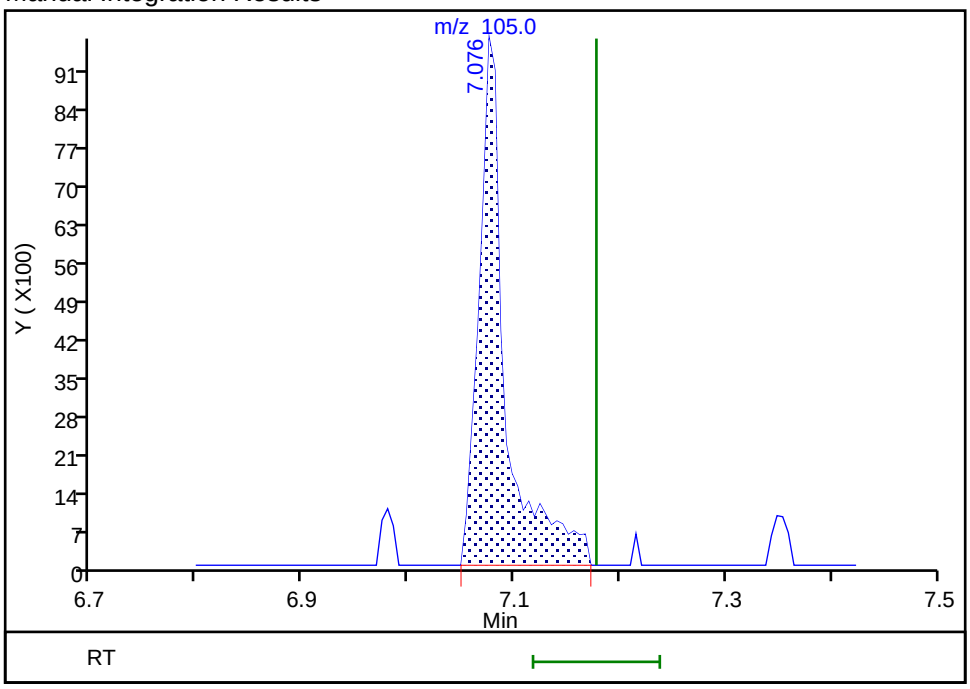
Not Detected
Expected RT: 7.18

Processing Integration Results



Manual Integration Results

RT: 7.08
Area: 16898
Amount: 19.008292
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:23:49
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

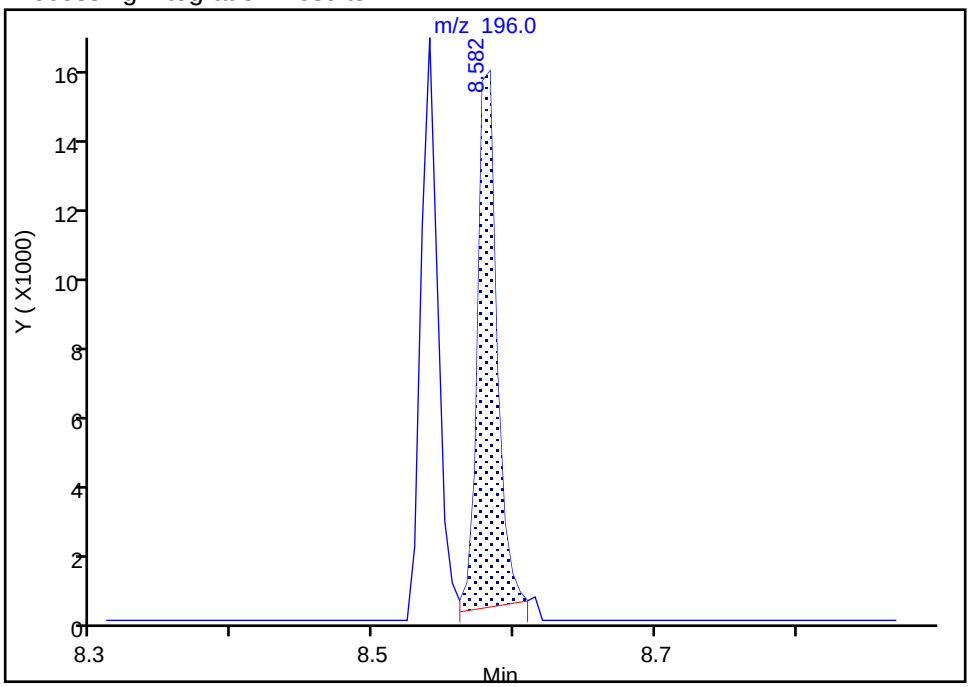
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139715.D
Injection Date: 21-Aug-2019 18:05:30 Instrument ID: HP5973V
Lims ID: IC L1 5
Client ID:
Operator ID: PJQ ALS Bottle#: 4 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

138 2,4,5-Trichlorophenol, CAS: 95-95-4

Signal: 1

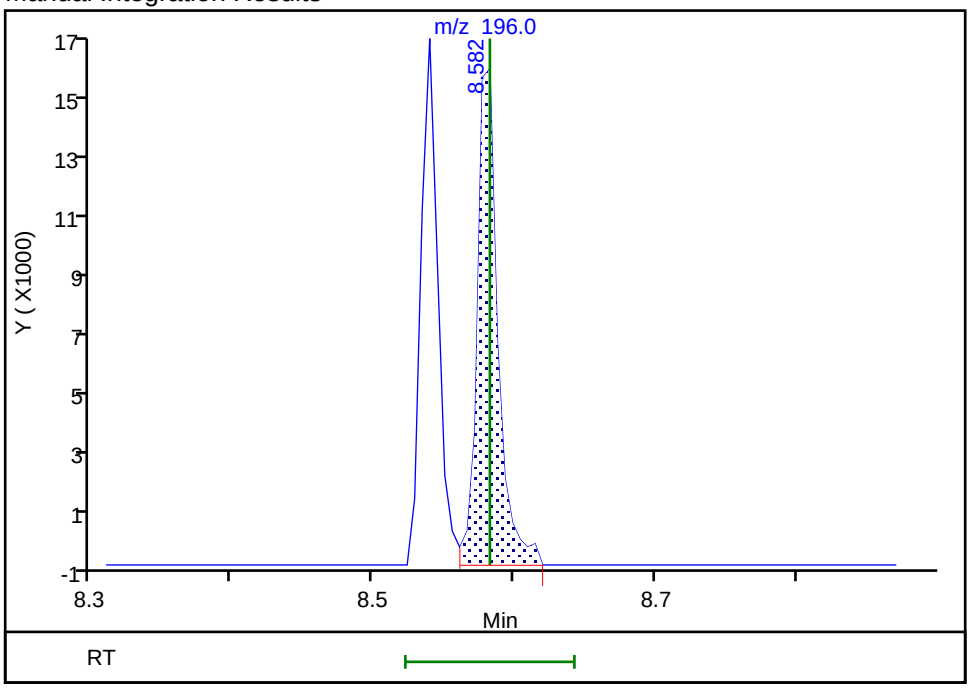
Processing Integration Results

RT: 8.58
Area: 14209
Amount: 4.833340
Amount Units: ng/uL



Manual Integration Results

RT: 8.58
Area: 15696
Amount: 5.140470
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:24:08
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

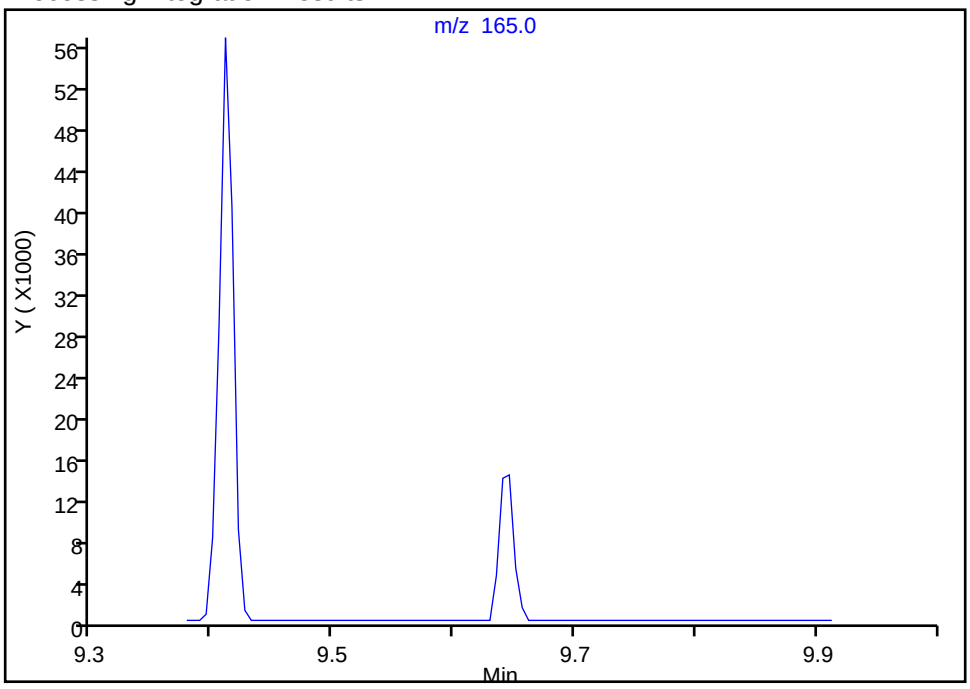
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139715.D				
Injection Date:	21-Aug-2019 18:05:30	Instrument ID:	HP5973V		
Lims ID:	IC L1 5				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	4	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

156 2,4-Dinitrotoluene, CAS: 121-14-2

Signal: 1

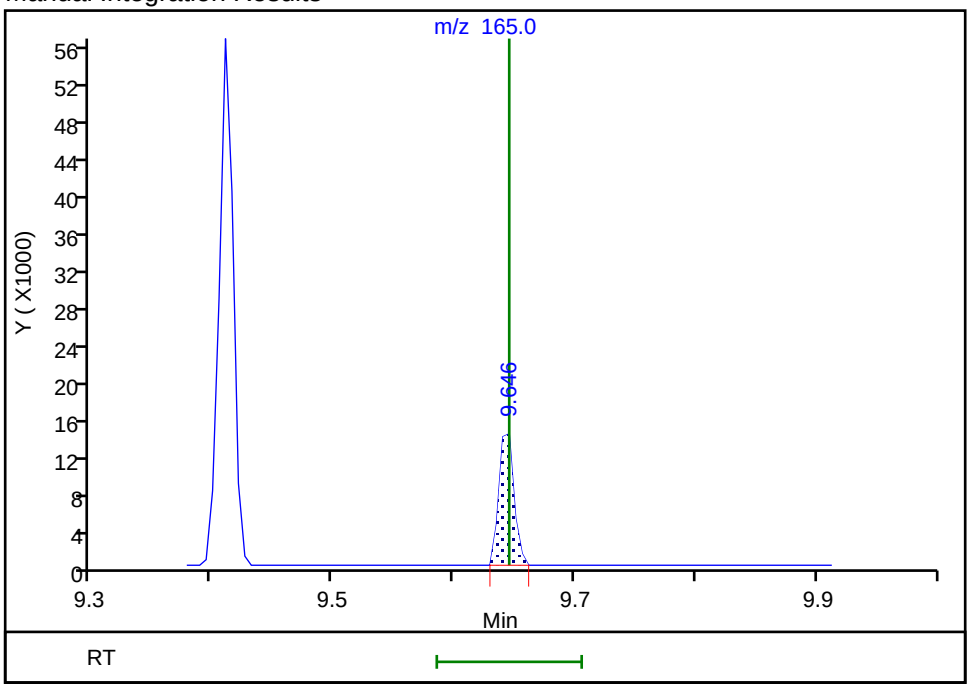
Not Detected
Expected RT: 9.65

Processing Integration Results



Manual Integration Results

RT: 9.65
Area: 12310
Amount: 4.552811
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:24:16
Audit Action: Assigned Compound ID Audit Reason: Baseline

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139716.D
Lims ID: IC L1 20
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 21-Aug-2019 18:30:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-005
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:47:19 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:25:20

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.805	5.805	0.000	95	172424	40.0	40.0	
* 2 Naphthalene-d8	136	7.348	7.348	0.000	100	595580	40.0	40.0	
* 3 Acenaphthene-d10	164	9.411	9.411	0.000	93	303410	40.0	40.0	
* 4 Phenanthrene-d10	188	11.019	11.019	0.000	98	516270	40.0	40.0	
* 5 Chrysene-d12	240	13.401	13.401	0.000	99	493615	40.0	40.0	
* 6 Perylene-d12	264	14.576	14.576	0.000	97	554884	40.0	40.0	
$ 7 2-Fluorophenol	112	4.084	4.084	0.000	95	116823	20.0	20.8	
$ 8 Phenol-d5	99	5.366	5.366	0.000	98	137871	20.0	20.8	
$ 9 Nitrobenzene-d5	82	6.488	6.488	0.000	90	109147	20.0	19.8	
$ 10 2-Fluorobiphenyl	172	8.636	8.636	0.000	100	237862	20.0	21.7	
$ 11 2,4,6-Tribromophenol	330	10.303	10.303	0.000	91	20546	20.0	18.5	
$ 12 p-Terphenyl-d14	244	12.498	12.498	0.000	100	218984	20.0	21.3	
68 1,4-Dioxane	88	1.766	1.766	0.000	95	56049	20.0	20.9	
69 N-Nitrosodimethylamine	42	2.076	2.076	0.000	90	77654	20.0	20.5	
70 Pyridine	52	2.134	2.134	0.000	86	211577	40.0	43.4	
80 Benzaldehyde	77	5.244	5.244	0.000	94	101056	20.0	21.5	
81 Phenol	94	5.388	5.388	0.000	94	165260	20.0	21.4	
82 Aniline	93	5.388	5.388	0.000	94	192213	20.0	21.4	
83 Bis(2-chloroethyl)ether	93	5.484	5.484	0.000	93	119969	20.0	21.0	
84 2-Chlorophenol	128	5.543	5.543	0.000	98	126200	20.0	20.9	
263 n-Decane	57	5.639	5.639	0.000	96	177816	20.0	21.7	
87 1,3-Dichlorobenzene	146	5.735	5.735	0.000	99	149118	20.0	21.1	
88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	95	155111	20.0	21.5	
90 Benzyl alcohol	108	5.992	5.992	0.000	93	78288	20.0	20.4	
91 1,2-Dichlorobenzene	146	6.013	6.013	0.000	98	142984	20.0	21.4	
248 Indene	115	6.125	6.125	0.000	90	601918	60.0	65.3	
92 2-Methylphenol	108	6.146	6.146	0.000	96	111255	20.0	20.9	
93 2,2'-oxybis[1-chloropropan	45	6.168	6.168	0.000	91	243379	20.0	21.2	
94 Acetophenone	105	6.312	6.312	0.000	95	161816	20.0	21.3	
95 N-Nitrosodi-n-propylamine	70	6.323	6.323	0.000	94	84736	20.0	20.8	
96 4-Methylphenol	108	6.339	6.339	0.000	96	113388	20.0	20.9	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	94	51475	20.0	20.6	
102 Nitrobenzene	77	6.510	6.510	0.000	91	123829	20.0	20.9	
106 Isophorone	82	6.809	6.809	0.000	98	216833	20.0	21.2	
107 2-Nitrophenol	139	6.900	6.900	0.000	95	50254	20.0	18.7	
108 2,4-Dimethylphenol	107	6.980	6.980	0.000	95	114918	20.0	21.5	
111 Bis(2-chloroethoxy)methane	93	7.087	7.087	0.000	98	132818	20.0	21.7	
115 Benzoic acid	105	7.124	7.124	0.000	92	125616	60.0	50.9	
114 2,4-Dichlorophenol	162	7.194	7.194	0.000	94	96753	20.0	20.8	
117 1,2,4-Trichlorobenzene	180	7.290	7.290	0.000	94	115485	20.0	21.6	
118 Naphthalene	128	7.375	7.375	0.000	97	354964	20.0	22.4	
119 4-Chloroaniline	127	7.450	7.450	0.000	96	137510	20.0	21.6	
122 2,6-Dichlorophenol	162	7.461	7.461	0.000	97	97271	20.0	21.7	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	97	57020	20.0	21.2	
124 Caprolactam	113	7.851	7.851	0.000	75	26522	20.0	18.9	
129 4-Chloro-3-methylphenol	107	8.048	8.048	0.000	96	87019	20.0	20.3	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	93	234774	20.0	22.4	
251 1-Methylnaphthalene	142	8.310	8.310	0.000	94	216773	20.0	22.1	
134 Hexachlorocyclopentadiene	237	8.396	8.396	0.000	96	54952	20.0	19.2	
135 1,2,4,5-Tetrachlorobenzene	216	8.401	8.401	0.000	97	101991	20.0	21.3	
137 2,4,6-Trichlorophenol	196	8.540	8.540	0.000	93	58313	20.0	20.0	
138 2,4,5-Trichlorophenol	196	8.582	8.582	0.000	96	59871	20.0	19.3	
140 1,1'-Biphenyl	154	8.748	8.748	0.000	95	277551	20.0	22.3	
141 2-Chloronaphthalene	162	8.764	8.764	0.000	96	210535	20.0	21.7	
143 2-Nitroaniline	65	8.887	8.887	0.000	83	50222	20.0	18.6	
146 Dimethyl phthalate	163	9.122	9.122	0.000	99	219356	20.0	21.7	
148 1,3-Dinitrobenzene	168	9.138	9.138	0.000	86	28481	20.0	17.5	
149 2,6-Dinitrotoluene	165	9.175	9.175	0.000	95	45815	20.0	19.7	
150 Acenaphthylene	152	9.245	9.245	0.000	98	314988	20.0	22.8	
151 3-Nitroaniline	138	9.368	9.368	0.000	93	49104	20.0	19.4	
152 Acenaphthene	153	9.448	9.448	0.000	94	207493	20.0	21.8	
153 2,4-Dinitrophenol	184	9.491	9.491	0.000	86	37010	40.0	33.4	
154 4-Nitrophenol	109	9.592	9.592	0.000	94	47207	40.0	38.1	
156 2,4-Dinitrotoluene	165	9.646	9.646	0.000	94	57266	20.0	18.9	
155 Dibenzofuran	168	9.651	9.651	0.000	96	295664	20.0	22.3	
158 2,3,4,6-Tetrachlorophenol	232	9.806	9.806	0.000	74	42948	20.0	19.6	
161 Diethyl phthalate	149	9.945	9.945	0.000	98	208395	20.0	21.6	
256 Hexadecane	57	9.982	9.982	0.000	91	165779	20.0	21.4	
162 Fluorene	166	10.041	10.041	0.000	94	230333	20.0	21.9	
163 4-Chlorophenyl phenyl ethe	204	10.052	10.052	0.000	92	108863	20.0	21.2	
164 4-Nitroaniline	138	10.068	10.068	0.000	85	48462	20.0	19.1	
165 4,6-Dinitro-2-methylphenol	198	10.105	10.105	0.000	85	50331	40.0	33.7	
169 Diphenylamine	169	10.180	10.180	0.000	95	165818	17.1	18.6	
168 N-Nitrosodiphenylamine	169	10.180	10.180	0.000	98	165818	20.0	21.7	
170 1,2-Diphenylhydrazine	77	10.223	10.223	0.000	99	228068	20.0	21.9	
171 Azobenzene	77	10.223	10.223	0.000	99	228068	20.0	22.0	
175 4-Bromophenyl phenyl ether	248	10.575	10.575	0.000	68	57932	20.0	20.9	
179 Hexachlorobenzene	284	10.634	10.634	0.000	95	58796	20.0	21.1	
180 Atrazine	200	10.757	10.757	0.000	92	54500	20.0	20.4	
183 Pentachlorophenol	266	10.842	10.842	0.000	91	56895	40.0	38.4	
265 n-Octadecane	57	10.954	10.954	0.000	92	164396	20.0	21.9	
188 Phenanthrene	178	11.040	11.040	0.000	98	327419	20.0	22.3	
189 Anthracene	178	11.093	11.093	0.000	97	335009	20.0	23.1	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.254	11.254	0.000	96	301011	20.0	22.6	
195 Di-n-butyl phthalate	149	11.606	11.606	0.000	100	329155	20.0	21.5	
201 Fluoranthene	202	12.156	12.156	0.000	98	343848	20.0	23.6	
202 Benzidine	184	12.279	12.279	0.000	99	171830	20.0	20.9	
204 Pyrene	202	12.359	12.359	0.000	97	367782	20.0	22.5	
210 Butyl benzyl phthalate	149	12.920	12.920	0.000	97	144997	20.0	19.9	
215 3,3'-Dichlorobenzidine	252	13.369	13.369	0.000	74	107847	20.0	19.9	
217 Benzo[a]anthracene	228	13.391	13.391	0.000	99	333045	20.0	21.7	
216 Bis(2-ethylhexyl) phthalat	149	13.412	13.412	0.000	98	210051	20.0	19.9	
218 Chrysene	228	13.423	13.423	0.000	98	324057	20.0	21.8	
220 Di-n-octyl phthalate	149	13.935	13.935	0.000	99	347009	20.0	19.7	
221 Benzo[b]fluoranthene	252	14.261	14.261	0.000	98	337034	20.0	21.2	
222 Benzo[k]fluoranthene	252	14.288	14.288	0.000	99	414646	20.0	23.6	
225 Benzo[a]pyrene	252	14.528	14.528	0.000	78	341566	20.0	21.3	
227 Indeno[1,2,3-cd]pyrene	276	15.527	15.527	0.000	97	393905	20.0	21.0	
228 Dibenz(a,h)anthracene	278	15.533	15.533	0.000	90	330925	20.0	21.5	
229 Benzo[g,h,i]perylene	276	15.800	15.800	0.000	96	342729	20.0	20.9	
S 232 Total Cresols	1				0			41.8	

Reagents:

MB_LIST1_WRK_00729	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

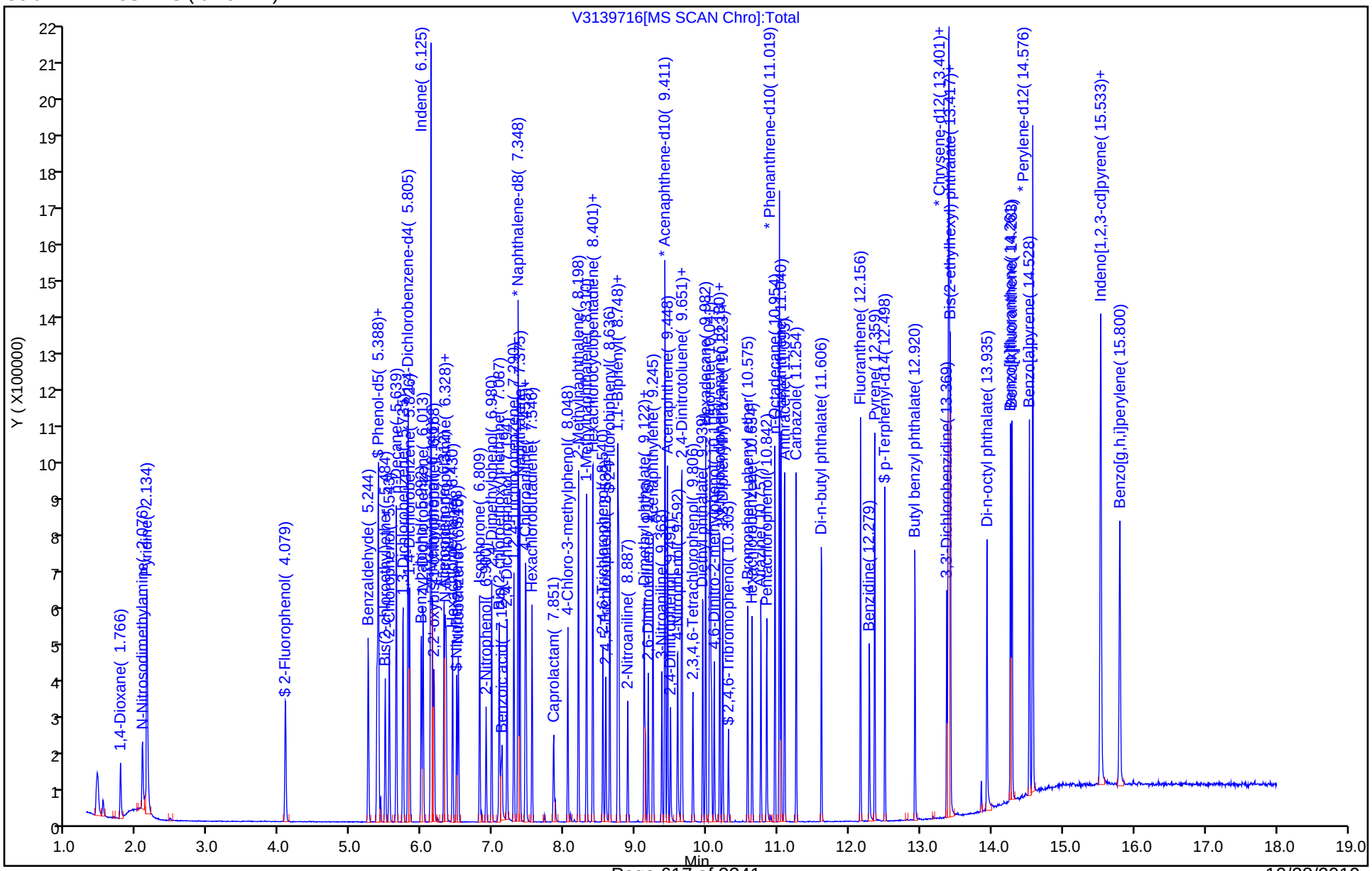
Report Date: 22-Aug-2019 12:47:21 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139716.D

Injection Date:	21-Aug-2019 18:30:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 20			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139717.D
Lims ID: ICIS L1 50
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 21-Aug-2019 18:55:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-006
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:47:29 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: RT Order ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 12:46:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.804	5.804	0.000	96	194878	40.0	40.0	
* 2 Naphthalene-d8	136	7.354	7.354	0.000	99	675608	40.0	40.0	
* 3 Acenaphthene-d10	164	9.410	9.410	0.000	94	335379	40.0	40.0	
* 4 Phenanthrene-d10	188	11.018	11.018	0.000	97	563550	40.0	40.0	
* 5 Chrysene-d12	240	13.401	13.401	0.000	99	500895	40.0	40.0	
* 6 Perylene-d12	264	14.576	14.576	0.000	97	578574	40.0	40.0	
$ 7 2-Fluorophenol	112	4.079	4.079	0.000	95	337773	50.0	53.2	
$ 8 Phenol-d5	99	5.372	5.372	0.000	99	395250	50.0	52.8	
$ 9 Nitrobenzene-d5	82	6.488	6.488	0.000	91	325612	50.0	51.2	
$ 10 2-Fluorobiphenyl	172	8.641	8.641	0.000	100	641573	50.0	52.9	
$ 11 2,4,6-Tribromophenol	330	10.308	10.308	0.000	92	64714	50.0	51.3	
$ 12 p-Terphenyl-d14	244	12.504	12.504	0.000	99	554626	50.0	53.0	
68 1,4-Dioxane	88	1.766	1.766	0.000	97	156174	50.0	51.6	
69 N-Nitrosodimethylamine	42	2.076	2.076	0.000	91	226177	50.0	52.9	
70 Pyridine	52	2.129	2.129	0.000	85	588745	100.0	106.9	
80 Benzaldehyde	77	5.244	5.244	0.000	94	264453	50.0	49.9	
81 Phenol	94	5.388	5.388	0.000	98	457203	50.0	52.3	
82 Aniline	93	5.393	5.393	0.000	97	523300	50.0	51.6	
83 Bis(2-chloroethyl)ether	93	5.484	5.484	0.000	94	329615	50.0	51.1	
84 2-Chlorophenol	128	5.543	5.543	0.000	98	360989	50.0	52.9	
263 n-Decane	57	5.639	5.639	0.000	96	493629	50.0	53.2	
87 1,3-Dichlorobenzene	146	5.735	5.735	0.000	99	418153	50.0	52.4	
88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	95	422081	50.0	51.8	
90 Benzyl alcohol	108	5.991	5.991	0.000	92	222904	50.0	50.6	
91 1,2-Dichlorobenzene	146	6.018	6.018	0.000	98	392933	50.0	52.0	
248 Indene	115	6.130	6.130	0.000	90	1582361	150.0	151.3	
92 2-Methylphenol	108	6.146	6.146	0.000	93	312421	50.0	51.9	
93 2,2'-oxybis[1-chloropropan	45	6.168	6.168	0.000	92	663271	50.0	51.2	
94 Acetophenone	105	6.312	6.312	0.000	95	443099	50.0	51.6	
95 N-Nitrosodi-n-propylamine	70	6.328	6.328	0.000	93	236494	50.0	51.3	
96 4-Methylphenol	108	6.344	6.344	0.000	94	316357	50.0	51.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	95	145141	50.0	51.4	
102 Nitrobenzene	77	6.515	6.515	0.000	90	349245	50.0	51.2	
106 Isophorone	82	6.814	6.814	0.000	98	599019	50.0	51.7	
107 2-Nitrophenol	139	6.905	6.905	0.000	94	155494	50.0	49.6	
108 2,4-Dimethylphenol	107	6.980	6.980	0.000	95	317212	50.0	52.3	
111 Bis(2-chloroethoxy)methane	93	7.087	7.087	0.000	97	357853	50.0	51.4	
115 Benzoic acid	105	7.177	7.177	0.000	86	458154	150.0	130.6	M
114 2,4-Dichlorophenol	162	7.199	7.199	0.000	92	273436	50.0	50.9	
117 1,2,4-Trichlorobenzene	180	7.290	7.290	0.000	94	313084	50.0	51.6	
118 Naphthalene	128	7.375	7.375	0.000	97	949704	50.0	52.8	
119 4-Chloroaniline	127	7.455	7.455	0.000	96	374831	50.0	52.0	
122 2,6-Dichlorophenol	162	7.466	7.466	0.000	98	266457	50.0	52.4	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	97	157141	50.0	51.5	
124 Caprolactam	113	7.877	7.877	0.000	75	83848	50.0	50.7	
129 4-Chloro-3-methylphenol	107	8.048	8.048	0.000	97	247363	50.0	49.8	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	93	626430	50.0	52.6	
251 1-Methylnaphthalene	142	8.310	8.310	0.000	93	579056	50.0	52.0	
134 Hexachlorocyclopentadiene	237	8.401	8.401	0.000	96	173204	50.0	52.8	
135 1,2,4,5-Tetrachlorobenzene	216	8.401	8.401	0.000	98	275643	50.0	52.2	
137 2,4,6-Trichlorophenol	196	8.540	8.540	0.000	93	169965	50.0	51.4	
138 2,4,5-Trichlorophenol	196	8.582	8.582	0.000	96	180098	50.0	50.9	
140 1,1'-Biphenyl	154	8.748	8.748	0.000	96	728731	50.0	53.0	
141 2-Chloronaphthalene	162	8.764	8.764	0.000	96	567547	50.0	52.9	
143 2-Nitroaniline	65	8.892	8.892	0.000	84	158093	50.0	50.7	
146 Dimethyl phthalate	163	9.122	9.122	0.000	98	593553	50.0	53.2	
148 1,3-Dinitrobenzene	168	9.138	9.138	0.000	86	88291	50.0	43.9	
149 2,6-Dinitrotoluene	165	9.181	9.181	0.000	95	134738	50.0	50.4	
150 Acenaphthylene	152	9.245	9.245	0.000	98	847240	50.0	55.5	
151 3-Nitroaniline	138	9.373	9.373	0.000	94	146956	50.0	50.6	
152 Acenaphthene	153	9.448	9.448	0.000	94	553948	50.0	52.7	
153 2,4-Dinitrophenol	184	9.496	9.496	0.000	86	138331	100.0	91.4	
154 4-Nitrophenol	109	9.597	9.597	0.000	93	142567	100.0	98.9	
156 2,4-Dinitrotoluene	165	9.646	9.646	0.000	89	176894	50.0	50.5	
155 Dibenzofuran	168	9.651	9.651	0.000	96	768445	50.0	52.4	
158 2,3,4,6-Tetrachlorophenol	232	9.806	9.806	0.000	75	125233	50.0	49.7	
161 Diethyl phthalate	149	9.945	9.945	0.000	98	569297	50.0	53.4	
256 Hexadecane	57	9.982	9.982	0.000	91	453447	50.0	52.9	
162 Fluorene	166	10.041	10.041	0.000	94	618372	50.0	53.1	
163 4-Chlorophenyl phenyl ethe	204	10.052	10.052	0.000	93	292114	50.0	51.6	
164 4-Nitroaniline	138	10.073	10.073	0.000	86	149124	50.0	50.9	
165 4,6-Dinitro-2-methylphenol	198	10.110	10.110	0.000	86	164101	100.0	91.6	
169 Diphenylamine	169	10.185	10.185	0.000	95	445917	42.8	45.7	
168 N-Nitrosodiphenylamine	169	10.185	10.185	0.000	98	445917	50.0	53.5	
170 1,2-Diphenylhydrazine	77	10.223	10.223	0.000	99	613353	50.0	53.3	
171 Azobenzene	77	10.223	10.223	0.000	99	613353	50.0	54.1	
175 4-Bromophenyl phenyl ether	248	10.575	10.575	0.000	68	158074	50.0	52.4	
179 Hexachlorobenzene	284	10.639	10.639	0.000	94	156608	50.0	51.4	
180 Atrazine	200	10.762	10.762	0.000	91	153441	50.0	50.7	
183 Pentachlorophenol	266	10.842	10.842	0.000	92	176211	100.0	102.9	
265 n-Octadecane	57	10.960	10.960	0.000	92	443761	50.0	54.2	
188 Phenanthrene	178	11.045	11.045	0.000	98	853636	50.0	53.4	
189 Anthracene	178	11.093	11.093	0.000	98	878726	50.0	55.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.259	11.259	0.000	96	783618	50.0	53.8	
195 Di-n-butyl phthalate	149	11.611	11.611	0.000	100	893084	50.0	52.5	
201 Fluoranthene	202	12.162	12.162	0.000	98	874491	50.0	54.9	
202 Benzidine	184	12.285	12.285	0.000	99	465950	50.0	54.2	
204 Pyrene	202	12.359	12.359	0.000	97	910875	50.0	55.0	
210 Butyl benzyl phthalate	149	12.920	12.920	0.000	98	393640	50.0	51.5	
215 3,3'-Dichlorobenzidine	252	13.369	13.369	0.000	74	294856	50.0	51.6	
217 Benzo[a]anthracene	228	13.390	13.390	0.000	98	832380	50.0	53.3	
216 Bis(2-ethylhexyl) phthalat	149	13.412	13.412	0.000	98	571489	50.0	51.8	
218 Chrysene	228	13.423	13.423	0.000	97	791112	50.0	52.5	
220 Di-n-octyl phthalate	149	13.935	13.935	0.000	99	979957	50.0	52.9	
221 Benzo[b]fluoranthene	252	14.267	14.267	0.000	98	895897	50.0	54.1	
222 Benzo[k]fluoranthene	252	14.288	14.288	0.000	99	964839	50.0	52.6	
225 Benzo[a]pyrene	252	14.534	14.534	0.000	79	880209	50.0	52.6	
227 Indeno[1,2,3-cd]pyrene	276	15.533	15.533	0.000	99	1030546	50.0	52.4	
228 Dibenz(a,h)anthracene	278	15.543	15.543	0.000	90	861928	50.0	53.5	
229 Benzo[g,h,i]perylene	276	15.805	15.805	0.000	96	910766	50.0	53.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

MB_LIST1_WRK_00731	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

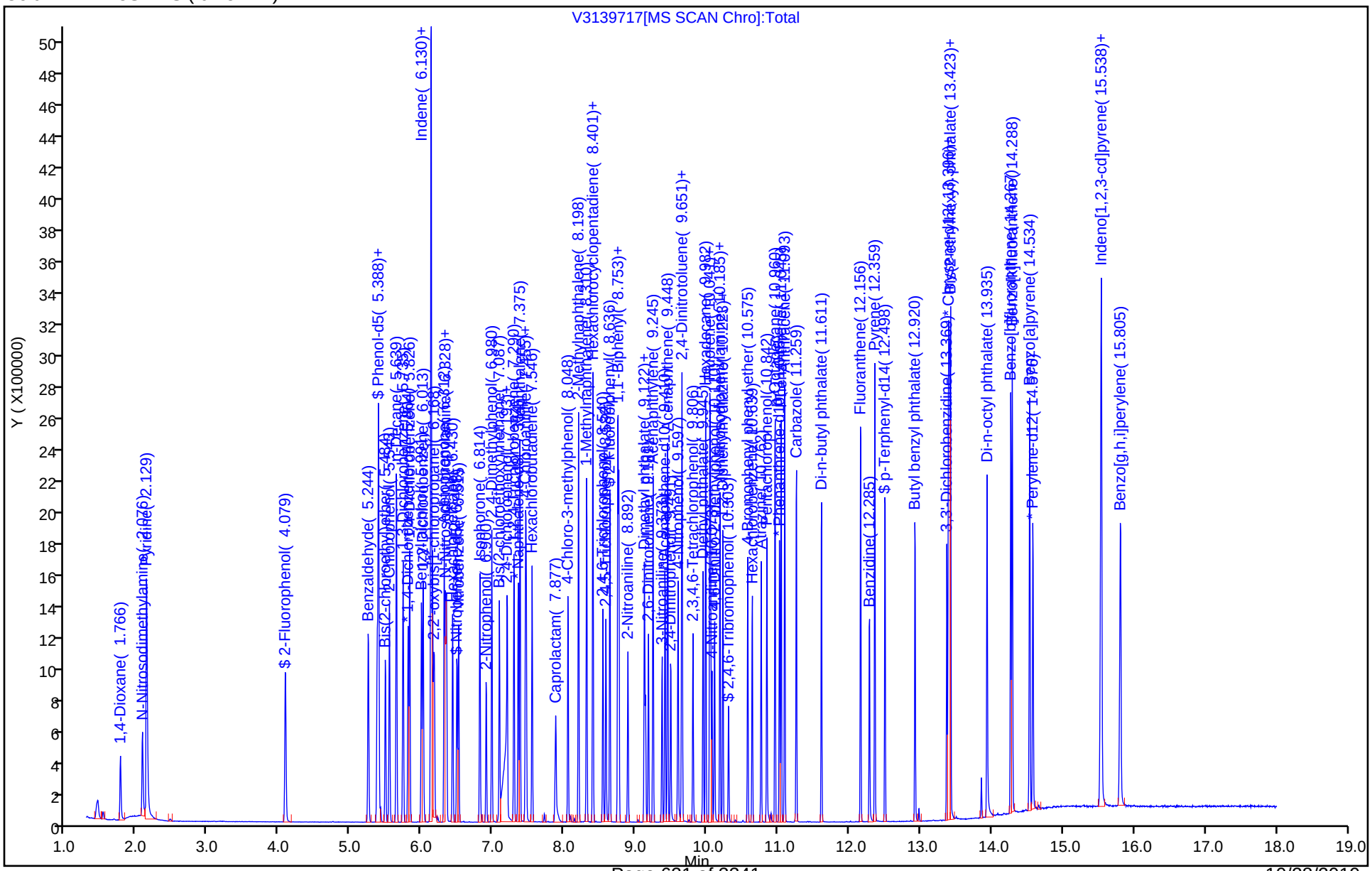
Report Date: 22-Aug-2019 12:47:31 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139717.D

Injection Date:	21-Aug-2019 18:55:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	ICIS L1 50			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

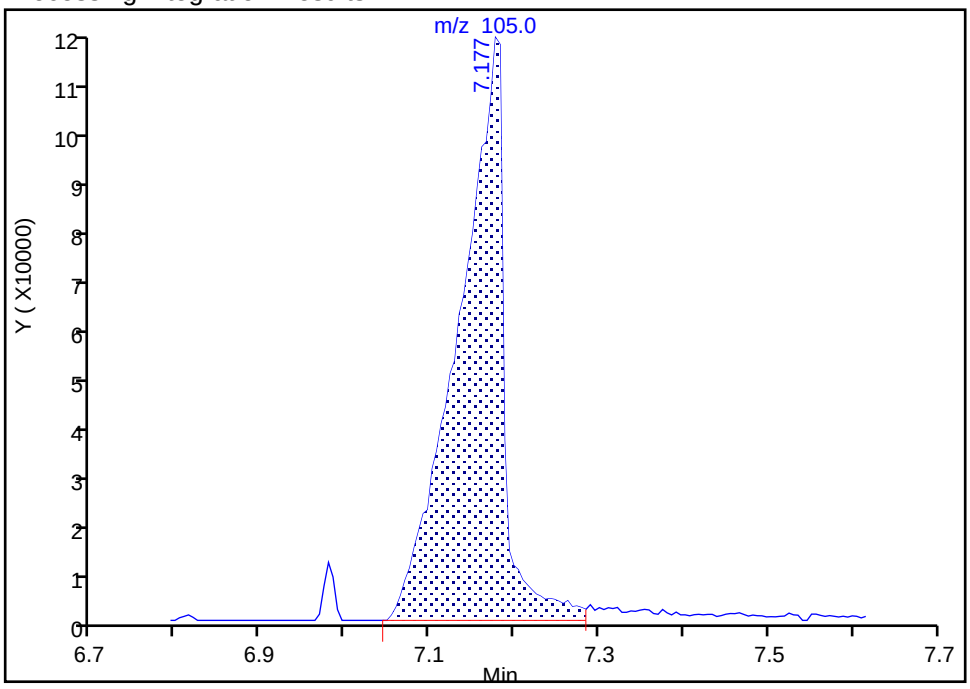
Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139717.D				
Injection Date:	21-Aug-2019 18:55:30	Instrument ID:	HP5973V		
Lims ID:	ICIS L1 50				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

115 Benzoic acid, CAS: 65-85-0

Signal: 1

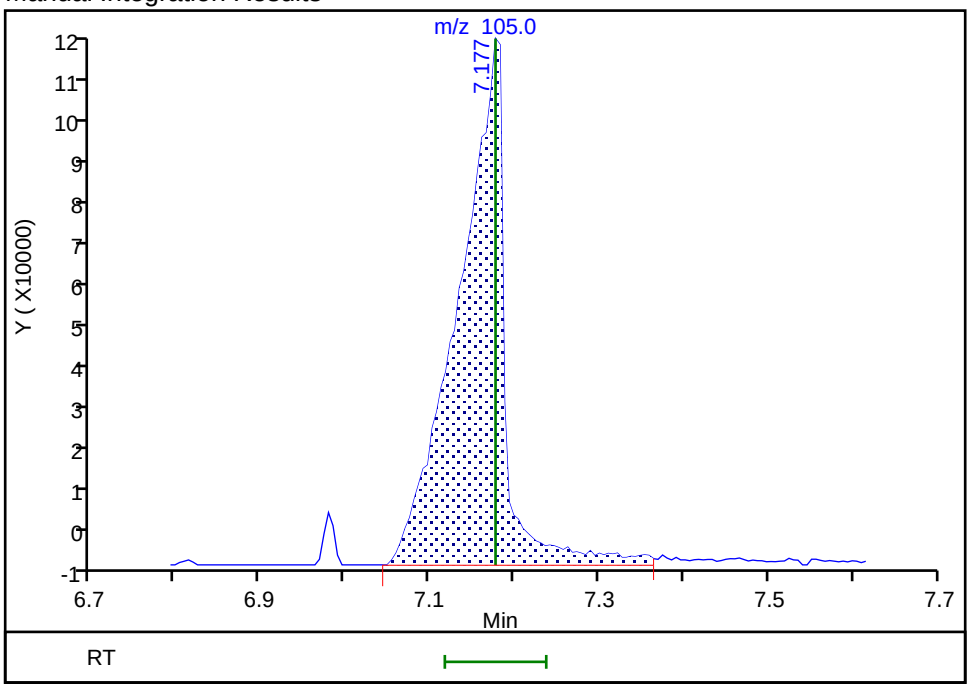
Processing Integration Results

RT: 7.18
Area: 446152
Amount: 170.3857
Amount Units: ng/uL



Manual Integration Results

RT: 7.18
Area: 458154
Amount: 130.5681
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:32:41

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139718.D
Lims ID: IC L1 80
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 21-Aug-2019 19:20:30 ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-007
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:47:41 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:26:21

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.805	5.804	0.001	96	189499	40.0	40.0	
* 2 Naphthalene-d8	136	7.354	7.354	0.000	100	665171	40.0	40.0	
* 3 Acenaphthene-d10	164	9.416	9.410	0.006	94	343458	40.0	40.0	
* 4 Phenanthrene-d10	188	11.019	11.018	0.001	97	586136	40.0	40.0	
* 5 Chrysene-d12	240	13.401	13.401	0.000	99	547310	40.0	40.0	
* 6 Perylene-d12	264	14.582	14.576	0.006	97	633395	40.0	40.0	
$ 7 2-Fluorophenol	112	4.084	4.079	0.005	95	500144	80.0	81.1	
$ 8 Phenol-d5	99	5.372	5.372	0.000	98	582829	80.0	80.0	
$ 9 Nitrobenzene-d5	82	6.494	6.488	0.006	90	497134	80.0	79.0	
$ 10 2-Fluorobiphenyl	172	8.641	8.641	0.000	100	973671	80.0	78.4	
$ 11 2,4,6-Tribromophenol	330	10.308	10.308	0.000	93	104500	80.0	79.0	
$ 12 p-Terphenyl-d14	244	12.504	12.504	0.000	99	891999	80.0	78.1	
68 1,4-Dioxane	88	1.766	1.766	0.000	97	229688	80.0	78.0	
69 N-Nitrosodimethylamine	42	2.076	2.076	0.000	91	321233	80.0	77.2	
70 Pyridine	52	2.129	2.129	0.000	85	846084	160.0	158.0	
80 Benzaldehyde	77	5.244	5.244	0.000	93	380664	80.0	73.8	
82 Aniline	93	5.393	5.393	0.000	88	786886	80.0	79.7	
81 Phenol	94	5.393	5.388	0.005	82	677245	80.0	79.7	
83 Bis(2-chloroethyl)ether	93	5.489	5.484	0.005	95	492721	80.0	78.5	
84 2-Chlorophenol	128	5.543	5.543	0.000	98	539599	80.0	81.3	
263 n-Decane	57	5.644	5.639	0.005	95	716348	80.0	79.4	
87 1,3-Dichlorobenzene	146	5.735	5.735	0.000	99	616300	80.0	79.4	
88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	95	624041	80.0	78.8	
90 Benzyl alcohol	108	5.997	5.991	0.006	92	345177	80.0	80.3	
91 1,2-Dichlorobenzene	146	6.018	6.018	0.000	98	577664	80.0	78.7	
248 Indene	115	6.131	6.130	0.001	91	2233967	240.0	217.0	
92 2-Methylphenol	108	6.152	6.146	0.006	96	470448	80.0	80.4	
93 2,2'-oxybis[1-chloropropan	45	6.173	6.168	0.005	92	983977	80.0	78.2	
94 Acetophenone	105	6.312	6.312	0.000	95	671490	80.0	80.3	
95 N-Nitrosodi-n-propylamine	70	6.334	6.328	0.006	94	362374	80.0	80.8	
96 4-Methylphenol	108	6.350	6.344	0.006	94	485656	80.0	81.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	96	214671	80.0	78.2	
102 Nitrobenzene	77	6.515	6.515	0.000	91	530373	80.0	78.7	
106 Isophorone	82	6.814	6.814	0.000	99	931812	80.0	81.6	
107 2-Nitrophenol	139	6.905	6.905	0.000	94	253374	80.0	81.5	
108 2,4-Dimethylphenol	107	6.980	6.980	0.000	95	485636	80.0	81.3	
111 Bis(2-chloroethoxy)methane	93	7.087	7.087	0.000	97	544517	80.0	79.5	
115 Benzoic acid	105	7.215	7.177	0.038	91	804117	240.0	221.1	Ma
114 2,4-Dichlorophenol	162	7.199	7.199	0.000	94	419971	80.0	79.1	
117 1,2,4-Trichlorobenzene	180	7.295	7.290	0.005	95	468024	80.0	78.4	
118 Naphthalene	128	7.375	7.375	0.000	98	1390684	80.0	78.6	
119 4-Chloroaniline	127	7.455	7.455	0.000	96	576277	80.0	81.2	
122 2,6-Dichlorophenol	162	7.466	7.466	0.000	97	412574	80.0	82.4	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	97	242053	80.0	80.6	
124 Caprolactam	113	7.899	7.877	0.022	75	132153	80.0	80.6	M
129 4-Chloro-3-methylphenol	107	8.054	8.048	0.006	97	393696	80.0	80.0	
131 2-Methylnaphthalene	142	8.198	8.198	0.000	92	947928	80.0	80.9	
251 1-Methylnaphthalene	142	8.315	8.310	0.005	93	880925	80.0	80.4	
134 Hexachlorocyclopentadiene	237	8.401	8.401	0.000	96	271604	80.0	80.2	
135 1,2,4,5-Tetrachlorobenzene	216	8.401	8.401	0.000	97	420699	80.0	77.8	
137 2,4,6-Trichlorophenol	196	8.540	8.540	0.000	94	268449	80.0	78.8	
138 2,4,5-Trichlorophenol	196	8.583	8.582	0.001	96	292680	80.0	80.2	
140 1,1'-Biphenyl	154	8.754	8.748	0.006	96	1102466	80.0	78.3	
141 2-Chloronaphthalene	162	8.764	8.764	0.000	97	860889	80.0	78.3	
143 2-Nitroaniline	65	8.892	8.892	0.000	85	260432	80.0	80.8	
146 Dimethyl phthalate	163	9.128	9.122	0.006	98	926191	80.0	81.1	
148 1,3-Dinitrobenzene	168	9.144	9.138	0.006	84	154975	80.0	76.6	
149 2,6-Dinitrotoluene	165	9.186	9.181	0.005	95	221372	80.0	80.1	
150 Acenaphthylene	152	9.245	9.245	0.000	98	1270027	80.0	81.2	
151 3-Nitroaniline	138	9.373	9.373	0.000	94	240195	80.0	80.0	
152 Acenaphthene	153	9.453	9.448	0.005	95	846931	80.0	78.7	
153 2,4-Dinitrophenol	184	9.496	9.496	0.000	86	242529	160.0	150.1	
154 4-Nitrophenol	109	9.603	9.597	0.006	94	236512	160.0	158.5	
156 2,4-Dinitrotoluene	165	9.651	9.646	0.005	92	288631	80.0	79.7	
155 Dibenzofuran	168	9.656	9.651	0.005	96	1178561	80.0	78.5	
158 2,3,4,6-Tetrachlorophenol	232	9.806	9.806	0.000	74	208422	80.0	80.0	
161 Diethyl phthalate	149	9.950	9.945	0.005	98	903283	80.0	82.7	
256 Hexadecane	57	9.988	9.982	0.006	92	708089	80.0	80.6	
162 Fluorene	166	10.041	10.041	0.000	93	937924	80.0	78.7	
163 4-Chlorophenyl phenyl ethe	204	10.052	10.052	0.000	96	450765	80.0	77.7	
164 4-Nitroaniline	138	10.078	10.073	0.005	85	244470	80.0	80.8	
165 4,6-Dinitro-2-methylphenol	198	10.116	10.110	0.006	84	291919	160.0	153.5	
169 Diphenylamine	169	10.185	10.185	0.000	94	696927	68.4	68.7	
168 N-Nitrosodiphenylamine	169	10.185	10.185	0.000	98	696927	80.0	80.4	
170 1,2-Diphenylhydrazine	77	10.228	10.223	0.006	99	951771	80.0	80.7	
171 Azobenzene	77	10.228	10.223	0.006	98	951771	80.0	80.7	
175 4-Bromophenyl phenyl ether	248	10.575	10.575	0.000	68	255752	80.0	81.5	
179 Hexachlorobenzene	284	10.639	10.639	0.000	93	247522	80.0	78.1	
180 Atrazine	200	10.768	10.762	0.006	91	251339	80.0	80.6	
183 Pentachlorophenol	266	10.848	10.842	0.006	92	289670	160.0	160.6	
265 n-Octadecane	57	10.960	10.960	0.000	92	703029	80.0	82.6	
188 Phenanthrene	178	11.045	11.045	0.000	98	1295730	80.0	77.9	
189 Anthracene	178	11.093	11.093	0.000	98	1340960	80.0	81.3	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.259	11.259	0.000	96	1215840	80.0	80.3	
195 Di-n-butyl phthalate	149	11.612	11.611	0.001	100	1421069	80.0	80.0	
201 Fluoranthene	202	12.162	12.162	0.000	98	1377541	80.0	83.2	
202 Benzidine	184	12.285	12.285	0.000	99	787194	80.0	83.2	
204 Pyrene	202	12.360	12.359	0.001	96	1433989	80.0	79.2	
210 Butyl benzyl phthalate	149	12.926	12.920	0.006	97	677425	80.0	80.5	
215 3,3'-Dichlorobenzidine	252	13.369	13.369	0.000	74	511278	80.0	81.1	
217 Benzo[a]anthracene	228	13.396	13.390	0.006	99	1377032	80.0	80.7	
216 Bis(2-ethylhexyl) phthalat	149	13.412	13.412	0.000	98	1007992	80.0	83.1	
218 Chrysene	228	13.428	13.423	0.006	97	1263844	80.0	76.7	
220 Di-n-octyl phthalate	149	13.936	13.935	0.001	99	1680388	80.0	82.4	
221 Benzo[b]fluoranthene	252	14.272	14.267	0.005	98	1617136	80.0	89.2	
222 Benzo[k]fluoranthene	252	14.293	14.288	0.005	98	1446464	80.0	72.1	
225 Benzo[a]pyrene	252	14.539	14.534	0.005	79	1450300	80.0	79.2	
227 Indeno[1,2,3-cd]pyrene	276	15.544	15.533	0.011	95	1730683	80.0	80.3	
228 Dibenz(a,h)anthracene	278	15.549	15.543	0.006	90	1418294	80.0	80.4	
229 Benzo[g,h,i]perylene	276	15.816	15.805	0.011	96	1509618	80.0	80.4	
S 232 Total Cresols	1				0			162.0	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MB_LIST1_WRK_00732	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

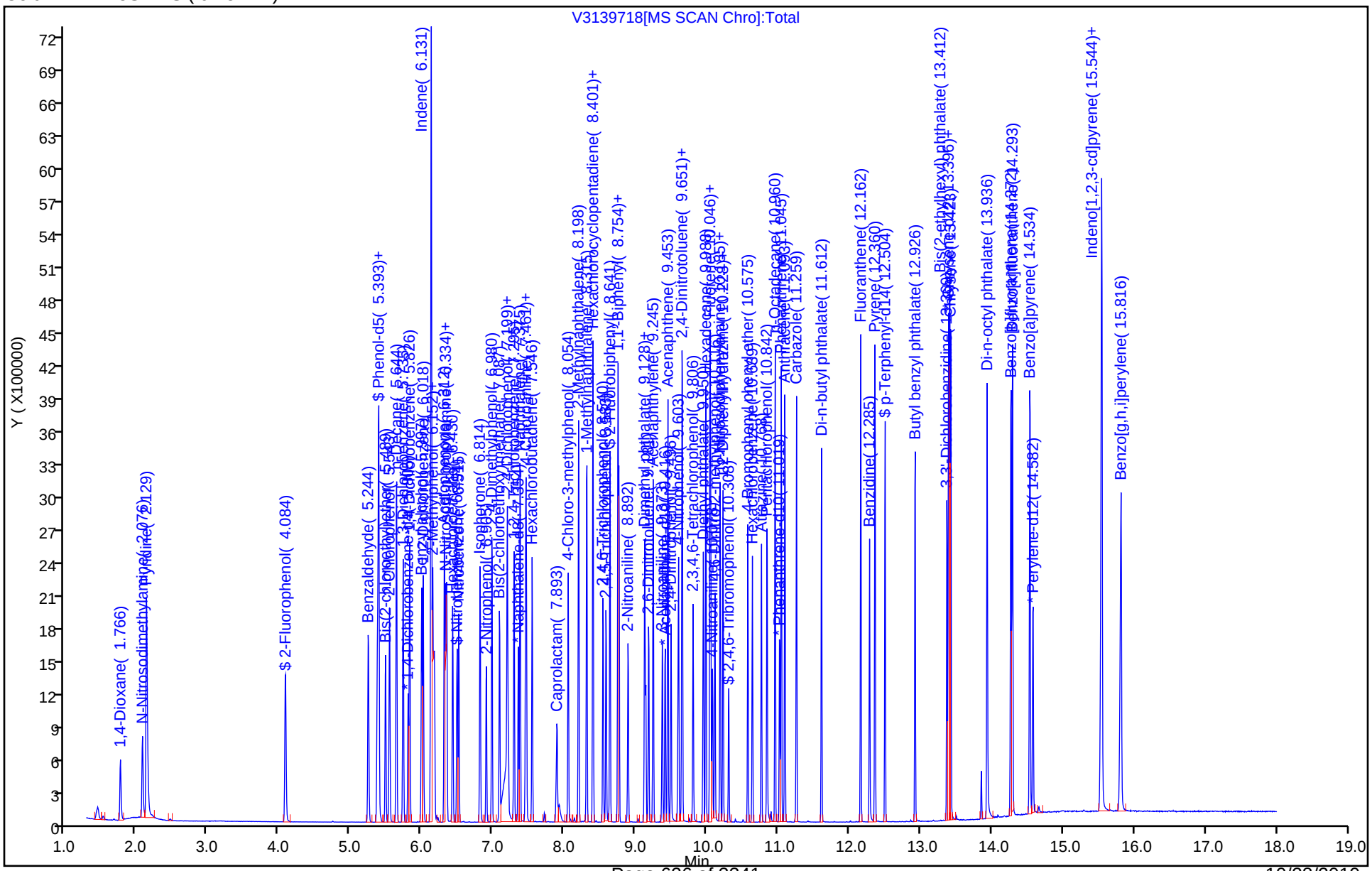
Report Date: 22-Aug-2019 12:47:43 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139718.D

Injection Date:	21-Aug-2019 19:20:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 80			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	7
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

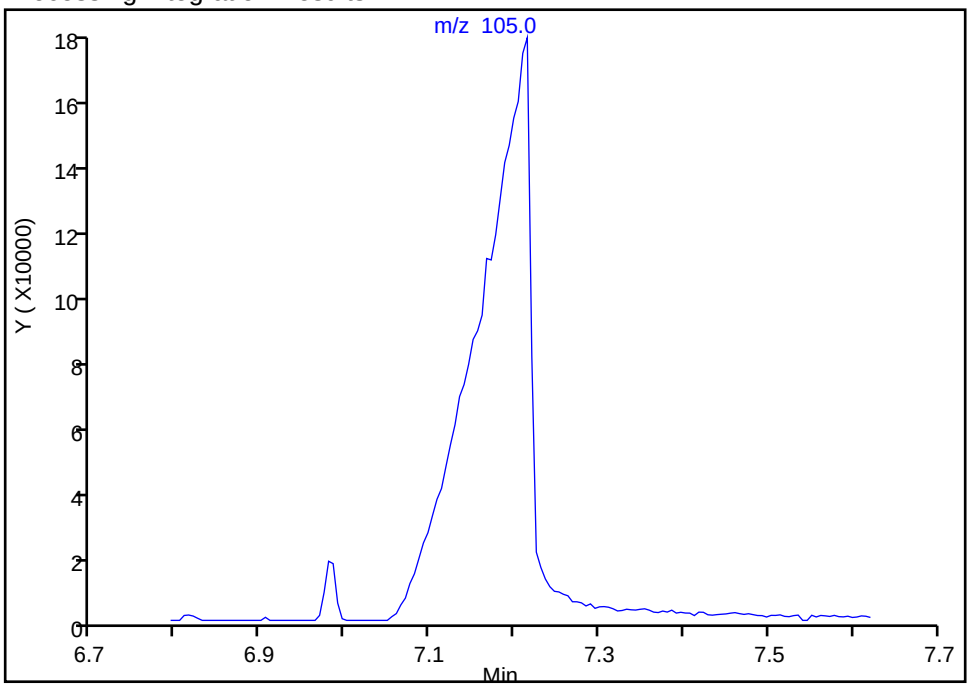
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139718.D
Injection Date: 21-Aug-2019 19:20:30 Instrument ID: HP5973V
Lims ID: IC L1 80
Client ID:
Operator ID: PJQ ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

115 Benzoic acid, CAS: 65-85-0

Signal: 1

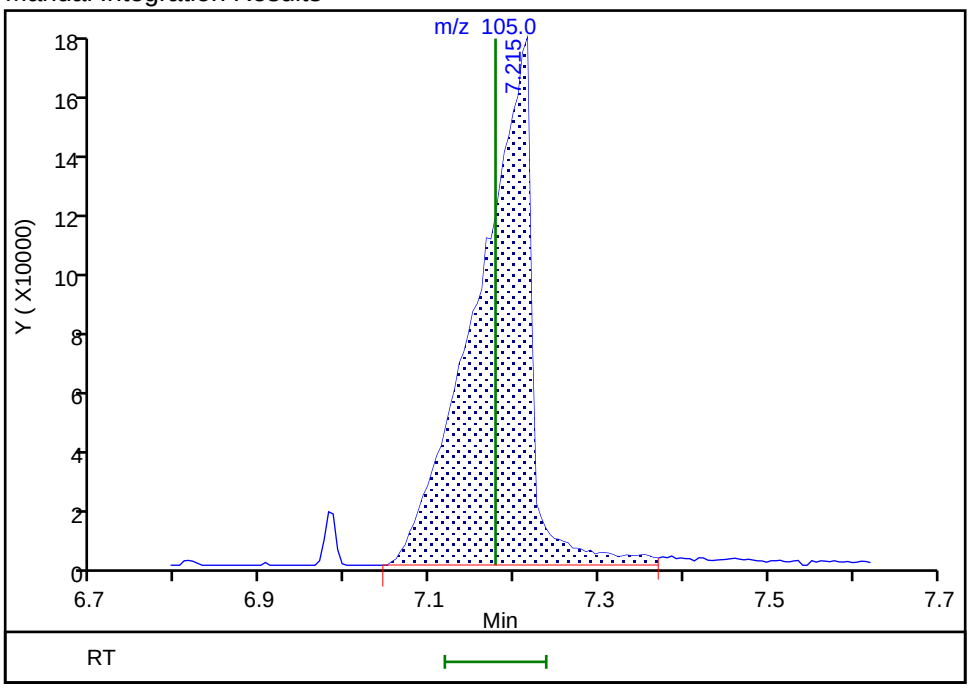
Not Detected
Expected RT: 7.18

Processing Integration Results



Manual Integration Results

RT: 7.21
Area: 804117
Amount: 221.0652
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:33:41
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

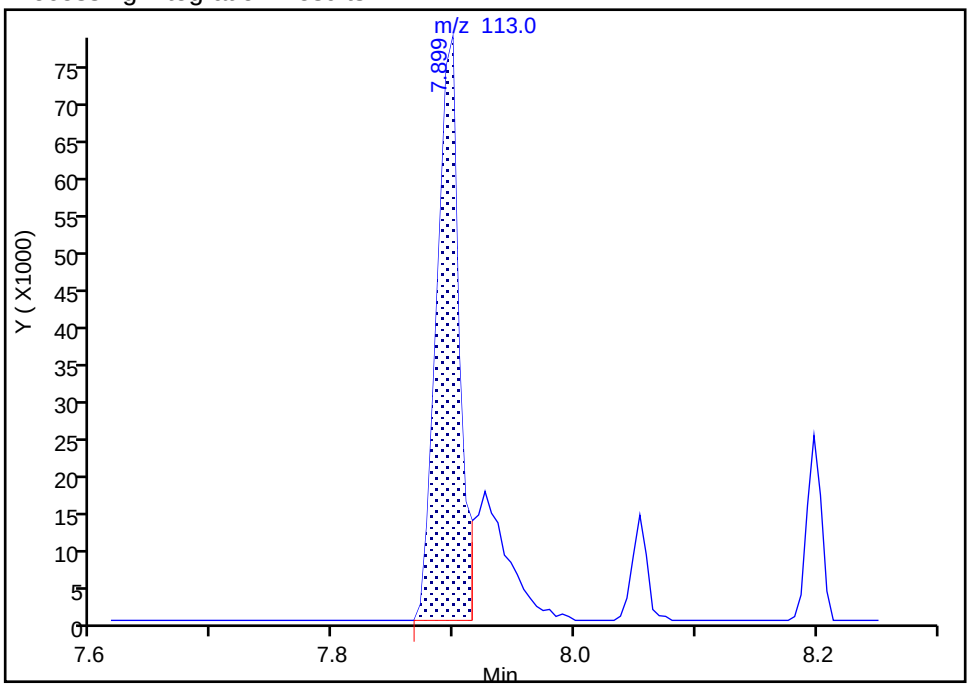
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139718.D
Injection Date: 21-Aug-2019 19:20:30 Instrument ID: HP5973V
Lims ID: IC L1 80
Client ID:
Operator ID: PJQ ALS Bottle#: 7 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

124 Caprolactam, CAS: 105-60-2

Signal: 1

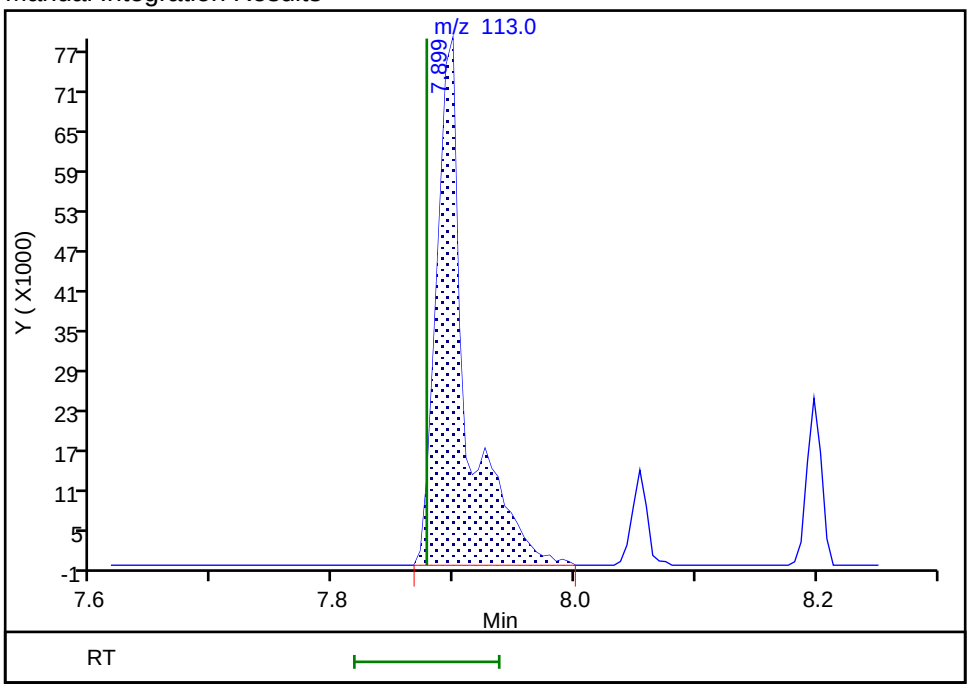
Processing Integration Results

RT: 7.90
Area: 101603
Amount: 77.072863
Amount Units: ng/uL



Manual Integration Results

RT: 7.90
Area: 132153
Amount: 80.585079
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:25:57
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139719.D
Lims ID: IC L1 120
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 21-Aug-2019 19:45:30 ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-008
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:47:52 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:27:33

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.805	5.804	0.001	96	193896	40.0	40.0	
* 2 Naphthalene-d8	136	7.354	7.354	0.000	100	672844	40.0	40.0	
* 3 Acenaphthene-d10	164	9.416	9.410	0.006	93	354828	40.0	40.0	
* 4 Phenanthrene-d10	188	11.024	11.018	0.006	97	614436	40.0	40.0	
* 5 Chrysene-d12	240	13.407	13.401	0.006	99	534304	40.0	40.0	
* 6 Perylene-d12	264	14.582	14.576	0.006	97	642200	40.0	40.0	
$ 7 2-Fluorophenol	112	4.079	4.079	0.000	95	739421	120.0	117.1	
$ 8 Phenol-d5	99	5.377	5.372	0.005	98	869446	120.0	116.7	
$ 9 Nitrobenzene-d5	82	6.494	6.488	0.006	91	761142	120.0	119.3	
$ 10 2-Fluorobiphenyl	172	8.641	8.641	0.000	99	1452341	120.0	113.2	
$ 11 2,4,6-Tribromophenol	330	10.308	10.308	0.000	92	171240	120.0	122.9	
$ 12 p-Terphenyl-d14	244	12.504	12.504	0.000	99	1307773	120.0	117.2	
68 1,4-Dioxane	88	1.761	1.766	-0.005	97	339574	120.0	112.7	
69 N-Nitrosodimethylamine	42	2.070	2.076	-0.006	91	484953	120.0	113.9	
70 Pyridine	52	2.124	2.129	-0.005	85	1247467	240.0	227.7	
80 Benzaldehyde	77	5.244	5.244	0.000	93	492597	120.0	93.3	
81 Phenol	94	5.393	5.388	0.005	82	1011549	120.0	116.4	
82 Aniline	93	5.393	5.393	0.000	90	1171237	120.0	116.0	
83 Bis(2-chloroethyl)ether	93	5.490	5.484	0.006	94	732563	120.0	114.1	
84 2-Chlorophenol	128	5.548	5.543	0.005	98	799699	120.0	117.7	
263 n-Decane	57	5.644	5.639	0.005	95	1049681	120.0	113.7	
87 1,3-Dichlorobenzene	146	5.735	5.735	0.000	99	906119	120.0	114.0	
88 1,4-Dichlorobenzene	146	5.826	5.826	0.000	94	916192	120.0	113.0	
90 Benzyl alcohol	108	6.002	5.991	0.011	92	510892	120.0	115.9	
91 1,2-Dichlorobenzene	146	6.018	6.018	0.000	98	855921	120.0	113.9	
248 Indene	115	6.131	6.130	0.001	91	2968976	360.0	285.1	
92 2-Methylphenol	108	6.152	6.146	0.006	93	704524	120.0	117.6	
93 2,2'-oxybis[1-chloropropan	45	6.173	6.168	0.005	93	1455477	120.0	113.0	
94 Acetophenone	105	6.318	6.312	0.006	95	1013809	120.0	118.6	
95 N-Nitrosodi-n-propylamine	70	6.334	6.328	0.006	94	553028	120.0	120.6	
96 4-Methylphenol	108	6.350	6.344	0.006	97	718471	120.0	118.0	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.430	6.430	0.000	96	322793	120.0	114.9	
102 Nitrobenzene	77	6.521	6.515	0.006	90	807243	120.0	118.2	
106 Isophorone	82	6.820	6.814	0.006	98	1387776	120.0	120.2	
107 2-Nitrophenol	139	6.905	6.905	0.000	94	394522	120.0	125.1	
108 2,4-Dimethylphenol	107	6.985	6.980	0.005	96	737033	120.0	122.0	
111 Bis(2-chloroethoxy)methane	93	7.092	7.087	0.005	97	827110	120.0	119.4	
115 Benzoic acid	105	7.252	7.177	0.075	89	1374733	360.0	363.3	Ma
114 2,4-Dichlorophenol	162	7.199	7.199	0.000	94	633949	120.0	117.8	
117 1,2,4-Trichlorobenzene	180	7.295	7.290	0.005	94	693475	120.0	114.8	
118 Naphthalene	128	7.381	7.375	0.006	98	1954659	120.0	109.2	
119 4-Chloroaniline	127	7.461	7.455	0.006	96	863189	120.0	120.3	
122 2,6-Dichlorophenol	162	7.466	7.466	0.000	96	623344	120.0	123.1	
121 Hexachlorobutadiene	225	7.546	7.546	0.000	97	367649	120.0	121.1	
124 Caprolactam	113	7.920	7.877	0.043	75	208458	120.0	125.1	Ma
129 4-Chloro-3-methylphenol	107	8.059	8.048	0.011	97	601884	120.0	120.6	
131 2-Methylnaphthalene	142	8.203	8.198	0.005	91	1387253	120.0	117.1	
251 1-Methylnaphthalene	142	8.316	8.310	0.006	93	1291440	120.0	116.5	
134 Hexachlorocyclopentadiene	237	8.401	8.401	0.000	96	423608	120.0	120.5	
135 1,2,4,5-Tetrachlorobenzene	216	8.406	8.401	0.005	97	630693	120.0	112.8	
137 2,4,6-Trichlorophenol	196	8.545	8.540	0.005	93	422322	120.0	119.6	
138 2,4,5-Trichlorophenol	196	8.588	8.582	0.006	96	452371	120.0	119.4	
140 1,1'-Biphenyl	154	8.754	8.748	0.006	98	1595656	120.0	109.7	
141 2-Chloronaphthalene	162	8.770	8.764	0.006	97	1286569	120.0	113.3	
143 2-Nitroaniline	65	8.898	8.892	0.006	84	410845	120.0	122.7	
146 Dimethyl phthalate	163	9.133	9.122	0.011	98	1393080	120.0	118.1	
148 1,3-Dinitrobenzene	168	9.149	9.138	0.011	89	254151	120.0	122.7	
149 2,6-Dinitrotoluene	165	9.186	9.181	0.005	95	351214	120.0	122.4	
150 Acenaphthylene	152	9.250	9.245	0.005	98	1863087	120.0	115.3	
151 3-Nitroaniline	138	9.384	9.373	0.011	96	381315	120.0	122.3	
152 Acenaphthene	153	9.453	9.448	0.005	95	1280828	120.0	115.1	
153 2,4-Dinitrophenol	184	9.502	9.496	0.006	86	405706	240.0	237.4	
154 4-Nitrophenol	109	9.614	9.597	0.017	94	388342	240.0	250.1	
156 2,4-Dinitrotoluene	165	9.656	9.646	0.010	91	467003	120.0	124.1	
155 Dibenzofuran	168	9.656	9.651	0.005	95	1742847	120.0	112.4	
158 2,3,4,6-Tetrachlorophenol	232	9.811	9.806	0.005	75	332175	120.0	122.8	
161 Diethyl phthalate	149	9.956	9.945	0.011	98	1366659	120.0	121.1	
256 Hexadecane	57	9.988	9.982	0.006	92	1070934	120.0	118.0	
162 Fluorene	166	10.046	10.041	0.005	94	1416374	120.0	115.0	
163 4-Chlorophenyl phenyl ethe	204	10.057	10.052	0.005	96	690112	120.0	115.1	
164 4-Nitroaniline	138	10.089	10.073	0.016	86	383446	120.0	122.0	
165 4,6-Dinitro-2-methylphenol	198	10.121	10.110	0.011	83	481802	240.0	239.1	
169 Diphenylamine	169	10.191	10.185	0.006	94	1073534	102.6	101.0	
168 N-Nitrosodiphenylamine	169	10.191	10.185	0.006	97	1073534	120.0	118.1	
170 1,2-Diphenylhydrazine	77	10.228	10.223	0.006	99	1434289	120.0	117.7	
171 Azobenzene	77	10.228	10.223	0.006	98	1434289	120.0	116.1	
175 4-Bromophenyl phenyl ether	248	10.581	10.575	0.006	68	395772	120.0	120.3	
179 Hexachlorobenzene	284	10.645	10.639	0.006	96	393617	120.0	118.4	
180 Atrazine	200	10.773	10.762	0.011	92	388736	120.0	120.2	
183 Pentachlorophenol	266	10.848	10.842	0.006	92	458922	240.0	241.0	
265 n-Octadecane	57	10.960	10.960	0.000	93	1046098	120.0	117.2	
188 Phenanthrene	178	11.051	11.045	0.006	98	1886639	120.0	108.2	
189 Anthracene	178	11.099	11.093	0.006	99	1933647	120.0	111.9	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.264	11.259	0.005	97	1773805	120.0	111.7	
195 Di-n-butyl phthalate	149	11.612	11.611	0.001	99	2030677	120.0	108.8	
201 Fluoranthene	202	12.162	12.162	0.000	99	1974687	120.0	113.8	
202 Benzidine	184	12.285	12.285	0.000	99	1101143	120.0	118.8	
204 Pyrene	202	12.365	12.359	0.006	96	1973550	120.0	111.7	
210 Butyl benzyl phthalate	149	12.926	12.920	0.006	98	1009281	120.0	122.2	
215 3,3'-Dichlorobenzidine	252	13.375	13.369	0.006	74	743024	120.0	120.2	
217 Benzo[a]anthracene	228	13.396	13.390	0.006	99	1936324	120.0	116.3	
216 Bis(2-ethylhexyl) phthalat	149	13.412	13.412	0.000	97	1450007	120.0	121.9	
218 Chrysene	228	13.428	13.423	0.006	96	1782488	120.0	110.8	
220 Di-n-octyl phthalate	149	13.936	13.935	0.001	99	2334869	120.0	116.8	
221 Benzo[b]fluoranthene	252	14.272	14.267	0.005	98	2090629	120.0	113.7	
222 Benzo[k]fluoranthene	252	14.299	14.288	0.011	96	2207374	120.0	108.4	
225 Benzo[a]pyrene	252	14.539	14.534	0.005	80	2063857	120.0	111.1	
227 Indeno[1,2,3-cd]pyrene	276	15.549	15.533	0.016	95	2576947	120.0	117.9	
228 Dibenz(a,h)anthracene	278	15.554	15.543	0.011	90	2087480	120.0	116.7	
229 Benzo[g,h,i]perylene	276	15.821	15.805	0.016	95	2256220	120.0	118.5	
S 232 Total Cresols	1				0			235.6	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MB_LIST1_WRK_00733	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

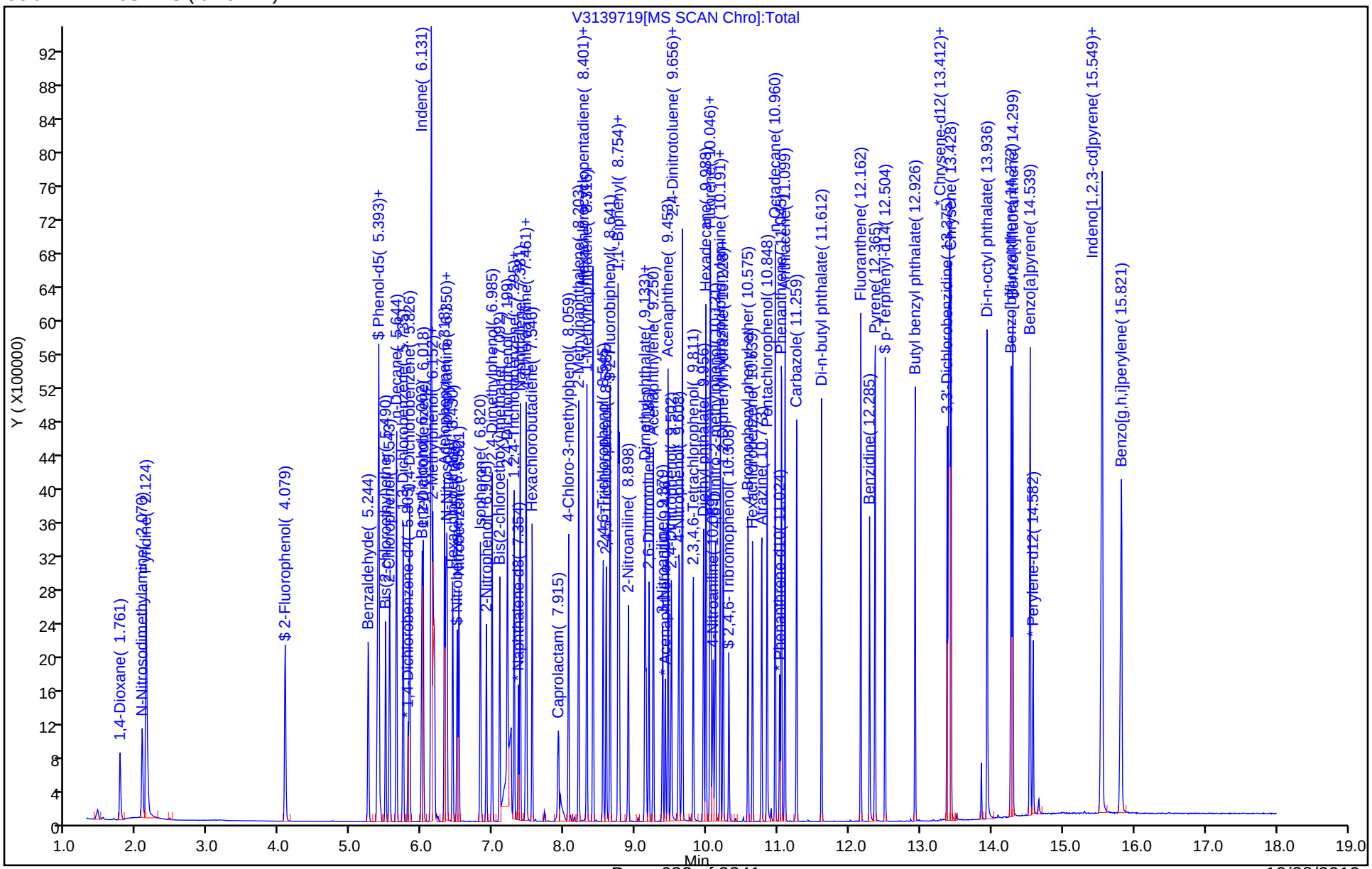
Report Date: 22-Aug-2019 12:47:53 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139719.D

Injection Date:	21-Aug-2019 19:45:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 120			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	8
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

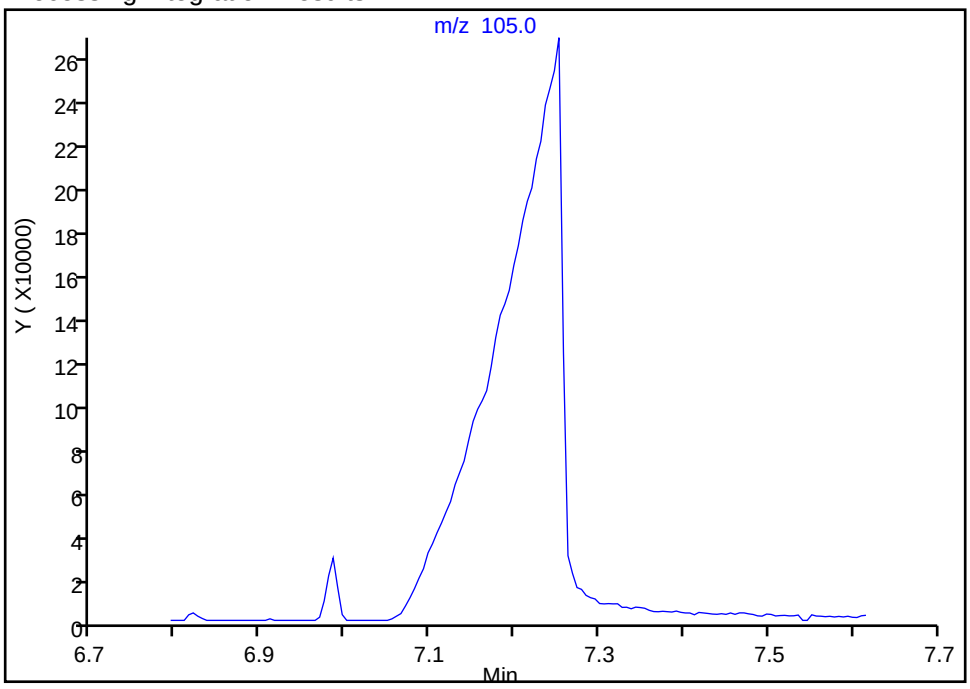
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139719.D
Injection Date: 21-Aug-2019 19:45:30 Instrument ID: HP5973V
Lims ID: IC L1 120
Client ID:
Operator ID: PJQ ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

115 Benzoic acid, CAS: 65-85-0

Signal: 1

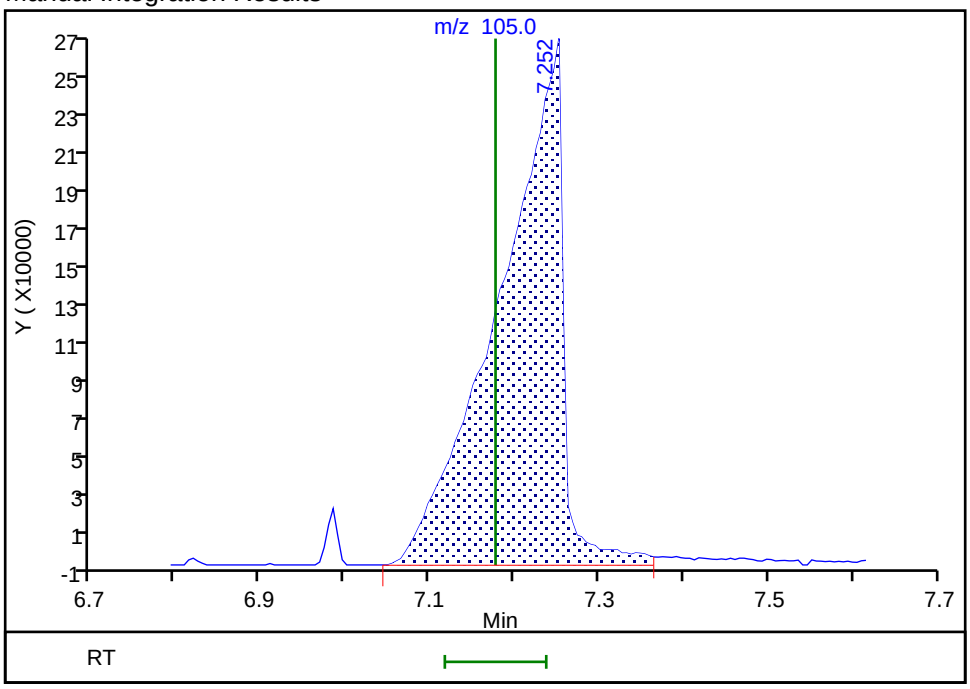
Not Detected
Expected RT: 7.18

Processing Integration Results



Manual Integration Results

RT: 7.25
Area: 1374733
Amount: 363.3162
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:34:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

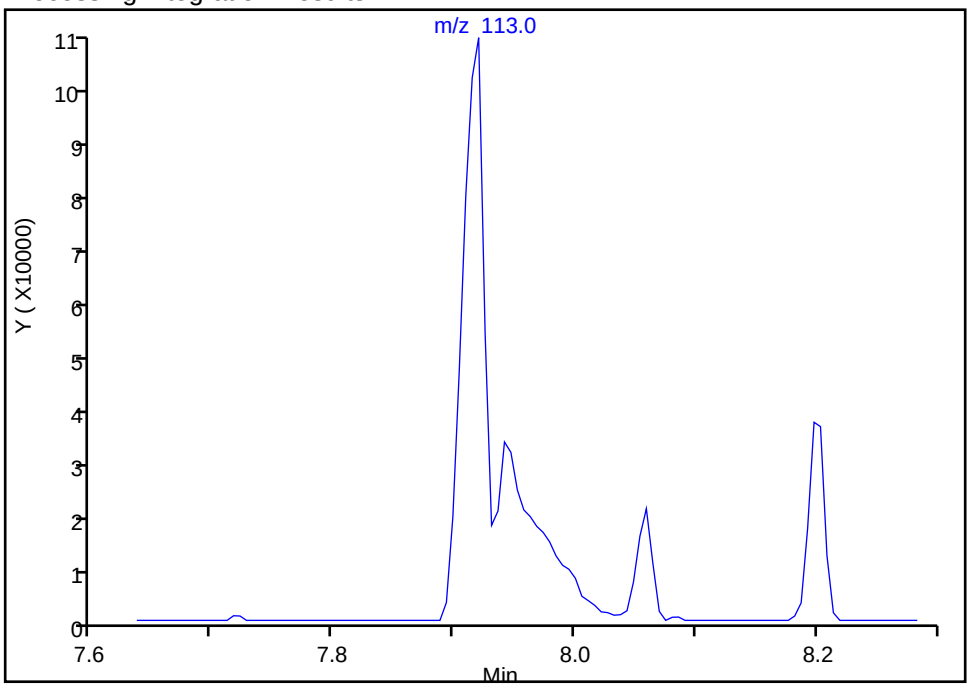
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139719.D
Injection Date: 21-Aug-2019 19:45:30 Instrument ID: HP5973V
Lims ID: IC L1 120
Client ID:
Operator ID: PJQ ALS Bottle#: 8 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

124 Caprolactam, CAS: 105-60-2

Signal: 1

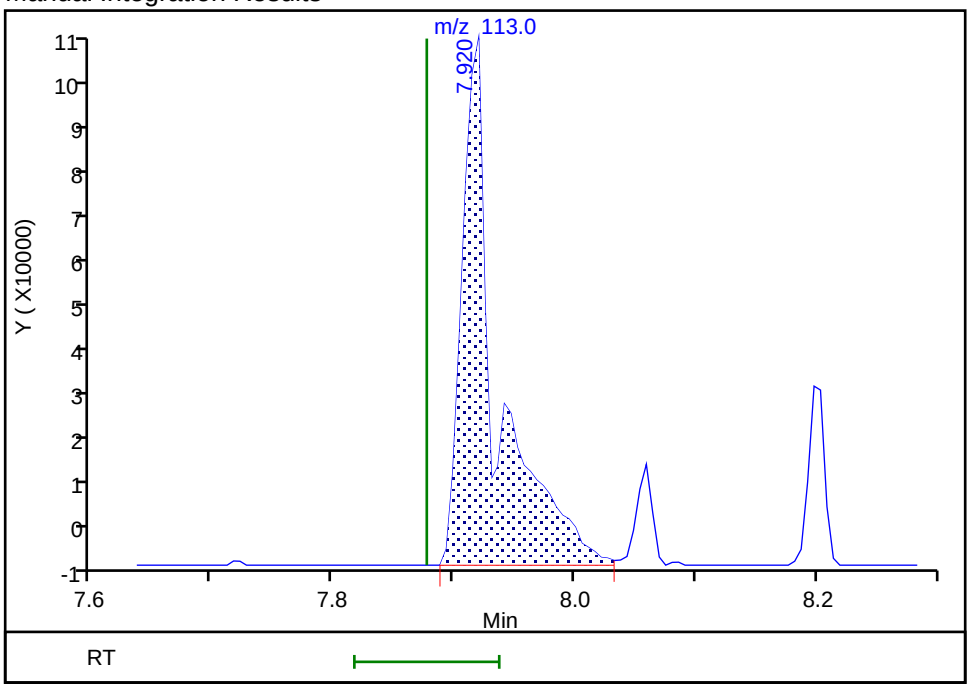
Not Detected
Expected RT: 7.88

Processing Integration Results



Manual Integration Results

RT: 7.92
Area: 208458
Amount: 125.0587
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:26:59
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D
Lims ID: IC L1 160
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 21-Aug-2019 20:10:30 ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0083574-009
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 12:48:02 Calib Date: 21-Aug-2019 23:31:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139728.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0338

First Level Reviewer: quirkp Date: 22-Aug-2019 11:29:03

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.810	5.804	0.006	95	216823	40.0	40.0	
* 2 Naphthalene-d8	136	7.359	7.354	0.005	99	772279	40.0	40.0	
* 3 Acenaphthene-d10	164	9.416	9.410	0.006	94	407081	40.0	40.0	
* 4 Phenanthrene-d10	188	11.024	11.018	0.006	97	705478	40.0	40.0	
* 5 Chrysene-d12	240	13.407	13.401	0.006	99	641290	40.0	40.0	
* 6 Perylene-d12	264	14.587	14.576	0.011	98	795904	40.0	40.0	
$ 7 2-Fluorophenol	112	4.084	4.079	0.005	95	1128688	160.0	159.9	
$ 8 Phenol-d5	99	5.383	5.372	0.011	97	1343236	160.0	161.2	
$ 9 Nitrobenzene-d5	82	6.499	6.488	0.011	91	1169692	160.0	159.5	
$ 10 2-Fluorobiphenyl	172	8.647	8.641	0.006	98	2066705	160.0	140.5	
$ 11 2,4,6-Tribromophenol	330	10.313	10.308	0.005	92	271089	160.0	169.0	
$ 12 p-Terphenyl-d14	244	12.504	12.504	0.000	98	1941804	160.0	145.0	
68 1,4-Dioxane	88	1.766	1.766	0.000	96	511771	160.0	151.8	
69 N-Nitrosodimethylamine	42	2.081	2.076	0.005	92	745161	160.0	156.5	
70 Pyridine	52	2.129	2.129	0.000	87	1906779	320.0	311.2	
80 Benzaldehyde	77	5.249	5.244	0.005	92	612171	160.0	103.7	
81 Phenol	94	5.404	5.388	0.016	92	1530292	160.0	157.4	
82 Aniline	93	5.399	5.393	0.006	96	1763730	160.0	156.2	
83 Bis(2-chloroethyl)ether	93	5.495	5.484	0.011	94	1099028	160.0	153.0	
84 2-Chlorophenol	128	5.554	5.543	0.011	98	1213208	160.0	159.7	
263 n-Decane	57	5.644	5.639	0.005	94	1563207	160.0	151.4	
87 1,3-Dichlorobenzene	146	5.740	5.735	0.005	98	1363362	160.0	153.4	
88 1,4-Dichlorobenzene	146	5.831	5.826	0.005	93	1373734	160.0	151.5	
90 Benzyl alcohol	108	6.008	5.991	0.017	92	798384	160.0	161.8	
91 1,2-Dichlorobenzene	146	6.018	6.018	0.000	98	1283342	160.0	152.7	
248 Indene	115	6.136	6.130	0.006	91	3975685	480.0	332.6	
92 2-Methylphenol	108	6.157	6.146	0.011	94	1066375	160.0	159.2	
93 2,2'-oxybis[1-chloropropan	45	6.173	6.168	0.005	93	2167209	160.0	150.5	
94 Acetophenone	105	6.323	6.312	0.011	93	1504863	160.0	157.4	
95 N-Nitrosodi-n-propylamine	70	6.344	6.328	0.016	94	844068	160.0	164.6	
96 4-Methylphenol	108	6.360	6.344	0.016	94	1113199	160.0	163.5	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.435	6.430	0.005	96	496255	160.0	158.0	
102 Nitrobenzene	77	6.526	6.515	0.011	91	1219879	160.0	155.5	
106 Isophorone	82	6.830	6.814	0.016	98	2095976	160.0	158.2	
107 2-Nitrophenol	139	6.910	6.905	0.005	95	616900	160.0	170.1	
108 2,4-Dimethylphenol	107	6.991	6.980	0.011	95	1123345	160.0	162.0	
111 Bis(2-chloroethoxy)methane	93	7.097	7.087	0.010	97	1235696	160.0	155.4	
115 Benzoic acid	105	7.300	7.177	0.123	93	2288192	480.0	520.1	Ma
114 2,4-Dichlorophenol	162	7.204	7.199	0.005	95	963795	160.0	155.9	
117 1,2,4-Trichlorobenzene	180	7.295	7.290	0.005	94	1046976	160.0	151.0	
118 Naphthalene	128	7.386	7.375	0.011	99	2694213	160.0	131.1	
119 4-Chloroaniline	127	7.466	7.455	0.011	94	1287542	160.0	156.3	
122 2,6-Dichlorophenol	162	7.471	7.466	0.005	97	938678	160.0	161.5	
121 Hexachlorobutadiene	225	7.552	7.546	0.006	97	557037	160.0	159.8	
124 Caprolactam	113	7.941	7.877	0.064	83	313764	160.0	163.7	Ma
129 4-Chloro-3-methylphenol	107	8.064	8.048	0.016	97	934191	160.0	162.8	
131 2-Methylnaphthalene	142	8.203	8.198	0.005	91	2008547	160.0	147.7	
251 1-Methylnaphthalene	142	8.321	8.310	0.011	92	1890865	160.0	148.6	
134 Hexachlorocyclopentadiene	237	8.406	8.401	0.005	97	651282	160.0	161.1	
135 1,2,4,5-Tetrachlorobenzene	216	8.406	8.401	0.005	98	965178	160.0	150.5	
137 2,4,6-Trichlorophenol	196	8.545	8.540	0.005	94	659614	160.0	162.5	
138 2,4,5-Trichlorophenol	196	8.593	8.582	0.011	95	697523	160.0	160.2	
140 1,1'-Biphenyl	154	8.759	8.748	0.011	98	2222174	160.0	133.2	
141 2-Chloronaphthalene	162	8.775	8.764	0.011	98	1902976	160.0	146.1	
143 2-Nitroaniline	65	8.903	8.892	0.011	84	643045	160.0	167.0	
146 Dimethyl phthalate	163	9.138	9.122	0.016	98	2019376	160.0	149.2	
148 1,3-Dinitrobenzene	168	9.154	9.138	0.016	85	403593	160.0	169.0	a
149 2,6-Dinitrotoluene	165	9.197	9.181	0.016	95	544989	160.0	165.1	
150 Acenaphthylene	152	9.250	9.245	0.005	97	2613919	160.0	141.1	
151 3-Nitroaniline	138	9.389	9.373	0.016	94	595148	160.0	166.0	
152 Acenaphthene	153	9.459	9.448	0.011	95	1887724	160.0	147.9	
153 2,4-Dinitrophenol	184	9.512	9.496	0.016	85	685463	320.0	345.3	
154 4-Nitrophenol	109	9.624	9.597	0.027	95	620873	320.0	347.4	
156 2,4-Dinitrotoluene	165	9.662	9.646	0.016	68	729103	160.0	168.5	
155 Dibenzofuran	168	9.662	9.651	0.011	92	2456093	160.0	138.0	
158 2,3,4,6-Tetrachlorophenol	232	9.811	9.806	0.005	74	521704	160.0	167.6	
161 Diethyl phthalate	149	9.961	9.945	0.016	98	2041360	160.0	157.6	
256 Hexadecane	57	9.988	9.982	0.006	93	1551668	160.0	149.0	
162 Fluorene	166	10.052	10.041	0.011	93	2034864	160.0	144.0	
163 4-Chlorophenyl phenyl ethe	204	10.057	10.052	0.005	96	1051481	160.0	152.9	
164 4-Nitroaniline	138	10.105	10.073	0.032	86	609493	160.0	168.5	
165 4,6-Dinitro-2-methylphenol	198	10.132	10.110	0.022	83	794582	320.0	341.4	
169 Diphenylamine	169	10.196	10.185	0.011	92	1590001	136.8	130.2	
168 N-Nitrosodiphenylamine	169	10.196	10.185	0.011	95	1590001	160.0	152.3	
170 1,2-Diphenylhydrazine	77	10.233	10.223	0.011	97	2069128	160.0	148.0	
171 Azobenzene	77	10.233	10.223	0.011	96	2069128	160.0	145.8	
175 4-Bromophenyl phenyl ether	248	10.581	10.575	0.006	69	609143	160.0	161.2	
179 Hexachlorobenzene	284	10.645	10.639	0.006	94	607637	160.0	159.2	
180 Atrazine	200	10.778	10.762	0.016	91	587020	160.0	158.0	
183 Pentachlorophenol	266	10.853	10.842	0.011	92	745164	320.0	339.4	
265 n-Octadecane	57	10.960	10.960	0.000	93	1527736	160.0	149.1	
188 Phenanthrene	178	11.051	11.045	0.006	97	2624364	160.0	131.1	
189 Anthracene	178	11.104	11.093	0.011	97	2652384	160.0	133.7	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.264	11.259	0.005	97	2547328	160.0	139.7	
195 Di-n-butyl phthalate	149	11.612	11.611	0.001	98	2743359	160.0	127.9	
201 Fluoranthene	202	12.167	12.162	0.005	96	2710431	160.0	136.0	
202 Benzidine	184	12.290	12.285	0.005	99	1545435	160.0	138.8	
204 Pyrene	202	12.365	12.359	0.006	92	2794147	160.0	131.7	
210 Butyl benzyl phthalate	149	12.926	12.920	0.006	99	1546866	160.0	155.8	
215 3,3'-Dichlorobenzidine	252	13.380	13.369	0.011	74	1170487	160.0	157.3	
217 Benzo[a]anthracene	228	13.401	13.390	0.011	98	2840808	160.0	142.2	
216 Bis(2-ethylhexyl) phthalat	149	13.412	13.412	0.000	97	2136635	160.0	149.5	
218 Chrysene	228	13.433	13.423	0.011	93	2621372	160.0	135.8	
220 Di-n-octyl phthalate	149	13.941	13.935	0.006	97	3173218	160.0	132.1	
221 Benzo[b]fluoranthene	252	14.277	14.267	0.010	96	3284534	160.0	144.1	
222 Benzo[k]fluoranthene	252	14.304	14.288	0.016	90	3186924	160.0	126.3	
225 Benzo[a]pyrene	252	14.544	14.534	0.010	81	3098202	160.0	134.5	
227 Indeno[1,2,3-cd]pyrene	276	15.560	15.533	0.027	97	4321854	160.0	159.4	
228 Dibenz(a,h)anthracene	278	15.565	15.543	0.022	91	3351303	160.0	151.1	
229 Benzo[g,h,i]perylene	276	15.837	15.805	0.032	93	3722338	160.0	157.8	
S 232 Total Cresols	1				0			322.7	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MB_LIST1_WRK_00734	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00061	Amount Added: 20.00	Units: uL	Run Reagent

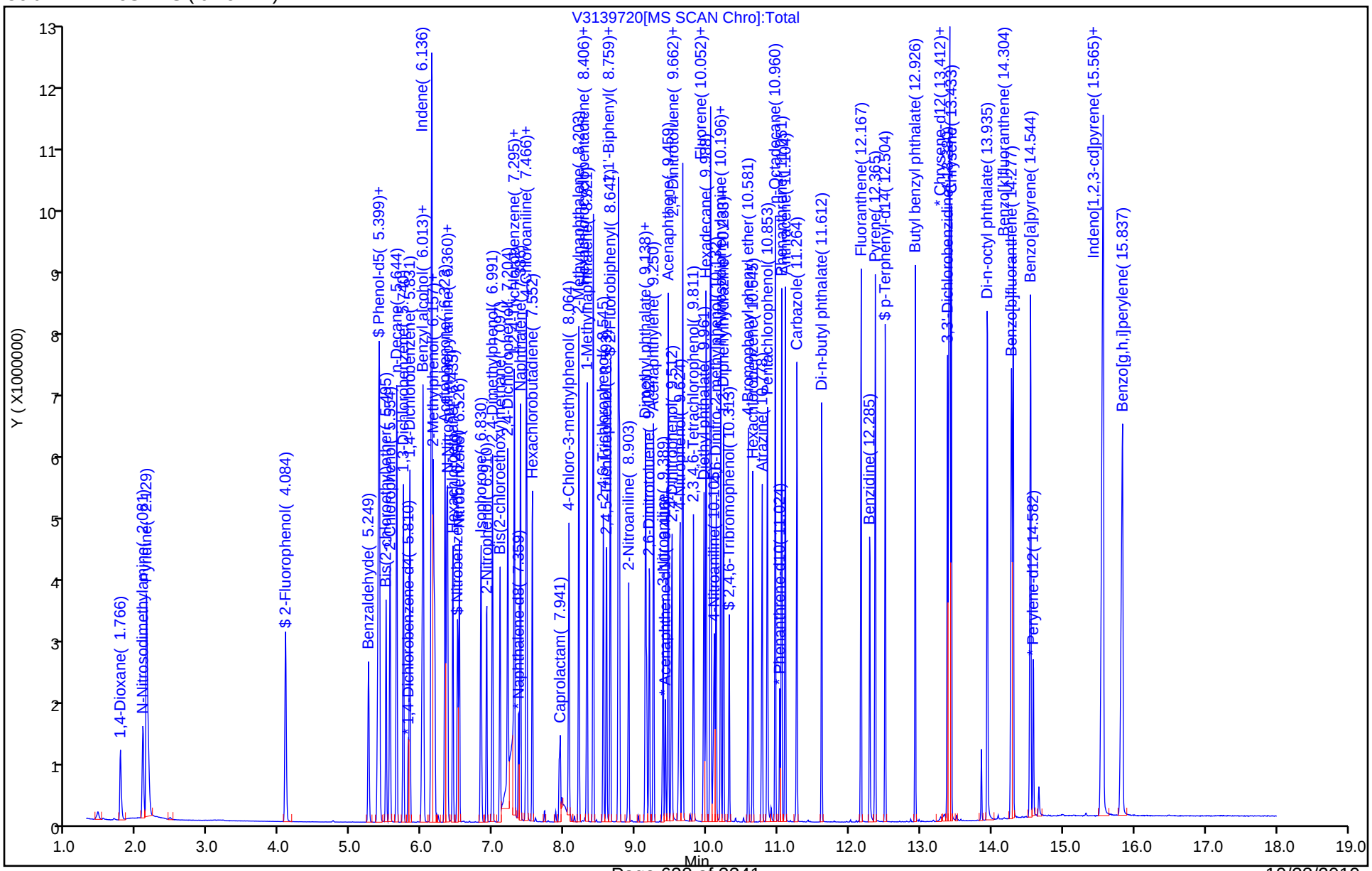
Report Date: 22-Aug-2019 12:48:04 Chrom Revision: 2.3 15-Jul-2019 06:58:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D

Injection Date:	21-Aug-2019 20:10:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	IC L1 160			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	9
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

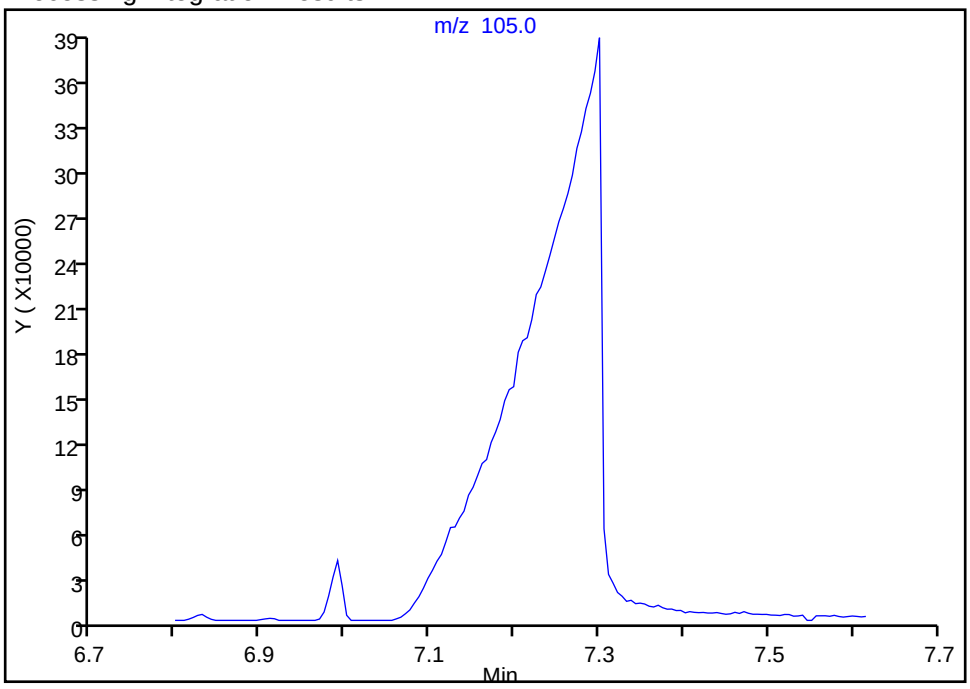
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D
Injection Date: 21-Aug-2019 20:10:30 Instrument ID: HP5973V
Lims ID: IC L1 160
Client ID:
Operator ID: PJQ ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

115 Benzoic acid, CAS: 65-85-0

Signal: 1

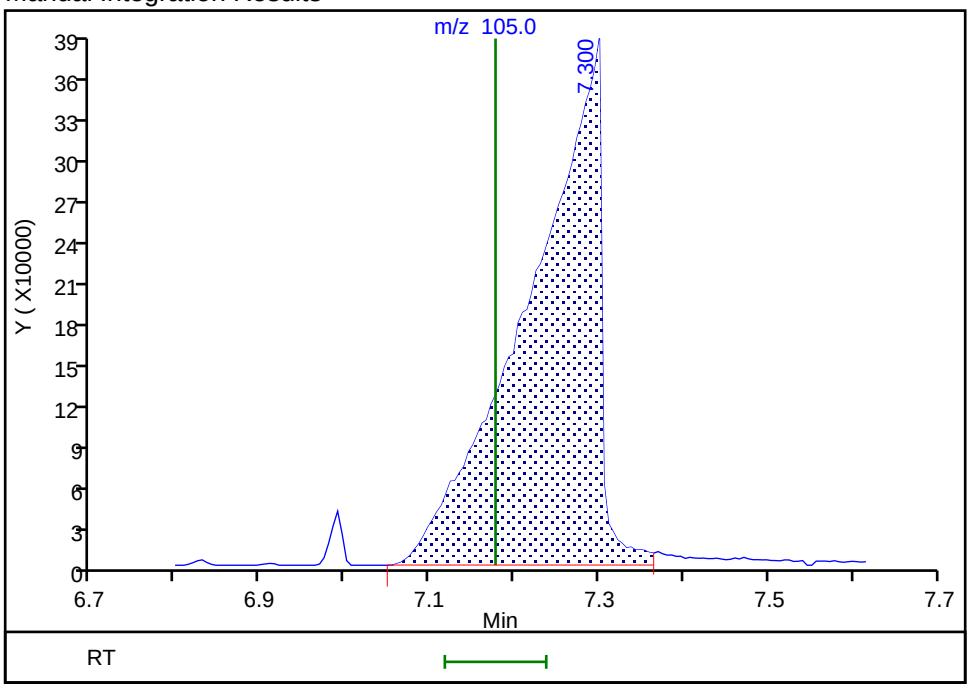
Not Detected
Expected RT: 7.18

Processing Integration Results



Manual Integration Results

RT: 7.30
Area: 2288192
Amount: 520.1389
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:34:53
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

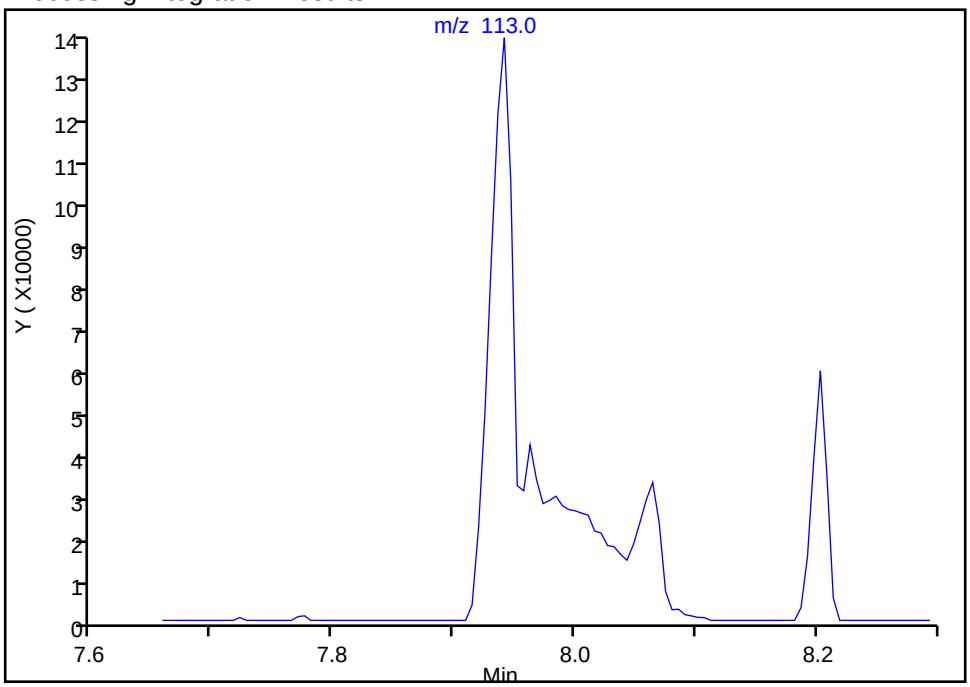
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D
Injection Date: 21-Aug-2019 20:10:30 Instrument ID: HP5973V
Lims ID: IC L1 160
Client ID:
Operator ID: PJQ ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

124 Caprolactam, CAS: 105-60-2

Signal: 1

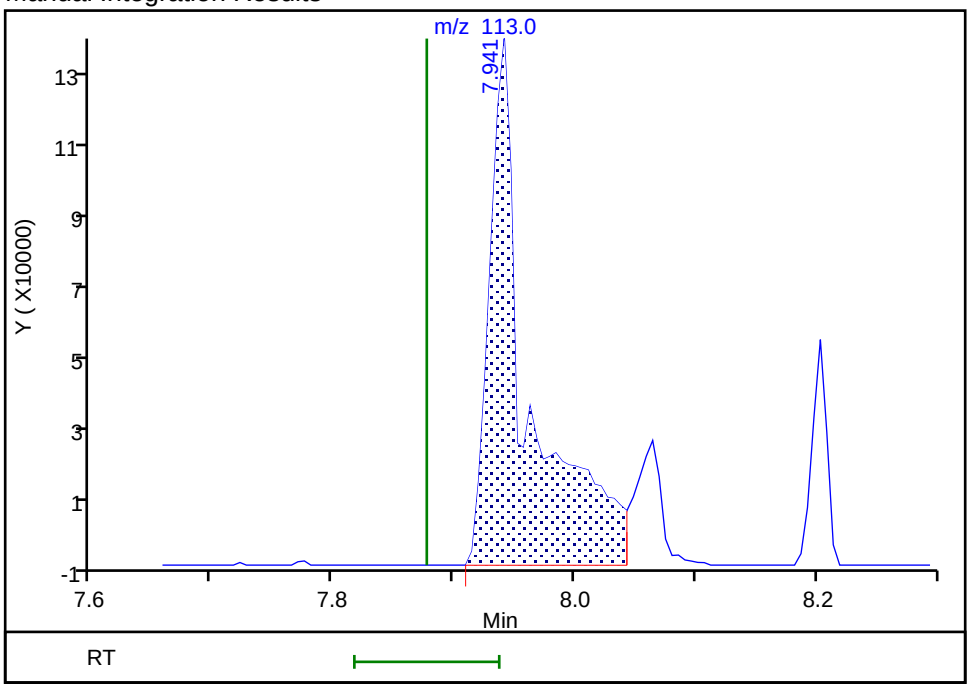
Not Detected
Expected RT: 7.88

Processing Integration Results



Manual Integration Results

RT: 7.94
Area: 313764
Amount: 163.6604
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:28:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Buffalo

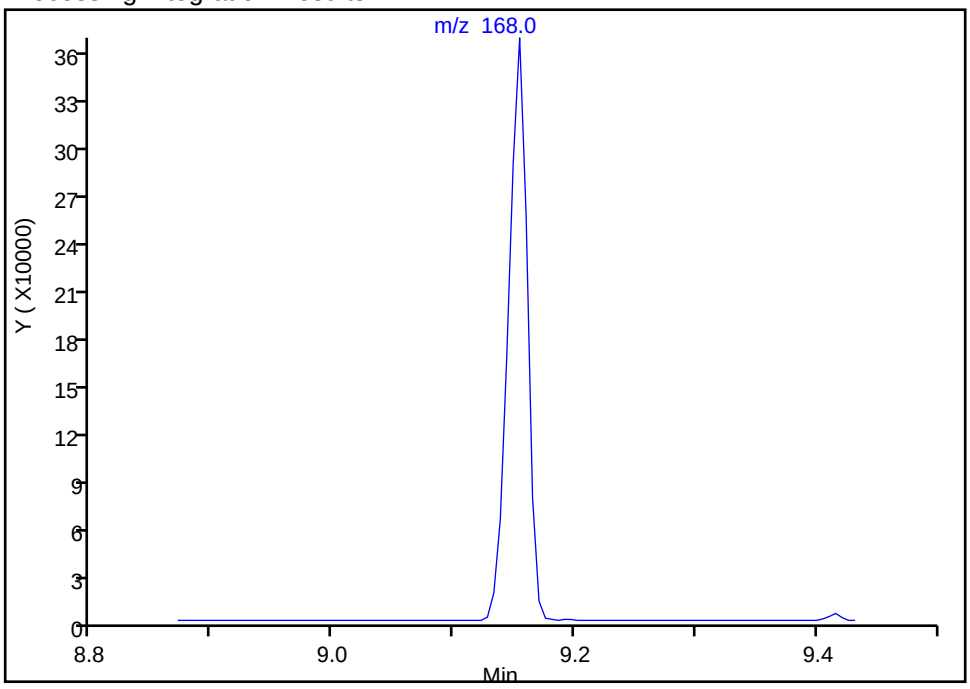
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D
Injection Date: 21-Aug-2019 20:10:30 Instrument ID: HP5973V
Lims ID: IC L1 160
Client ID:
Operator ID: PJQ ALS Bottle#: 9 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Column: RXI-5Sil MS (0.25 mm) Detector MS SCAN

148 1,3-Dinitrobenzene, CAS: 99-65-0

Signal: 1

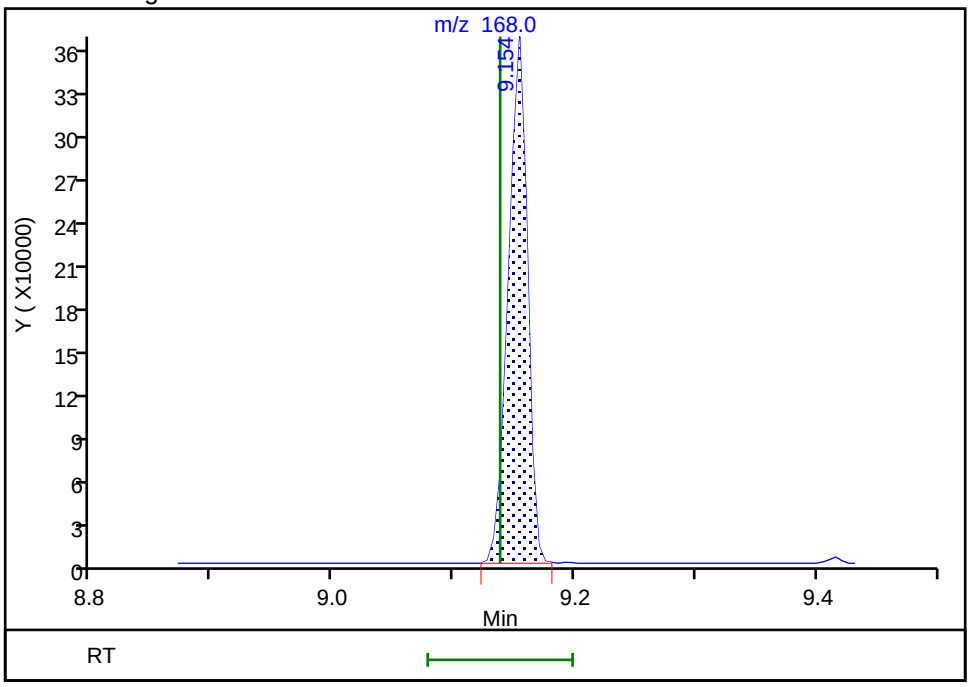
Not Detected
Expected RT: 9.14

Processing Integration Results



Manual Integration Results

RT: 9.15
Area: 403593
Amount: 168.9511
Amount Units: ng/uL



Reviewer: quirkp, 22-Aug-2019 11:28:34
Audit Action: Assigned Compound ID Audit Reason: Baseline

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID (1): CCVIS 480-494348/3 Instrument ID (1): HP5973V

GC Column (1): RXI-5Sil MS ID: 0.25(mm) Date Analyzed (1): 09/26/2019 16:02

ANALYTE	RT	RESOLUTION (%)
Benzo[b]fluoranthene	14.15	38.00

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494348/3 Calibration Date: 09/26/2019 16:02

Instrument ID: HP5973V Calib Start Date: 08/21/2019 17:15

GC Column: RXI-5Sil MS ID: 0.25(mm) Calib End Date: 08/21/2019 20:10

Lab File ID: V3140347.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	Ave	0.6218	0.5214	0.0100	41900	50000	-16.2	20.0
N-Nitrosodimethylamine	Ave	0.8781	0.8192	0.0100	46600	50000	-6.7	50.0
Pyridine	Ave	1.130	0.9323	0.0100	82500	100000	-17.5	50.0
Benzaldehyde	Ave	1.089	0.9082	0.0100	41700	50000	-16.6	50.0
Aniline	Ave	2.083	1.966	0.0100	47200	50000	-5.6	20.0
Phenol	Ave	1.793	1.721	0.8000	48000	50000	-4.0	20.0
Bis(2-chloroethyl)ether	Ave	1.325	1.200	0.7000	45300	50000	-9.4	20.0
2-Chlorophenol	Ave	1.401	1.369	0.8000	48900	50000	-2.3	20.0
n-Decane	Ave	1.905	1.545	0.0100	40500	50000	-18.9	20.0
1,3-Dichlorobenzene	Ave	1.639	1.537	0.0100	46900	50000	-6.2	20.0
1,4-Dichlorobenzene	Ave	1.672	1.571	0.0100	47000	50000	-6.0	20.0
Benzyl alcohol	Lin2		0.8979	0.0100	49600	50000	-0.7	20.0
1,2-Dichlorobenzene	Ave	1.550	1.454	0.0100	46900	50000	-6.2	20.0
Indene	Ave	0.6191	0.5448	0.0100	132000	150000	-12.0	20.0
2-Methylphenol	Ave	1.236	1.187	0.7000	48000	50000	-3.9	20.0
bis (2-chloroisopropyl) ether	Ave	2.657	1.924	0.0100	36200	50000	-27.6*	20.0
Acetophenone	Ave	1.764	1.880	0.0100	53300	50000	6.5	20.0
N-Nitrosodi-n-propylamine	Ave	0.9463	0.9463	0.5000	50000	50000	0.0	20.0
Methylphenol, 3 & 4	Ave	1.256	1.292	0.6000	51400	50000	2.8	20.0
Hexachloroethane	Ave	0.5796	0.6170	0.3000	53200	50000	6.5	20.0
Nitrobenzene	Lin2		0.4115	0.2000	51000	50000	1.9	20.0
Isophorone	Ave	0.6863	0.6849	0.4000	49900	50000	-0.2	20.0
2-Nitrophenol	Lin2		0.2034	0.1000	54700	50000	9.4	20.0
2,4-Dimethylphenol	Ave	0.3591	0.3880	0.2000	54000	50000	8.0	20.0
Bis(2-chloroethoxy)methane	Ave	0.4119	0.3817	0.3000	46300	50000	-7.3	20.0
Benzoic acid	Lin1		0.0826	0.0100	67700	150000	-54.8*	50.0
2,4-Dichlorophenol	Lin2		0.3027	0.2000	47700	50000	-4.7	20.0
1,2,4-Trichlorobenzene	Ave	0.3592	0.3393	0.0100	47200	50000	-5.5	20.0
Naphthalene	Ave	1.064	1.039	0.7000	48800	50000	-2.3	20.0
4-Chloroaniline	Ave	0.4266	0.4280	0.0100	50200	50000	0.3	20.0
2,6-Dichlorophenol	Ave	0.3010	0.3028	0.0100	50300	50000	0.6	20.0
Hexachlorobutadiene	Ave	0.1805	0.1929	0.0100	53400	50000	6.9	20.0
Caprolactam	Lin2		0.1065	0.0100	54300	50000	8.7	50.0
4-Chloro-3-methylphenol	Lin2		0.3286	0.2000	55800	50000	11.5	20.0
2-Methylnaphthalene	Ave	0.7045	0.7006	0.4000	49700	50000	-0.6	20.0
1-Methylnaphthalene	Ave	0.6592	0.6606	0.0100	50100	50000	0.2	20.0
Hexachlorocyclopentadiene	Lin2		0.3146	0.0500	40500	50000	-19.1	20.0
1,2,4,5-Tetrachlorobenzene	Ave	0.6301	0.5889	0.0100	46700	50000	-6.5	20.0
2,4,6-Trichlorophenol	Lin2		0.3866	0.2000	49100	50000	-1.9	20.0
2,4,5-Trichlorophenol	Lin2		0.4217	0.2000	50000	50000	-0.0	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494348/3 Calibration Date: 09/26/2019 16:02

Instrument ID: HP5973V Calib Start Date: 08/21/2019 17:15

GC Column: RXI-5Sil MS ID: 0.25(mm) Calib End Date: 08/21/2019 20:10

Lab File ID: V3140347.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Biphenyl	Ave	1.639	1.503	0.0100	45900	50000	-8.3	20.0
2-Chloronaphthalene	Ave	1.280	1.186	0.8000	46300	50000	-7.4	20.0
2-Nitroaniline	Lin2		0.4018	0.0100	53900	50000	7.8	20.0
Dimethyl phthalate	Ave	1.330	1.398	0.0100	52600	50000	5.1	20.0
1,3-Dinitrobenzene	Lin1		0.1291	0.0100	53700	50000	7.4	20.0
2,6-Dinitrotoluene	Lin2		0.3322	0.2000	52000	50000	4.1	20.0
Acenaphthylene	Ave	1.821	1.814	0.9000	49800	50000	-0.4	20.0
3-Nitroaniline	Lin2		0.3436	0.0100	49600	50000	-0.8	20.0
Acenaphthene	Ave	1.254	1.195	0.9000	47700	50000	-4.7	20.0
2,4-Dinitrophenol	Lin1		0.1818	0.0100	99800	100000	-0.2	20.0
4-Nitrophenol	Lin2		0.2202	0.0100	127000	100000	27.2*	20.0
Dibenzofuran	Ave	1.749	1.660	0.8000	47500	50000	-5.1	20.0
2,4-Dinitrotoluene	Lin2		0.4508	0.2000	53900	50000	7.8	20.0
2,3,4,6-Tetrachlorophenol	Lin2		0.2953	0.0100	49100	50000	-1.8	20.0
Diethyl phthalate	Ave	1.273	1.427	0.0100	56100	50000	12.1	20.0
Hexadecane	Ave	1.023	0.8552	0.0100	41800	50000	-16.4	20.0
Fluorene	Ave	1.389	1.343	0.9000	48300	50000	-3.3	20.0
4-Chlorophenyl phenyl ether	Ave	0.6756	0.6698	0.4000	49600	50000	-0.9	20.0
4-Nitroaniline	Lin2		0.3525	0.0100	50500	50000	1.0	20.0
4,6-Dinitro-2-methylphenol	Lin1		0.1281	0.0100	100000	100000	0.4	20.0
Diphenylamine	Ave	0.6922	0.6592	0.0100	40700	42800	-4.8	20.0
N-Nitrosodiphenylamine	Ave	0.5918	0.5636	0.0100	47600	50000	-4.8	20.0
1,2-Diphenylhydrazine	Ave	1.374	1.425	0.0100	51900	50000	3.8	20.0
trans-Azobenzene	Ave	0.8044	0.8038	0.0100	50000	50000	-0.0	20.0
4-Bromophenyl phenyl ether	Ave	0.2143	0.2157	0.1000	50300	50000	0.7	20.0
Hexachlorobenzene	Ave	0.2164	0.2118	0.1000	48900	50000	-2.1	20.0
Atrazine	Lin2		0.4079	0.0100	56400	50000	12.7	20.0
Pentachlorophenol	Lin2		0.1039	0.0500	86100	100000	-13.9	20.0
n-Octadecane	Ave	0.5809	0.5023	0.0100	43200	50000	-13.5	20.0
Phenanthrene	Ave	1.135	1.100	0.7000	48500	50000	-3.1	20.0
Anthracene	Ave	1.125	1.139	0.7000	50600	50000	1.3	20.0
Carbazole	Ave	1.034	1.024	0.0100	49500	50000	-0.9	20.0
Di-n-butyl phthalate	Lin2		1.333	0.0100	55200	50000	10.3	20.0
Fluoranthene	Ave	1.130	1.194	0.6000	52800	50000	5.6	20.0
Benzidine	Lin2		0.7754	0.0100	56400	50000	12.9	50.0
Pyrene	Ave	1.323	1.316	0.6000	49800	50000	-0.5	20.0
Butyl benzyl phthalate	Lin2		0.6688	0.0100	54700	50000	9.4	20.0
3,3'-Dichlorobenzidine	Lin2		0.5003	0.0100	54700	50000	9.5	50.0
Benzo[a]anthracene	Ave	1.246	1.215	0.8000	48700	50000	-2.6	20.0
Bis(2-ethylhexyl) phthalate	Lin2		0.9847	0.0100	55800	50000	11.7	20.0
Chrysene	Ave	1.204	1.146	0.7000	47600	50000	-4.8	20.0

FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494348/3 Calibration Date: 09/26/2019 16:02

Instrument ID: HP5973V Calib Start Date: 08/21/2019 17:15

GC Column: RXI-5Sil MS ID: 0.25(mm) Calib End Date: 08/21/2019 20:10

Lab File ID: V3140347.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Di-n-octyl phthalate	Lin2		1.666	0.0100	56200	50000	12.4	20.0
Benzo[b]fluoranthene	Ave	1.145	1.238	0.7000	54000	50000	8.1	20.0
Benzo[k]fluoranthene	Ave	1.268	1.125	0.7000	44400	50000	-11.3	20.0
Benzo[a]pyrene	Lin2		1.097	0.7000	47400	50000	-5.1	20.0
Dibenz(a,h)anthracene	Lin2		1.046	0.4000	47000	50000	-6.0	20.0
Indeno[1,2,3-cd]pyrene	Lin2		1.258	0.5000	46300	50000	-7.4	20.0
Benzo[g,h,i]perylene	Lin2		1.080	0.5000	45600	50000	-8.8	20.0
2-Fluorophenol (Surr)	Ave	1.302	1.262	0.0100	48500	50000	-3.1	20.0
Phenol-d5 (Surr)	Ave	1.537	1.555	0.0100	50600	50000	1.2	20.0
Nitrobenzene-d5 (Surr)	Lin2		0.4046	0.0100	53700	50000	7.3	20.0
2-Fluorobiphenyl	Ave	1.446	1.383	0.0100	47800	50000	-4.4	20.0
2,4,6-Tribromophenol (Surr)	Lin2		0.0967	0.0100	54000	50000	7.9	20.0
p-Terphenyl-d14 (Surr)	Ave	0.8351	0.8726	0.0100	52200	50000	4.5	20.0

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140347.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 26-Sep-2019 16:02:30 ALS Bottle#: 3 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-003
Operator ID: PJQ Instrument ID: HP5973V
Sublist: chrom-V-8270*sub63

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 26-Sep-2019 16:41:27 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0313

First Level Reviewer: quirkp Date: 26-Sep-2019 16:41:27

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	179575	40.0	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	662032	40.0	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	94	362537	40.0	40.0	
* 4 Phenanthrene-d10	188	10.901	10.901	0.000	97	642976	40.0	40.0	
* 5 Chrysene-d12	240	13.289	13.289	0.000	99	603352	40.0	40.0	
* 6 Perylene-d12	264	14.454	14.454	0.000	99	686989	40.0	40.0	
$ 7 2-Fluorophenol	112	3.929	3.929	0.000	94	283359	50.0	48.5	
$ 8 Phenol-d5	99	5.244	5.244	0.000	96	349066	50.0	50.6	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	92	334807	50.0	53.7	
$ 10 2-Fluorobiphenyl	172	8.508	8.508	0.000	100	626579	50.0	47.8	
$ 11 2,4,6-Tribromophenol	330	10.185	10.185	0.000	91	77755	50.0	54.0	
$ 12 p-Terphenyl-d14	244	12.391	12.391	0.000	99	658116	50.0	52.2	
68 1,4-Dioxane	88	1.632	1.632	0.000	98	117035	50.0	41.9	
69 N-Nitrosodimethylamine	42	1.926	1.926	0.000	83	183879	50.0	46.6	
70 Pyridine	52	1.969	1.969	0.000	86	418550	100.0	82.5	
80 Benzaldehyde	77	5.105	5.105	0.000	93	203871	50.0	41.7	
82 Aniline	93	5.249	5.249	0.000	92	441336	50.0	47.2	
81 Phenol	94	5.260	5.260	0.000	97	386353	50.0	48.0	
83 Bis(2-chloroethyl)ether	93	5.345	5.345	0.000	96	269320	50.0	45.3	
84 2-Chlorophenol	128	5.404	5.404	0.000	97	307401	50.0	48.9	
263 n-Decane	57	5.500	5.500	0.000	91	346743	50.0	40.5	
87 1,3-Dichlorobenzene	146	5.596	5.596	0.000	97	345112	50.0	46.9	
88 1,4-Dichlorobenzene	146	5.687	5.687	0.000	93	352741	50.0	47.0	
90 Benzyl alcohol	108	5.858	5.858	0.000	90	201554	50.0	49.6	
91 1,2-Dichlorobenzene	146	5.879	5.879	0.000	96	326425	50.0	46.9	
248 Indene	115	5.986	5.986	0.000	89	1352508	150.0	132.0	
92 2-Methylphenol	108	6.023	6.023	0.000	98	266415	50.0	48.0	
93 2,2'-oxybis[1-chloropropan	45	6.034	6.034	0.000	92	431790	50.0	36.2	
94 Acetophenone	105	6.178	6.178	0.000	97	421890	50.0	53.3	
95 N-Nitrosodi-n-propylamine	70	6.194	6.194	0.000	91	212411	50.0	50.0	
96 4-Methylphenol	108	6.221	6.221	0.000	93	290035	50.0	51.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
99 Hexachloroethane	117	6.291	6.291	0.000	93	138505	50.0	53.2	
102 Nitrobenzene	77	6.381	6.381	0.000	90	340510	50.0	51.0	
106 Isophorone	82	6.675	6.675	0.000	98	566814	50.0	49.9	
107 2-Nitrophenol	139	6.771	6.771	0.000	98	168319	50.0	54.7	
108 2,4-Dimethylphenol	107	6.857	6.857	0.000	98	321061	50.0	54.0	
111 Bis(2-chloroethoxy)methane	93	6.953	6.953	0.000	98	315898	50.0	46.3	
115 Benzoic acid	105	7.044	7.044	0.000	85	204978	150.0	67.7	
114 2,4-Dichlorophenol	162	7.071	7.071	0.000	95	250498	50.0	47.7	
117 1,2,4-Trichlorobenzene	180	7.161	7.161	0.000	95	280783	50.0	47.2	
118 Naphthalene	128	7.242	7.242	0.000	98	860206	50.0	48.8	
119 4-Chloroaniline	127	7.322	7.322	0.000	96	354217	50.0	50.2	
122 2,6-Dichlorophenol	162	7.332	7.332	0.000	96	250567	50.0	50.3	
121 Hexachlorobutadiene	225	7.412	7.412	0.000	97	159663	50.0	53.4	
124 Caprolactam	113	7.744	7.744	0.000	76	88102	50.0	54.3	
129 4-Chloro-3-methylphenol	107	7.931	7.931	0.000	96	271938	50.0	55.8	
131 2-Methylnaphthalene	142	8.064	8.064	0.000	91	579733	50.0	49.7	
251 1-Methylnaphthalene	142	8.182	8.182	0.000	92	546629	50.0	50.1	
134 Hexachlorocyclopentadiene	237	8.262	8.262	0.000	98	142566	50.0	40.5	
135 1,2,4,5-Tetrachlorobenzene	216	8.273	8.273	0.000	98	266856	50.0	46.7	
137 2,4,6-Trichlorophenol	196	8.417	8.417	0.000	94	175208	50.0	49.1	
138 2,4,5-Trichlorophenol	196	8.460	8.460	0.000	94	191101	50.0	50.0	
140 1,1'-Biphenyl	154	8.620	8.620	0.000	95	681314	50.0	45.9	
141 2-Chloronaphthalene	162	8.630	8.630	0.000	98	537363	50.0	46.3	
143 2-Nitroaniline	65	8.764	8.764	0.000	82	182100	50.0	53.9	
146 Dimethyl phthalate	163	8.994	8.994	0.000	98	633536	50.0	52.6	
148 1,3-Dinitrobenzene	168	9.020	9.020	0.000	83	106845	50.0	53.7	
149 2,6-Dinitrotoluene	165	9.053	9.053	0.000	93	150554	50.0	52.0	
150 Acenaphthylene	152	9.111	9.111	0.000	98	821920	50.0	49.8	
151 3-Nitroaniline	138	9.245	9.245	0.000	92	155716	50.0	49.6	
152 Acenaphthene	153	9.320	9.320	0.000	94	541618	50.0	47.7	
153 2,4-Dinitrophenol	184	9.378	9.378	0.000	87	164784	100.0	99.8	
154 4-Nitrophenol	109	9.485	9.485	0.000	96	199541	100.0	127.2	
155 Dibenzofuran	168	9.517	9.517	0.000	94	752296	50.0	47.5	
156 2,4-Dinitrotoluene	165	9.528	9.528	0.000	87	204301	50.0	53.9	
158 2,3,4,6-Tetrachlorophenol	232	9.678	9.678	0.000	77	133821	50.0	49.1	
161 Diethyl phthalate	149	9.816	9.816	0.000	98	646713	50.0	56.1	
256 Hexadecane	57	9.859	9.859	0.000	94	387557	50.0	41.8	
162 Fluorene	166	9.913	9.913	0.000	94	608505	50.0	48.3	
163 4-Chlorophenyl phenyl ethe	204	9.923	9.923	0.000	96	303535	50.0	49.6	
164 4-Nitroaniline	138	9.950	9.950	0.000	80	159725	50.0	50.5	
165 4,6-Dinitro-2-methylphenol	198	9.998	9.998	0.000	80	205951	100.0	100.4	
168 N-Nitrosodiphenylamine	169	10.062	10.062	0.000	98	452978	50.0	47.6	
169 Diphenylamine	169	10.062	10.062	0.000	95	452978	42.8	40.7	
170 1,2-Diphenylhydrazine	77	10.100	10.100	0.000	98	645991	50.0	51.9	
171 Azobenzene	77	10.100	10.100	0.000	99	645991	50.0	50.0	
175 4-Bromophenyl phenyl ether	248	10.452	10.452	0.000	68	173365	50.0	50.3	
179 Hexachlorobenzene	284	10.522	10.522	0.000	93	170230	50.0	48.9	
180 Atrazine	200	10.650	10.650	0.000	94	184851	50.0	56.4	
183 Pentachlorophenol	266	10.730	10.730	0.000	90	167081	100.0	86.1	
265 n-Octadecane	57	10.842	10.842	0.000	93	403724	50.0	43.2	
188 Phenanthrene	178	10.928	10.928	0.000	98	884175	50.0	48.5	
189 Anthracene	178	10.976	10.976	0.000	97	915659	50.0	50.6	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
192 Carbazole	167	11.141	11.141	0.000	96	823004	50.0	49.5	
195 Di-n-butyl phthalate	149	11.494	11.494	0.000	100	1071444	50.0	55.2	
201 Fluoranthene	202	12.050	12.050	0.000	97	959249	50.0	52.8	
202 Benzidine	184	12.172	12.172	0.000	99	584799	50.0	56.4	
204 Pyrene	202	12.247	12.247	0.000	98	992749	50.0	49.8	
210 Butyl benzyl phthalate	149	12.813	12.813	0.000	98	504384	50.0	54.7	
215 3,3'-Dichlorobenzidine	252	13.257	13.257	0.000	74	377340	50.0	54.7	
217 Benzo[a]anthracene	228	13.278	13.278	0.000	97	915987	50.0	48.7	
216 Bis(2-ethylhexyl) phthalat	149	13.294	13.294	0.000	96	742684	50.0	55.8	
218 Chrysene	228	13.310	13.310	0.000	96	864204	50.0	47.6	
220 Di-n-octyl phthalate	149	13.818	13.818	0.000	99	1256380	50.0	56.2	
221 Benzo[b]fluoranthene	252	14.154	14.154	0.000	97	1062883	50.0	54.0	
222 Benzo[k]fluoranthene	252	14.176	14.176	0.000	99	965759	50.0	44.4	
225 Benzo[a]pyrene	252	14.405	14.405	0.000	77	941713	50.0	47.4	
227 Indeno[1,2,3-cd]pyrene	276	15.372	15.372	0.000	97	1080200	50.0	46.3	
228 Dibenz(a,h)anthracene	278	15.372	15.372	0.000	87	898181	50.0	47.0	
229 Benzo[g,h,i]perylene	276	15.629	15.629	0.000	98	927305	50.0	45.6	

Reagents:

MB_LIST1_WRK_00735	Amount Added: 1.00	Units: mL	
MB_INTSTD_STK_00062	Amount Added: 20.00	Units: uL	Run Reagent

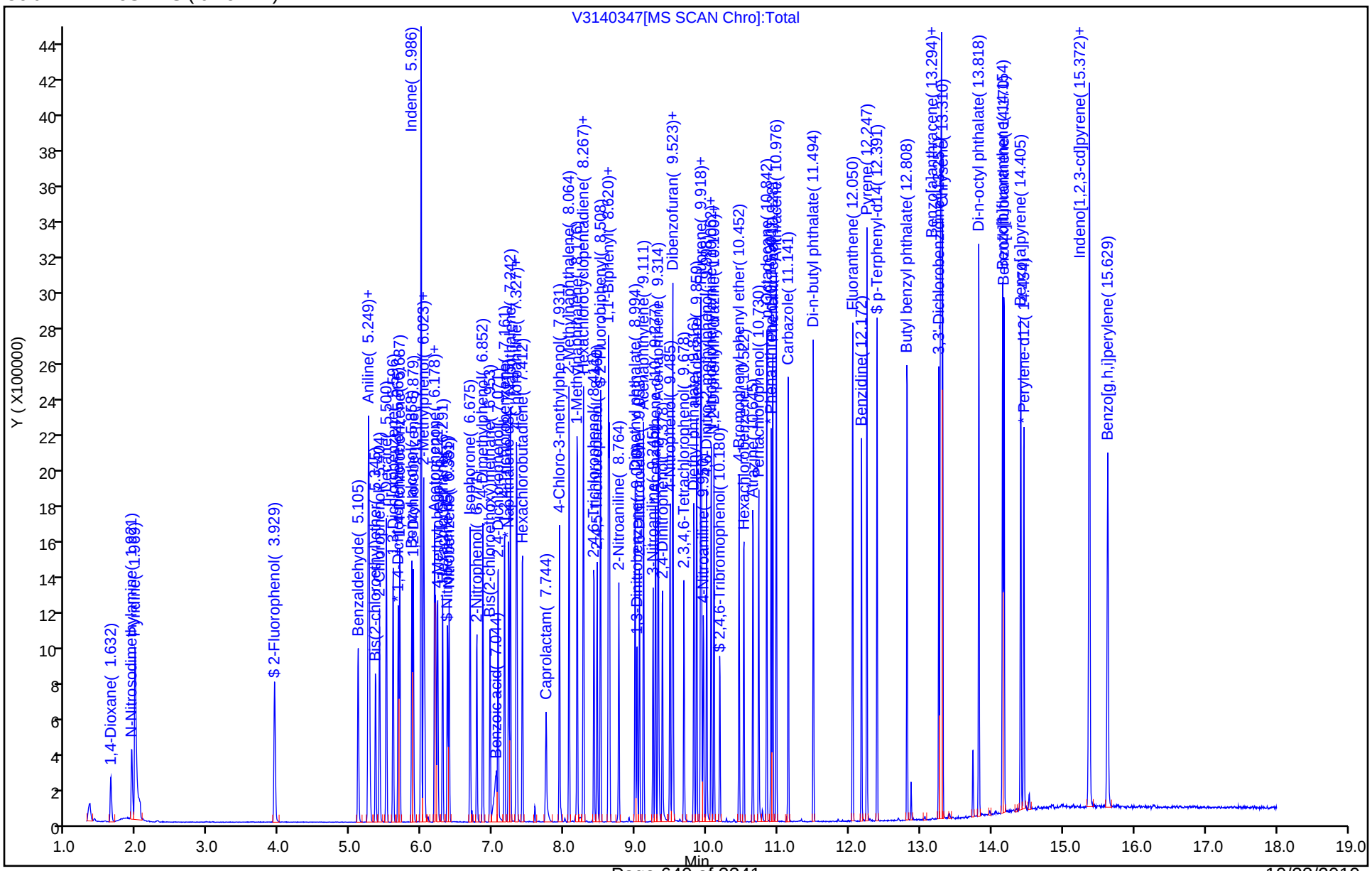
Report Date: 26-Sep-2019 16:41:28 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140347.D

Injection Date:	26-Sep-2019 16:02:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 21-Aug-2019 16:49:30 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: DFTPP
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 22-Aug-2019 15:28:09 Calib Date: 21-Aug-2019 20:10:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139720.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX1003

First Level Reviewer: quirkp Date: 21-Aug-2019 17:12:10

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
104 Pentachlorophenol_T	266	10.842	10.842	0.000	91	106842	NR	NR	
112 DFTPP									
128 Benzidine_T	184	12.285	12.285	0.000	99	975799	NR	NR	
136 4,4'-DDD	235		12.632					ND	
139 4,4'-DDT	235	13.001	13.001	0.000	97	406445	NR	NR	
130 4,4'-DDE	246		13.745					ND	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

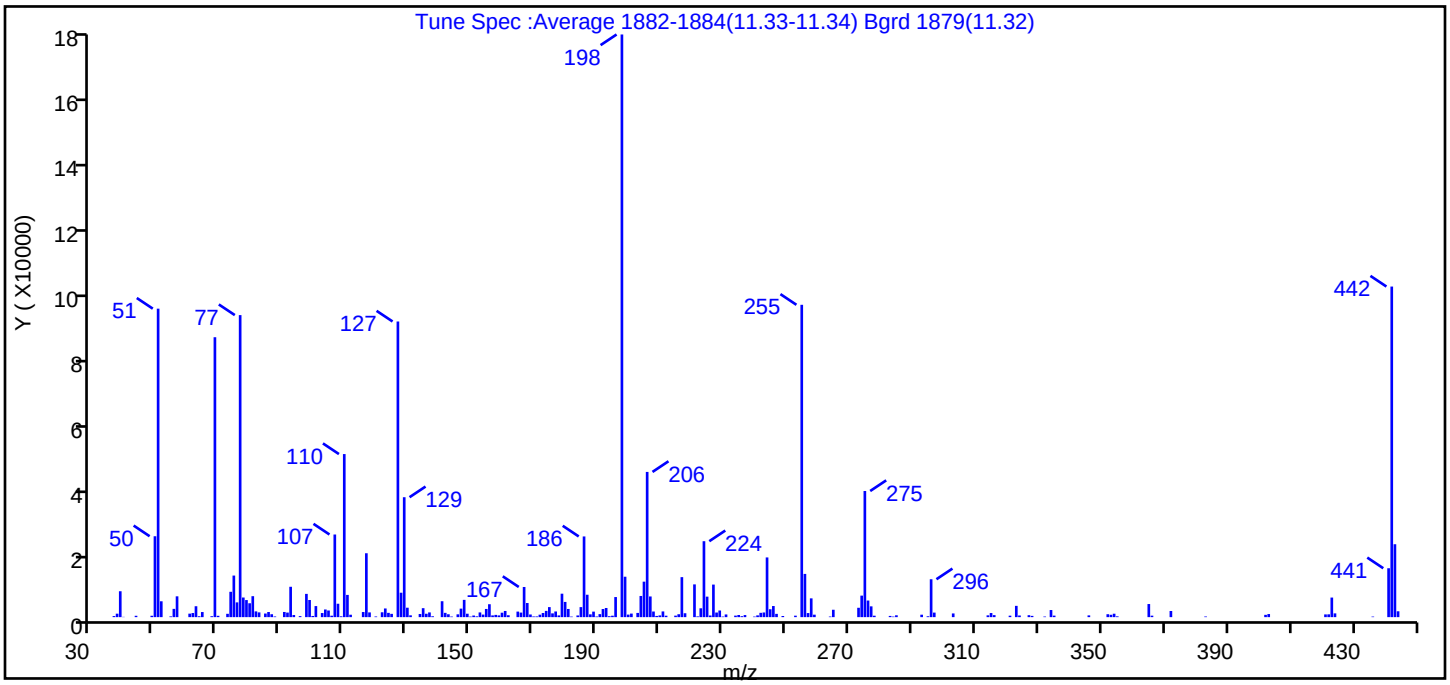
MB_DFTPP_WRK_00358 Amount Added: 1.00 Units: mL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D
Injection Date: 21-Aug-2019 16:49:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Tune Method: DFTPP Method 8270D, BP 198

112 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >50% of 442	100.0 (176.3)
51	10-80% of the base peak	52.9
68	<2% of mass 69	0.2 (0.3)
69	Present	48.0
70	<2% of mass 69	0.2 (0.5)
127	10-80% of the base peak	50.7
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.9
275	10-60% of the base peak	21.6
365	>1% of mass 198	2.2
441	present but <24% of mass 442	8.4 (14.8)
442	base peak, or >50% of 198	56.7
443	15-24% of mass 442	12.5 (22.1)

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D\V-8270.rslt\spectra.d
Injection Date: 21-Aug-2019 16:49:30
Spectrum: Tune Spec :Average 1882-1884(11.33-11.34) Bgrd 1879(11.32)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 219

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	326	117.00	19440	182.00	166	249.00	345
38.00	1054	118.00	1440	184.00	514	253.00	447
39.00	7881	120.00	203	185.00	3052	255.00	95032
40.00	82	122.00	1478	186.00	24552	256.00	13153
44.00	416	123.00	2639	187.00	6816	257.00	1241
49.00	421	124.00	1305	188.00	849	258.00	5717
50.00	24616	125.00	1001	189.00	1680	259.00	749
51.00	93856	127.00	89952	190.00	186	264.00	186
52.00	4827	128.00	7430	191.00	916	265.00	2249
55.00	225	129.00	36488	192.00	2468	273.00	2850
56.00	2516	130.00	2870	193.00	2785	274.00	6547
57.00	6335	131.00	553	194.00	288	275.00	38376
61.00	1063	134.00	959	195.00	434	276.00	5052
62.00	1251	135.00	2728	196.00	6113	277.00	3284
63.00	3321	136.00	1029	198.00	177280	278.00	435
64.00	274	137.00	1438	199.00	12299	283.00	370
65.00	1551	138.00	266	200.00	774	284.00	171
68.00	281	141.00	4843	201.00	1083	285.00	565
69.00	85168	142.00	1306	203.00	1284	293.00	745
70.00	409	143.00	876	204.00	6442	295.00	263
73.00	1017	144.00	180	205.00	10797	296.00	11532
74.00	7712	146.00	854	206.00	44184	297.00	1383
75.00	12652	147.00	2594	207.00	6293	303.00	1126
76.00	4493	148.00	5258	208.00	1713	314.00	550
77.00	91896	149.00	1040	209.00	370	315.00	1250
78.00	5972	150.00	168	210.00	524	316.00	614
79.00	5196	151.00	491	211.00	1738	321.00	447
80.00	4223	152.00	241	212.00	437	323.00	3433
81.00	6378	153.00	1433	215.00	458	324.00	505
82.00	1751	154.00	777	216.00	882	327.00	590
83.00	1442	155.00	2490	217.00	12170	328.00	384
85.00	1099	156.00	3932	218.00	1186	332.00	181
86.00	1558	157.00	528	221.00	9967	334.00	2166

Report Date: 22-Aug-2019 15:28:10 Chrom Revision: 2.3 15-Jul-2019 06:58:08
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D\V-8270.rslt\spectra.d
Injection Date: 21-Aug-2019 16:49:30
Spectrum: Tune Spec :Average 1882-1884(11.33-11.34) Bgrd 1879(11.32)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 219

m/z	Y	m/z	Y	m/z	Y	m/z	Y
87.00	887	158.00	685	222.00	224	335.00	460
88.00	200	159.00	524	223.00	2694	346.00	535
91.00	1574	160.00	1349	224.00	23104	352.00	889
92.00	1386	161.00	1878	225.00	6236	353.00	718
93.00	9238	162.00	579	226.00	496	354.00	1042
94.00	642	165.00	1687	227.00	9908	355.00	238
96.00	307	166.00	1384	228.00	1405	365.00	3988
98.00	7078	167.00	9174	229.00	2019	366.00	449
99.00	5213	168.00	4301	230.00	175	372.00	1871
100.00	356	169.00	806	231.00	820	383.00	199
101.00	3365	170.00	203	234.00	464	402.00	700
103.00	1249	171.00	210	235.00	651	403.00	943
104.00	2330	172.00	749	236.00	288	421.00	832
105.00	2021	173.00	1262	237.00	632	422.00	854
106.00	438	174.00	1902	240.00	172	423.00	5959
107.00	25144	175.00	3055	241.00	539	424.00	1144
108.00	4077	176.00	1148	242.00	1313	436.00	173
109.00	250	177.00	1723	243.00	1419	441.00	14878
110.00	49616	178.00	525	244.00	18168	442.00	100584
111.00	6765	179.00	7135	245.00	2404	443.00	22184
112.00	735	180.00	4631	246.00	3382	444.00	1786
116.00	1555	181.00	2486	247.00	998		

Breakdown Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D
Injection Date: 21-Aug-2019 16:49:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

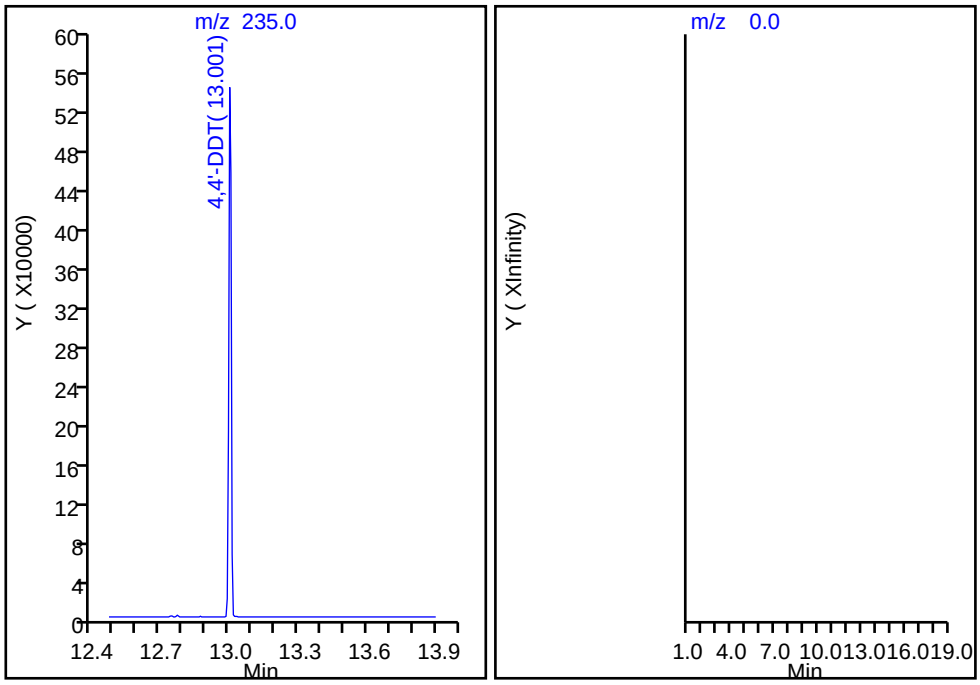
139 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

139 4,4'-DDT, Area = 406445
136 4,4'-DDD, Area = 0
130 4,4'-DDE, Area = 0

%Breakdown: 0.00%, <= 20.00%
Passed



Peak Tailing Report

Eurofins TestAmerica, Buffalo

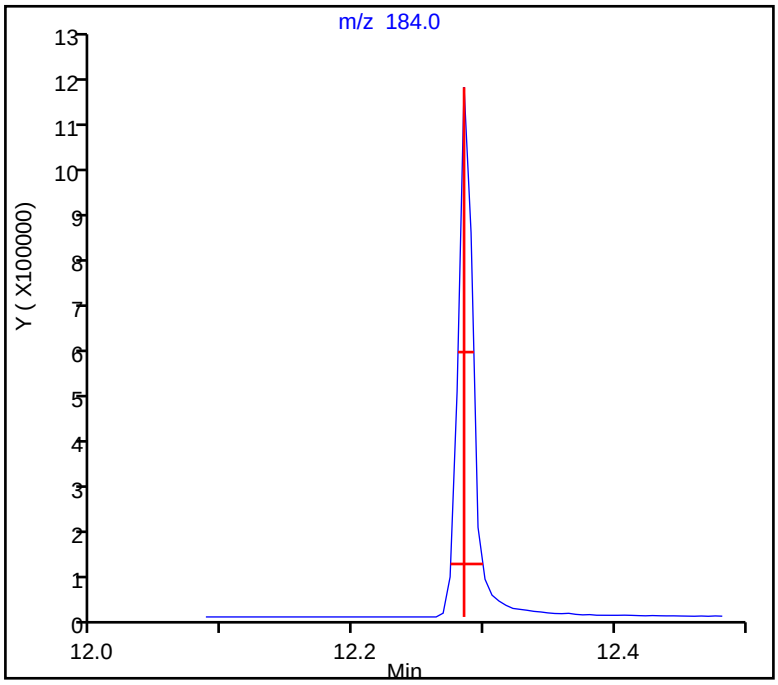
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D
Injection Date: 21-Aug-2019 16:49:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

128 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.014 (min.)
Front Width = 0.010 (min.)

Tailing Factor = 1.4, Max. Tailing < 2.00
Passed



Peak Tailing Report

Eurofins TestAmerica, Buffalo

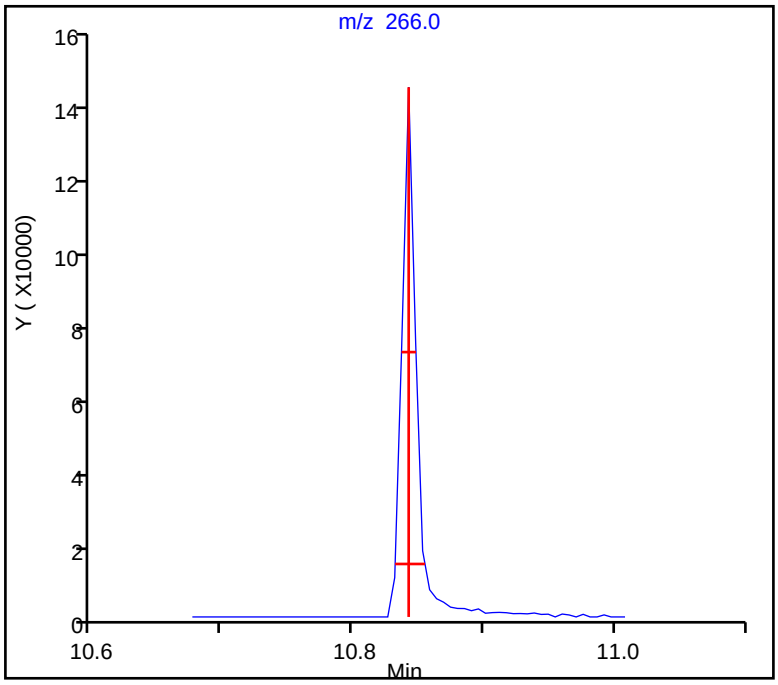
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190821-83574.b\V3139712.D
Injection Date: 21-Aug-2019 16:49:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

104 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.012 (min.)
Front Width = 0.010 (min.)

Tailing Factor = 1.2, Max. Tailing < 2.00
Passed



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D
Lims ID: DFTPP
Client ID:
Sample Type: DFTPP
Inject. Date: 26-Sep-2019 15:36:30 ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-002
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 26-Sep-2019 16:16:40 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0313

First Level Reviewer: quirkp Date: 26-Sep-2019 15:58:47

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
104 Pentachlorophenol_T	266	10.725	10.725	0.000	89	43620	NR	NR	
112 DFTPP									
128 Benzidine_T	184	12.173	12.173	0.000	99	620727	NR	NR	
136 4,4'-DDD	235		12.691					ND	
139 4,4'-DDT	235	12.888	12.888	0.000	96	306567	NR	NR	
130 4,4'-DDE	246		13.745					ND	

QC Flag Legend

Processing Flags
NR - Missing Quant Standard

Reagents:

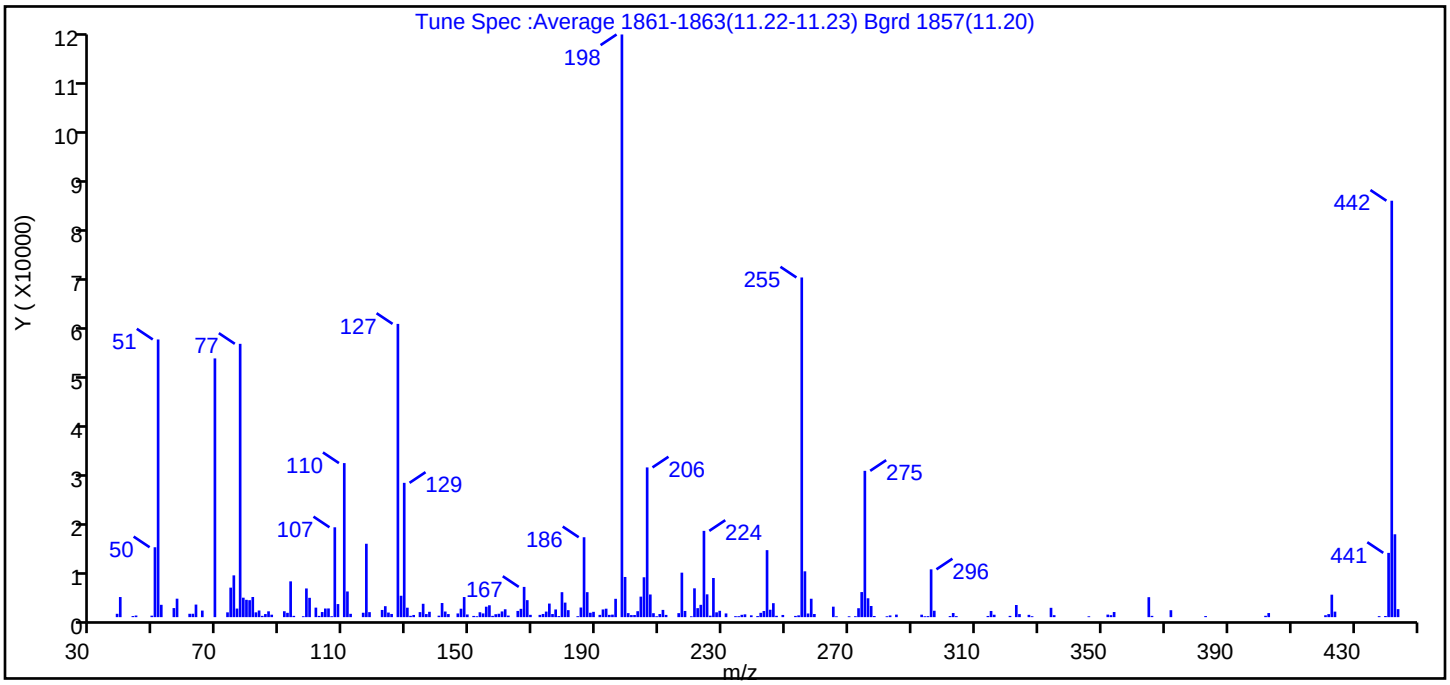
MB_DFTPP_WRK_00361 Amount Added: 1.00 Units: mL

MS Tune Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D
Injection Date: 26-Sep-2019 15:36:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL
Tune Method: DFTPP Method 8270D, BP 198

112 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >50% of 442	100.0 (139.9)
51	10-80% of the base peak	47.7
68	<2% of mass 69	0.0 (0.0)
69	Present	44.4
70	<2% of mass 69	0.0 (0.0)
127	10-80% of the base peak	50.3
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.9
275	10-60% of the base peak	25.1
365	>1% of mass 198	3.4
441	present but <24% of mass 442	11.0 (15.4)
442	base peak, or >50% of 198	71.5
443	15-24% of mass 442	14.2 (19.9)

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D\V-8270.rslt\spectra.d
Injection Date: 26-Sep-2019 15:36:30
Spectrum: Tune Spec :Average 1861-1863(11.22-11.23) Bgrd 1857(11.20)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 212

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	683	124.00	933	191.00	462	258.00	3753
39.00	4100	125.00	649	192.00	1568	259.00	639
43.00	224	127.00	59792	193.00	1723	265.00	2136
44.00	331	128.00	4360	194.00	462	266.00	169
49.00	302	129.00	27384	195.00	513	270.00	175
50.00	14249	130.00	1925	196.00	3738	272.00	188
51.00	56616	131.00	273	198.00	118800	273.00	1820
52.00	2514	132.00	445	199.00	8190	274.00	5113
56.00	1850	134.00	1026	200.00	821	275.00	29832
57.00	3764	135.00	2725	201.00	421	276.00	3849
61.00	685	136.00	628	202.00	435	277.00	2273
62.00	692	137.00	1090	203.00	1214	278.00	228
63.00	2563	140.00	297	204.00	4179	282.00	179
65.00	1340	141.00	2879	205.00	8131	283.00	351
69.00	52752	142.00	1147	206.00	30528	285.00	515
73.00	979	143.00	628	207.00	4619	293.00	502
74.00	6015	146.00	755	208.00	804	294.00	177
75.00	8519	147.00	1722	209.00	176	295.00	205
76.00	1750	148.00	4099	210.00	636	296.00	9748
77.00	55728	149.00	542	211.00	1478	297.00	1304
78.00	3967	151.00	250	212.00	455	302.00	216
79.00	3535	152.00	180	216.00	816	303.00	840
80.00	3457	153.00	997	217.00	9071	304.00	207
81.00	4108	154.00	760	218.00	1263	314.00	241
82.00	978	155.00	2131	220.00	171	315.00	1260
83.00	1352	156.00	2421	221.00	5877	316.00	488
84.00	262	157.00	265	222.00	1835	321.00	257
85.00	630	158.00	596	223.00	2512	323.00	2475
86.00	1188	159.00	689	224.00	17592	324.00	622
87.00	498	160.00	1165	225.00	4650	327.00	466
91.00	1203	161.00	1604	226.00	297	328.00	189
92.00	879	162.00	322	227.00	7982	334.00	1903
93.00	7297	165.00	1267	228.00	983	335.00	401

Report Date: 26-Sep-2019 16:16:41 Chrom Revision: 2.3 17-Sep-2019 16:19:08
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D\V-8270.rslt\spectra.d
Injection Date: 26-Sep-2019 15:36:30
Spectrum: Tune Spec :Average 1861-1863(11.22-11.23) Bgrd 1857(11.20)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 212

m/z	Y	m/z	Y	m/z	Y	m/z	Y
94.00	262	166.00	1696	229.00	1294	346.00	173
97.00	181	167.00	6165	231.00	757	352.00	519
98.00	5850	168.00	3464	234.00	199	353.00	403
99.00	3941	169.00	470	235.00	193	354.00	1046
101.00	1940	172.00	462	236.00	475	365.00	4070
102.00	254	173.00	647	237.00	575	366.00	263
103.00	1040	174.00	1135	239.00	370	372.00	1414
104.00	1760	175.00	2769	241.00	220	383.00	227
105.00	1773	176.00	633	242.00	878	402.00	271
106.00	184	177.00	1570	243.00	1256	403.00	837
107.00	18320	178.00	210	244.00	13661	421.00	388
108.00	2667	179.00	5090	245.00	1509	422.00	620
110.00	31408	180.00	2963	246.00	2847	423.00	4579
111.00	5236	181.00	1425	247.00	273	424.00	1126
112.00	677	184.00	196	249.00	446	438.00	205
116.00	898	185.00	1962	253.00	251	440.00	232
117.00	14963	186.00	16292	254.00	361	441.00	13102
118.00	1019	187.00	5094	255.00	69256	442.00	84904
122.00	1466	188.00	894	256.00	9342	443.00	16896
123.00	2235	189.00	1084	257.00	742	444.00	1635

Breakdown Report

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D
Injection Date: 26-Sep-2019 15:36:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

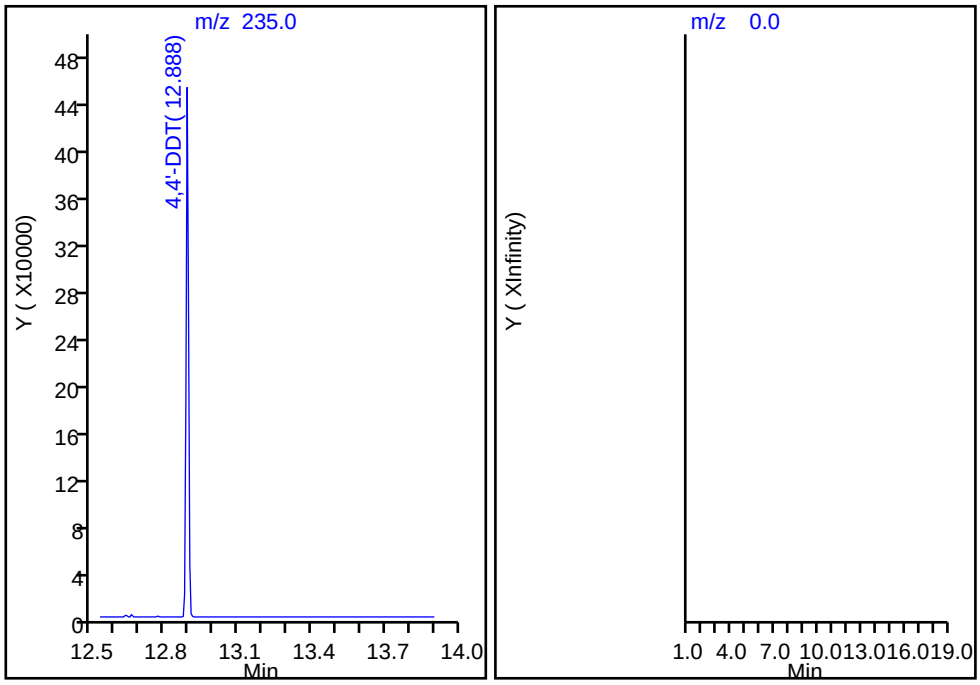
139 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

139 4,4'-DDT, Area = 306567
136 4,4'-DDD, Area = 0
130 4,4'-DDE, Area = 0

%Breakdown: 0.00%, <= 20.00%
Passed



Peak Tailing Report

Eurofins TestAmerica, Buffalo

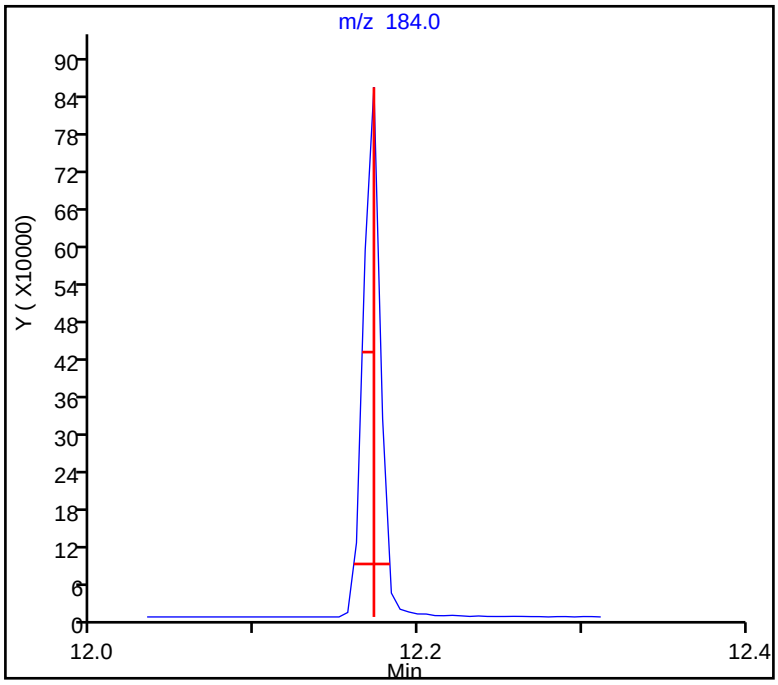
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D
Injection Date: 26-Sep-2019 15:36:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

128 Benzidine_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.010 (min.)
Front Width = 0.012 (min.)

Tailing Factor = 0.8, Max. Tailing < 2.00
Passed



Peak Tailing Report

Eurofins TestAmerica, Buffalo

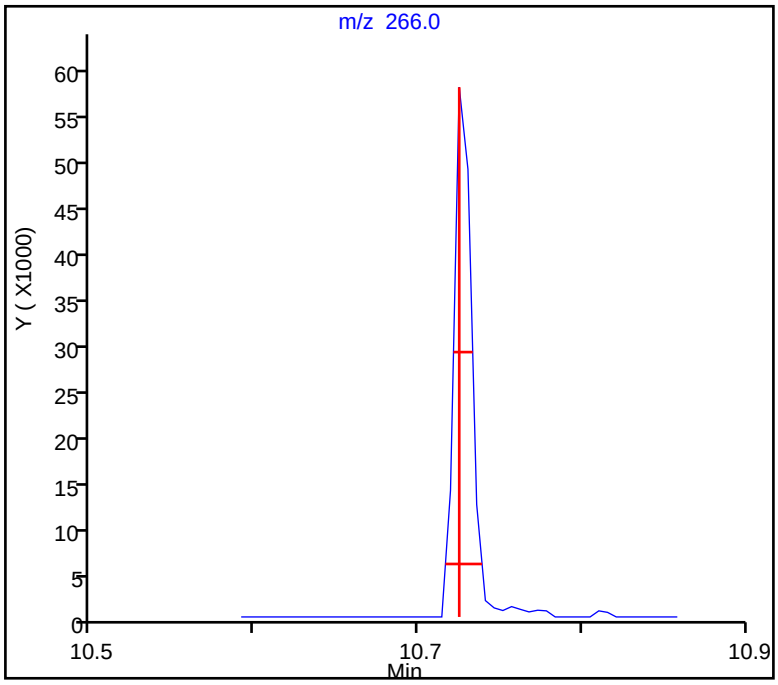
Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140346.D
Injection Date: 26-Sep-2019 15:36:30 Instrument ID: HP5973V
Lims ID: DFTPP
Client ID:
Operator ID: PJQ ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: V-8270 Limit Group: MB - 8270D ICAL

104 Pentachlorophenol_T, Detector: MS SCAN

Peak Tailing Factor =
BackWidth/FrontWidth @ 10% Peak Height

Back Width = 0.014 (min.)
Front Width = 0.008 (min.)

Tailing Factor = 1.8, Max. Tailing < 2.00
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 480-494075/1-A

Matrix: Solid | Lab File ID: V3140349.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.10(g) | Date Analyzed: 09/26/2019 16:52

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		170	25
208-96-8	Acenaphthylene	ND		170	22
120-12-7	Anthracene	ND		170	42
56-55-3	Benzo[a]anthracene	ND		170	17
50-32-8	Benzo[a]pyrene	ND		170	25
205-99-2	Benzo[b]fluoranthene	ND		170	27
191-24-2	Benzo[g,h,i]perylene	ND		170	18
207-08-9	Benzo[k]fluoranthene	ND		170	22
218-01-9	Chrysene	ND		170	38
53-70-3	Dibenz(a,h)anthracene	ND		170	30
132-64-9	Dibenzofuran	ND		170	20
206-44-0	Fluoranthene	ND		170	18
86-73-7	Fluorene	ND		170	20
118-74-1	Hexachlorobenzene	ND		170	23
193-39-5	Indeno[1,2,3-cd]pyrene	ND		170	21
95-48-7	2-Methylphenol	ND		170	20
106-44-5	Methylphenol, 3 & 4	ND		330	20
91-20-3	Naphthalene	ND		170	22
123-91-1	1,4-Dioxane	ND		200	55
87-86-5	Pentachlorophenol	ND		330	170
85-01-8	Phenanthrene	ND		170	25
108-95-2	Phenol	ND		170	26
129-00-0	Pyrene	ND		170	20

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	91		60-120
367-12-4	2-Fluorophenol (Surr)	83		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	96		53-120
4165-62-2	Phenol-d5 (Surr)	91		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	104		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	98		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140349.D
Lims ID: MB 480-494075/1-A
Client ID:
Sample Type: MB
Inject. Date: 26-Sep-2019 16:52:30 ALS Bottle#: 5 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-005
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:24:36 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:24:36

	Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
*	1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	98	177150	40.0	40.0	
*	2 Naphthalene-d8	136	7.215	7.215	0.000	100	653677	40.0	40.0	
*	3 Acenaphthene-d10	164	9.277	9.277	0.000	93	352239	40.0	40.0	
*	4 Phenanthrene-d10	188	10.901	10.901	0.000	97	644194	40.0	40.0	
*	5 Chrysene-d12	240	13.284	13.289	-0.005	99	574592	40.0	40.0	
*	6 Perylene-d12	264	14.448	14.454	-0.006	98	616410	40.0	40.0	
$	7 2-Fluorophenol	112	3.935	3.929	0.006	94	192043	40.0	33.3	
$	8 Phenol-d5	99	5.244	5.244	0.000	94	246881	40.0	36.3	
$	9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	234751	40.0	38.3	
$	10 2-Fluorobiphenyl	172	8.503	8.508	-0.006	100	465506	40.0	36.6	
$	11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	92	55907	40.0	39.1	
$	12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	499349	40.0	41.6	
	68 1,4-Dioxane	88		1.632					ND	
	69 N-Nitrosodimethylamine	42		1.926					ND	
	70 Pyridine	52		1.969					ND	
	52 Chlorotoluene N.O.S	1		2.170					ND	
	49 Chlorobenzotrifluoride N.O	1		2.170					ND	
	33 2-Chlorotoluene	91		2.170					ND	
	59 o-Anisidine	1		2.170					ND	
	15 Lidocaine	1		2.170					ND	
	72 2-Picoline	93		3.144					ND	
	73 N-Nitrosomethylethylamine	88		3.305					ND	
	74 Methyl methanesulfonate	80		3.785					ND	
	249 Acrylamide	44		3.828					ND	
	77 N-Nitrosodiethylamine	102		4.357					ND	
	78 Ethyl methanesulfonate	79		4.784					ND	
	80 Benzaldehyde	77		5.105					ND	
	82 Aniline	93		5.249					ND	
	81 Phenol	94		5.260					ND	
	83 Bis(2-chloroethyl)ether	93		5.345					ND	
	84 2-Chlorophenol	128		5.404					ND	
	85 Pentachloroethane	167		5.404					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
263 n-Decane	57		5.500					ND	
87 1,3-Dichlorobenzene	146		5.596					ND	
88 1,4-Dichlorobenzene	146		5.687					ND	
90 Benzyl alcohol	108		5.858					ND	
91 1,2-Dichlorobenzene	146		5.879					ND	
248 Indene	115		5.986					ND	
92 2-Methylphenol	108		6.023					ND	
93 2,2'-oxybis[1-chloropropan	45		6.034					ND	
94 Acetophenone	105		6.178					ND	
95 N-Nitrosodi-n-propylamine	70		6.194					ND	
96 4-Methylphenol	108		6.221					ND	
97 N-Nitrosopyrrolidine	100		6.237					ND	
99 Hexachloroethane	117		6.291					ND	
98 N-Nitrosomorpholine	56		6.291					ND	
101 4-Methylbenzenamine	106		6.312					ND	
100 2-Toluidine	106		6.318					ND	
102 Nitrobenzene	77		6.381					ND	
17 2,4-Dichlorotoluene	125		6.633					ND	
105 N-Nitrosopiperidine	114		6.654					ND	
106 Isophorone	82		6.675					ND	
76 3-Chloropyridine	78		6.685					ND	
75 4-Chloropyridine	78		6.685					ND	
58 1,3,5-Trichlorobenzene	180		6.750					ND	
107 2-Nitrophenol	139		6.771					ND	
109 2-Chloroaniline	127		6.804					ND	
108 2,4-Dimethylphenol	107		6.857					ND	
111 Bis(2-chloroethoxy)methane	93		6.953					ND	
110 Tetraethyl lead	237		6.969					ND	
113 o,o',o''-Triethylphosphoro	198		7.023					ND	
115 Benzoic acid	105		7.044					ND	
114 2,4-Dichlorophenol	162		7.071					ND	
117 1,2,4-Trichlorobenzene	180		7.161					ND	
37 4-Chlorophenol	128		7.215					ND	
116 alpha,alpha-Dimethyl phene	58		7.215					ND	
79 2-Chloropyridine	78		7.221					ND	
118 Naphthalene	128		7.242					ND	
119 4-Chloroaniline	127		7.322					ND	
122 2,6-Dichlorophenol	162		7.332					ND	
120 Alpha-Terpineol	59		7.354					ND	
121 Hexachlorobutadiene	225		7.412					ND	
123 Hexachloropropene	213		7.455					ND	
125 Quinoline	129		7.733					ND	
124 Caprolactam	113		7.744					ND	
127 N-Nitrosodi-n-butylamine	84		7.835					ND	
126 p-Phenylene diamine	108		7.835					ND	
267 CBF-400	214		7.900					ND	
129 4-Chloro-3-methylphenol	107		7.931					ND	
272 2,4,5-Trichlorotoluene	159		7.995					ND	
131 2-Methylnaphthalene	142	8.064	8.064	0.000	85	2868		0.2491	
132 Safrole, Total	162		8.070					ND	
251 1-Methylnaphthalene	142	8.177	8.182	-0.005	84	1710		0.1587	
133 Phthalic anhydride	104		8.214					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
134 Hexachlorocyclopentadiene	237		8.262					ND	
135 1,2,4,5-Tetrachlorobenzene	216		8.273					ND	
298 1,3-Dibromobenzene TIC	236		8.280					ND	
299 1,4-Dibromobenzene TIC	236		8.329					ND	
86 p-Fluoroaniline	111		8.359					ND	
137 2,4,6-Trichlorophenol	196		8.417					ND	
291 Isosafrole Peak 1	162		8.417					ND	
138 2,4,5-Trichlorophenol	196		8.460					ND	
274 2,3-Dichlorobenzenamine	161		8.481					ND	
275 1,2,3,4 -Tetrachlorobenzen	216		8.567					ND	
13 N-Methylaniline	106		8.589					ND	
140 1,1'-Biphenyl	154		8.620					ND	
141 2-Chloronaphthalene	162		8.630					ND	
293 Isosafrole Peak 2	162		8.679					ND	
142 Isosafrole	162		8.679					ND	
253 1-Chloronaphthalene	162		8.754					ND	
143 2-Nitroaniline	65		8.764					ND	
103 2,6-Dichloropyridine	112		8.872					ND	
145 1,4-Naphthoquinone	158		8.930					ND	
144 Dicyclohexylamine	138		8.940					ND	
146 Dimethyl phthalate	163		8.994					ND	
147 1,4-Dinitrobenzene	168		9.010					ND	
148 1,3-Dinitrobenzene	168		9.020					ND	
149 2,6-Dinitrotoluene	165		9.053					ND	
150 Acenaphthylene	152		9.111					ND	
151 3-Nitroaniline	138		9.245					ND	
152 Acenaphthene	153		9.320					ND	
153 2,4-Dinitrophenol	184		9.378					ND	
154 4-Nitrophenol	109		9.485					ND	
155 Dibenzofuran	168		9.517					ND	
156 2,4-Dinitrotoluene	165		9.528					ND	
157 Pentachlorobenzene	250		9.576					ND	
158 2,3,4,6-Tetrachlorophenol	232		9.678					ND	
159 1-Naphthylamine	143		9.705					ND	
264 2,3,5,6-Tetrachlorophenol	232		9.721					ND	
160 2-Naphthylamine	143		9.795					ND	
161 Diethyl phthalate	149		9.816					ND	
256 Hexadecane	57		9.859					ND	U
162 Fluorene	166		9.913					ND	
163 4-Chlorophenyl phenyl ethe	204		9.923					ND	
266 NVF-400	82		9.940					ND	
164 4-Nitroaniline	138		9.950					ND	
166 Thionazin	97		9.993					ND	
165 4,6-Dinitro-2-methylphenol	198		9.998					ND	
230 Benzeneacetic acid (TIC)	91		10.016					ND	
167 N-Nitro-o-toluidine	152		10.025					ND	
168 N-Nitrosodiphenylamine	169		10.062					ND	
169 Diphenylamine	169		10.062					ND	
170 1,2-Diphenylhydrazine	77		10.100					ND	
171 Azobenzene	77		10.100					ND	
172 Tributyl phosphate	99		10.142					ND	
35 n,n'-Dimethylacetamide	44		10.170					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
173 Sulfotepp	322		10.340					ND	
36 Benzeneacetonitrile	117		10.395					ND	
174 1,3,5-Trinitrobenzene	213		10.447					ND	
175 4-Bromophenyl phenyl ether	248		10.452					ND	
294 Diallate Peak 1	86		10.468					ND	
176 Diallate	86		10.468					ND	
177 Phorate	75		10.474					ND	
178 Phenacetin	108		10.495					ND	
179 Hexachlorobenzene	284		10.522					ND	
296 Diallate Peak 2	86		10.559					ND	
181 Dimethoate	87		10.645					ND	
180 Atrazine	200		10.650					ND	
184 Simazine	201		10.682					ND	
183 Pentachlorophenol	266		10.730					ND	
185 4-Aminobiphenyl	169		10.810					ND	
186 Pentachloronitrobenzene	237		10.821					ND	
265 n-Octadecane	57		10.842					ND	U
187 Pronamide	173		10.890					ND	
188 Phenanthrene	178	10.923	10.922	-0.005	90	2676		0.1464	
189 Anthracene	178		10.976					ND	
190 Disulfoton	88		11.008					ND	
191 Dinoseb	211		11.008					ND	
192 Carbazole	167		11.141					ND	
194 Alachlor	160		11.360					ND	
193 Methyl parathion	109		11.366					ND	
276 2-Methylanthracene	192		11.446					ND	
195 Di-n-butyl phthalate	149		11.494					ND	
196 Ethyl Parathion	97		11.735					ND	
197 4-Nitroquinoline-1-oxide	190		11.745					ND	
198 Anthraquinone	180		11.761					ND	
199 Methapyrilene	58		11.831					ND	
200 Isodrin	193		11.991					ND	
201 Fluoranthene	202		12.050					ND	
203 1-Hydroxyanthraquinone	224		12.151					ND	
202 Benzidine	184		12.172					ND	
204 Pyrene	202		12.247					ND	
44 1-Methylcyclopentanol	71		12.261					ND	
292 Aramite Peak 1	185		12.456					ND	
205 Aramite, Total	185		12.520					ND	
295 Aramite Peak 2	185		12.520					ND	
207 1,4-Dihydroxyanthraquinone	240		12.562					ND	
206 p-Dimethylamino azobenzene	120		12.589					ND	
208 Chlorobenzilate	139		12.632					ND	
210 Butyl benzyl phthalate	149		12.813					ND	
211 Famphur	218		12.830					ND	
209 3,3'-Dimethylbenzidine	212		12.878					ND	
212 9-Octadecenamide	72		12.888					ND	
213 Kepone	272		12.904					ND	
214 2-Acetylaminofluorene	181		13.091					ND	
215 3,3'-Dichlorobenzidine	252		13.257					ND	
217 Benzo[a]anthracene	228		13.278					ND	
216 Bis(2-ethylhexyl) phthalat	149	13.294	13.289	0.000	92	6953		1.51	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
218 Chrysene	228		13.310					ND	
19 4,4'-Methylene bis(2-chlor	231		13.332					ND	
254 6-Methylchrysene	242		13.765					ND	
220 Di-n-octyl phthalate	149		13.818					ND	
221 Benzo[b]fluoranthene	252		14.154					ND	
222 Benzo[k]fluoranthene	252		14.176					ND	
223 7,12-Dimethylbenz(a)anthra	256		14.219					ND	
273 Benzo[e]pyrene	252		14.347					ND	
225 Benzo[a]pyrene	252		14.405					ND	U
226 3-Methylcholanthrene	252		14.774					ND	
224 Hexachlorophene	196		15.237					ND	
54 Dibenz[a,h]acridine	279		15.244					ND	
227 Indeno[1,2,3-cd]pyrene	276		15.372					ND	
228 Dibenz(a,h)anthracene	278		15.372					ND	
229 Benzo[g,h,i]perylene	276		15.629					ND	
269 CN-500	112		16.521					ND	
271 CU-600	58		17.216					ND	
270 CBF-500	161		17.852					ND	
268 CAG-800	149		17.954					ND	
231 Dibenzo[a,e]pyrene	302		20.654					ND	
297 2-Aminopyridine TIC	1		0.000					ND	
39 4-Chlorotoluene	91		2.129					ND	
246 Phenylmercaptan	110		2.146					ND	
282 1,2,3-Trimethylbenzene	105		2.167					ND	
65 Hexamethyldisiloxane TIC	1		2.170					ND	
30 3-Chlorobenzotrifluoride	1		2.170					ND	
22 Phenylacetic Acid	1		2.170					ND	
260 2,4-Dichlorotoluene TIC	1		2.170					ND	
38 Tetramethyl lead TIC	1		2.170					ND	
257 2,6-Dichlorotoluene TIC	1		2.170					ND	
42 2-Chlorobenzotrifluoride	1		2.170					ND	
250 n,n'-Dimethylaniline	1		2.170					ND	
67 1-Bromopropane	1		2.170					ND	
290 Photomirex TIC	1		2.170					ND	
62 Dibenz[a,j]acridine	279		2.170					ND	
61 4-Chlorobenzotrifluoride	1		2.170					ND	
261 3-Chlorobenzotrifluoride T	1		2.170					ND	
56 7H-Dibenzo[c,g]carbazole	1		2.170					ND	
34 3-Chlorotoluene	1		2.170					ND	
16 Dibenzo[a,h]pyrene	1		2.170					ND	
29 2,3-Dichlorophenol	1		2.170					ND	
247 Octachlorostyrene	1		2.170					ND	
31 Pendimethalin	1		2.170					ND	
255 Dibenz(a,i)pyrene	1		2.170					ND	
259 2-Chlorobenzotrifluoride T	1		2.170					ND	
41 5-Methyl-o-Anisidine	1		2.170					ND	
57 2,4-Toluene diamine	1		2.170					ND	
104 Pentachlorophenol_T	266		10.725					ND	
128 Benzidine_T	184		12.173					ND	
S 245 EPH Adjustment 1	1		2.170					ND	
S 232 Total Cresols	1		2.170					ND	
S 234 3 & 4 Methylphenol	108		8.667					ND	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
S 233 3-Methylphenol	1		8.667					ND	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

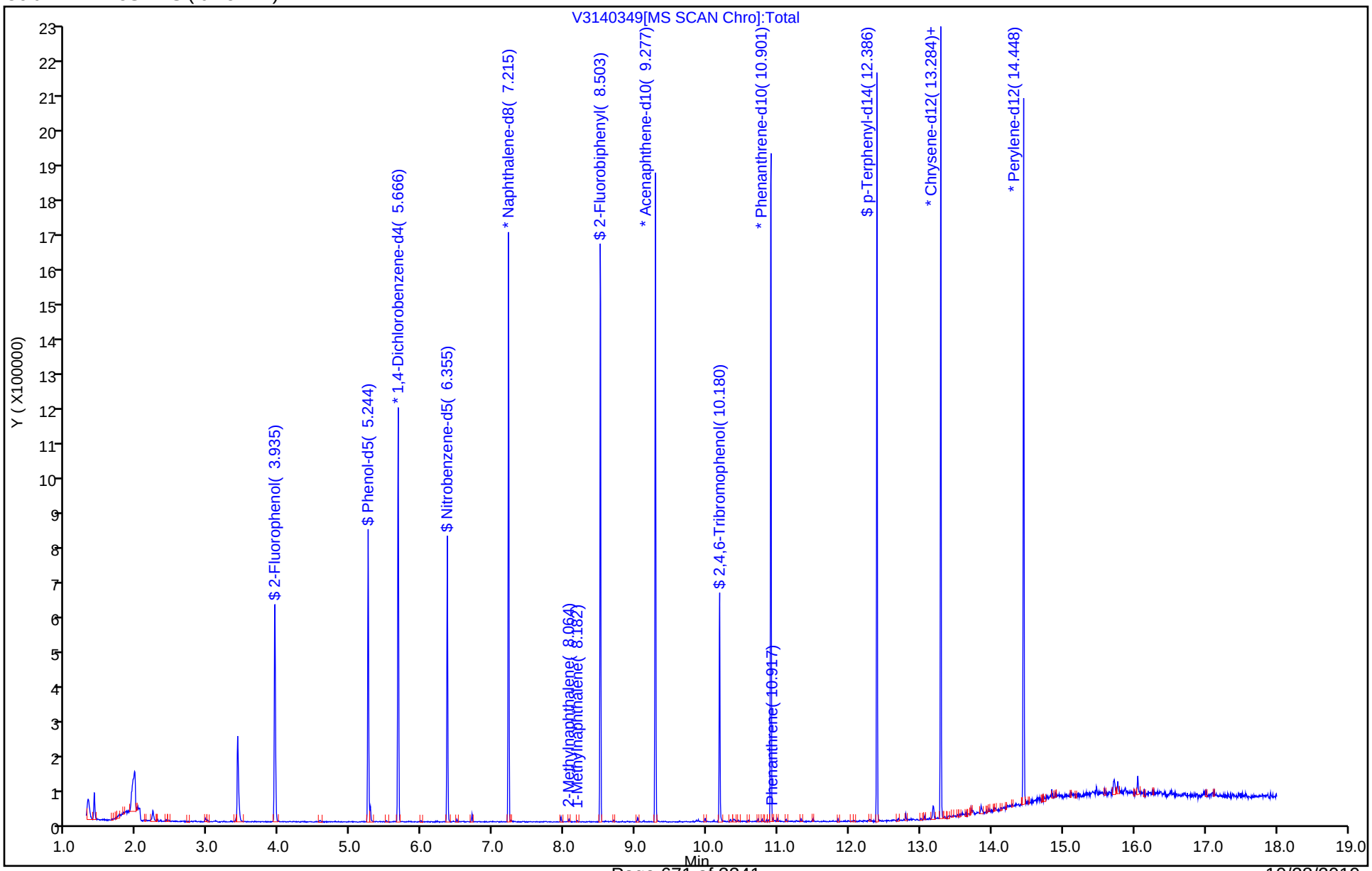
Report Date: 28-Sep-2019 11:24:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140349.D

Injection Date:	26-Sep-2019 16:52:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	MB 480-494075/1-A			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



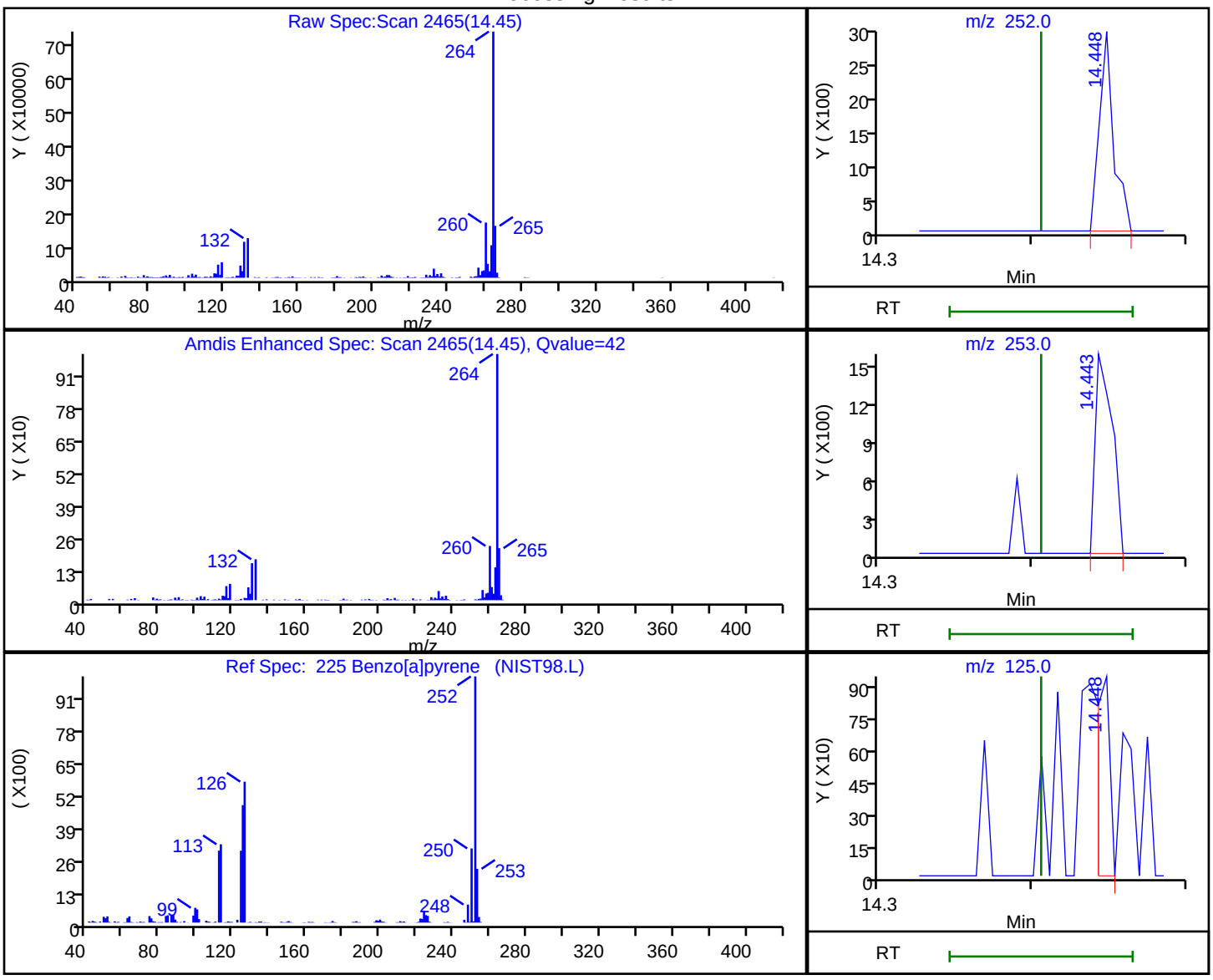
User Disabled Compound Report

Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140349.D				
Injection Date:	26-Sep-2019 16:52:30	Instrument ID:	HP5973V		
Lims ID:	MB 480-494075/1-A				
Client ID:					
Operator ID:	PJQ	ALS Bottle#:	5	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	V-8270	Limit Group:	MB - 8270D ICAL		
Column:	RXI-5Sil MS (0.25 mm)	Detector	MS SCAN		

225 Benzo[a]pyrene, CAS: 50-32-8

Processing Results



RT	Mass	Response	Amount
14.45	252.00	1898	0.185275
14.44	253.00	1179	
14.45	125.00	560	

Reviewer: quirkp, 28-Sep-2019 11:23:42

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 480-494075/2-A

Matrix: Solid | Lab File ID: V3140350.D

Analysis Method: 8270D | Date Collected:

Extract. Method: 3550C | Date Extracted: 09/25/2019 14:37

Sample wt/vol: 30.03(g) | Date Analyzed: 09/26/2019 17:17

Con. Extract Vol.: 1(mL) | Dilution Factor: 1

Injection Volume: 1(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 494348 | Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	1510		170	25
208-96-8	Acenaphthylene	1570		170	22
120-12-7	Anthracene	1770		170	42
56-55-3	Benzo[a]anthracene	1630		170	17
50-32-8	Benzo[a]pyrene	1560		170	25
205-99-2	Benzo[b]fluoranthene	1830		170	27
191-24-2	Benzo[g,h,i]perylene	1590		170	18
207-08-9	Benzo[k]fluoranthene	1640		170	22
218-01-9	Chrysene	1660		170	38
53-70-3	Dibenz(a,h)anthracene	1640		170	30
132-64-9	Dibenzofuran	1550		170	20
206-44-0	Fluoranthene	1840		170	18
86-73-7	Fluorene	1590		170	20
118-74-1	Hexachlorobenzene	1730		170	23
193-39-5	Indeno[1,2,3-cd]pyrene	1640		170	21
95-48-7	2-Methylphenol	1480		170	20
106-44-5	Methylphenol, 3 & 4	1540		330	20
91-20-3	Naphthalene	1430		170	22
123-91-1	1,4-Dioxane	651		200	55
87-86-5	Pentachlorophenol	2900		330	170
85-01-8	Phenanthrene	1710		170	25
108-95-2	Phenol	1410		170	26
129-00-0	Pyrene	1760		170	20

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	89		60-120
367-12-4	2-Fluorophenol (Surr)	78		52-120
4165-60-0	Nitrobenzene-d5 (Surr)	96		53-120
4165-62-2	Phenol-d5 (Surr)	87		54-120
1718-51-0	p-Terphenyl-d14 (Surr)	109		79-130
118-79-6	2,4,6-Tribromophenol (Surr)	115		54-120

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140350.D
Lims ID: LCS 480-494075/2-A
Client ID:
Sample Type: LCS
Inject. Date: 26-Sep-2019 17:17:30 ALS Bottle#: 6 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 480-0084505-006
Operator ID: PJQ Instrument ID: HP5973V

Method: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V-8270.m
Limit Group: MB - 8270D ICAL
Last Update: 28-Sep-2019 11:26:41 Calib Date: 06-Sep-2019 19:06:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5973V\20190906-83928.b\V3140002.D

Column 1 : RXI-5Sil MS (0.25 mm) Det: MS SCAN
Process Host: CTX0327

First Level Reviewer: quirkp Date: 28-Sep-2019 11:26:41

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1,4-Dichlorobenzene-d4	152	5.666	5.666	0.000	97	179767	40.0	40.0	
* 2 Naphthalene-d8	136	7.215	7.215	0.000	100	650548	40.0	40.0	
* 3 Acenaphthene-d10	164	9.277	9.277	0.000	95	358028	40.0	40.0	
* 4 Phenanthrene-d10	188	10.901	10.901	0.000	97	613578	40.0	40.0	
* 5 Chrysene-d12	240	13.289	13.289	0.000	99	553918	40.0	40.0	
* 6 Perylene-d12	264	14.448	14.454	-0.006	98	602218	40.0	40.0	
$ 7 2-Fluorophenol	112	3.929	3.929	0.000	94	183535	40.0	31.4	
$ 8 Phenol-d5	99	5.244	5.244	0.000	96	240062	40.0	34.8	
$ 9 Nitrobenzene-d5	82	6.355	6.355	0.000	91	233806	40.0	38.3	
$ 10 2-Fluorobiphenyl	172	8.508	8.508	0.000	100	460934	40.0	35.6	
$ 11 2,4,6-Tribromophenol	330	10.180	10.180	-0.005	90	62748	40.0	45.8	
$ 12 p-Terphenyl-d14	244	12.386	12.386	-0.005	99	503354	40.0	43.5	
68 1,4-Dioxane	88	1.627	1.632	-0.005	96	54646	50.0	19.6	
69 N-Nitrosodimethylamine	42	1.915	1.926	-0.011	87	151037	50.0	38.3	
70 Pyridine	52	1.964	1.969	-0.005	85	277739	100.0	54.7	
80 Benzaldehyde	77	5.099	5.105	-0.006	93	380250	100.0	77.7	
82 Aniline	93	5.249	5.249	0.000	89	367082	50.0	39.2	
81 Phenol	94	5.260	5.260	0.000	95	340748	50.0	42.3	
83 Bis(2-chloroethyl)ether	93	5.345	5.345	0.000	98	234251	50.0	39.3	
84 2-Chlorophenol	128	5.404	5.404	0.000	97	261820	50.0	41.6	
263 n-Decane	57	5.500	5.500	0.000	90	236536	50.0	27.6	
87 1,3-Dichlorobenzene	146	5.591	5.596	-0.005	97	269812	50.0	36.6	
88 1,4-Dichlorobenzene	146	5.687	5.687	0.000	92	272930	50.0	36.3	
90 Benzyl alcohol	108	5.858	5.858	0.000	89	176419	50.0	43.5	
91 1,2-Dichlorobenzene	146	5.879	5.879	0.000	97	267943	50.0	38.5	
248 Indene	115	5.992	5.986	0.006	90	3015373	400.0	299.5	E
92 2-Methylphenol	108	6.024	6.024	0.001	97	247539	50.0	44.6	
93 2,2'-oxybis[1-chloropropan	45	6.034	6.034	0.000	93	366695	50.0	30.7	
94 Acetophenone	105	6.179	6.178	0.001	94	372351	50.0	47.0	
95 N-Nitrosodi-n-propylamine	70	6.189	6.194	-0.005	91	198518	50.0	46.7	
96 4-Methylphenol	108	6.216	6.221	-0.005	93	261699	50.0	46.3	
99 Hexachloroethane	117	6.291	6.291	0.000	93	105147	50.0	40.4	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
102 Nitrobenzene	77	6.382	6.381	0.001	91	292701	50.0	44.6	
106 Isophorone	82	6.675	6.675	0.000	98	531180	50.0	47.6	
107 2-Nitrophenol	139	6.772	6.771	0.001	98	143068	50.0	47.4	
108 2,4-Dimethylphenol	107	6.857	6.857	0.000	98	292934	50.0	50.2	
111 Bis(2-chloroethoxy)methane	93	6.953	6.953	0.000	99	289956	50.0	43.3	
115 Benzoic acid	105	7.076	6.969	0.032	90	450012	400.0	132.9	
114 2,4-Dichlorophenol	162	7.071	7.071	0.000	96	235276	50.0	45.6	
117 1,2,4-Trichlorobenzene	180	7.156	7.161	-0.005	95	237790	50.0	40.7	
118 Naphthalene	128	7.242	7.242	0.000	98	742545	50.0	42.9	
119 4-Chloroaniline	127	7.327	7.322	0.005	96	308868	50.0	44.5	
122 2,6-Dichlorophenol	162	7.333	7.332	0.000	96	232871	50.0	47.6	
121 Hexachlorobutadiene	225	7.413	7.413	0.001	97	137785	50.0	46.9	
124 Caprolactam	113	7.776	7.744	0.032	76	173037	100.0	107.5	
129 4-Chloro-3-methylphenol	107	7.931	7.931	0.000	96	258445	50.0	54.0	
131 2-Methylnaphthalene	142	8.064	8.064	0.000	91	527589	50.0	46.0	
251 1-Methylnaphthalene	142	8.177	8.182	-0.005	92	482088	50.0	45.0	
134 Hexachlorocyclopentadiene	237	8.262	8.262	0.000	98	133654	50.0	38.5	
135 1,2,4,5-Tetrachlorobenzene	216	8.273	8.273	0.000	98	239939	50.0	42.5	
137 2,4,6-Trichlorophenol	196	8.417	8.417	0.000	93	172662	50.0	49.0	
138 2,4,5-Trichlorophenol	196	8.460	8.460	0.000	95	182587	50.0	48.4	
140 1,1'-Biphenyl	154	8.620	8.620	0.000	95	637009	50.0	43.4	
141 2-Chloronaphthalene	162	8.631	8.631	0.001	98	493353	50.0	43.1	
143 2-Nitroaniline	65	8.764	8.764	0.000	81	176622	50.0	53.0	
146 Dimethyl phthalate	163	8.994	8.994	0.000	98	631055	50.0	53.0	
148 1,3-Dinitrobenzene	168	9.021	9.021	0.001	83	108365	50.0	55.4	
149 2,6-Dinitrotoluene	165	9.053	9.053	0.000	93	147358	50.0	51.6	
150 Acenaphthylene	152	9.111	9.111	0.000	98	766468	50.0	47.0	
151 3-Nitroaniline	138	9.245	9.245	0.000	93	142698	50.0	46.1	
152 Acenaphthene	153	9.314	9.320	-0.006	94	509778	50.0	45.4	
153 2,4-Dinitrophenol	184	9.379	9.378	0.001	87	131351	100.0	82.3	
154 4-Nitrophenol	109	9.480	9.485	-0.005	96	201996	100.0	130.4	
155 Dibenzofuran	168	9.517	9.517	0.000	95	728421	50.0	46.5	
156 2,4-Dinitrotoluene	165	9.528	9.528	0.000	90	204017	50.0	54.5	
158 2,3,4,6-Tetrachlorophenol	232	9.678	9.678	0.000	76	135506	50.0	50.3	
161 Diethyl phthalate	149	9.817	9.817	0.001	98	655907	50.0	57.6	
256 Hexadecane	57	9.854	9.859	-0.005	94	398915	50.0	43.6	
162 Fluorene	166	9.913	9.913	0.000	94	591960	50.0	47.6	
163 4-Chlorophenyl phenyl ethe	204	9.923	9.923	0.000	97	288618	50.0	47.7	
164 4-Nitroaniline	138	9.950	9.950	0.000	80	158539	50.0	50.7	
165 4,6-Dinitro-2-methylphenol	198	9.998	9.993	0.000	80	225609	100.0	114.5	
169 Diphenylamine	169	10.062	10.057	0.000	95	454630	42.8	42.8	
168 N-Nitrosodiphenylamine	169	10.062	10.057	0.000	98	454630	50.0	50.1	
171 Azobenzene	77	10.100	10.095	0.000	99	629684	50.0	51.0	
170 1,2-Diphenylhydrazine	77	10.100	10.100	0.000	97	629684	50.0	51.2	
175 4-Bromophenyl phenyl ether	248	10.452	10.447	0.000	69	169667	50.0	51.6	
179 Hexachlorobenzene	284	10.516	10.517	-0.006	92	172063	50.0	51.8	
180 Atrazine	200	10.650	10.650	0.000	92	372550	100.0	114.2	
183 Pentachlorophenol	266	10.730	10.725	0.000	90	161313	100.0	87.0	
265 n-Octadecane	57	10.837	10.837	-0.005	93	415704	50.0	46.7	
188 Phenanthrene	178	10.922	10.922	-0.006	97	894112	50.0	51.3	
189 Anthracene	178	10.976	10.970	0.000	97	919073	50.0	53.3	
192 Carbazole	167	11.142	11.136	0.001	97	812350	50.0	51.2	

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
195 Di-n-butyl phthalate	149	11.494	11.488	0.000	100	1092302	50.0	58.9	
201 Fluoranthene	202	12.044	12.044	-0.006	98	956881	50.0	55.2	
202 Benzidine	184	12.173	12.168	0.001	99	878366	100.0	91.7	
204 Pyrene	202	12.247	12.242	0.000	98	966782	50.0	52.8	
210 Butyl benzyl phthalate	149	12.808	12.808	-0.005	98	488729	50.0	57.7	
215 3,3'-Dichlorobenzidine	252	13.257	13.252	0.000	75	603916	100.0	94.5	
217 Benzo[a]anthracene	228	13.278	13.273	0.000	97	846292	50.0	49.0	
216 Bis(2-ethylhexyl) phthalat	149	13.294	13.289	0.000	96	737561	50.0	60.3	
218 Chrysene	228	13.310	13.305	0.000	96	833454	50.0	50.0	
220 Di-n-octyl phthalate	149	13.818	13.812	0.000	99	1209269	50.0	58.9	
221 Benzo[b]fluoranthene	252	14.149	14.144	-0.005	96	946977	50.0	54.9	
222 Benzo[k]fluoranthene	252	14.171	14.165	-0.005	99	940975	50.0	49.3	
225 Benzo[a]pyrene	252	14.406	14.395	0.001	77	817729	50.0	47.0	
227 Indeno[1,2,3-cd]pyrene	276	15.367	15.361	-0.005	99	1004757	50.0	49.1	
228 Dibenz(a,h)anthracene	278	15.367	15.361	-0.005	90	825755	50.0	49.3	
229 Benzo[g,h,i]perylene	276	15.624	15.617	-0.005	98	850190	50.0	47.7	
S 233 3-Methylphenol	1				0		50.0	46.3	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

MB_INTSTD_STK_00062 Amount Added: 20.00 Units: uL Run Reagent

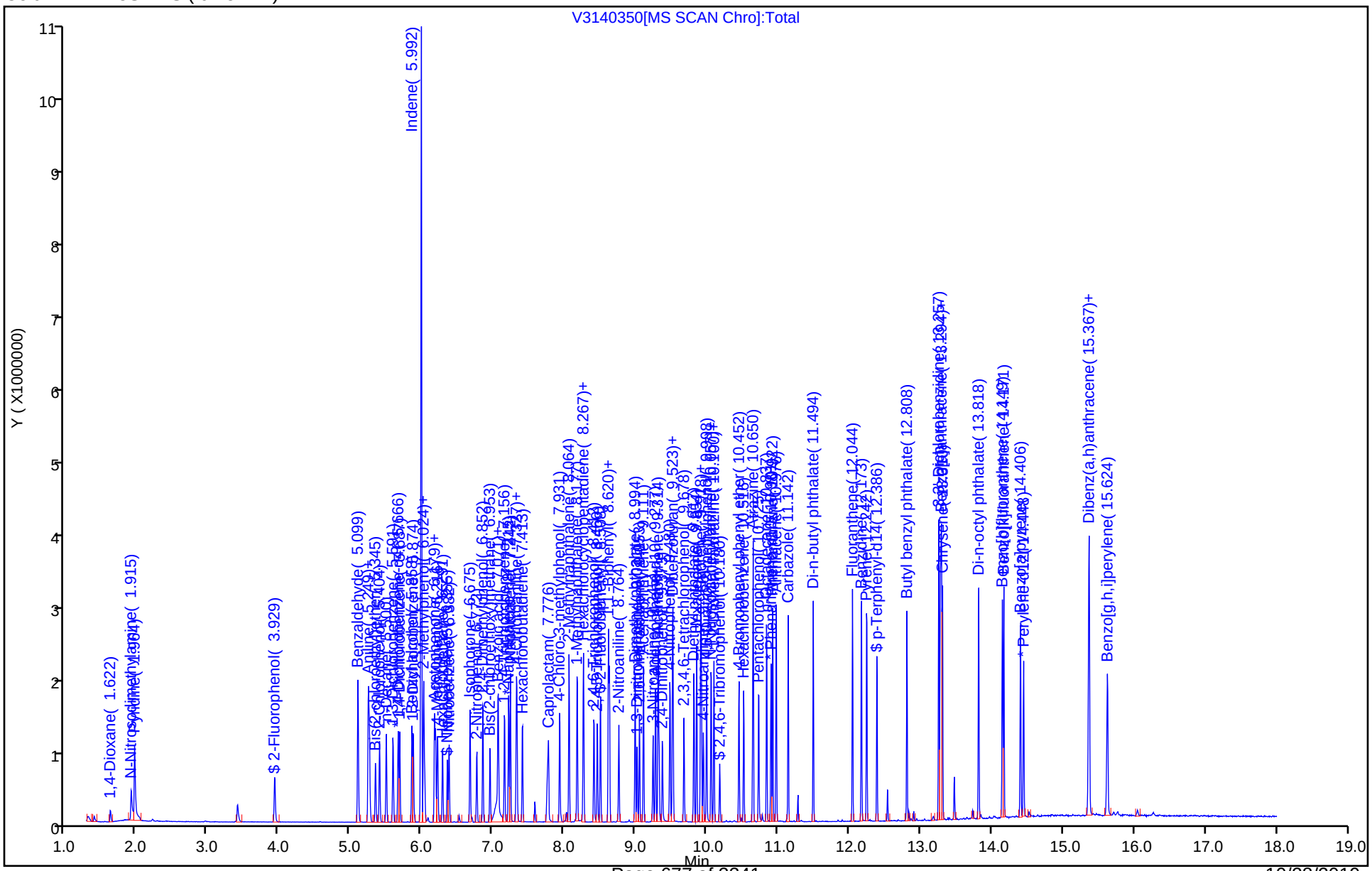
Report Date: 28-Sep-2019 11:26:42 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP5973V\20190926-84505.b\V3140350.D

Injection Date:	26-Sep-2019 17:17:30	Instrument ID:	HP5973V	Operator ID:	PJQ
Lims ID:	LCS 480-494075/2-A			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	V-8270	Limit Group:	MB - 8270D ICAL		

Column: RXI-5Sil MS (0.25 mm)



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973V Start Date: 08/21/2019 16:49

Analysis Batch Number: 488167 End Date: 08/21/2019 20:35

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-488167/1		08/21/2019 16:49	1	V3139712.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/2		08/21/2019 17:15	1	V3139713.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/3		08/21/2019 17:40	1	V3139714.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/4		08/21/2019 18:05	1	V3139715.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/5		08/21/2019 18:30	1	V3139716.D	RXI-5Sil MS 0.25(mm)
ICIS 480-488167/6		08/21/2019 18:55	1	V3139717.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/7		08/21/2019 19:20	1	V3139718.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/8		08/21/2019 19:45	1	V3139719.D	RXI-5Sil MS 0.25(mm)
IC 480-488167/9		08/21/2019 20:10	1	V3139720.D	RXI-5Sil MS 0.25(mm)
ICV 480-488167/10		08/21/2019 20:35	1		RXI-5Sil MS 0.25(mm)

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5973V Start Date: 09/26/2019 15:36

Analysis Batch Number: 494348 End Date: 09/27/2019 01:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-494348/2		09/26/2019 15:36	1	V3140346.D	RXI-5Sil MS 0.25(mm)
CCVIS 480-494348/3		09/26/2019 16:02	1	V3140347.D	RXI-5Sil MS 0.25(mm)
RL 480-494348/4		09/26/2019 16:27	1		RXI-5Sil MS 0.25(mm)
MB 480-494075/1-A		09/26/2019 16:52	1	V3140349.D	RXI-5Sil MS 0.25(mm)
LCS 480-494075/2-A		09/26/2019 17:17	1	V3140350.D	RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 17:42	20		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 18:07	20		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 18:33	20		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 18:59	20		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 19:25	1		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/26/2019 19:50	1		RXI-5Sil MS 0.25(mm)
480-159547-7		09/26/2019 20:15	1	V3140357.D	RXI-5Sil MS 0.25(mm)
480-159547-8		09/26/2019 20:40	1	V3140358.D	RXI-5Sil MS 0.25(mm)
480-159547-18		09/26/2019 21:05	1	V3140359.D	RXI-5Sil MS 0.25(mm)
480-159547-19		09/26/2019 21:30	1	V3140360.D	RXI-5Sil MS 0.25(mm)
480-159547-20		09/26/2019 21:56	1	V3140361.D	RXI-5Sil MS 0.25(mm)
480-159547-30		09/26/2019 22:21	1	V3140362.D	RXI-5Sil MS 0.25(mm)
480-159547-31		09/26/2019 22:47	1	V3140363.D	RXI-5Sil MS 0.25(mm)
480-159547-32		09/26/2019 23:13	1	V3140364.D	RXI-5Sil MS 0.25(mm)
480-159547-39		09/26/2019 23:38	1	V3140365.D	RXI-5Sil MS 0.25(mm)
480-159547-40		09/27/2019 00:03	1	V3140366.D	RXI-5Sil MS 0.25(mm)
ZZZZZ		09/27/2019 00:28	1		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/27/2019 00:53	1		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/27/2019 01:18	1		RXI-5Sil MS 0.25(mm)
ZZZZZ		09/27/2019 01:43	1		RXI-5Sil MS 0.25(mm)

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 494075 Batch Start Date: 09/25/19 14:37 Batch Analyst: Duda, Silka G

Batch Method: 3550C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	O_8270/625LCS 00154	O_8270surr 00085	
MB 480-494075/1		3550C, 8270D		30.10 g	1 mL	CALC NOT SET TO RUN		1 mL	
LCS 480-494075/2		3550C, 8270D		30.03 g	1 mL	CALC NOT SET TO RUN	1 mL	1 mL	
480-159547-E-7	RUSSO-TS-COMP 1	3550C, 8270D	T	30.10 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-E-8	RUSSO-TS-COMP 2	3550C, 8270D	T	30.43 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-E-18	RUSSO-CF-COMP 1	3550C, 8270D	T	30.34 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-E-19	RUSSO-CF-COMP 2	3550C, 8270D	T	30.28 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-F-20	RUSSO-CF-COMP 3	3550C, 8270D	T	30.88 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-F-30	GERNATT-CF-COMP 1	3550C, 8270D	T	30.20 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-E-31	GERNATT-CF-COMP 2	3550C, 8270D	T	30.32 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-F-32	GERNATT-CF-COMP 3	3550C, 8270D	T	30.40 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-E-39	GERNATT-TS-COMP 1	3550C, 8270D	T	30.19 g	1 mL	CALC NOT SET TO RUN		1 mL	
480-159547-D-40	GERNATT-TS-COMP 2	3550C, 8270D	T	30.32 g	1 mL	CALC NOT SET TO RUN		1 mL	

Batch Notes	
Blank Matrix ID	5393118
Analyst ID - Concentration	SD
Analyst ID - Extraction	SD
Filter ID	16899048
Method/Fraction	3550C/8270D
Na2SO4 ID	5393118
Prep Solvent ID	5516541/5457715
Analyst ID - Spike Analyst	SD
Analyst ID - Spike Witness Analyst	SD
Sufficient Volume for Batch QC	Yes
Vial Lot Number	00270998

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 494075 Batch Start Date: 09/25/19 14:37 Batch Analyst: Duda, Silka G

Batch Method: 3550C Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method 8081B

Organochlorine Pesticides (GC) by Method 8081B

FORM II
PESTICIDES SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

Client Sample ID	Lab Sample ID	TCX1 #	TCX2 #	DCBP1 #	DCBP2 #
RUSSO-TS-COMP 1	480-159547-7	87	68	103	116
RUSSO-TS-COMP 2	480-159547-8	86	65	95	104
RUSSO-CF-COMP 1	480-159547-18	86	77	101	97
RUSSO-CF-COMP 2	480-159547-19	75	71	90	90
RUSSO-CF-COMP 3	480-159547-20	85	76	99	94
GERNATT-CF-COMP 1	480-159547-30	95	82	107	100
GERNATT-CF-COMP 2	480-159547-31	87	74	102	93
GERNATT-CF-COMP 3	480-159547-32	97	86	116	108
GERNATT-TS-COMP 1	480-159547-39	82	63	100	92
GERNATT-TS-COMP 2	480-159547-40	74	58	97	87
	MB 480-493908/1-A	63	49	79	74
	LCS 480-493908/2-A	74	57	93	85

	QC LIMITS
TCX = Tetrachloro-m-xylene	30-124
DCBP = DCB Decachlorobiphenyl	45-120

Column to be used to flag recovery values

FORM II 8081B

FORM III
PESTICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 5_25139.D

Lab ID: LCS 480-493908/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
4,4'-DDD	16.7	12.0	72	56-120	
4,4'-DDE	16.7	10.8	65	44-120	
4,4'-DDT	16.7	12.2	73	38-120	
Aldrin	16.7	8.65	52	38-120	
alpha-BHC	16.7	10.3	62	39-120	
cis-Chlordane	16.7	13.1	79	47-120	
beta-BHC	16.7	10.1	60	40-120	
delta-BHC	16.7	11.3	68	45-120	
Dieldrin	16.7	12.5	75	58-120	
Endosulfan I	16.7	11.1	67	49-120	
Endosulfan II	16.7	13.8	83	55-120	
Endosulfan sulfate	16.7	11.7	70	49-124	
Endrin	16.7	12.0	72	58-120	
gamma-BHC (Lindane)	16.7	9.62	58	50-120	
Heptachlor	16.7	10.6	64	50-120	

Column to be used to flag recovery and RPD values

FORM III 8081B

FORM IV
PESTICIDES METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: MB 480-493908/1-A

Matrix: Solid Date Extracted: 09/25/2019 07:36

Lab File ID:(1) 5_25138.D Lab File ID:(2) 5_25138.D

Date Analyzed:(1) 09/27/2019 10:55 Date Analyzed:(2) 09/27/2019 10:55

Instrument ID:(1) HP6890-5 Instrument ID:(2) HP6890-5

GC Column:(1) RTX-CLPI ID: 0.53(mm) GC Column:(2) RTX-CLPII ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 480-493908/2-A	09/27/2019 11:15	09/27/2019 11:15
RUSSO-TS-COMP 1	480-159547-7	09/27/2019 14:11	09/27/2019 14:11
RUSSO-TS-COMP 2	480-159547-8	09/27/2019 14:30	09/27/2019 14:30
RUSSO-CF-COMP 1	480-159547-18	09/27/2019 14:50	09/27/2019 14:50
RUSSO-CF-COMP 2	480-159547-19	09/27/2019 15:09	09/27/2019 15:09
RUSSO-CF-COMP 3	480-159547-20	09/27/2019 15:29	09/27/2019 15:29
GERNATT-CF-COMP 1	480-159547-30	09/27/2019 15:48	09/27/2019 15:48
GERNATT-CF-COMP 2	480-159547-31	09/27/2019 16:08	09/27/2019 16:08
GERNATT-CF-COMP 3	480-159547-32	09/27/2019 16:27	09/27/2019 16:27
GERNATT-TS-COMP 1	480-159547-39	09/27/2019 16:47	09/27/2019 16:47
GERNATT-TS-COMP 2	480-159547-40	09/27/2019 17:07	09/27/2019 17:07

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: STD3 480-492274/7 Date Analyzed: 09/16/2019 12:07

Instrument ID: HP6890-5 GC Column: RTX-CLPI ID: 0.53(mm)

Lab File ID (Standard): 5_24339.D Heated Purge: (Y/N) N

Calibration ID: 37650

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		15393881	1.84				
UPPER LIMIT		30787762	2.34				
LOWER LIMIT		7696941	1.34				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494474/10		15479846	1.82				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: STD3 480-492274/7 Date Analyzed: 09/16/2019 12:07

Instrument ID: HP6890-5 GC Column: RTX-CLPII ID: 0.53(mm)

Lab File ID (Standard): 5_24339.D Heated Purge: (Y/N) N

Calibration ID: 37651

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		16072130	2.06				
UPPER LIMIT		32144260	2.56				
LOWER LIMIT		8036065	1.56				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494474/10		16143446	2.04				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494474/10 Date Analyzed: 09/27/2019 10:16

Instrument ID: HP6890-5 GC Column: RTX-CLPI ID: 0.53(mm)

Lab File ID (Standard): 5_25136.D Heated Purge: (Y/N) N

Calibration ID: 37650

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		15479846	1.82				
UPPER LIMIT		30959692	2.32				
LOWER LIMIT		7739923	1.32				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-493908/1-A		13681409	1.83				
LCS 480-493908/2-A		13333261	1.83				
480-159547-7	RUSSO-TS-COMP 1	10881649	1.83				
480-159547-8	RUSSO-TS-COMP 2	12696628	1.83				
480-159547-18	RUSSO-CF-COMP 1	14112300	1.83				
480-159547-19	RUSSO-CF-COMP 2	13962911	1.83				
480-159547-20	RUSSO-CF-COMP 3	14037634	1.82				
480-159547-30	GERNATT-CF-COMP 1	13166854	1.83				
480-159547-31	GERNATT-CF-COMP 2	13456713	1.83				
480-159547-32	GERNATT-CF-COMP 3	12067015	1.83				
480-159547-39	GERNATT-TS-COMP 1	12816814	1.83				
480-159547-40	GERNATT-TS-COMP 2	12367727	1.83				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM VIII
PESTICIDES INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494474/10 Date Analyzed: 09/27/2019 10:16

Instrument ID: HP6890-5 GC Column: RTX-CLPII ID: 0.53(mm)

Lab File ID (Standard): 5_25136.D Heated Purge: (Y/N) N

Calibration ID: 37651

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		16143446	2.04				
UPPER LIMIT		32286892	2.54				
LOWER LIMIT		8071723	1.54				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-493908/1-A		15246034	2.04				
LCS 480-493908/2-A		14773320	2.04				
480-159547-7	RUSSO-TS-COMP 1	12133490	2.04				
480-159547-8	RUSSO-TS-COMP 2	13986743	2.04				
480-159547-18	RUSSO-CF-COMP 1	14782210	2.04				
480-159547-19	RUSSO-CF-COMP 2	14299401	2.04				
480-159547-20	RUSSO-CF-COMP 3	14562287	2.04				
480-159547-30	GERNATT-CF-COMP 1	13629936	2.04				
480-159547-31	GERNATT-CF-COMP 2	13983475	2.04				
480-159547-32	GERNATT-CF-COMP 3	12445450	2.05				
480-159547-39	GERNATT-TS-COMP 1	14072971	2.04				
480-159547-40	GERNATT-TS-COMP 2	13670695	2.04				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8081B

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 14:11 Date Analyzed (2): 09/27/2019 14:11

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	0.90		5.1
	2		3.24	3.21	3.27	0.95		
gamma-BHC (Lindane)	1		2.96	2.94	3.00	0.54		10.9
	2		3.55	3.54	3.60	0.60		
beta-BHC	1		3.06	3.01	3.07	0.76		32.9
	2		3.64	3.61	3.67	0.55		
delta-BHC	1		3.17	3.15	3.21	0.52		14.9
	2		3.91	3.90	3.96	0.61		
4,4'-DDE	1		4.55	4.52	4.58	10		20.1
	2		5.48	5.45	5.51	12		
4,4'-DDD	1		5.16	5.13	5.19	0.81		8.5
	2		6.08	6.05	6.11	0.75		
4,4'-DDT	1		5.44	5.41	5.47	3.6		10.1
	2		6.41	6.38	6.44	4.0		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 14:30 Date Analyzed (2): 09/27/2019 14:30

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	1.7		8.0
	2		3.24	3.21	3.27	1.9		
gamma-BHC (Lindane)	1		2.97	2.94	3.00	0.49		38.1
	2		3.56	3.54	3.60	0.72		
delta-BHC	1		3.18	3.15	3.21	0.57		12.5
	2		3.91	3.90	3.96	0.65		
4,4'-DDE	1		4.56	4.52	4.58	6.3		24.6
	2		5.48	5.45	5.51	8.0		
4,4'-DDD	1		5.16	5.13	5.19	0.89		5.6
	2		6.08	6.05	6.11	0.84		
4,4'-DDT	1		5.45	5.41	5.47	2.8		36.1
	2		6.41	6.38	6.44	4.0		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 14:50 Date Analyzed (2): 09/27/2019 14:50

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	5.2		14.6
	2		3.24	3.21	3.27	6.0		
gamma-BHC (Lindane)	1		2.97	2.94	3.00	0.39		26.6
	2		3.57	3.54	3.60	0.51		
beta-BHC	1		3.04	3.01	3.07	1.3		11.1
	2		3.64	3.61	3.67	1.5		
4,4'-DDE	1		4.55	4.52	4.58	0.66		19.4
	2		5.48	5.45	5.51	0.80		
4,4'-DDD	1		5.16	5.13	5.19	0.62		24.8
	2		6.08	6.05	6.11	0.48		
4,4'-DDT	1		5.45	5.41	5.47	1.2		9.5
	2		6.41	6.38	6.44	1.1		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 15:09 Date Analyzed (2): 09/27/2019 15:09

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	0.56		20.7
	2		3.24	3.21	3.27	0.69		
4,4'-DDE	1		4.55	4.52	4.58	0.59		28.9
	2		5.48	5.45	5.51	0.79		
4,4'-DDD	1		5.16	5.13	5.19	0.61		24.0
	2		6.08	6.05	6.11	0.48		
4,4'-DDT	1		5.45	5.41	5.47	1.1		12.5
	2		6.41	6.38	6.44	0.98		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 15:29 Date Analyzed (2): 09/27/2019 15:29

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	0.88		12.8
	2		3.24	3.21	3.27	0.99		
4,4'-DDE	1		4.55	4.52	4.58	0.57		32.8
	2		5.48	5.45	5.51	0.80		
4,4'-DDD	1		5.16	5.13	5.19	0.63		27.8
	2		6.08	6.05	6.11	0.48		
4,4'-DDT	1		5.44	5.41	5.47	1.1		8.9
	2		6.41	6.38	6.44	1.2		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 15:48 Date Analyzed (2): 09/27/2019 15:48

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	1.9		11.9
	2		3.24	3.21	3.27	2.1		
4,4'-DDT	1		5.45	5.41	5.47	0.85		8.6
	2		6.43	6.38	6.44	0.78		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 16:08 Date Analyzed (2): 09/27/2019 16:08

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	0.42		22.9
	2		3.24	3.21	3.27	0.53		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 16:47 Date Analyzed (2): 09/27/2019 16:47

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Heptachlor	1		3.36	3.33	3.39	0.99		6.0
	2		4.02	3.99	4.05	1.1		
4,4'-DDE	1		4.55	4.52	4.58	11		11.4
	2		5.48	5.45	5.51	13		
Dieldrin	1		4.85	4.81	4.87	30		9.6
	2		5.66	5.63	5.69	27		
Endrin	1		5.08	5.05	5.11	2.1		12.2
	2		5.97	5.94	6.00	1.9		
4,4'-DDD	1		5.16	5.13	5.19	5.7		32.0
	2		6.08	6.05	6.11	7.8		
Endosulfan II	1		5.29	5.27	5.33	0.91		9.3
	2		6.19	6.16	6.22	1.0		
4,4'-DDT	1		5.45	5.41	5.47	5.2		3.8
	2		6.41	6.38	6.44	5.4		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 17:07 Date Analyzed (2): 09/27/2019 17:07

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
gamma-BHC (Lindane)	1		2.94	2.94	3.00	0.63		29.8
	2		3.55	3.54	3.60	0.46		
delta-BHC	1		3.18	3.15	3.21	0.47		21.9
	2		3.91	3.90	3.96	0.58		
Heptachlor	1		3.37	3.33	3.39	0.89		6.2
	2		4.02	3.99	4.05	0.94		
4,4'-DDE	1		4.56	4.52	4.58	10		12.3
	2		5.48	5.45	5.51	11		
Dieldrin	1		4.85	4.81	4.87	27		9.5
	2		5.66	5.63	5.69	24		
Endrin	1		5.08	5.05	5.11	1.7		4.0
	2		5.98	5.94	6.00	1.7		
4,4'-DDD	1		5.16	5.13	5.19	5.2		31.4
	2		6.08	6.05	6.11	7.1		
Endosulfan II	1		5.29	5.27	5.33	0.85		2.6
	2		6.20	6.16	6.22	0.83		
4,4'-DDT	1		5.45	5.41	5.47	4.3		8.0
	2		6.41	6.38	6.44	4.7		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493908/1-A

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 10:55 Date Analyzed (2): 09/27/2019 10:55

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	0.340		37.4
	2		3.24	3.21	3.27	0.496		
delta-BHC	1		3.17	3.15	3.21	0.435		12.9
	2		3.91	3.90	3.96	0.495		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493908/2-A

Instrument ID (1): HP6890-5 Instrument ID (2): HP6890-5

Date Analyzed (1): 09/27/2019 11:15 Date Analyzed (2): 09/27/2019 11:15

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
alpha-BHC	1		2.73	2.69	2.75	10.3		6.4
	2		3.24	3.21	3.27	11.0		
gamma-BHC (Lindane)	1		2.97	2.94	3.00	9.62		10.3
	2		3.57	3.54	3.60	10.7		
beta-BHC	1		3.04	3.01	3.07	10.1		12.2
	2		3.64	3.61	3.67	11.4		
delta-BHC	1		3.18	3.15	3.21	11.3		3.2
	2		3.93	3.90	3.96	11.0		
Heptachlor	1		3.36	3.33	3.39	10.6		8.7
	2		4.02	3.99	4.05	11.6		
Aldrin	1		3.63	3.60	3.66	8.65		11.6
	2		4.36	4.33	4.39	9.72		
cis-Chlordane	1		4.47	4.43	4.49	13.1		5.7
	2		5.31	5.28	5.34	12.4		
4,4'-DDE	1		4.55	4.52	4.58	10.8		11.2
	2		5.48	5.45	5.51	12.1		
Endosulfan I	1		4.60	4.57	4.63	11.1		8.0
	2		5.37	5.34	5.40	12.1		
Dieldrin	1		4.84	4.81	4.87	12.5		0.5
	2		5.66	5.63	5.69	12.6		
Endrin	1		5.08	5.05	5.11	12.0		0.5
	2		5.98	5.94	6.00	12.1		
4,4'-DDD	1		5.16	5.13	5.19	12.0		8.3
	2		6.08	6.05	6.11	13.1		
Endosulfan II	1		5.30	5.27	5.33	13.8		5.2
	2		6.19	6.16	6.22	13.1		
4,4'-DDT	1		5.44	5.41	5.47	12.2		2.8
	2		6.41	6.38	6.44	11.9		
Endosulfan sulfate	1		6.18	6.14	6.20	11.7		1.1
	2		6.82	6.79	6.85	11.8		

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 5_25148.D

Analysis Method: 8081B Date Collected: 09/16/2019 09:35

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.08(g) Date Analyzed: 09/27/2019 14:11

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	0.81	J	2.1	0.41
72-55-9	4,4'-DDE	10		2.1	0.44
50-29-3	4,4'-DDT	3.6		2.1	0.50
309-00-2	Aldrin	ND		2.1	0.52
319-84-6	alpha-BHC	0.90	J B	2.1	0.38
5103-71-9	cis-Chlordane	ND		2.1	1.1
319-85-7	beta-BHC	0.76	J	2.1	0.38
319-86-8	delta-BHC	0.52	J B	2.1	0.39
60-57-1	Dieldrin	ND		2.1	0.51
959-98-8	Endosulfan I	ND		2.1	0.41
33213-65-9	Endosulfan II	ND		2.1	0.38
1031-07-8	Endosulfan sulfate	ND		2.1	0.40
72-20-8	Endrin	ND		2.1	0.42
58-89-9	gamma-BHC (Lindane)	0.54	J	2.1	0.39
76-44-8	Heptachlor	ND		2.1	0.46

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	103		45-120
877-09-8	Tetrachloro-m-xylene	87		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25148.D
Lims ID: 480-159547-D-7-A
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 14:11:05 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:32:43 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 14:33:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	10881649	0.5000	
2	2.043	2.043	0.000	12133490	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.323	2.323	0.000	316541	0.0174	
2	2.720	2.720	0.000	340411	0.0135	
					RPD = 24.93	
$ 3 DCB Decachlorobiphenyl						
1	7.463	7.463	0.000	377722	0.0206	
2	8.583	8.583	0.000	366058	0.0231	
					RPD = 11.54	
6 alpha-BHC						
1	2.727	2.723	0.004	68099	0.002135	
2	3.237	3.237	0.000	53839	0.002246	
					RPD = 5.07	
7 gamma-BHC (Lindane)						
1	2.963	2.970	-0.007	29065	0.001265	
2	3.553	3.567	-0.014	15477	0.001410	
					RPD = 10.87	
8 beta-BHC						
1	3.060	3.037	0.023	22099	0.001806	
2	3.637	3.637	0.000	10890	0.001295	
					RPD = 32.93	
9 delta-BHC						
1	3.173	3.183	-0.010	27800	0.001232	
2	3.907	3.933	-0.026	12819	0.001430	
					RPD = 14.92	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
18 4,4'-DDE						
1	4.550	4.550	0.000	788146	0.0235	
2	5.480	5.480	0.000	774088	0.0288	
					RPD = 20.12	
24 4,4'-DDD						
1	5.160	5.160	0.000	7940	0.001922	
2	6.080	6.080	0.000	11898	0.001766	
					RPD = 8.45	
28 4,4'-DDT						
1	5.443	5.443	0.000	174757	0.008614	
2	6.407	6.407	0.000	166294	0.009535	
					RPD = 10.15	

Reagents:

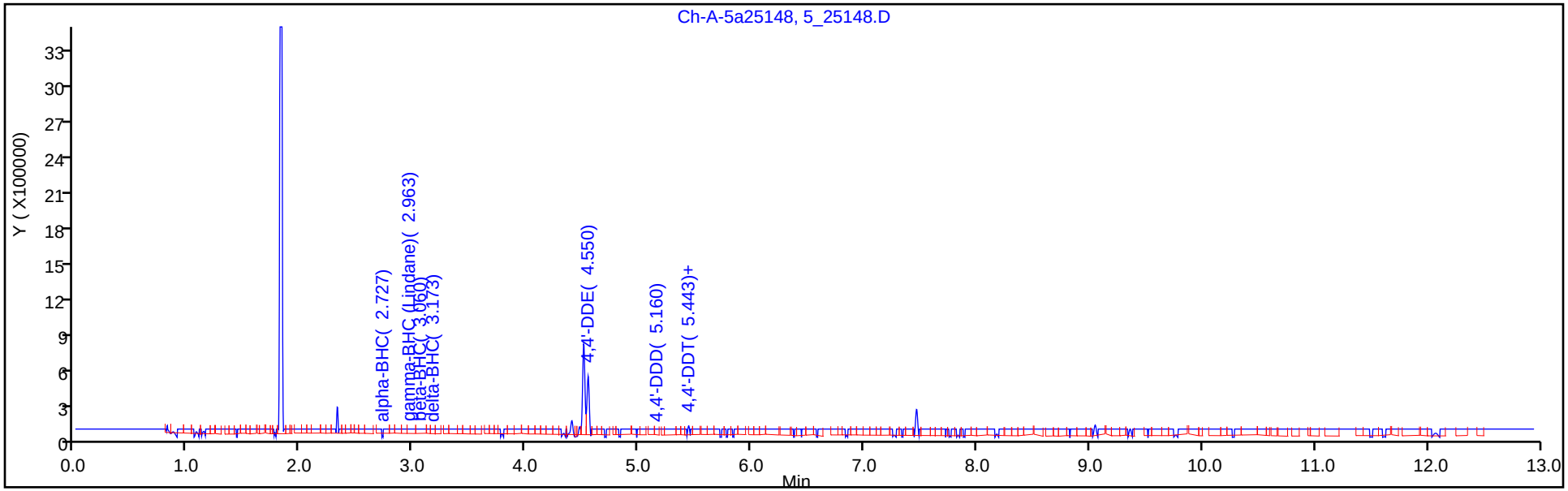
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 14:33:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

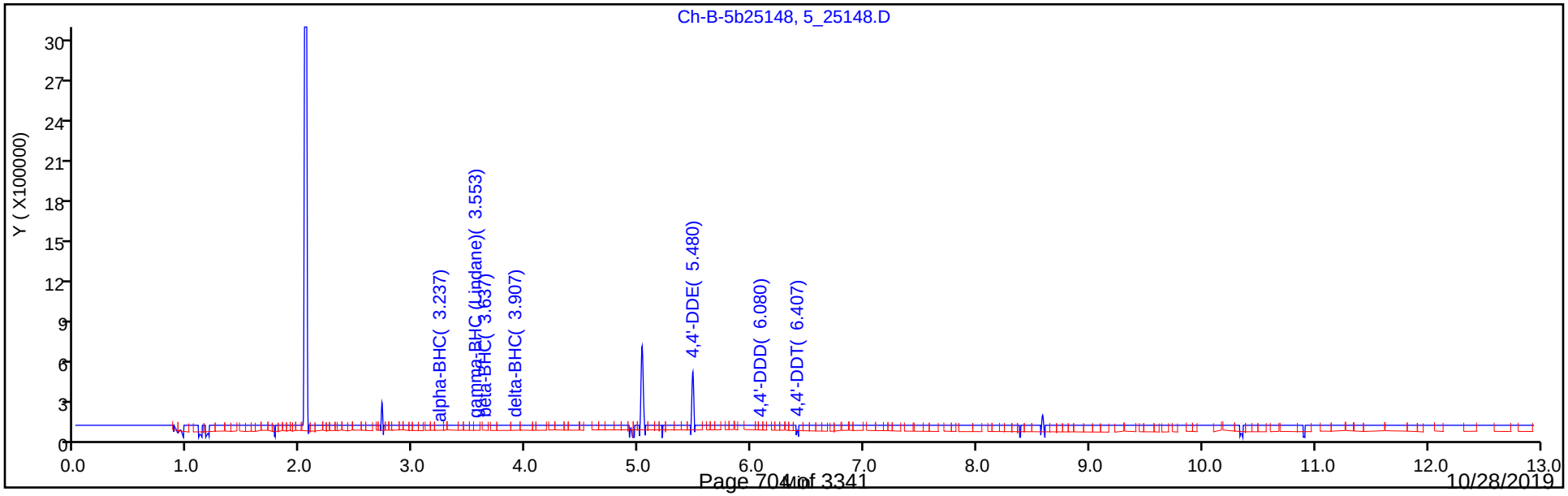
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25148.D				
Injection Date:	27-Sep-2019 14:11:05	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-7-A	Lab Sample ID:	480-159547-7	Worklist Smp#:	21
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 5_25148.D

Analysis Method: 8081B Date Collected: 09/16/2019 09:35

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.08(g) Date Analyzed: 09/27/2019 14:11

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	116		45-120
877-09-8	Tetrachloro-m-xylene	68		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25148.D
Lims ID: 480-159547-D-7-A
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 14:11:05 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:32:43 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 14:33:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	10881649	0.5000	
2	2.043	2.043	0.000	12133490	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.323	2.323	0.000	316541	0.0174	
2	2.720	2.720	0.000	340411	0.0135	
					RPD = 24.93	
$ 3 DCB Decachlorobiphenyl						
1	7.463	7.463	0.000	377722	0.0206	
2	8.583	8.583	0.000	366058	0.0231	
					RPD = 11.54	
6 alpha-BHC						
1	2.727	2.723	0.004	68099	0.002135	
2	3.237	3.237	0.000	53839	0.002246	
					RPD = 5.07	
7 gamma-BHC (Lindane)						
1	2.963	2.970	-0.007	29065	0.001265	
2	3.553	3.567	-0.014	15477	0.001410	
					RPD = 10.87	
8 beta-BHC						
1	3.060	3.037	0.023	22099	0.001806	
2	3.637	3.637	0.000	10890	0.001295	
					RPD = 32.93	
9 delta-BHC						
1	3.173	3.183	-0.010	27800	0.001232	
2	3.907	3.933	-0.026	12819	0.001430	
					RPD = 14.92	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
18 4,4'-DDE						
1	4.550	4.550	0.000	788146	0.0235	
2	5.480	5.480	0.000	774088	0.0288	
					RPD = 20.12	
24 4,4'-DDD						
1	5.160	5.160	0.000	7940	0.001922	
2	6.080	6.080	0.000	11898	0.001766	
					RPD = 8.45	
28 4,4'-DDT						
1	5.443	5.443	0.000	174757	0.008614	
2	6.407	6.407	0.000	166294	0.009535	
					RPD = 10.15	

Reagents:

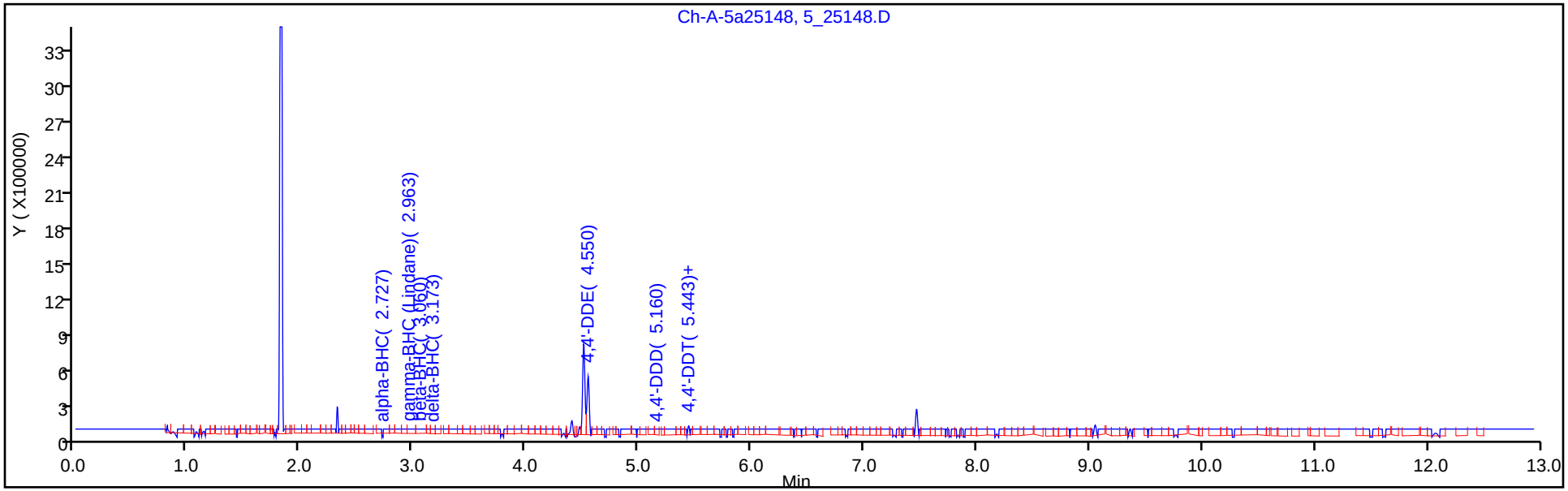
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 14:33:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

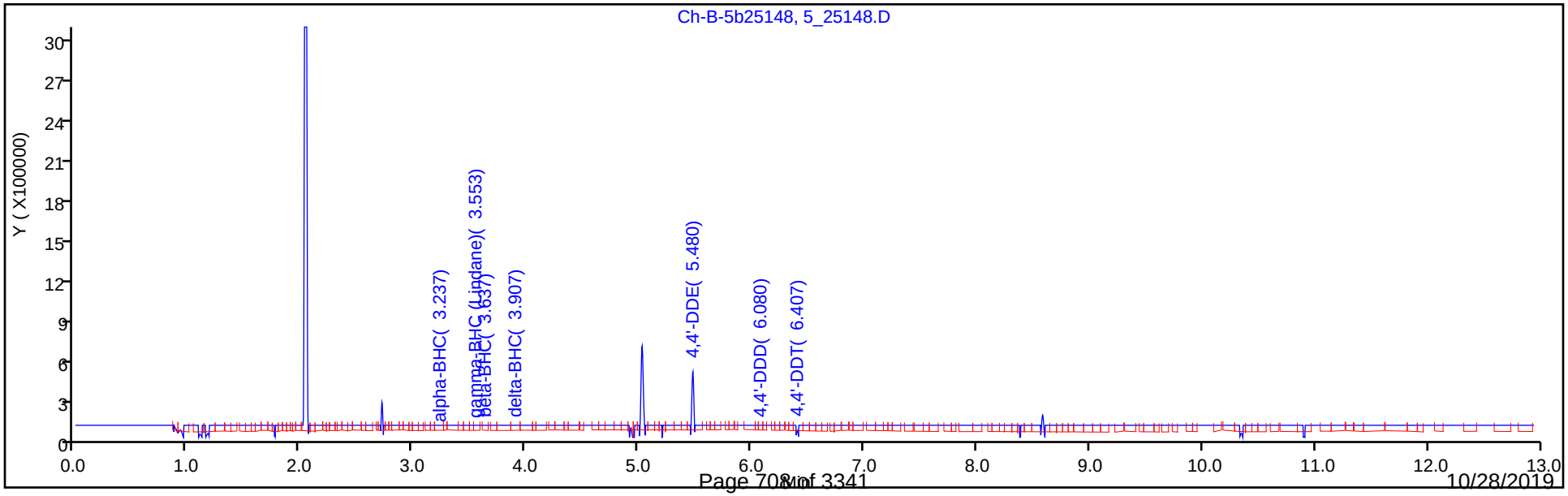
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25148.D				
Injection Date:	27-Sep-2019 14:11:05	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-7-A	Lab Sample ID:	480-159547-7	Worklist Smp#:	21
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 5_25149.D

Analysis Method: 8081B Date Collected: 09/16/2019 09:40

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.14(g) Date Analyzed: 09/27/2019 14:30

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	0.89	J	2.3	0.45
72-55-9	4,4'-DDE	6.3		2.3	0.48
50-29-3	4,4'-DDT	2.8		2.3	0.54
309-00-2	Aldrin	ND		2.3	0.56
319-84-6	alpha-BHC	1.7	J B	2.3	0.41
5103-71-9	cis-Chlordane	ND		2.3	1.1
319-85-7	beta-BHC	ND		2.3	0.41
319-86-8	delta-BHC	0.57	J B	2.3	0.43
60-57-1	Dieldrin	ND		2.3	0.55
959-98-8	Endosulfan I	ND		2.3	0.44
33213-65-9	Endosulfan II	ND		2.3	0.41
1031-07-8	Endosulfan sulfate	ND		2.3	0.43
72-20-8	Endrin	ND		2.3	0.45
58-89-9	gamma-BHC (Lindane)	0.49	J	2.3	0.42
76-44-8	Heptachlor	ND		2.3	0.50

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	95		45-120
877-09-8	Tetrachloro-m-xylene	86		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25149.D
Lims ID: 480-159547-F-8-C
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 14:30:53 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:54:31 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 14:55:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12696628	0.5000	
2	2.043	2.043	0.000	13986743	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	363900	0.0171	
2	2.723	2.720	0.003	375782	0.0130	
					RPD = 27.55	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	401262	0.0189	
2	8.583	8.583	0.000	378382	0.0207	
					RPD = 9.18	
6 alpha-BHC						
1	2.730	2.723	0.007	161919	0.003770	
2	3.240	3.237	0.003	153978	0.004086	
					RPD = 8.05	
7 gamma-BHC (Lindane)						
1	2.970	2.970	0.000	25104	0.001073	
2	3.557	3.567	-0.010	25318	0.001578	
					RPD = 38.11	
9 delta-BHC						
1	3.177	3.183	-0.006	33159	0.001249	
2	3.910	3.933	-0.023	14097	0.001415	
					RPD = 12.50	
18 4,4'-DDE						
1	4.557	4.550	0.007	528217	0.0137	
2	5.480	5.480	0.000	528379	0.0175	
					RPD = 24.60	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
24 4,4'-DDD						
1	5.163	5.160	0.003	9712	0.001936	
2	6.083	6.080	0.003	15326	0.001830	
					RPD = 5.64	
28 4,4'-DDT						
1	5.447	5.443	0.004	118610	0.006017	
2	6.410	6.407	0.003	169515	0.008664	
					RPD = 36.06	

Reagents:

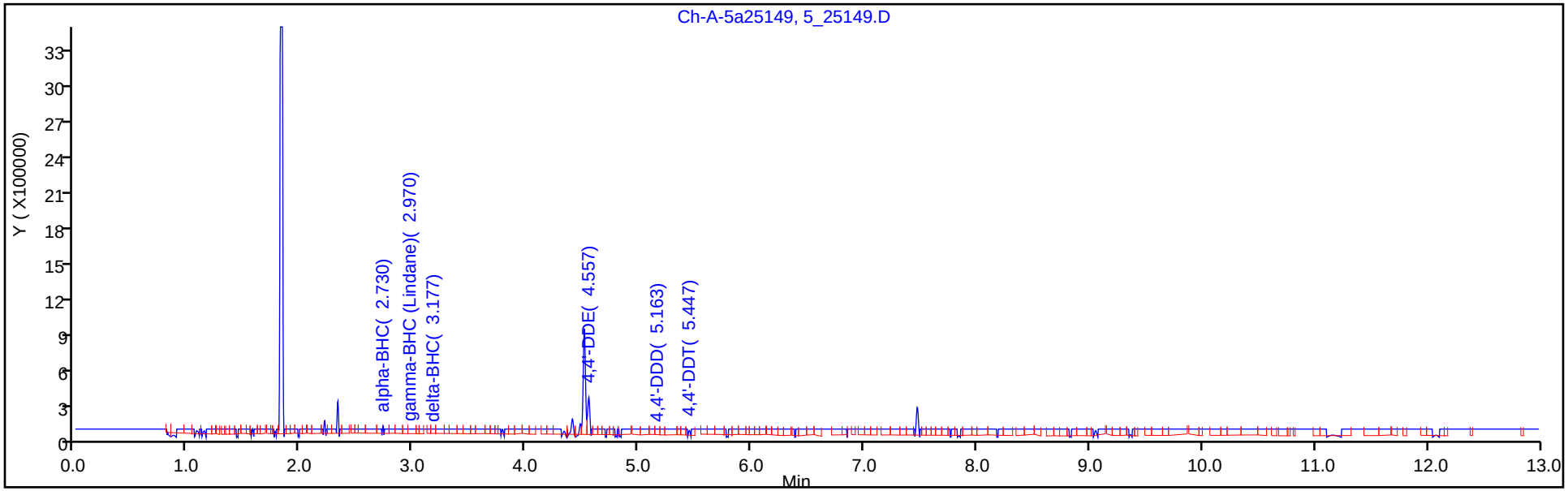
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 14:55:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

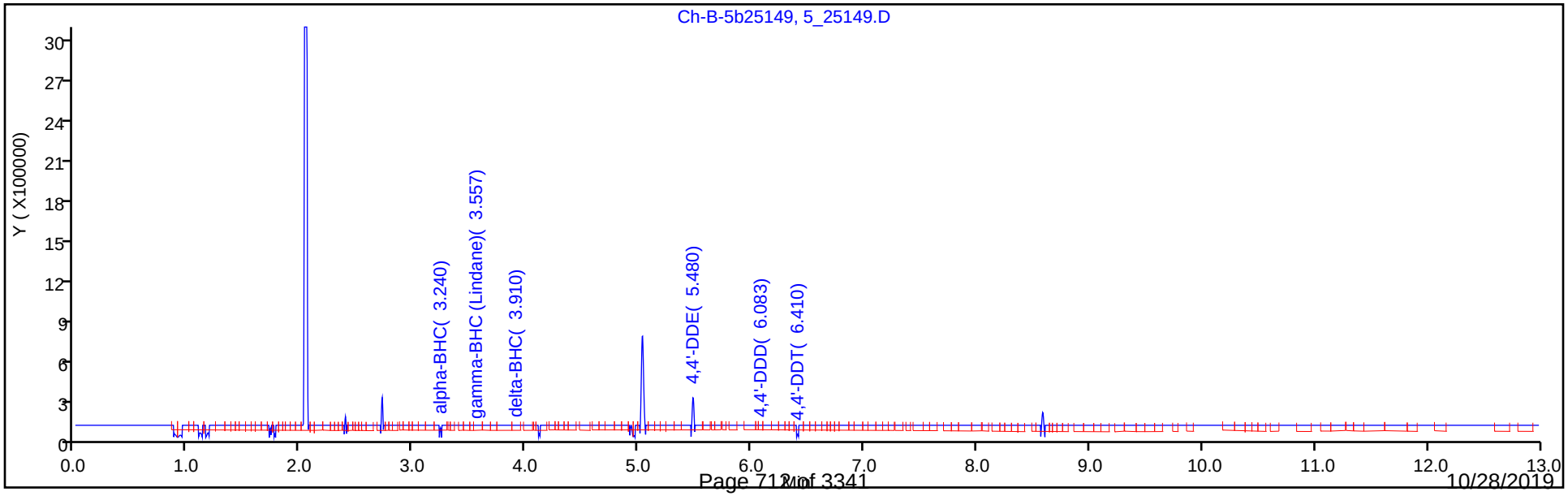
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25149.D				
Injection Date:	27-Sep-2019 14:30:53	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-8-C	Lab Sample ID:	480-159547-8	Worklist Smp#:	22
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 5_25149.D

Analysis Method: 8081B Date Collected: 09/16/2019 09:40

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.14(g) Date Analyzed: 09/27/2019 14:30

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	104		45-120
877-09-8	Tetrachloro-m-xylene	65		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25149.D
Lims ID: 480-159547-F-8-C
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 14:30:53 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:54:31 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 14:55:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12696628	0.5000	
2	2.043	2.043	0.000	13986743	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	363900	0.0171	
2	2.723	2.720	0.003	375782	0.0130	
					RPD = 27.55	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	401262	0.0189	
2	8.583	8.583	0.000	378382	0.0207	
					RPD = 9.18	
6 alpha-BHC						
1	2.730	2.723	0.007	161919	0.003770	
2	3.240	3.237	0.003	153978	0.004086	
					RPD = 8.05	
7 gamma-BHC (Lindane)						
1	2.970	2.970	0.000	25104	0.001073	
2	3.557	3.567	-0.010	25318	0.001578	
					RPD = 38.11	
9 delta-BHC						
1	3.177	3.183	-0.006	33159	0.001249	
2	3.910	3.933	-0.023	14097	0.001415	
					RPD = 12.50	
18 4,4'-DDE						
1	4.557	4.550	0.007	528217	0.0137	
2	5.480	5.480	0.000	528379	0.0175	
					RPD = 24.60	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
24 4,4'-DDD						
1	5.163	5.160	0.003	9712	0.001936	
2	6.083	6.080	0.003	15326	0.001830	
					RPD = 5.64	
28 4,4'-DDT						
1	5.447	5.443	0.004	118610	0.006017	
2	6.410	6.407	0.003	169515	0.008664	
					RPD = 36.06	

Reagents:

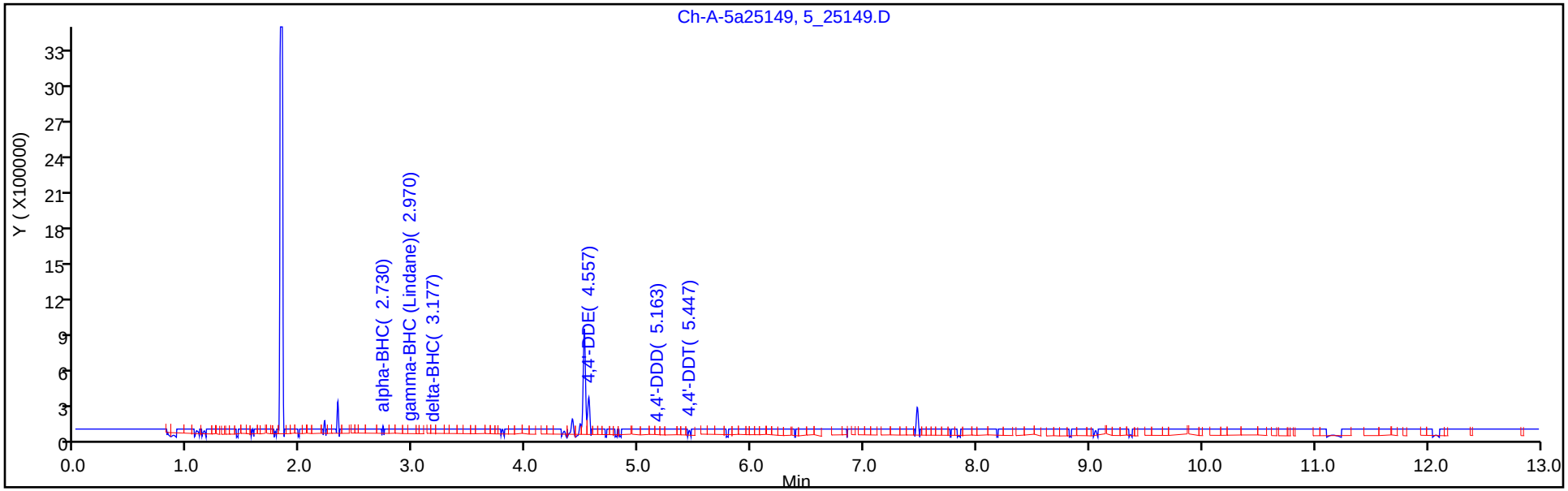
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 14:55:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

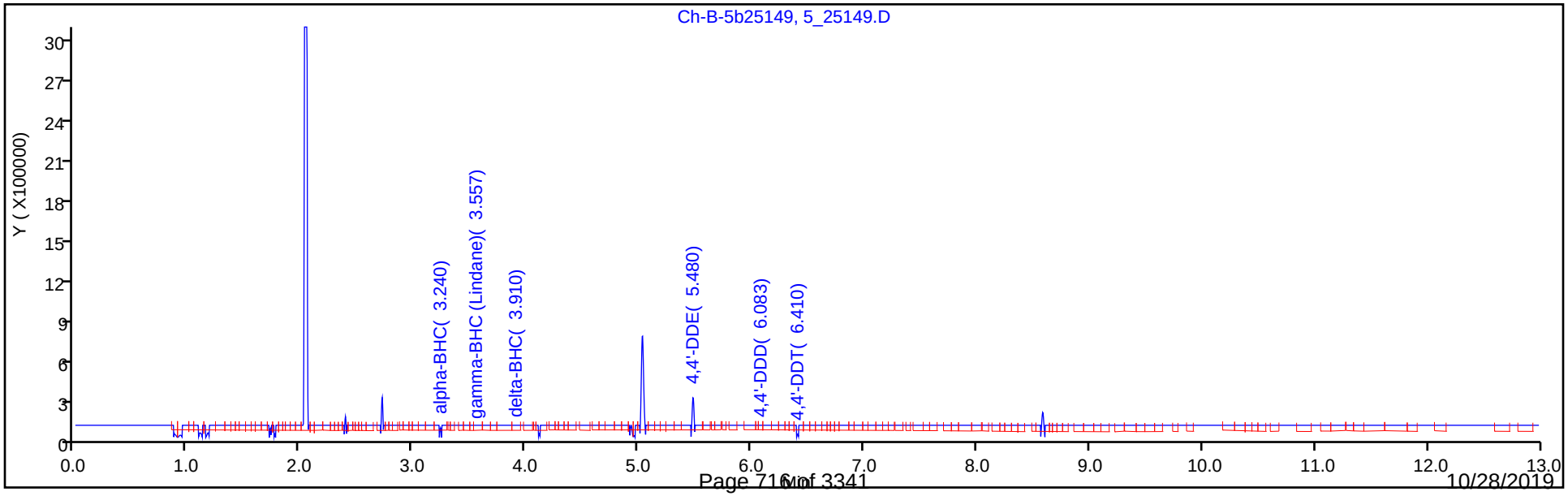
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25149.D				
Injection Date:	27-Sep-2019 14:30:53	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-8-C	Lab Sample ID:	480-159547-8	Worklist Smp#:	22
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 5_25150.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:50

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.02(g) Date Analyzed: 09/27/2019 14:50

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	0.62	J	1.9	0.36
72-55-9	4,4'-DDE	0.66	J	1.9	0.39
50-29-3	4,4'-DDT	1.2	J	1.9	0.44
309-00-2	Aldrin	ND		1.9	0.46
319-84-6	alpha-BHC	5.2	B	1.9	0.34
5103-71-9	cis-Chlordane	ND		1.9	0.93
319-85-7	beta-BHC	1.3	J	1.9	0.34
319-86-8	delta-BHC	ND		1.9	0.35
60-57-1	Dieldrin	ND		1.9	0.45
959-98-8	Endosulfan I	ND		1.9	0.36
33213-65-9	Endosulfan II	ND		1.9	0.34
1031-07-8	Endosulfan sulfate	ND		1.9	0.35
72-20-8	Endrin	ND		1.9	0.37
58-89-9	gamma-BHC (Lindane)	0.39	J	1.9	0.34
76-44-8	Heptachlor	ND		1.9	0.41

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	101		45-120
877-09-8	Tetrachloro-m-xylene	86		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25150.D
Lims ID: 480-159547-F-18-C
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 14:50:20 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 15:12:50 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 15:13:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	14112300	0.5000	
2	2.043	2.043	0.000	14782210	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	404991	0.0172	
2	2.720	2.720	0.000	474278	0.0154	
					RPD = 10.96	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	482032	0.0203	
2	8.583	8.583	0.000	375942	0.0195	
					RPD = 4.02	
6 alpha-BHC						
1	2.730	2.723	0.007	740657	0.0138	
2	3.240	3.237	0.003	788649	0.0159	
					RPD = 14.61	
7 gamma-BHC (Lindane)						
1	2.970	2.970	0.000	25833	0.001032	
2	3.567	3.567	0.000	15950	0.001348	
					RPD = 26.59	
8 beta-BHC						
1	3.043	3.037	0.006	62134	0.003471	
2	3.640	3.637	0.003	60622	0.003879	
					RPD = 11.12	
18 4,4'-DDE						
1	4.553	4.550	0.003	60609	0.001747	
2	5.480	5.480	0.000	33894	0.002121	
					RPD = 19.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
21 Dieldrin						
1	4.857	4.843	0.014	30591	0.001104	
2	5.660	5.660	0.000	6795	0.001012	
					RPD = 8.66	
24 4,4'-DDD						
1	5.163	5.160	0.003	775	0.001653	
2	6.080	6.080	0.000	1750	0.001288	
					RPD = 24.79	
28 4,4'-DDT						
1	5.447	5.443	0.004	24438	0.003074	
2	6.407	6.407	0.000	21346	0.002797	
					RPD = 9.45	

Reagents:

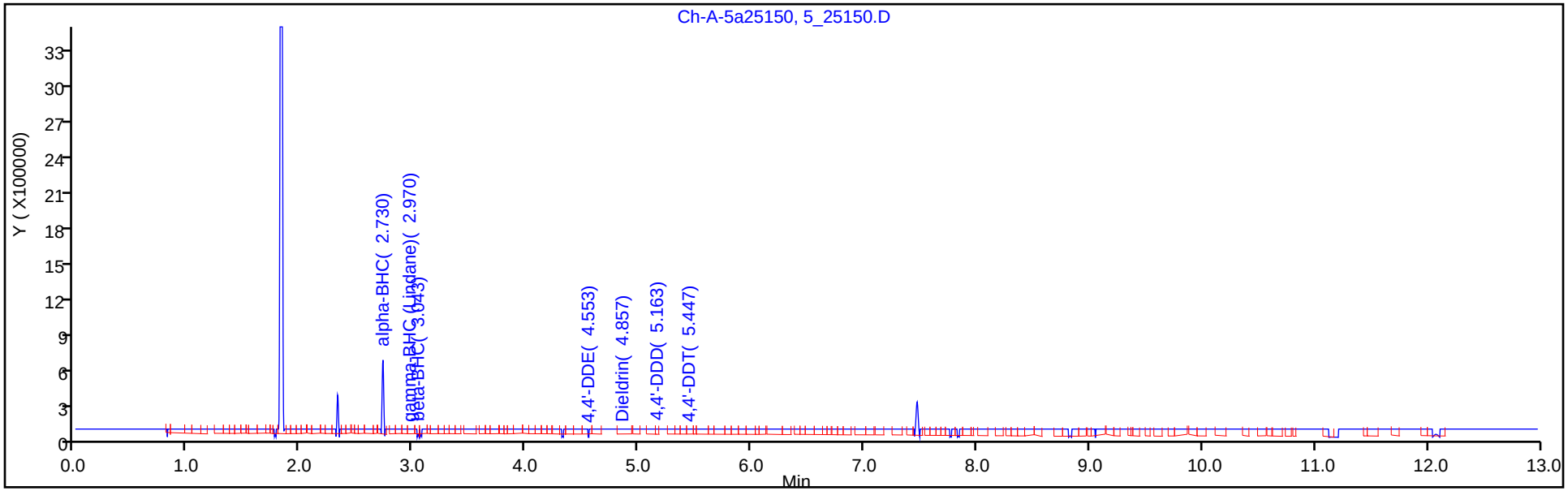
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 15:13:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

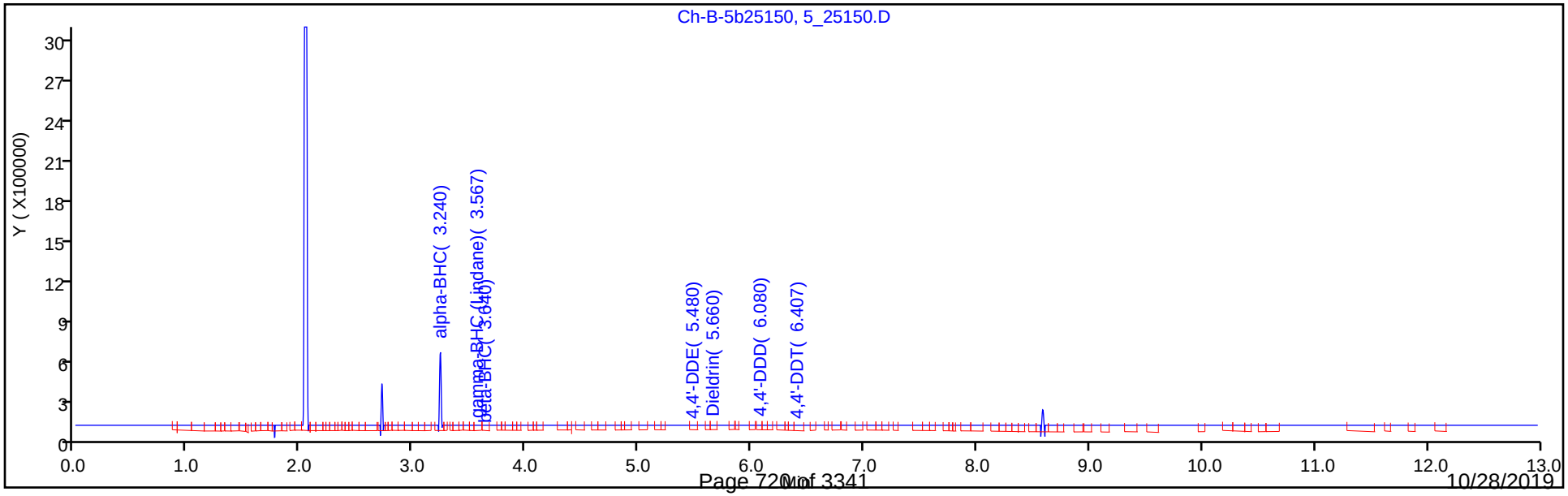
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25150.D				
Injection Date:	27-Sep-2019 14:50:20	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-18-C	Lab Sample ID:	480-159547-18	Worklist Smp#:	23
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 5_25150.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:50

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.02(g) Date Analyzed: 09/27/2019 14:50

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	97		45-120
877-09-8	Tetrachloro-m-xylene	77		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25150.D
Lims ID: 480-159547-F-18-C
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 14:50:20 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 15:12:50 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 15:13:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	14112300	0.5000	
2	2.043	2.043	0.000	14782210	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	404991	0.0172	
2	2.720	2.720	0.000	474278	0.0154	
					RPD = 10.96	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	482032	0.0203	
2	8.583	8.583	0.000	375942	0.0195	
					RPD = 4.02	
6 alpha-BHC						
1	2.730	2.723	0.007	740657	0.0138	
2	3.240	3.237	0.003	788649	0.0159	
					RPD = 14.61	
7 gamma-BHC (Lindane)						
1	2.970	2.970	0.000	25833	0.001032	
2	3.567	3.567	0.000	15950	0.001348	
					RPD = 26.59	
8 beta-BHC						
1	3.043	3.037	0.006	62134	0.003471	
2	3.640	3.637	0.003	60622	0.003879	
					RPD = 11.12	
18 4,4'-DDE						
1	4.553	4.550	0.003	60609	0.001747	
2	5.480	5.480	0.000	33894	0.002121	
					RPD = 19.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
21 Dieldrin						
1	4.857	4.843	0.014	30591	0.001104	
2	5.660	5.660	0.000	6795	0.001012	
					RPD = 8.66	
24 4,4'-DDD						
1	5.163	5.160	0.003	775	0.001653	
2	6.080	6.080	0.000	1750	0.001288	
					RPD = 24.79	
28 4,4'-DDT						
1	5.447	5.443	0.004	24438	0.003074	
2	6.407	6.407	0.000	21346	0.002797	
					RPD = 9.45	

Reagents:

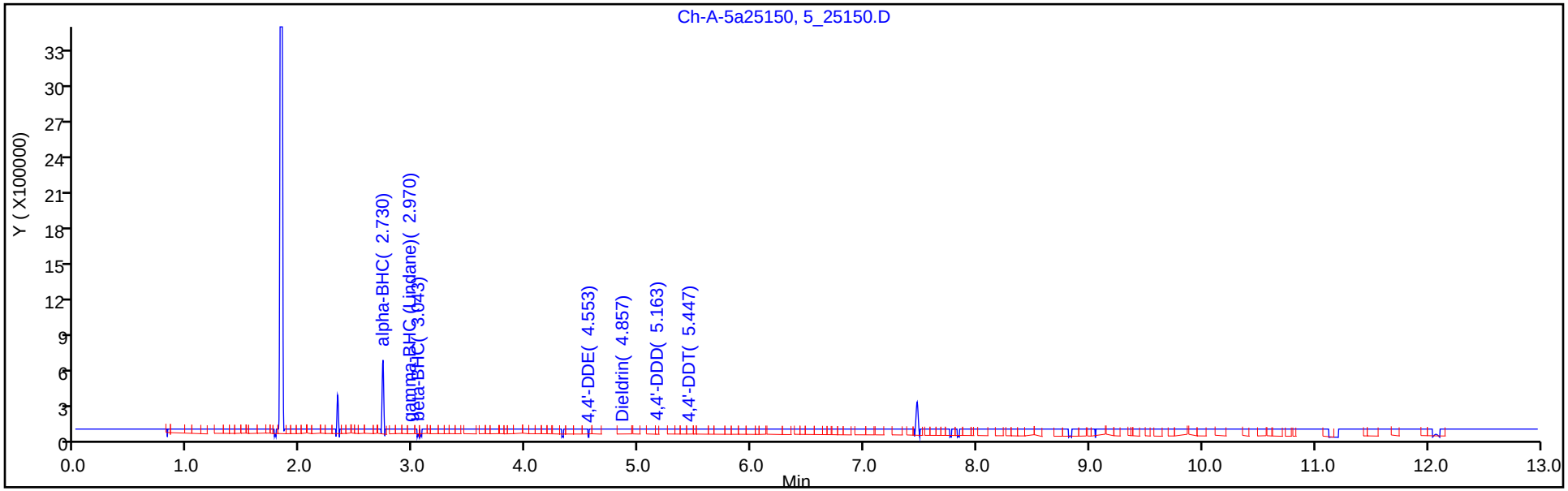
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 15:13:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

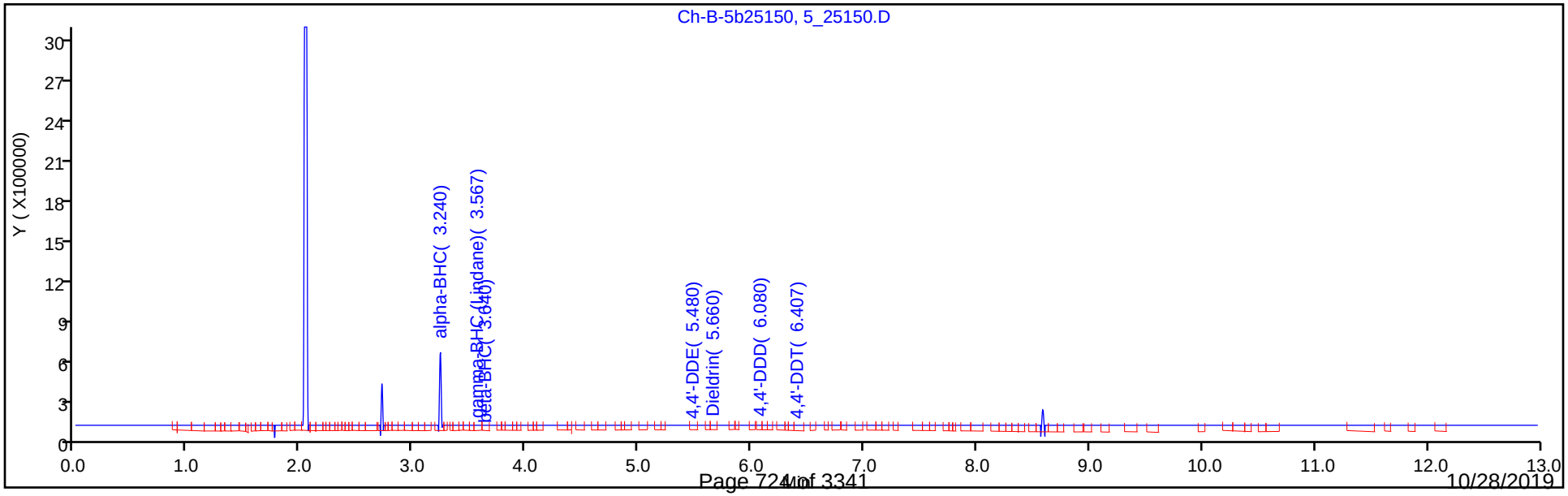
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25150.D				
Injection Date:	27-Sep-2019 14:50:20	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-18-C	Lab Sample ID:	480-159547-18	Worklist Smp#:	23
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 5_25151.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:52

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.17(g) Date Analyzed: 09/27/2019 15:09

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	0.61	J	1.8	0.36
72-55-9	4,4'-DDE	0.59	J	1.8	0.38
50-29-3	4,4'-DDT	1.1	J	1.8	0.43
309-00-2	Aldrin	ND		1.8	0.45
319-84-6	alpha-BHC	0.56	J B	1.8	0.33
5103-71-9	cis-Chlordane	ND		1.8	0.91
319-85-7	beta-BHC	ND		1.8	0.33
319-86-8	delta-BHC	ND		1.8	0.34
60-57-1	Dieldrin	ND		1.8	0.44
959-98-8	Endosulfan I	ND		1.8	0.35
33213-65-9	Endosulfan II	ND		1.8	0.33
1031-07-8	Endosulfan sulfate	ND		1.8	0.34
72-20-8	Endrin	ND		1.8	0.36
58-89-9	gamma-BHC (Lindane)	ND		1.8	0.34
76-44-8	Heptachlor	ND		1.8	0.40

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	90		45-120
877-09-8	Tetrachloro-m-xylene	75		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25151.D
Lims ID: 480-159547-F-19-C
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:09:46 ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:18:37

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13962911	0.5000	
2	2.043	2.043	0.000	14299401	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	347151	0.0149	
2	2.720	2.720	0.000	425179	0.0143	
					RPD = 4.32	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	418417	0.0180	
2	8.583	8.583	0.000	335980	0.0180	
					RPD = 0.09	
6 alpha-BHC						
1	2.727	2.723	0.004	54159	0.001536	
2	3.237	3.237	0.000	45342	0.001891	
					RPD = 20.74	
18 4,4'-DDE						
1	4.550	4.550	0.000	54062	0.001612	
2	5.480	5.480	0.000	33959	0.002157	
					RPD = 28.94	
21 Dieldrin						
1	4.853	4.843	0.010	29143	0.001074	
2	5.657	5.660	-0.003	8036	0.001056	
					RPD = 1.65	
24 4,4'-DDD						
1	5.163	5.160	0.003	1706	0.001679	
2	6.080	6.080	0.000	2511	0.001320	
					RPD = 23.98	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
28 4,4'-DDT						
1	5.447	5.443	0.004	22769	0.003035	
2	6.407	6.407	0.000	17547	0.002678	
					RPD = 12.52	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

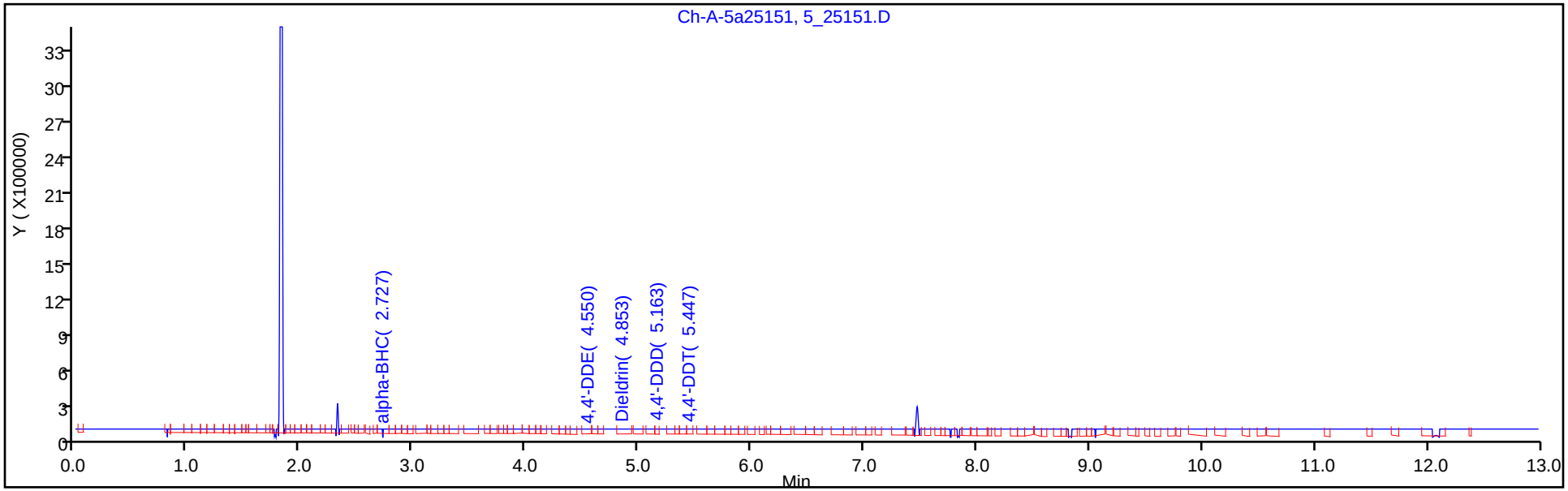
Report Date: 30-Sep-2019 06:36:20 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

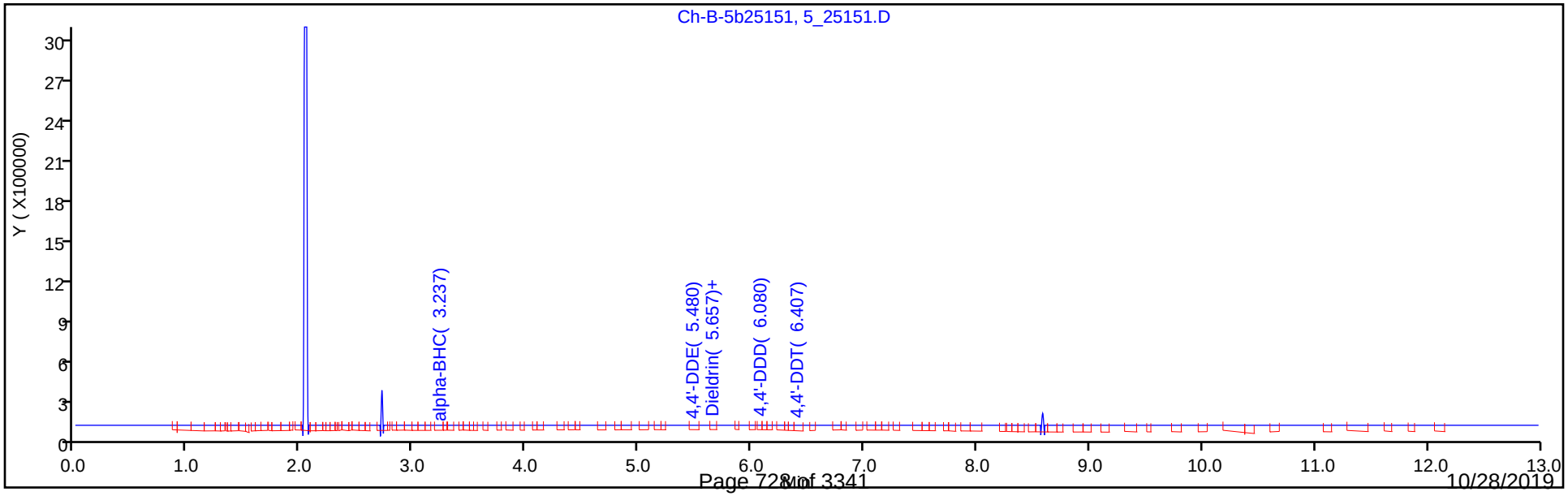
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25151.D

Injection Date:	27-Sep-2019 15:09:46	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-19-C	Lab Sample ID:	480-159547-19	Worklist Smp#:	24
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 5_25151.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:52

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.17(g) Date Analyzed: 09/27/2019 15:09

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	90		45-120
877-09-8	Tetrachloro-m-xylene	71		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25151.D
Lims ID: 480-159547-F-19-C
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:09:46 ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:18:37

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13962911	0.5000	
2	2.043	2.043	0.000	14299401	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	347151	0.0149	
2	2.720	2.720	0.000	425179	0.0143	
					RPD = 4.32	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	418417	0.0180	
2	8.583	8.583	0.000	335980	0.0180	
					RPD = 0.09	
6 alpha-BHC						
1	2.727	2.723	0.004	54159	0.001536	
2	3.237	3.237	0.000	45342	0.001891	
					RPD = 20.74	
18 4,4'-DDE						
1	4.550	4.550	0.000	54062	0.001612	
2	5.480	5.480	0.000	33959	0.002157	
					RPD = 28.94	
21 Dieldrin						
1	4.853	4.843	0.010	29143	0.001074	
2	5.657	5.660	-0.003	8036	0.001056	
					RPD = 1.65	
24 4,4'-DDD						
1	5.163	5.160	0.003	1706	0.001679	
2	6.080	6.080	0.000	2511	0.001320	
					RPD = 23.98	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
28	4,4'-DDT					
1	5.447	5.443	0.004	22769	0.003035	
2	6.407	6.407	0.000	17547	0.002678	
					RPD = 12.52	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

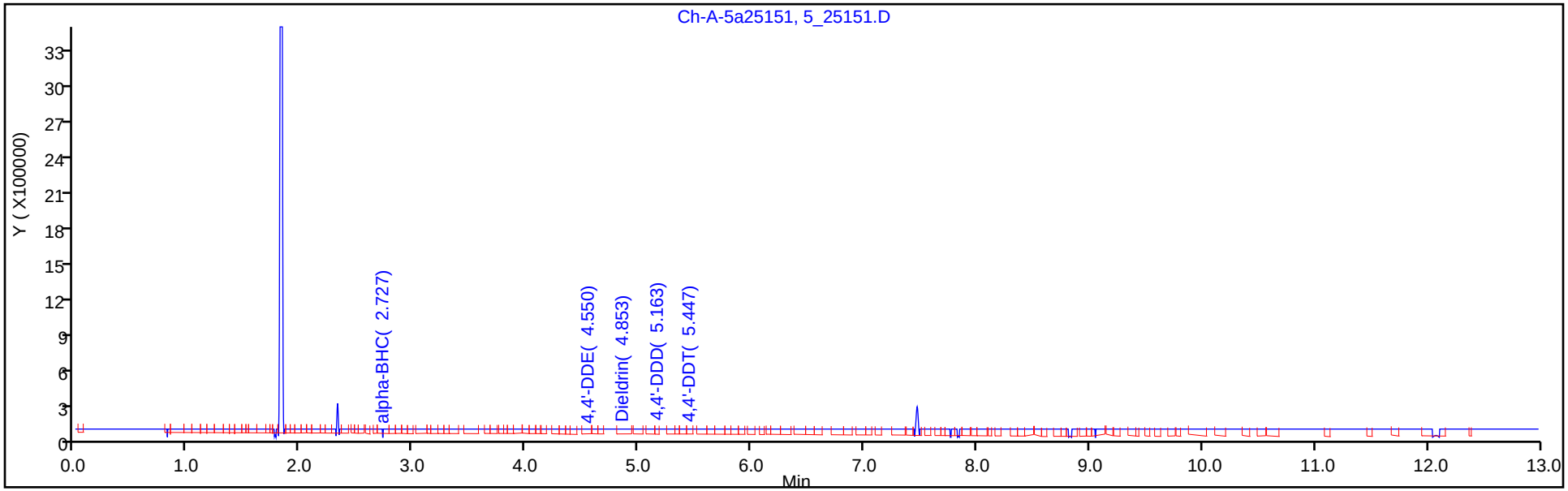
Report Date: 30-Sep-2019 06:36:20 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

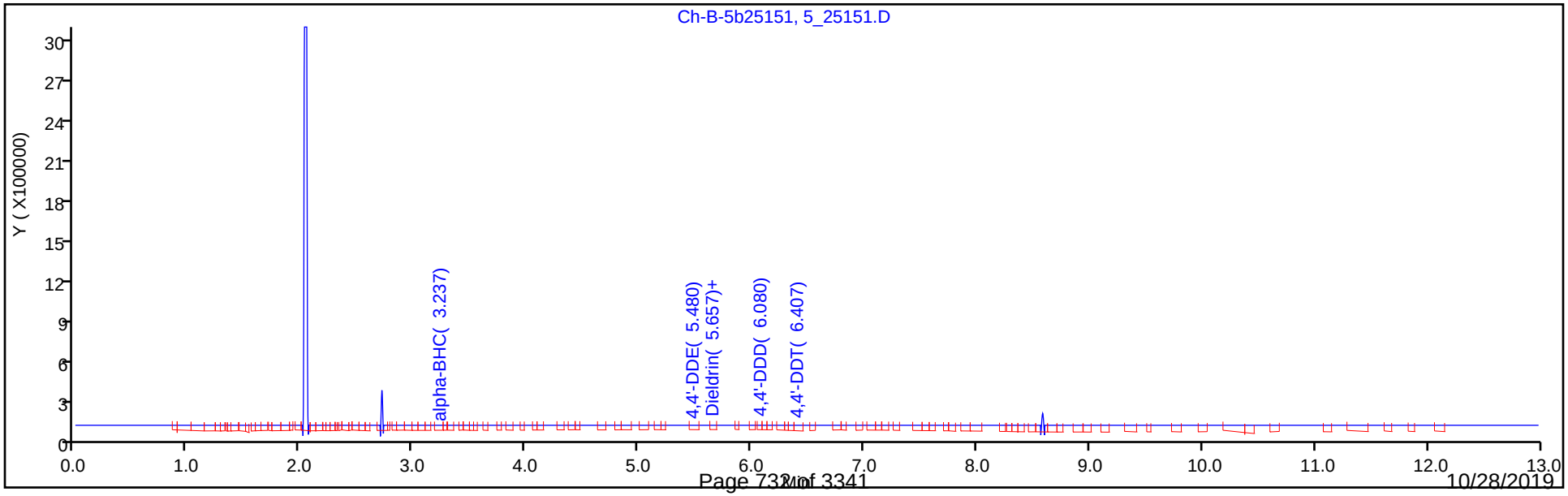
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25151.D

Injection Date:	27-Sep-2019 15:09:46	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-19-C	Lab Sample ID:	480-159547-19	Worklist Smp#:	24
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 5_25152.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:55

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.12(g) Date Analyzed: 09/27/2019 15:29

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	0.63	J	1.9	0.36
72-55-9	4,4'-DDE	0.57	J	1.9	0.39
50-29-3	4,4'-DDT	1.1	J	1.9	0.43
309-00-2	Aldrin	ND		1.9	0.45
319-84-6	alpha-BHC	0.88	J B	1.9	0.33
5103-71-9	cis-Chlordane	ND		1.9	0.92
319-85-7	beta-BHC	ND		1.9	0.33
319-86-8	delta-BHC	ND		1.9	0.34
60-57-1	Dieldrin	ND		1.9	0.44
959-98-8	Endosulfan I	ND		1.9	0.35
33213-65-9	Endosulfan II	ND		1.9	0.33
1031-07-8	Endosulfan sulfate	ND		1.9	0.34
72-20-8	Endrin	ND		1.9	0.37
58-89-9	gamma-BHC (Lindane)	ND		1.9	0.34
76-44-8	Heptachlor	ND		1.9	0.40

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	99		45-120
877-09-8	Tetrachloro-m-xylene	85		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25152.D
Lims ID: 480-159547-D-20-C
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 15:29:13 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:11

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.823	1.827	-0.004	14037634	0.5000	
2	2.043	2.043	0.000	14562287	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.323	2.323	0.000	399209	0.0170	
2	2.720	2.720	0.000	458927	0.0151	
					RPD = 11.79	
$ 3 DCB Decachlorobiphenyl						
1	7.467	7.463	0.004	469099	0.0199	
2	8.583	8.583	0.000	356539	0.0188	
					RPD = 5.82	
6 alpha-BHC						
1	2.727	2.723	0.004	100847	0.002368	
2	3.237	3.237	0.000	87751	0.002691	
					RPD = 12.76	
18 4,4'-DDE						
1	4.550	4.550	0.000	51712	0.001551	
2	5.480	5.480	0.000	34707	0.002160	
					RPD = 32.81	
21 Dieldrin						
1	4.850	4.843	0.007	30202	0.001098	
2	5.657	5.660	-0.003	7005	0.001021	
					RPD = 7.21	
24 4,4'-DDD						
1	5.160	5.160	0.000	2750	0.001709	
2	6.080	6.080	0.000	1817	0.001292	
					RPD = 27.81	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
28	4,4'-DDT					
1	5.443	5.443	0.000	19017	0.002929	
2	6.407	6.407	0.000	31765	0.003202	
					RPD = 8.92	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

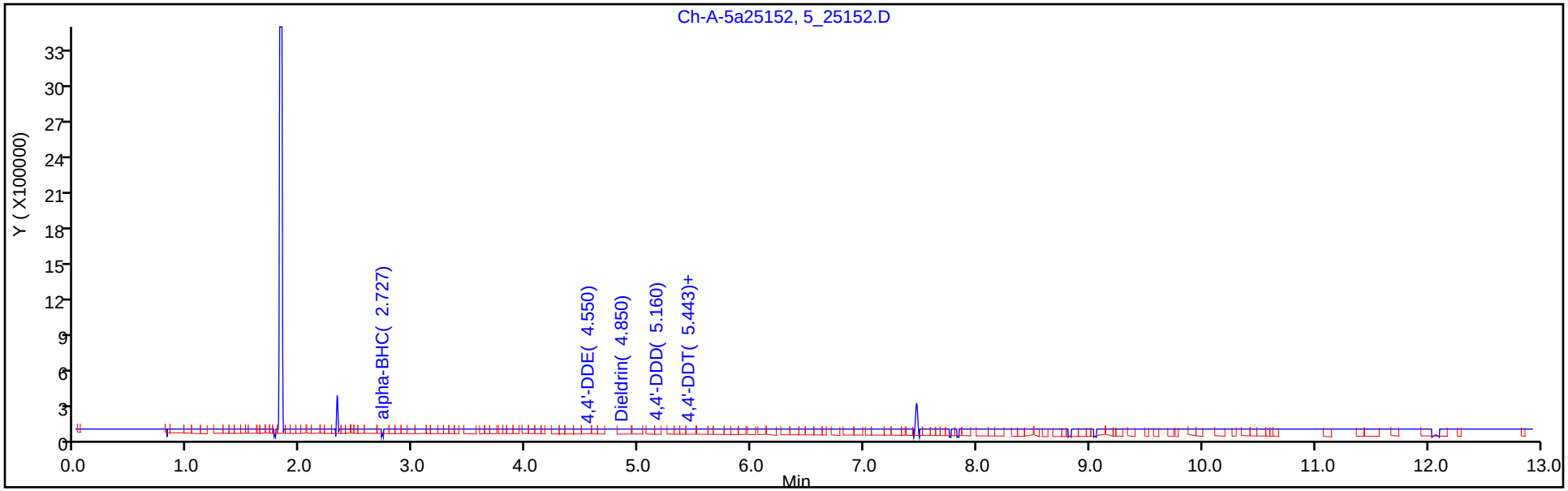
Report Date: 30-Sep-2019 06:36:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

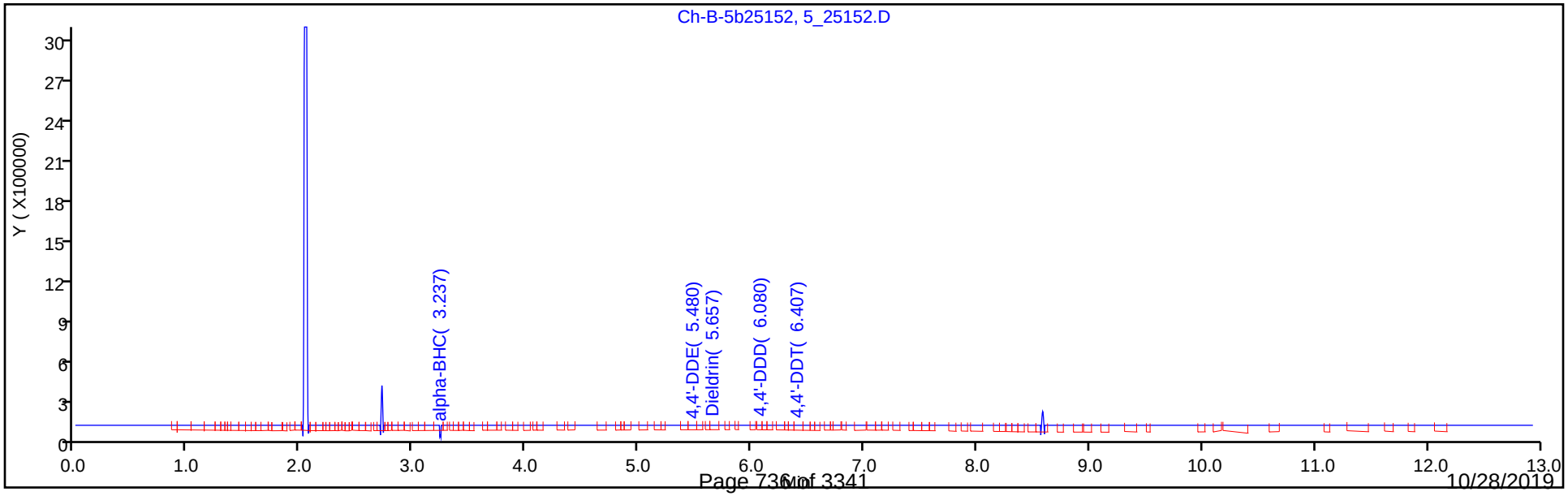
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25152.D

Injection Date:	27-Sep-2019 15:29:13	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-20-C	Lab Sample ID:	480-159547-20	Worklist Smp#:	25
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 5_25152.D

Analysis Method: 8081B Date Collected: 09/16/2019 11:55

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.12(g) Date Analyzed: 09/27/2019 15:29

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	94		45-120
877-09-8	Tetrachloro-m-xylene	76		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25152.D
Lims ID: 480-159547-D-20-C
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 15:29:13 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:11

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.823	1.827	-0.004	14037634	0.5000	
2	2.043	2.043	0.000	14562287	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.323	2.323	0.000	399209	0.0170	
2	2.720	2.720	0.000	458927	0.0151	
					RPD = 11.79	
$ 3 DCB Decachlorobiphenyl						
1	7.467	7.463	0.004	469099	0.0199	
2	8.583	8.583	0.000	356539	0.0188	
					RPD = 5.82	
6 alpha-BHC						
1	2.727	2.723	0.004	100847	0.002368	
2	3.237	3.237	0.000	87751	0.002691	
					RPD = 12.76	
18 4,4'-DDE						
1	4.550	4.550	0.000	51712	0.001551	
2	5.480	5.480	0.000	34707	0.002160	
					RPD = 32.81	
21 Dieldrin						
1	4.850	4.843	0.007	30202	0.001098	
2	5.657	5.660	-0.003	7005	0.001021	
					RPD = 7.21	
24 4,4'-DDD						
1	5.160	5.160	0.000	2750	0.001709	
2	6.080	6.080	0.000	1817	0.001292	
					RPD = 27.81	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
28	4,4'-DDT					
1	5.443	5.443	0.000	19017	0.002929	
2	6.407	6.407	0.000	31765	0.003202	
					RPD = 8.92	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

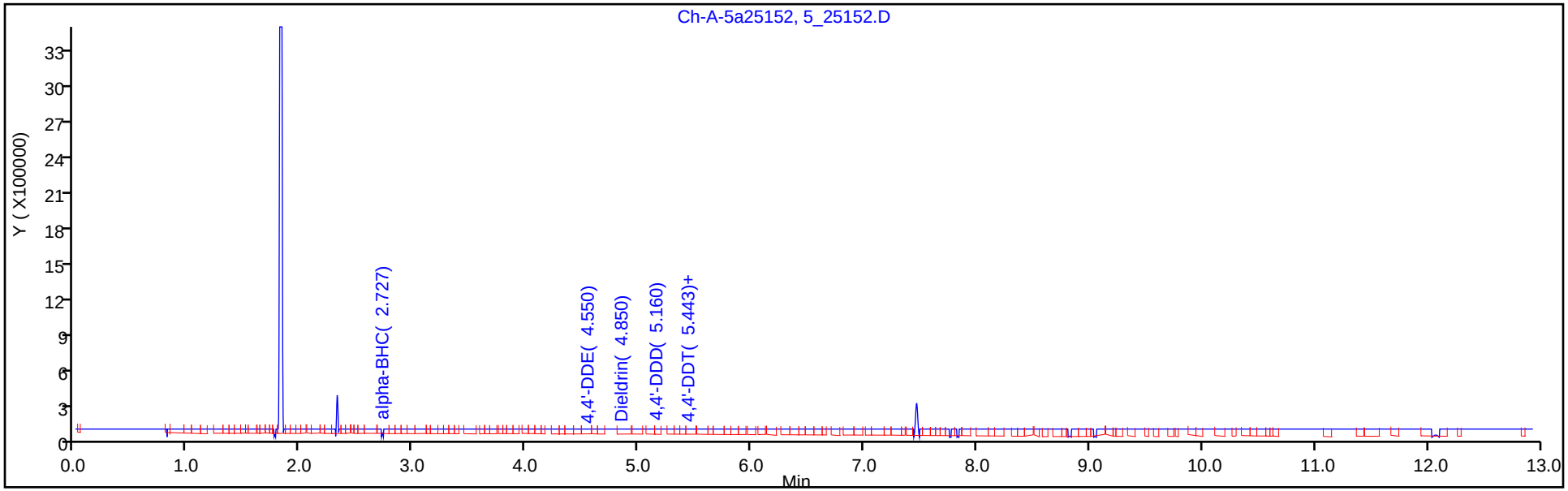
Report Date: 30-Sep-2019 06:36:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

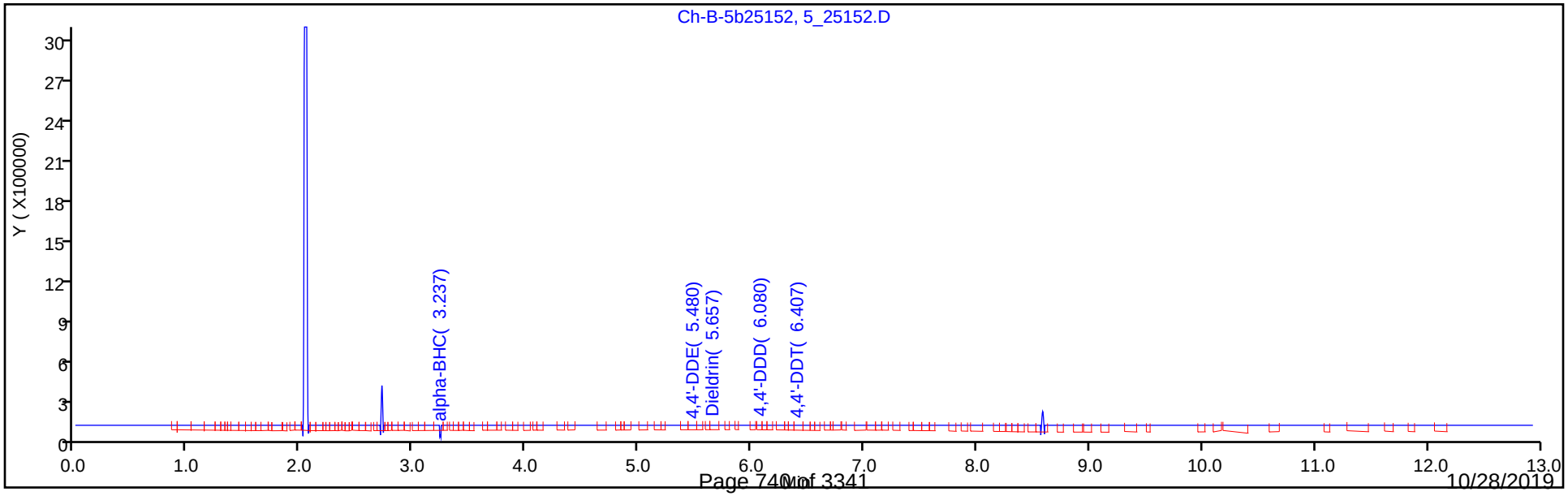
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25152.D

Injection Date:	27-Sep-2019 15:29:13	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-20-C	Lab Sample ID:	480-159547-20	Worklist Smp#:	25
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 5_25153.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:50

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.72(g) Date Analyzed: 09/27/2019 15:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	ND		1.8	0.34
72-55-9	4,4'-DDE	ND		1.8	0.37
50-29-3	4,4'-DDT	0.85	J	1.8	0.41
309-00-2	Aldrin	ND		1.8	0.43
319-84-6	alpha-BHC	1.9	B	1.8	0.31
5103-71-9	cis-Chlordane	ND		1.8	0.87
319-85-7	beta-BHC	ND		1.8	0.31
319-86-8	delta-BHC	ND		1.8	0.33
60-57-1	Dieldrin	ND		1.8	0.42
959-98-8	Endosulfan I	ND		1.8	0.34
33213-65-9	Endosulfan II	ND		1.8	0.31
1031-07-8	Endosulfan sulfate	ND		1.8	0.33
72-20-8	Endrin	ND		1.8	0.35
58-89-9	gamma-BHC (Lindane)	ND		1.8	0.32
76-44-8	Heptachlor	ND		1.8	0.38

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	107		45-120
877-09-8	Tetrachloro-m-xylene	95		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25153.D
Lims ID: 480-159547-D-30-C
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:48:46 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13166854	0.5000	
2	2.043	2.043	0.000	13629936	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	419403	0.0190	
2	2.720	2.720	0.000	469009	0.0164	
					RPD = 14.40	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	477240	0.0214	
2	8.583	8.583	0.000	356823	0.0201	
					RPD = 6.54	
6 alpha-BHC						
1	2.727	2.723	0.004	249602	0.005332	
2	3.237	3.237	0.000	243607	0.006008	
					RPD = 11.93	
28 4,4'-DDT						
1	5.453	5.443	0.010	602	0.002423	
2	6.433	6.407	0.026	5456	0.002223	
					RPD = 8.58	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

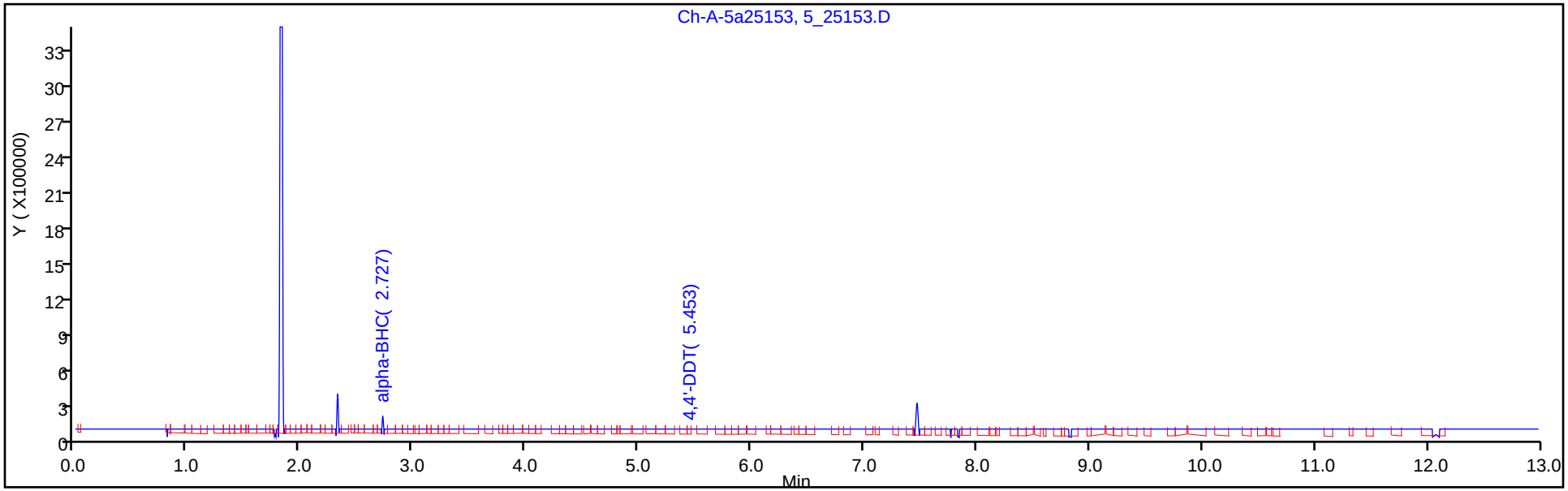
Report Date: 30-Sep-2019 06:36:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

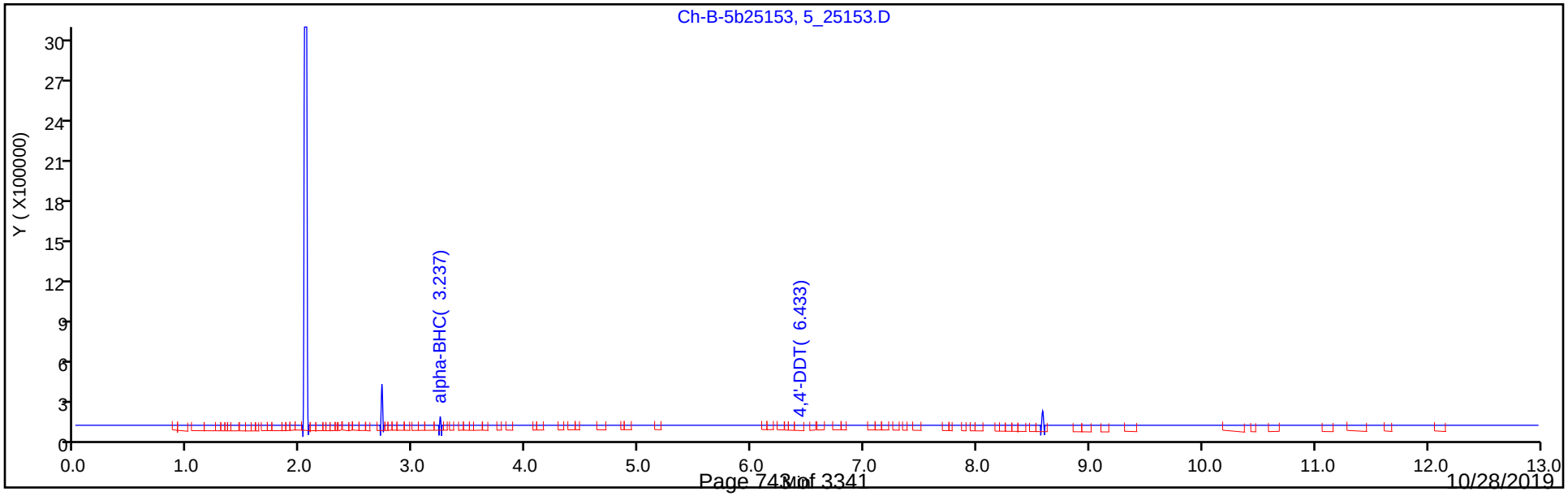
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25153.D

Injection Date:	27-Sep-2019 15:48:46	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-30-C	Lab Sample ID:	480-159547-30	Worklist Smp#:	26
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 5_25153.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:50

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.72(g) Date Analyzed: 09/27/2019 15:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	100		45-120
877-09-8	Tetrachloro-m-xylene	82		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25153.D
Lims ID: 480-159547-D-30-C
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:48:46 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13166854	0.5000	
2	2.043	2.043	0.000	13629936	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	419403	0.0190	
2	2.720	2.720	0.000	469009	0.0164	
					RPD = 14.40	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	477240	0.0214	
2	8.583	8.583	0.000	356823	0.0201	
					RPD = 6.54	
6 alpha-BHC						
1	2.727	2.723	0.004	249602	0.005332	
2	3.237	3.237	0.000	243607	0.006008	
					RPD = 11.93	
28 4,4'-DDT						
1	5.453	5.443	0.010	602	0.002423	
2	6.433	6.407	0.026	5456	0.002223	
					RPD = 8.58	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

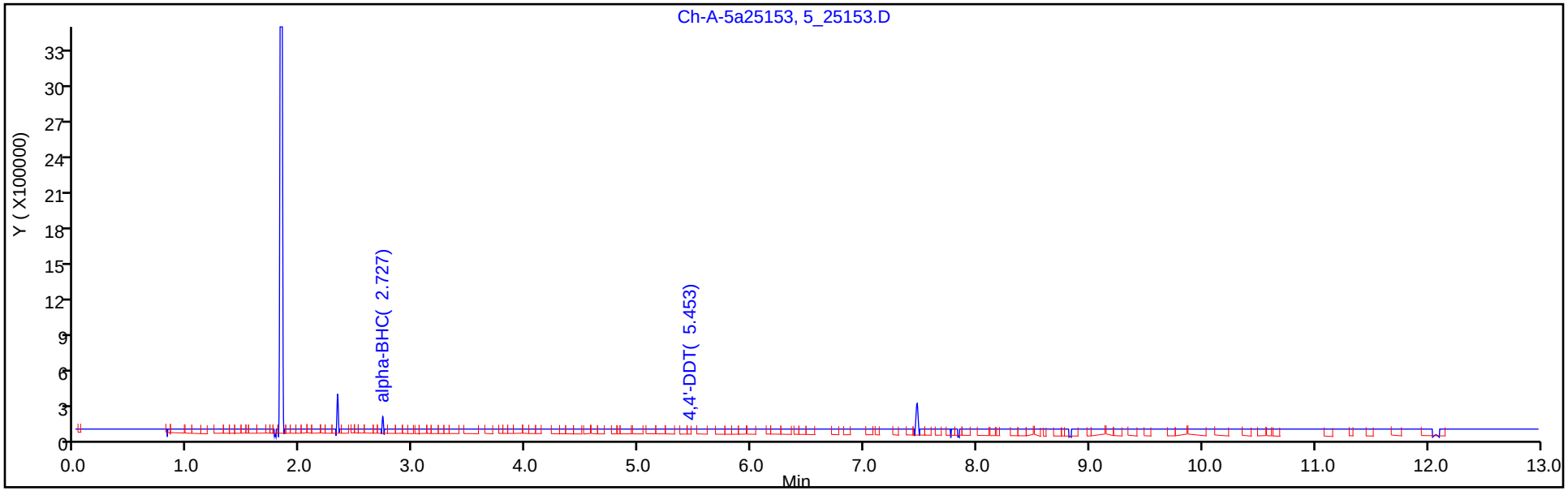
Report Date: 30-Sep-2019 06:36:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

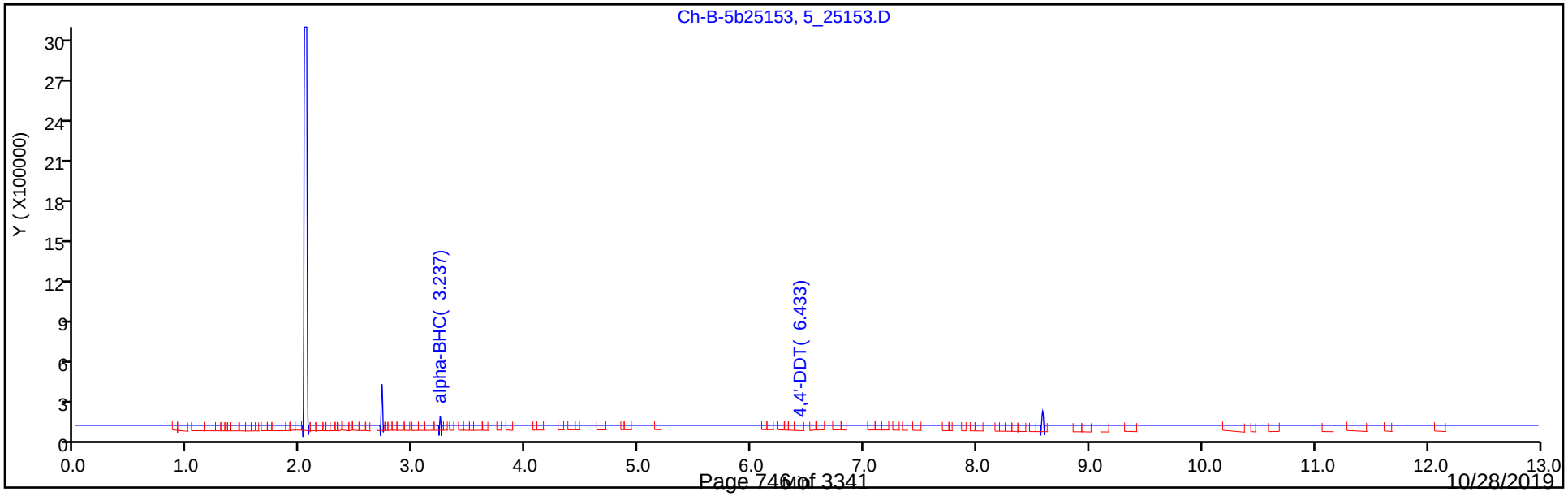
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25153.D

Injection Date:	27-Sep-2019 15:48:46	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-30-C	Lab Sample ID:	480-159547-30	Worklist Smp#:	26
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 5_25154.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:53

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.40(g) Date Analyzed: 09/27/2019 16:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	ND		1.8	0.34
72-55-9	4,4'-DDE	ND		1.8	0.37
50-29-3	4,4'-DDT	ND		1.8	0.41
309-00-2	Aldrin	ND		1.8	0.43
319-84-6	alpha-BHC	0.42	J B	1.8	0.31
5103-71-9	cis-Chlordane	ND		1.8	0.87
319-85-7	beta-BHC	ND		1.8	0.31
319-86-8	delta-BHC	ND		1.8	0.33
60-57-1	Dieldrin	ND		1.8	0.42
959-98-8	Endosulfan I	ND		1.8	0.34
33213-65-9	Endosulfan II	ND		1.8	0.31
1031-07-8	Endosulfan sulfate	ND		1.8	0.33
72-20-8	Endrin	ND		1.8	0.35
58-89-9	gamma-BHC (Lindane)	ND		1.8	0.32
76-44-8	Heptachlor	ND		1.8	0.38

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	102		45-120
877-09-8	Tetrachloro-m-xylene	87		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25154.D
Lims ID: 480-159547-E-31-B
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 16:08:26 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:49

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13456713	0.5000	
2	2.043	2.043	0.000	13983475	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	393026	0.0174	
2	2.720	2.720	0.000	431106	0.0148	
					RPD = 16.45	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	464288	0.0205	
2	8.583	8.583	0.000	338726	0.0186	
					RPD = 9.79	
6 alpha-BHC						
1	2.730	2.723	0.007	34406	0.001203	
2	3.237	3.237	0.000	25482	0.001514	
					RPD = 22.86	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

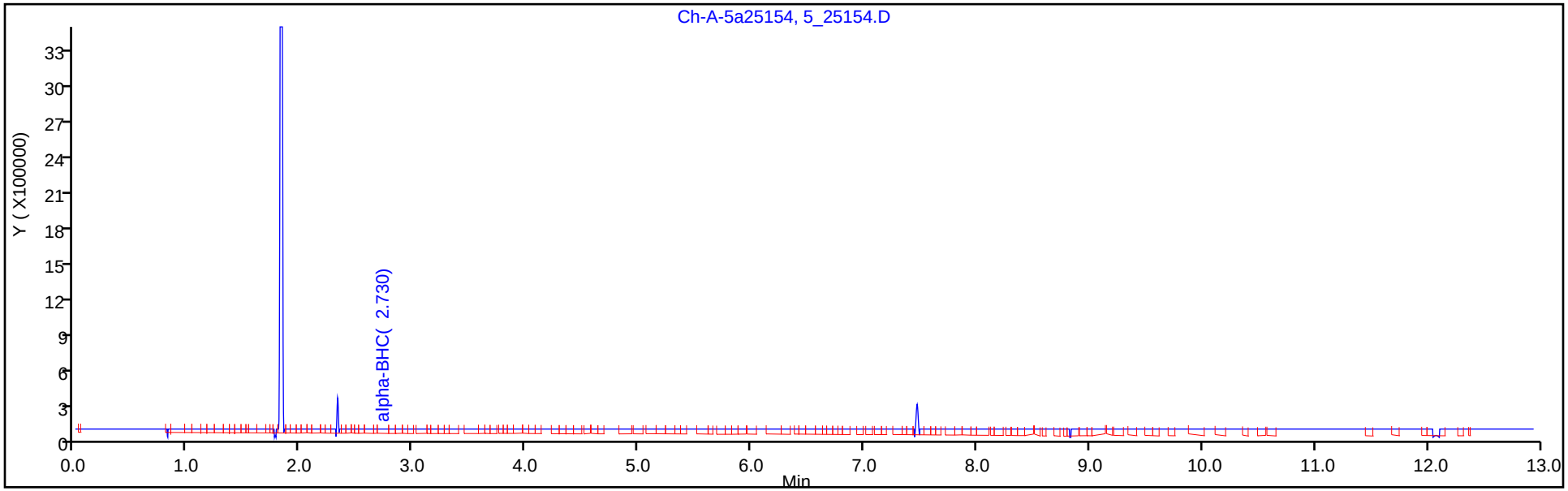
Report Date: 30-Sep-2019 06:36:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

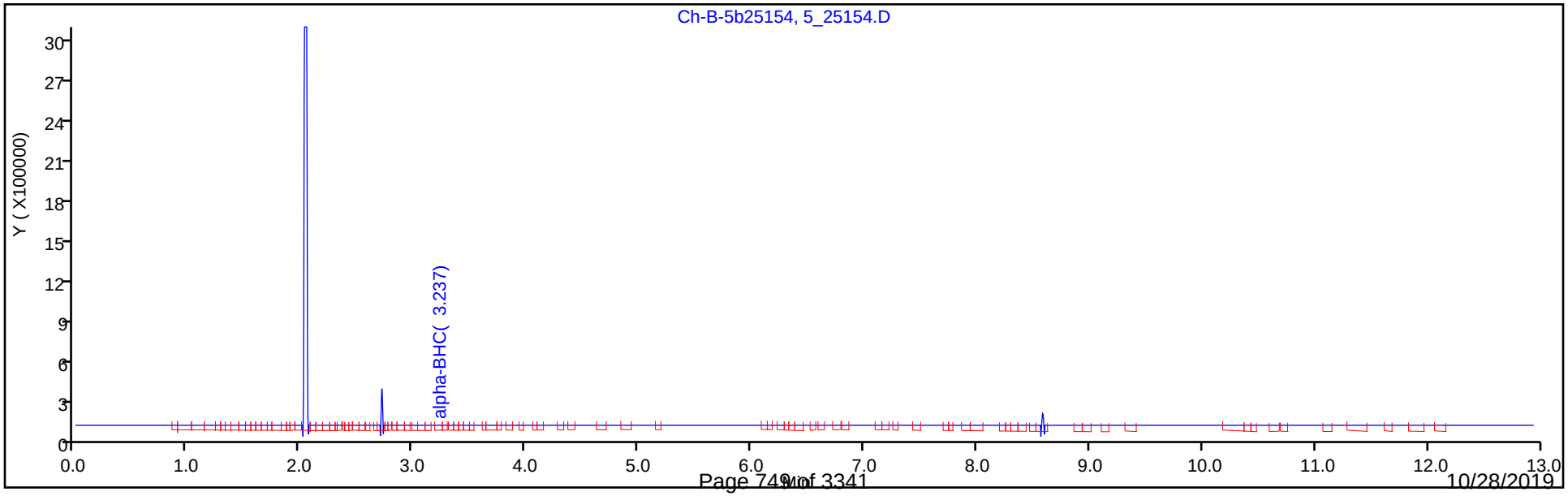
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25154.D

Injection Date:	27-Sep-2019 16:08:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-31-B	Lab Sample ID:	480-159547-31	Worklist Smp#:	27
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 5_25154.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:53

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.40(g) Date Analyzed: 09/27/2019 16:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	93		45-120
877-09-8	Tetrachloro-m-xylene	74		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25154.D
Lims ID: 480-159547-E-31-B
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 16:08:26 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:19:49

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	13456713	0.5000	
2	2.043	2.043	0.000	13983475	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	393026	0.0174	
2	2.720	2.720	0.000	431106	0.0148	
					RPD = 16.45	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	464288	0.0205	
2	8.583	8.583	0.000	338726	0.0186	
					RPD = 9.79	
6 alpha-BHC						
1	2.730	2.723	0.007	34406	0.001203	
2	3.237	3.237	0.000	25482	0.001514	
					RPD = 22.86	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

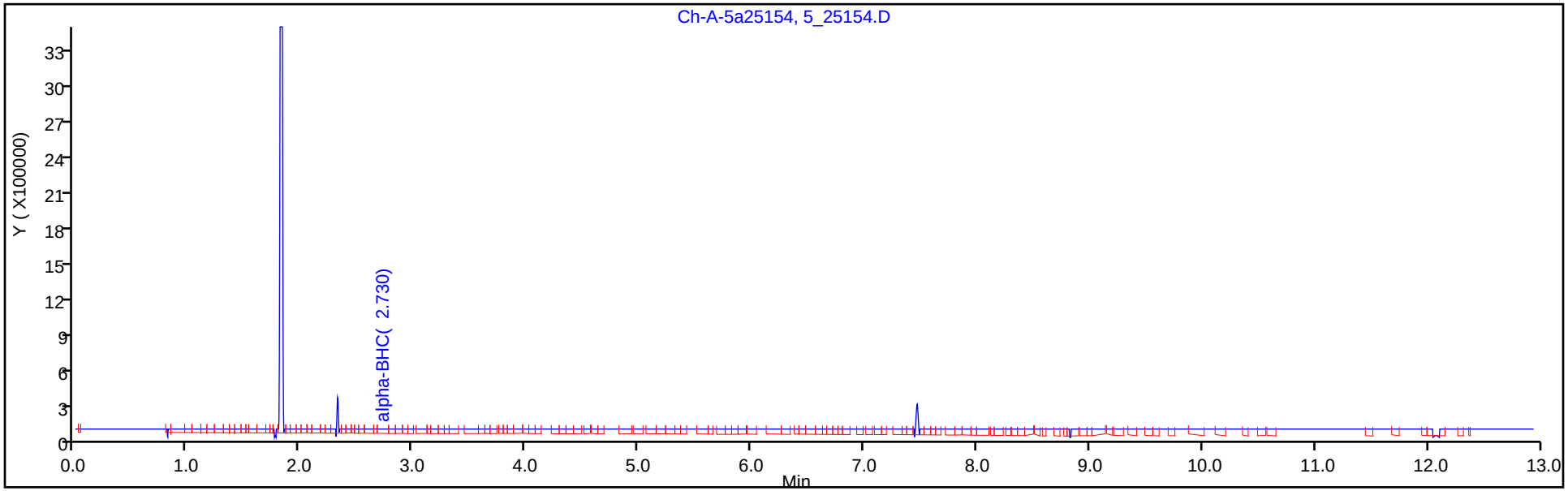
Report Date: 30-Sep-2019 06:36:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

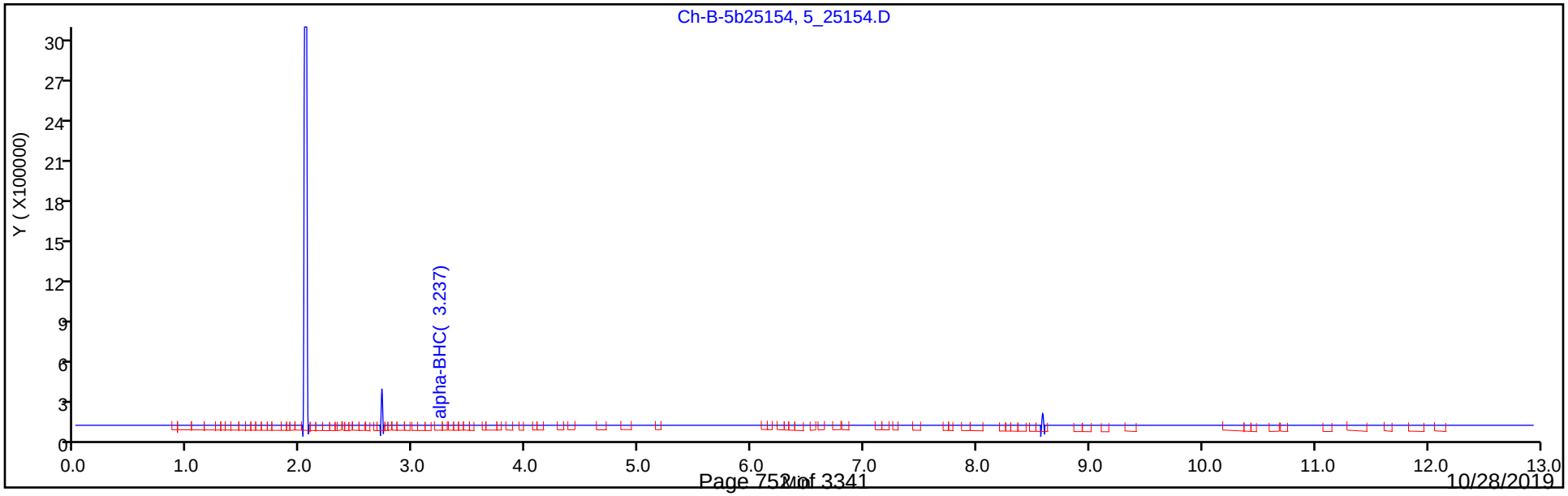
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25154.D

Injection Date:	27-Sep-2019 16:08:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-31-B	Lab Sample ID:	480-159547-31	Worklist Smp#:	27
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 5_25155.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:57

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.34(g) Date Analyzed: 09/27/2019 16:27

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	ND		1.8	0.35
72-55-9	4,4'-DDE	ND		1.8	0.37
50-29-3	4,4'-DDT	ND		1.8	0.42
309-00-2	Aldrin	ND		1.8	0.44
319-84-6	alpha-BHC	ND		1.8	0.32
5103-71-9	cis-Chlordane	ND		1.8	0.88
319-85-7	beta-BHC	ND		1.8	0.32
319-86-8	delta-BHC	ND		1.8	0.33
60-57-1	Dieldrin	ND		1.8	0.43
959-98-8	Endosulfan I	ND		1.8	0.34
33213-65-9	Endosulfan II	ND		1.8	0.32
1031-07-8	Endosulfan sulfate	ND		1.8	0.33
72-20-8	Endrin	ND		1.8	0.35
58-89-9	gamma-BHC (Lindane)	ND		1.8	0.33
76-44-8	Heptachlor	ND		1.8	0.38

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	116		45-120
877-09-8	Tetrachloro-m-xylene	97		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25155.D
Lims ID: 480-159547-E-32-C
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 16:27:57 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:20:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12067015	0.5000	
2	2.047	2.043	0.004	12445450	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	393631	0.0194	
2	2.723	2.720	0.003	448951	0.0172	
					RPD = 12.20	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	477704	0.0232	
2	8.587	8.583	0.004	351052	0.0216	
					RPD = 7.19	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

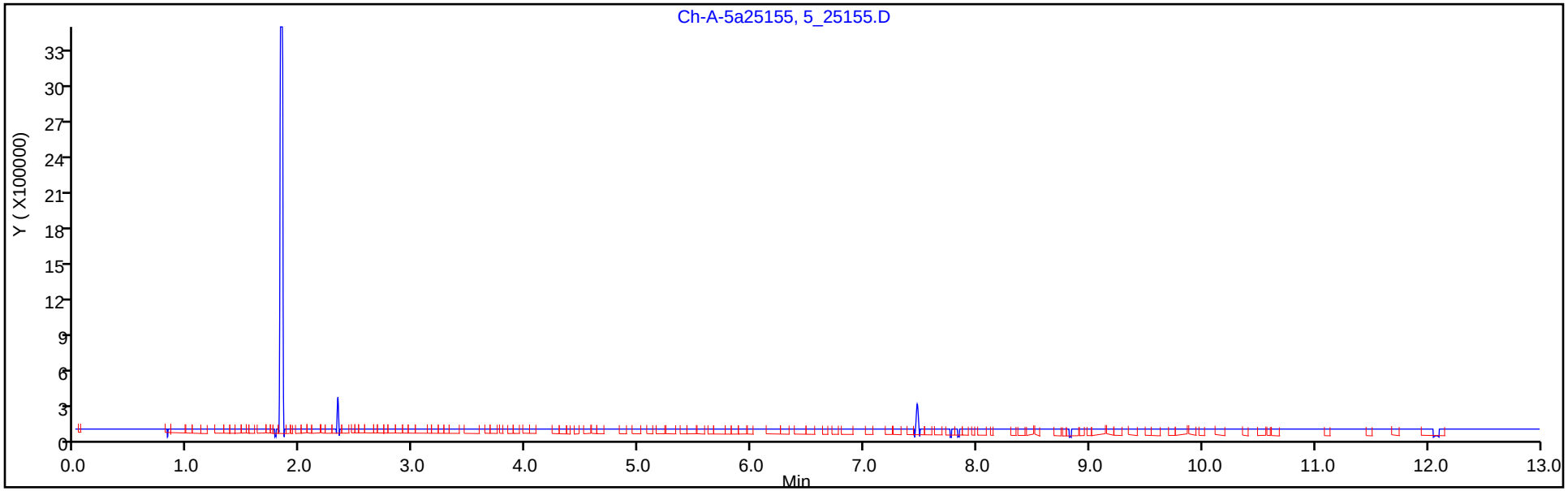
Report Date: 30-Sep-2019 06:36:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

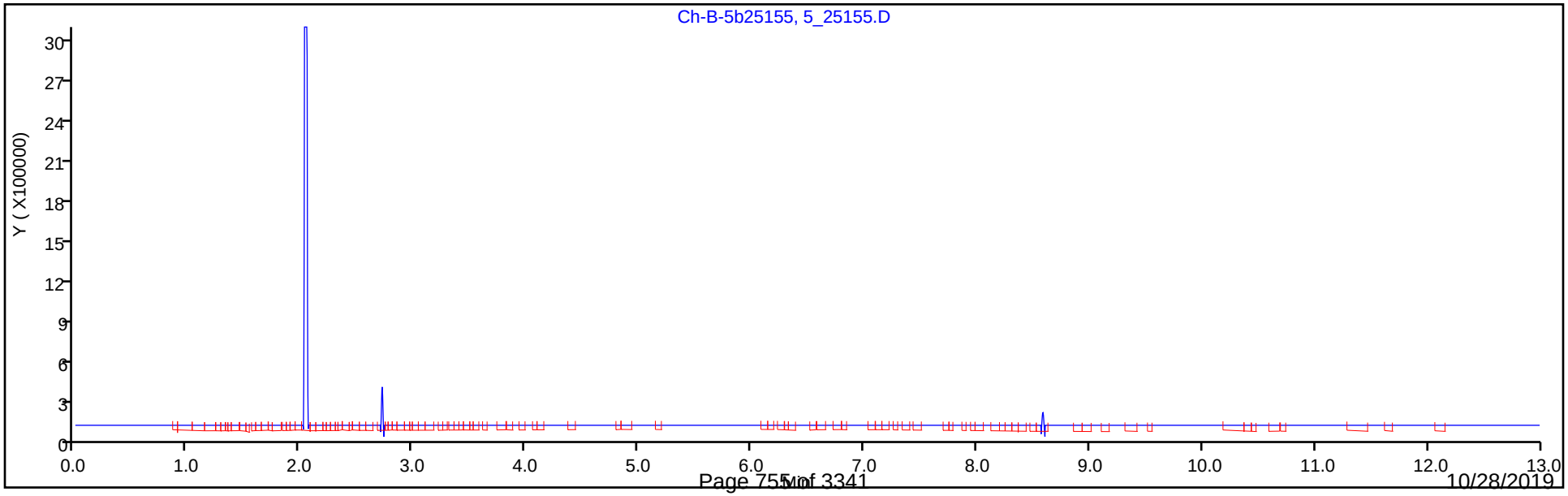
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25155.D

Injection Date:	27-Sep-2019 16:27:57	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-C	Lab Sample ID:	480-159547-32	Worklist Smp#:	28
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 5_25155.D

Analysis Method: 8081B Date Collected: 09/16/2019 13:57

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.34(g) Date Analyzed: 09/27/2019 16:27

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	108		45-120
877-09-8	Tetrachloro-m-xylene	86		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25155.D
Lims ID: 480-159547-E-32-C
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 16:27:57 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:20:05

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12067015	0.5000	
2	2.047	2.043	0.004	12445450	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	393631	0.0194	
2	2.723	2.720	0.003	448951	0.0172	
					RPD = 12.20	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	477704	0.0232	
2	8.587	8.583	0.004	351052	0.0216	
					RPD = 7.19	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

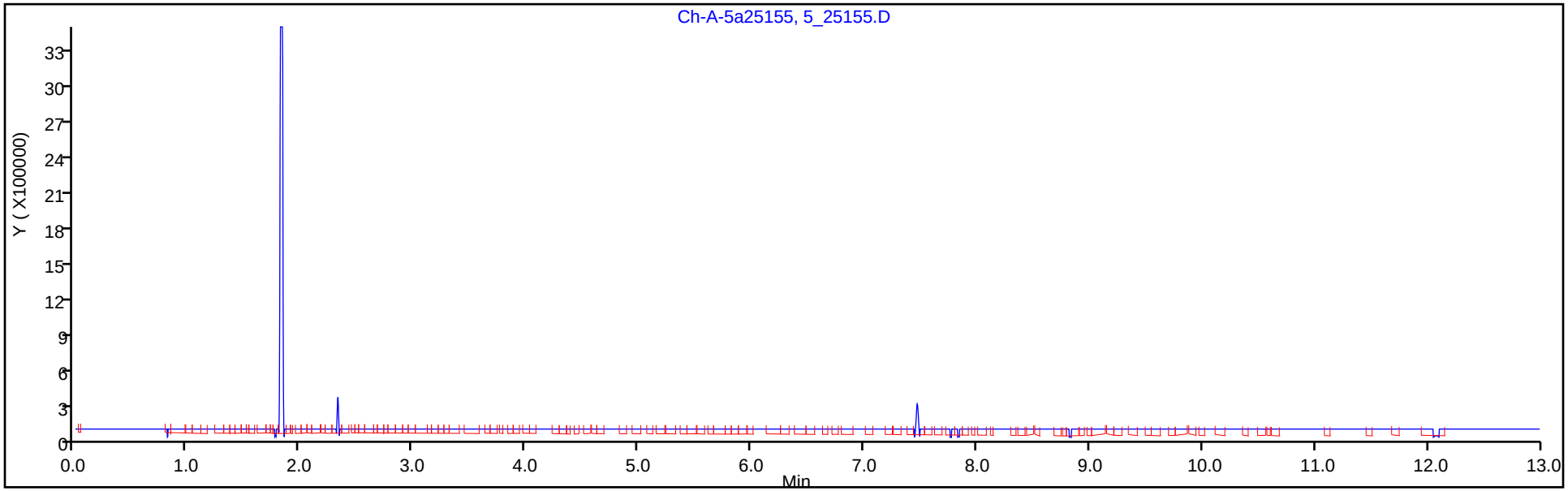
Report Date: 30-Sep-2019 06:36:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

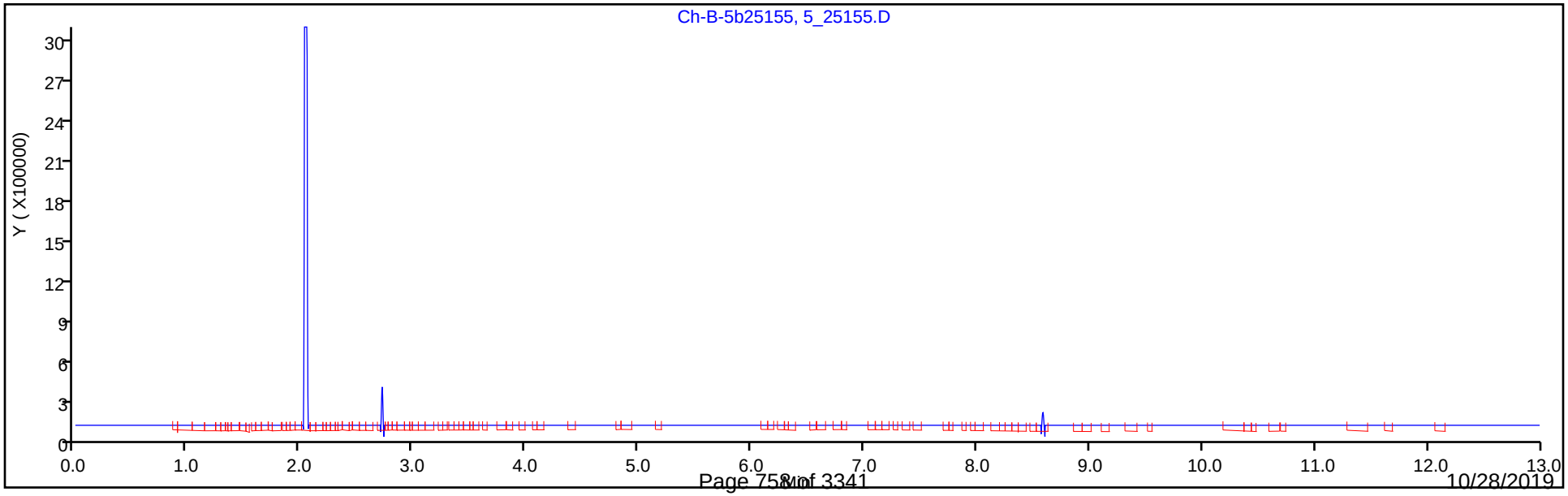
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25155.D

Injection Date:	27-Sep-2019 16:27:57	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-C	Lab Sample ID:	480-159547-32	Worklist Smp#:	28
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 5_25156.D

Analysis Method: 8081B Date Collected: 09/16/2019 14:30

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.68(g) Date Analyzed: 09/27/2019 16:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	5.7		1.8	0.36
72-55-9	4,4'-DDE	11		1.8	0.39
50-29-3	4,4'-DDT	5.2		1.8	0.43
309-00-2	Aldrin	ND		1.8	0.45
319-84-6	alpha-BHC	ND		1.8	0.33
5103-71-9	cis-Chlordane	ND		1.8	0.92
319-85-7	beta-BHC	ND		1.8	0.33
319-86-8	delta-BHC	ND		1.8	0.34
60-57-1	Dieldrin	30		1.8	0.44
959-98-8	Endosulfan I	ND		1.8	0.35
33213-65-9	Endosulfan II	0.91	J	1.8	0.33
1031-07-8	Endosulfan sulfate	ND		1.8	0.34
72-20-8	Endrin	2.1		1.8	0.37
58-89-9	gamma-BHC (Lindane)	ND		1.8	0.34
76-44-8	Heptachlor	0.99	J	1.8	0.40

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	100		45-120
877-09-8	Tetrachloro-m-xylene	82		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Lims ID: 480-159547-F-39-C
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 16:47:31 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:20:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	12816814	0.5000	
2	2.043	2.043	0.000	14072971	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	352400	0.0165	
2	2.720	2.720	0.000	368096	0.0127	
					RPD = 26.08	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	430339	0.0200	
2	8.583	8.583	0.000	338363	0.0184	
					RPD = 8.06	
11 Heptachlor						
1	3.363	3.363	0.000	110210	0.002698	
2	4.017	4.017	0.000	77696	0.002864	
					RPD = 5.98	
18 4,4'-DDE						
1	4.553	4.550	0.003	1216920	0.0307	
2	5.480	5.480	0.000	1081498	0.0344	
					RPD = 11.43	
21 Dieldrin						
1	4.847	4.843	0.004	2778177	0.0807	
2	5.657	5.660	-0.003	2360433	0.0733	
					RPD = 9.58	
23 Endrin						
1	5.077	5.077	0.000	216137	0.005714	
2	5.973	5.973	0.000	121724	0.005056	
					RPD = 12.23	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
24 4,4'-DDD						
1	5.163	5.160	0.003	442283	0.0154	
2	6.080	6.080	0.000	509031	0.0213	
					RPD = 32.01	
26 Endosulfan II						
1	5.287	5.303	-0.016	71203	0.002468	
2	6.193	6.190	0.003	45832	0.002709	
					RPD = 9.29	
28 4,4'-DDT						
1	5.447	5.443	0.004	389717	0.0142	
2	6.407	6.407	0.000	325429	0.0147	
					RPD = 3.81	

Reagents:

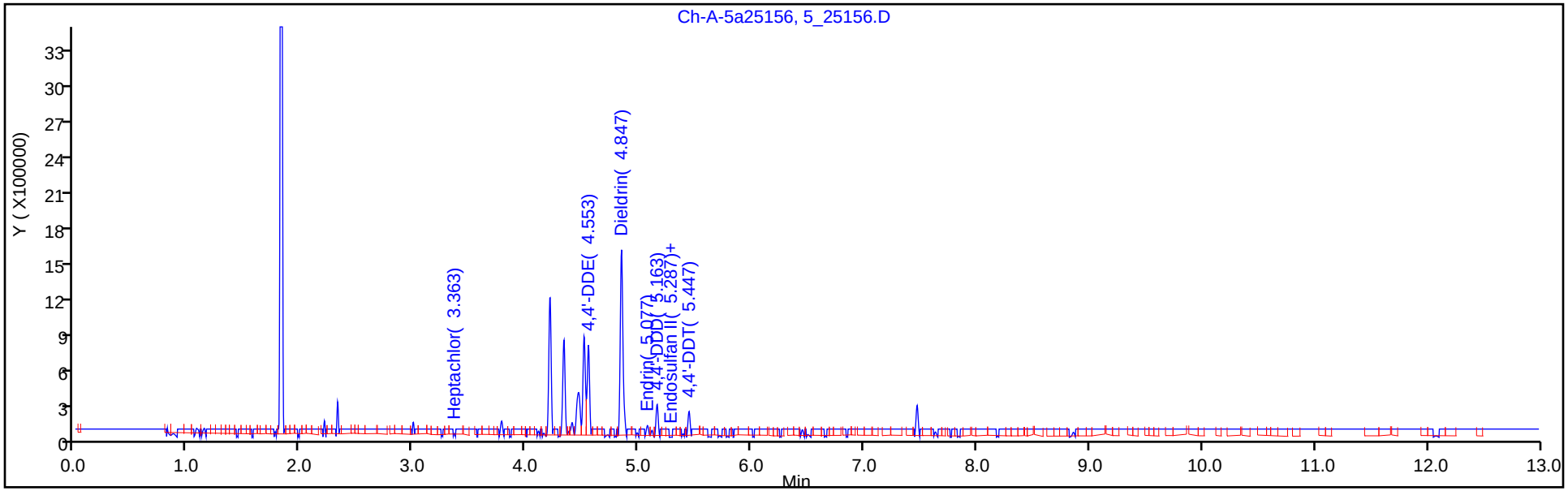
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 30-Sep-2019 06:36:34 Chrom Revision: 2.3 17-Sep-2019 16:19:08

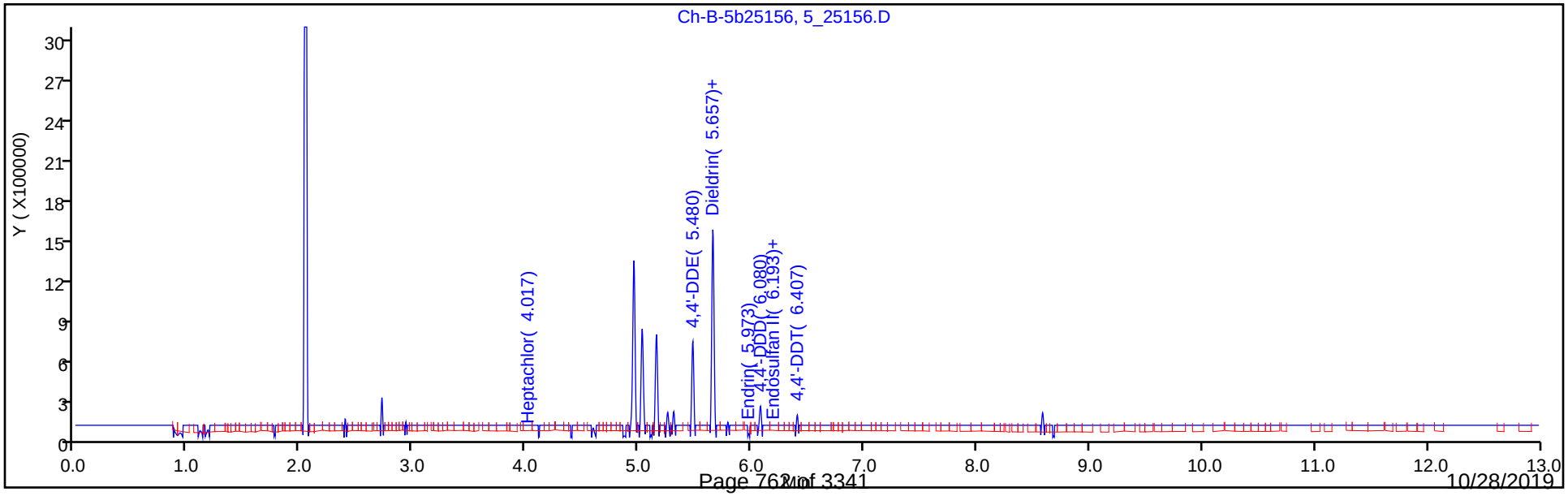
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D				
Injection Date:	27-Sep-2019 16:47:31	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-C	Lab Sample ID:	480-159547-39	Worklist Smp#:	29
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



User Disabled Compound Report

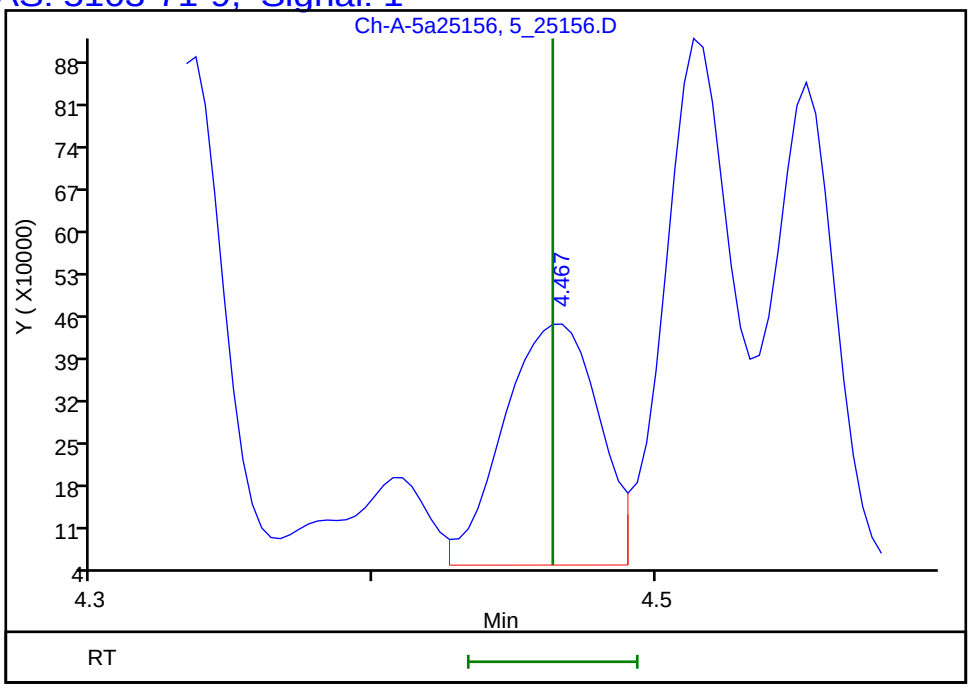
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Injection Date: 27-Sep-2019 16:47:31 Instrument ID: HP6890-5
Lims ID: 480-159547-F-39-C Lab Sample ID: 480-159547-39
Client ID: GERNATT-TS-COMP 1
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 1

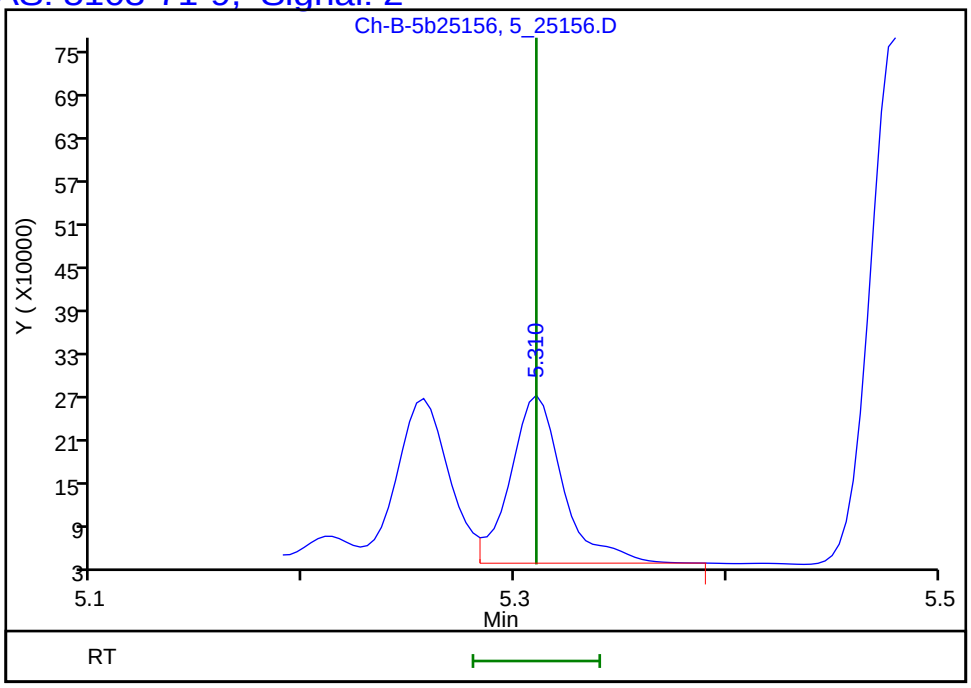
RT: 4.47
Response: 922906
Amount: 0.024061



Column: Detector Ch-B-6b58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 2

RT: 5.31
Response: 402171
Amount: 0.013661



Reviewer: salversonj, 30-Sep-2019 06:20:53
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

User Disabled Compound Report

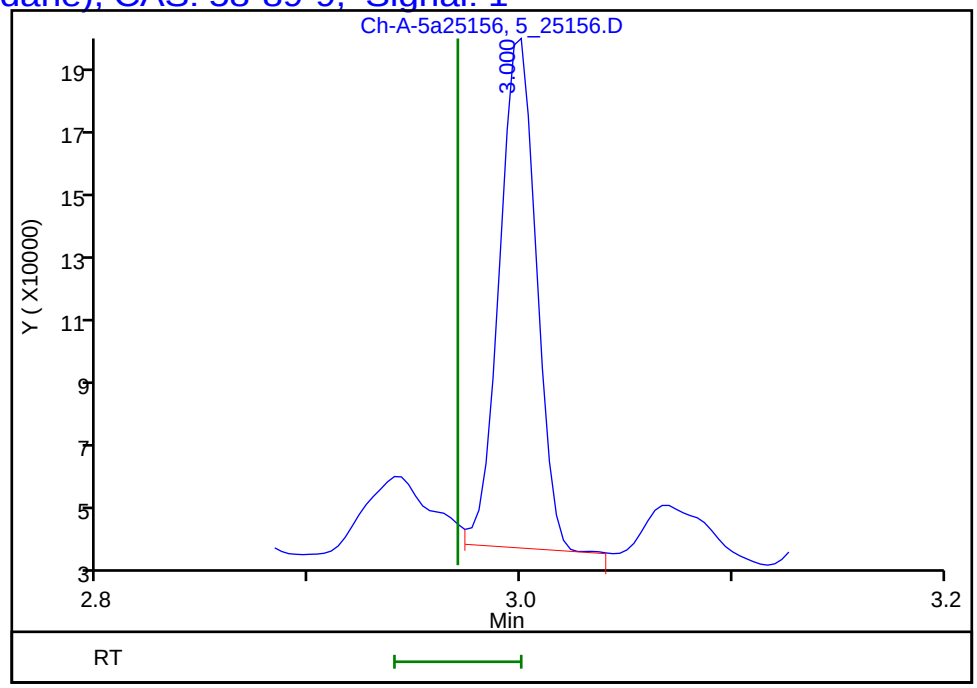
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Injection Date: 27-Sep-2019 16:47:31 Instrument ID: HP6890-5
Lims ID: 480-159547-F-39-C Lab Sample ID: 480-159547-39
Client ID: GERNATT-TS-COMP 1
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

7 gamma-BHC (Lindane), CAS: 58-89-9, Signal: 1

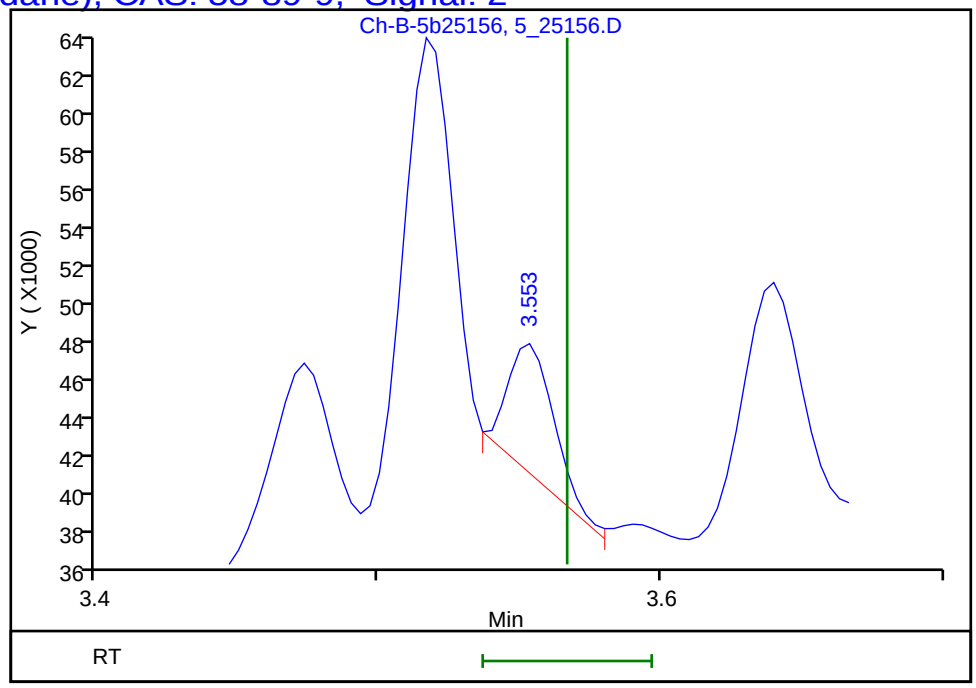
RT: 3.00
Response: 187386
Amount: 0.004574



Column: Detector Ch-B-6b58132

7 gamma-BHC (Lindane), CAS: 58-89-9, Signal: 2

RT: 3.55
Response: 7512
Amount: 0.001177



Reviewer: salversonj, 30-Sep-2019 06:20:53
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 5_25156.D

Analysis Method: 8081B Date Collected: 09/16/2019 14:30

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.68(g) Date Analyzed: 09/27/2019 16:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	92		45-120
877-09-8	Tetrachloro-m-xylene	63		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Lims ID: 480-159547-F-39-C
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 16:47:31 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:20:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.827	1.827	0.000	12816814	0.5000	
2	2.043	2.043	0.000	14072971	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.327	2.323	0.004	352400	0.0165	
2	2.720	2.720	0.000	368096	0.0127	
					RPD = 26.08	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	430339	0.0200	
2	8.583	8.583	0.000	338363	0.0184	
					RPD = 8.06	
11 Heptachlor						
1	3.363	3.363	0.000	110210	0.002698	
2	4.017	4.017	0.000	77696	0.002864	
					RPD = 5.98	
18 4,4'-DDE						
1	4.553	4.550	0.003	1216920	0.0307	
2	5.480	5.480	0.000	1081498	0.0344	
					RPD = 11.43	
21 Dieldrin						
1	4.847	4.843	0.004	2778177	0.0807	
2	5.657	5.660	-0.003	2360433	0.0733	
					RPD = 9.58	
23 Endrin						
1	5.077	5.077	0.000	216137	0.005714	
2	5.973	5.973	0.000	121724	0.005056	
					RPD = 12.23	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
24 4,4'-DDD						
1	5.163	5.160	0.003	442283	0.0154	
2	6.080	6.080	0.000	509031	0.0213	
					RPD = 32.01	
26 Endosulfan II						
1	5.287	5.303	-0.016	71203	0.002468	
2	6.193	6.190	0.003	45832	0.002709	
					RPD = 9.29	
28 4,4'-DDT						
1	5.447	5.443	0.004	389717	0.0142	
2	6.407	6.407	0.000	325429	0.0147	
					RPD = 3.81	

Reagents:

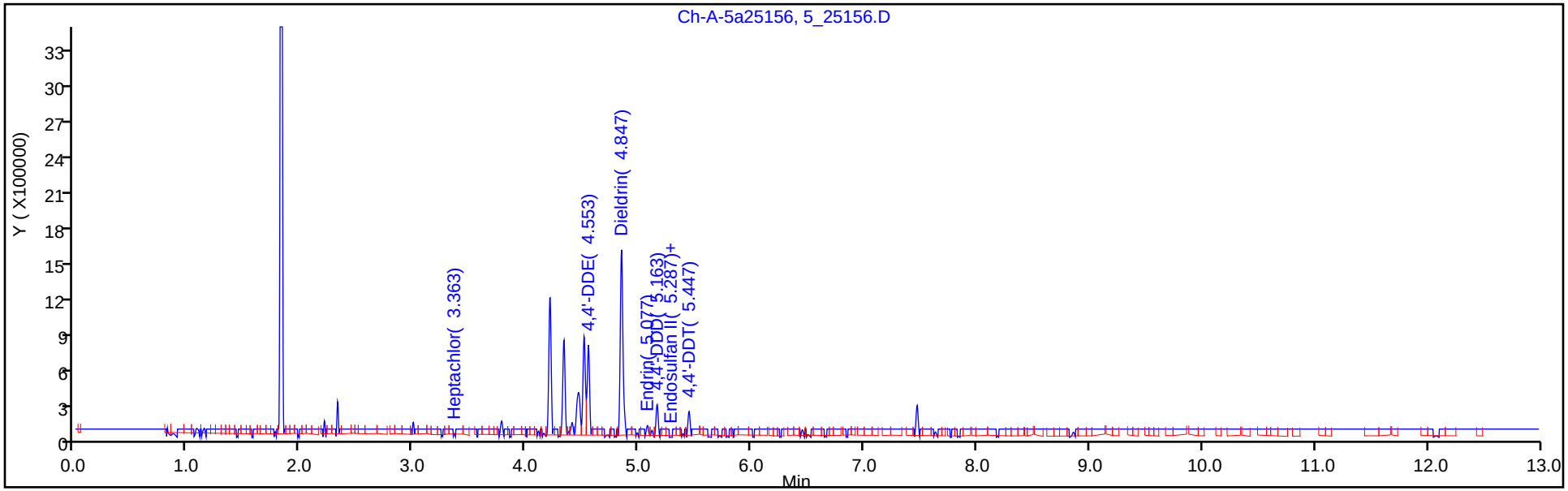
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 30-Sep-2019 06:36:34 Chrom Revision: 2.3 17-Sep-2019 16:19:08

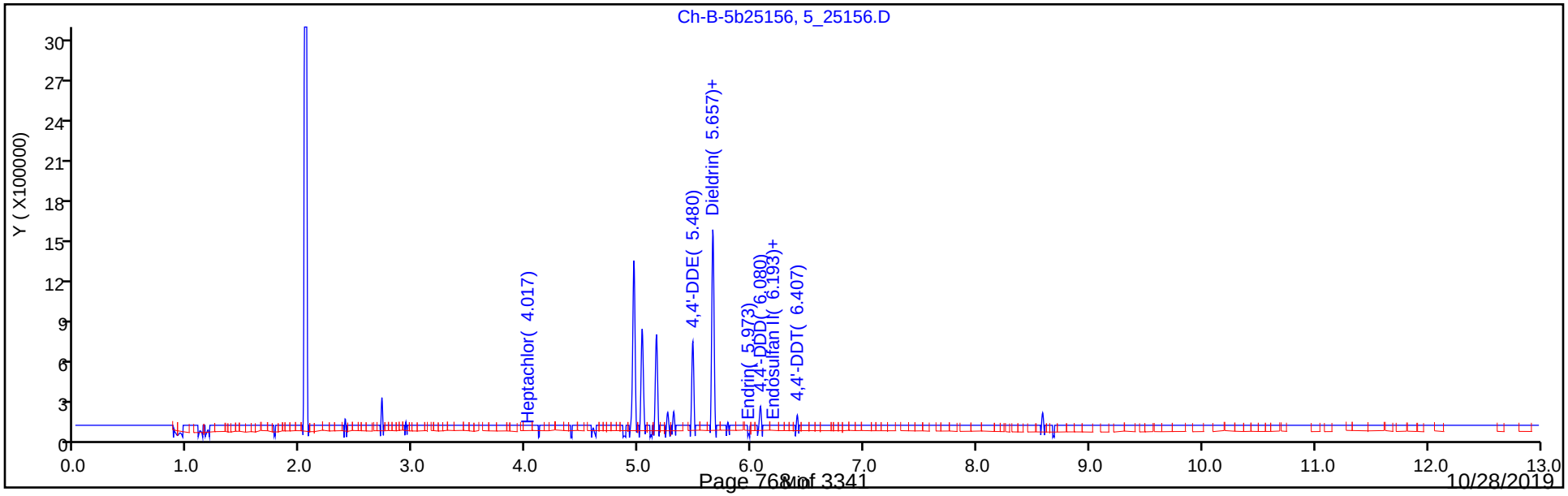
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D				
Injection Date:	27-Sep-2019 16:47:31	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-C	Lab Sample ID:	480-159547-39	Worklist Smp#:	29
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



User Disabled Compound Report

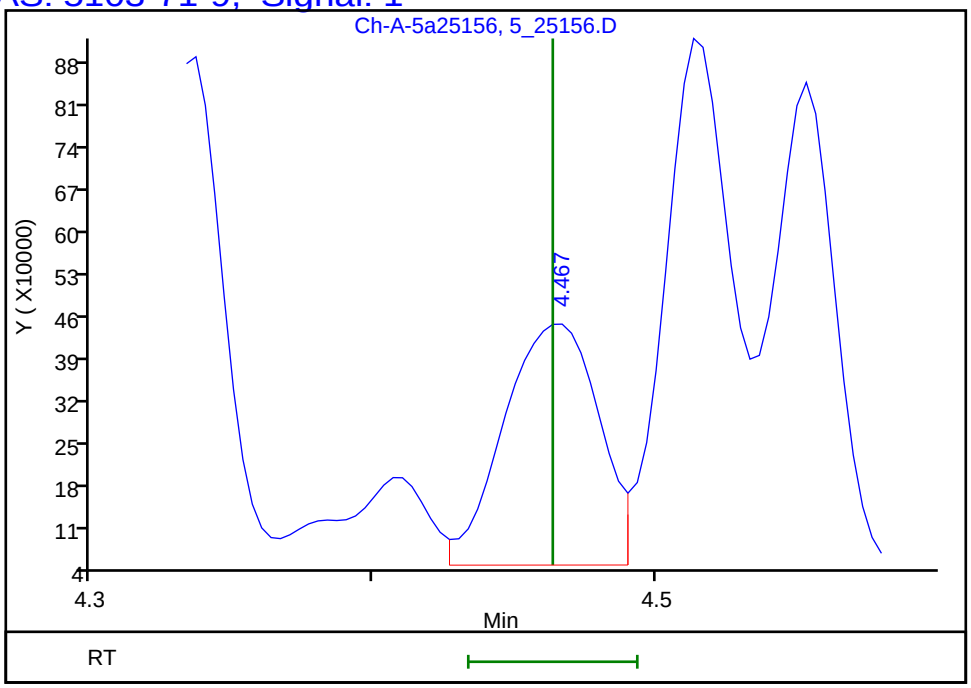
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Injection Date: 27-Sep-2019 16:47:31 Instrument ID: HP6890-5
Lims ID: 480-159547-F-39-C Lab Sample ID: 480-159547-39
Client ID: GERNATT-TS-COMP 1
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 1

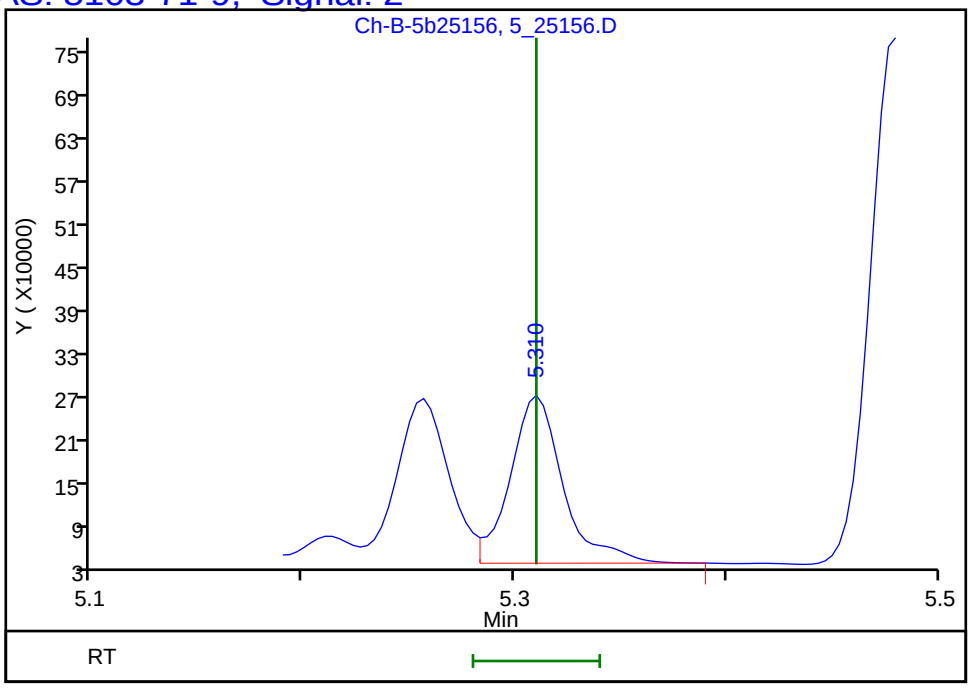
RT: 4.47
Response: 922906
Amount: 0.024061



Column: Detector Ch-B-6b58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 2

RT: 5.31
Response: 402171
Amount: 0.013661



Reviewer: salversonj, 30-Sep-2019 06:20:53
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

User Disabled Compound Report

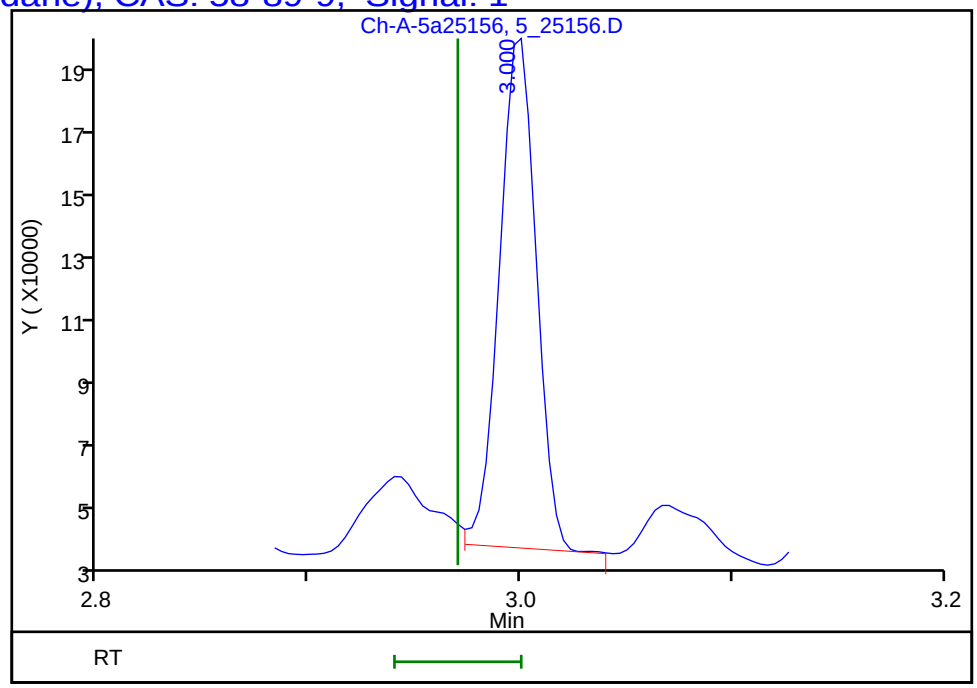
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25156.D
Injection Date: 27-Sep-2019 16:47:31 Instrument ID: HP6890-5
Lims ID: 480-159547-F-39-C Lab Sample ID: 480-159547-39
Client ID: GERNATT-TS-COMP 1
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

7 gamma-BHC (Lindane), CAS: 58-89-9, Signal: 1

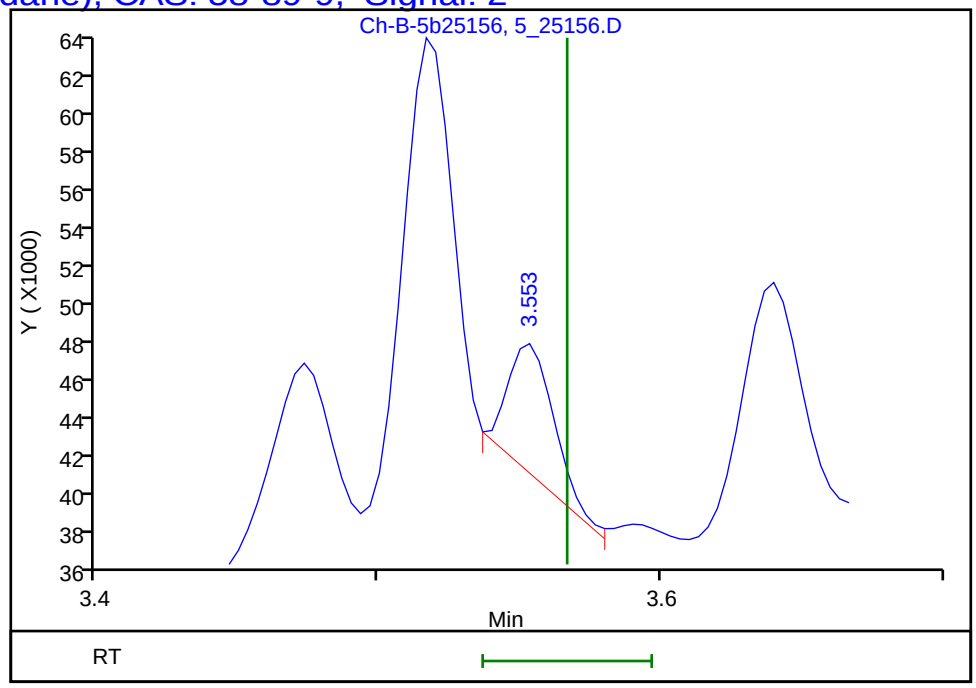
RT: 3.00
Response: 187386
Amount: 0.004574



Column: Detector Ch-B-6b58132

7 gamma-BHC (Lindane), CAS: 58-89-9, Signal: 2

RT: 3.55
Response: 7512
Amount: 0.001177



Reviewer: salversonj, 30-Sep-2019 06:20:53
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 5_25157.D

Analysis Method: 8081B Date Collected: 09/16/2019 14:35

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.07(g) Date Analyzed: 09/27/2019 17:07

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	5.2		1.9	0.37
72-55-9	4,4'-DDE	10		1.9	0.40
50-29-3	4,4'-DDT	4.3		1.9	0.45
309-00-2	Aldrin	ND		1.9	0.47
319-84-6	alpha-BHC	ND		1.9	0.34
5103-71-9	cis-Chlordane	ND		1.9	0.95
319-85-7	beta-BHC	ND		1.9	0.34
319-86-8	delta-BHC	0.47	J B	1.9	0.36
60-57-1	Dieldrin	27		1.9	0.46
959-98-8	Endosulfan I	ND		1.9	0.37
33213-65-9	Endosulfan II	0.85	J	1.9	0.34
1031-07-8	Endosulfan sulfate	ND		1.9	0.36
72-20-8	Endrin	1.7	J	1.9	0.38
58-89-9	gamma-BHC (Lindane)	0.63	J	1.9	0.35
76-44-8	Heptachlor	0.89	J	1.9	0.41

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	97		45-120
877-09-8	Tetrachloro-m-xylene	74		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D
Lims ID: 480-159547-F-40-C
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 17:07:12 ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:21:47

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12367727	0.5000	
2	2.043	2.043	0.000	13670695	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	303360	0.0147	
2	2.723	2.720	0.003	323097	0.0115	
					RPD = 24.61	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	401282	0.0194	
2	8.583	8.583	0.000	310491	0.0174	
					RPD = 10.63	
7 gamma-BHC (Lindane)						
1	2.943	2.970	-0.027	49777	0.001640	
2	3.553	3.567	-0.014	8903	0.001214	
					RPD = 29.81	
9 delta-BHC						
1	3.180	3.183	-0.003	31232	0.001223	
2	3.910	3.933	-0.023	18556	0.001524	
					RPD = 21.94	
11 Heptachlor						
1	3.367	3.363	0.004	91005	0.002316	
2	4.017	4.017	0.000	61596	0.002464	
					RPD = 6.20	
18 4,4'-DDE						
1	4.557	4.550	0.007	1005019	0.0263	
2	5.480	5.480	0.000	904553	0.0298	
					RPD = 12.35	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
21 Dieldrin						
1	4.850	4.843	0.007	2318454	0.0699	
2	5.660	5.660	0.000	1983068	0.0635	
					RPD = 9.47	
23 Endrin						
1	5.080	5.077	0.003	166538	0.004501	
2	5.977	5.973	0.004	97780	0.004326	
					RPD = 3.98	
24 4,4'-DDD						
1	5.163	5.160	0.003	367383	0.0135	
2	6.080	6.080	0.000	426520	0.0185	
					RPD = 31.44	
26 Endosulfan II						
1	5.290	5.303	-0.013	61770	0.002225	
2	6.197	6.190	0.007	32258	0.002167	
					RPD = 2.62	
28 4,4'-DDT						
1	5.447	5.443	0.004	283086	0.0113	
2	6.407	6.407	0.000	253407	0.0122	
					RPD = 7.98	

Reagents:

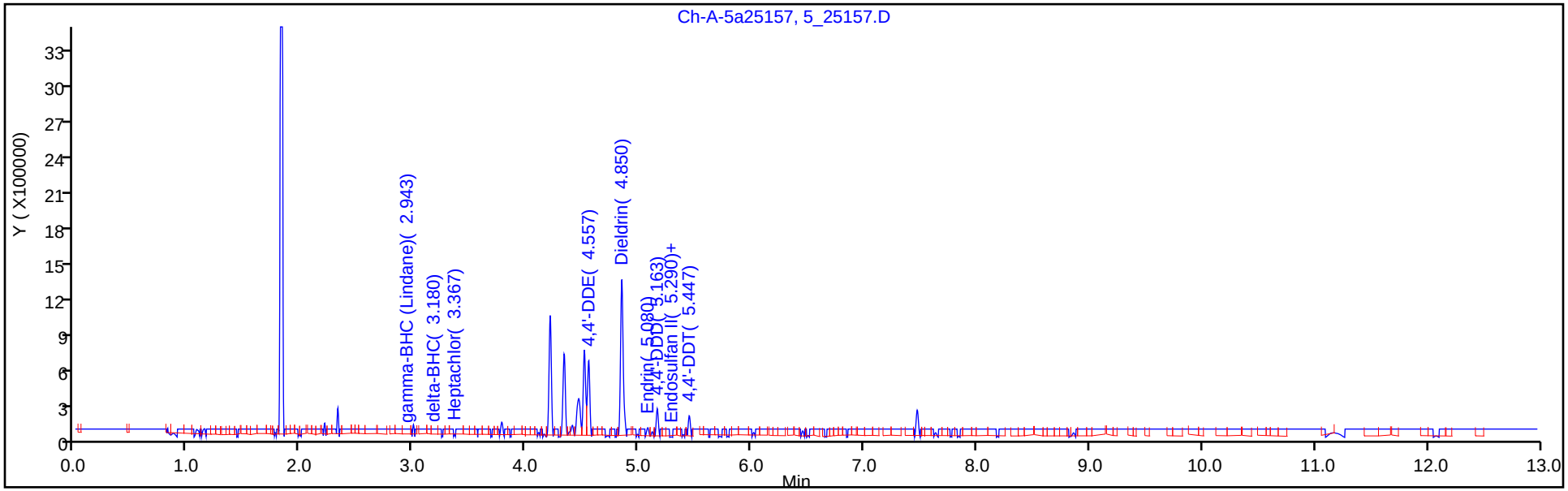
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 30-Sep-2019 06:36:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

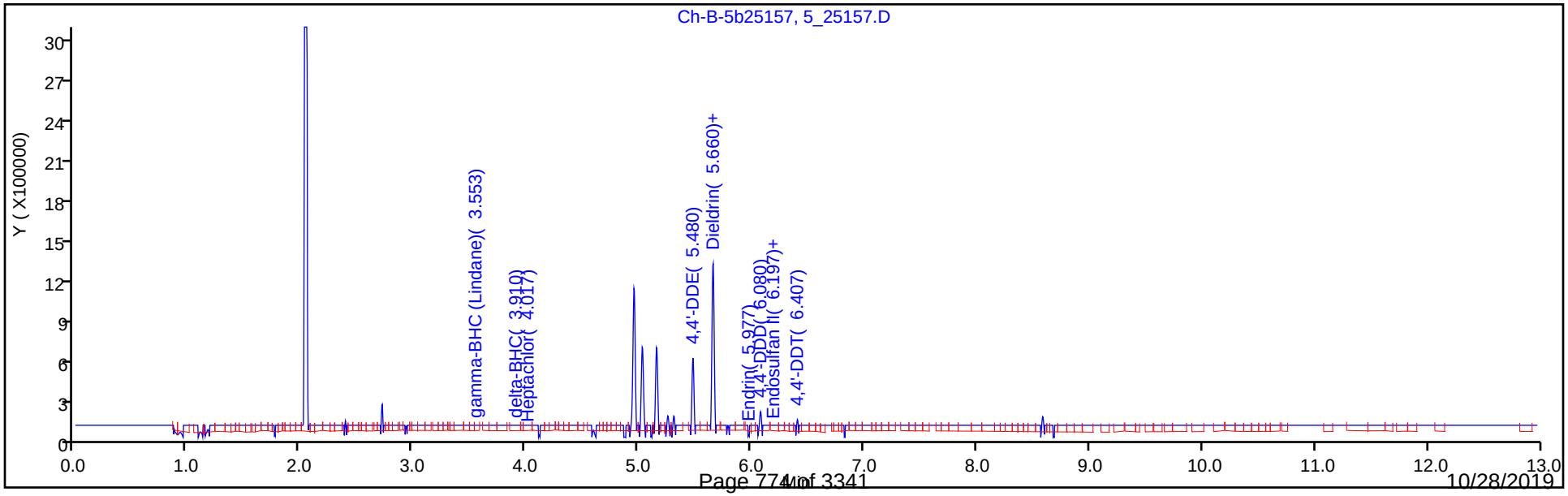
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D				
Injection Date:	27-Sep-2019 17:07:12	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-C	Lab Sample ID:	480-159547-40	Worklist Smp#:	30
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



User Disabled Compound Report

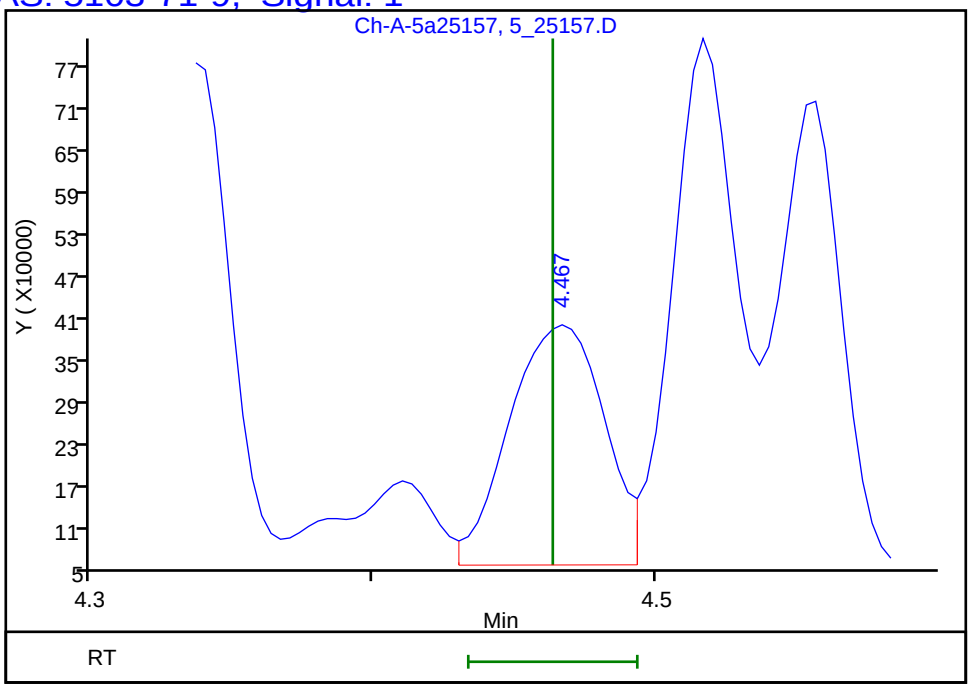
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D
Injection Date: 27-Sep-2019 17:07:12 Instrument ID: HP6890-5
Lims ID: 480-159547-F-40-C Lab Sample ID: 480-159547-40
Client ID: GERNATT-TS-COMP 2
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 1

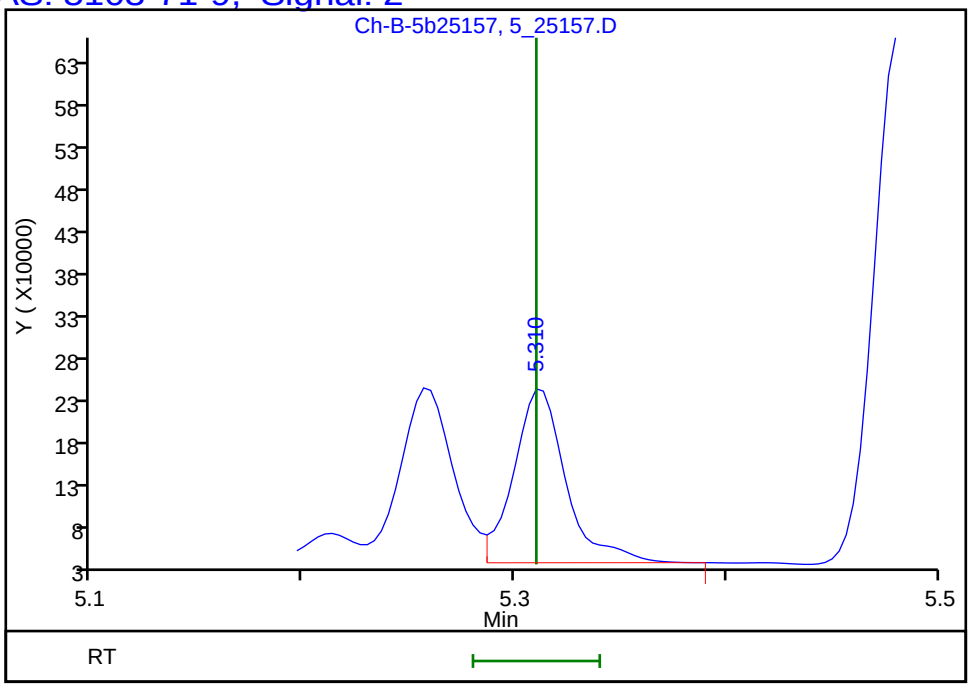
RT: 4.47
Response: 797605
Amount: 0.021595



Column: Detector Ch-B-6b58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 2

RT: 5.31
Response: 346662
Amount: 0.012237



Reviewer: salversonj, 30-Sep-2019 06:21:47
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 5_25157.D

Analysis Method: 8081B Date Collected: 09/16/2019 14:35

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.07(g) Date Analyzed: 09/27/2019 17:07

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	87		45-120
877-09-8	Tetrachloro-m-xylene	58		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D
Lims ID: 480-159547-F-40-C
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 17:07:12 ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 30-Sep-2019 06:34:51 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0333

First Level Reviewer: salversonj Date: 30-Sep-2019 06:21:47

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene						
1	1.830	1.827	0.003	12367727	0.5000	
2	2.043	2.043	0.000	13670695	0.5000	
					RPD = 0.00	
$ 2 Tetrachloro-m-xylene						
1	2.330	2.323	0.007	303360	0.0147	
2	2.723	2.720	0.003	323097	0.0115	
					RPD = 24.61	
$ 3 DCB Decachlorobiphenyl						
1	7.470	7.463	0.007	401282	0.0194	
2	8.583	8.583	0.000	310491	0.0174	
					RPD = 10.63	
7 gamma-BHC (Lindane)						
1	2.943	2.970	-0.027	49777	0.001640	
2	3.553	3.567	-0.014	8903	0.001214	
					RPD = 29.81	
9 delta-BHC						
1	3.180	3.183	-0.003	31232	0.001223	
2	3.910	3.933	-0.023	18556	0.001524	
					RPD = 21.94	
11 Heptachlor						
1	3.367	3.363	0.004	91005	0.002316	
2	4.017	4.017	0.000	61596	0.002464	
					RPD = 6.20	
18 4,4'-DDE						
1	4.557	4.550	0.007	1005019	0.0263	
2	5.480	5.480	0.000	904553	0.0298	
					RPD = 12.35	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
21 Dieldrin						
1	4.850	4.843	0.007	2318454	0.0699	
2	5.660	5.660	0.000	1983068	0.0635	
					RPD = 9.47	
23 Endrin						
1	5.080	5.077	0.003	166538	0.004501	
2	5.977	5.973	0.004	97780	0.004326	
					RPD = 3.98	
24 4,4'-DDD						
1	5.163	5.160	0.003	367383	0.0135	
2	6.080	6.080	0.000	426520	0.0185	
					RPD = 31.44	
26 Endosulfan II						
1	5.290	5.303	-0.013	61770	0.002225	
2	6.197	6.190	0.007	32258	0.002167	
					RPD = 2.62	
28 4,4'-DDT						
1	5.447	5.443	0.004	283086	0.0113	
2	6.407	6.407	0.000	253407	0.0122	
					RPD = 7.98	

Reagents:

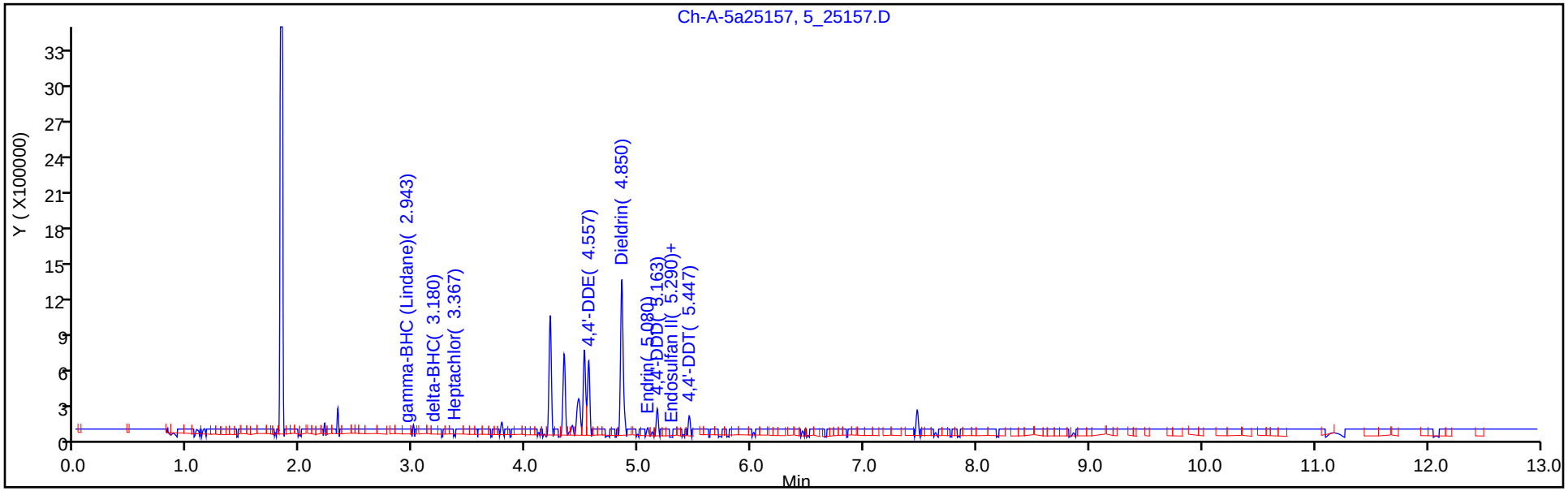
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 30-Sep-2019 06:36:37 Chrom Revision: 2.3 17-Sep-2019 16:19:08

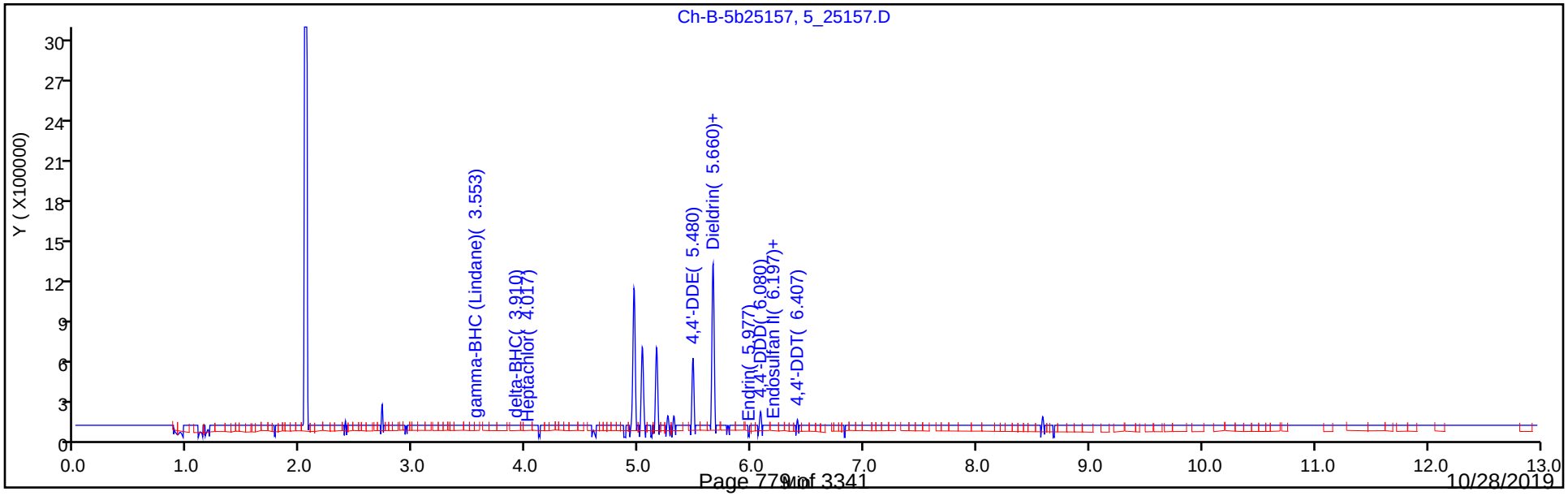
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D				
Injection Date:	27-Sep-2019 17:07:12	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-C	Lab Sample ID:	480-159547-40	Worklist Smp#:	30
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



User Disabled Compound Report

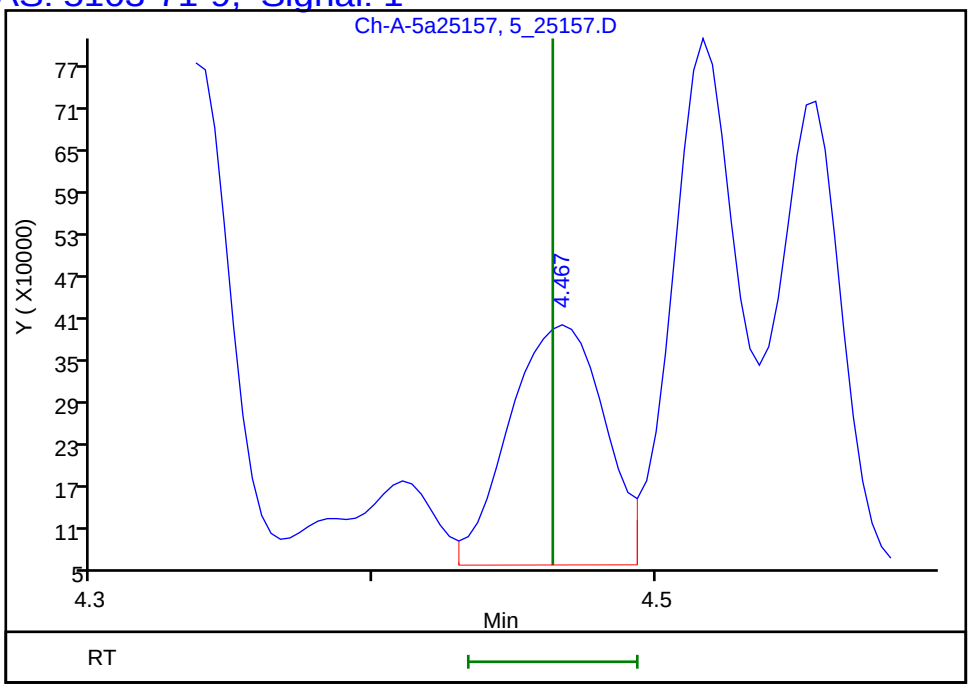
Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25157.D
Injection Date: 27-Sep-2019 17:07:12 Instrument ID: HP6890-5
Lims ID: 480-159547-F-40-C Lab Sample ID: 480-159547-40
Client ID: GERNATT-TS-COMP 2
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL

Column: Detector Ch-A-6A58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 1

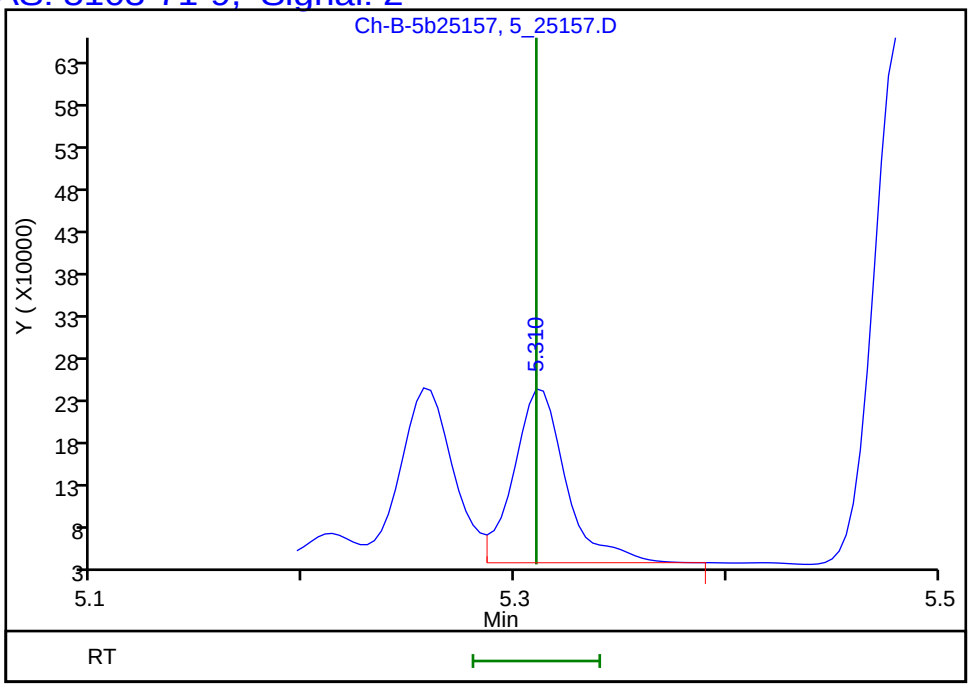
RT: 4.47
Response: 797605
Amount: 0.021595



Column: Detector Ch-B-6b58132

17 cis-Chlordane, CAS: 5103-71-9, Signal: 2

RT: 5.31
Response: 346662
Amount: 0.012237



Reviewer: salversonj, 30-Sep-2019 06:21:47
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492274

SDG No.:

Instrument ID: HP6890-5 GC Column: RTX-CLPI ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/16/2019 11:28 Calibration End Date: 09/16/2019 13:25 Calibration ID: 37650

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD5 480-492274/9	5_24341.D
Level 2	STD4 480-492274/8	5_24340.D
Level 3	STD3 480-492274/7	5_24339.D
Level 4	STD2 480-492274/11	5_24343.D
Level 5	STD1 480-492274/5	5_24337.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
alpha-BHC	1.7444	1.8509	2.0072	2.0124	1.9416	Lin1	-0.001	1.9861							1.0000		0.9900
gamma-BHC (Lindane)	1.6066	1.6860	1.8215	1.8231	1.7717	Lin1	-0.001	1.8056							1.0000		0.9900
beta-BHC	0.6630	0.6770	0.7054	0.7224	0.7031	Lin1	0	0.7124							1.0000		0.9900
delta-BHC	1.5263	1.5633	1.6847	1.7160	1.6391	Lin1	-0.001	1.6791							0.9990		0.9900
Heptachlor	1.5435	1.6015	1.7212	1.6500	1.5752	Lin1	0	1.6237							0.9990		0.9900
Aldrin	1.5375	1.6029	1.6591	1.6843	1.6123	Lin1	0	1.6478							0.9990		0.9900
Heptachlor epoxide	1.4453	1.4846	1.5149	1.4598	1.3966	Lin1	0.0004	1.4324							0.9990		0.9900
trans-Chlordane	1.4683	1.4909	1.5848	1.6106	1.5515	Lin1	-0.001	1.5819							1.0000		0.9900
cis-Chlordane	1.3914	1.4354	1.5290	1.5440	1.4969	Lin1	-0.001	1.5238							1.0000		0.9900
4,4'-DDE	1.4424	1.4852	1.5800	1.5908	1.5356	Lin1	-0.001	1.5664							1.0000		0.9900
Endosulfan I	1.2866	1.2980	1.3475	1.3434	1.2793	Lin1	0	1.3113							0.9990		0.9900
Dieldrin	1.2366	1.2972	1.3671	1.4040	1.2970	Lin1	0	1.3476							0.9980		0.9900
Endrin	1.4172	1.4476	1.4922	1.4287	1.3625	Lin1	0.0004	1.4009							0.9990		0.9900
4,4'-DDD	0.8432	1.0423	1.2193	1.2399	1.2328	Lin1	-0.002	1.2531							1.0000		0.9900
Endosulfan II	1.1149	1.1356	1.1908	1.1718	1.1272	Lin1	0	1.1526							0.9990		0.9900
4,4'-DDT	0.7791	0.8928	1.1946	1.2718	1.2804	Lin1	-0.003	1.2932							0.9990		0.9900
Endrin aldehyde	1.0130	1.0321	1.0758	1.0626	1.0148	Lin1	0	1.0403							0.9990		0.9900
Methoxychlor	0.3525	0.4026	0.5139	0.5216	0.5118	Lin1	-0.001	0.5243							1.0000		0.9900
Endosulfan sulfate	1.1598	1.1596	1.1981	1.1762	1.1055	Lin1	0.0003	1.1407							0.9990		0.9900
Endrin ketone	1.0735	1.1266	1.2430	1.2382	1.1285	Lin1	0	1.1863							0.9970		0.9900
Tetrachloro-m-xylene	0.7749	0.8056	0.8506	0.9025	0.8295	Lin1	0	0.8611							0.9980		0.9900
DCB Decachlorobiphenyl	0.5758	0.7944	0.8610	0.8892	0.9351	Lin1	-0.002	0.9256							0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492274

SDG No.:

Instrument ID: HP6890-5 GC Column: RTX-CLPI ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/16/2019 11:28 Calibration End Date: 09/16/2019 13:25 Calibration ID: 37650

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD5 480-492274/9	5_24341.D
Level 2	STD4 480-492274/8	5_24340.D
Level 3	STD3 480-492274/7	5_24339.D
Level 4	STD2 480-492274/11	5_24343.D
Level 5	STD1 480-492274/5	5_24337.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
alpha-BHC	BNB	Lin1	285266	599638	3089897	6285845	9361292	0.00500	0.0100	0.0500	0.100	0.150
gamma-BHC (Lindane)	BNB	Lin1	262729	546219	2803964	5694697	8541765	0.00500	0.0100	0.0500	0.100	0.150
beta-BHC	BNB	Lin1	108422	219328	1085872	2256436	3389997	0.00500	0.0100	0.0500	0.100	0.150
delta-BHC	BNB	Lin1	249597	506449	2593472	5360003	7902896	0.00500	0.0100	0.0500	0.100	0.150
Heptachlor	BNB	Lin1	252416	518838	2649627	5154067	7594491	0.00500	0.0100	0.0500	0.100	0.150
Aldrin	BNB	Lin1	251426	519292	2554032	5261063	7773247	0.00500	0.0100	0.0500	0.100	0.150
Heptachlor epoxide	BNB	Lin1	236356	480967	2332094	4559889	6733249	0.00500	0.0100	0.0500	0.100	0.150
trans-Chlordane	BNB	Lin1	240123	483020	2439647	5030756	7480256	0.00500	0.0100	0.0500	0.100	0.150
cis-Chlordane	BNB	Lin1	227534	465036	2353649	4822816	7217102	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDE	BNB	Lin1	235875	481170	2432218	4968970	7403439	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan I	BNB	Lin1	210403	420501	2074361	4196222	6167959	0.00500	0.0100	0.0500	0.100	0.150
Dieldrin	BNB	Lin1	202218	420268	2104489	4385564	6253387	0.00500	0.0100	0.0500	0.100	0.150
Endrin	BNB	Lin1	231759	468981	2297084	4462738	6569292	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDD	BNB	Lin1	137897	337684	1877004	3872888	5943558	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan II	BNB	Lin1	182328	367909	1833114	3660342	5434752	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDT	BNB	Lin1	127410	289255	1838997	3972614	6173236	0.00500	0.0100	0.0500	0.100	0.150
Endrin aldehyde	BNB	Lin1	165654	334358	1656019	3319009	4892891	0.00500	0.0100	0.0500	0.100	0.150
Methoxychlor	BNB	Lin1	57644	130426	791068	1629340	2467588	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan sulfate	BNB	Lin1	189660	375688	1844319	3674112	5330136	0.00500	0.0100	0.0500	0.100	0.150
Endrin ketone	BNB	Lin1	175561	364978	1913479	3867636	5440940	0.00500	0.0100	0.0500	0.100	0.150
Tetrachloro-m-xylene	BNB	Lin1	126728	260986	1309402	2818988	3999484	0.00500	0.0100	0.0500	0.100	0.150
DCB Decachlorobiphenyl	BNB	Lin1	94169	257356	1325377	2777574	4508395	0.00500	0.0100	0.0500	0.100	0.150

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24337.D
Lims ID: std1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 16-Sep-2019 11:28:12 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:33:08 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 13:13:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.833	1.840	-0.007	16071140	0.5000	0.5000	
2	2.053	2.060	-0.007	16568701	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	3999484	0.1500	0.1450	
2	2.737	2.740	-0.003	5374805	0.1500	0.1491	
						RPD = 2.82	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	4508395	0.1500	0.1534	
2	8.603	8.610	-0.007	3259468	0.1500	0.1505	
						RPD = 1.92	
6 alpha-BHC							
1	2.740	2.747	-0.007	9361292	0.1500	0.1472	
2	3.257	3.260	-0.003	8749461	0.1500	0.1489	
						RPD = 1.13	
7 gamma-BHC (Lindane)							
1	2.983	2.990	-0.007	8541765	0.1500	0.1477	
2	3.587	3.593	-0.006	7834645	0.1500	0.1493	
						RPD = 1.06	
8 beta-BHC							
1	3.053	3.057	-0.004	3389997	0.1500	0.1484	
2	3.657	3.663	-0.006	3063401	0.1500	0.1497	
						RPD = 0.87	
9 delta-BHC							
1	3.200	3.203	-0.003	7902896	0.1500	0.1469	
2	3.953	3.960	-0.007	7840807	0.1500	0.1490	
						RPD = 1.43	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	7594491	0.1500	0.1456	
2	4.037	4.043	-0.006	6181946	0.1500	0.1477	
						RPD = 1.43	
12 Aldrin							
1	3.647	3.650	-0.003	7773247	0.1500	0.1470	
2	4.383	4.387	-0.004	6501324	0.1500	0.1483	
						RPD = 0.87	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	6733249	0.1500	0.1460	
2	4.980	4.987	-0.007	5421694	0.1500	0.1485	
						RPD = 1.72	
16 trans-Chlordane							
1	4.350	4.353	-0.003	7480256	0.1500	0.1475	
2	5.180	5.183	-0.003	5860598	0.1500	0.1495	
						RPD = 1.32	
17 cis-Chlordane							
1	4.483	4.487	-0.004	7217102	0.1500	0.1478	
2	5.333	5.337	-0.004	5560885	0.1500	0.1495	
						RPD = 1.18	
18 4,4'-DDE							
1	4.570	4.573	-0.003	7403439	0.1500	0.1474	
2	5.500	5.507	-0.007	5690103	0.1500	0.1498	
						RPD = 1.62	
19 Endosulfan I							
1	4.620	4.623	-0.003	6167959	0.1500	0.1463	
2	5.393	5.400	-0.007	4680770	0.1500	0.1484	
						RPD = 1.37	
21 Dieldrin							
1	4.863	4.867	-0.004	6253387	0.1500	0.1447	
2	5.680	5.687	-0.007	5679966	0.1500	0.1491	
						RPD = 2.98	
23 Endrin							
1	5.093	5.100	-0.007	6569292	0.1500	0.1456	
2	5.997	6.000	-0.003	5055053	0.1500	0.1496	
						RPD = 2.70	
24 4,4'-DDD							
1	5.177	5.180	-0.003	5943558	0.1500	0.1492	
2	6.100	6.107	-0.007	4459340	0.1500	0.1504	
						RPD = 0.79	
26 Endosulfan II							
1	5.320	5.327	-0.007	5434752	0.1500	0.1468	
2	6.213	6.217	-0.004	4093881	0.1500	0.1499	
						RPD = 2.09	
28 4,4'-DDT							
1	5.460	5.467	-0.007	6173236	0.1500	0.1509	
2	6.427	6.433	-0.006	4530370	0.1500	0.1523	
						RPD = 0.89	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	4892891	0.1500	0.1463	
2	6.557	6.560	-0.003	3539761	0.1500	0.1499	
						RPD = 2.39	
30 Methoxychlor							
1	5.967	5.970	-0.003	2467588	0.1500	0.1482	
2	7.117	7.123	-0.006	2020284	0.1500	0.1533	
						RPD = 3.34	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	5330136	0.1500	0.1451	
2	6.840	6.847	-0.007	4337038	0.1500	0.1503	
						RPD = 3.53	
33 Endrin ketone							
1	6.467	6.473	-0.006	5440940	0.1500	0.1430	
2	7.383	7.390	-0.007	4532068	0.1500	0.1512	
						RPD = 5.54	
S 35 BHC, Total							
1						0.5902	
2						0.5969	
						RPD = 1.12	

Reagents:

PEST_CAL_.15_00035 Amount Added: 1.00 Units: mL

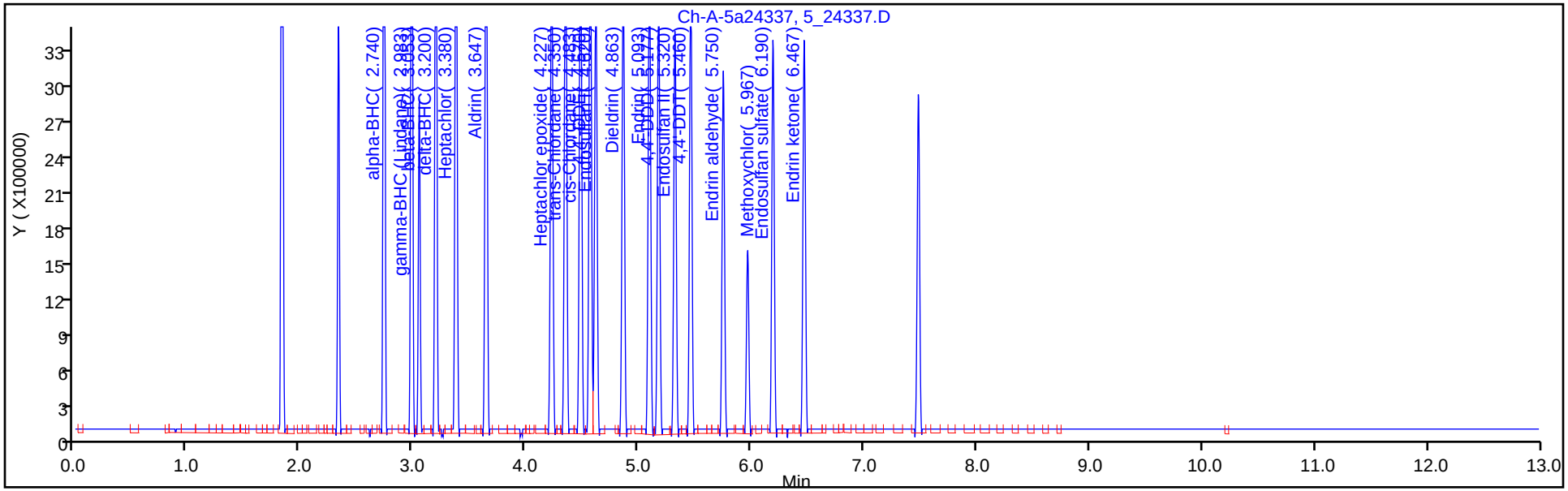
Report Date: 16-Sep-2019 14:33:08 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

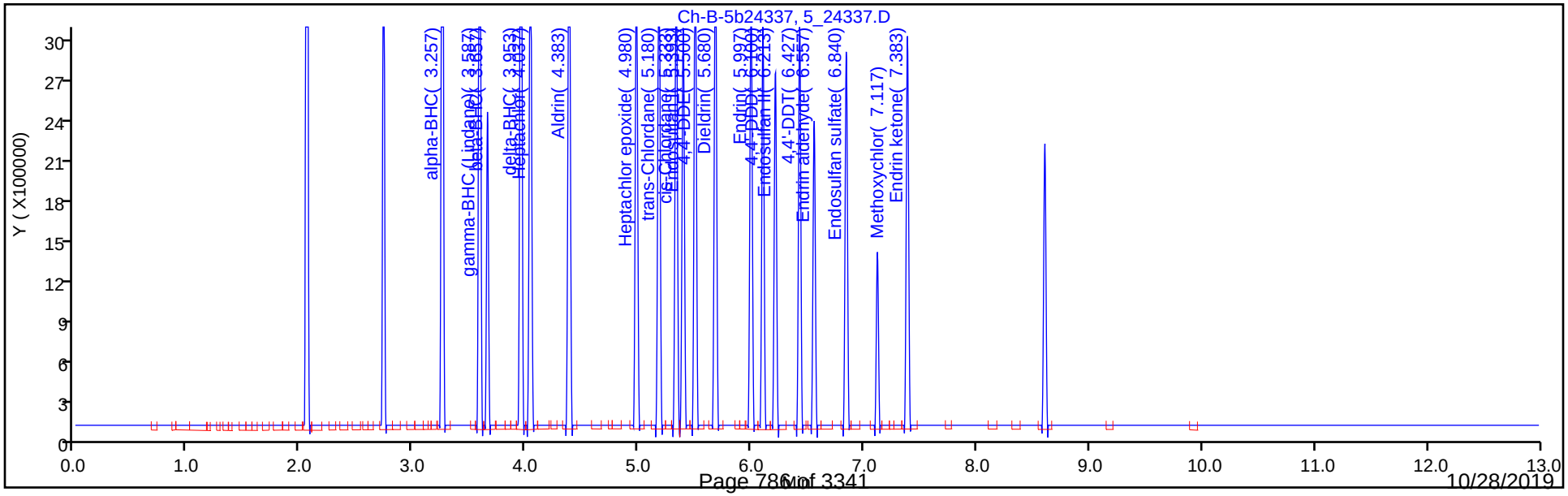
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24337.D

Injection Date:	16-Sep-2019 11:28:12	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std1			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24339.D
Lims ID: std3
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 16-Sep-2019 12:07:16 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:32:54 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.840	1.840	0.000	15393881	0.5000	0.5000	
2	2.060	2.060	0.000	16072130	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.340	2.340	0.000	1309402	0.0500	0.0499	
2	2.740	2.740	0.000	1733743	0.0500	0.0501	
						RPD = 0.34	
$ 3 DCB Decachlorobiphenyl							
1	7.487	7.487	0.000	1325377	0.0500	0.0483	
2	8.610	8.610	0.000	1028744	0.0500	0.0490	
						RPD = 1.31	
6 alpha-BHC							
1	2.747	2.747	0.000	3089897	0.0500	0.0511	
2	3.260	3.260	0.000	2810018	0.0500	0.0500	
						RPD = 2.23	
7 gamma-BHC (Lindane)							
1	2.990	2.990	0.000	2803964	0.0500	0.0510	
2	3.593	3.593	0.000	2502708	0.0500	0.0498	
						RPD = 2.24	
8 beta-BHC							
1	3.057	3.057	0.000	1085872	0.0500	0.0499	
2	3.663	3.663	0.000	969718	0.0500	0.0492	
						RPD = 1.30	
9 delta-BHC							
1	3.203	3.203	0.000	2593472	0.0500	0.0506	
2	3.960	3.960	0.000	2507941	0.0500	0.0499	
						RPD = 1.52	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.383	3.383	0.000	2649627	0.0500	0.0531	
2	4.043	4.043	0.000	2018078	0.0500	0.0501	
						RPD = 5.62	
12 Aldrin							
1	3.650	3.650	0.000	2554032	0.0500	0.0506	
2	4.387	4.387	0.000	2120270	0.0500	0.0505	
						RPD = 0.26	
14 Heptachlor epoxide							
1	4.230	4.230	0.000	2332094	0.0500	0.0526	
2	4.987	4.987	0.000	1792275	0.0500	0.0508	
						RPD = 3.40	
16 trans-Chlordane							
1	4.353	4.353	0.000	2439647	0.0500	0.0505	
2	5.183	5.183	0.000	1847589	0.0500	0.0493	
						RPD = 2.39	
17 cis-Chlordane							
1	4.487	4.487	0.000	2353649	0.0500	0.0506	
2	5.337	5.337	0.000	1759284	0.0500	0.0495	
						RPD = 2.29	
18 4,4'-DDE							
1	4.573	4.573	0.000	2432218	0.0500	0.0508	
2	5.507	5.507	0.000	1792140	0.0500	0.0494	
						RPD = 2.80	
19 Endosulfan I							
1	4.623	4.623	0.000	2074361	0.0500	0.0514	
2	5.400	5.400	0.000	1515432	0.0500	0.0500	
						RPD = 2.79	
21 Dieldrin							
1	4.867	4.867	0.000	2104489	0.0500	0.0510	
2	5.687	5.687	0.000	1837732	0.0500	0.0503	
						RPD = 1.51	
23 Endrin							
1	5.100	5.100	0.000	2297084	0.0500	0.0530	
2	6.000	6.000	0.000	1619855	0.0500	0.0500	
						RPD = 5.80	
24 4,4'-DDD							
1	5.180	5.180	0.000	1877004	0.0500	0.0503	
2	6.107	6.107	0.000	1386666	0.0500	0.0490	
						RPD = 2.50	
26 Endosulfan II							
1	5.327	5.327	0.000	1833114	0.0500	0.0517	
2	6.217	6.217	0.000	1305272	0.0500	0.0498	
						RPD = 3.86	
28 4,4'-DDT							
1	5.467	5.467	0.000	1838997	0.0500	0.0486	
2	6.433	6.433	0.000	1344710	0.0500	0.0480	
						RPD = 1.27	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.753	5.753	0.000	1656019	0.0500	0.0517	
2	6.560	6.560	0.000	1134964	0.0500	0.0499	
						RPD = 3.63	
30 Methoxychlor							
1	5.970	5.970	0.000	791068	0.0500	0.0508	
2	7.123	7.123	0.000	599232	0.0500	0.0479	
						RPD = 5.89	
32 Endosulfan sulfate							
1	6.197	6.197	0.000	1844319	0.0500	0.0523	
2	6.847	6.847	0.000	1376954	0.0500	0.0496	
						RPD = 5.13	
33 Endrin ketone							
1	6.473	6.473	0.000	1913479	0.0500	0.0527	
2	7.390	7.390	0.000	1412549	0.0500	0.0492	
						RPD = 6.76	

Reagents:

PEST_CCV_.05_00296 Amount Added: 1.00 Units: mL

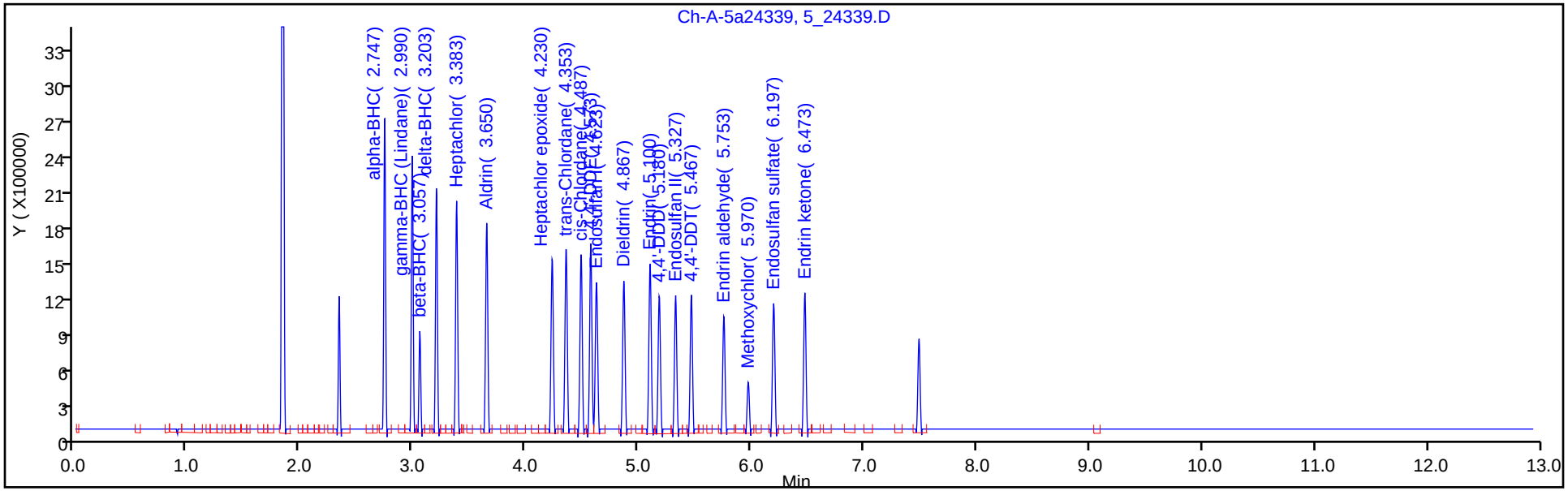
Report Date: 16-Sep-2019 14:32:55 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

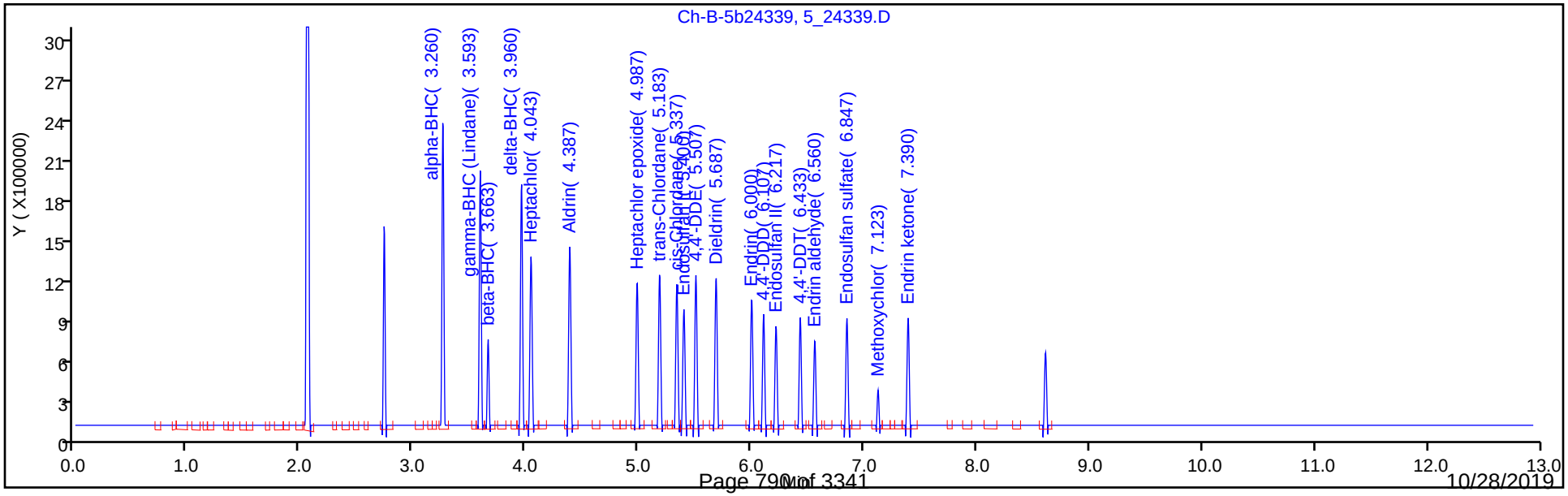
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24339.D

Injection Date:	16-Sep-2019 12:07:16	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std3			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24340.D
Lims ID: std4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 16-Sep-2019 12:26:57 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:32:59 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.833	1.840	-0.007	16198436	0.5000	0.5000	
2	2.053	2.060	-0.007	17019645	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	260986	0.0100	0.009847	
2	2.737	2.740	-0.003	339294	0.0100	0.009813	
						RPD = 0.35	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	257356	0.0100	0.0104	
2	8.603	8.610	-0.007	219339	0.0100	0.009897	
						RPD = 5.14	
6 alpha-BHC							
1	2.740	2.747	-0.007	599638	0.0100	0.009879	
2	3.257	3.260	-0.003	532956	0.0100	0.009772	
						RPD = 1.08	
7 gamma-BHC (Lindane)							
1	2.983	2.990	-0.007	546219	0.0100	0.009863	
2	3.587	3.593	-0.006	474901	0.0100	0.009759	
						RPD = 1.05	
8 beta-BHC							
1	3.053	3.057	-0.004	219328	0.0100	0.009883	
2	3.657	3.663	-0.006	195122	0.0100	0.009819	
						RPD = 0.65	
9 delta-BHC							
1	3.200	3.203	-0.003	506449	0.0100	0.009781	
2	3.953	3.960	-0.007	470560	0.0100	0.009742	
						RPD = 0.40	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	518838	0.0100	0.0099	
2	4.037	4.043	-0.006	396838	0.0100	0.009874	
						RPD = 0.40	
12 Aldrin							
1	3.643	3.650	-0.007	519292	0.0100	0.0100	
2	4.380	4.387	-0.007	406921	0.0100	0.009897	
						RPD = 0.89	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	480967	0.0100	0.0101	
2	4.980	4.987	-0.007	358545	0.0100	0.009887	
						RPD = 1.89	
16 trans-Chlordane							
1	4.350	4.353	-0.003	483020	0.0100	0.009807	
2	5.180	5.183	-0.003	350332	0.0100	0.009688	
						RPD = 1.22	
17 cis-Chlordane							
1	4.483	4.487	-0.004	465036	0.0100	0.009854	
2	5.333	5.337	-0.004	337986	0.0100	0.009803	
						RPD = 0.52	
18 4,4'-DDE							
1	4.567	4.573	-0.006	481170	0.0100	0.009857	
2	5.500	5.507	-0.007	334777	0.0100	0.009645	
						RPD = 2.18	
19 Endosulfan I							
1	4.620	4.623	-0.003	420501	0.0100	0.0099	
2	5.393	5.400	-0.007	301519	0.0100	0.0099	
						RPD = 0.42	
21 Dieldrin							
1	4.860	4.867	-0.007	420268	0.0100	0.0099	
2	5.680	5.687	-0.007	353417	0.0100	0.009793	
						RPD = 1.35	
23 Endrin							
1	5.093	5.100	-0.007	468981	0.0100	0.0100	
2	5.997	6.000	-0.003	312152	0.0100	0.009780	
						RPD = 2.51	
24 4,4'-DDD							
1	5.177	5.180	-0.003	337684	0.0100	0.0099	
2	6.103	6.107	-0.004	257921	0.0100	0.009621	
						RPD = 3.35	
26 Endosulfan II							
1	5.323	5.327	-0.004	367909	0.0100	0.0099	
2	6.213	6.217	-0.004	253841	0.0100	0.009744	
						RPD = 1.70	
28 4,4'-DDT							
1	5.460	5.467	-0.007	289255	0.0100	0.009309	
2	6.427	6.433	-0.006	229862	0.0100	0.009426	
						RPD = 1.24	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	334358	0.0100	0.0099	
2	6.557	6.560	-0.003	225610	0.0100	0.009761	
						RPD = 1.73	
30 Methoxychlor							
1	5.967	5.970	-0.003	130426	0.0100	0.009486	
2	7.117	7.123	-0.006	110200	0.0100	0.009557	
						RPD = 0.74	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	375688	0.0100	0.0099	
2	6.840	6.847	-0.007	268450	0.0100	0.009682	
						RPD = 2.40	
33 Endrin ketone							
1	6.467	6.473	-0.006	364978	0.0100	0.009801	
2	7.383	7.390	-0.007	267806	0.0100	0.009641	
						RPD = 1.65	
S 35 BHC, Total							
1						0.0394	
2						0.0391	
						RPD = 0.80	

Reagents:

pest_cal_.01_00026 Amount Added: 1.00 Units: mL

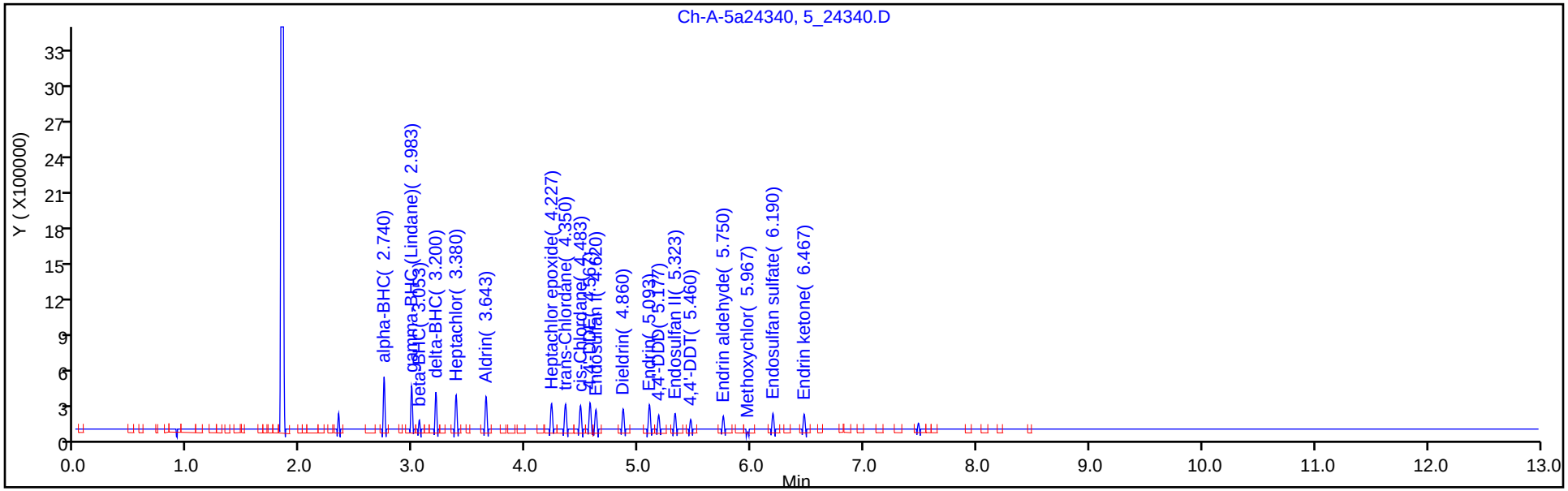
Report Date: 16-Sep-2019 14:32:59 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

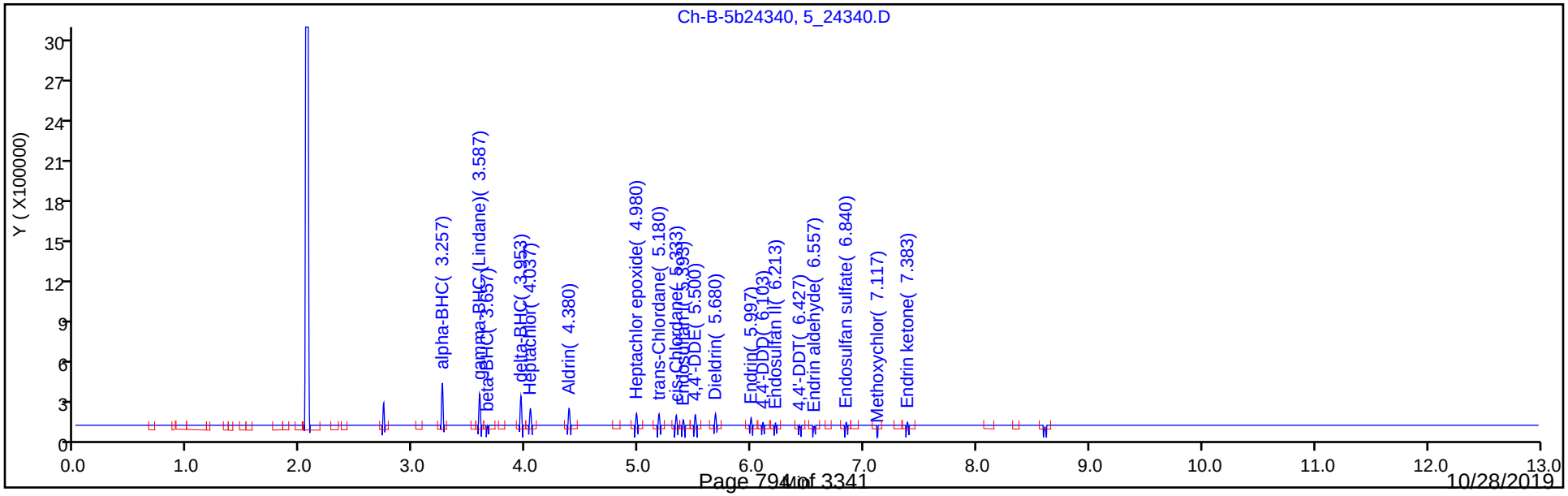
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24340.D

Injection Date:	16-Sep-2019 12:26:57	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std4			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24341.D
Lims ID: std5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 16-Sep-2019 12:46:26 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:33:04 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 13:14:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.837	1.840	-0.003	16353318	0.5000	0.5000	
2	2.057	2.060	-0.003	17240498	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	126728	0.005000	0.004991	
2	2.737	2.740	-0.003	165046	0.005000	0.005071	
						RPD = 1.59	
$ 3 DCB Decachlorobiphenyl							M
1	7.483	7.487	-0.004	94169	0.005000	0.004948	M
2	8.603	8.610	-0.007	114261	0.005000	0.005110	
						RPD = 3.24	
6 alpha-BHC							
1	2.740	2.747	-0.007	285266	0.005000	0.004951	
2	3.257	3.260	-0.003	251617	0.005000	0.005090	
						RPD = 2.77	
7 gamma-BHC (Lindane)							
1	2.987	2.990	-0.003	262729	0.005000	0.004974	
2	3.590	3.593	-0.003	225417	0.005000	0.005110	
						RPD = 2.70	
8 beta-BHC							
1	3.053	3.057	-0.004	108422	0.005000	0.005034	
2	3.660	3.663	-0.003	97231	0.005000	0.005121	
						RPD = 1.71	
9 delta-BHC							
1	3.200	3.203	-0.003	249597	0.005000	0.005016	
2	3.953	3.960	-0.007	221286	0.005000	0.005112	
						RPD = 1.90	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	252416	0.005000	0.004803	
2	4.040	4.043	-0.003	189156	0.005000	0.005011	
						RPD = 4.24	
12 Aldrin							
1	3.647	3.650	-0.003	251426	0.005000	0.004923	
2	4.383	4.387	-0.004	187206	0.005000	0.004995	
						RPD = 1.44	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	236356	0.005000	0.004757	
2	4.980	4.987	-0.007	176437	0.005000	0.004983	
						RPD = 4.65	
16 trans-Chlordane							
1	4.350	4.353	-0.003	240123	0.005000	0.005023	
2	5.180	5.183	-0.003	169459	0.005000	0.005176	
						RPD = 3.00	
17 cis-Chlordane							
1	4.483	4.487	-0.004	227534	0.005000	0.004999	
2	5.333	5.337	-0.004	159700	0.005000	0.005114	
						RPD = 2.28	
18 4,4'-DDE							
1	4.570	4.573	-0.003	235875	0.005000	0.004980	
2	5.503	5.507	-0.004	161969	0.005000	0.005196	
						RPD = 4.25	
19 Endosulfan I							
1	4.620	4.623	-0.003	210403	0.005000	0.004909	
2	5.397	5.400	-0.003	142390	0.005000	0.005000	
						RPD = 1.82	
21 Dieldrin							
1	4.863	4.867	-0.004	202218	0.005000	0.004888	
2	5.683	5.687	-0.004	169623	0.005000	0.005068	
						RPD = 3.62	
23 Endrin							
1	5.097	5.100	-0.003	231759	0.005000	0.004754	
2	5.997	6.000	-0.003	150632	0.005000	0.005098	
						RPD = 7.00	
24 4,4'-DDD							
1	5.180	5.180	0.000	137897	0.005000	0.004995	
2	6.103	6.107	-0.004	124872	0.005000	0.005237	
						RPD = 4.72	
26 Endosulfan II							
1	5.323	5.327	-0.004	182328	0.005000	0.004895	
2	6.213	6.217	-0.004	125361	0.005000	0.005132	
						RPD = 4.72	
28 4,4'-DDT							
1	5.460	5.467	-0.007	127410	0.005000	0.005417	
2	6.430	6.433	-0.003	107120	0.005000	0.005418	
						RPD = 0.01	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	165654	0.005000	0.004878	
2	6.557	6.560	-0.003	114065	0.005000	0.005118	
						RPD = 4.79	
30 Methoxychlor							
1	5.967	5.970	-0.003	57644	0.005000	0.005169	
2	7.120	7.123	-0.003	53737	0.005000	0.005377	
						RPD = 3.94	
32 Endosulfan sulfate							
1	6.193	6.197	-0.004	189660	0.005000	0.004835	
2	6.843	6.847	-0.004	136050	0.005000	0.005175	
						RPD = 6.80	
33 Endrin ketone							
1	6.470	6.473	-0.003	175561	0.005000	0.004829	
2	7.387	7.390	-0.003	132739	0.005000	0.005230	
						RPD = 7.96	
S 35 BHC, Total							
1						0.0200	
2						0.0204	
						RPD = 2.27	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

pest_cal_.005_00026 Amount Added: 1.00 Units: mL

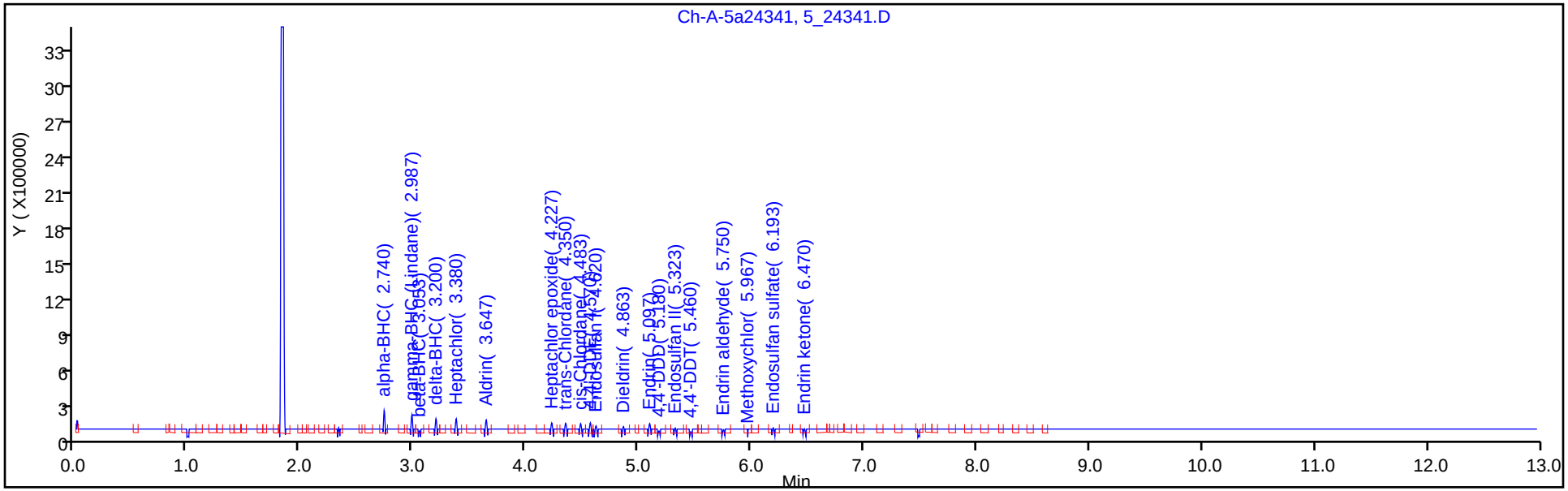
Report Date: 16-Sep-2019 14:33:04 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

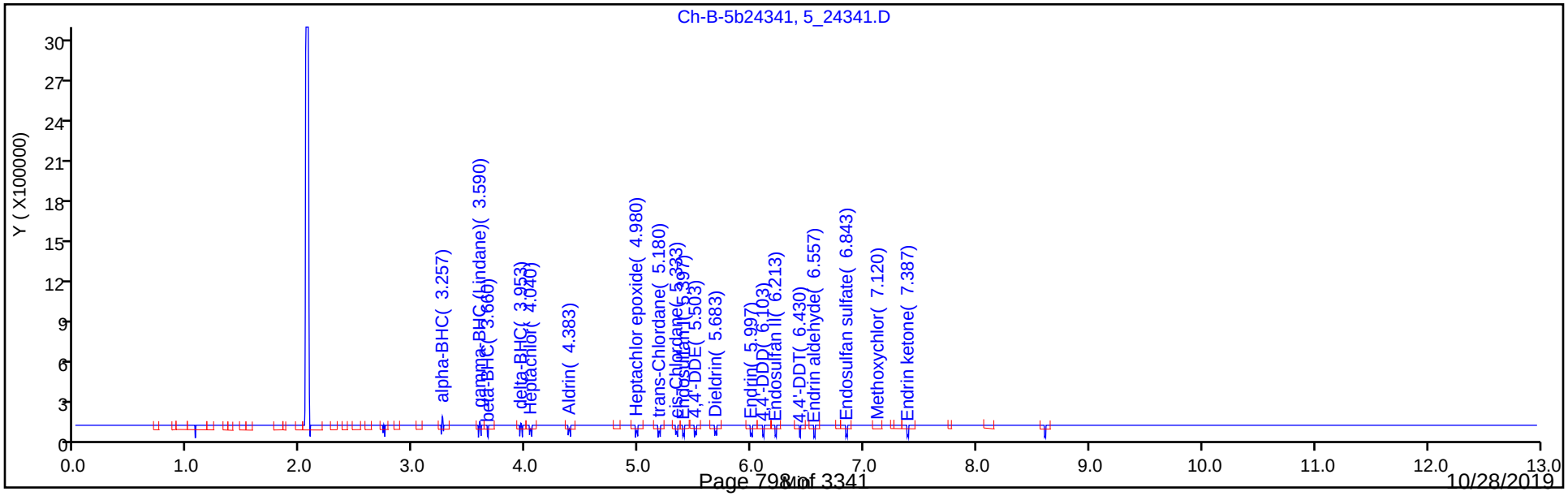
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24341.D

Injection Date:	16-Sep-2019 12:46:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std5			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

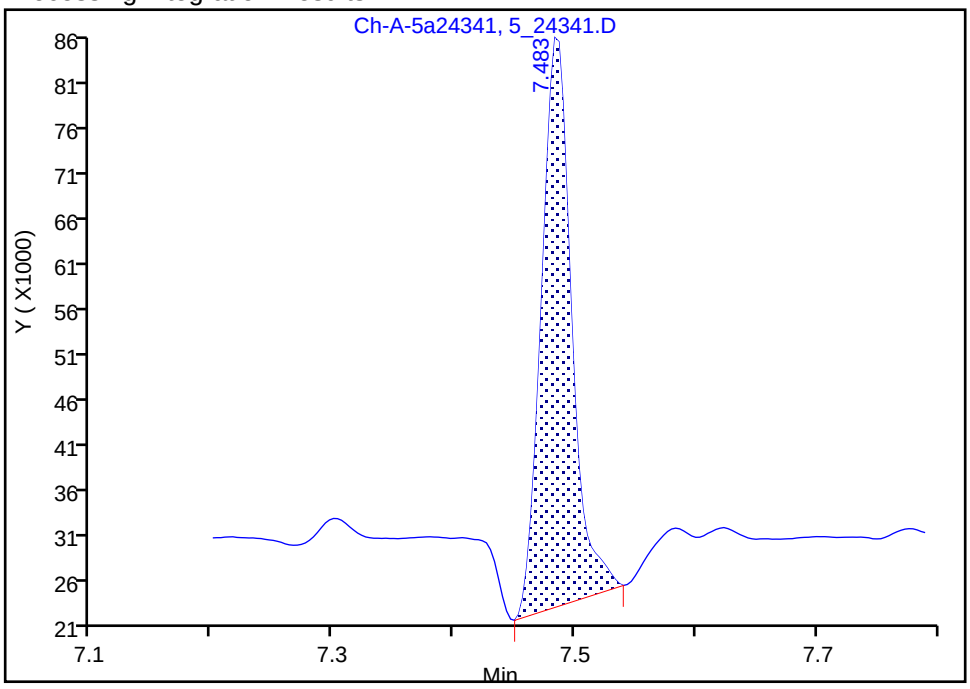
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24341.D
Injection Date: 16-Sep-2019 12:46:26 Instrument ID: HP6890-5
Lims ID: std5
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: IS-8081 6890-5 Limit Group: GC - 8081B IS ICAL
Column: Detector Ch-A-6A58132

$ 3 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 1

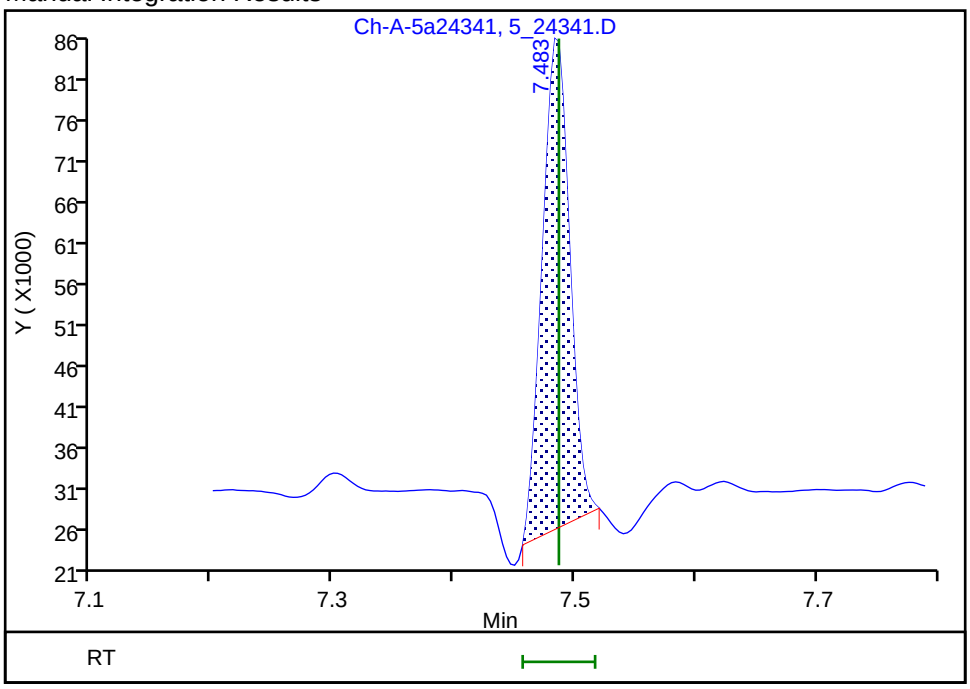
Processing Integration Results

RT: 7.48
Area: 108307
Amount: 0.005000
Amount Units: ng/ul



Manual Integration Results

RT: 7.48
Area: 94169
Amount: 0.004948
Amount Units: ng/ul



Reviewer: NearyM, 16-Sep-2019 13:14:03
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D
Lims ID: std2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Sep-2019 13:25:36 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:40:27 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 14:40:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.837	1.840	-0.003	15618105	0.5000	0.5000	
2	2.057	2.060	-0.003	16432146	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	2818988	0.1000	0.1053	
2	2.737	2.740	-0.003	3599801	0.1000	0.1009	
						RPD = 4.23	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	2777574	0.1000	0.0979	
2	8.603	8.610	-0.007	2159934	0.1000	0.1005	
						RPD = 2.66	
6 alpha-BHC							
1	2.740	2.747	-0.007	6285845	0.1000	0.1019	
2	3.257	3.260	-0.003	5885398	0.1000	0.1013	
						RPD = 0.57	
7 gamma-BHC (Lindane)							
1	2.987	2.990	-0.003	5694697	0.1000	0.1015	
2	3.590	3.593	-0.003	5240557	0.1000	0.1010	
						RPD = 0.48	
8 beta-BHC							
1	3.053	3.057	-0.004	2256436	0.1000	0.1018	
2	3.657	3.663	-0.006	2047870	0.1000	0.1011	
						RPD = 0.66	
9 delta-BHC							
1	3.200	3.203	-0.003	5360003	0.1000	0.1027	
2	3.953	3.960	-0.007	5265861	0.1000	0.1013	
						RPD = 1.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.377	3.383	-0.006	5154067	0.1000	0.1017	
2	4.040	4.043	-0.003	4239049	0.1000	0.1023	
						RPD = 0.63	
12 Aldrin							
1	3.647	3.650	-0.003	5261063	0.1000	0.1025	
2	4.383	4.387	-0.004	4393118	0.1000	0.1013	
						RPD = 1.11	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	4559889	0.1000	0.1016	
2	4.980	4.987	-0.007	3646794	0.1000	0.1008	
						RPD = 0.80	
16 trans-Chlordane							
1	4.350	4.353	-0.003	5030756	0.1000	0.1022	
2	5.180	5.183	-0.003	3930038	0.1000	0.1014	
						RPD = 0.78	
17 cis-Chlordane							
1	4.483	4.487	-0.004	4822816	0.1000	0.1018	
2	5.333	5.337	-0.004	3715876	0.1000	0.1011	
						RPD = 0.66	
18 4,4'-DDE							
1	4.567	4.573	-0.006	4968970	0.1000	0.1019	
2	5.500	5.507	-0.007	3787477	0.1000	0.1009	
						RPD = 0.99	
19 Endosulfan I							
1	4.617	4.623	-0.006	4196222	0.1000	0.1025	
2	5.397	5.400	-0.003	3175745	0.1000	0.1017	
						RPD = 0.72	
21 Dieldrin							
1	4.860	4.867	-0.007	4385564	0.1000	0.1045	
2	5.680	5.687	-0.007	3800330	0.1000	0.1008	
						RPD = 3.57	
23 Endrin							
1	5.093	5.100	-0.007	4462738	0.1000	0.1017	
2	5.997	6.000	-0.003	3362426	0.1000	0.1006	
						RPD = 1.08	
24 4,4'-DDD							
1	5.177	5.180	-0.003	3872888	0.1000	0.1006	
2	6.103	6.107	-0.004	2949821	0.1000	0.1007	
						RPD = 0.14	
26 Endosulfan II							
1	5.320	5.327	-0.007	3660342	0.1000	0.1017	
2	6.213	6.217	-0.004	2716592	0.1000	0.1005	
						RPD = 1.20	
28 4,4'-DDT							
1	5.460	5.467	-0.007	3972614	0.1000	0.1008	
2	6.427	6.433	-0.006	2927126	0.1000	0.0999	
						RPD = 0.85	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	3319009	0.1000	0.1021	
2	6.557	6.560	-0.003	2347658	0.1000	0.1004	
						RPD = 1.74	
30 Methoxychlor							
1	5.967	5.970	-0.003	1629340	0.1000	0.1013	
2	7.117	7.123	-0.006	1285668	0.1000	0.0989	
						RPD = 2.41	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	3674112	0.1000	0.1029	
2	6.840	6.847	-0.007	2859511	0.1000	0.1002	
						RPD = 2.66	
33 Endrin ketone							
1	6.467	6.473	-0.006	3867636	0.1000	0.1047	
2	7.383	7.390	-0.007	2955468	0.1000	0.0997	
						RPD = 4.84	
S 35 BHC, Total							
1						0.4078	
2						0.4047	
						RPD = 0.77	

Reagents:

PEST_CAL_.10_00035 Amount Added: 1.00 Units: mL

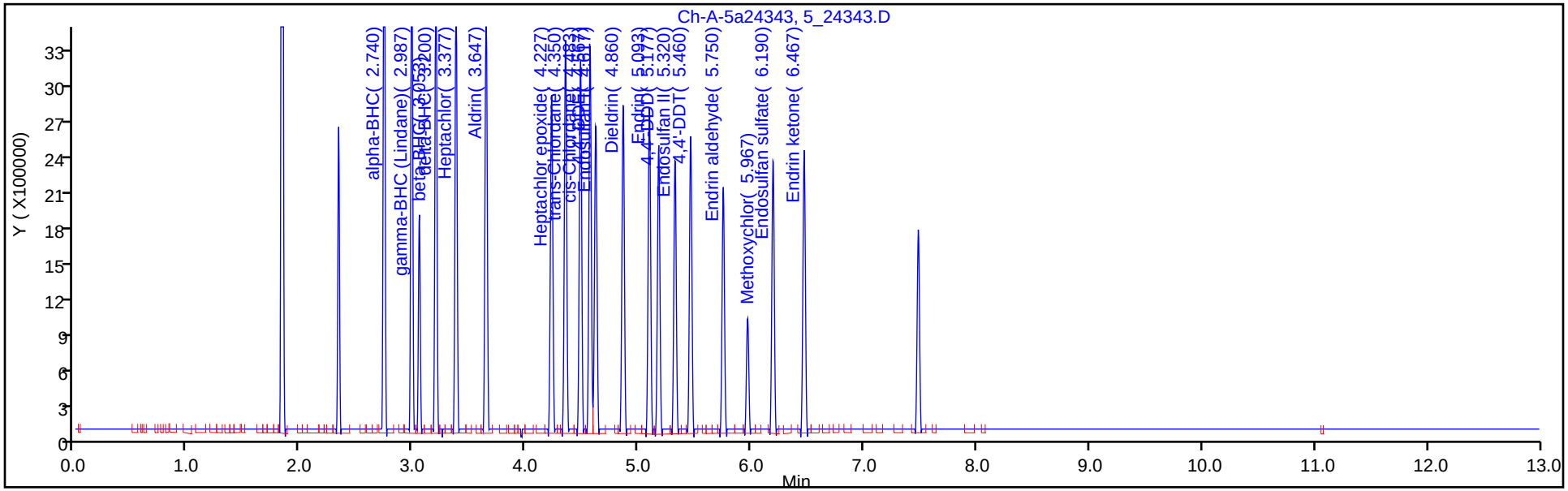
Report Date: 16-Sep-2019 14:40:28 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

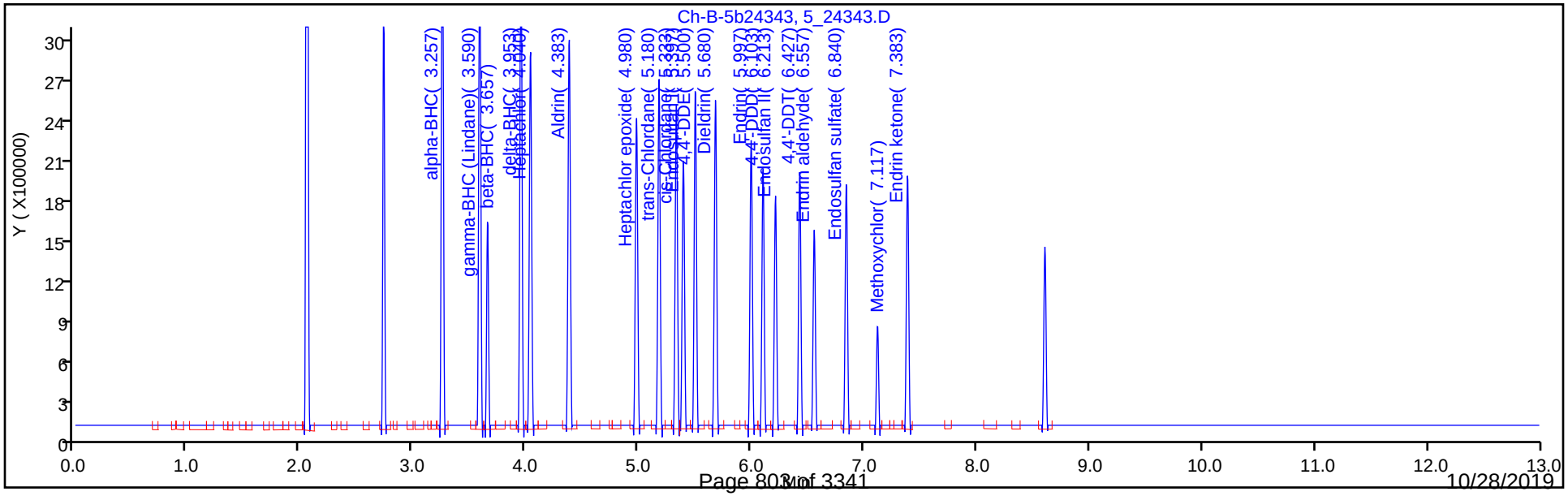
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Injection Date:	16-Sep-2019 13:25:36	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std2			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492274

SDG No.:

Instrument ID: HP6890-5 GC Column: RTX-CLPII ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/16/2019 11:28 Calibration End Date: 09/16/2019 13:25 Calibration ID: 37651

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD5 480-492274/9	5_24341.D
Level 2	STD4 480-492274/8	5_24340.D
Level 3	STD3 480-492274/7	5_24339.D
Level 4	STD2 480-492274/11	5_24343.D
Level 5	STD1 480-492274/5	5_24337.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
alpha-BHC	1.4595	1.5657	1.7484	1.7908	1.7602	Lin1	-0.002	1.7856							1.0000		0.9900
gamma-BHC (Lindane)	1.3075	1.3952	1.5572	1.5946	1.5762	Lin1	-0.002	1.5946							1.0000		0.9900
beta-BHC	0.5640	0.5732	0.6034	0.6231	0.6163	Lin1	0	0.6198							1.0000		0.9900
delta-BHC	1.2835	1.3824	1.5604	1.6023	1.5774	Lin1	-0.002	1.5997							1.0000		0.9900
Heptachlor	1.0972	1.1658	1.2556	1.2899	1.2437	Lin1	-0.001	1.2693							1.0000		0.9900
Aldrin	1.0859	1.1954	1.3192	1.3367	1.3080	Lin1	-0.001	1.3311							1.0000		0.9900
Heptachlor epoxide	1.0234	1.0533	1.1151	1.1097	1.0908	Lin1	0	1.1045							1.0000		0.9900
trans-Chlordane	0.9829	1.0292	1.1496	1.1958	1.1790	Lin1	-0.001	1.1917							1.0000		0.9900
cis-Chlordane	0.9263	0.9929	1.0946	1.1307	1.1188	Lin1	-0.001	1.1299							1.0000		0.9900
Endosulfan I	0.8259	0.8858	0.9429	0.9663	0.9417	Lin1	-0.001	0.9564							1.0000		0.9900
4,4'-DDE	0.9395	0.9835	1.1151	1.1525	1.1447	Lin1	-0.001	1.1548							1.0000		0.9900
Dieldrin	0.9839	1.0383	1.1434	1.1564	1.1427	Lin1	-0.001	1.1563							1.0000		0.9900
Endrin	0.8737	0.9170	1.0079	1.0231	1.0170	Lin1	-0.001	1.0257							1.0000		0.9900
4,4'-DDD	0.7243	0.7577	0.8628	0.8976	0.8971	Lin1	-0.001	0.9022							1.0000		0.9900
Endosulfan II	0.7271	0.7457	0.8121	0.8266	0.8236	Lin1	-0.001	0.8285							1.0000		0.9900
4,4'-DDT	0.6213	0.6753	0.8367	0.8907	0.9114	Lin1	-0.002	0.9098							0.9990		0.9900
Endrin aldehyde	0.6616	0.6628	0.7062	0.7143	0.7121	Lin1	0	0.7151							1.0000		0.9900
Endosulfan sulfate	0.7891	0.7886	0.8567	0.8701	0.8725	Lin1	-0.001	0.8745							1.0000		0.9900
Methoxychlor	0.3117	0.3237	0.3728	0.3912	0.4064	Lin1	-0.001	0.4017							0.9990		0.9900
Endrin ketone	0.7699	0.7868	0.8789	0.8993	0.9118	Lin1	-0.001	0.9109							1.0000		0.9900
Tetrachloro-m-xylene	0.9573	0.9968	1.0787	1.0954	1.0813	Lin1	-0.001	1.0927							1.0000		0.9900
DCB Decachlorobiphenyl	0.6627	0.6444	0.6401	0.6572	0.6557	Lin1	0	0.6539							1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PESTICIDES BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492274

SDG No.:

Instrument ID: HP6890-5 GC Column: RTX-CLPII ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/16/2019 11:28 Calibration End Date: 09/16/2019 13:25 Calibration ID: 37651

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD5 480-492274/9	5_24341.D
Level 2	STD4 480-492274/8	5_24340.D
Level 3	STD3 480-492274/7	5_24339.D
Level 4	STD2 480-492274/11	5_24343.D
Level 5	STD1 480-492274/5	5_24337.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
alpha-BHC	BNB	Lin1	251617	532956	2810018	5885398	8749461	0.00500	0.0100	0.0500	0.100	0.150
gamma-BHC (Lindane)	BNB	Lin1	225417	474901	2502708	5240557	7834645	0.00500	0.0100	0.0500	0.100	0.150
beta-BHC	BNB	Lin1	97231	195122	969718	2047870	3063401	0.00500	0.0100	0.0500	0.100	0.150
delta-BHC	BNB	Lin1	221286	470560	2507941	5265861	7840807	0.00500	0.0100	0.0500	0.100	0.150
Heptachlor	BNB	Lin1	189156	396838	2018078	4239049	6181946	0.00500	0.0100	0.0500	0.100	0.150
Aldrin	BNB	Lin1	187206	406921	2120270	4393118	6501324	0.00500	0.0100	0.0500	0.100	0.150
Heptachlor epoxide	BNB	Lin1	176437	358545	1792275	3646794	5421694	0.00500	0.0100	0.0500	0.100	0.150
trans-Chlordane	BNB	Lin1	169459	350332	1847589	3930038	5860598	0.00500	0.0100	0.0500	0.100	0.150
cis-Chlordane	BNB	Lin1	159700	337986	1759284	3715876	5560885	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan I	BNB	Lin1	142390	301519	1515432	3175745	4680770	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDE	BNB	Lin1	161969	334777	1792140	3787477	5690103	0.00500	0.0100	0.0500	0.100	0.150
Dieldrin	BNB	Lin1	169623	353417	1837732	3800330	5679966	0.00500	0.0100	0.0500	0.100	0.150
Endrin	BNB	Lin1	150632	312152	1619855	3362426	5055053	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDD	BNB	Lin1	124872	257921	1386666	2949821	4459340	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan II	BNB	Lin1	125361	253841	1305272	2716592	4093881	0.00500	0.0100	0.0500	0.100	0.150
4,4'-DDT	BNB	Lin1	107120	229862	1344710	2927126	4530370	0.00500	0.0100	0.0500	0.100	0.150
Endrin aldehyde	BNB	Lin1	114065	225610	1134964	2347658	3539761	0.00500	0.0100	0.0500	0.100	0.150
Endosulfan sulfate	BNB	Lin1	136050	268450	1376954	2859511	4337038	0.00500	0.0100	0.0500	0.100	0.150
Methoxychlor	BNB	Lin1	53737	110200	599232	1285668	2020284	0.00500	0.0100	0.0500	0.100	0.150
Endrin ketone	BNB	Lin1	132739	267806	1412549	2955468	4532068	0.00500	0.0100	0.0500	0.100	0.150
Tetrachloro-m-xylene	BNB	Lin1	165046	339294	1733743	3599801	5374805	0.00500	0.0100	0.0500	0.100	0.150
DCB Decachlorobiphenyl	BNB	Lin1	114261	219339	1028744	2159934	3259468	0.00500	0.0100	0.0500	0.100	0.150

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24337.D
Lims ID: std1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 16-Sep-2019 11:28:12 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:33:08 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 13:13:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.833	1.840	-0.007	16071140	0.5000	0.5000	
2	2.053	2.060	-0.007	16568701	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	3999484	0.1500	0.1450	
2	2.737	2.740	-0.003	5374805	0.1500	0.1491	
						RPD = 2.82	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	4508395	0.1500	0.1534	
2	8.603	8.610	-0.007	3259468	0.1500	0.1505	
						RPD = 1.92	
6 alpha-BHC							
1	2.740	2.747	-0.007	9361292	0.1500	0.1472	
2	3.257	3.260	-0.003	8749461	0.1500	0.1489	
						RPD = 1.13	
7 gamma-BHC (Lindane)							
1	2.983	2.990	-0.007	8541765	0.1500	0.1477	
2	3.587	3.593	-0.006	7834645	0.1500	0.1493	
						RPD = 1.06	
8 beta-BHC							
1	3.053	3.057	-0.004	3389997	0.1500	0.1484	
2	3.657	3.663	-0.006	3063401	0.1500	0.1497	
						RPD = 0.87	
9 delta-BHC							
1	3.200	3.203	-0.003	7902896	0.1500	0.1469	
2	3.953	3.960	-0.007	7840807	0.1500	0.1490	
						RPD = 1.43	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	7594491	0.1500	0.1456	
2	4.037	4.043	-0.006	6181946	0.1500	0.1477	
						RPD = 1.43	
12 Aldrin							
1	3.647	3.650	-0.003	7773247	0.1500	0.1470	
2	4.383	4.387	-0.004	6501324	0.1500	0.1483	
						RPD = 0.87	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	6733249	0.1500	0.1460	
2	4.980	4.987	-0.007	5421694	0.1500	0.1485	
						RPD = 1.72	
16 trans-Chlordane							
1	4.350	4.353	-0.003	7480256	0.1500	0.1475	
2	5.180	5.183	-0.003	5860598	0.1500	0.1495	
						RPD = 1.32	
17 cis-Chlordane							
1	4.483	4.487	-0.004	7217102	0.1500	0.1478	
2	5.333	5.337	-0.004	5560885	0.1500	0.1495	
						RPD = 1.18	
18 4,4'-DDE							
1	4.570	4.573	-0.003	7403439	0.1500	0.1474	
2	5.500	5.507	-0.007	5690103	0.1500	0.1498	
						RPD = 1.62	
19 Endosulfan I							
1	4.620	4.623	-0.003	6167959	0.1500	0.1463	
2	5.393	5.400	-0.007	4680770	0.1500	0.1484	
						RPD = 1.37	
21 Dieldrin							
1	4.863	4.867	-0.004	6253387	0.1500	0.1447	
2	5.680	5.687	-0.007	5679966	0.1500	0.1491	
						RPD = 2.98	
23 Endrin							
1	5.093	5.100	-0.007	6569292	0.1500	0.1456	
2	5.997	6.000	-0.003	5055053	0.1500	0.1496	
						RPD = 2.70	
24 4,4'-DDD							
1	5.177	5.180	-0.003	5943558	0.1500	0.1492	
2	6.100	6.107	-0.007	4459340	0.1500	0.1504	
						RPD = 0.79	
26 Endosulfan II							
1	5.320	5.327	-0.007	5434752	0.1500	0.1468	
2	6.213	6.217	-0.004	4093881	0.1500	0.1499	
						RPD = 2.09	
28 4,4'-DDT							
1	5.460	5.467	-0.007	6173236	0.1500	0.1509	
2	6.427	6.433	-0.006	4530370	0.1500	0.1523	
						RPD = 0.89	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	4892891	0.1500	0.1463	
2	6.557	6.560	-0.003	3539761	0.1500	0.1499	
						RPD = 2.39	
30 Methoxychlor							
1	5.967	5.970	-0.003	2467588	0.1500	0.1482	
2	7.117	7.123	-0.006	2020284	0.1500	0.1533	
						RPD = 3.34	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	5330136	0.1500	0.1451	
2	6.840	6.847	-0.007	4337038	0.1500	0.1503	
						RPD = 3.53	
33 Endrin ketone							
1	6.467	6.473	-0.006	5440940	0.1500	0.1430	
2	7.383	7.390	-0.007	4532068	0.1500	0.1512	
						RPD = 5.54	
S 35 BHC, Total							
1						0.5902	
2						0.5969	
						RPD = 1.12	

Reagents:

PEST_CAL_.15_00035 Amount Added: 1.00 Units: mL

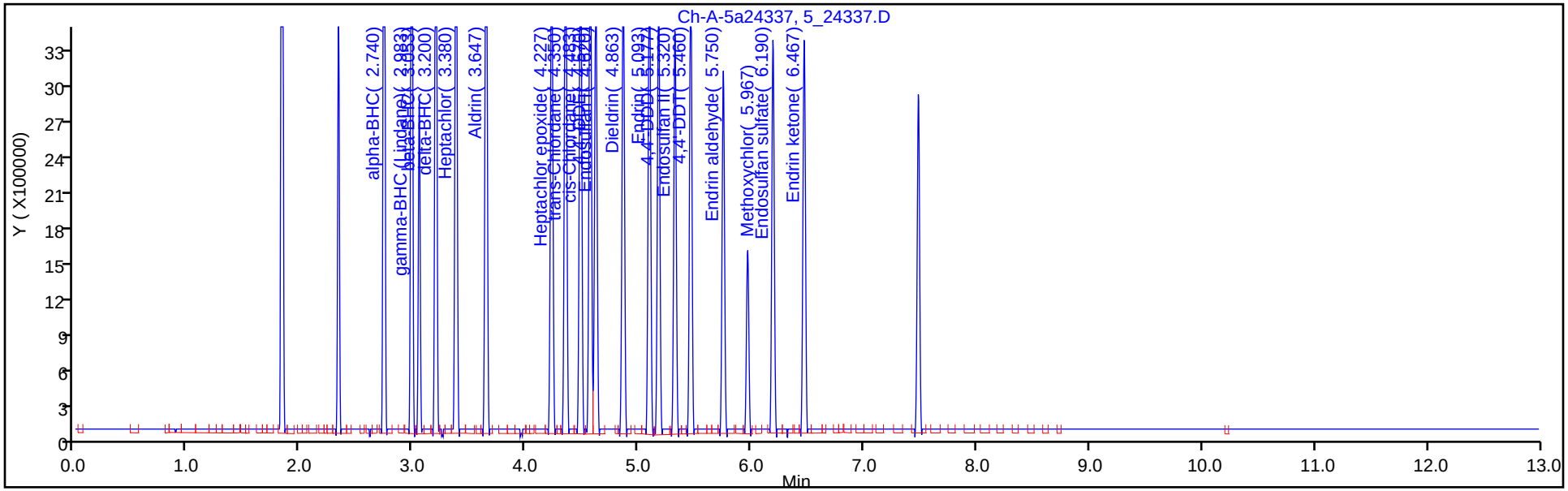
Report Date: 16-Sep-2019 14:33:08 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

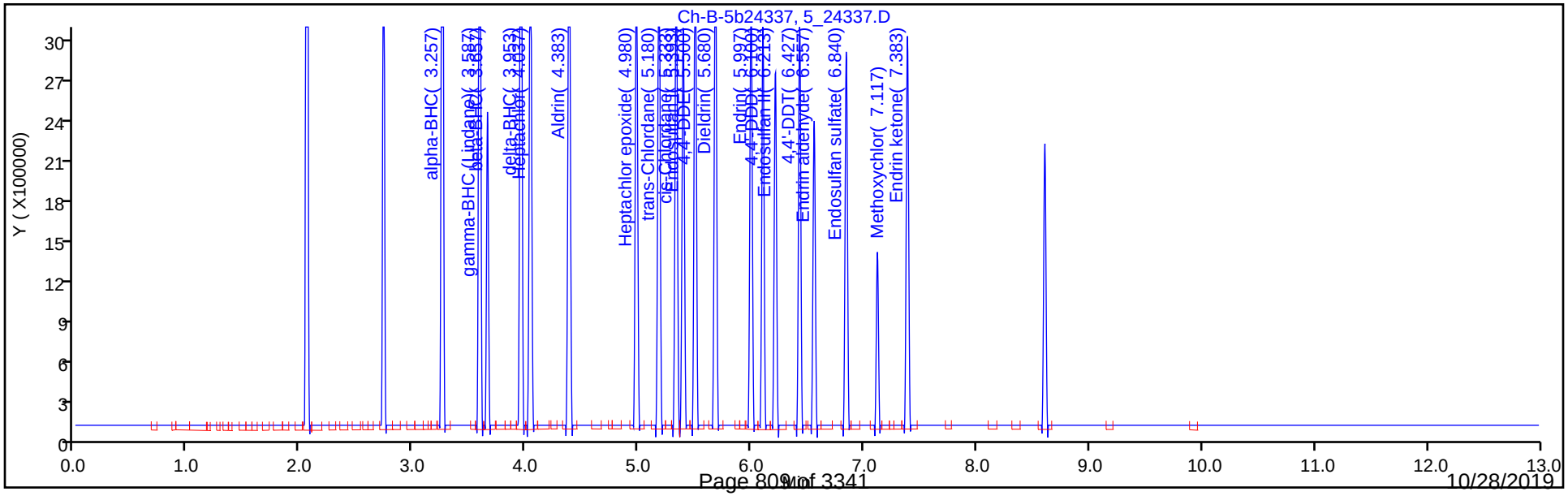
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24337.D

Injection Date:	16-Sep-2019 11:28:12	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std1			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24339.D
Lims ID: std3
Client ID:
Sample Type: ICIS Calib Level: 3
Inject. Date: 16-Sep-2019 12:07:16 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:32:54 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.840	1.840	0.000	15393881	0.5000	0.5000	
2	2.060	2.060	0.000	16072130	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.340	2.340	0.000	1309402	0.0500	0.0499	
2	2.740	2.740	0.000	1733743	0.0500	0.0501	
						RPD = 0.34	
$ 3 DCB Decachlorobiphenyl							
1	7.487	7.487	0.000	1325377	0.0500	0.0483	
2	8.610	8.610	0.000	1028744	0.0500	0.0490	
						RPD = 1.31	
6 alpha-BHC							
1	2.747	2.747	0.000	3089897	0.0500	0.0511	
2	3.260	3.260	0.000	2810018	0.0500	0.0500	
						RPD = 2.23	
7 gamma-BHC (Lindane)							
1	2.990	2.990	0.000	2803964	0.0500	0.0510	
2	3.593	3.593	0.000	2502708	0.0500	0.0498	
						RPD = 2.24	
8 beta-BHC							
1	3.057	3.057	0.000	1085872	0.0500	0.0499	
2	3.663	3.663	0.000	969718	0.0500	0.0492	
						RPD = 1.30	
9 delta-BHC							
1	3.203	3.203	0.000	2593472	0.0500	0.0506	
2	3.960	3.960	0.000	2507941	0.0500	0.0499	
						RPD = 1.52	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.383	3.383	0.000	2649627	0.0500	0.0531	
2	4.043	4.043	0.000	2018078	0.0500	0.0501	
						RPD = 5.62	
12 Aldrin							
1	3.650	3.650	0.000	2554032	0.0500	0.0506	
2	4.387	4.387	0.000	2120270	0.0500	0.0505	
						RPD = 0.26	
14 Heptachlor epoxide							
1	4.230	4.230	0.000	2332094	0.0500	0.0526	
2	4.987	4.987	0.000	1792275	0.0500	0.0508	
						RPD = 3.40	
16 trans-Chlordane							
1	4.353	4.353	0.000	2439647	0.0500	0.0505	
2	5.183	5.183	0.000	1847589	0.0500	0.0493	
						RPD = 2.39	
17 cis-Chlordane							
1	4.487	4.487	0.000	2353649	0.0500	0.0506	
2	5.337	5.337	0.000	1759284	0.0500	0.0495	
						RPD = 2.29	
18 4,4'-DDE							
1	4.573	4.573	0.000	2432218	0.0500	0.0508	
2	5.507	5.507	0.000	1792140	0.0500	0.0494	
						RPD = 2.80	
19 Endosulfan I							
1	4.623	4.623	0.000	2074361	0.0500	0.0514	
2	5.400	5.400	0.000	1515432	0.0500	0.0500	
						RPD = 2.79	
21 Dieldrin							
1	4.867	4.867	0.000	2104489	0.0500	0.0510	
2	5.687	5.687	0.000	1837732	0.0500	0.0503	
						RPD = 1.51	
23 Endrin							
1	5.100	5.100	0.000	2297084	0.0500	0.0530	
2	6.000	6.000	0.000	1619855	0.0500	0.0500	
						RPD = 5.80	
24 4,4'-DDD							
1	5.180	5.180	0.000	1877004	0.0500	0.0503	
2	6.107	6.107	0.000	1386666	0.0500	0.0490	
						RPD = 2.50	
26 Endosulfan II							
1	5.327	5.327	0.000	1833114	0.0500	0.0517	
2	6.217	6.217	0.000	1305272	0.0500	0.0498	
						RPD = 3.86	
28 4,4'-DDT							
1	5.467	5.467	0.000	1838997	0.0500	0.0486	
2	6.433	6.433	0.000	1344710	0.0500	0.0480	
						RPD = 1.27	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.753	5.753	0.000	1656019	0.0500	0.0517	
2	6.560	6.560	0.000	1134964	0.0500	0.0499	
						RPD = 3.63	
30 Methoxychlor							
1	5.970	5.970	0.000	791068	0.0500	0.0508	
2	7.123	7.123	0.000	599232	0.0500	0.0479	
						RPD = 5.89	
32 Endosulfan sulfate							
1	6.197	6.197	0.000	1844319	0.0500	0.0523	
2	6.847	6.847	0.000	1376954	0.0500	0.0496	
						RPD = 5.13	
33 Endrin ketone							
1	6.473	6.473	0.000	1913479	0.0500	0.0527	
2	7.390	7.390	0.000	1412549	0.0500	0.0492	
						RPD = 6.76	

Reagents:

PEST_CCV_.05_00296 Amount Added: 1.00 Units: mL

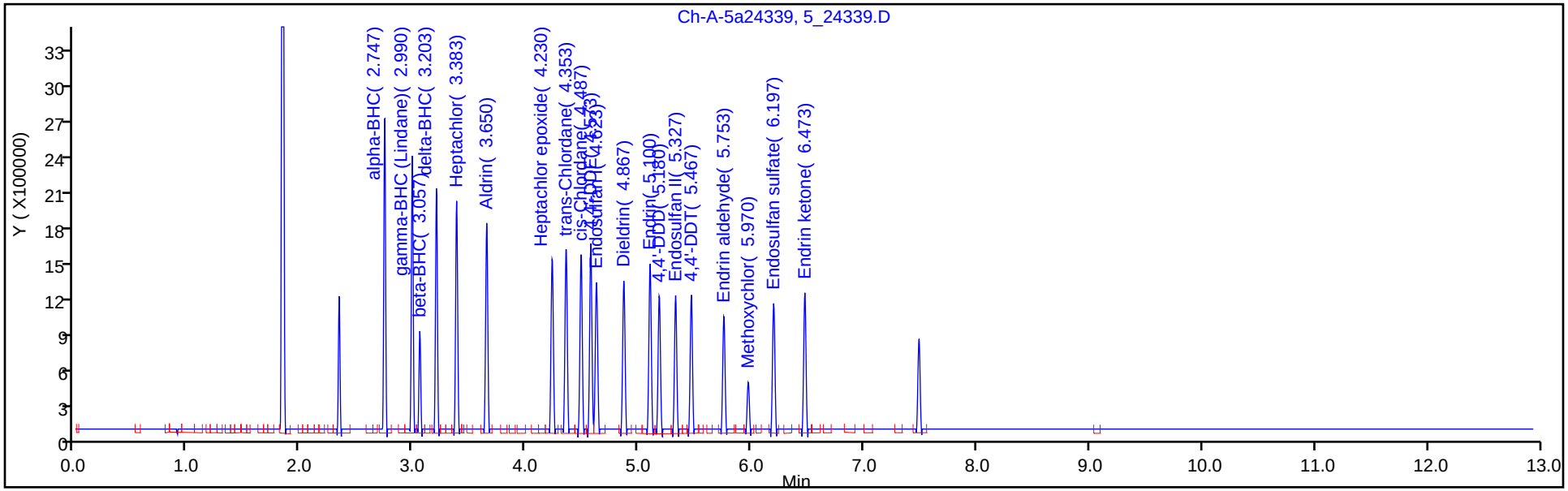
Report Date: 16-Sep-2019 14:32:55 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

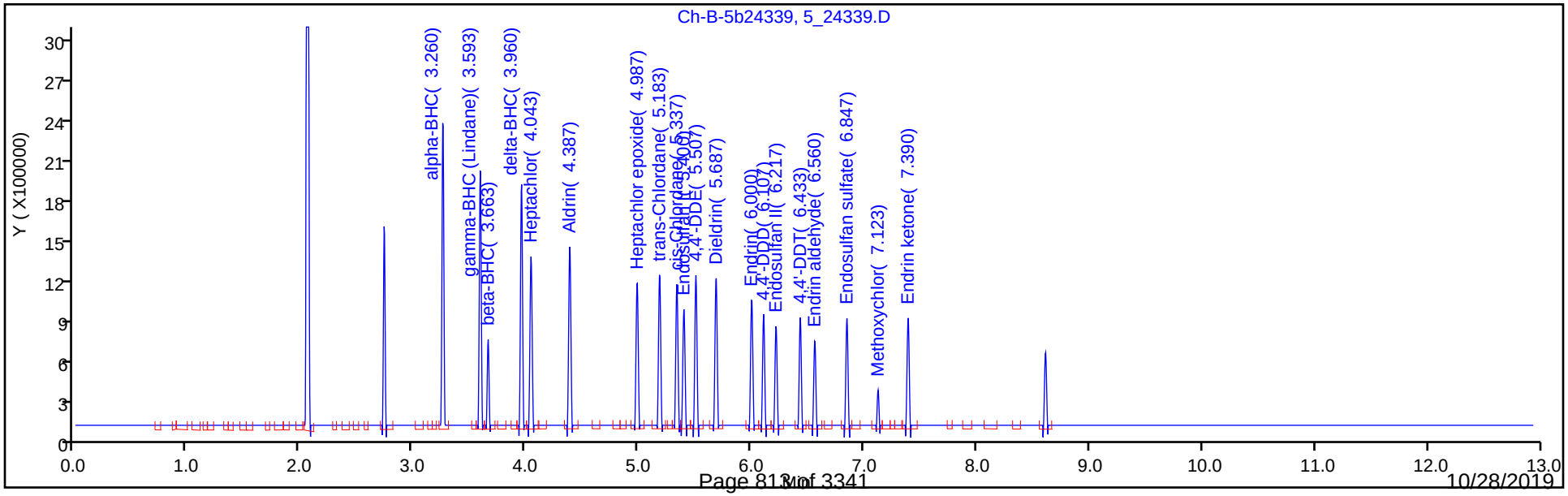
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24339.D

Injection Date:	16-Sep-2019 12:07:16	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std3			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24340.D
Lims ID: std4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 16-Sep-2019 12:26:57 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:32:59 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.833	1.840	-0.007	16198436	0.5000	0.5000	
2	2.053	2.060	-0.007	17019645	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	260986	0.0100	0.009847	
2	2.737	2.740	-0.003	339294	0.0100	0.009813	
						RPD = 0.35	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	257356	0.0100	0.0104	
2	8.603	8.610	-0.007	219339	0.0100	0.009897	
						RPD = 5.14	
6 alpha-BHC							
1	2.740	2.747	-0.007	599638	0.0100	0.009879	
2	3.257	3.260	-0.003	532956	0.0100	0.009772	
						RPD = 1.08	
7 gamma-BHC (Lindane)							
1	2.983	2.990	-0.007	546219	0.0100	0.009863	
2	3.587	3.593	-0.006	474901	0.0100	0.009759	
						RPD = 1.05	
8 beta-BHC							
1	3.053	3.057	-0.004	219328	0.0100	0.009883	
2	3.657	3.663	-0.006	195122	0.0100	0.009819	
						RPD = 0.65	
9 delta-BHC							
1	3.200	3.203	-0.003	506449	0.0100	0.009781	
2	3.953	3.960	-0.007	470560	0.0100	0.009742	
						RPD = 0.40	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	518838	0.0100	0.0099	
2	4.037	4.043	-0.006	396838	0.0100	0.009874	
						RPD = 0.40	
12 Aldrin							
1	3.643	3.650	-0.007	519292	0.0100	0.0100	
2	4.380	4.387	-0.007	406921	0.0100	0.009897	
						RPD = 0.89	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	480967	0.0100	0.0101	
2	4.980	4.987	-0.007	358545	0.0100	0.009887	
						RPD = 1.89	
16 trans-Chlordane							
1	4.350	4.353	-0.003	483020	0.0100	0.009807	
2	5.180	5.183	-0.003	350332	0.0100	0.009688	
						RPD = 1.22	
17 cis-Chlordane							
1	4.483	4.487	-0.004	465036	0.0100	0.009854	
2	5.333	5.337	-0.004	337986	0.0100	0.009803	
						RPD = 0.52	
18 4,4'-DDE							
1	4.567	4.573	-0.006	481170	0.0100	0.009857	
2	5.500	5.507	-0.007	334777	0.0100	0.009645	
						RPD = 2.18	
19 Endosulfan I							
1	4.620	4.623	-0.003	420501	0.0100	0.0099	
2	5.393	5.400	-0.007	301519	0.0100	0.0099	
						RPD = 0.42	
21 Dieldrin							
1	4.860	4.867	-0.007	420268	0.0100	0.0099	
2	5.680	5.687	-0.007	353417	0.0100	0.009793	
						RPD = 1.35	
23 Endrin							
1	5.093	5.100	-0.007	468981	0.0100	0.0100	
2	5.997	6.000	-0.003	312152	0.0100	0.009780	
						RPD = 2.51	
24 4,4'-DDD							
1	5.177	5.180	-0.003	337684	0.0100	0.0099	
2	6.103	6.107	-0.004	257921	0.0100	0.009621	
						RPD = 3.35	
26 Endosulfan II							
1	5.323	5.327	-0.004	367909	0.0100	0.0099	
2	6.213	6.217	-0.004	253841	0.0100	0.009744	
						RPD = 1.70	
28 4,4'-DDT							
1	5.460	5.467	-0.007	289255	0.0100	0.009309	
2	6.427	6.433	-0.006	229862	0.0100	0.009426	
						RPD = 1.24	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	334358	0.0100	0.0099	
2	6.557	6.560	-0.003	225610	0.0100	0.009761	
						RPD = 1.73	
30 Methoxychlor							
1	5.967	5.970	-0.003	130426	0.0100	0.009486	
2	7.117	7.123	-0.006	110200	0.0100	0.009557	
						RPD = 0.74	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	375688	0.0100	0.0099	
2	6.840	6.847	-0.007	268450	0.0100	0.009682	
						RPD = 2.40	
33 Endrin ketone							
1	6.467	6.473	-0.006	364978	0.0100	0.009801	
2	7.383	7.390	-0.007	267806	0.0100	0.009641	
						RPD = 1.65	
S 35 BHC, Total							
1						0.0394	
2						0.0391	
						RPD = 0.80	

Reagents:

pest_cal_.01_00026 Amount Added: 1.00 Units: mL

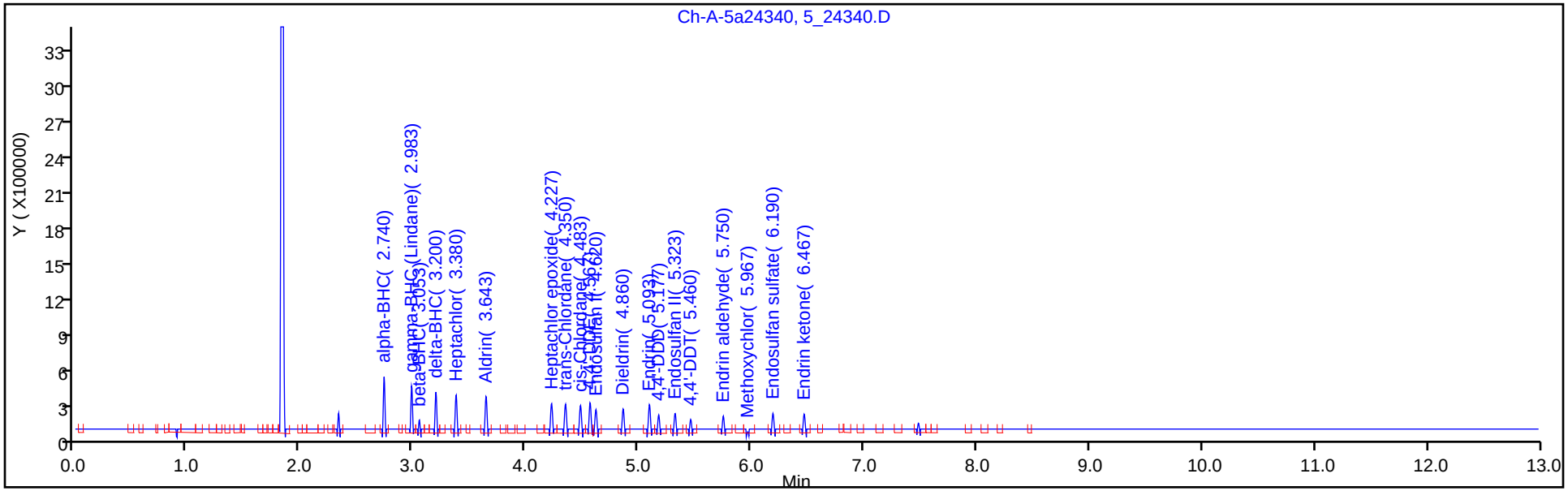
Report Date: 16-Sep-2019 14:32:59 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

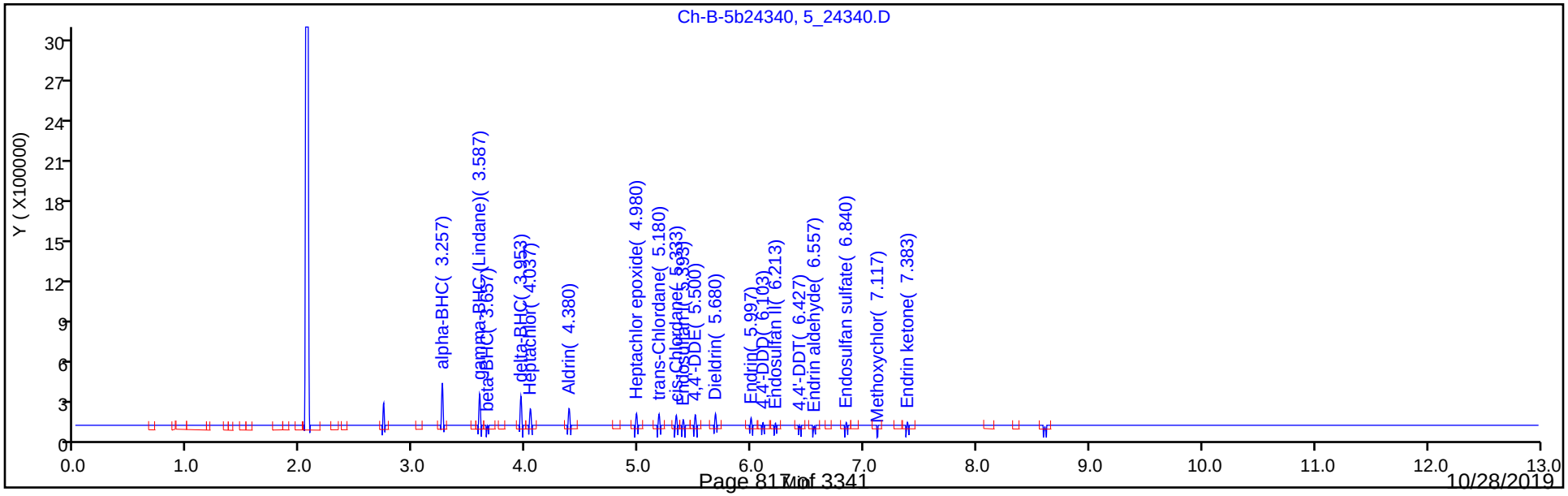
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24340.D

Injection Date:	16-Sep-2019 12:26:57	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std4			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24341.D
Lims ID: std5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 16-Sep-2019 12:46:26 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:33:04 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 13:14:26

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.837	1.840	-0.003	16353318	0.5000	0.5000	
2	2.057	2.060	-0.003	17240498	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	126728	0.005000	0.004991	
2	2.737	2.740	-0.003	165046	0.005000	0.005071	
						RPD = 1.59	
$ 3 DCB Decachlorobiphenyl							M
1	7.483	7.487	-0.004	94169	0.005000	0.004948	M
2	8.603	8.610	-0.007	114261	0.005000	0.005110	
						RPD = 3.24	
6 alpha-BHC							
1	2.740	2.747	-0.007	285266	0.005000	0.004951	
2	3.257	3.260	-0.003	251617	0.005000	0.005090	
						RPD = 2.77	
7 gamma-BHC (Lindane)							
1	2.987	2.990	-0.003	262729	0.005000	0.004974	
2	3.590	3.593	-0.003	225417	0.005000	0.005110	
						RPD = 2.70	
8 beta-BHC							
1	3.053	3.057	-0.004	108422	0.005000	0.005034	
2	3.660	3.663	-0.003	97231	0.005000	0.005121	
						RPD = 1.71	
9 delta-BHC							
1	3.200	3.203	-0.003	249597	0.005000	0.005016	
2	3.953	3.960	-0.007	221286	0.005000	0.005112	
						RPD = 1.90	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.380	3.383	-0.003	252416	0.005000	0.004803	
2	4.040	4.043	-0.003	189156	0.005000	0.005011	
						RPD = 4.24	
12 Aldrin							
1	3.647	3.650	-0.003	251426	0.005000	0.004923	
2	4.383	4.387	-0.004	187206	0.005000	0.004995	
						RPD = 1.44	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	236356	0.005000	0.004757	
2	4.980	4.987	-0.007	176437	0.005000	0.004983	
						RPD = 4.65	
16 trans-Chlordane							
1	4.350	4.353	-0.003	240123	0.005000	0.005023	
2	5.180	5.183	-0.003	169459	0.005000	0.005176	
						RPD = 3.00	
17 cis-Chlordane							
1	4.483	4.487	-0.004	227534	0.005000	0.004999	
2	5.333	5.337	-0.004	159700	0.005000	0.005114	
						RPD = 2.28	
18 4,4'-DDE							
1	4.570	4.573	-0.003	235875	0.005000	0.004980	
2	5.503	5.507	-0.004	161969	0.005000	0.005196	
						RPD = 4.25	
19 Endosulfan I							
1	4.620	4.623	-0.003	210403	0.005000	0.004909	
2	5.397	5.400	-0.003	142390	0.005000	0.005000	
						RPD = 1.82	
21 Dieldrin							
1	4.863	4.867	-0.004	202218	0.005000	0.004888	
2	5.683	5.687	-0.004	169623	0.005000	0.005068	
						RPD = 3.62	
23 Endrin							
1	5.097	5.100	-0.003	231759	0.005000	0.004754	
2	5.997	6.000	-0.003	150632	0.005000	0.005098	
						RPD = 7.00	
24 4,4'-DDD							
1	5.180	5.180	0.000	137897	0.005000	0.004995	
2	6.103	6.107	-0.004	124872	0.005000	0.005237	
						RPD = 4.72	
26 Endosulfan II							
1	5.323	5.327	-0.004	182328	0.005000	0.004895	
2	6.213	6.217	-0.004	125361	0.005000	0.005132	
						RPD = 4.72	
28 4,4'-DDT							
1	5.460	5.467	-0.007	127410	0.005000	0.005417	
2	6.430	6.433	-0.003	107120	0.005000	0.005418	
						RPD = 0.01	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	165654	0.005000	0.004878	
2	6.557	6.560	-0.003	114065	0.005000	0.005118	
						RPD = 4.79	
30 Methoxychlor							
1	5.967	5.970	-0.003	57644	0.005000	0.005169	
2	7.120	7.123	-0.003	53737	0.005000	0.005377	
						RPD = 3.94	
32 Endosulfan sulfate							
1	6.193	6.197	-0.004	189660	0.005000	0.004835	
2	6.843	6.847	-0.004	136050	0.005000	0.005175	
						RPD = 6.80	
33 Endrin ketone							
1	6.470	6.473	-0.003	175561	0.005000	0.004829	
2	7.387	7.390	-0.003	132739	0.005000	0.005230	
						RPD = 7.96	
S 35 BHC, Total							
1						0.0200	
2						0.0204	
						RPD = 2.27	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

pest_cal_.005_00026 Amount Added: 1.00 Units: mL

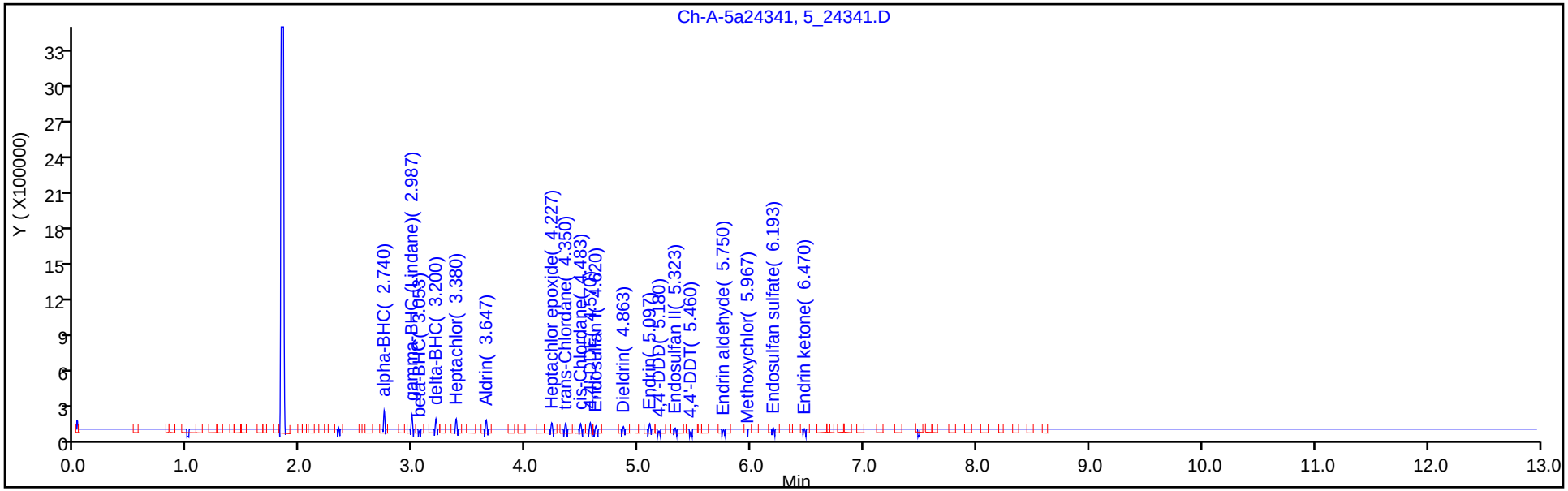
Report Date: 16-Sep-2019 14:33:05 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

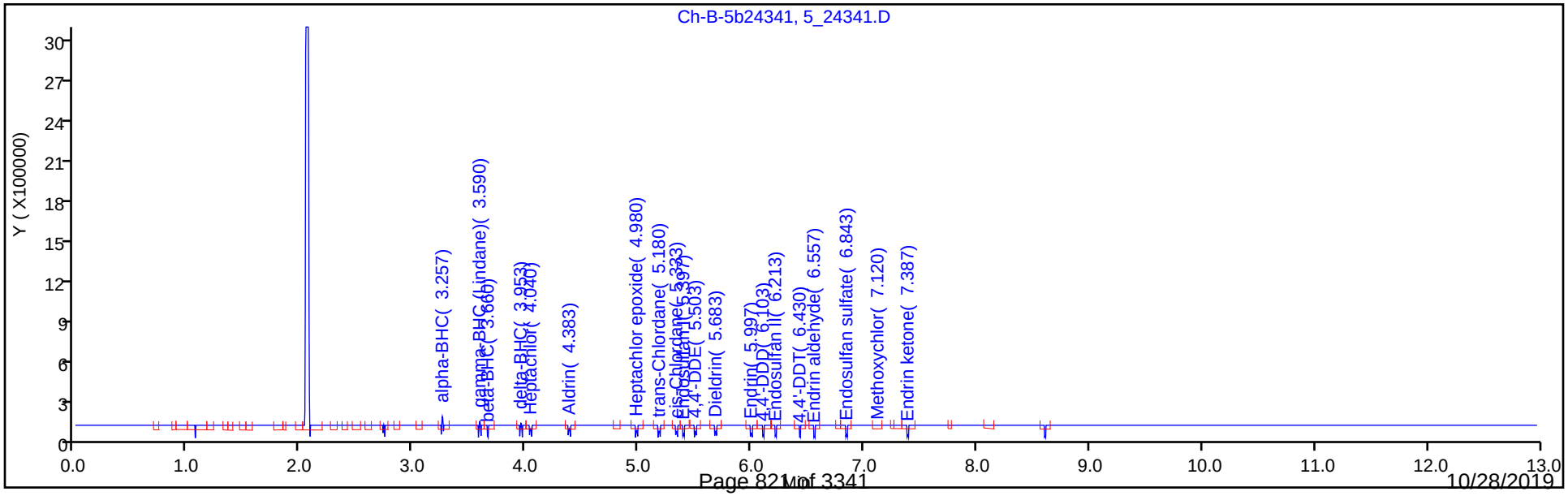
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24341.D

Injection Date:	16-Sep-2019 12:46:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std5			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D
Lims ID: std2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 16-Sep-2019 13:25:36 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 16-Sep-2019 14:40:27 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0327

First Level Reviewer: NearyM Date: 16-Sep-2019 14:40:22

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.837	1.840	-0.003	15618105	0.5000	0.5000	
2	2.057	2.060	-0.003	16432146	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.337	2.340	-0.003	2818988	0.1000	0.1053	
2	2.737	2.740	-0.003	3599801	0.1000	0.1009	
						RPD = 4.23	
$ 3 DCB Decachlorobiphenyl							
1	7.480	7.487	-0.007	2777574	0.1000	0.0979	
2	8.603	8.610	-0.007	2159934	0.1000	0.1005	
						RPD = 2.66	
6 alpha-BHC							
1	2.740	2.747	-0.007	6285845	0.1000	0.1019	
2	3.257	3.260	-0.003	5885398	0.1000	0.1013	
						RPD = 0.57	
7 gamma-BHC (Lindane)							
1	2.987	2.990	-0.003	5694697	0.1000	0.1015	
2	3.590	3.593	-0.003	5240557	0.1000	0.1010	
						RPD = 0.48	
8 beta-BHC							
1	3.053	3.057	-0.004	2256436	0.1000	0.1018	
2	3.657	3.663	-0.006	2047870	0.1000	0.1011	
						RPD = 0.66	
9 delta-BHC							
1	3.200	3.203	-0.003	5360003	0.1000	0.1027	
2	3.953	3.960	-0.007	5265861	0.1000	0.1013	
						RPD = 1.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.377	3.383	-0.006	5154067	0.1000	0.1017	
2	4.040	4.043	-0.003	4239049	0.1000	0.1023	
						RPD = 0.63	
12 Aldrin							
1	3.647	3.650	-0.003	5261063	0.1000	0.1025	
2	4.383	4.387	-0.004	4393118	0.1000	0.1013	
						RPD = 1.11	
14 Heptachlor epoxide							
1	4.227	4.230	-0.003	4559889	0.1000	0.1016	
2	4.980	4.987	-0.007	3646794	0.1000	0.1008	
						RPD = 0.80	
16 trans-Chlordane							
1	4.350	4.353	-0.003	5030756	0.1000	0.1022	
2	5.180	5.183	-0.003	3930038	0.1000	0.1014	
						RPD = 0.78	
17 cis-Chlordane							
1	4.483	4.487	-0.004	4822816	0.1000	0.1018	
2	5.333	5.337	-0.004	3715876	0.1000	0.1011	
						RPD = 0.66	
18 4,4'-DDE							
1	4.567	4.573	-0.006	4968970	0.1000	0.1019	
2	5.500	5.507	-0.007	3787477	0.1000	0.1009	
						RPD = 0.99	
19 Endosulfan I							
1	4.617	4.623	-0.006	4196222	0.1000	0.1025	
2	5.397	5.400	-0.003	3175745	0.1000	0.1017	
						RPD = 0.72	
21 Dieldrin							
1	4.860	4.867	-0.007	4385564	0.1000	0.1045	
2	5.680	5.687	-0.007	3800330	0.1000	0.1008	
						RPD = 3.57	
23 Endrin							
1	5.093	5.100	-0.007	4462738	0.1000	0.1017	
2	5.997	6.000	-0.003	3362426	0.1000	0.1006	
						RPD = 1.08	
24 4,4'-DDD							
1	5.177	5.180	-0.003	3872888	0.1000	0.1006	
2	6.103	6.107	-0.004	2949821	0.1000	0.1007	
						RPD = 0.14	
26 Endosulfan II							
1	5.320	5.327	-0.007	3660342	0.1000	0.1017	
2	6.213	6.217	-0.004	2716592	0.1000	0.1005	
						RPD = 1.20	
28 4,4'-DDT							
1	5.460	5.467	-0.007	3972614	0.1000	0.1008	
2	6.427	6.433	-0.006	2927126	0.1000	0.0999	
						RPD = 0.85	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.750	5.753	-0.003	3319009	0.1000	0.1021	
2	6.557	6.560	-0.003	2347658	0.1000	0.1004	
						RPD = 1.74	
30 Methoxychlor							
1	5.967	5.970	-0.003	1629340	0.1000	0.1013	
2	7.117	7.123	-0.006	1285668	0.1000	0.0989	
						RPD = 2.41	
32 Endosulfan sulfate							
1	6.190	6.197	-0.007	3674112	0.1000	0.1029	
2	6.840	6.847	-0.007	2859511	0.1000	0.1002	
						RPD = 2.66	
33 Endrin ketone							
1	6.467	6.473	-0.006	3867636	0.1000	0.1047	
2	7.383	7.390	-0.007	2955468	0.1000	0.0997	
						RPD = 4.84	
S 35 BHC, Total							
1						0.4078	
2						0.4047	
						RPD = 0.77	

Reagents:

PEST_CAL_.10_00035 Amount Added: 1.00 Units: mL

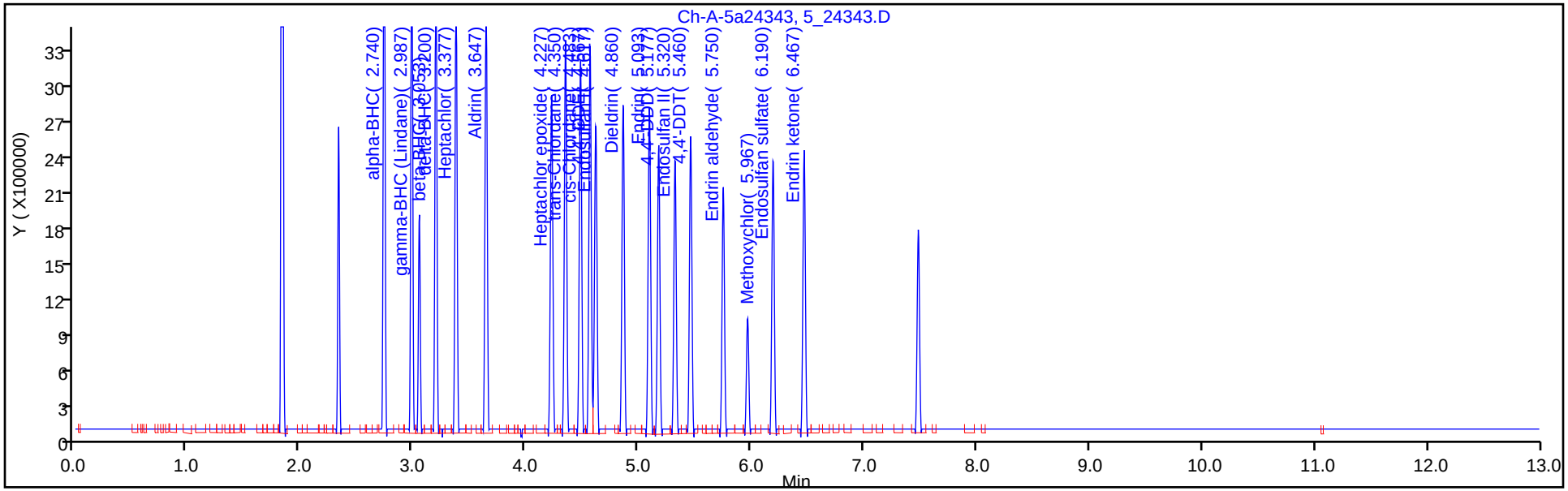
Report Date: 16-Sep-2019 14:40:28 Chrom Revision: 2.3 22-Aug-2019 12:55:36

Eurofins TestAmerica, Buffalo

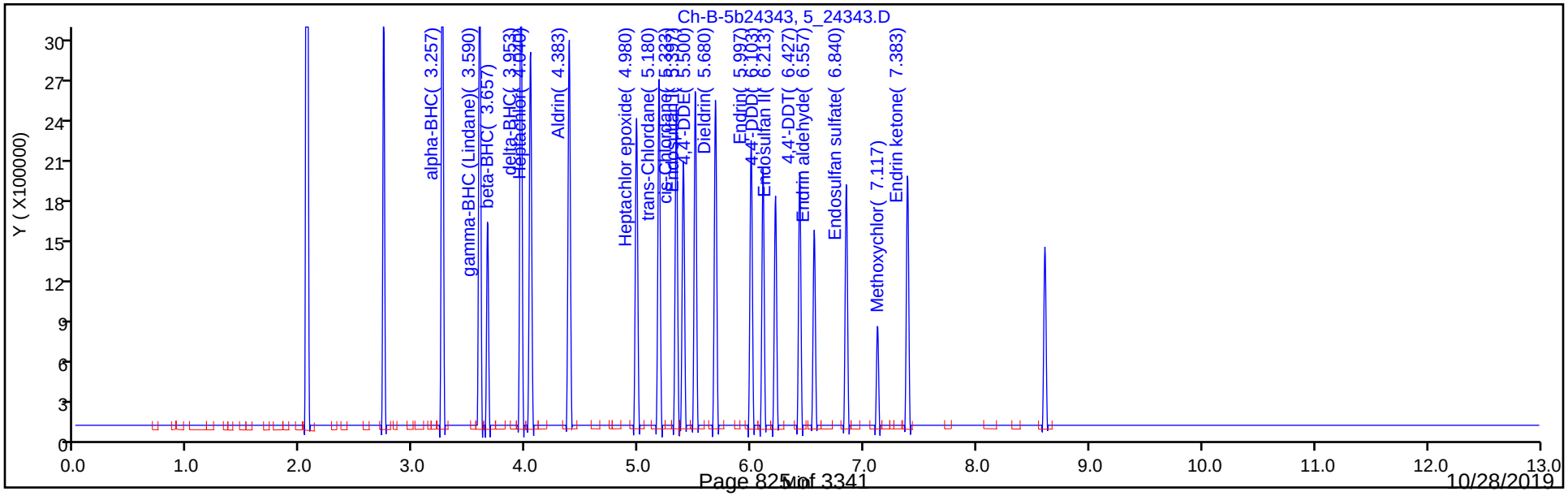
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Injection Date:	16-Sep-2019 13:25:36	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	std2			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: PEM 480-494474/5 Calibration Date: 09/27/2019 08:58

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25132.D Conc. Units: ng/uL

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	5.08	2339402	0.98	15	
Endrin aldehyde	5.73	8648			
Endrin ketone	6.45	14437			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	5.44	3295273	1.02	15	
4,4'-DDD	5.16	22173			
4,4'-DDE	4.55	11672			

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25132.D
Lims ID: pem
Client ID:
Sample Type: PEM
Inject. Date: 27-Sep-2019 08:58:07 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist:

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:28:23 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.823	1.827	-0.004	16360699	0.5000	0.5000	
2	2.043	2.043	0.000	16984750	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.323	2.323	0.000	524958	0.0200	0.0191	
2	2.720	2.720	0.000	676827	0.0200	0.0189	
						RPD = 1.04	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	554464	0.0200	0.0201	
2	8.587	8.583	0.004	458591	0.0200	0.0207	
						RPD = 2.66	
6 alpha-BHC							
1	2.723	2.723	0.000	584119	0.0100	0.009547	
2	3.237	3.237	0.000	525563	0.0100	0.009668	
						RPD = 1.26	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	537119	0.0100	0.009616	
2	3.570	3.567	0.003	476512	0.0100	0.009807	
						RPD = 1.97	
8 beta-BHC							
1	3.037	3.037	0.000	210140	0.0100	0.009395	
2	3.640	3.637	0.003	186051	0.0100	0.009407	
						RPD = 0.13	
18 4,4'-DDE							
1	4.553	4.550	0.003	11672		0.000603	
2	5.480	5.480	0.000	7926		0.001331	
						RPD = 75.20	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
23 Endrin							
1	5.077	5.077	0.000	2339402	0.0500	0.0507	
2	5.977	5.973	0.004	1689829	0.0500	0.0493	
						RPD = 2.78	
24 4,4'-DDD							
1	5.163	5.160	0.003	22173		0.002171	
2	6.087	6.080	0.007	10528		0.001566	
						RPD = 32.40	
28 4,4'-DDT							
1	5.443	5.443	0.000	3295273	0.1000	0.0803	
2	6.407	6.407	0.000	2956524	0.1000	0.0977	
						RPD = 19.54	
29 Endrin aldehyde							
1	5.730	5.733	-0.003	8648		0.000264	
2	6.537	6.533	0.004	8014		0.000822	
						RPD = 102.76	
30 Methoxychlor							
1	5.950	5.950	0.000	3751111	0.2500	0.2205	E
2	7.100	7.097	0.003	3393018	0.2500	0.2502	E
						RPD = 12.62	
33 Endrin ketone							
1	6.450	6.450	0.000	14437		0.000677	
2	7.363	7.363	0.000	14435		0.001470	
						RPD = 73.93	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

PEST_PEM_00177 Amount Added: 1.00 Units: mL

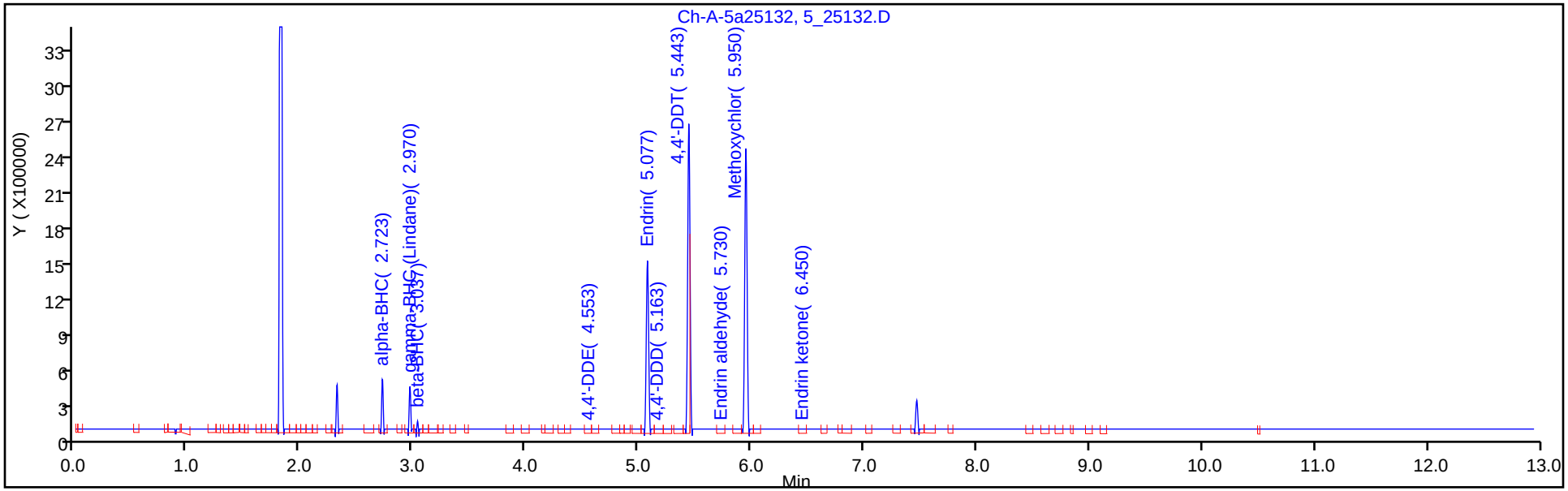
Report Date: 27-Sep-2019 14:28:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

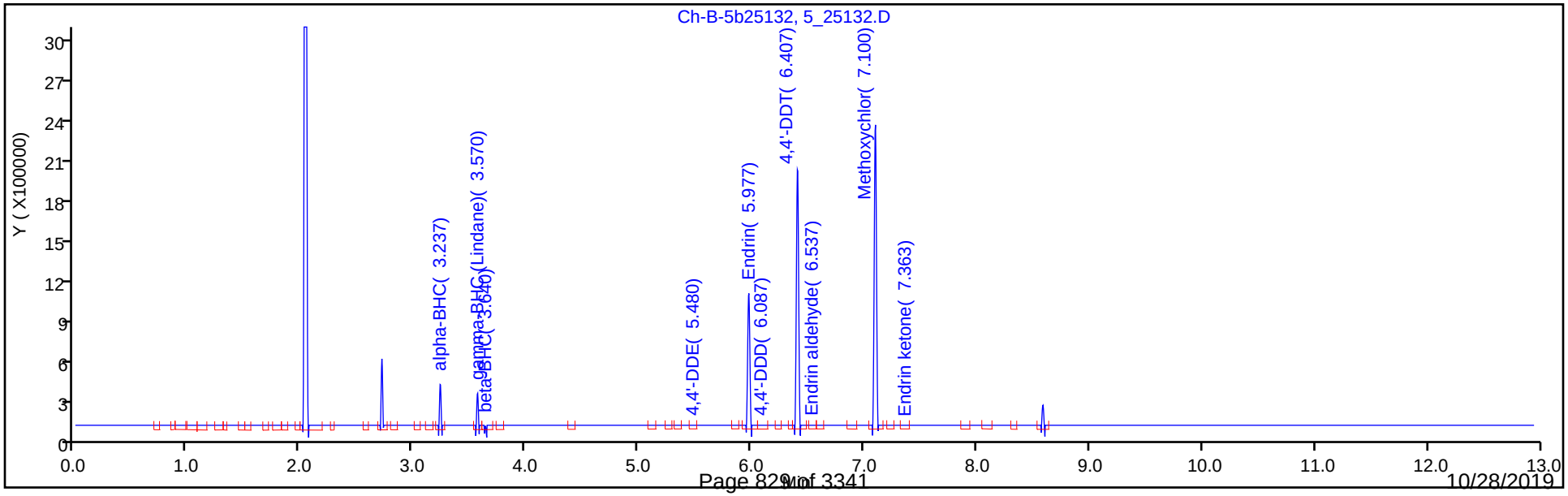
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25132.D

Injection Date:	27-Sep-2019 08:58:07	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	pem			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM VII
PESTICIDES PERFORMANCE EVALUATION MIXTURE (PEM)

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: PEM 480-494474/5 Calibration Date: 09/27/2019 08:58

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPII ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25132.D Conc. Units: ng/uL

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
Endrin	5.98	1689829	1.31	15	
Endrin aldehyde	6.54	8014			
Endrin ketone	7.36	14435			

ANALYTE	RT	RESPONSE	BREAKDOWN (%)	LIMIT	#
4,4'-DDT	6.41	2956524	0.62	15	
4,4'-DDD	6.09	10528			
4,4'-DDE	5.48	7926			

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25132.D
Lims ID: pem
Client ID:
Sample Type: PEM
Inject. Date: 27-Sep-2019 08:58:07 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist:

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:28:23 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.823	1.827	-0.004	16360699	0.5000	0.5000	
2	2.043	2.043	0.000	16984750	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.323	2.323	0.000	524958	0.0200	0.0191	
2	2.720	2.720	0.000	676827	0.0200	0.0189	
						RPD = 1.04	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	554464	0.0200	0.0201	
2	8.587	8.583	0.004	458591	0.0200	0.0207	
						RPD = 2.66	
6 alpha-BHC							
1	2.723	2.723	0.000	584119	0.0100	0.009547	
2	3.237	3.237	0.000	525563	0.0100	0.009668	
						RPD = 1.26	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	537119	0.0100	0.009616	
2	3.570	3.567	0.003	476512	0.0100	0.009807	
						RPD = 1.97	
8 beta-BHC							
1	3.037	3.037	0.000	210140	0.0100	0.009395	
2	3.640	3.637	0.003	186051	0.0100	0.009407	
						RPD = 0.13	
18 4,4'-DDE							
1	4.553	4.550	0.003	11672		0.000603	
2	5.480	5.480	0.000	7926		0.001331	
						RPD = 75.20	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
23 Endrin							
1	5.077	5.077	0.000	2339402	0.0500	0.0507	
2	5.977	5.973	0.004	1689829	0.0500	0.0493	
						RPD = 2.78	
24 4,4'-DDD							
1	5.163	5.160	0.003	22173		0.002171	
2	6.087	6.080	0.007	10528		0.001566	
						RPD = 32.40	
28 4,4'-DDT							
1	5.443	5.443	0.000	3295273	0.1000	0.0803	
2	6.407	6.407	0.000	2956524	0.1000	0.0977	
						RPD = 19.54	
29 Endrin aldehyde							
1	5.730	5.733	-0.003	8648		0.000264	
2	6.537	6.533	0.004	8014		0.000822	
						RPD = 102.76	
30 Methoxychlor							
1	5.950	5.950	0.000	3751111	0.2500	0.2205	E
2	7.100	7.097	0.003	3393018	0.2500	0.2502	E
						RPD = 12.62	
33 Endrin ketone							
1	6.450	6.450	0.000	14437		0.000677	
2	7.363	7.363	0.000	14435		0.001470	
						RPD = 73.93	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

PEST_PEM_00177 Amount Added: 1.00 Units: mL

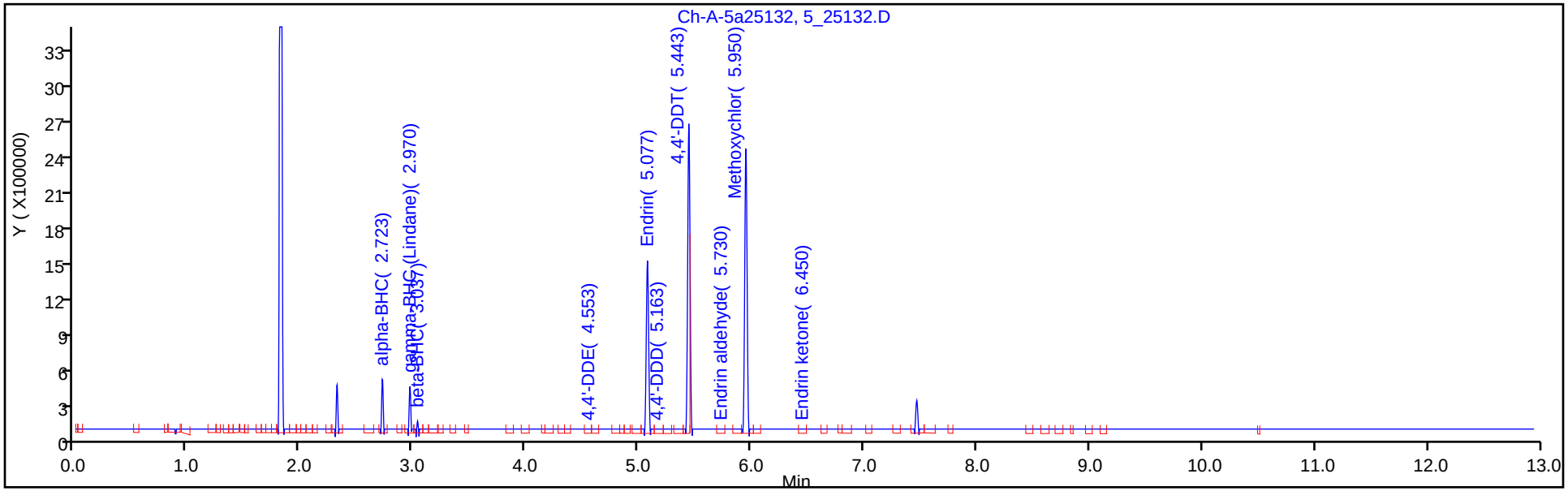
Report Date: 27-Sep-2019 14:28:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

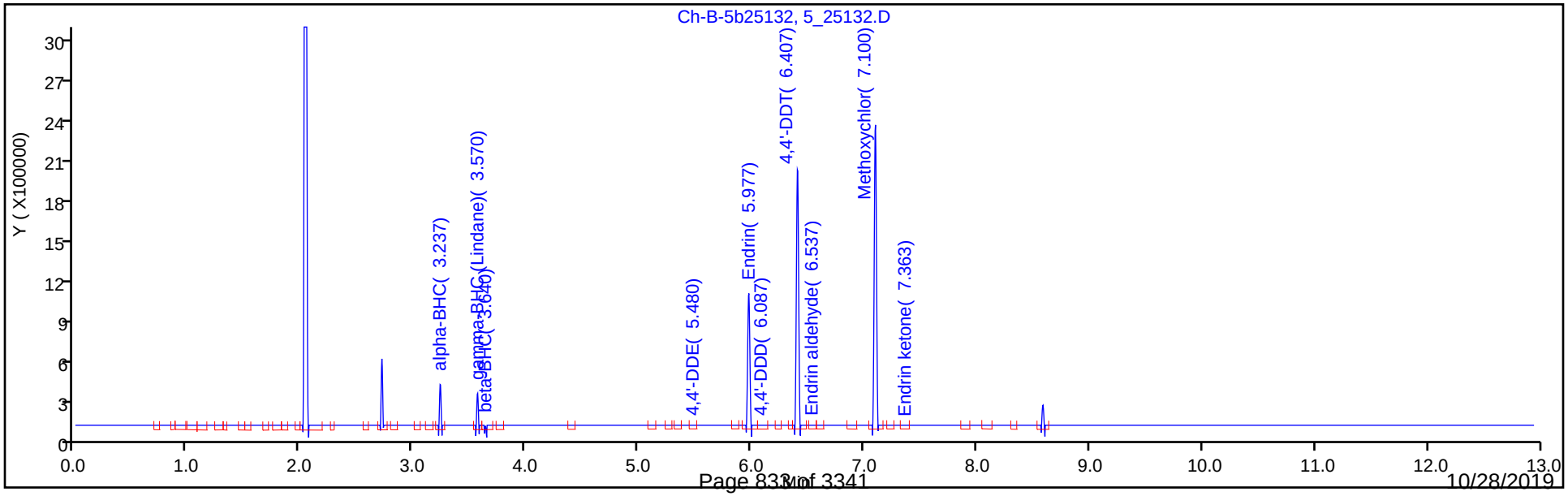
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25132.D

Injection Date:	27-Sep-2019 08:58:07	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	pem			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494474/10 Calibration Date: 09/27/2019 10:16

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25136.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Lin1		1.957		0.0498	0.0500	-0.4	20.0
gamma-BHC (Lindane)	Lin1		1.775		0.0497	0.0500	-0.6	20.0
beta-BHC	Lin1		0.6866		0.0486	0.0500	-2.9	20.0
delta-BHC	Lin1		1.623		0.0488	0.0500	-2.4	20.0
Heptachlor	Lin1		1.662		0.0512	0.0500	2.4	20.0
Aldrin	Lin1		1.658		0.0506	0.0500	1.1	20.0
Heptachlor epoxide	Lin1		1.459		0.0507	0.0500	1.3	20.0
trans-Chlordane	Lin1		1.561		0.0497	0.0500	-0.6	20.0
cis-Chlordane	Lin1		1.499		0.0496	0.0500	-0.8	20.0
4,4'-DDE	Lin1		1.558		0.0501	0.0500	0.2	20.0
Endosulfan I	Lin1		1.314		0.0501	0.0500	0.2	20.0
Dieldrin	Lin1		1.334		0.0498	0.0500	-0.4	20.0
Endrin	Lin1		1.442		0.0512	0.0500	2.3	20.0
4,4'-DDD	Lin1		1.230		0.0507	0.0500	1.5	20.0
Endosulfan II	Lin1		1.183		0.0514	0.0500	2.8	20.0
4,4'-DDT	Lin1		1.235		0.0501	0.0500	0.3	20.0
Endrin aldehyde	Lin1		1.085		0.0521	0.0500	4.3	20.0
Methoxychlor	Lin1		0.5430		0.0536	0.0500	7.2	20.0
Endosulfan sulfate	Lin1		1.167		0.0509	0.0500	1.8	20.0
Endrin ketone	Lin1		1.283		0.0544	0.0500	8.7	20.0
Tetrachloro-m-xylene	Lin1		0.8402		0.0493	0.0500	-1.5	20.0
DCB Decachlorobiphenyl	Lin1		0.9305		0.0521	0.0500	4.2	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494474/10 Calibration Date: 09/27/2019 10:16

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25136.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	2.72	2.69	2.75
gamma-BHC (Lindane)	2.97	2.94	3.00
beta-BHC	3.04	3.01	3.07
delta-BHC	3.18	3.15	3.21
Heptachlor	3.36	3.33	3.39
Aldrin	3.63	3.60	3.66
Heptachlor epoxide	4.21	4.18	4.24
trans-Chlordane	4.33	4.30	4.36
cis-Chlordane	4.46	4.43	4.49
4,4'-DDE	4.55	4.52	4.58
Endosulfan I	4.60	4.57	4.63
Dieldrin	4.84	4.81	4.87
Endrin	5.08	5.05	5.11
4,4'-DDD	5.16	5.13	5.19
Endosulfan II	5.30	5.27	5.33
4,4'-DDT	5.44	5.41	5.47
Endrin aldehyde	5.73	5.70	5.76
Methoxychlor	5.95	5.92	5.98
Endosulfan sulfate	6.17	6.14	6.20
Endrin ketone	6.45	6.42	6.48
Tetrachloro-m-xylene	2.32	2.29	2.35
DCB Decachlorobiphenyl	7.46	7.43	7.49

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25136.D
Lims ID: ccvis
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Sep-2019 10:16:26 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:30 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.823	1.823	0.000	15479846	0.5000	0.5000	
2	2.043	2.043	0.000	16143446	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.323	2.323	0.000	1300542	0.0500	0.0493	
2	2.720	2.720	0.000	1749136	0.0500	0.0503	
						RPD = 2.00	
$ 3 DCB Decachlorobiphenyl							
1	7.463	7.463	0.000	1440464	0.0500	0.0521	
2	8.583	8.583	0.000	1108962	0.0500	0.0526	
						RPD = 0.88	
6 alpha-BHC							
1	2.723	2.723	0.000	3028904	0.0500	0.0498	
2	3.237	3.237	0.000	2839367	0.0500	0.0503	
						RPD = 0.87	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	2747609	0.0500	0.0497	
2	3.567	3.567	0.000	2533359	0.0500	0.0502	
						RPD = 1.08	
8 beta-BHC							
1	3.037	3.037	0.000	1062898	0.0500	0.0486	
2	3.637	3.637	0.000	990540	0.0500	0.0501	
						RPD = 3.04	
9 delta-BHC							
1	3.183	3.183	0.000	2511832	0.0500	0.0488	
2	3.933	3.933	0.000	2564584	0.0500	0.0508	
						RPD = 3.95	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.363	3.363	0.000	2572408	0.0500	0.0512	
2	4.017	4.017	0.000	2045910	0.0500	0.0506	
						RPD = 1.20	
12 Aldrin							
1	3.627	3.627	0.000	2566028	0.0500	0.0506	
2	4.360	4.360	0.000	2205831	0.0500	0.0522	
						RPD = 3.28	
14 Heptachlor epoxide							
1	4.207	4.207	0.000	2259248	0.0500	0.0507	
2	4.957	4.957	0.000	1876417	0.0500	0.0530	
						RPD = 4.46	
16 trans-Chlordane							
1	4.333	4.333	0.000	2415745	0.0500	0.0497	
2	5.157	5.157	0.000	1908742	0.0500	0.0507	
						RPD = 1.89	
17 cis-Chlordane							
1	4.463	4.463	0.000	2319700	0.0500	0.0496	
2	5.310	5.310	0.000	1800004	0.0500	0.0504	
						RPD = 1.51	
18 4,4'-DDE							
1	4.550	4.550	0.000	2411514	0.0500	0.0501	
2	5.480	5.480	0.000	1808398	0.0500	0.0496	
						RPD = 0.95	
19 Endosulfan I							
1	4.600	4.600	0.000	2033855	0.0500	0.0501	
2	5.373	5.373	0.000	1540128	0.0500	0.0506	
						RPD = 0.90	
21 Dieldrin							
1	4.843	4.843	0.000	2065741	0.0500	0.0498	
2	5.660	5.660	0.000	1861075	0.0500	0.0507	
						RPD = 1.70	
23 Endrin							
1	5.077	5.077	0.000	2232192	0.0500	0.0512	
2	5.973	5.973	0.000	1590834	0.0500	0.0489	
						RPD = 4.57	
24 4,4'-DDD							
1	5.160	5.160	0.000	1904643	0.0500	0.0507	
2	6.080	6.080	0.000	1363581	0.0500	0.0480	
						RPD = 5.45	
26 Endosulfan II							
1	5.303	5.303	0.000	1831329	0.0500	0.0514	
2	6.190	6.190	0.000	1299939	0.0500	0.0493	
						RPD = 4.05	
28 4,4'-DDT							
1	5.443	5.443	0.000	1911109	0.0500	0.0501	
2	6.407	6.407	0.000	1334157	0.0500	0.0474	
						RPD = 5.57	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.733	5.733	0.000	1679183	0.0500	0.0521	
2	6.533	6.533	0.000	1139670	0.0500	0.0499	
						RPD = 4.49	
30 Methoxychlor							
1	5.950	5.950	0.000	840576	0.0500	0.0536	
2	7.097	7.097	0.000	588462	0.0500	0.0469	
						RPD = 13.38	
32 Endosulfan sulfate							
1	6.173	6.173	0.000	1805724	0.0500	0.0509	
2	6.820	6.820	0.000	1301287	0.0500	0.0468	
						RPD = 8.46	
33 Endrin ketone							
1	6.450	6.450	0.000	1985613	0.0500	0.0544	
2	7.363	7.363	0.000	1403668	0.0500	0.0487	
						RPD = 10.93	

Reagents:

PEST_CCV_.05_00298 Amount Added: 1.00 Units: mL

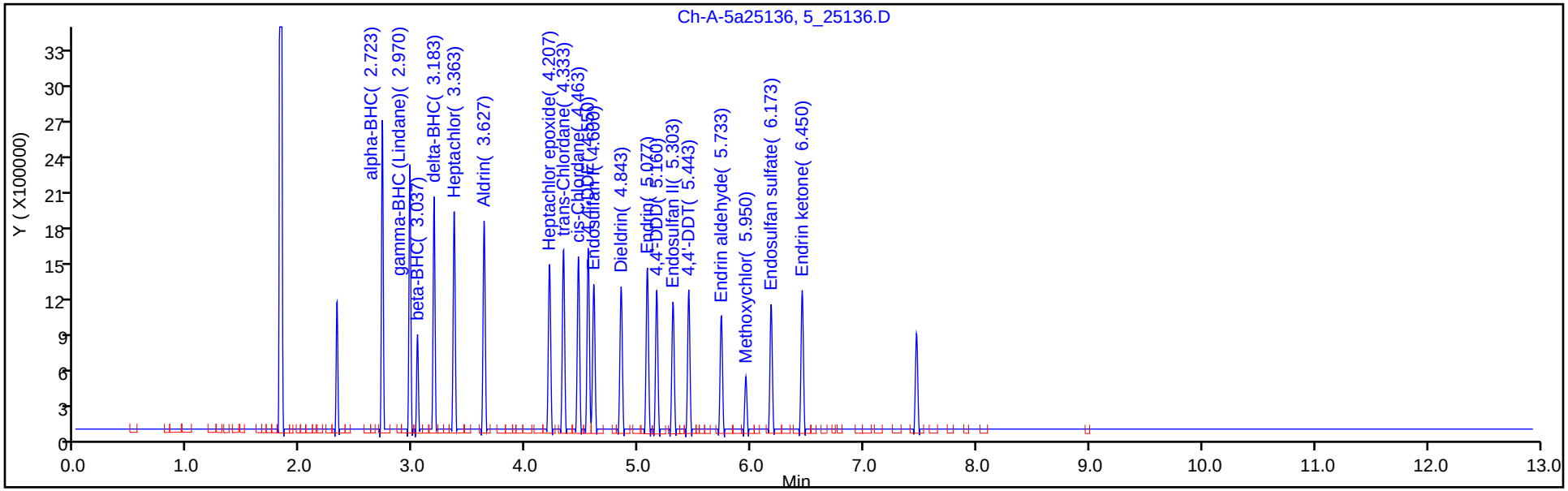
Report Date: 27-Sep-2019 14:29:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

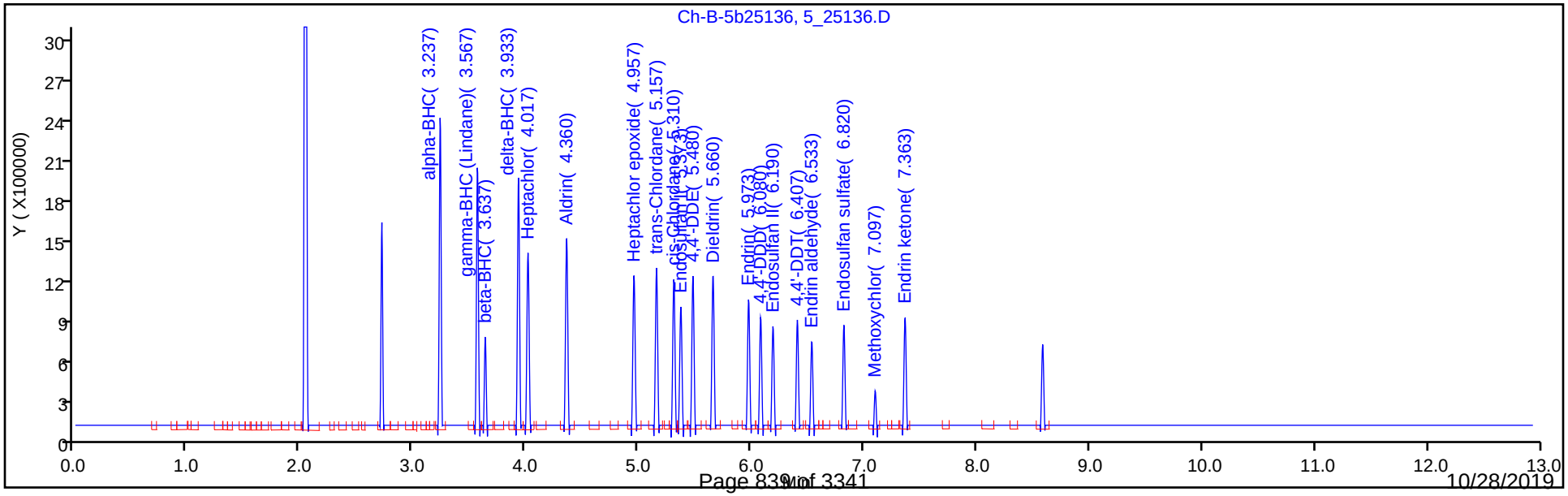
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25136.D

Injection Date:	27-Sep-2019 10:16:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	ccvis			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM VII
PESTICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494474/10 Calibration Date: 09/27/2019 10:16

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPII ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25136.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
alpha-BHC	Lin1		1.759		0.0503	0.0500	0.5	20.0
gamma-BHC (Lindane)	Lin1		1.569		0.0502	0.0500	0.4	20.0
beta-BHC	Lin1		0.6136		0.0501	0.0500	0.1	20.0
delta-BHC	Lin1		1.589		0.0508	0.0500	1.5	20.0
Heptachlor	Lin1		1.267		0.0506	0.0500	1.2	20.0
Aldrin	Lin1		1.366		0.0522	0.0500	4.5	20.0
Heptachlor epoxide	Lin1		1.162		0.0530	0.0500	5.9	20.0
trans-Chlordane	Lin1		1.182		0.0507	0.0500	1.3	20.0
cis-Chlordane	Lin1		1.115		0.0504	0.0500	0.7	20.0
Endosulfan I	Lin1		0.9540		0.0506	0.0500	1.1	20.0
4,4'-DDE	Lin1		1.120		0.0496	0.0500	-0.7	20.0
Dieldrin	Lin1		1.153		0.0507	0.0500	1.3	20.0
Endrin	Lin1		0.9854		0.0489	0.0500	-2.2	20.0
4,4'-DDD	Lin1		0.8447		0.0480	0.0500	-3.9	20.0
Endosulfan II	Lin1		0.8052		0.0493	0.0500	-1.3	20.0
4,4'-DDT	Lin1		0.8264		0.0474	0.0500	-5.2	20.0
Endrin aldehyde	Lin1		0.7060		0.0499	0.0500	-0.3	20.0
Endosulfan sulfate	Lin1		0.8061		0.0468	0.0500	-6.5	20.0
Methoxychlor	Lin1		0.3645		0.0469	0.0500	-6.3	20.0
Endrin ketone	Lin1		0.8695		0.0487	0.0500	-2.5	20.0
Tetrachloro-m-xylene	Lin1		1.084		0.0503	0.0500	0.5	20.0
DCB Decachlorobiphenyl	Lin1		0.6869		0.0526	0.0500	5.1	20.0

FORM VII
PESTICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494474/10 Calibration Date: 09/27/2019 10:16

Instrument ID: HP6890-5 Calib Start Date: 09/16/2019 11:28

GC Column: RTX-CLPII ID: 0.53(mm) Calib End Date: 09/16/2019 13:25

Lab File ID: 5_25136.D

Analyte	RT	RT WINDOW	
		FROM	TO
alpha-BHC	3.24	3.21	3.27
gamma-BHC (Lindane)	3.57	3.54	3.60
beta-BHC	3.64	3.61	3.67
delta-BHC	3.93	3.90	3.96
Heptachlor	4.02	3.99	4.05
Aldrin	4.36	4.33	4.39
Heptachlor epoxide	4.96	4.93	4.99
trans-Chlordane	5.16	5.13	5.19
cis-Chlordane	5.31	5.28	5.34
Endosulfan I	5.37	5.34	5.40
4,4'-DDE	5.48	5.45	5.51
Dieldrin	5.66	5.63	5.69
Endrin	5.97	5.94	6.00
4,4'-DDD	6.08	6.05	6.11
Endosulfan II	6.19	6.16	6.22
4,4'-DDT	6.41	6.38	6.44
Endrin aldehyde	6.53	6.50	6.56
Endosulfan sulfate	6.82	6.79	6.85
Methoxychlor	7.10	7.07	7.13
Endrin ketone	7.36	7.33	7.39
Tetrachloro-m-xylene	2.72	2.69	2.75
DCB Decachlorobiphenyl	8.58	8.55	8.61

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25136.D
Lims ID: ccvis
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Sep-2019 10:16:26 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5
Sublist: chrom-IS-8081 6890-5*sub20

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:30 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.823	1.823	0.000	15479846	0.5000	0.5000	
2	2.043	2.043	0.000	16143446	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.323	2.323	0.000	1300542	0.0500	0.0493	
2	2.720	2.720	0.000	1749136	0.0500	0.0503	
						RPD = 2.00	
$ 3 DCB Decachlorobiphenyl							
1	7.463	7.463	0.000	1440464	0.0500	0.0521	
2	8.583	8.583	0.000	1108962	0.0500	0.0526	
						RPD = 0.88	
6 alpha-BHC							
1	2.723	2.723	0.000	3028904	0.0500	0.0498	
2	3.237	3.237	0.000	2839367	0.0500	0.0503	
						RPD = 0.87	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	2747609	0.0500	0.0497	
2	3.567	3.567	0.000	2533359	0.0500	0.0502	
						RPD = 1.08	
8 beta-BHC							
1	3.037	3.037	0.000	1062898	0.0500	0.0486	
2	3.637	3.637	0.000	990540	0.0500	0.0501	
						RPD = 3.04	
9 delta-BHC							
1	3.183	3.183	0.000	2511832	0.0500	0.0488	
2	3.933	3.933	0.000	2564584	0.0500	0.0508	
						RPD = 3.95	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.363	3.363	0.000	2572408	0.0500	0.0512	
2	4.017	4.017	0.000	2045910	0.0500	0.0506	
						RPD = 1.20	
12 Aldrin							
1	3.627	3.627	0.000	2566028	0.0500	0.0506	
2	4.360	4.360	0.000	2205831	0.0500	0.0522	
						RPD = 3.28	
14 Heptachlor epoxide							
1	4.207	4.207	0.000	2259248	0.0500	0.0507	
2	4.957	4.957	0.000	1876417	0.0500	0.0530	
						RPD = 4.46	
16 trans-Chlordane							
1	4.333	4.333	0.000	2415745	0.0500	0.0497	
2	5.157	5.157	0.000	1908742	0.0500	0.0507	
						RPD = 1.89	
17 cis-Chlordane							
1	4.463	4.463	0.000	2319700	0.0500	0.0496	
2	5.310	5.310	0.000	1800004	0.0500	0.0504	
						RPD = 1.51	
18 4,4'-DDE							
1	4.550	4.550	0.000	2411514	0.0500	0.0501	
2	5.480	5.480	0.000	1808398	0.0500	0.0496	
						RPD = 0.95	
19 Endosulfan I							
1	4.600	4.600	0.000	2033855	0.0500	0.0501	
2	5.373	5.373	0.000	1540128	0.0500	0.0506	
						RPD = 0.90	
21 Dieldrin							
1	4.843	4.843	0.000	2065741	0.0500	0.0498	
2	5.660	5.660	0.000	1861075	0.0500	0.0507	
						RPD = 1.70	
23 Endrin							
1	5.077	5.077	0.000	2232192	0.0500	0.0512	
2	5.973	5.973	0.000	1590834	0.0500	0.0489	
						RPD = 4.57	
24 4,4'-DDD							
1	5.160	5.160	0.000	1904643	0.0500	0.0507	
2	6.080	6.080	0.000	1363581	0.0500	0.0480	
						RPD = 5.45	
26 Endosulfan II							
1	5.303	5.303	0.000	1831329	0.0500	0.0514	
2	6.190	6.190	0.000	1299939	0.0500	0.0493	
						RPD = 4.05	
28 4,4'-DDT							
1	5.443	5.443	0.000	1911109	0.0500	0.0501	
2	6.407	6.407	0.000	1334157	0.0500	0.0474	
						RPD = 5.57	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.733	5.733	0.000	1679183	0.0500	0.0521	
2	6.533	6.533	0.000	1139670	0.0500	0.0499	
						RPD = 4.49	
30 Methoxychlor							
1	5.950	5.950	0.000	840576	0.0500	0.0536	
2	7.097	7.097	0.000	588462	0.0500	0.0469	
						RPD = 13.38	
32 Endosulfan sulfate							
1	6.173	6.173	0.000	1805724	0.0500	0.0509	
2	6.820	6.820	0.000	1301287	0.0500	0.0468	
						RPD = 8.46	
33 Endrin ketone							
1	6.450	6.450	0.000	1985613	0.0500	0.0544	
2	7.363	7.363	0.000	1403668	0.0500	0.0487	
						RPD = 10.93	

Reagents:

PEST_CCV_.05_00298 Amount Added: 1.00 Units: mL

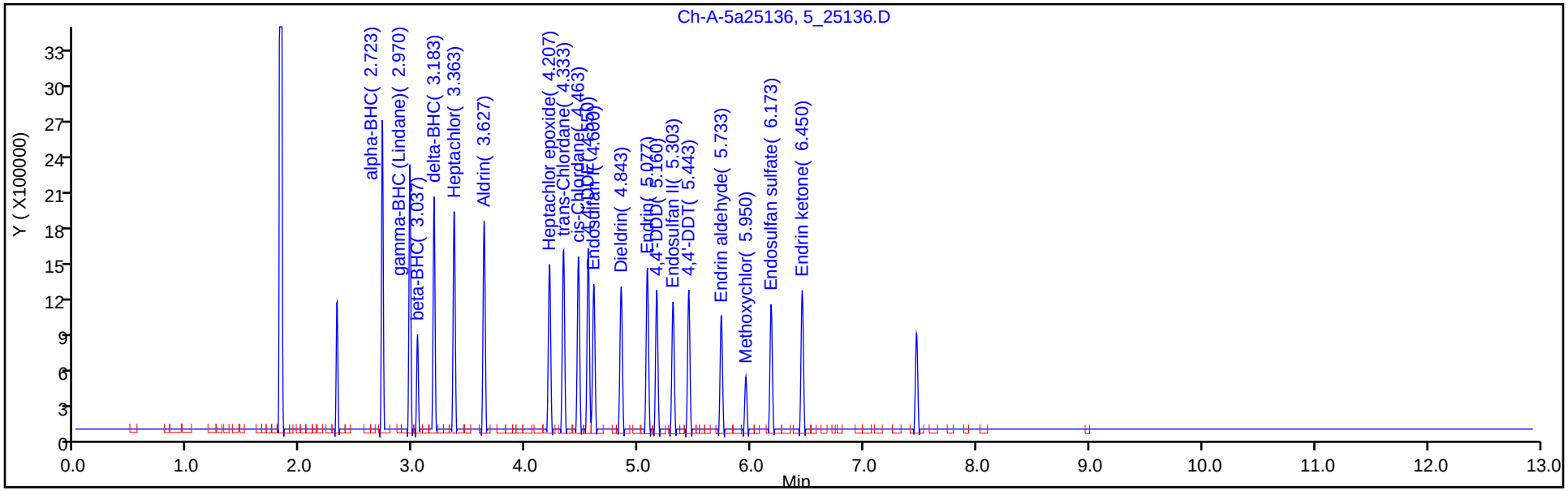
Report Date: 27-Sep-2019 14:29:33 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

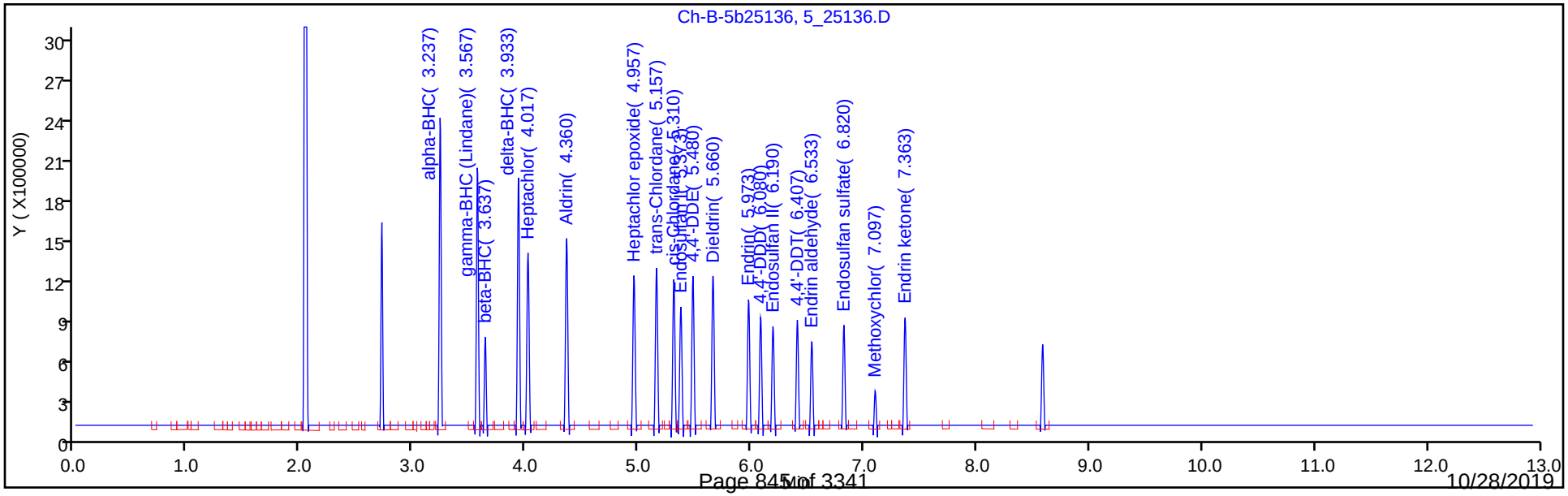
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25136.D

Injection Date:	27-Sep-2019 10:16:26	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	ccvis			Worklist Smp#:	10
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493908/1-A

Matrix: Solid Lab File ID: 5_25138.D

Analysis Method: 8081B Date Collected:

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.69(g) Date Analyzed: 09/27/2019 10:55

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	ND		1.6	0.32
72-55-9	4,4'-DDE	ND		1.6	0.34
50-29-3	4,4'-DDT	ND		1.6	0.38
309-00-2	Aldrin	ND		1.6	0.40
319-84-6	alpha-BHC	0.340	J	1.6	0.29
5103-71-9	cis-Chlordane	ND		1.6	0.81
319-85-7	beta-BHC	ND		1.6	0.29
319-86-8	delta-BHC	0.435	J	1.6	0.30
60-57-1	Dieldrin	ND		1.6	0.39
959-98-8	Endosulfan I	ND		1.6	0.31
33213-65-9	Endosulfan II	ND		1.6	0.29
1031-07-8	Endosulfan sulfate	ND		1.6	0.30
72-20-8	Endrin	ND		1.6	0.32
58-89-9	gamma-BHC (Lindane)	ND		1.6	0.30
76-44-8	Heptachlor	ND		1.6	0.35

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	79		45-120
877-09-8	Tetrachloro-m-xylene	63		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25138.D
Lims ID: MB 480-493908/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Sep-2019 10:55:37 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:46 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 11:37:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.827	1.827	0.000	13681409	0.5000	0.5000	
2	2.043	2.043	0.000	15246034	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.327	2.323	0.004	286556	0.0200	0.0127	
2	2.720	2.720	0.000	302920	0.0200	0.009782	
						RPD = 25.59	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	354765	0.0200	0.0158	
2	8.580	8.583	-0.003	295890	0.0200	0.0149	
						RPD = 6.26	
6 alpha-BHC							
1	2.727	2.723	0.004	26263		0.001043	
2	3.237	3.237	0.000	28294		0.001523	
						RPD = 37.44	
9 delta-BHC							
1	3.173	3.183	-0.010	39730		0.001336	
2	3.907	3.933	-0.026	20458		0.001519	
						RPD = 12.87	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.730	5.733	-0.003	54520		0.001925	
2	6.540	6.533	0.007	17565		0.001298	
						RPD = 38.94	
33 Endrin ketone							
1	6.443	6.450	-0.007	33154		0.001326	
2	7.360	7.363	-0.003	765		0.001031	
						RPD = 25.02	
S 35 BHC, Total							
1						0.002378	
2						0.003042	
						RPD = 24.50	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

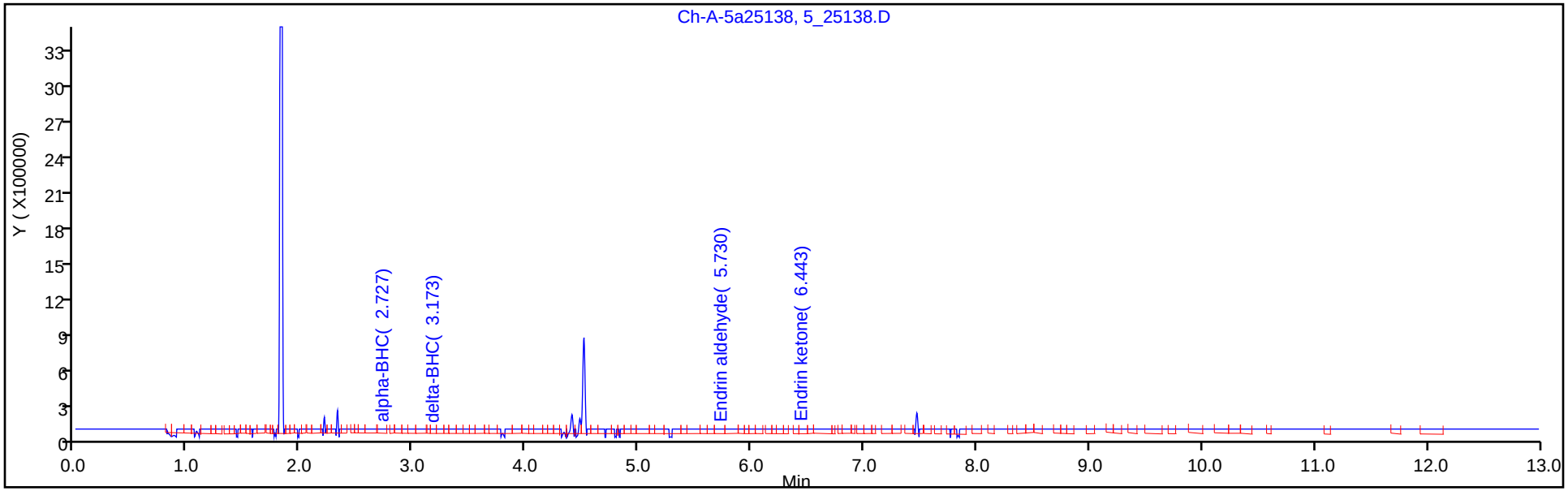
Report Date: 27-Sep-2019 14:29:58 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

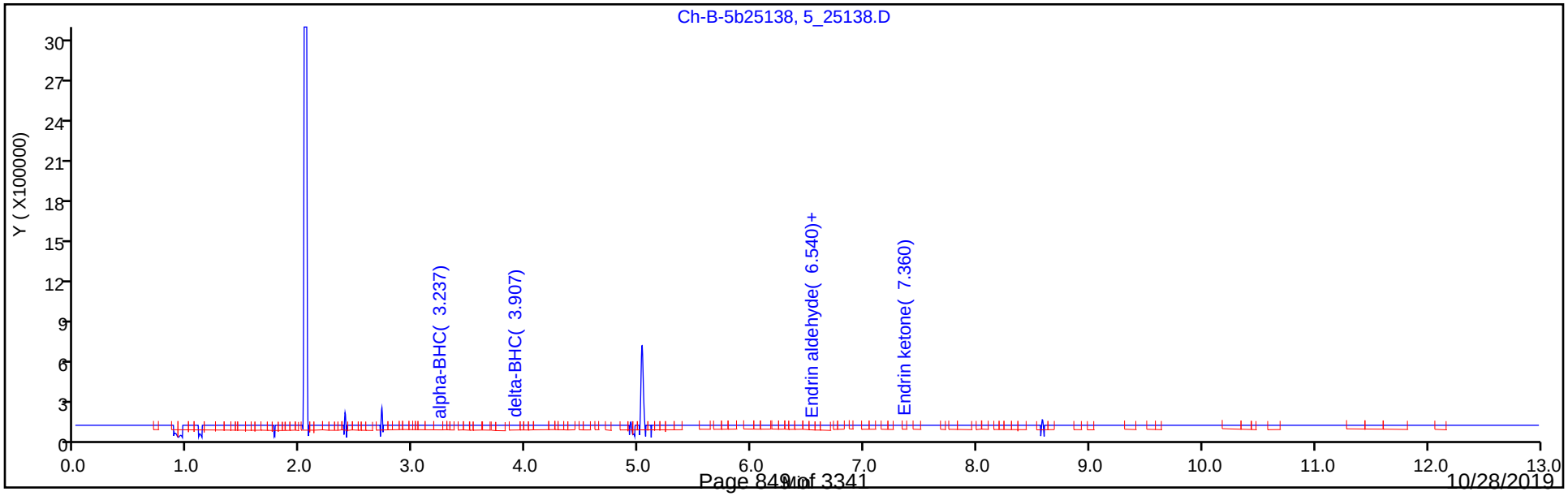
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25138.D

Injection Date:	27-Sep-2019 10:55:37	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	MB 480-493908/1-A			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493908/1-A

Matrix: Solid Lab File ID: 5_25138.D

Analysis Method: 8081B Date Collected:

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.69(g) Date Analyzed: 09/27/2019 10:55

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	74		45-120
877-09-8	Tetrachloro-m-xylene	49		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25138.D
Lims ID: MB 480-493908/1-A
Client ID:
Sample Type: MB
Inject. Date: 27-Sep-2019 10:55:37 ALS Bottle#: 0 Worklist Smp#: 11
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:46 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 11:37:39

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.827	1.827	0.000	13681409	0.5000	0.5000	
2	2.043	2.043	0.000	15246034	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.327	2.323	0.004	286556	0.0200	0.0127	
2	2.720	2.720	0.000	302920	0.0200	0.009782	
						RPD = 25.59	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	354765	0.0200	0.0158	
2	8.580	8.583	-0.003	295890	0.0200	0.0149	
						RPD = 6.26	
6 alpha-BHC							
1	2.727	2.723	0.004	26263		0.001043	
2	3.237	3.237	0.000	28294		0.001523	
						RPD = 37.44	
9 delta-BHC							
1	3.173	3.183	-0.010	39730		0.001336	
2	3.907	3.933	-0.026	20458		0.001519	
						RPD = 12.87	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.730	5.733	-0.003	54520		0.001925	
2	6.540	6.533	0.007	17565		0.001298	
						RPD = 38.94	
33 Endrin ketone							
1	6.443	6.450	-0.007	33154		0.001326	
2	7.360	7.363	-0.003	765		0.001031	
						RPD = 25.02	
S 35 BHC, Total							
1						0.002378	
2						0.003042	
						RPD = 24.50	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

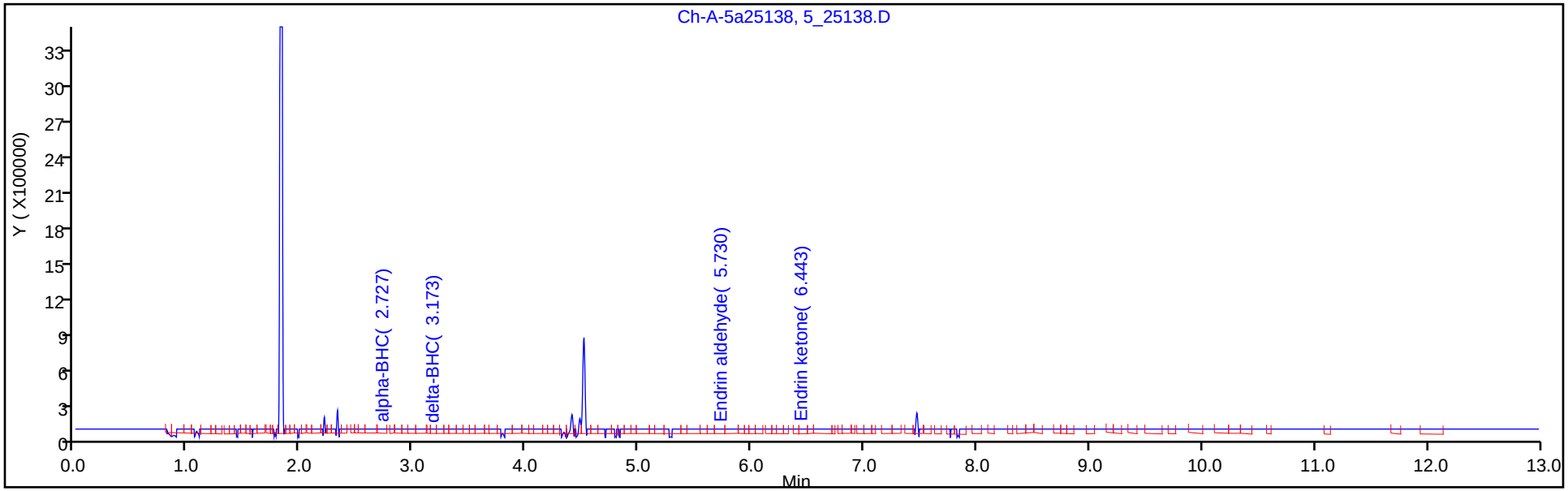
Report Date: 27-Sep-2019 14:29:58 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

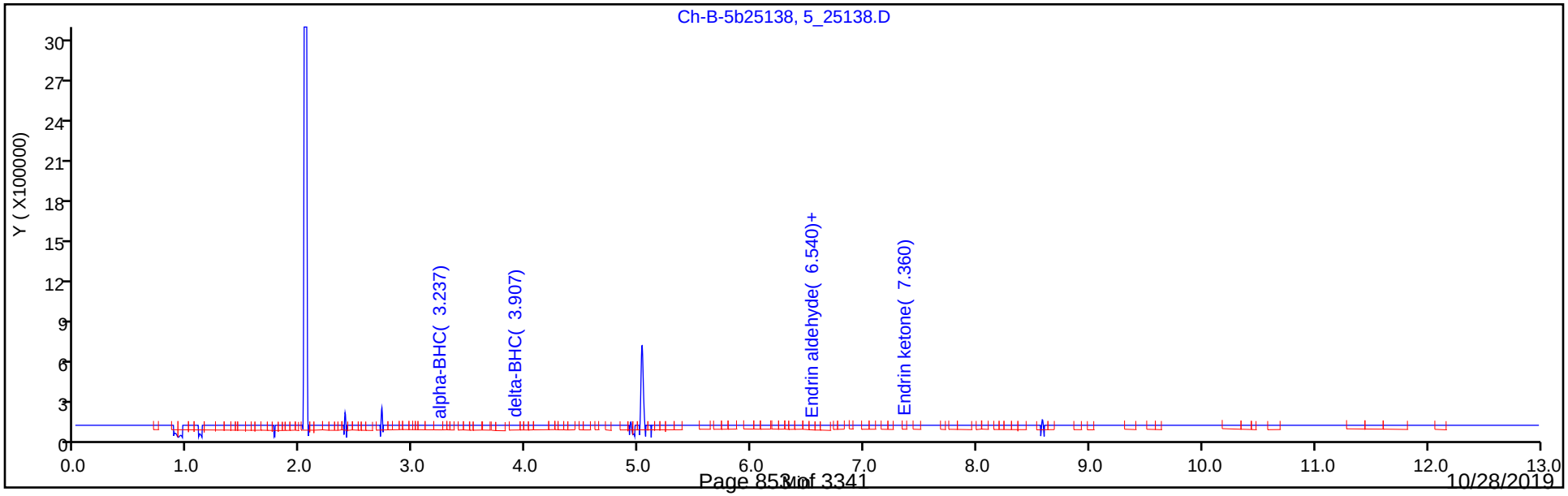
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25138.D

Injection Date:	27-Sep-2019 10:55:37	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	MB 480-493908/1-A			Worklist Smp#:	11
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493908/2-A

Matrix: Solid Lab File ID: 5_25139.D

Analysis Method: 8081B Date Collected:

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.01(g) Date Analyzed: 09/27/2019 11:15

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
72-54-8	4,4'-DDD	12.0		1.7	0.32
72-55-9	4,4'-DDE	10.8		1.7	0.35
50-29-3	4,4'-DDT	12.2		1.7	0.39
309-00-2	Aldrin	8.65		1.7	0.41
319-84-6	alpha-BHC	10.3		1.7	0.30
5103-71-9	cis-Chlordane	13.1		1.7	0.83
319-85-7	beta-BHC	10.1		1.7	0.30
319-86-8	delta-BHC	11.3		1.7	0.31
60-57-1	Dieldrin	12.5		1.7	0.40
959-98-8	Endosulfan I	11.1		1.7	0.32
33213-65-9	Endosulfan II	13.8		1.7	0.30
1031-07-8	Endosulfan sulfate	11.7		1.7	0.31
72-20-8	Endrin	12.0		1.7	0.33
58-89-9	gamma-BHC (Lindane)	9.62		1.7	0.31
76-44-8	Heptachlor	10.6		1.7	0.36

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	93		45-120
877-09-8	Tetrachloro-m-xylene	74		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25139.D
Lims ID: LCS 480-493908/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Sep-2019 11:15:05 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:46 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 11:38:00

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.827	1.827	0.000	13333261	0.5000	0.5000	
2	2.043	2.043	0.000	14773320	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.327	2.323	0.004	327755	0.0200	0.0148	
2	2.723	2.720	0.003	348719	0.0200	0.0115	
						RPD = 24.93	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	413279	0.0200	0.0186	
2	8.583	8.583	0.000	327156	0.0200	0.0170	
						RPD = 9.03	
6 alpha-BHC							
1	2.727	2.723	0.004	1604525	0.0500	0.0309	
2	3.240	3.237	0.003	1682542	0.0500	0.0329	
						RPD = 6.40	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	1364818	0.0500	0.0289	
2	3.570	3.567	0.003	1460077	0.0500	0.0320	
						RPD = 10.28	
8 beta-BHC							
1	3.037	3.037	0.000	566359	0.0500	0.0302	
2	3.640	3.637	0.003	614094	0.0500	0.0341	
						RPD = 12.16	
9 delta-BHC							
1	3.183	3.183	0.000	1498609	0.0500	0.0339	
2	3.933	3.933	0.000	1501237	0.0500	0.0329	
						RPD = 3.23	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.363	3.363	0.000	1379906	0.0500	0.0319	
2	4.017	4.017	0.000	1279827	0.0500	0.0348	
						RPD = 8.68	
12 Aldrin							
1	3.630	3.627	0.003	1129980	0.0500	0.0260	
2	4.360	4.360	0.000	1111009	0.0500	0.0292	
						RPD = 11.57	
14 Heptachlor epoxide							
1	4.210	4.207	0.003	1116646	0.0500	0.0289	
2	4.960	4.957	0.003	1583946	0.0500	0.0489	
						RPD = 51.24	
16 trans-Chlordane							
1	4.333	4.333	0.000	1347114	0.0500	0.0323	
2	5.160	5.157	0.003	1229181	0.0500	0.0360	
						RPD = 10.67	
17 cis-Chlordane							
1	4.467	4.463	0.004	1579654	0.0500	0.0393	
2	5.310	5.310	0.000	1205189	0.0500	0.0371	
						RPD = 5.74	
18 4,4'-DDE							
1	4.550	4.550	0.000	1339868	0.0500	0.0325	
2	5.480	5.480	0.000	1200196	0.0500	0.0363	
						RPD = 11.20	
19 Endosulfan I							
1	4.603	4.600	0.003	1169767	0.0500	0.0335	
2	5.373	5.373	0.000	1004949	0.0500	0.0362	
						RPD = 7.99	
21 Dieldrin							
1	4.843	4.843	0.000	1337034	0.0500	0.0375	
2	5.660	5.660	0.000	1259711	0.0500	0.0377	
						RPD = 0.48	
23 Endrin							
1	5.077	5.077	0.000	1361980	0.0500	0.0362	
2	5.977	5.973	0.004	1076203	0.0500	0.0364	
						RPD = 0.54	
24 4,4'-DDD							
1	5.160	5.160	0.000	1152088	0.0500	0.0361	
2	6.083	6.080	0.003	1012949	0.0500	0.0392	
						RPD = 8.27	
26 Endosulfan II							
1	5.303	5.303	0.000	1267760	0.0500	0.0413	
2	6.190	6.190	0.000	941257	0.0500	0.0392	
						RPD = 5.25	
28 4,4'-DDT							
1	5.443	5.443	0.000	1180546	0.0500	0.0366	
2	6.407	6.407	0.000	903667	0.0500	0.0356	
						RPD = 2.82	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.733	5.733	0.000	684098	0.0500	0.0247	
2	6.537	6.533	0.004	715121	0.0500	0.0343	
						RPD = 32.77	
30 Methoxychlor							
1	5.950	5.950	0.000	526398	0.0500	0.0395	
2	7.097	7.097	0.000	386738	0.0500	0.0341	
						RPD = 14.62	
32 Endosulfan sulfate							
1	6.177	6.173	0.004	1074376	0.0500	0.0351	
2	6.820	6.820	0.000	898843	0.0500	0.0355	
						RPD = 1.08	
33 Endrin ketone							
1	6.450	6.450	0.000	1192091	0.0500	0.0380	
2	7.363	7.363	0.000	947004	0.0500	0.0362	
						RPD = 4.85	

Reagents:

1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

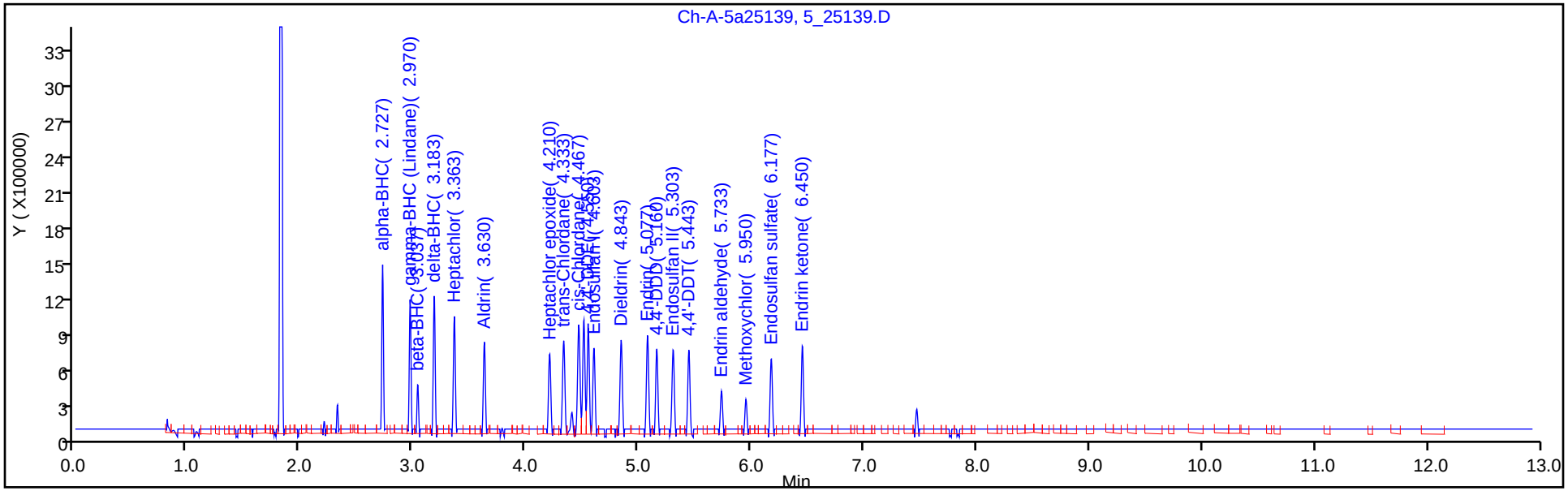
Report Date: 27-Sep-2019 14:30:02 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

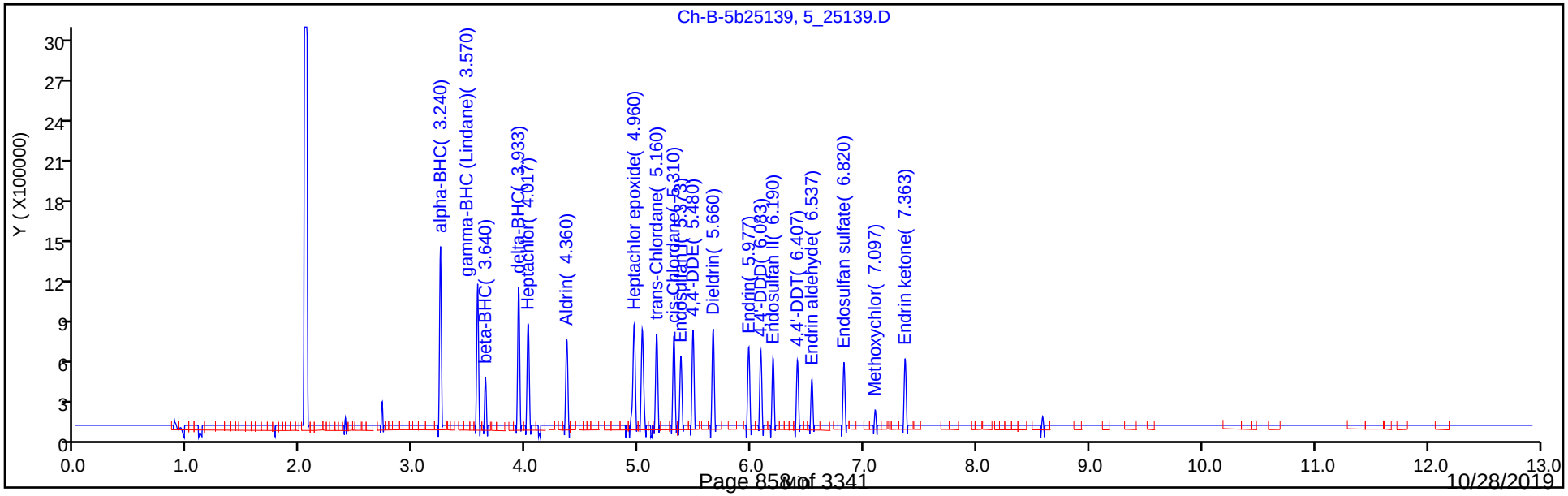
Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25139.D

Injection Date:	27-Sep-2019 11:15:05	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	LCS 480-493908/2-A			Worklist Smp#:	12
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
PESTICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493908/2-A

Matrix: Solid Lab File ID: 5_25139.D

Analysis Method: 8081B Date Collected:

Extraction Method: 3550C Date Extracted: 09/25/2019 07:36

Sample wt/vol: 30.01(g) Date Analyzed: 09/27/2019 11:15

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494474 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	85		45-120
877-09-8	Tetrachloro-m-xylene	57		30-124

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25139.D
Lims ID: LCS 480-493908/2-A
Client ID:
Sample Type: LCS
Inject. Date: 27-Sep-2019 11:15:05 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: Name:
Misc. Info.: Study: Channel A: I/F Serial#, CN10520009
Operator ID: BufTCHROM Instrument ID: HP6890-5

Method: \\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\IS-8081 6890-5.m
Limit Group: GC - 8081B IS ICAL
Last Update: 27-Sep-2019 14:29:46 Calib Date: 16-Sep-2019 13:25:36
Integrator: Falcon
Quant Method: Internal/External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-05\20190916-84180.b\5_24343.D

Column 1 : Det: Ch-A-6A58132
Column 2 : Det: Ch-B-6b58132
Process Host: CTX0331

First Level Reviewer: salversonj Date: 27-Sep-2019 11:38:00

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.827	1.827	0.000	13333261	0.5000	0.5000	
2	2.043	2.043	0.000	14773320	0.5000	0.5000	
						RPD = 0.00	
$ 2 Tetrachloro-m-xylene							
1	2.327	2.323	0.004	327755	0.0200	0.0148	
2	2.723	2.720	0.003	348719	0.0200	0.0115	
						RPD = 24.93	
$ 3 DCB Decachlorobiphenyl							
1	7.467	7.463	0.004	413279	0.0200	0.0186	
2	8.583	8.583	0.000	327156	0.0200	0.0170	
						RPD = 9.03	
6 alpha-BHC							
1	2.727	2.723	0.004	1604525	0.0500	0.0309	
2	3.240	3.237	0.003	1682542	0.0500	0.0329	
						RPD = 6.40	
7 gamma-BHC (Lindane)							
1	2.970	2.970	0.000	1364818	0.0500	0.0289	
2	3.570	3.567	0.003	1460077	0.0500	0.0320	
						RPD = 10.28	
8 beta-BHC							
1	3.037	3.037	0.000	566359	0.0500	0.0302	
2	3.640	3.637	0.003	614094	0.0500	0.0341	
						RPD = 12.16	
9 delta-BHC							
1	3.183	3.183	0.000	1498609	0.0500	0.0339	
2	3.933	3.933	0.000	1501237	0.0500	0.0329	
						RPD = 3.23	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
11 Heptachlor							
1	3.363	3.363	0.000	1379906	0.0500	0.0319	
2	4.017	4.017	0.000	1279827	0.0500	0.0348	
						RPD = 8.68	
12 Aldrin							
1	3.630	3.627	0.003	1129980	0.0500	0.0260	
2	4.360	4.360	0.000	1111009	0.0500	0.0292	
						RPD = 11.57	
14 Heptachlor epoxide							
1	4.210	4.207	0.003	1116646	0.0500	0.0289	
2	4.960	4.957	0.003	1583946	0.0500	0.0489	
						RPD = 51.24	
16 trans-Chlordane							
1	4.333	4.333	0.000	1347114	0.0500	0.0323	
2	5.160	5.157	0.003	1229181	0.0500	0.0360	
						RPD = 10.67	
17 cis-Chlordane							
1	4.467	4.463	0.004	1579654	0.0500	0.0393	
2	5.310	5.310	0.000	1205189	0.0500	0.0371	
						RPD = 5.74	
18 4,4'-DDE							
1	4.550	4.550	0.000	1339868	0.0500	0.0325	
2	5.480	5.480	0.000	1200196	0.0500	0.0363	
						RPD = 11.20	
19 Endosulfan I							
1	4.603	4.600	0.003	1169767	0.0500	0.0335	
2	5.373	5.373	0.000	1004949	0.0500	0.0362	
						RPD = 7.99	
21 Dieldrin							
1	4.843	4.843	0.000	1337034	0.0500	0.0375	
2	5.660	5.660	0.000	1259711	0.0500	0.0377	
						RPD = 0.48	
23 Endrin							
1	5.077	5.077	0.000	1361980	0.0500	0.0362	
2	5.977	5.973	0.004	1076203	0.0500	0.0364	
						RPD = 0.54	
24 4,4'-DDD							
1	5.160	5.160	0.000	1152088	0.0500	0.0361	
2	6.083	6.080	0.003	1012949	0.0500	0.0392	
						RPD = 8.27	
26 Endosulfan II							
1	5.303	5.303	0.000	1267760	0.0500	0.0413	
2	6.190	6.190	0.000	941257	0.0500	0.0392	
						RPD = 5.25	
28 4,4'-DDT							
1	5.443	5.443	0.000	1180546	0.0500	0.0366	
2	6.407	6.407	0.000	903667	0.0500	0.0356	
						RPD = 2.82	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
29 Endrin aldehyde							
1	5.733	5.733	0.000	684098	0.0500	0.0247	
2	6.537	6.533	0.004	715121	0.0500	0.0343	
						RPD = 32.77	
30 Methoxychlor							
1	5.950	5.950	0.000	526398	0.0500	0.0395	
2	7.097	7.097	0.000	386738	0.0500	0.0341	
						RPD = 14.62	
32 Endosulfan sulfate							
1	6.177	6.173	0.004	1074376	0.0500	0.0351	
2	6.820	6.820	0.000	898843	0.0500	0.0355	
						RPD = 1.08	
33 Endrin ketone							
1	6.450	6.450	0.000	1192091	0.0500	0.0380	
2	7.363	7.363	0.000	947004	0.0500	0.0362	
						RPD = 4.85	

Reagents:

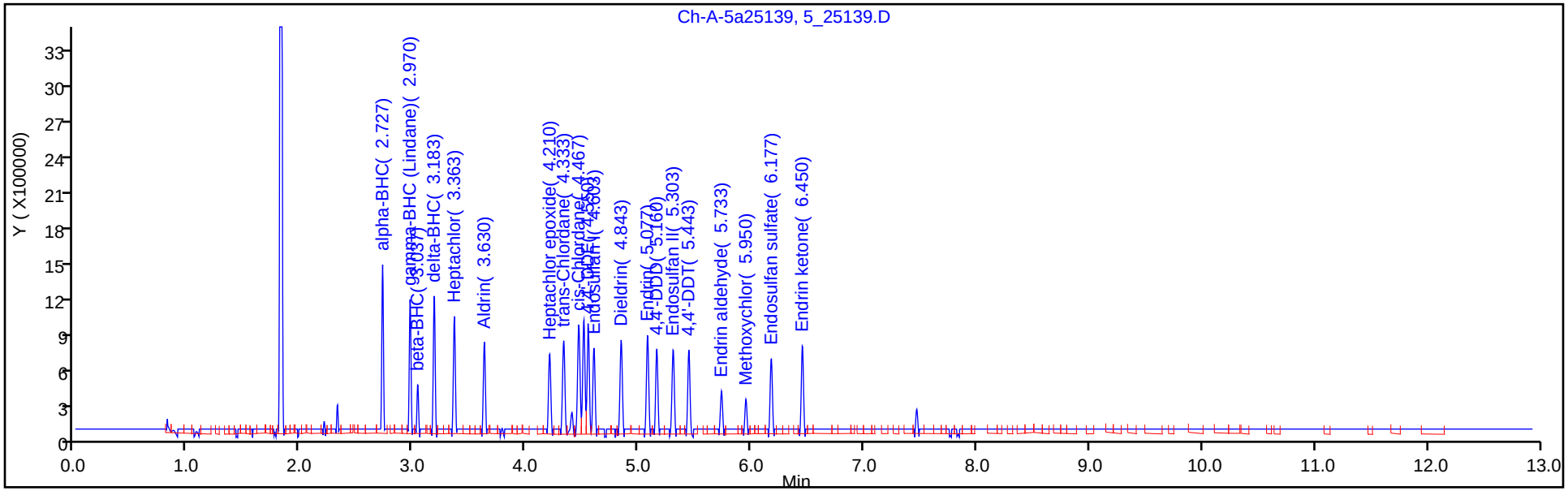
1-Br2nit 50ng_00020 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 27-Sep-2019 14:30:03 Chrom Revision: 2.3 17-Sep-2019 16:19:08

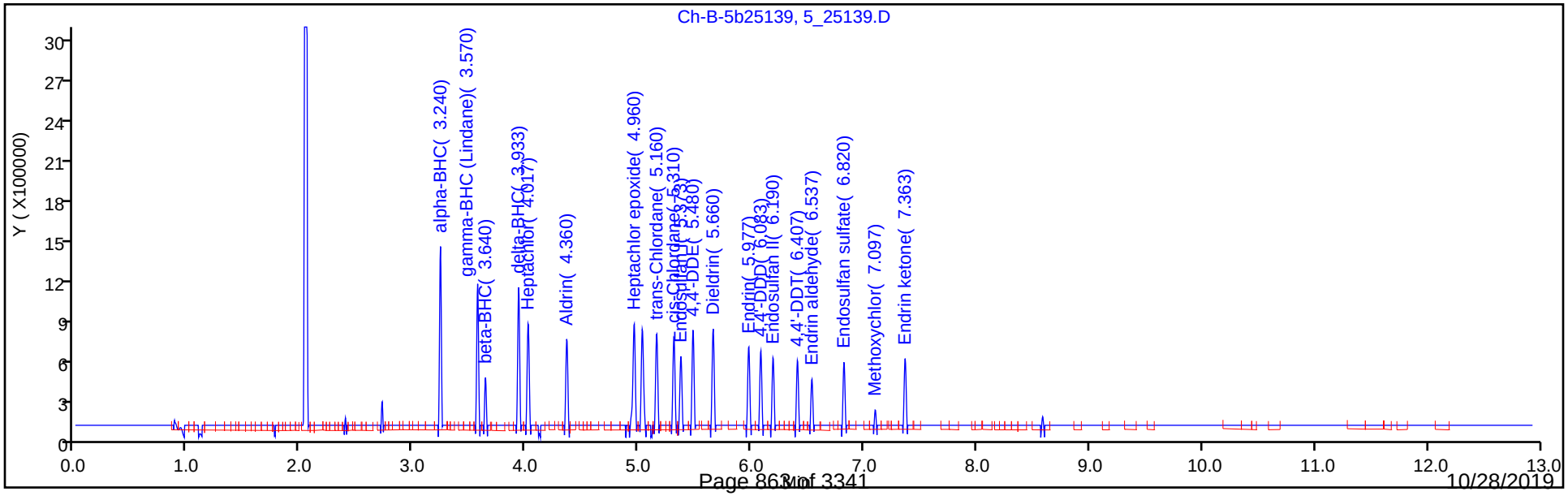
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-05\20190927-84520.b\5_25139.D				
Injection Date:	27-Sep-2019 11:15:05	Instrument ID:	HP6890-5	Operator ID:	BufTCHROM
Lims ID:	LCS 480-493908/2-A			Worklist Smp#:	12
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	IS-8081 6890-5	Limit Group:	GC - 8081B IS ICAL		

Y Scaling: Method Defined: Set to Absolute Y Value



Y Scaling: Method Defined: Set to Absolute Y Value



PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-5 Start Date: 09/16/2019 11:28

Analysis Batch Number: 492274 End Date: 09/16/2019 13:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD1 480-492274/5 IC		09/16/2019 11:28	1	5_24337.D	RTX-CLPI 0.53(mm)
STD1 480-492274/5 IC		09/16/2019 11:28	1	5_24337.D	RTX-CLPII 0.53(mm)
STD3 480-492274/7 ICIS		09/16/2019 12:07	1	5_24339.D	RTX-CLPI 0.53(mm)
STD3 480-492274/7 ICIS		09/16/2019 12:07	1	5_24339.D	RTX-CLPII 0.53(mm)
STD4 480-492274/8 IC		09/16/2019 12:26	1	5_24340.D	RTX-CLPI 0.53(mm)
STD4 480-492274/8 IC		09/16/2019 12:26	1	5_24340.D	RTX-CLPII 0.53(mm)
STD5 480-492274/9 IC		09/16/2019 12:46	1	5_24341.D	RTX-CLPI 0.53(mm)
STD5 480-492274/9 IC		09/16/2019 12:46	1	5_24341.D	RTX-CLPII 0.53(mm)
STD2 480-492274/11 IC		09/16/2019 13:25	1	5_24343.D	RTX-CLPI 0.53(mm)
STD2 480-492274/11 IC		09/16/2019 13:25	1	5_24343.D	RTX-CLPII 0.53(mm)
ICV 480-492274/12		09/16/2019 13:45	1		RTX-CLPI 0.53(mm)
ICV 480-492274/12		09/16/2019 13:45	1		RTX-CLPII 0.53(mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-5 Start Date: 09/27/2019 08:58

Analysis Batch Number: 494474 End Date: 09/27/2019 23:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PEM 480-494474/5		09/27/2019 08:58	1	5_25132.D	RTX-CLPI 0.53(mm)
PEM 480-494474/5		09/27/2019 08:58	1	5_25132.D	RTX-CLPII 0.53(mm)
CCV 480-494474/7		09/27/2019 09:37	1		RTX-CLPI 0.53(mm)
CCV 480-494474/7		09/27/2019 09:37	1		RTX-CLPII 0.53(mm)
CCV 480-494474/8		09/27/2019 09:56	1		RTX-CLPI 0.53(mm)
CCV 480-494474/8		09/27/2019 09:56	1		RTX-CLPII 0.53(mm)
CCVIS 480-494474/10		09/27/2019 10:16	1	5_25136.D	RTX-CLPI 0.53(mm)
CCVIS 480-494474/10		09/27/2019 10:16	1	5_25136.D	RTX-CLPII 0.53(mm)
CCV 480-494474/9		09/27/2019 10:35	1		RTX-CLPI 0.53(mm)
CCV 480-494474/9		09/27/2019 10:35	1		RTX-CLPII 0.53(mm)
MB 480-493908/1-A		09/27/2019 10:55	1	5_25138.D	RTX-CLPI 0.53(mm)
MB 480-493908/1-A		09/27/2019 10:55	1	5_25138.D	RTX-CLPII 0.53(mm)
LCS 480-493908/2-A		09/27/2019 11:15	1	5_25139.D	RTX-CLPI 0.53(mm)
LCS 480-493908/2-A		09/27/2019 11:15	1	5_25139.D	RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 11:34	2		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 11:34	2		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 11:54	2		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 11:54	2		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 12:13	2		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 12:13	2		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 12:33	5		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 12:33	5		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 12:52	5		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 12:52	5		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 13:12	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 13:12	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 13:32	5		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 13:32	5		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 13:51	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 13:51	1		RTX-CLPII 0.53(mm)
480-159547-7		09/27/2019 14:11	1	5_25148.D	RTX-CLPI 0.53(mm)
480-159547-7		09/27/2019 14:11	1	5_25148.D	RTX-CLPII 0.53(mm)
480-159547-8		09/27/2019 14:30	1	5_25149.D	RTX-CLPI 0.53(mm)
480-159547-8		09/27/2019 14:30	1	5_25149.D	RTX-CLPII 0.53(mm)
480-159547-18		09/27/2019 14:50	1	5_25150.D	RTX-CLPI 0.53(mm)
480-159547-18		09/27/2019 14:50	1	5_25150.D	RTX-CLPII 0.53(mm)
480-159547-19		09/27/2019 15:09	1	5_25151.D	RTX-CLPI 0.53(mm)
480-159547-19		09/27/2019 15:09	1	5_25151.D	RTX-CLPII 0.53(mm)
480-159547-20		09/27/2019 15:29	1	5_25152.D	RTX-CLPI 0.53(mm)
480-159547-20		09/27/2019 15:29	1	5_25152.D	RTX-CLPII 0.53(mm)
480-159547-30		09/27/2019 15:48	1	5_25153.D	RTX-CLPI 0.53(mm)
480-159547-30		09/27/2019 15:48	1	5_25153.D	RTX-CLPII 0.53(mm)
480-159547-31		09/27/2019 16:08	1	5_25154.D	RTX-CLPI 0.53(mm)
480-159547-31		09/27/2019 16:08	1	5_25154.D	RTX-CLPII 0.53(mm)
480-159547-32		09/27/2019 16:27	1	5_25155.D	RTX-CLPI 0.53(mm)

PESTICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-5 Start Date: 09/27/2019 08:58

Analysis Batch Number: 494474 End Date: 09/27/2019 23:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
480-159547-32		09/27/2019 16:27	1	5_25155.D	RTX-CLPII 0.53(mm)
480-159547-39		09/27/2019 16:47	1	5_25156.D	RTX-CLPI 0.53(mm)
480-159547-39		09/27/2019 16:47	1	5_25156.D	RTX-CLPII 0.53(mm)
480-159547-40		09/27/2019 17:07	1	5_25157.D	RTX-CLPI 0.53(mm)
480-159547-40		09/27/2019 17:07	1	5_25157.D	RTX-CLPII 0.53(mm)
CCV 480-494474/31		09/27/2019 17:26	1		RTX-CLPI 0.53(mm)
CCV 480-494474/31		09/27/2019 17:26	1		RTX-CLPII 0.53(mm)
PEM 480-494474/32		09/27/2019 17:46	1		RTX-CLPI 0.53(mm)
PEM 480-494474/32		09/27/2019 17:46	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 18:05	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 18:05	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 18:25	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 18:25	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 18:44	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 18:44	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 19:04	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 19:04	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 19:23	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 19:23	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 19:43	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 19:43	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 20:03	5		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 20:03	5		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 20:22	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 20:22	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 20:42	5		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 20:42	5		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 21:02	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 21:02	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 21:21	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 21:21	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 21:41	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 21:41	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 22:00	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 22:00	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 22:20	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 22:20	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 22:39	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 22:39	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 22:59	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 22:59	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 23:19	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 23:19	1		RTX-CLPII 0.53(mm)
ZZZZZ		09/27/2019 23:38	1		RTX-CLPI 0.53(mm)
ZZZZZ		09/27/2019 23:38	1		RTX-CLPII 0.53(mm)

PESTICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493908 Batch Start Date: 09/25/19 07:36 Batch Analyst: Shanon, Edward L

Batch Method: 3550C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CalcMsg	O_8081/82surr 00126	O8081pestspik 00048	AnalysisComment
MB 480-493908/1		3550C, 8081B		30.69 g	10 mL	CALC NOT SET TO RUN	1 mL		Florisiled
LCS 480-493908/2		3550C, 8081B		30.01 g	10 mL	CALC NOT SET TO RUN	1 mL	1 mL	Florisiled
480-159547-D-7	RUSSO-TS-COMP 1	3550C, 8081B	T	30.08 g	10 mL	CALC NOT SET TO RUN	1 mL		Florisiled
480-159547-F-8	RUSSO-TS-COMP 2	3550C, 8081B	T	30.14 g	10 mL	CALC NOT SET TO RUN	1 mL		Florisiled
480-159547-F-18	RUSSO-CF-COMP 1	3550C, 8081B	T	30.02 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-F-19	RUSSO-CF-COMP 2	3550C, 8081B	T	30.17 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-D-20	RUSSO-CF-COMP 3	3550C, 8081B	T	30.12 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-D-30	GERNATT-CF-COMP 1	3550C, 8081B	T	30.72 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-E-31	GERNATT-CF-COMP 2	3550C, 8081B	T	30.40 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-E-32	GERNATT-CF-COMP 3	3550C, 8081B	T	30.34 g	10 mL	CALC NOT SET TO RUN	1 mL		rocky
480-159547-F-39	GERNATT-TS-COMP 1	3550C, 8081B	T	30.68 g	10 mL	CALC NOT SET TO RUN	1 mL		Florisiled
480-159547-F-40	GERNATT-TS-COMP 2	3550C, 8081B	T	30.07 g	10 mL	CALC NOT SET TO RUN	1 mL		Florisiled

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PESTICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493908 Batch Start Date: 09/25/19 07:36 Batch Analyst: Shanon, Edward L

Batch Method: 3550C Batch End Date:

Batch Notes	
Balance ID	Balance 5
Batch Comment	Florisiled by: ES on 9/26/19
Blank Matrix ID	5393118
Analyst ID - Concentration	ES
Copper ID	5330325
Analyst ID - Clean Up	ES 9/26/19
Analyst ID - Extraction	ES
Florisil ID	3650758
Method/Fraction	3550C/8081B
Na2SO4 ID	5393118
Nominal Amount Used	30 g
Prep Solvent ID	5453114/5457716
Perform Calculation (0=No, 1=Yes)	0
Analyst ID - Spike Analyst	ES
Analyst ID - Spike Witness Analyst	ES
Sufficient Volume for Batch QC	Yes
Vial Lot Number	J27378

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method 8082A Low Level

Polychlorinated Biphenyls (PCBs) (GC) by Method 8082A Low Level

FORM II
PCBS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): ZB-35 ID: 0.53(mm) GC Column (2): ZB-5 ID: 0.53(mm)

Client Sample ID	Lab Sample ID	TCX1 #	TCX2 #	DCBP1 #	DCBP2 #
RUSSO-TS-COMP 1	480-159547-7	98	112	108	120
RUSSO-TS-COMP 2	480-159547-8	92	98	100	113
RUSSO-CF-COMP 1	480-159547-18	90	87	102	121
RUSSO-CF-COMP 2	480-159547-19	95	106	107	114
RUSSO-CF-COMP 3	480-159547-20	132	145	140	160
GERNATT-CF-COMP 1	480-159547-30	97	111	110	122
GERNATT-CF-COMP 2	480-159547-31	93	98	107	120
GERNATT-CF-COMP 3	480-159547-32	92	104	109	128
GERNATT-TS-COMP 1	480-159547-39	94	99	101	115
GERNATT-TS-COMP 2	480-159547-40	92	98	100	112
	MB 480-493640/1-A	98	99	84	111
	LCS 480-493640/2-A	121	131	116	125

	QC LIMITS
TCX = Tetrachloro-m-xylene	60-154
DCBP = DCB Decachlorobiphenyl	65-174

Column to be used to flag recovery values

FORM II 8082A

FORM III
PCBS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 7_54-299.D

Lab ID: LCS 480-493640/2-A Client ID:

COMPOUND	SPIKE ADDED (mg/Kg)	LCS CONCENTRATION (mg/Kg)	LCS % REC	QC LIMITS REC	#
PCB-1016	1.82	2.34	129	51-185	
PCB-1260	1.82	2.04	112	61-184	

Column to be used to flag recovery and RPD values

FORM III 8082A

FORM IV
PCBS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: MB 480-493640/1-A

Matrix: Solid Date Extracted: 09/24/2019 05:51

Lab File ID:(1) 7_54-298.D Lab File ID:(2) 7_54-298.D

Date Analyzed:(1) 09/25/2019 20:25 Date Analyzed:(2) 09/25/2019 20:25

Instrument ID:(1) HP6890-7 Instrument ID:(2) HP6890-7

GC Column:(1) ZB-35 ID: 0.53(mm) GC Column:(2) ZB-5 ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 480-493640/2-A	09/25/2019 20:37	09/25/2019 20:37
RUSSO-CF-COMP 3	480-159547-20	09/26/2019 00:09	09/26/2019 00:09
RUSSO-TS-COMP 1	480-159547-7	09/27/2019 15:08	09/27/2019 15:08
RUSSO-TS-COMP 2	480-159547-8	09/27/2019 15:21	09/27/2019 15:21
RUSSO-CF-COMP 1	480-159547-18	09/27/2019 15:33	09/27/2019 15:33
RUSSO-CF-COMP 2	480-159547-19	09/27/2019 15:45	09/27/2019 15:45
GERNATT-CF-COMP 1	480-159547-30	09/27/2019 15:58	09/27/2019 15:58
GERNATT-CF-COMP 2	480-159547-31	09/27/2019 16:10	09/27/2019 16:10
GERNATT-CF-COMP 3	480-159547-32	09/27/2019 16:23	09/27/2019 16:23
GERNATT-TS-COMP 1	480-159547-39	09/27/2019 16:35	09/27/2019 16:35
GERNATT-TS-COMP 2	480-159547-40	09/27/2019 16:47	09/27/2019 16:47

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-472294/23 Date Analyzed: 05/10/2019 19:17

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm)

Lab File ID (Standard): 7_42-260.D Heated Purge: (Y/N) N

Calibration ID: 36953

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		4757621	1.16				
UPPER LIMIT		9515242	1.66				
LOWER LIMIT		2378811	0.66				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494086/3		7556141	0.96				
CCVIS 480-494480/5		6868001	0.96				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: ICIS 480-472294/23 Date Analyzed: 05/10/2019 19:17

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm)

Lab File ID (Standard): 7_42-260.D Heated Purge: (Y/N) N

Calibration ID: 36954

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		6769847	1.49				
UPPER LIMIT		13539694	1.99				
LOWER LIMIT		3384924	0.99				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVIS 480-494086/3		10661391	1.25				
CCVIS 480-494480/5		9836775	1.26				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494086/3 Date Analyzed: 09/25/2019 15:49

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm)

Lab File ID (Standard): 7_54-276.D Heated Purge: (Y/N) N

Calibration ID: 36969

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		7556141	0.96				
UPPER LIMIT		15112282	1.46				
LOWER LIMIT		3778071	0.46				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 480-494086/4		7754722	0.96				
CCV 480-494086/5		6651083	0.96				
CCV 480-494086/6		7276201	0.95				
CCV 480-494086/7		7261601	0.95				
MB 480-493640/1-A		5193741	0.96				
LCS 480-493640/2-A		5144635	0.96				
CCV 480-494086/29		4935105	0.96				
480-159547-20	RUSSO-CF-COMP 3	4002147	0.96				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494086/3 Date Analyzed: 09/25/2019 15:49

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm)

Lab File ID (Standard): 7_54-276.D Heated Purge: (Y/N) N

Calibration ID: 36970

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		10661391	1.25				
UPPER LIMIT		21322782	1.75				
LOWER LIMIT		5330696	0.75				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 480-494086/4		10924360	1.26				
CCV 480-494086/5		9647878	1.26				
CCV 480-494086/6		10436182	1.25				
CCV 480-494086/7		10369341	1.25				
MB 480-493640/1-A		7257338	1.26				
LCS 480-493640/2-A		6980111	1.26				
CCV 480-494086/29		6877281	1.26				
480-159547-20	RUSSO-CF-COMP 3	5843303	1.26				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494480/5 Date Analyzed: 09/27/2019 09:10

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm)

Lab File ID (Standard): 7_55-005.D Heated Purge: (Y/N) N

Calibration ID: 36969

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		6868001	0.96				
UPPER LIMIT		13736002	1.46				
LOWER LIMIT		3434001	0.46				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 480-494480/6		6789536	0.96				
CCV 480-494480/7		5908161	0.96				
CCV 480-494480/8		6464560	0.96				
CCV 480-494480/9		6280655	0.96				
480-159547-7	RUSSO-TS-COMP 1	5450077	0.95				
480-159547-8	RUSSO-TS-COMP 2	5880716	0.96				
480-159547-18	RUSSO-CF-COMP 1	6254657	0.96				
480-159547-19	RUSSO-CF-COMP 2	5716297	0.96				
480-159547-30	GERNATT-CF-COMP 1	5855693	0.96				
480-159547-31	GERNATT-CF-COMP 2	6024590	0.96				
480-159547-32	GERNATT-CF-COMP 3	6078544	0.96				
480-159547-39	GERNATT-TS-COMP 1	6050985	0.96				
480-159547-40	GERNATT-TS-COMP 2	6300654	0.96				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM VIII
PCBS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Sample No.: CCVIS 480-494480/5 Date Analyzed: 09/27/2019 09:10

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm)

Lab File ID (Standard): 7_55-005.D Heated Purge: (Y/N) N

Calibration ID: 36970

		BNB					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		9836775	1.26				
UPPER LIMIT		19673550	1.76				
LOWER LIMIT		4918388	0.76				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCV 480-494480/6		9899970	1.26				
CCV 480-494480/7		8782955	1.26				
CCV 480-494480/8		9452314	1.26				
CCV 480-494480/9		9226687	1.26				
480-159547-7	RUSSO-TS-COMP 1	8065415	1.26				
480-159547-8	RUSSO-TS-COMP 2	8654287	1.26				
480-159547-18	RUSSO-CF-COMP 1	9297029	1.26				
480-159547-19	RUSSO-CF-COMP 2	8462869	1.26				
480-159547-30	GERNATT-CF-COMP 1	8549166	1.26				
480-159547-31	GERNATT-CF-COMP 2	8798515	1.26				
480-159547-32	GERNATT-CF-COMP 3	8961705	1.26				
480-159547-39	GERNATT-TS-COMP 1	8951870	1.26				
480-159547-40	GERNATT-TS-COMP 2	9233175	1.26				

BNB = 1-Bromo-2-nitrobenzene

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8082A

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493640/2-A

Instrument ID (1): HP6890-7 Instrument ID (2): HP6890-7

Date Analyzed (1): 09/25/2019 20:37 Date Analyzed (2): 09/25/2019 20:37

GC Column (1): ZB-35 ID: 0.53(mm) GC Column (2): ZB-5 ID: 0.53(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
PCB-1016	1	1	2.10	2.06	2.12	2.00	2.34	10.4
		2	2.67	2.64	2.70	2.47		
		3	2.78	2.74	2.80	2.28		
		4	2.87	2.83	2.89	2.48		
	2	1	1.79	1.75	1.81	2.06	2.11	
		2	1.89	1.86	1.92	2.00		
		3	2.05	2.02	2.08	2.58		
		4	2.39	2.36	2.42	2.10		
PCB-1260	1	1	4.06	4.02	4.08	2.13	2.04	2.8
		2	4.16	4.13	4.19	2.17		
		3	4.47	4.44	4.50	1.71		
		4	4.78	4.75	4.81	1.94		
	2	1	3.27	3.24	3.30	2.10	2.10	
		2	3.45	3.42	3.48	2.23		
		3	3.65	3.62	3.68	2.18		
		4	4.15	4.12	4.18	2.13		

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 7_55-013.D

Analysis Method: 8082A Date Collected: 09/16/2019 09:35

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.12(g) Date Analyzed: 09/27/2019 15:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.30	0.059
11104-28-2	PCB-1221	ND		0.30	0.059
11141-16-5	PCB-1232	ND		0.30	0.059
53469-21-9	PCB-1242	ND		0.30	0.059
12672-29-6	PCB-1248	ND		0.30	0.059
11097-69-1	PCB-1254	ND		0.30	0.14
11096-82-5	PCB-1260	ND		0.30	0.14
37324-23-5	PCB-1262	ND		0.30	0.14
11100-14-4	PCB-1268	ND		0.30	0.14
1336-36-3	Polychlorinated biphenyls, Total	ND		0.30	0.14

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	120		65-174
877-09-8	Tetrachloro-m-xylene	112		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-013.D
Lims ID: 480-159547-F-7-A
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:08:48 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:29:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.954	0.955	-0.001	5450077	0.5000	
2	1.255	1.255	0.000	8065415	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	318761	0.0224	
2	1.738	1.739	-0.001	478450	0.0195	
					RPD = 13.68	
$ 15 DCB Decachlorobiphenyl						
1	5.331	5.326	0.005	282847	0.0240	
2	6.238	6.236	0.002	362088	0.0216	
					RPD = 10.68	

Reagents:

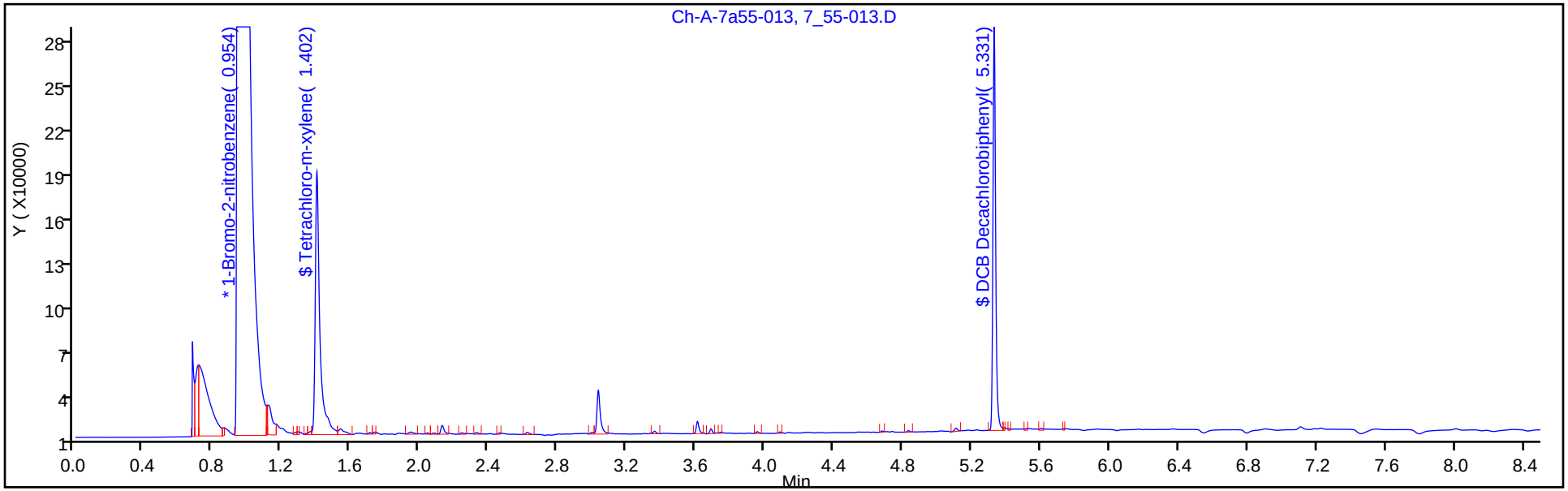
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:07 Chrom Revision: 2.3 17-Sep-2019 16:19:08

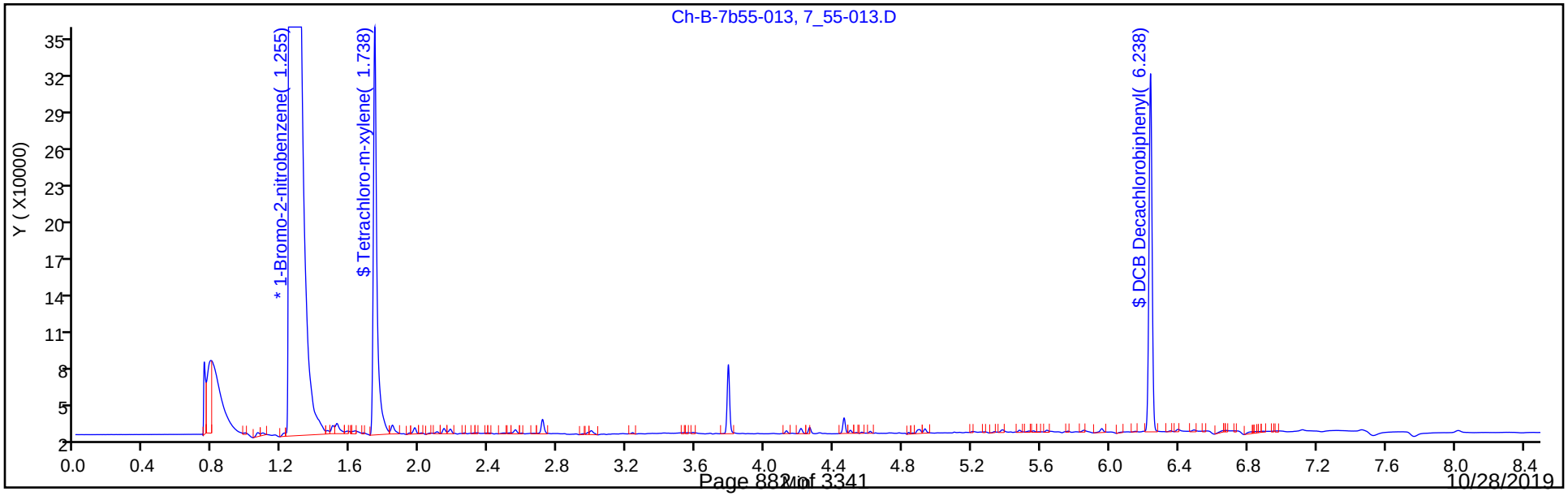
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-013.D				
Injection Date:	27-Sep-2019 15:08:48	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-7-A	Lab Sample ID:	480-159547-7	Worklist Smp#:	13
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 7_55-013.D

Analysis Method: 8082A Date Collected: 09/16/2019 09:35

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.12(g) Date Analyzed: 09/27/2019 15:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	108		65-174
877-09-8	Tetrachloro-m-xylene	98		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-013.D
Lims ID: 480-159547-F-7-A
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:08:48 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:29:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.954	0.955	-0.001	5450077	0.5000	
2	1.255	1.255	0.000	8065415	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	318761	0.0224	
2	1.738	1.739	-0.001	478450	0.0195	
					RPD = 13.68	
$ 15 DCB Decachlorobiphenyl						
1	5.331	5.326	0.005	282847	0.0240	
2	6.238	6.236	0.002	362088	0.0216	
					RPD = 10.68	

Reagents:

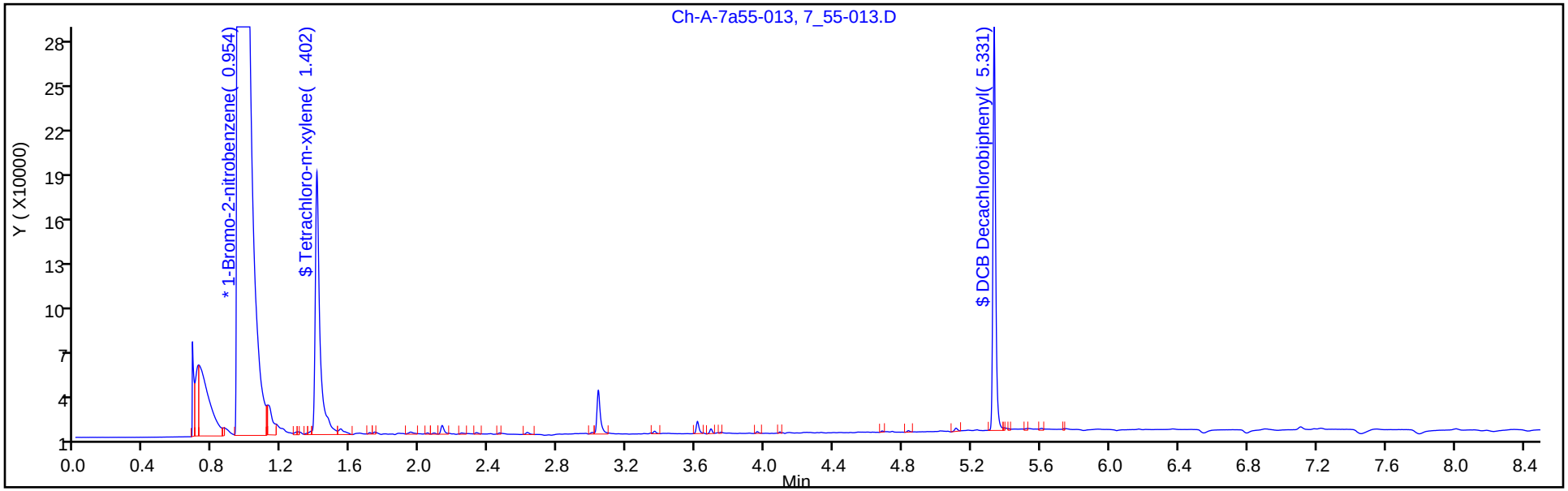
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:07 Chrom Revision: 2.3 17-Sep-2019 16:19:08

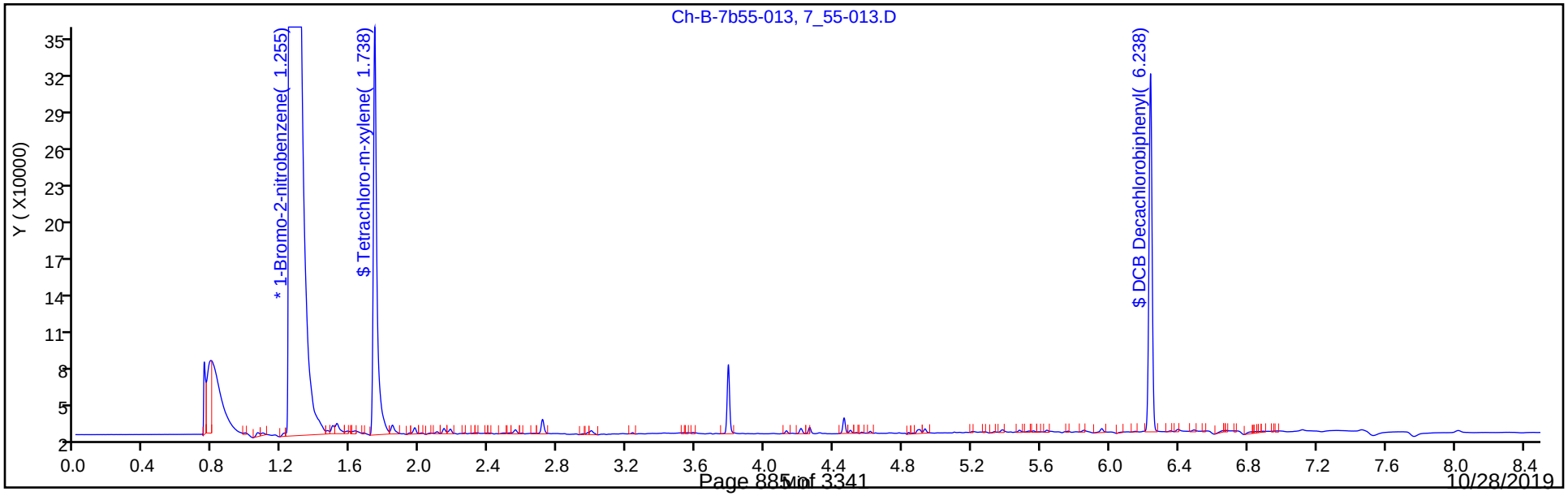
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-013.D				
Injection Date:	27-Sep-2019 15:08:48	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-7-A	Lab Sample ID:	480-159547-7	Worklist Smp#:	13
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 7_55-014.D

Analysis Method: 8082A Date Collected: 09/16/2019 09:40

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.75(g) Date Analyzed: 09/27/2019 15:21

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.25	0.049
11104-28-2	PCB-1221	ND		0.25	0.049
11141-16-5	PCB-1232	ND		0.25	0.049
53469-21-9	PCB-1242	ND		0.25	0.049
12672-29-6	PCB-1248	ND		0.25	0.049
11097-69-1	PCB-1254	ND		0.25	0.12
11096-82-5	PCB-1260	ND		0.25	0.12
37324-23-5	PCB-1262	ND		0.25	0.12
11100-14-4	PCB-1268	ND		0.25	0.12
1336-36-3	Polychlorinated biphenyls, Total	ND		0.25	0.12

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	113		65-174
877-09-8	Tetrachloro-m-xylene	98		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-014.D
Lims ID: 480-159547-D-8-A
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:21:09 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:30:16

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.956	0.955	0.001	5880716	0.5000	
2	1.256	1.255	0.001	8654287	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	301413	0.0195	
2	1.738	1.739	-0.001	482776	0.0184	
					RPD = 6.10	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	287657	0.0226	
2	6.237	6.236	0.001	359484	0.0200	
					RPD = 12.27	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

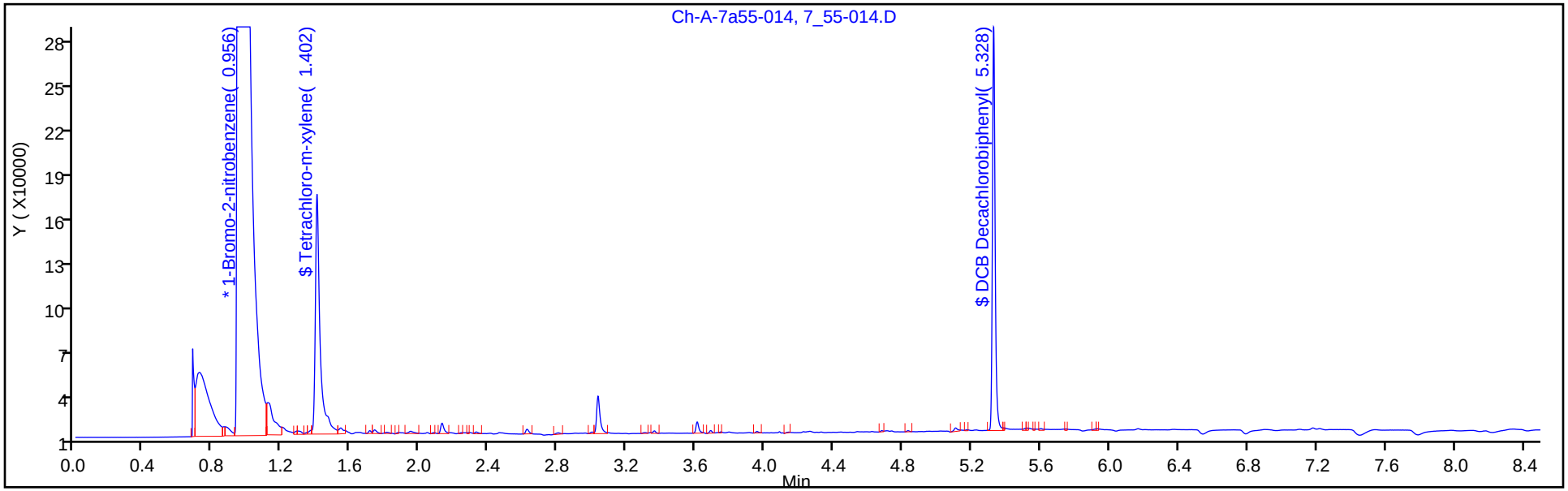
Report Date: 29-Sep-2019 14:16:10 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

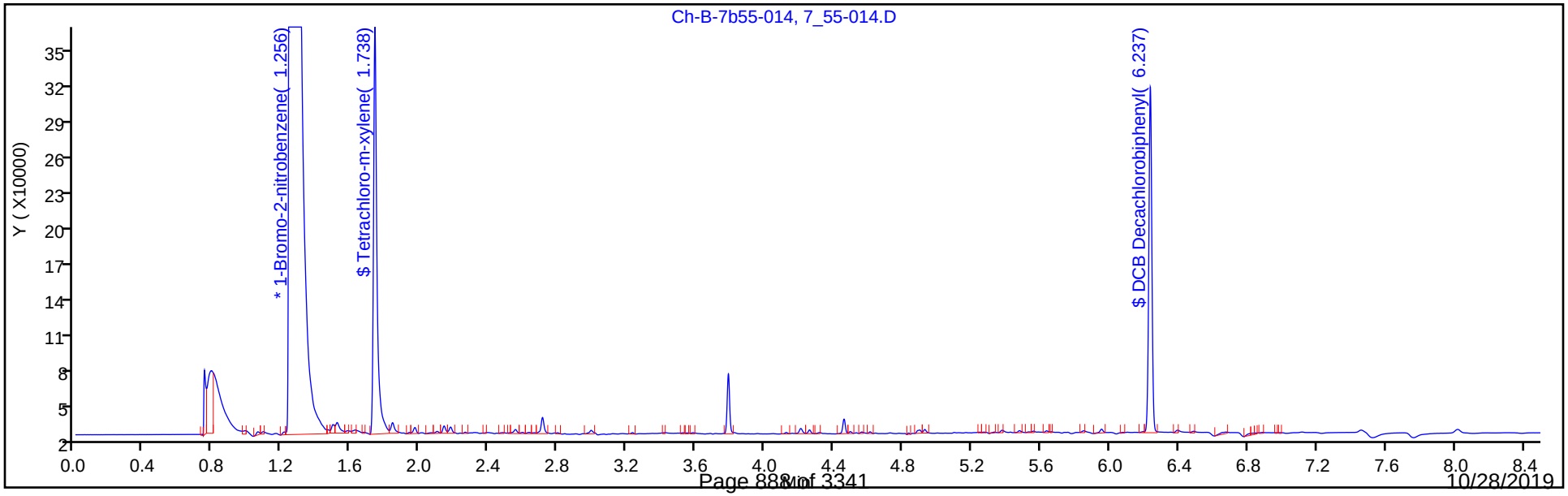
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-014.D

Injection Date:	27-Sep-2019 15:21:09	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-8-A	Lab Sample ID:	480-159547-8	Worklist Smp#:	14
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 7_55-014.D

Analysis Method: 8082A Date Collected: 09/16/2019 09:40

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.75(g) Date Analyzed: 09/27/2019 15:21

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	100		65-174
877-09-8	Tetrachloro-m-xylene	92		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-014.D
Lims ID: 480-159547-D-8-A
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:21:09 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:30:16

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.956	0.955	0.001	5880716	0.5000	
2	1.256	1.255	0.001	8654287	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	301413	0.0195	
2	1.738	1.739	-0.001	482776	0.0184	
					RPD = 6.10	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	287657	0.0226	
2	6.237	6.236	0.001	359484	0.0200	
					RPD = 12.27	

Reagents:

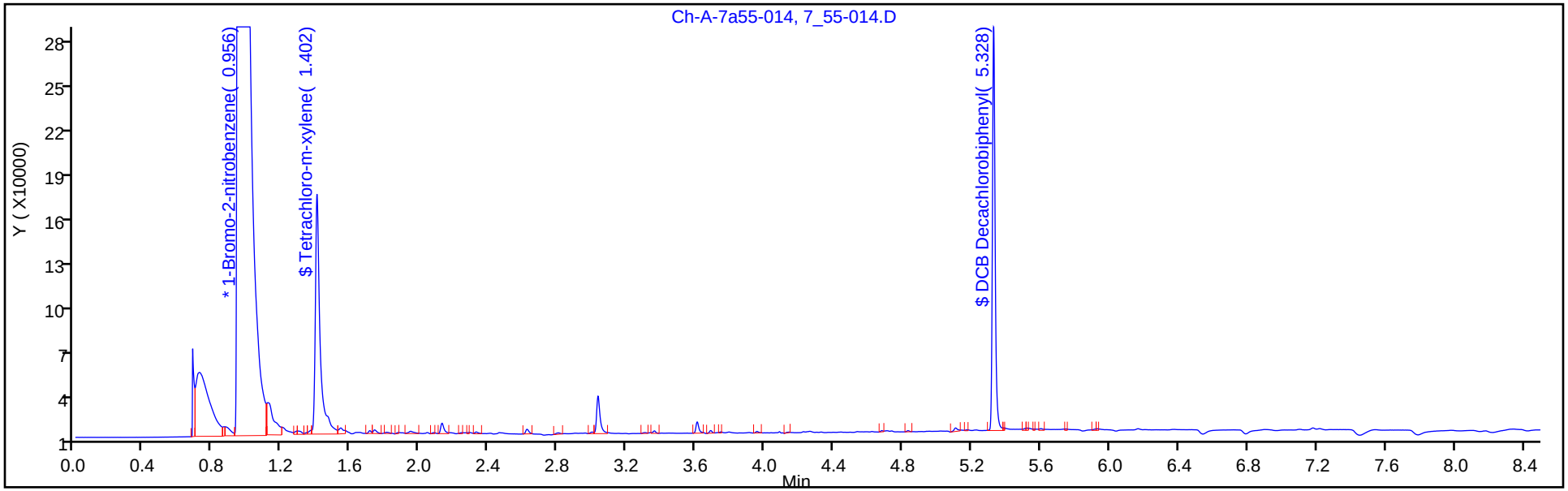
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:11 Chrom Revision: 2.3 17-Sep-2019 16:19:08

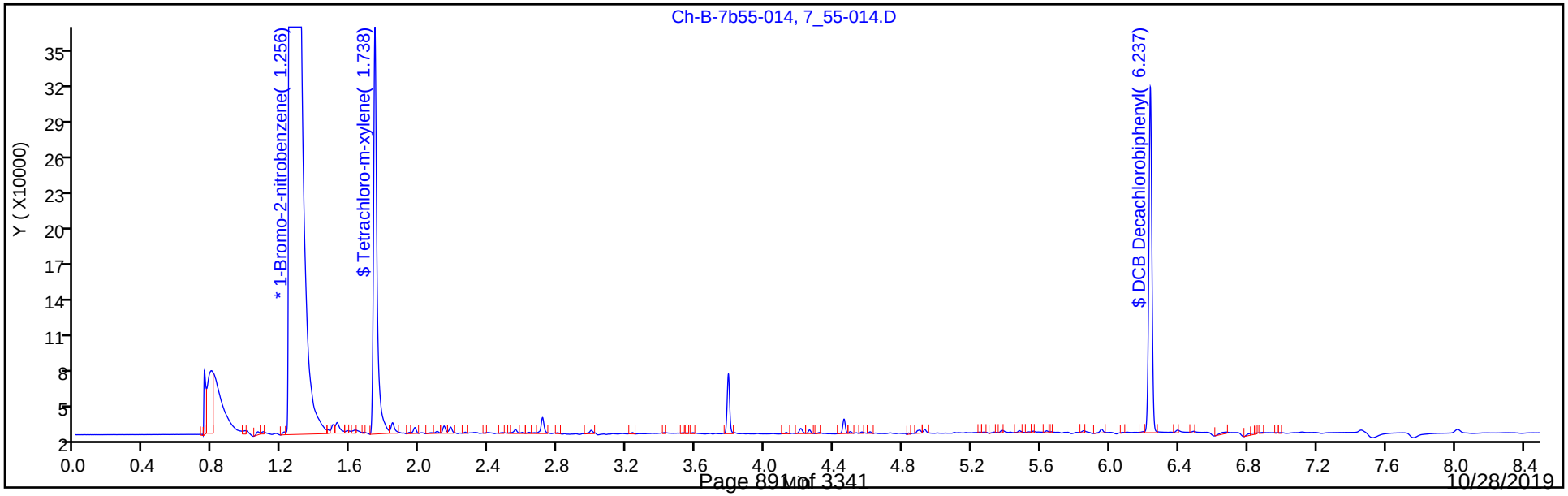
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-014.D				
Injection Date:	27-Sep-2019 15:21:09	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-8-A	Lab Sample ID:	480-159547-8	Worklist Smp#:	14
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 7_55-015.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:50

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.45(g) Date Analyzed: 09/27/2019 15:33

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.23	0.045
11104-28-2	PCB-1221	ND		0.23	0.045
11141-16-5	PCB-1232	ND		0.23	0.045
53469-21-9	PCB-1242	ND		0.23	0.045
12672-29-6	PCB-1248	ND		0.23	0.045
11097-69-1	PCB-1254	ND		0.23	0.11
11096-82-5	PCB-1260	ND		0.23	0.11
37324-23-5	PCB-1262	ND		0.23	0.11
11100-14-4	PCB-1268	ND		0.23	0.11
1336-36-3	Polychlorinated biphenyls, Total	ND		0.23	0.11

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	121		65-174
877-09-8	Tetrachloro-m-xylene	87		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-015.D
Lims ID: 480-159547-D-18-A
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:33:34 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:30:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.955	0.955	0.000	6254657	0.5000	
2	1.255	1.255	0.000	9297029	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	287902	0.0174	
2	1.738	1.739	-0.001	509278	0.0180	
					RPD = 3.33	
$ 15 DCB Decachlorobiphenyl						
1	5.326	5.326	0.000	327146	0.0242	
2	6.236	6.236	0.000	393021	0.0203	
					RPD = 17.47	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

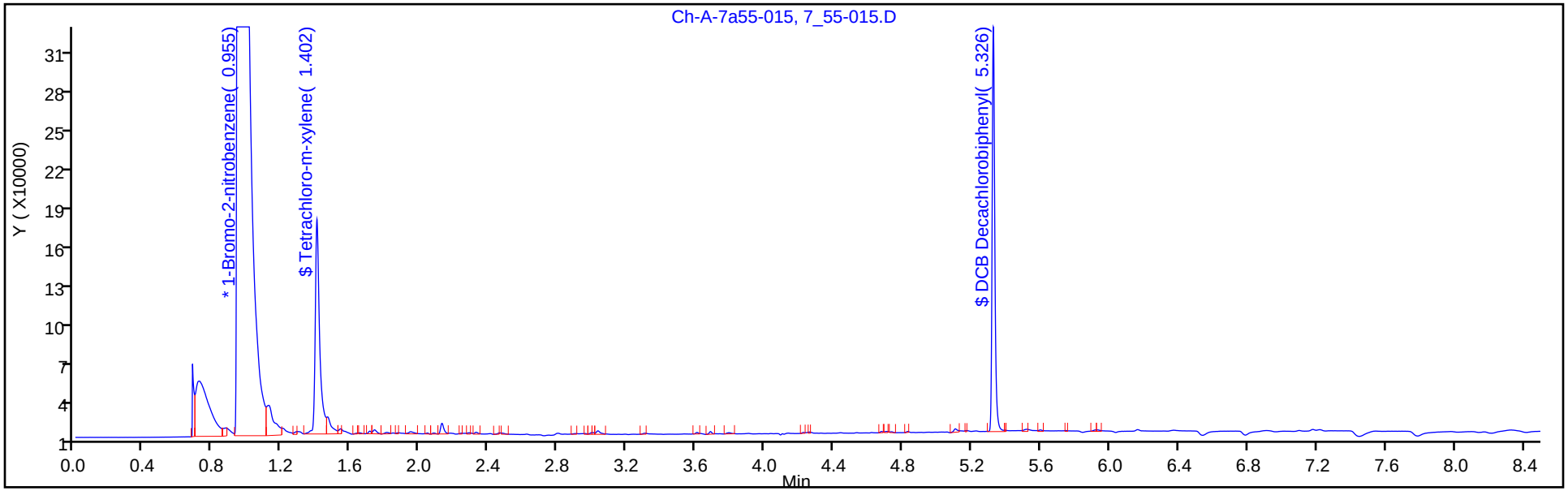
Report Date: 29-Sep-2019 14:16:14 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

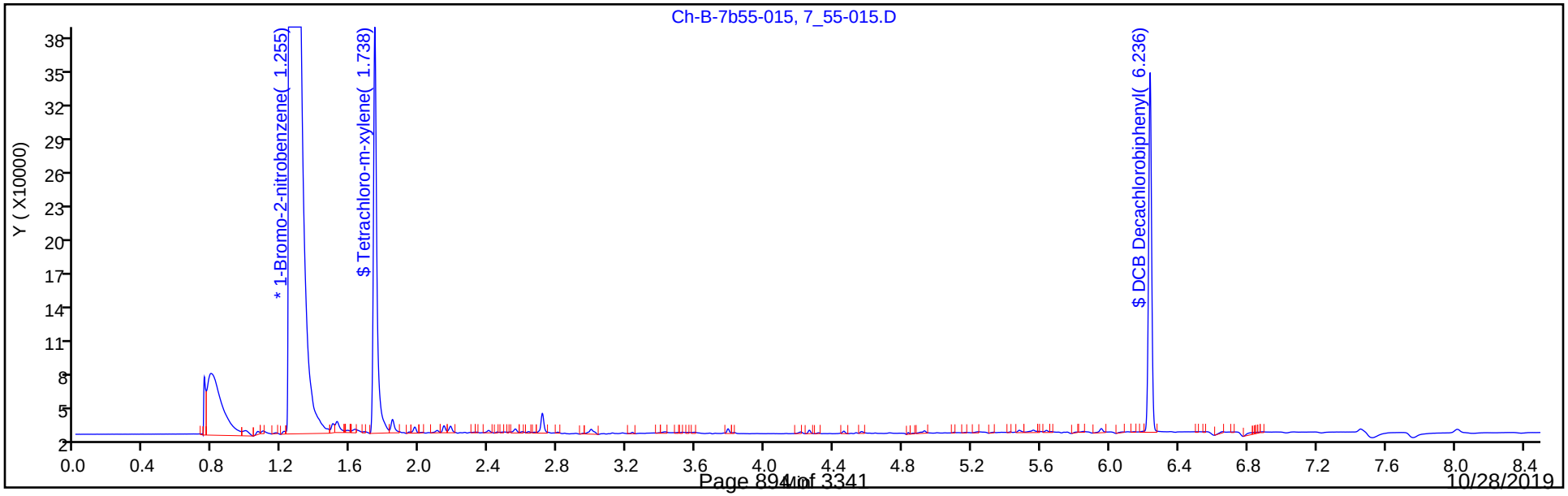
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-015.D

Injection Date:	27-Sep-2019 15:33:34	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-18-A	Lab Sample ID:	480-159547-18	Worklist Smp#:	15
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 7_55-015.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:50

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.45(g) Date Analyzed: 09/27/2019 15:33

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	102		65-174
877-09-8	Tetrachloro-m-xylene	90		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-015.D
Lims ID: 480-159547-D-18-A
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:33:34 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:30:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.955	0.955	0.000	6254657	0.5000	
2	1.255	1.255	0.000	9297029	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.402	1.403	-0.001	287902	0.0174	
2	1.738	1.739	-0.001	509278	0.0180	
					RPD = 3.33	
$ 15 DCB Decachlorobiphenyl						
1	5.326	5.326	0.000	327146	0.0242	
2	6.236	6.236	0.000	393021	0.0203	
					RPD = 17.47	

Reagents:

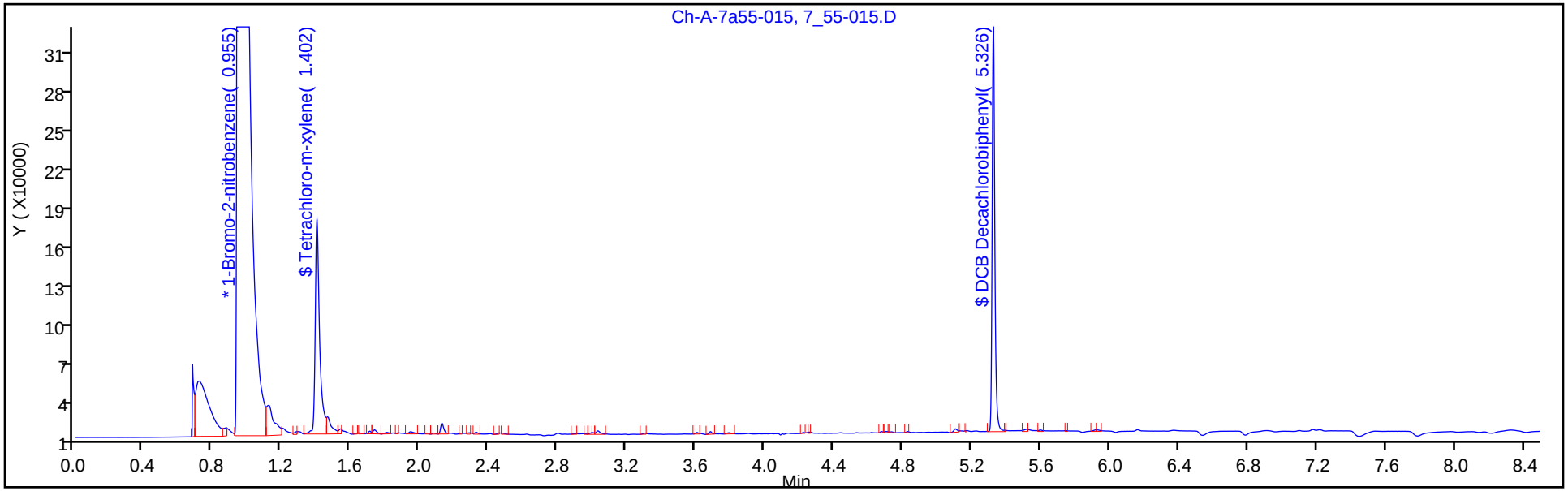
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:14 Chrom Revision: 2.3 17-Sep-2019 16:19:08

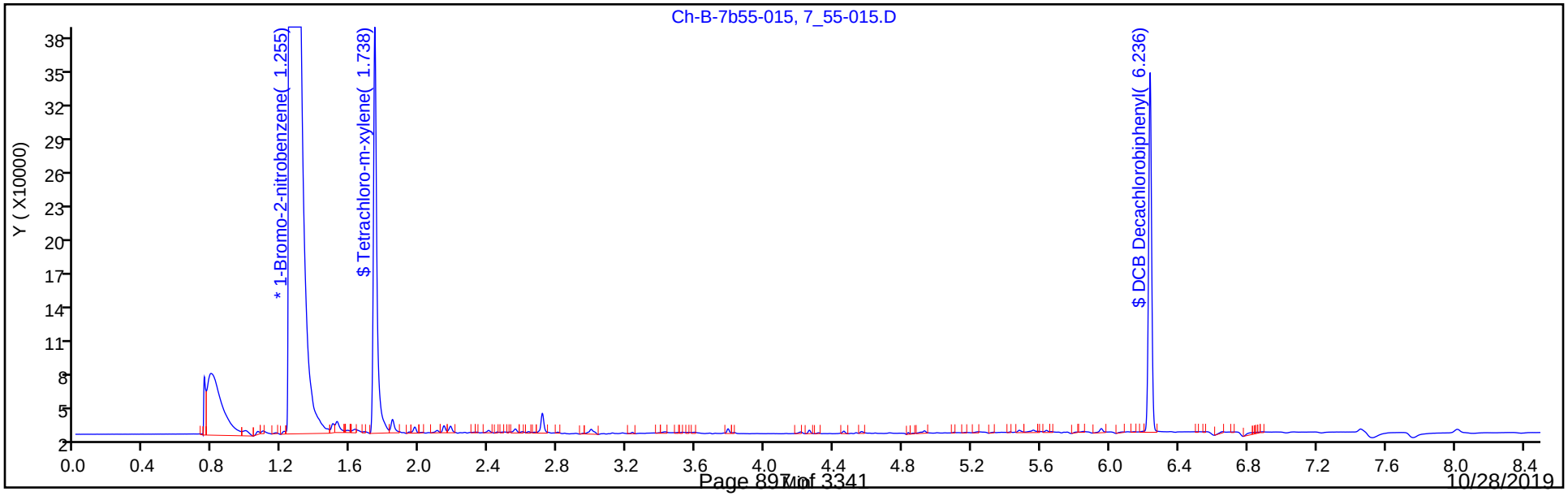
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-015.D				
Injection Date:	27-Sep-2019 15:33:34	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-18-A	Lab Sample ID:	480-159547-18	Worklist Smp#:	15
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 7_55-016.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:52

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.89(g) Date Analyzed: 09/27/2019 15:45

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.19	0.037
11104-28-2	PCB-1221	ND		0.19	0.037
11141-16-5	PCB-1232	ND		0.19	0.037
53469-21-9	PCB-1242	ND		0.19	0.037
12672-29-6	PCB-1248	ND		0.19	0.037
11097-69-1	PCB-1254	ND		0.19	0.090
11096-82-5	PCB-1260	ND		0.19	0.090
37324-23-5	PCB-1262	ND		0.19	0.090
11100-14-4	PCB-1268	ND		0.19	0.090
1336-36-3	Polychlorinated biphenyls, Total	ND		0.19	0.090

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	114		65-174
877-09-8	Tetrachloro-m-xylene	106		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-016.D
Lims ID: 480-159547-D-19-A
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:45:58 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:31:24

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.956	0.955	0.001	5716297	0.5000	
2	1.256	1.255	0.001	8462869	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	-0.001	318704	0.0213	
2	1.738	1.739	-0.001	489403	0.0190	
					RPD = 11.26	
$ 15 DCB Decachlorobiphenyl						
1	5.327	5.326	0.001	282986	0.0229	
2	6.236	6.236	0.000	377781	0.0215	
					RPD = 6.33	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

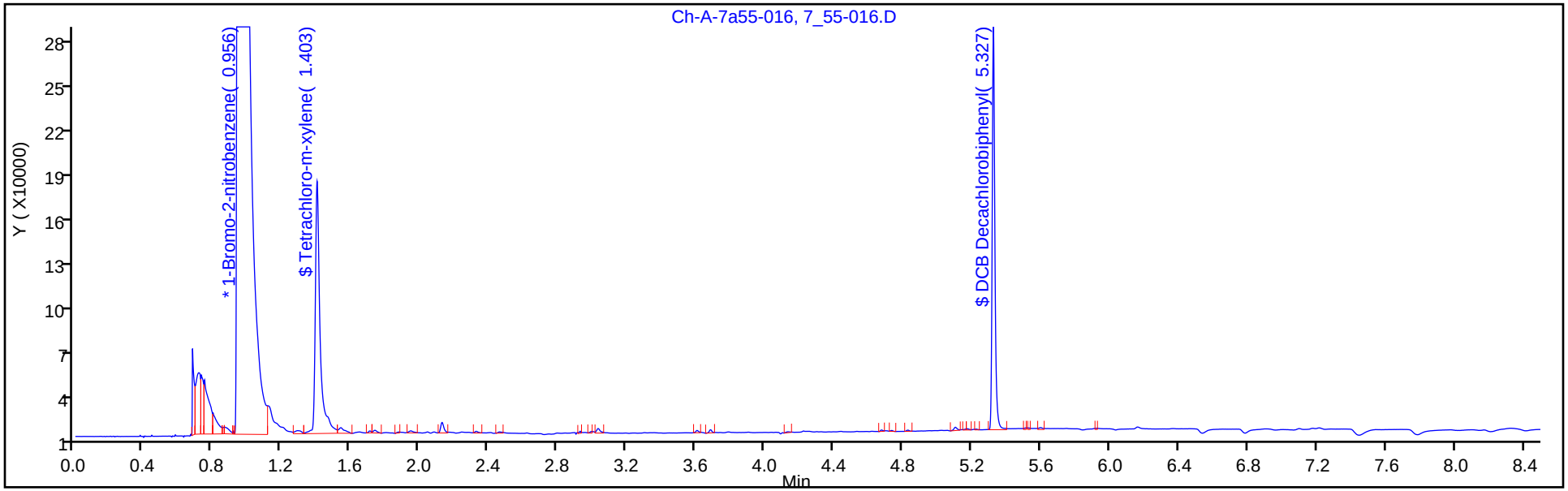
Report Date: 29-Sep-2019 14:16:17 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

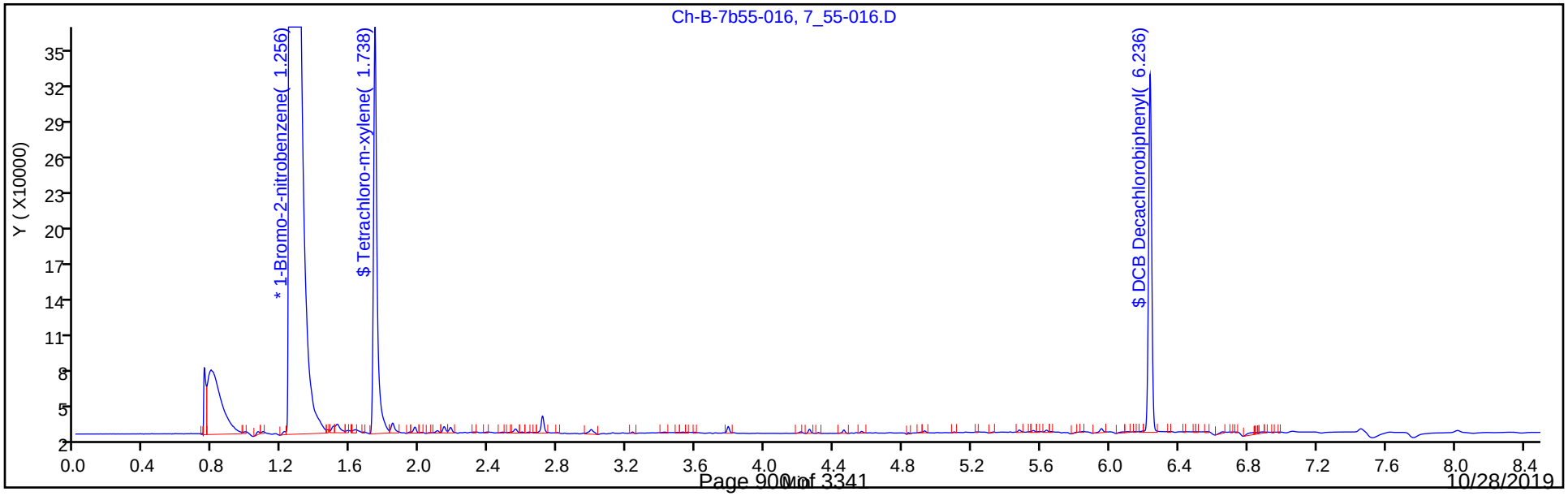
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-016.D

Injection Date:	27-Sep-2019 15:45:58	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-19-A	Lab Sample ID:	480-159547-19	Worklist Smp#:	16
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 7_55-016.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:52

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.89(g) Date Analyzed: 09/27/2019 15:45

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	107		65-174
877-09-8	Tetrachloro-m-xylene	95		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-016.D
Lims ID: 480-159547-D-19-A
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 15:45:58 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:31:24

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.956	0.955	0.001	5716297	0.5000	
2	1.256	1.255	0.001	8462869	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	-0.001	318704	0.0213	
2	1.738	1.739	-0.001	489403	0.0190	
					RPD = 11.26	
$ 15 DCB Decachlorobiphenyl						
1	5.327	5.326	0.001	282986	0.0229	
2	6.236	6.236	0.000	377781	0.0215	
					RPD = 6.33	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

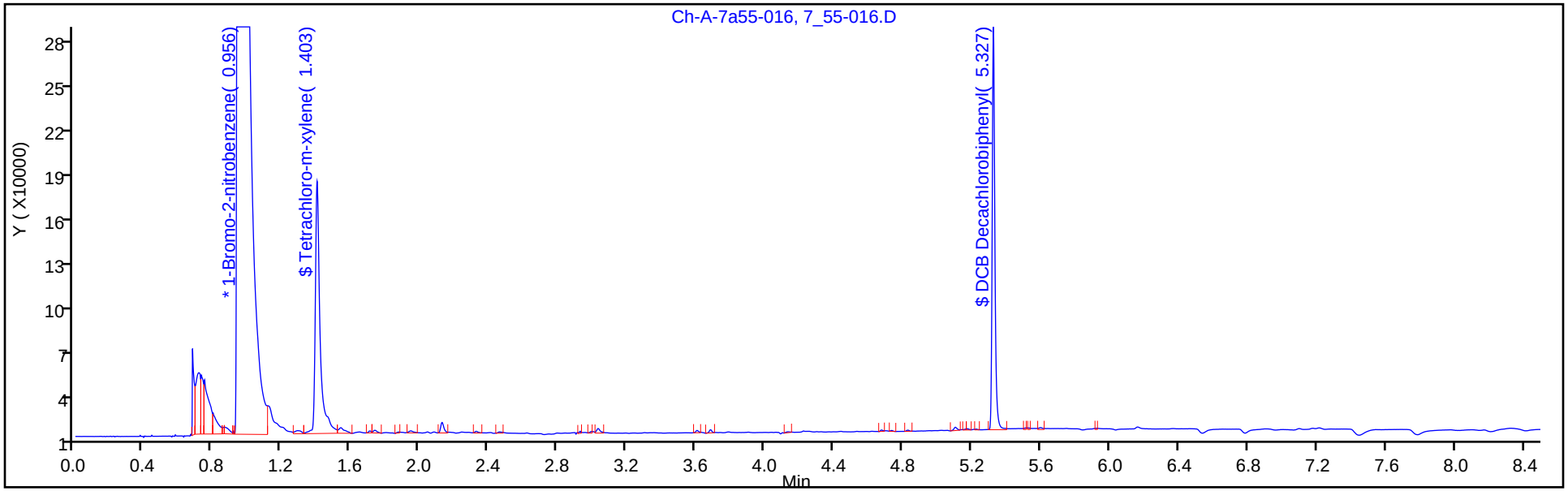
Report Date: 29-Sep-2019 14:16:18 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

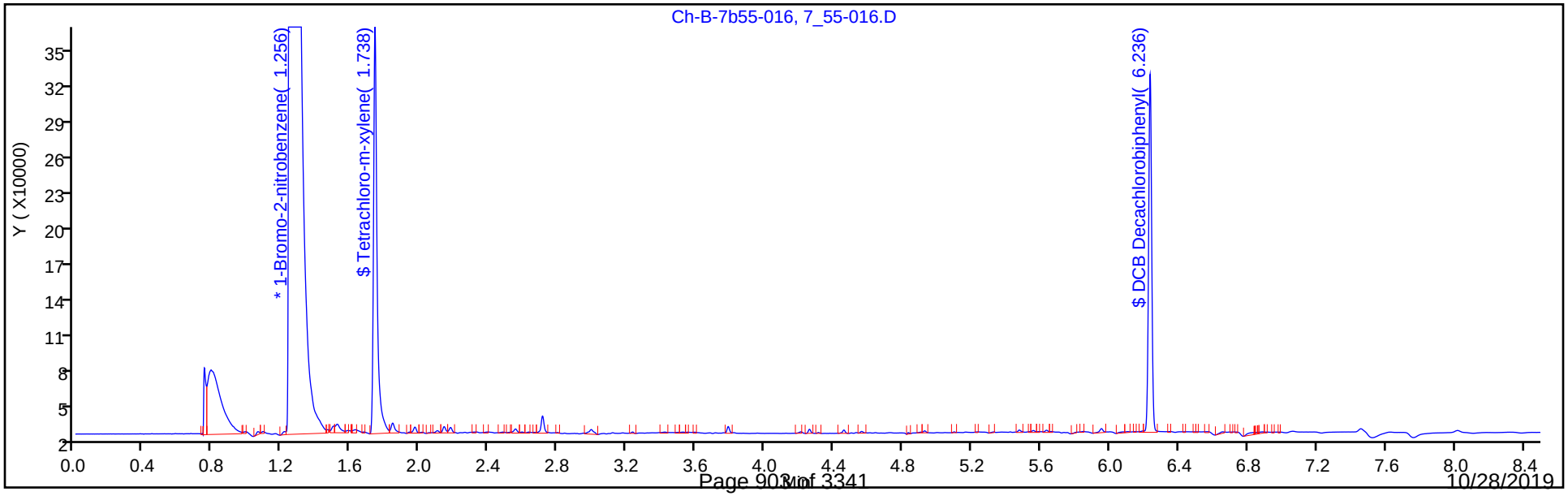
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-016.D

Injection Date:	27-Sep-2019 15:45:58	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-19-A	Lab Sample ID:	480-159547-19	Worklist Smp#:	16
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 7_54-316.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:55

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.56(g) Date Analyzed: 09/26/2019 00:09

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	160		65-174
877-09-8	Tetrachloro-m-xylene	145		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-316.D
Lims ID: 480-159547-E-20-A
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 26-Sep-2019 00:09:05 ALS Bottle#: 0 Worklist Smp#: 43
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 14:49:20

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.955	0.954	0.001	4002147	0.5000	
2	1.256	1.253	0.003	5843303	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.406	1.401	0.005	301285	0.0291	
2	1.742	1.737	0.005	467158	0.0263	
					RPD = 9.95	
$ 15 DCB Decachlorobiphenyl						
1	5.335	5.336	-0.001	273730	0.0320	
2	6.242	6.242	0.000	340001	0.0280	
					RPD = 13.34	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

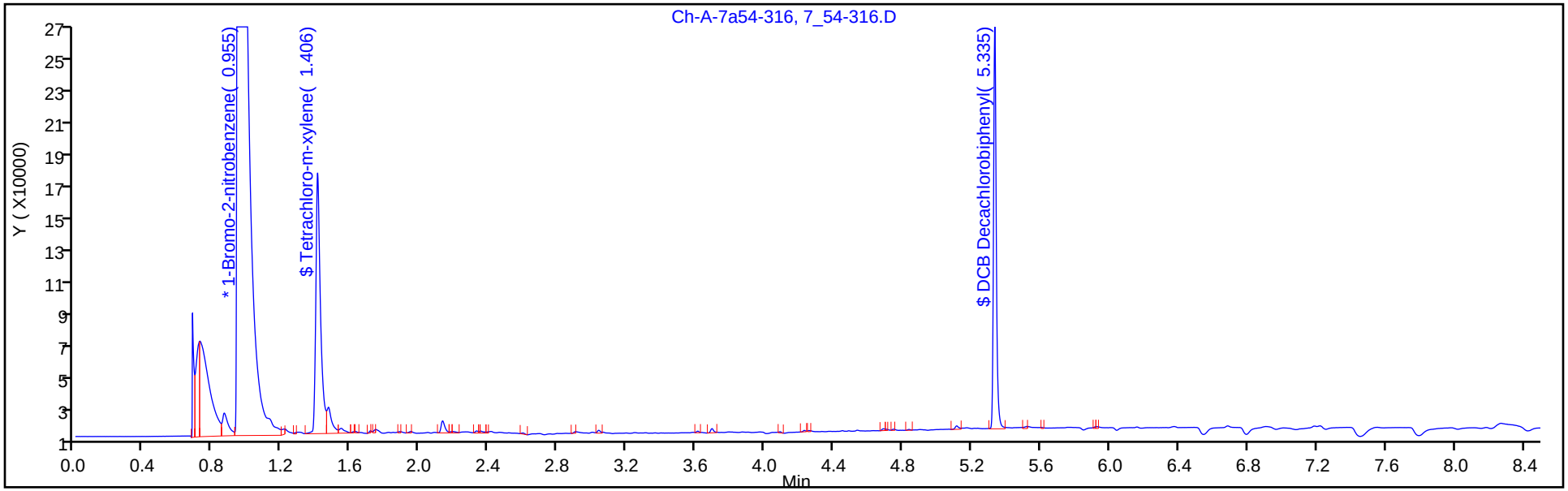
Report Date: 26-Sep-2019 15:09:24 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

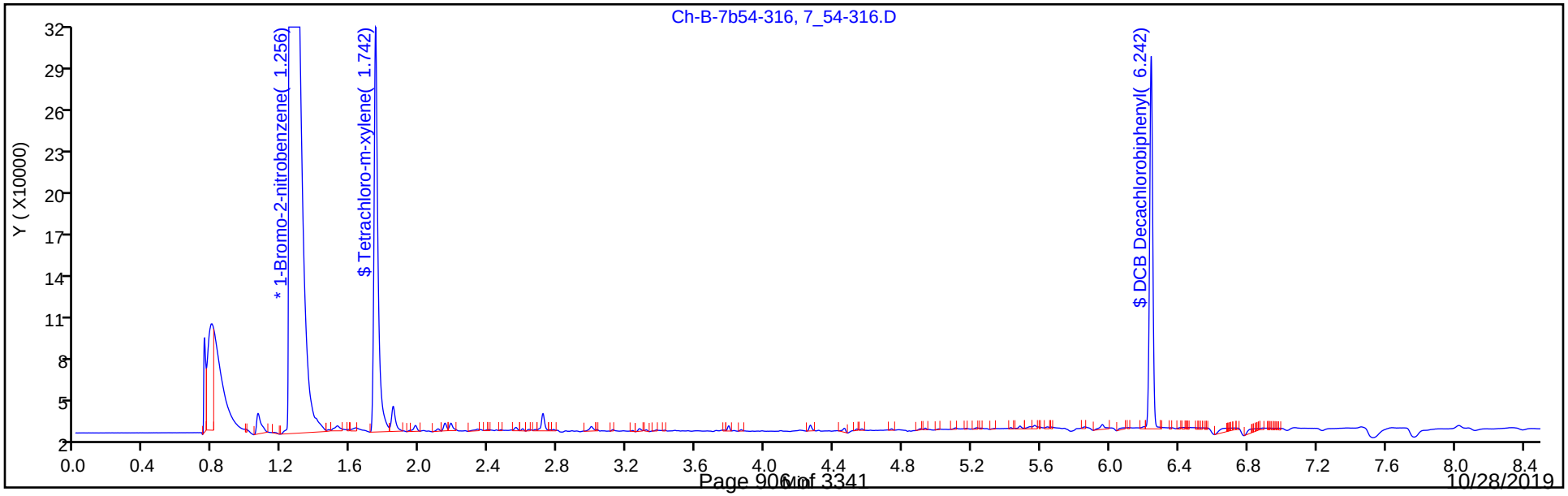
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-316.D

Injection Date:	26-Sep-2019 00:09:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-20-A	Lab Sample ID:	480-159547-20	Worklist Smp#:	43
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 7_54-316.D

Analysis Method: 8082A Date Collected: 09/16/2019 11:55

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.56(g) Date Analyzed: 09/26/2019 00:09

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.22	0.043
11104-28-2	PCB-1221	ND		0.22	0.043
11141-16-5	PCB-1232	ND		0.22	0.043
53469-21-9	PCB-1242	ND		0.22	0.043
12672-29-6	PCB-1248	ND		0.22	0.043
11097-69-1	PCB-1254	ND		0.22	0.10
11096-82-5	PCB-1260	ND		0.22	0.10
37324-23-5	PCB-1262	ND		0.22	0.10
11100-14-4	PCB-1268	ND		0.22	0.10
1336-36-3	Polychlorinated biphenyls, Total	ND		0.22	0.10

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	140		65-174
877-09-8	Tetrachloro-m-xylene	132		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-316.D
Lims ID: 480-159547-E-20-A
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 26-Sep-2019 00:09:05 ALS Bottle#: 0 Worklist Smp#: 43
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 14:49:20

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.955	0.954	0.001	4002147	0.5000	
2	1.256	1.253	0.003	5843303	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.406	1.401	0.005	301285	0.0291	
2	1.742	1.737	0.005	467158	0.0263	
					RPD = 9.95	
$ 15 DCB Decachlorobiphenyl						
1	5.335	5.336	-0.001	273730	0.0320	
2	6.242	6.242	0.000	340001	0.0280	
					RPD = 13.34	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

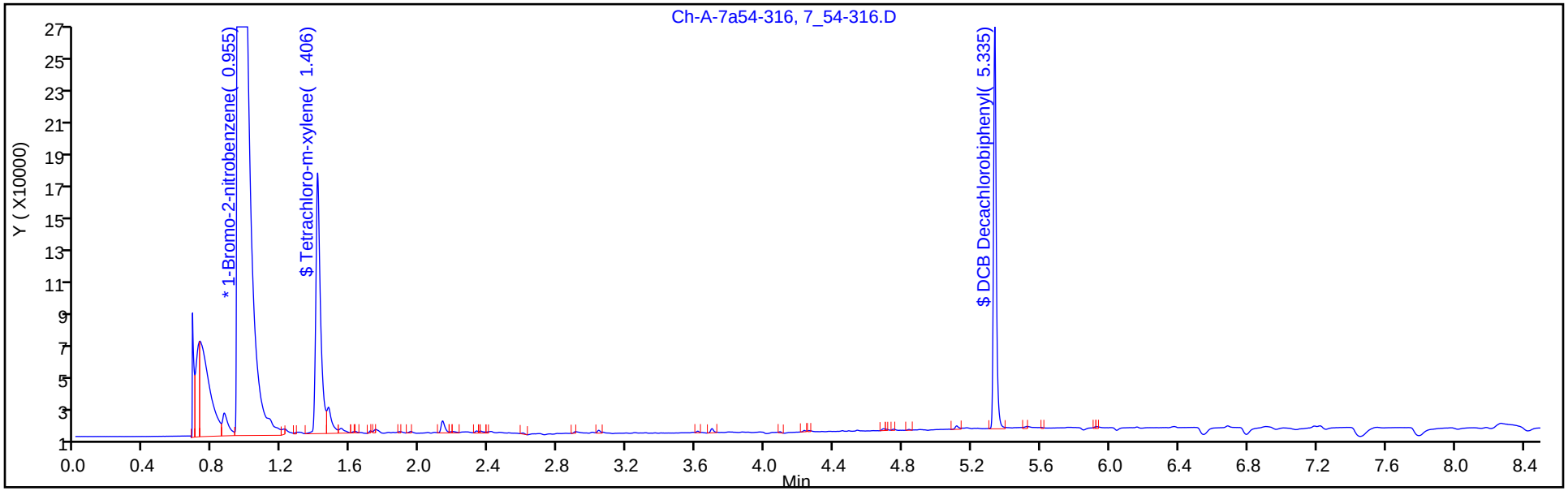
Report Date: 26-Sep-2019 15:09:25 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

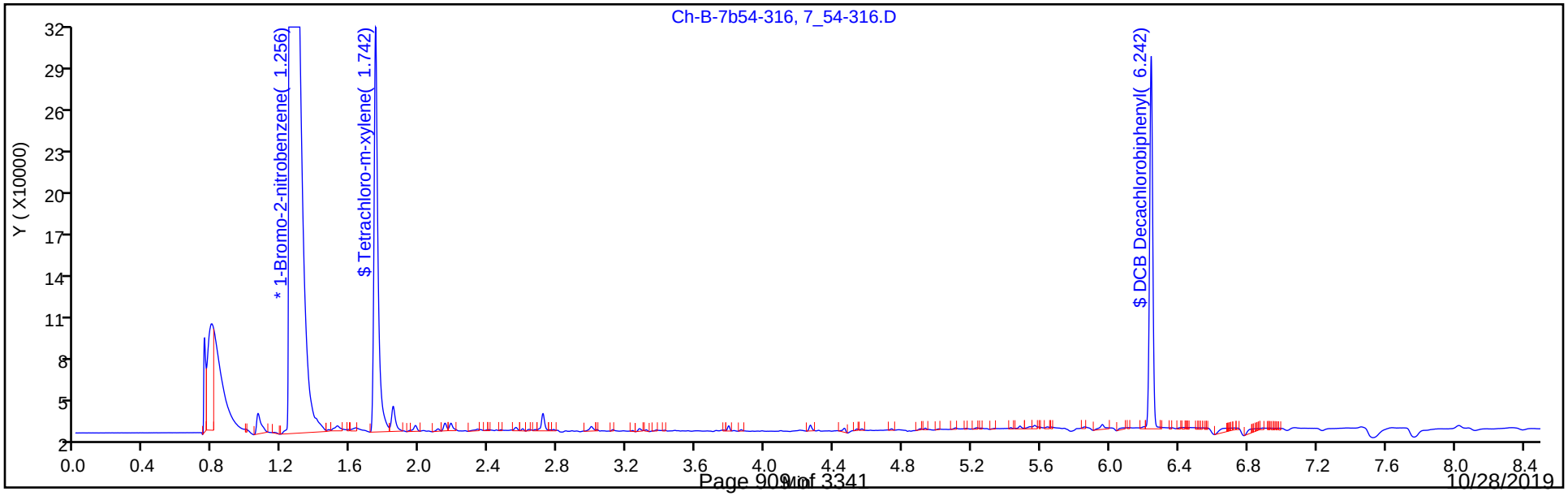
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-316.D

Injection Date:	26-Sep-2019 00:09:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-20-A	Lab Sample ID:	480-159547-20	Worklist Smp#:	43
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 7_55-017.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:50

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.88(g) Date Analyzed: 09/27/2019 15:58

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.19	0.037
11104-28-2	PCB-1221	ND		0.19	0.037
11141-16-5	PCB-1232	ND		0.19	0.037
53469-21-9	PCB-1242	ND		0.19	0.037
12672-29-6	PCB-1248	ND		0.19	0.037
11097-69-1	PCB-1254	ND		0.19	0.088
11096-82-5	PCB-1260	ND		0.19	0.088
37324-23-5	PCB-1262	ND		0.19	0.088
11100-14-4	PCB-1268	ND		0.19	0.088
1336-36-3	Polychlorinated biphenyls, Total	ND		0.19	0.088

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	122		65-174
877-09-8	Tetrachloro-m-xylene	111		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-017.D
Lims ID: 480-159547-E-30-A
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:58:27 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:32:06

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.957	0.955	0.002	5855693	0.5000	
2	1.257	1.255	0.002	8549166	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.404	1.403	0.001	340879	0.0223	
2	1.739	1.739	0.000	505812	0.0195	
					RPD = 13.46	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	308891	0.0245	
2	6.238	6.236	0.002	389541	0.0219	
					RPD = 10.89	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

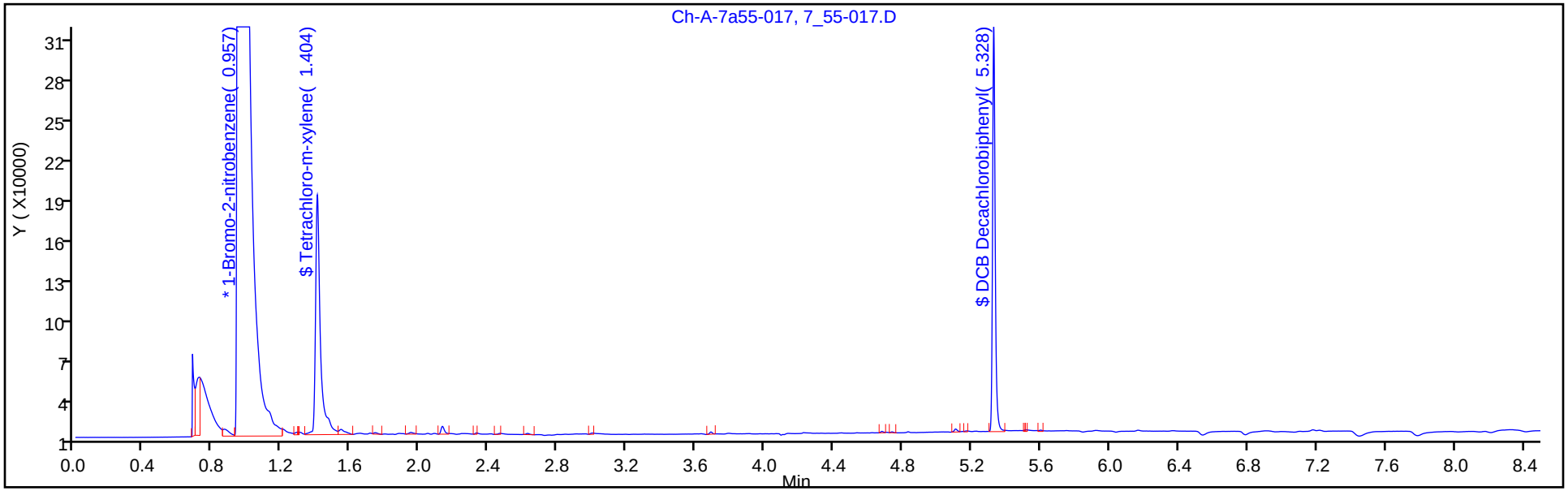
Report Date: 29-Sep-2019 14:16:22 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

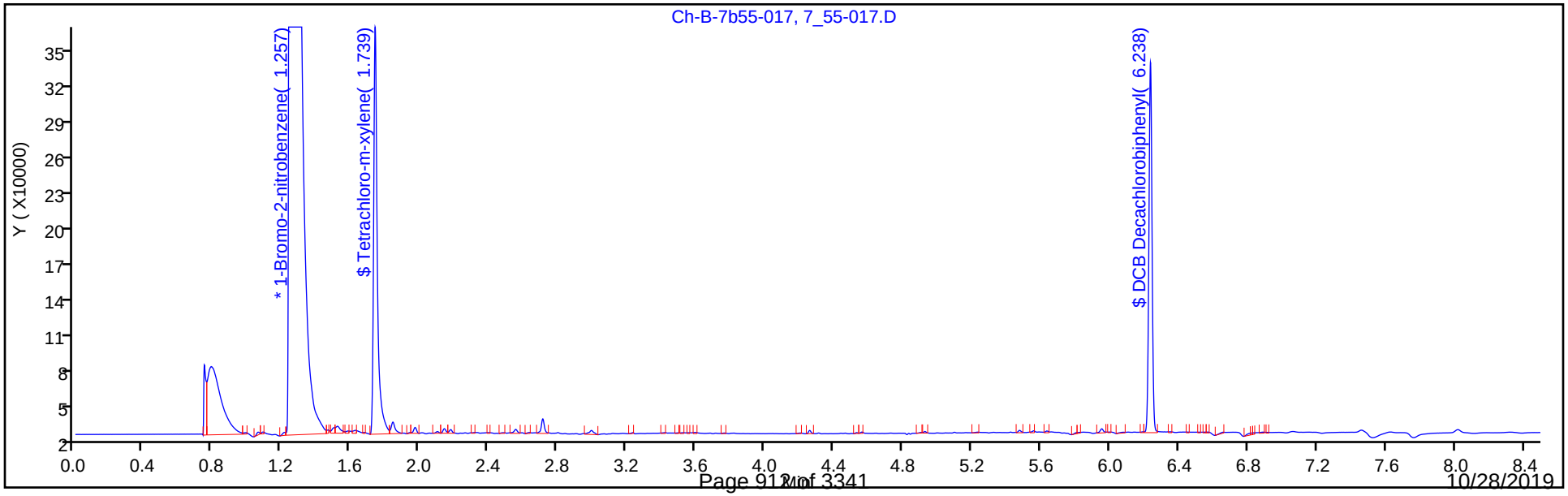
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-017.D

Injection Date:	27-Sep-2019 15:58:27	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-30-A	Lab Sample ID:	480-159547-30	Worklist Smp#:	17
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 7_55-017.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:50

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.88(g) Date Analyzed: 09/27/2019 15:58

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	110		65-174
877-09-8	Tetrachloro-m-xylene	97		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-017.D
Lims ID: 480-159547-E-30-A
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 15:58:27 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:32:06

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.957	0.955	0.002	5855693	0.5000	
2	1.257	1.255	0.002	8549166	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.404	1.403	0.001	340879	0.0223	
2	1.739	1.739	0.000	505812	0.0195	
					RPD = 13.46	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	308891	0.0245	
2	6.238	6.236	0.002	389541	0.0219	
					RPD = 10.89	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

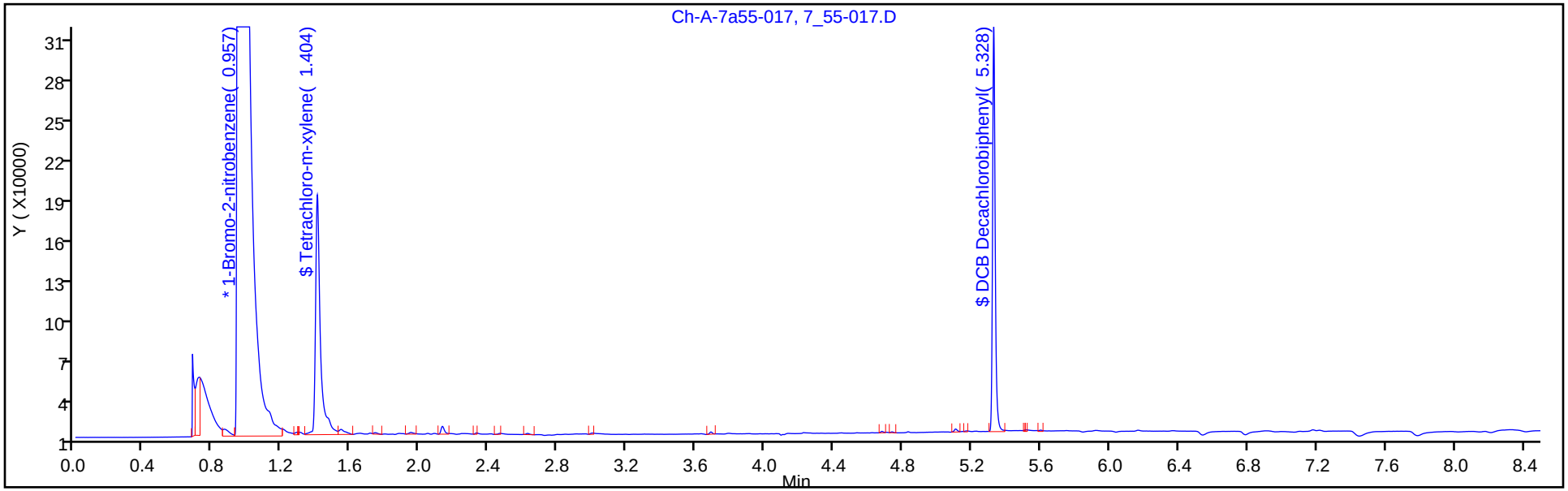
Report Date: 29-Sep-2019 14:16:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

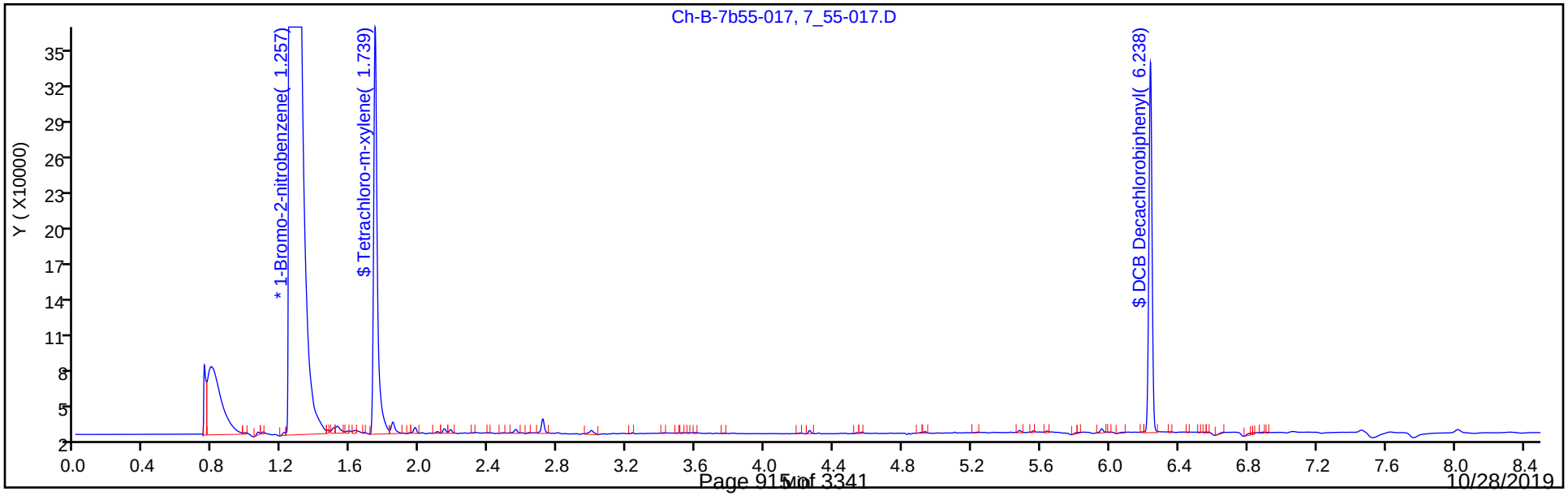
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-017.D

Injection Date:	27-Sep-2019 15:58:27	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-30-A	Lab Sample ID:	480-159547-30	Worklist Smp#:	17
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 7_55-018.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:53

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.85(g) Date Analyzed: 09/27/2019 16:10

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.19	0.036
11104-28-2	PCB-1221	ND		0.19	0.036
11141-16-5	PCB-1232	ND		0.19	0.036
53469-21-9	PCB-1242	ND		0.19	0.036
12672-29-6	PCB-1248	ND		0.19	0.036
11097-69-1	PCB-1254	ND		0.19	0.087
11096-82-5	PCB-1260	ND		0.19	0.087
37324-23-5	PCB-1262	ND		0.19	0.087
11100-14-4	PCB-1268	ND		0.19	0.087
1336-36-3	Polychlorinated biphenyls, Total	ND		0.19	0.087

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	120		65-174
877-09-8	Tetrachloro-m-xylene	98		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-018.D
Lims ID: 480-159547-D-31-A
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 16:10:45 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:32:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.957	0.955	0.002	6024590	0.5000	
2	1.258	1.255	0.003	8798515	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	-0.001	311333	0.0197	
2	1.739	1.739	0.000	499391	0.0187	
					RPD = 5.23	
$ 15 DCB Decachlorobiphenyl						
1	5.327	5.326	0.001	311381	0.0239	
2	6.237	6.236	0.001	391078	0.0214	
					RPD = 11.24	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

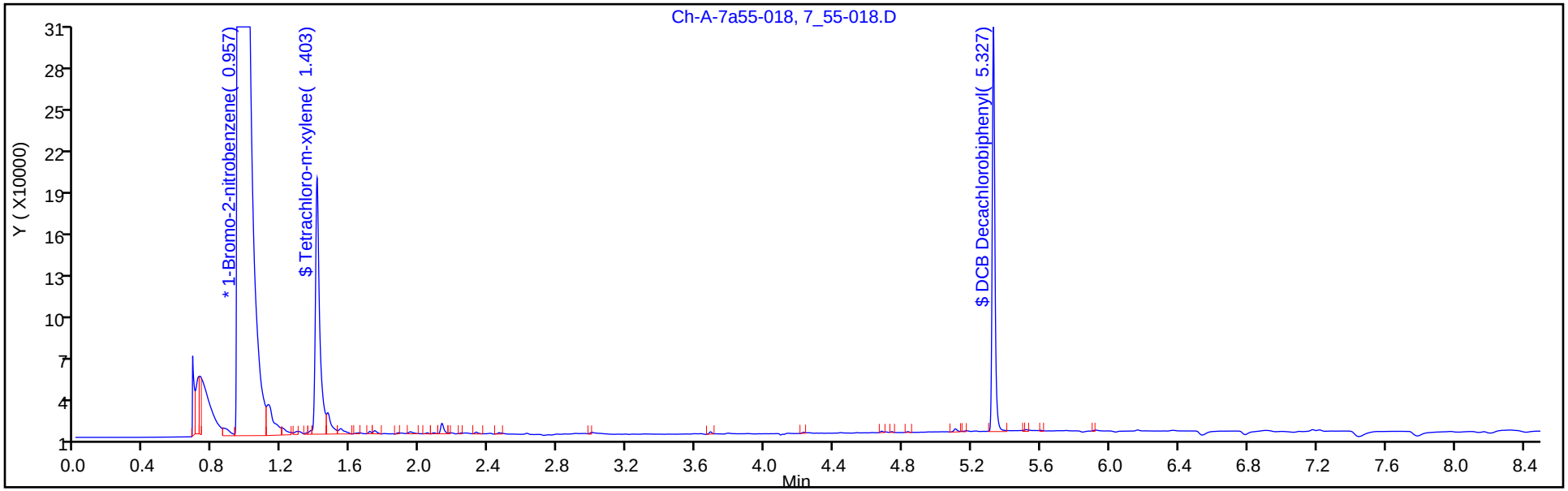
Report Date: 29-Sep-2019 14:16:25 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

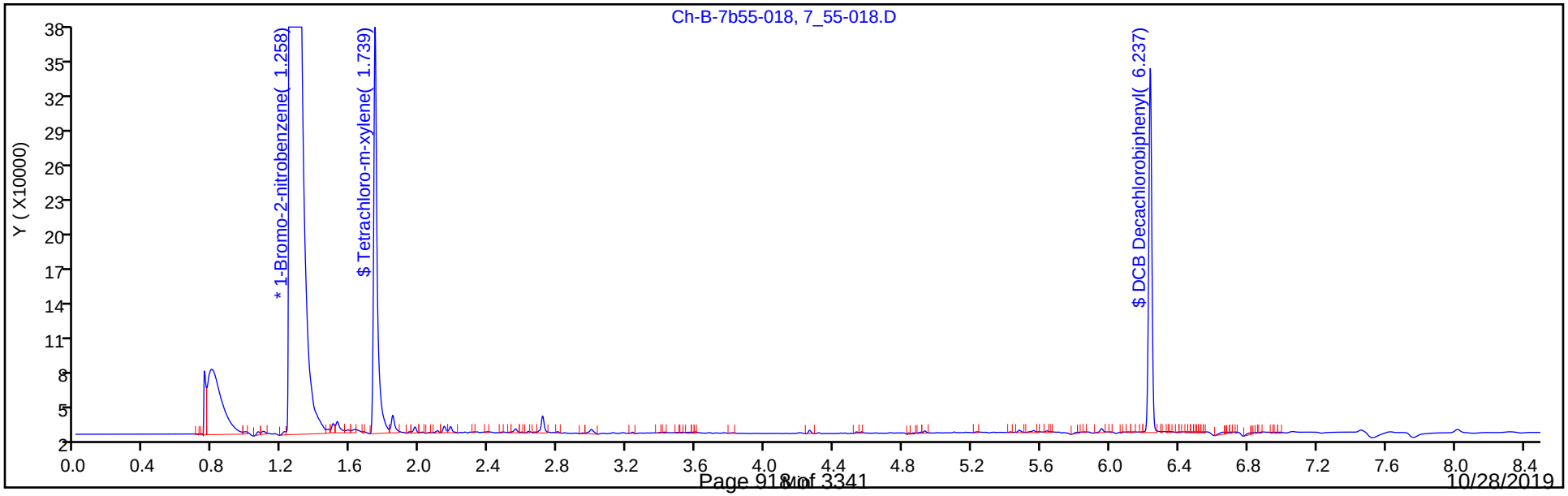
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-018.D

Injection Date:	27-Sep-2019 16:10:45	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-31-A	Lab Sample ID:	480-159547-31	Worklist Smp#:	18
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 7_55-018.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:53

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.85(g) Date Analyzed: 09/27/2019 16:10

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	107		65-174
877-09-8	Tetrachloro-m-xylene	93		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-018.D
Lims ID: 480-159547-D-31-A
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 27-Sep-2019 16:10:45 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:32:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.957	0.955	0.002	6024590	0.5000	
2	1.258	1.255	0.003	8798515	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	-0.001	311333	0.0197	
2	1.739	1.739	0.000	499391	0.0187	
					RPD = 5.23	
$ 15 DCB Decachlorobiphenyl						
1	5.327	5.326	0.001	311381	0.0239	
2	6.237	6.236	0.001	391078	0.0214	
					RPD = 11.24	

Reagents:

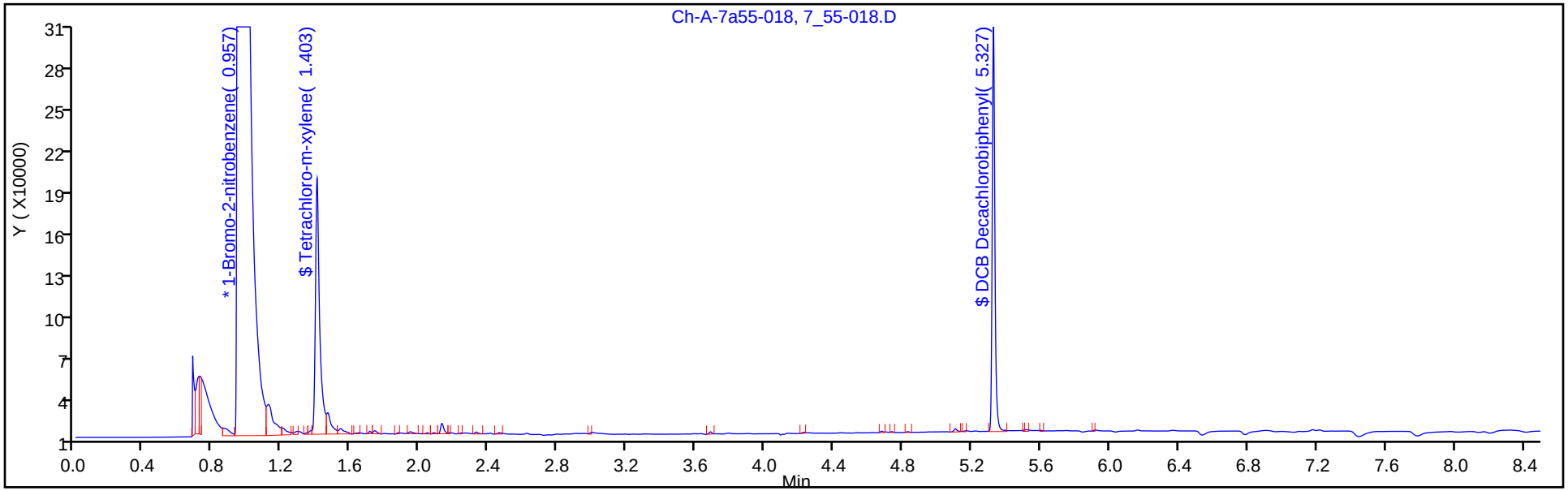
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:25 Chrom Revision: 2.3 17-Sep-2019 16:19:08

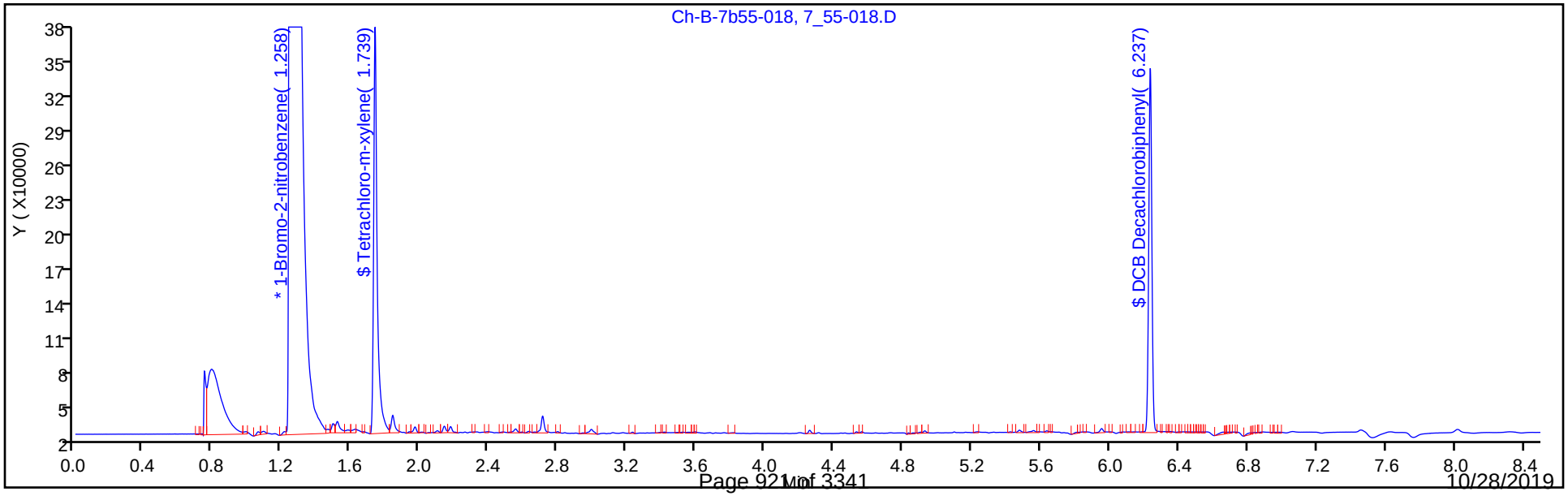
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-018.D				
Injection Date:	27-Sep-2019 16:10:45	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-31-A	Lab Sample ID:	480-159547-31	Worklist Smp#:	18
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 7_55-019.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:57

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.27(g) Date Analyzed: 09/27/2019 16:23

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.24	0.046
11104-28-2	PCB-1221	ND		0.24	0.046
11141-16-5	PCB-1232	ND		0.24	0.046
53469-21-9	PCB-1242	ND		0.24	0.046
12672-29-6	PCB-1248	ND		0.24	0.046
11097-69-1	PCB-1254	ND		0.24	0.11
11096-82-5	PCB-1260	ND		0.24	0.11
37324-23-5	PCB-1262	ND		0.24	0.11
11100-14-4	PCB-1268	ND		0.24	0.11
1336-36-3	Polychlorinated biphenyls, Total	ND		0.24	0.11

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	128		65-174
877-09-8	Tetrachloro-m-xylene	104		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-019.D
Lims ID: 480-159547-E-32-A
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 16:23:04 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:38:56

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.959	0.955	0.004	6078544	0.5000	
2	1.258	1.255	0.003	8961705	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.405	1.403	0.002	332376	0.0209	
2	1.740	1.739	0.001	498711	0.0183	
					RPD = 13.08	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	336245	0.0257	
2	6.239	6.236	0.003	406170	0.0218	
					RPD = 16.34	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

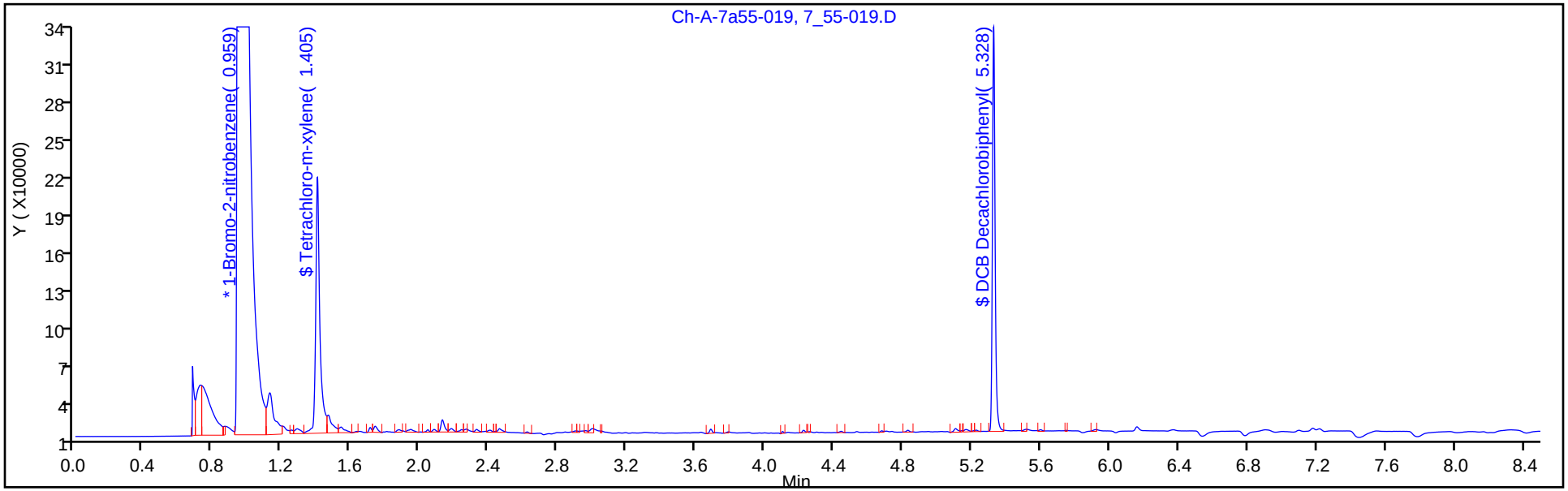
Report Date: 29-Sep-2019 14:16:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

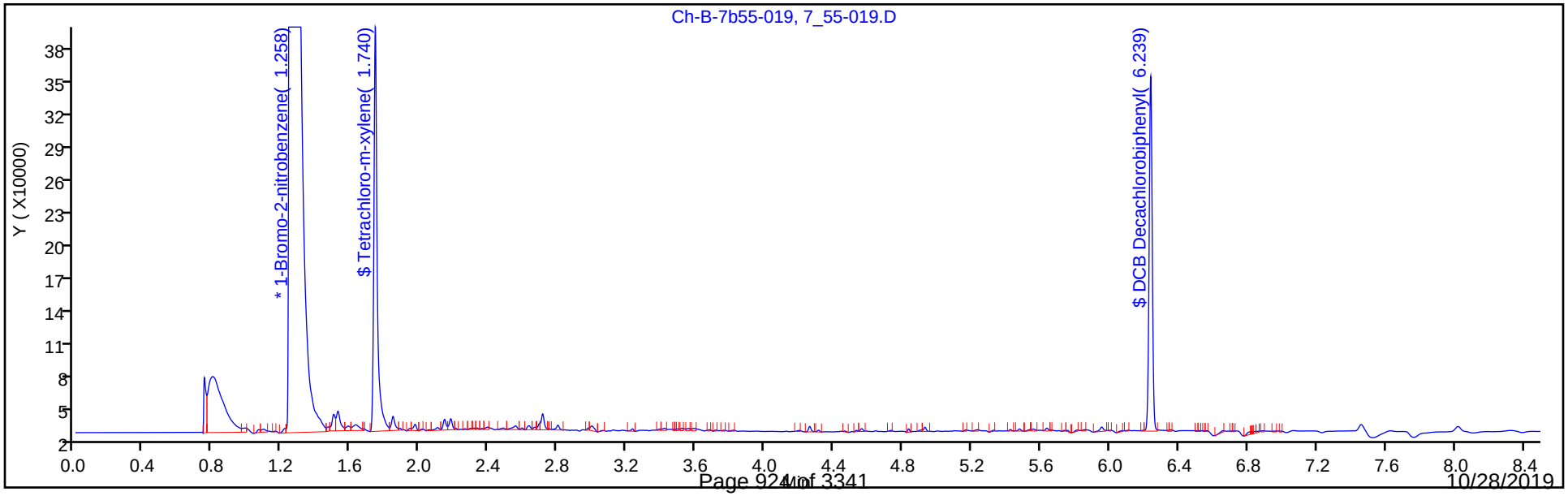
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-019.D

Injection Date:	27-Sep-2019 16:23:04	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-A	Lab Sample ID:	480-159547-32	Worklist Smp#:	19
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 7_55-019.D

Analysis Method: 8082A Date Collected: 09/16/2019 13:57

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.27(g) Date Analyzed: 09/27/2019 16:23

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	109		65-174
877-09-8	Tetrachloro-m-xylene	92		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-019.D
Lims ID: 480-159547-E-32-A
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 27-Sep-2019 16:23:04 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 16:38:56

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.959	0.955	0.004	6078544	0.5000	
2	1.258	1.255	0.003	8961705	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.405	1.403	0.002	332376	0.0209	
2	1.740	1.739	0.001	498711	0.0183	
					RPD = 13.08	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	336245	0.0257	
2	6.239	6.236	0.003	406170	0.0218	
					RPD = 16.34	

Reagents:

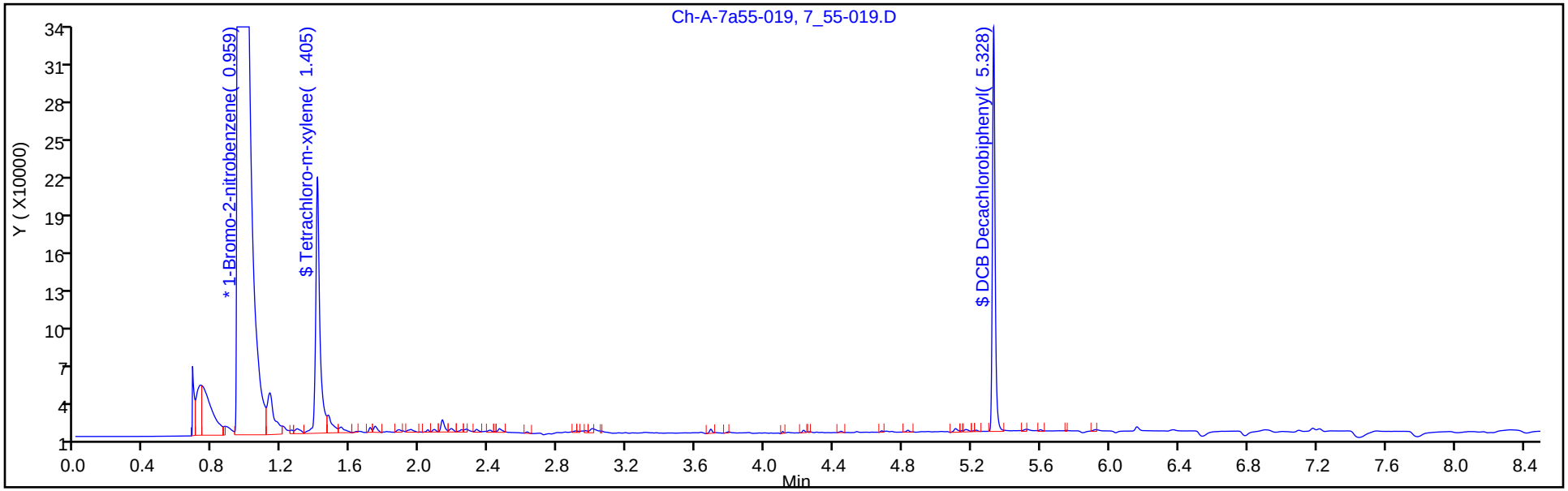
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:30 Chrom Revision: 2.3 17-Sep-2019 16:19:08

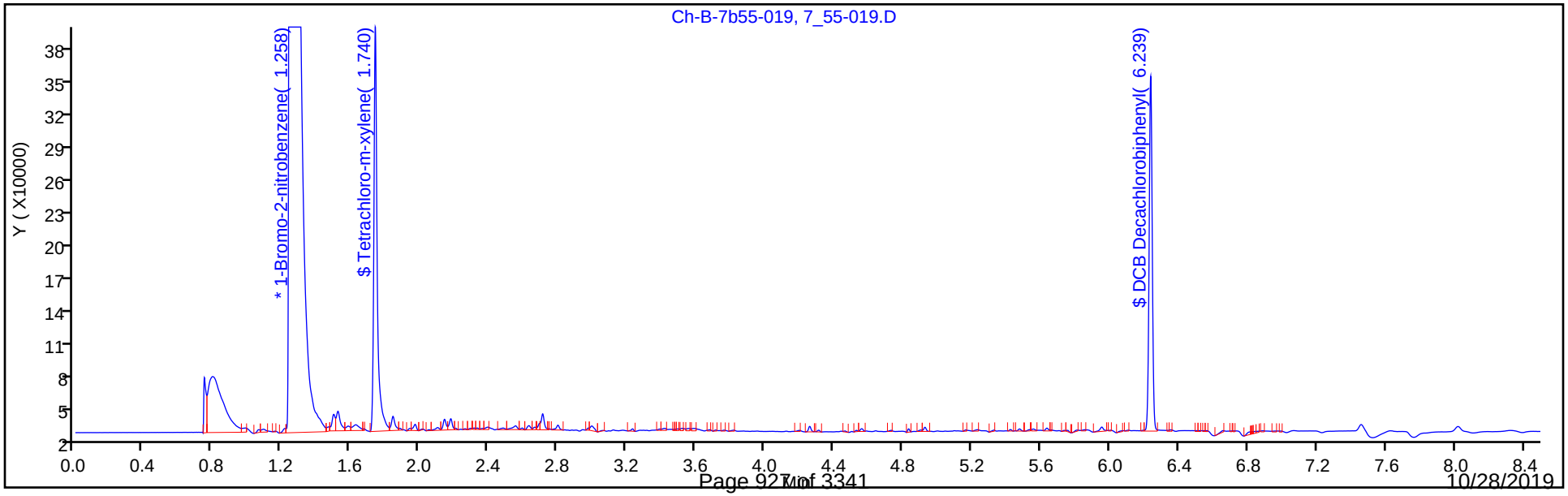
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-019.D				
Injection Date:	27-Sep-2019 16:23:04	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-A	Lab Sample ID:	480-159547-32	Worklist Smp#:	19
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 7_55-020.D

Analysis Method: 8082A Date Collected: 09/16/2019 14:30

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.15(g) Date Analyzed: 09/27/2019 16:35

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.26	0.051
11104-28-2	PCB-1221	ND		0.26	0.051
11141-16-5	PCB-1232	ND		0.26	0.051
53469-21-9	PCB-1242	ND		0.26	0.051
12672-29-6	PCB-1248	ND		0.26	0.051
11097-69-1	PCB-1254	ND		0.26	0.12
11096-82-5	PCB-1260	ND		0.26	0.12
37324-23-5	PCB-1262	ND		0.26	0.12
11100-14-4	PCB-1268	ND		0.26	0.12
1336-36-3	Polychlorinated biphenyls, Total	ND		0.26	0.12

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	115		65-174
877-09-8	Tetrachloro-m-xylene	99		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-020.D
Lims ID: 480-159547-F-39-A
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 16:35:29 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 29-Sep-2019 13:32:25

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.958	0.955	0.003	6050985	0.5000	
2	1.258	1.255	0.003	8951870	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	0.000	316078	0.0199	
2	1.739	1.739	0.000	509301	0.0187	
					RPD = 6.11	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	301929	0.0231	
2	6.237	6.236	0.001	376574	0.0202	
					RPD = 13.07	

Reagents:

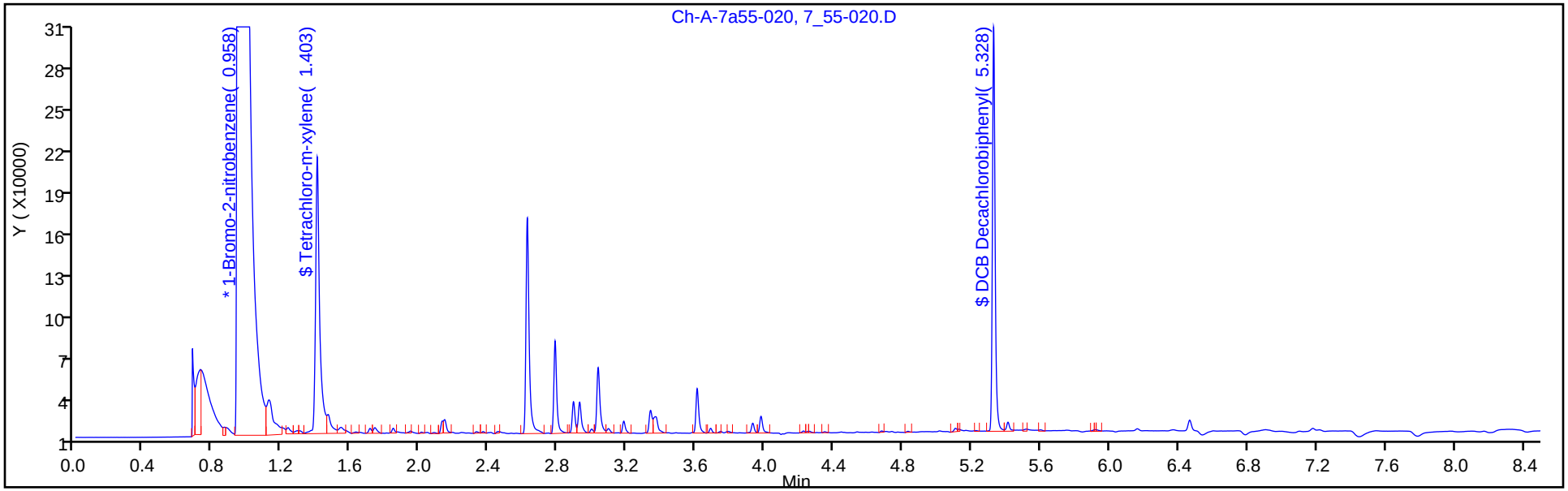
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:33 Chrom Revision: 2.3 17-Sep-2019 16:19:08

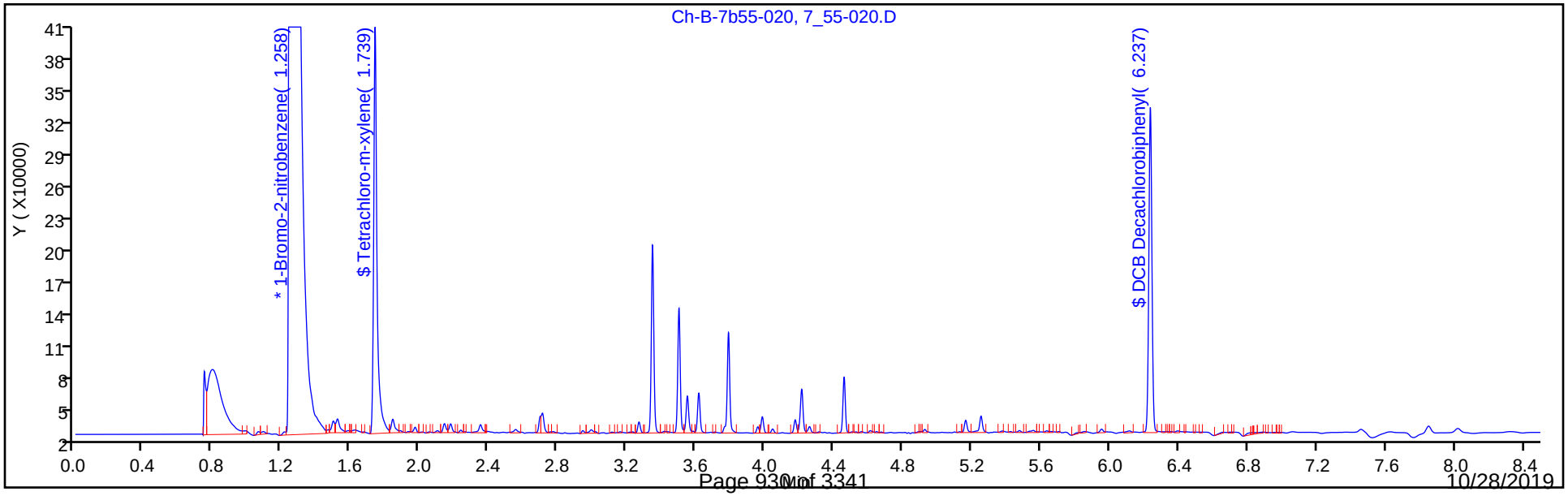
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-020.D				
Injection Date:	27-Sep-2019 16:35:29	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-A	Lab Sample ID:	480-159547-39	Worklist Smp#:	20
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 7_55-020.D

Analysis Method: 8082A Date Collected: 09/16/2019 14:30

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.15(g) Date Analyzed: 09/27/2019 16:35

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	101		65-174
877-09-8	Tetrachloro-m-xylene	94		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-020.D
Lims ID: 480-159547-F-39-A
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 27-Sep-2019 16:35:29 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:15:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 29-Sep-2019 13:32:25

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.958	0.955	0.003	6050985	0.5000	
2	1.258	1.255	0.003	8951870	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.403	1.403	0.000	316078	0.0199	
2	1.739	1.739	0.000	509301	0.0187	
					RPD = 6.11	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	301929	0.0231	
2	6.237	6.236	0.001	376574	0.0202	
					RPD = 13.07	

Reagents:

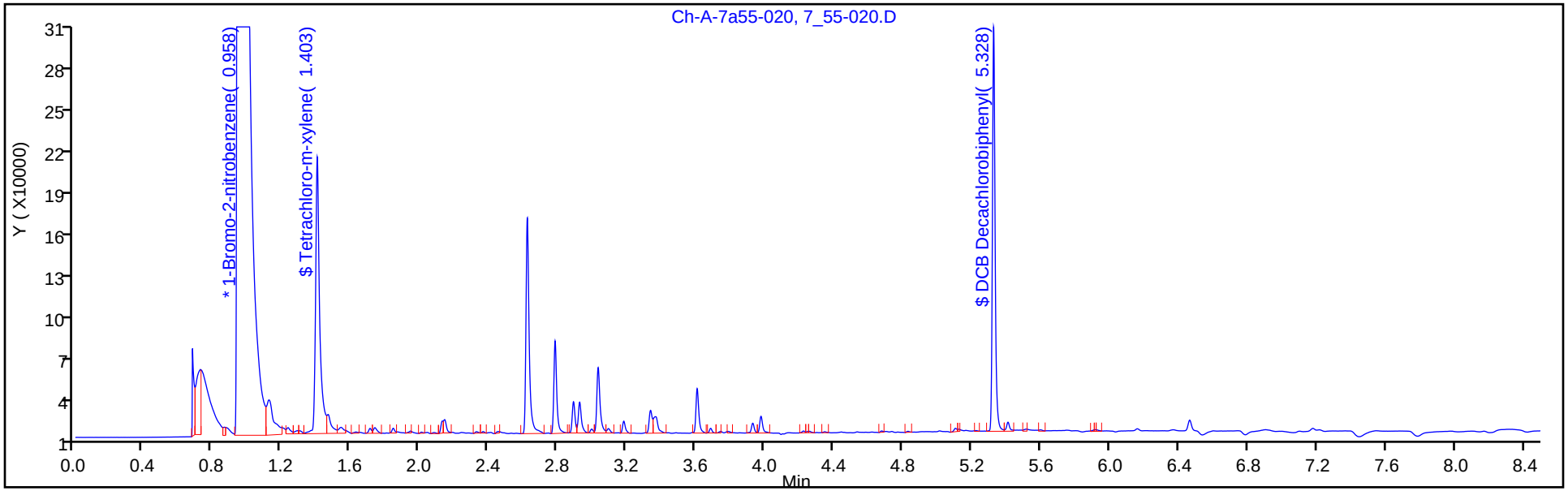
PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 29-Sep-2019 14:16:33 Chrom Revision: 2.3 17-Sep-2019 16:19:08

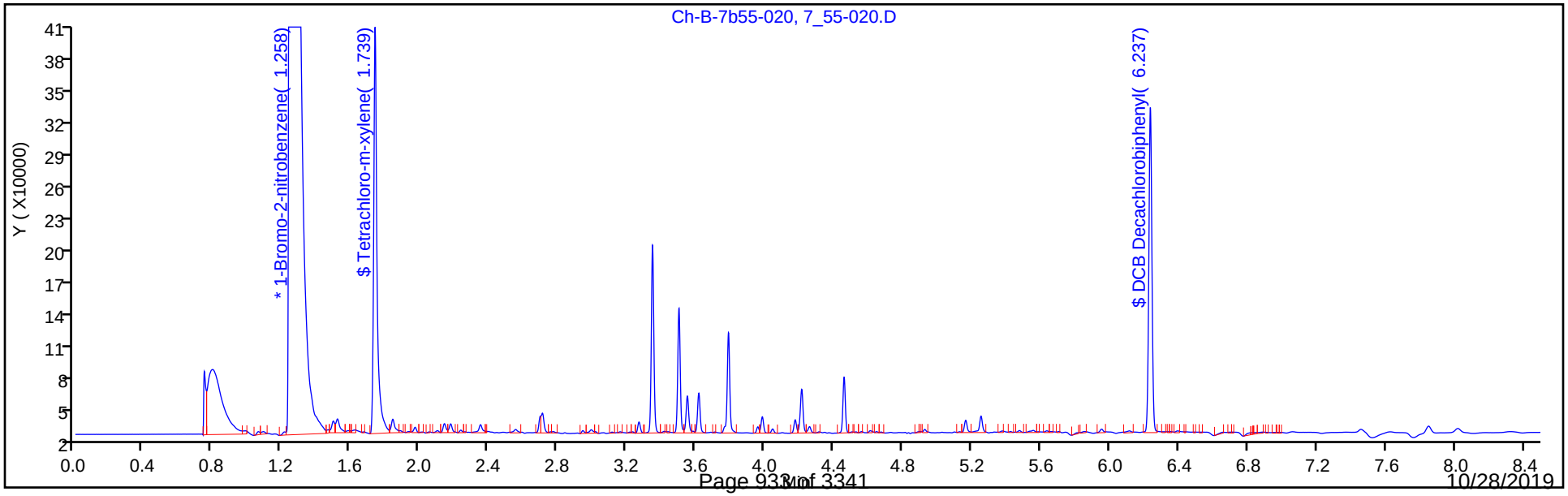
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-020.D				
Injection Date:	27-Sep-2019 16:35:29	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-A	Lab Sample ID:	480-159547-39	Worklist Smp#:	20
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 7_55-021.D

Analysis Method: 8082A Date Collected: 09/16/2019 14:35

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.26(g) Date Analyzed: 09/27/2019 16:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.25	0.050
11104-28-2	PCB-1221	ND		0.25	0.050
11141-16-5	PCB-1232	ND		0.25	0.050
53469-21-9	PCB-1242	ND		0.25	0.050
12672-29-6	PCB-1248	ND		0.25	0.050
11097-69-1	PCB-1254	ND		0.25	0.12
11096-82-5	PCB-1260	ND		0.25	0.12
37324-23-5	PCB-1262	ND		0.25	0.12
11100-14-4	PCB-1268	ND		0.25	0.12
1336-36-3	Polychlorinated biphenyls, Total	ND		0.25	0.12

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	112		65-174
877-09-8	Tetrachloro-m-xylene	98		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-021.D				
Lims ID:	480-159547-F-40-A				
Client ID:	GERNATT-TS-COMP 2				
Sample Type:	Client				
Inject. Date:	27-Sep-2019 16:47:50	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP6890-7		
Method:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m				
Limit Group:	GC - 8082A PCB IS ICAL				
Last Update:	29-Sep-2019 14:15:46	Calib Date:	12-May-2019 16:32:12		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D				
Column 1 :	ZB-5 (0.53 mm)		Det: Ch-A-7A136		
Column 2 :	ZB-35 (0.53 mm)		Det: Ch-B-7b136		
Process Host:	CTX0305				

First Level Reviewer: clarkda Date: 29-Sep-2019 13:33:29

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.959	0.955	0.004	6300654	0.5000	
2	1.258	1.255	0.003	9233175	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.405	1.403	0.002	325952	0.0197	
2	1.740	1.739	0.001	517183	0.0184	
					RPD = 6.66	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	305414	0.0224	
2	6.239	6.236	0.003	383080	0.0200	
					RPD = 11.44	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

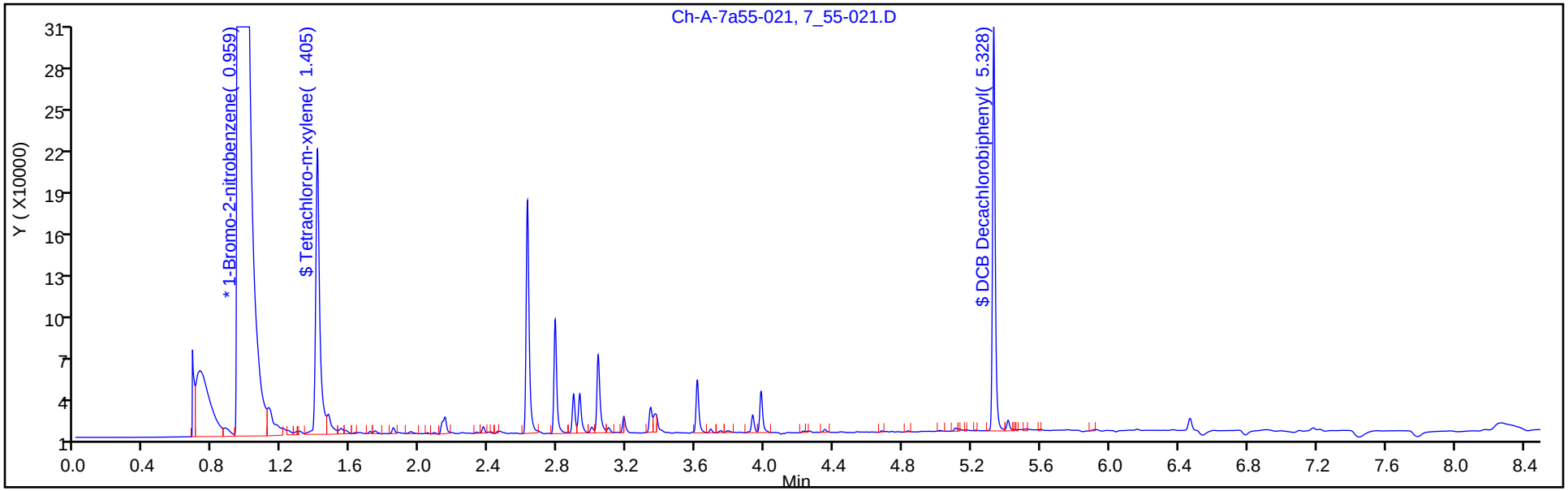
Report Date: 29-Sep-2019 14:16:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

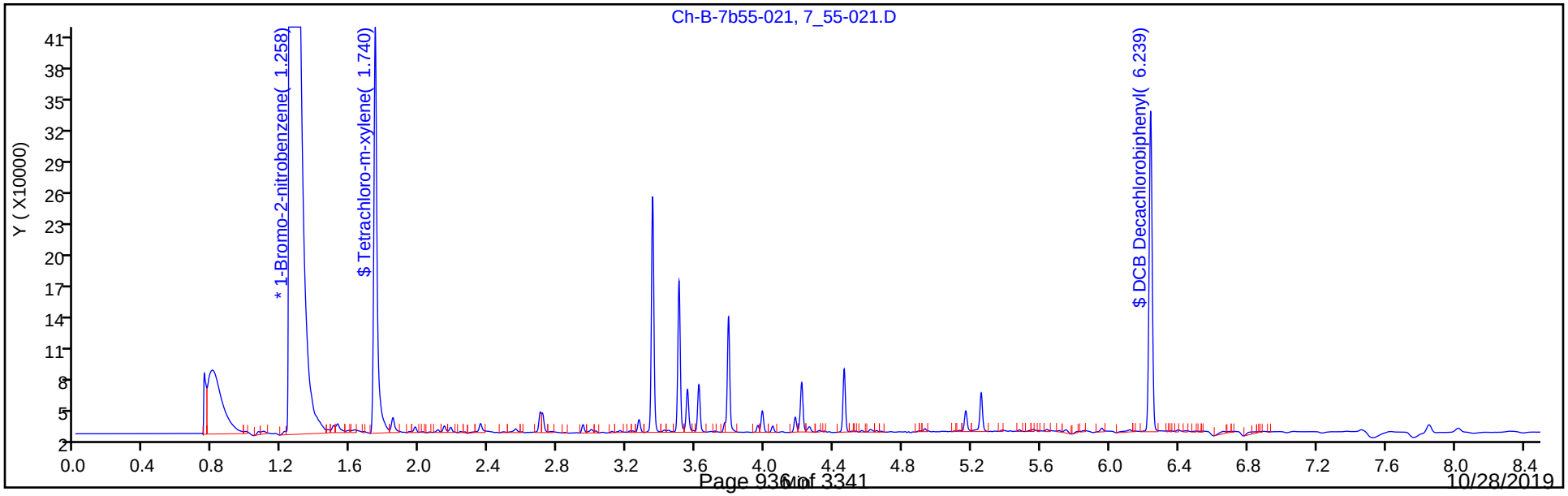
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-021.D

Injection Date:	27-Sep-2019 16:47:50	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-A	Lab Sample ID:	480-159547-40	Worklist Smp#:	21
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 7_55-021.D

Analysis Method: 8082A Date Collected: 09/16/2019 14:35

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.26(g) Date Analyzed: 09/27/2019 16:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 494480 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	100		65-174
877-09-8	Tetrachloro-m-xylene	92		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-021.D				
Lims ID:	480-159547-F-40-A				
Client ID:	GERNATT-TS-COMP 2				
Sample Type:	Client				
Inject. Date:	27-Sep-2019 16:47:50	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP6890-7		
Method:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m				
Limit Group:	GC - 8082A PCB IS ICAL				
Last Update:	29-Sep-2019 14:15:46	Calib Date:	12-May-2019 16:32:12		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D				
Column 1 :	ZB-5 (0.53 mm)		Det: Ch-A-7A136		
Column 2 :	ZB-35 (0.53 mm)		Det: Ch-B-7b136		
Process Host:	CTX0305				
First Level Reviewer: clarkda		Date:	29-Sep-2019 13:33:29		

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene						
1	0.959	0.955	0.004	6300654	0.5000	
2	1.258	1.255	0.003	9233175	0.5000	
					RPD = 0.00	
$ 6 Tetrachloro-m-xylene						
1	1.405	1.403	0.002	325952	0.0197	
2	1.740	1.739	0.001	517183	0.0184	
					RPD = 6.66	
$ 15 DCB Decachlorobiphenyl						
1	5.328	5.326	0.002	305414	0.0224	
2	6.239	6.236	0.003	383080	0.0200	
					RPD = 11.44	

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

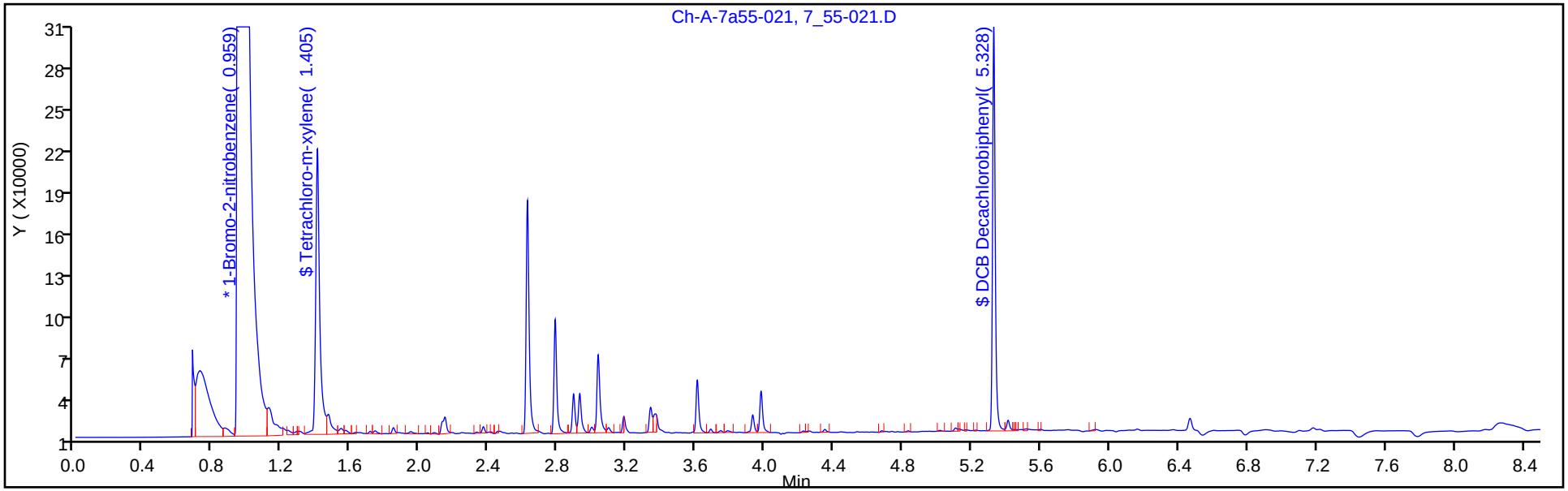
Report Date: 29-Sep-2019 14:16:37 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

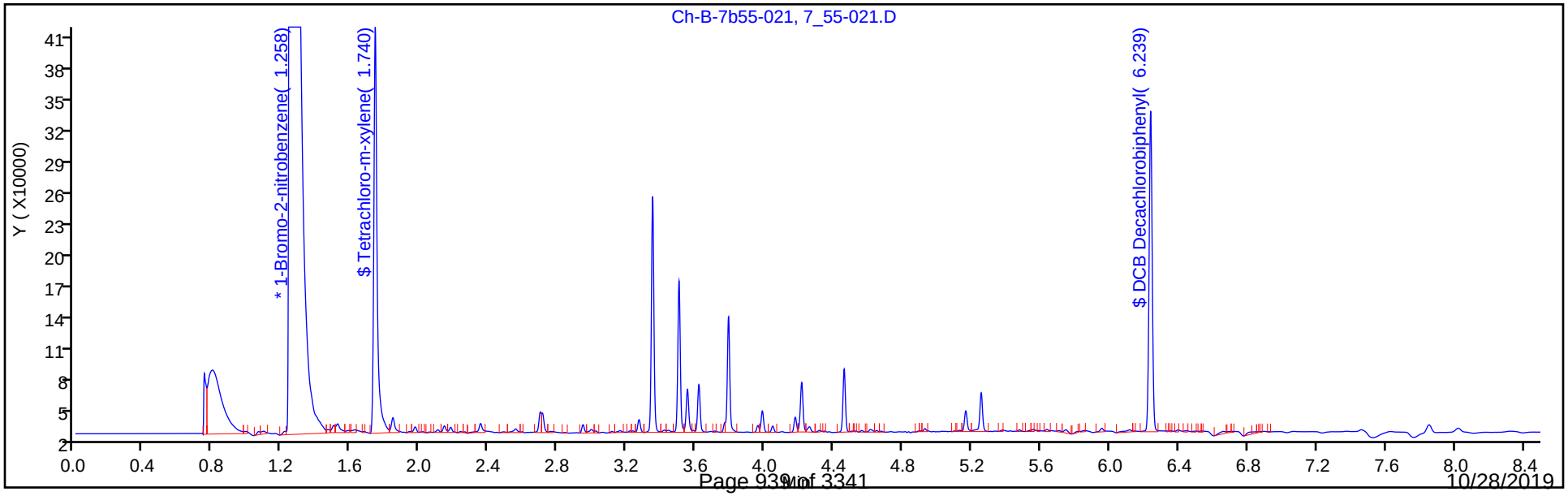
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-021.D

Injection Date:	27-Sep-2019 16:47:50	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-A	Lab Sample ID:	480-159547-40	Worklist Smp#:	21
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

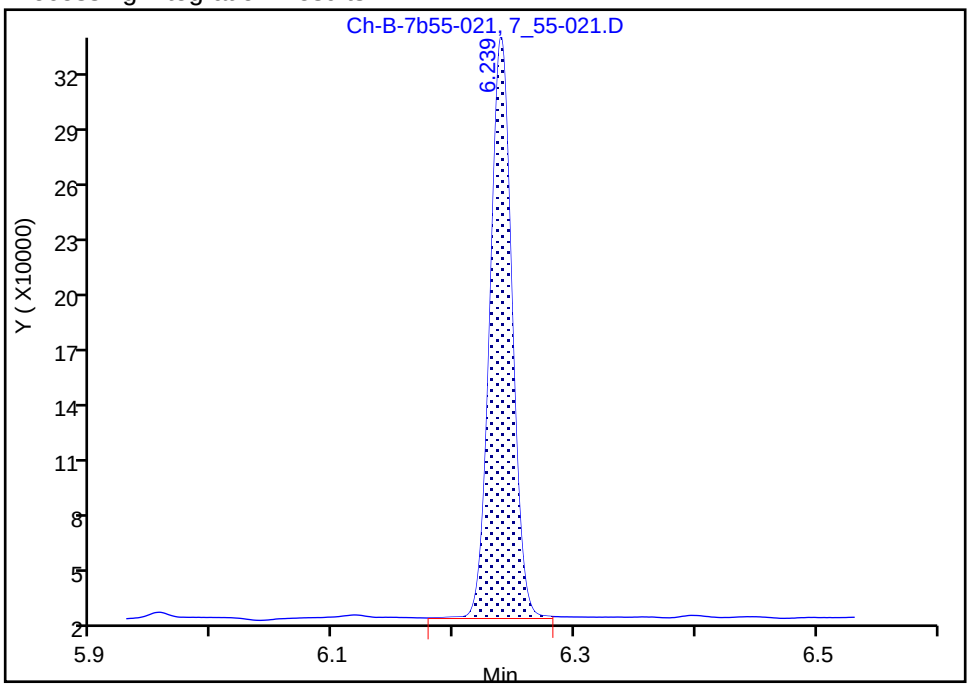
Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-021.D				
Injection Date:	27-Sep-2019 16:47:50	Instrument ID:	HP6890-7		
Lims ID:	480-159547-F-40-A	Lab Sample ID:	480-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	21
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		
Column:	ZB-35 (0.53 mm)	Detector	Ch-B-7b136		

$ 15 DCB Decachlorobiphenyl, CAS: 2051-24-3

Signal: 2

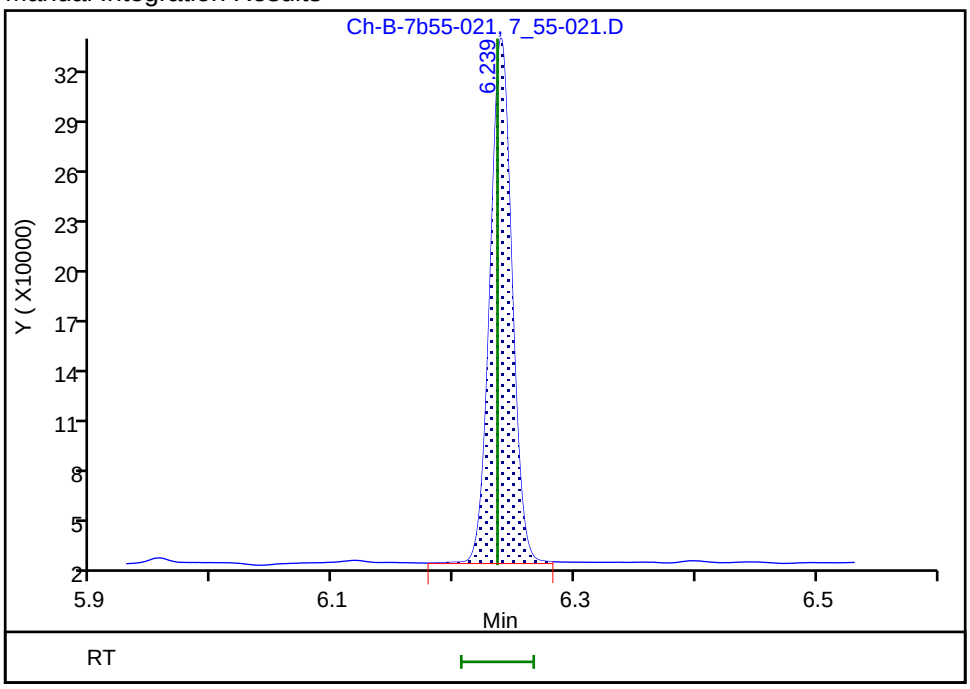
Processing Integration Results

RT: 6.24
Area: 383080
Amount: 0.019970
Amount Units: ng/uL



Manual Integration Results

RT: 6.24
Area: 383080
Amount: 0.019970
Amount Units: ng/uL



Reviewer: clarkda, 29-Sep-2019 13:33:24
Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 18:45 Calibration End Date: 05/10/2019 20:21 Calibration ID: 36953

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/27	7_42-264.D
Level 2	IC 480-472294/26	7_42-263.D
Level 3	IC 480-472294/25	7_42-262.D
Level 4	IC 480-472294/24	7_42-261.D
Level 5	ICIS 480-472294/23	7_42-260.D
Level 6	IC 480-472294/22	7_42-259.D
Level 7	IC 480-472294/21	7_42-258.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1016 Peak 1	0.0589 0.0386	0.0532 0.0384	0.0480	0.0470	0.0391	Ave		0.0462				17.3		20.0			
PCB-1016 Peak 2	0.0384 0.0298	0.0371 0.0287	0.0370	0.0370	0.0297	Ave		0.0339				12.7		20.0			
PCB-1016 Peak 3	0.0772 0.0866	0.0807 0.0899	0.0793	0.0822	0.0810	Ave		0.0824				5.3		20.0			
PCB-1016 Peak 4	0.0270 0.0228	0.0279 0.0233	0.0268	0.0254	0.0223	Ave		0.0251				9.1		20.0			
PCB-1016 Peak 5	0.0408 0.0359	0.0408 0.0362	0.0395	0.0387	0.0348	Ave		0.0381				6.5		20.0			
PCB-1260 Peak 1	0.0692 0.0588	0.0660 0.0584	0.0609	0.0614	0.0584	Ave		0.0619				6.8		20.0			
PCB-1260 Peak 2	0.0661 0.0644	0.0626 0.0647	0.0606	0.0624	0.0618	Ave		0.0632				3.1		20.0			
PCB-1260 Peak 3	0.0892 0.0891	0.0858 0.0891	0.0833	0.0872	0.0866	Ave		0.0872				2.5		20.0			
PCB-1260 Peak 4	0.1253 0.1279	0.1262 0.1234	0.1253	0.1271	0.1259	Ave		0.1258				1.2		20.0			
PCB-1260 Peak 5	0.0690 0.0621	0.0675 0.0615	0.0643	0.0623	0.0608	Ave		0.0639				5.0		20.0			
Tetrachloro-m-xylene	2.8954 1.2742	2.2908 1.2699	1.8496	1.7684	1.2943	Lin1	0.0011	1.2581				23.1			0.9950		0.9900
DCB Decachlorobiphenyl	3.0138 1.0825	1.8604 1.0405	1.4765	1.3242	1.1422	Lin1	0.0010	1.0358				6.0			0.9990		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 18:45 Calibration End Date: 05/10/2019 20:21 Calibration ID: 36953

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/27	7_42-264.D
Level 2	IC 480-472294/26	7_42-263.D
Level 3	IC 480-472294/25	7_42-262.D
Level 4	IC 480-472294/24	7_42-261.D
Level 5	ICIS 480-472294/23	7_42-260.D
Level 6	IC 480-472294/22	7_42-259.D
Level 7	IC 480-472294/21	7_42-258.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1016 Peak 1	BNB	Ave	11197 373175	25217 772240	48583	86753	186049	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 2	BNB	Ave	7295 288083	17587 576505	37462	68296	141094	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 3	BNB	Ave	14680 836853	38213 1807677	80385	151813	385447	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 4	BNB	Ave	5141 220295	13231 468674	27146	46948	105945	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 5	BNB	Ave	7763 346715	19321 726884	40013	71466	165530	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 1	BNB	Ave	13168 568479	31277 1174156	61745	113460	278001	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 2	BNB	Ave	12576 622491	29649 1301052	61360	115316	293956	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 3	BNB	Ave	16974 861212	40667 1790717	84413	161081	412054	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 4	BNB	Ave	23824 1235279	59764 2479260	126904	234777	598980	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 5	BNB	Ave	13132 599989	31977 1236960	65142	115106	289141	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
Tetrachloro-m-xylene	BNB	Lin1	13767 307771	27131 638054	46846	81663	153942	0.000500 0.0250	0.00125 0.0500	0.00250	0.00500	0.0125
DCB Decachlorobiphenyl	BNB	Lin1	14330 261462	22034 522803	37397	61149	135858	0.000500 0.0250	0.00125 0.0500	0.00250	0.00500	0.0125

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-258.D
Lims ID: IC 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-May-2019 18:45:49 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:44:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	5024466	0.5000	0.5000	
2	1.490	1.490	0.000	7109137	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.642	0.001	638054	0.0500	0.0496	
2	2.005	2.003	0.002	928208	0.0500	0.0430	
						RPD = 14.37	
9 PCB-1016							
1	2.037	2.042	-0.005	772240	2.00	1.66	
1	2.148	2.151	-0.003	576505	2.00	1.69	
1	2.311	2.330	-0.019	1807677	2.00	2.18	
1	2.663	2.667	-0.005	468674	2.00	1.86	
1	2.748	2.754	-0.006	726884	2.00	1.90	
		Average of Peak Amounts =				1.86	
2	2.372	2.373	0.000	559937	2.00	1.59	
2	2.968	2.971	-0.003	2640811	2.00	1.73	
2	3.075	3.077	-0.002	980258	2.00	1.64	
2	3.168	3.169	-0.001	595538	2.00	1.76	
2	3.436	3.435	0.001	803082	2.00	1.72	
		Average of Peak Amounts =				1.69	
						RPD = 9.66	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.558	3.560	-0.002	1174156	2.00	1.89	
1	3.733	3.739	-0.006	1301052	2.00	2.05	
1	3.942	3.948	-0.006	1790717	2.00	2.04	
1	4.445	4.450	-0.005	2479260	2.00	1.96	
1	4.669	4.675	-0.006	1236960	2.00	1.93	
		Average of Peak Amounts =				1.97	
2	4.378	4.378	0.000	1503875	2.00	1.68	
2	4.483	4.483	0.000	1696039	2.00	1.66	
2	4.803	4.803	-0.001	1577674	2.00	1.76	
2	5.116	5.115	0.001	1361142	2.00	1.70	
2	5.256	5.257	-0.001	2962532	2.00	1.79	
		Average of Peak Amounts =				1.72	
						RPD = 13.85	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	522803	0.0500	0.0492	
2	6.707	6.707	0.000	580394	0.0500	0.0393	
						RPD = 22.43	

Reagents:

1660sur/is2.0_00015 Amount Added: 1.00 Units: mL

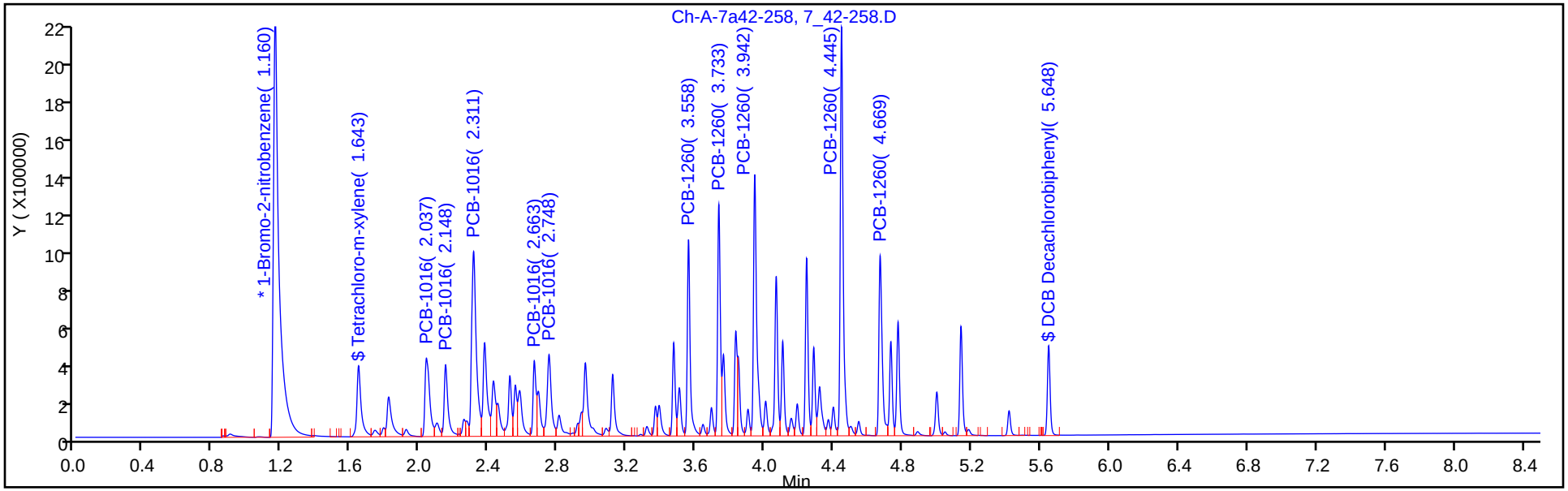
Report Date: 17-May-2019 15:18:45 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

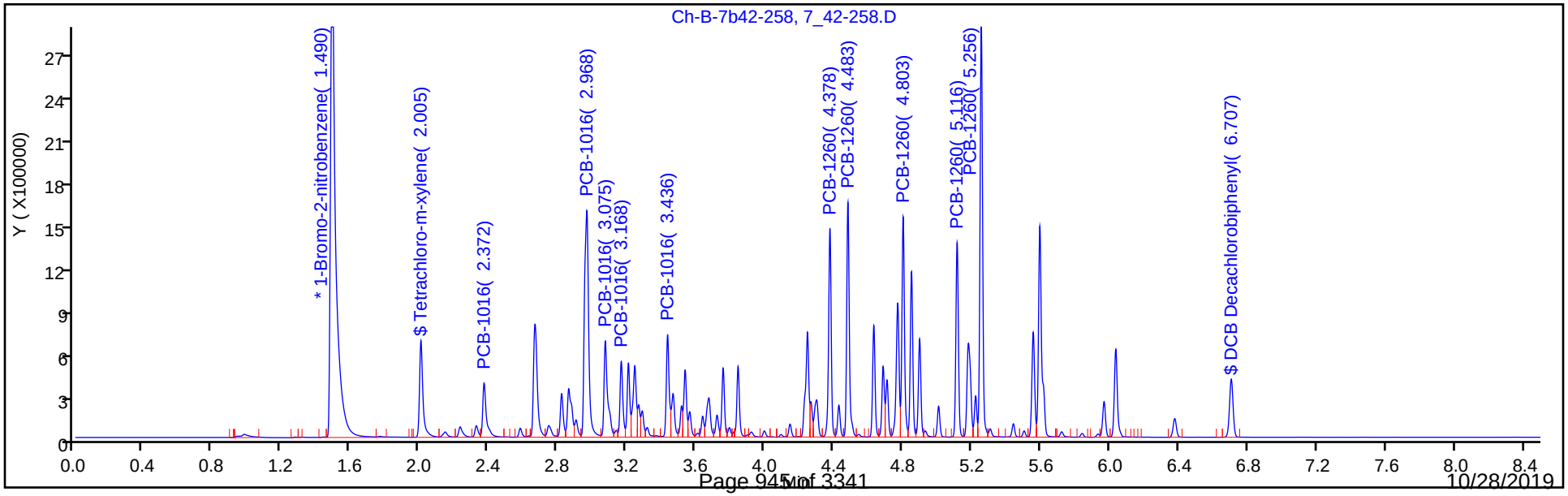
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-258.D

Injection Date:	10-May-2019 18:45:49	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 7			Worklist Smp#:	21
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-259.D
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-May-2019 19:01:36 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:48 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:59:01

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4830758	0.5000	0.5000	
2	1.488	1.490	-0.002	6876428	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.642	0.000	307771	0.0250	0.0245	
2	2.003	2.003	0.000	455252	0.0250	0.0218	
						RPD = 11.58	
9 PCB-1016							
1	2.038	2.042	-0.004	373175	1.00	0.8366	
1	2.148	2.151	-0.003	288083	1.00	0.8785	
1	2.313	2.330	-0.017	836853	1.00	1.05	
1	2.663	2.667	-0.004	220295	1.00	0.9091	
1	2.749	2.754	-0.005	346715	1.00	0.9421	
		Average of Peak Amounts =				0.9235	
2	2.371	2.373	-0.001	292658	1.00	0.8591	
2	2.968	2.971	-0.003	1322641	1.00	0.8939	
2	3.075	3.077	-0.002	495450	1.00	0.8583	
2	3.168	3.169	-0.001	294895	1.00	0.8990	
2	3.436	3.435	0.001	389919	1.00	0.8656	
		Average of Peak Amounts =				0.8752	
						RPD = 5.37	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.558	3.560	-0.002	568479	1.00	0.9505	
1	3.734	3.739	-0.005	622491	1.00	1.02	
1	3.943	3.948	-0.005	861212	1.00	1.02	
1	4.447	4.450	-0.003	1235279	1.00	1.02	
1	4.670	4.675	-0.005	599989	1.00	0.9712	
		Average of Peak Amounts =				1.00	
2	4.378	4.378	0.000	751997	1.00	0.8666	
2	4.483	4.483	0.000	837265	1.00	0.8472	
2	4.803	4.803	0.000	753689	1.00	0.8698	
2	5.116	5.115	0.001	675662	1.00	0.8709	
2	5.256	5.257	-0.001	1468840	1.00	0.9181	
		Average of Peak Amounts =				0.8745	
						RPD = 12.96	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	261462	0.0250	0.0251	
2	6.707	6.707	0.000	296133	0.0250	0.0207	
						RPD = 19.16	

Reagents:

1660sur/is1.0_00014 Amount Added: 1.00 Units: mL

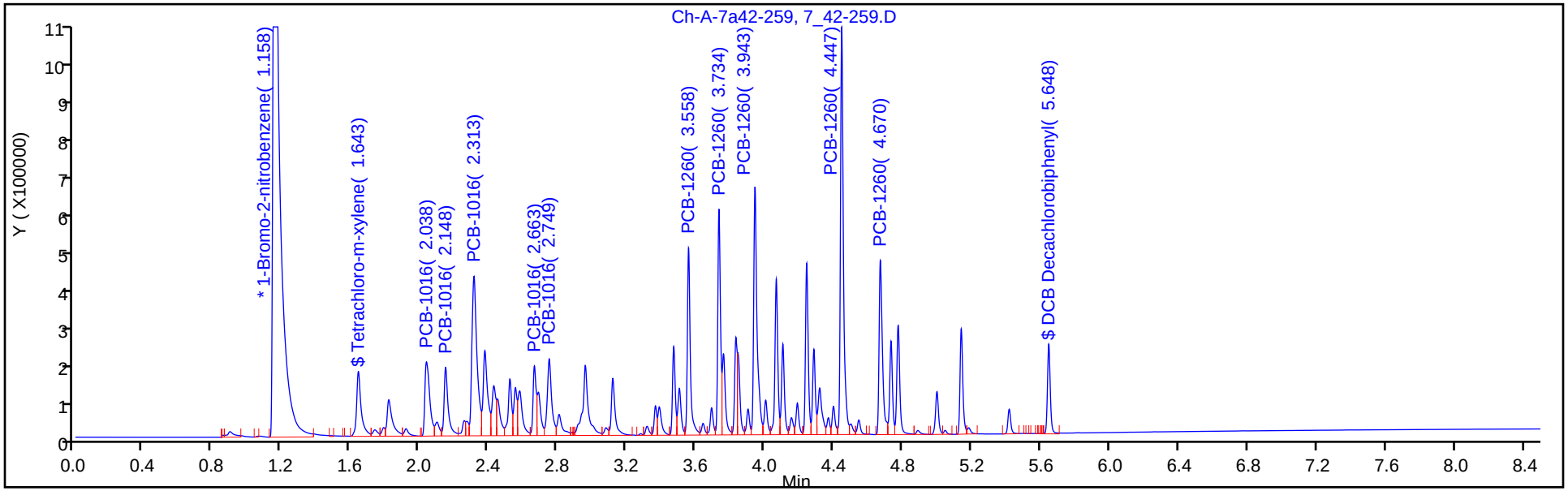
Report Date: 17-May-2019 15:18:49 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

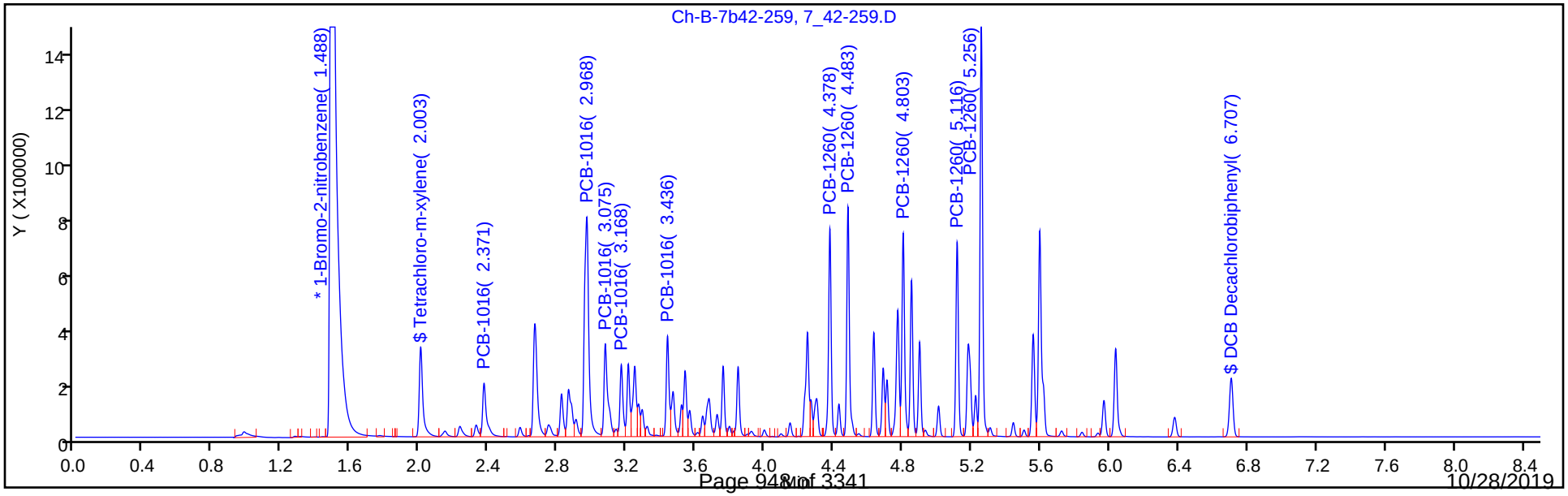
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-259.D

Injection Date:	10-May-2019 19:01:36	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 6			Worklist Smp#:	22
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-260.D
Lims ID: ICIS
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 10-May-2019 19:17:32 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:52 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:59:06

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4757621	0.5000	0.5000	
2	1.489	1.489	0.000	6769847	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.643	0.000	153942	0.0125	0.0120	
2	2.004	2.004	0.000	230059	0.0125	0.0112	
						RPD = 7.06	
9 PCB-1016							
1	2.038	2.038	0.000	186049	0.5000	0.4235	
1	2.149	2.149	0.000	141094	0.5000	0.4369	
1	2.317	2.317	0.000	385447	0.5000	0.4915	
1	2.665	2.665	0.000	105945	0.5000	0.4439	
1	2.751	2.751	0.000	165530	0.5000	0.4567	
		Average of Peak Amounts =				0.4505	
2	2.372	2.372	0.000	154658	0.5000	0.4611	
2	2.968	2.968	0.000	665910	0.5000	0.4571	
2	3.075	3.075	0.000	257380	0.5000	0.4529	
2	3.168	3.168	0.000	149320	0.5000	0.4624	
2	3.436	3.436	0.000	195124	0.5000	0.4400	
		Average of Peak Amounts =				0.4547	
						RPD = 0.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.559	3.559	0.000	278001	0.5000	0.4720	
1	3.736	3.736	0.000	293956	0.5000	0.4885	
1	3.945	3.945	0.000	412054	0.5000	0.4966	
1	4.447	4.447	0.000	598980	0.5000	0.5002	
1	4.672	4.672	0.000	289141	0.5000	0.4752	
		Average of Peak Amounts =				0.4865	
2	4.378	4.378	0.000	381139	0.5000	0.4462	
2	4.483	4.483	0.000	427896	0.5000	0.4398	
2	4.803	4.803	0.000	381365	0.5000	0.4471	
2	5.115	5.115	0.000	337287	0.5000	0.4416	
2	5.257	5.257	0.000	727246	0.5000	0.4617	
		Average of Peak Amounts =				0.4473	
						RPD = 8.40	
$ 15 DCB Decachlorobiphenyl							
1	5.647	5.647	0.000	135858	0.0125	0.0128	
2	6.706	6.706	0.000	160577	0.0125	0.0114	
						RPD = 11.25	

Reagents:

1660sur/is0.5_00070 Amount Added: 1.00 Units: mL

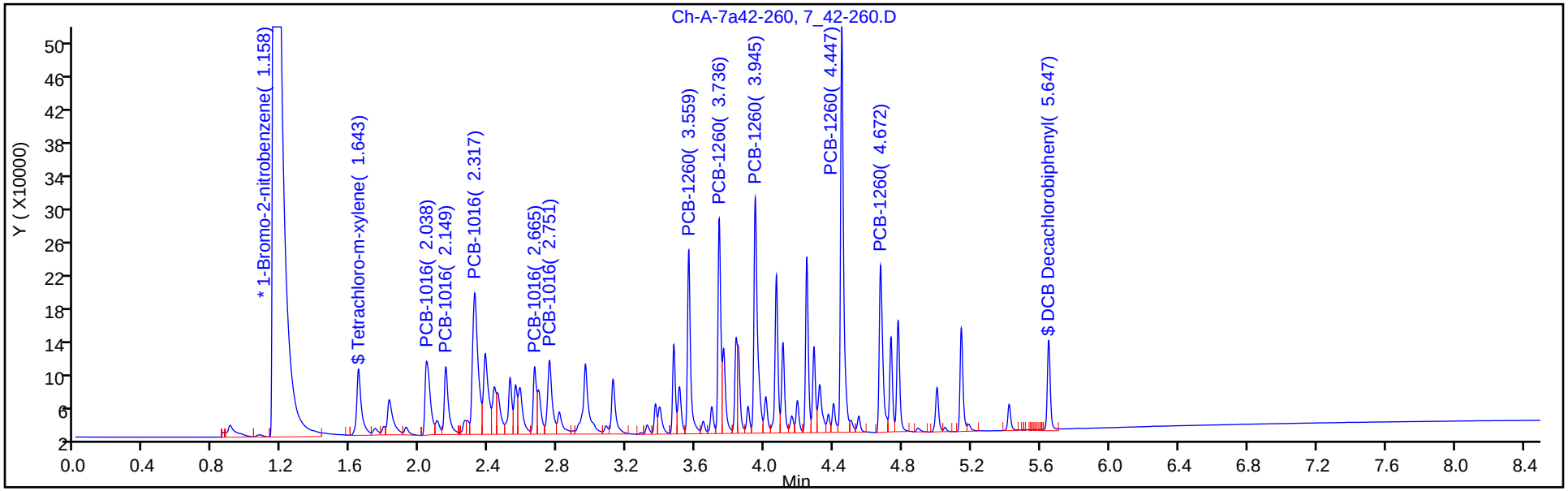
Report Date: 17-May-2019 15:18:54 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

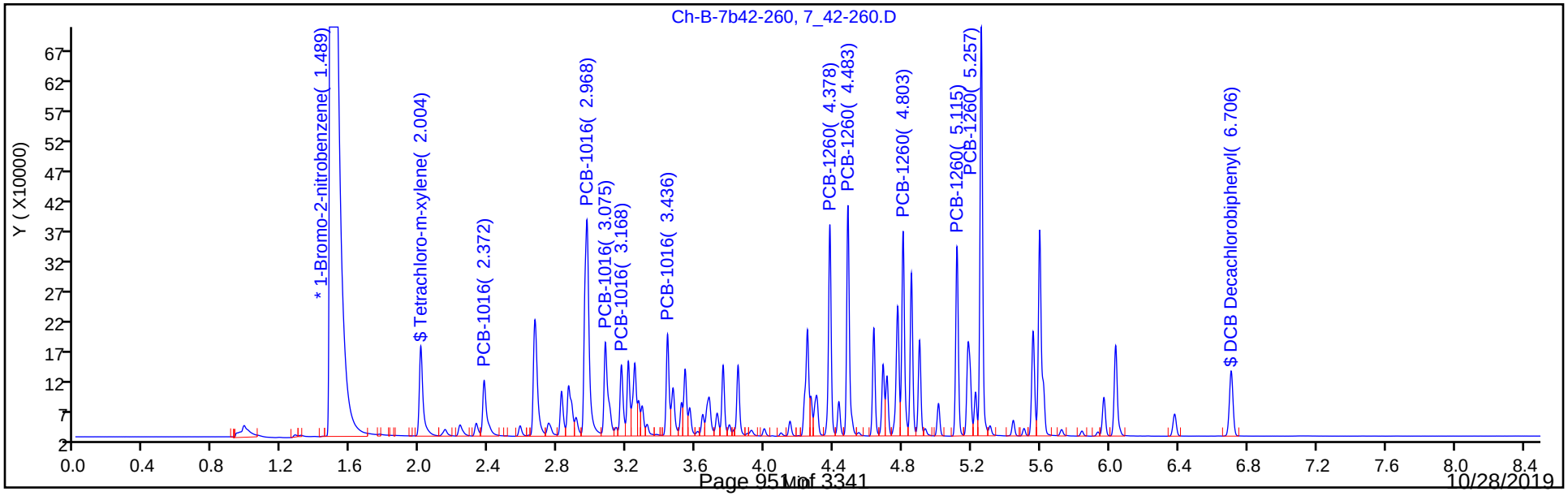
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-260.D

Injection Date:	10-May-2019 19:17:32	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	ICIS			Worklist Smp#:	23
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 10-May-2019 19:33:25 ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:56 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:52:33

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.159	1.158	0.001	4617786	0.5000	0.5000	
2	1.490	1.489	0.001	6537148	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	0.000	81663	0.005000	0.006167	M
2	2.005	2.004	0.001	96824	0.005000	0.004873	
						RPD = 23.44	
9 PCB-1016							M
1	2.040	2.038	0.002	86753	0.2000	0.2035	M
1	2.151	2.149	0.002	68296	0.2000	0.2179	M
1	2.323	2.317	0.005	151813	0.2000	0.1994	M
1	2.666	2.665	0.001	46948	0.2000	0.2027	M
1	2.753	2.751	0.002	71466	0.2000	0.2032	M
		Average of Peak Amounts =				0.2053	
2	2.373	2.372	0.001	66728	0.2000	0.2060	
2	2.969	2.968	0.001	271804	0.2000	0.1932	
2	3.077	3.075	0.002	108401	0.2000	0.1975	
2	3.169	3.168	0.001	62087	0.2000	0.1991	
2	3.437	3.436	0.001	81472	0.2000	0.1902	
		Average of Peak Amounts =				0.1972	
						RPD = 4.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.559	3.559	0.000	113460	0.2000	0.1985	
1	3.737	3.736	0.001	115316	0.2000	0.1974	
1	3.947	3.945	0.002	161081	0.2000	0.2000	
1	4.448	4.447	0.001	234777	0.2000	0.2020	
1	4.674	4.672	0.002	115106	0.2000	0.1949	
		Average of Peak Amounts =				0.1986	
2	4.378	4.378	0.000	158281	0.2000	0.1919	
2	4.483	4.483	0.001	180837	0.2000	0.1925	
2	4.803	4.803	0.001	159068	0.2000	0.1931	
2	5.117	5.115	0.002	142378	0.2000	0.1931	
2	5.257	5.257	0.000	296999	0.2000	0.1953	
		Average of Peak Amounts =				0.1932	
						RPD = 2.76	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.647	0.001	61149	0.005000	0.005386	
2	6.708	6.706	0.002	70570	0.005000	0.005196	
						RPD = 3.59	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.2_00013 Amount Added: 1.00 Units: mL

Report Date: 17-May-2019 15:18:57 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D

Injection Date: 10-May-2019 19:33:25 Instrument ID: HP6890-7 Operator ID: BufTCHROM

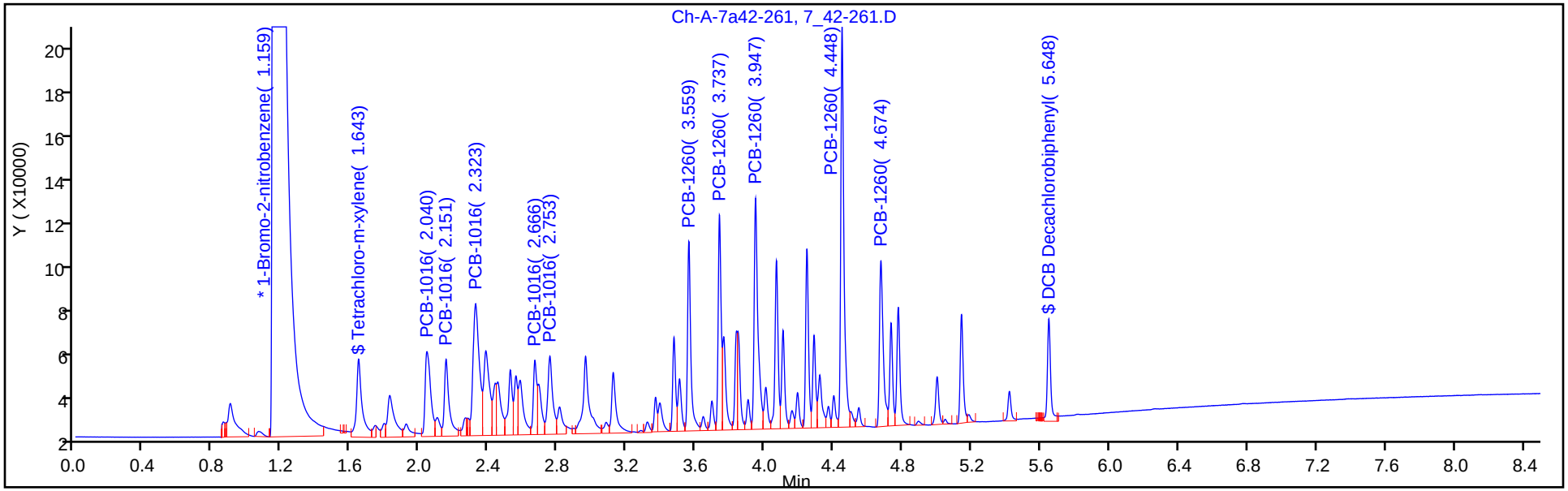
Lims ID: IC 4 Worklist Smp#: 24

Client ID:

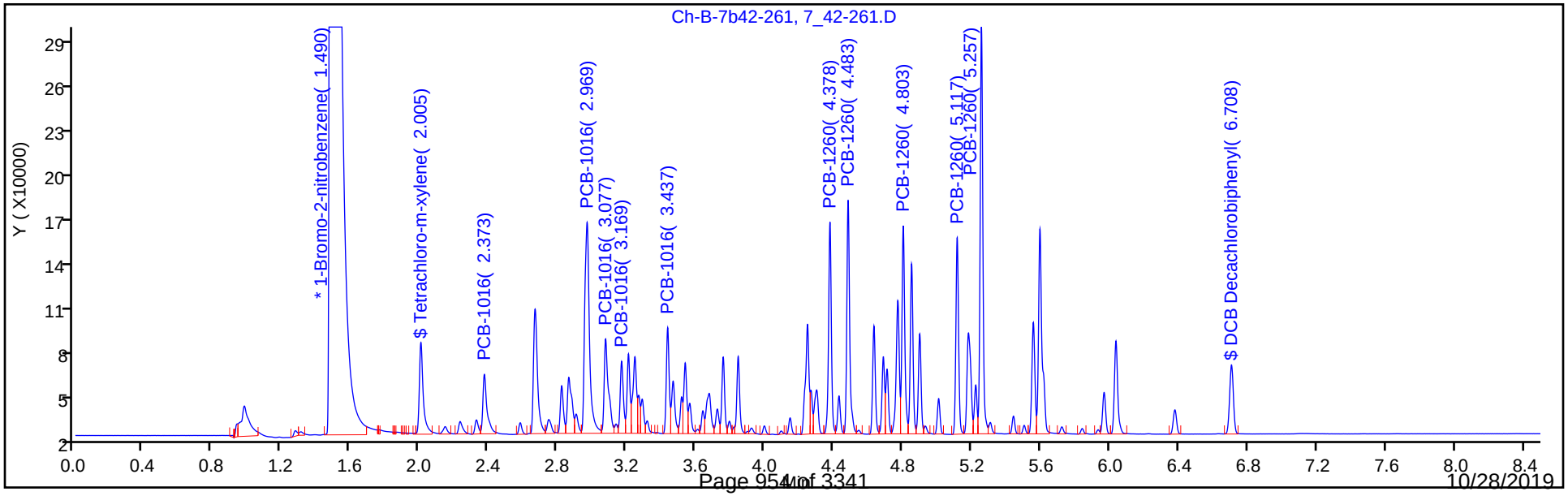
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

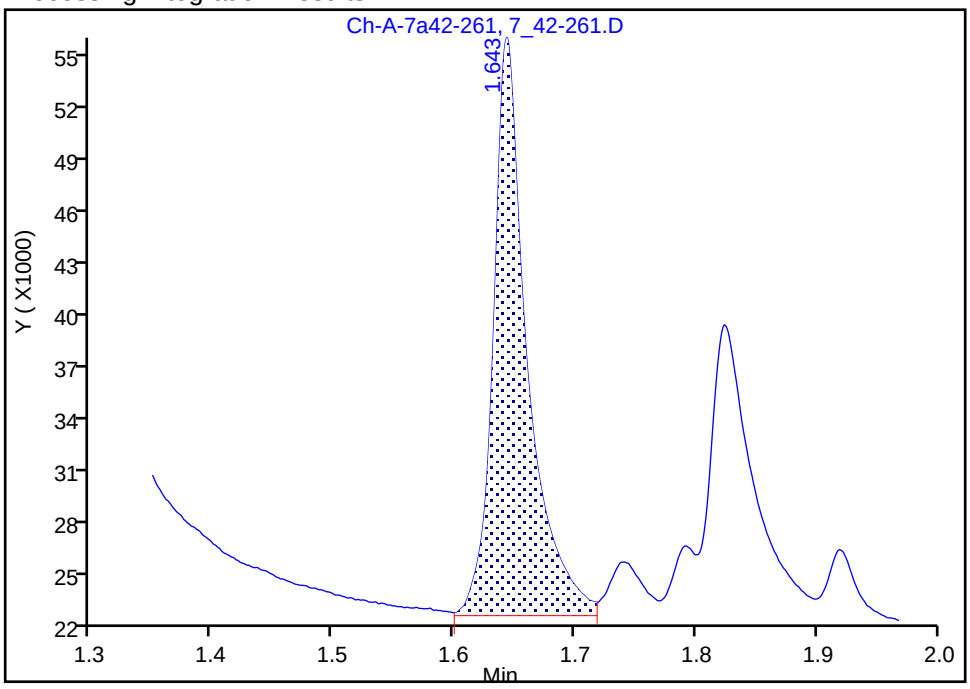
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D
Injection Date: 10-May-2019 19:33:25 Instrument ID: HP6890-7
Lims ID: IC 4
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

$ 6 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

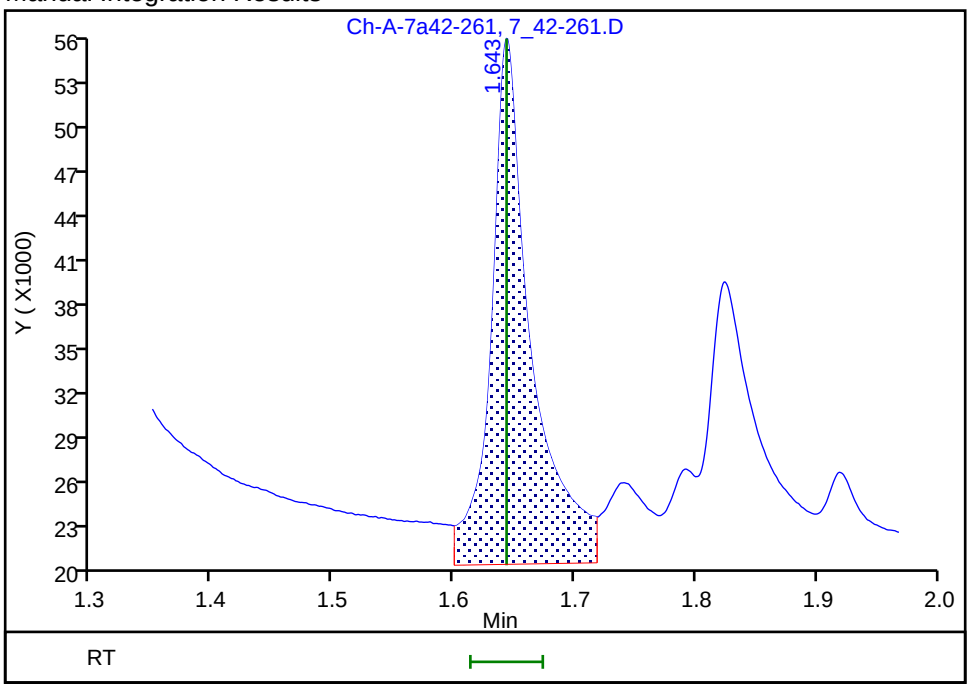
Processing Integration Results

RT: 1.64
Area: 64513
Amount: 0.004627
Amount Units: ng/uL



Manual Integration Results

RT: 1.64
Area: 81663
Amount: 0.006167
Amount Units: ng/uL



Reviewer: clarkda, 17-May-2019 13:55:25
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:18:57 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D

Injection Date: 10-May-2019 19:33:25 Instrument ID: HP6890-7

Lims ID: IC 4

Client ID:

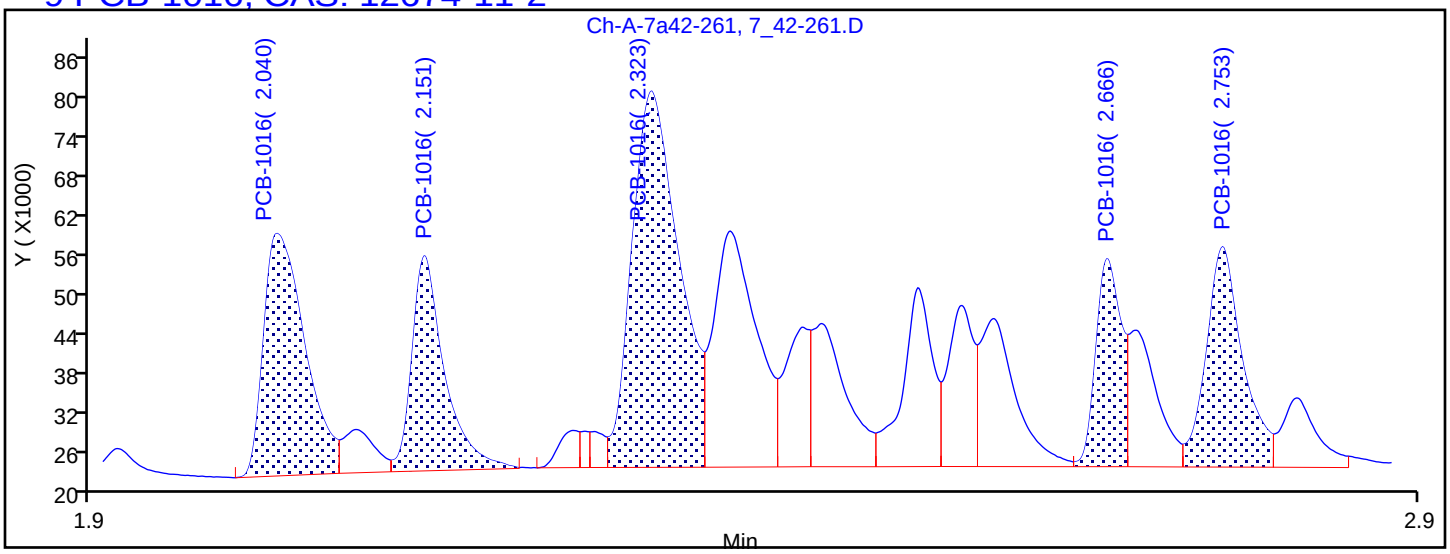
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 24

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

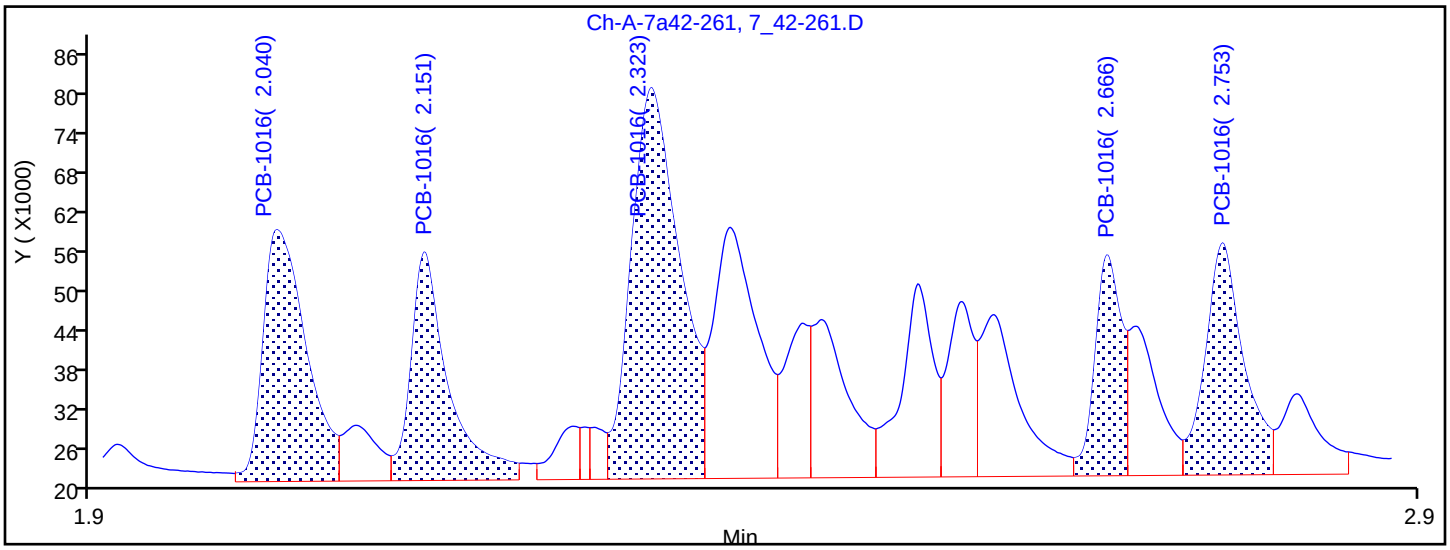
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

2.040	Response = 79457
2.151	Response = 55530
2.323	Response = 141244
2.666	Response = 41966
2.753	Response = 63930



Manual Integration Results

2.040	Response = 86753	M
2.151	Response = 68296	M
2.323	Response = 151813	M
2.666	Response = 46948	M
2.753	Response = 71466	M

Reviewer: clarkda, 17-May-2019 13:55:25

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-May-2019 19:49:15 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:00 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:52:21

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	5065617	0.5000	0.5000	
2	1.490	1.489	0.001	7154905	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	0.000	46846	0.002500	0.002814	M
2	2.005	2.004	0.001	56368	0.002500	0.002592	
						RPD = 8.22	
9 PCB-1016							M
1	2.040	2.038	0.002	48583	0.1000	0.1039	M
1	2.151	2.149	0.002	37462	0.1000	0.1089	M
1	2.326	2.317	0.009	80385	0.1000	0.0963	M
1	2.667	2.665	0.002	27146	0.1000	0.1068	M
1	2.754	2.751	0.003	40013	0.1000	0.1037	M
		Average of Peak Amounts =				0.1039	
2	2.373	2.372	0.001	39725	0.1000	0.1121	
2	2.970	2.968	0.002	158201	0.1000	0.1028	
2	3.077	3.075	0.002	64371	0.1000	0.1072	
2	3.170	3.168	0.002	36234	0.1000	0.1062	
2	3.437	3.436	0.001	48244	0.1000	0.1029	
		Average of Peak Amounts =				0.1062	
						RPD = 2.19	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.559	0.001	61745	0.1000	0.0985	
1	3.738	3.736	0.002	61360	0.1000	0.0958	
1	3.948	3.945	0.003	84413	0.1000	0.0955	
1	4.449	4.447	0.002	126904	0.1000	0.0995	
1	4.674	4.672	0.002	65142	0.1000	0.1006	
		Average of Peak Amounts =				0.0980	
2	4.378	4.378	0.000	93287	0.1000	0.1033	
2	4.483	4.483	0.001	105712	0.1000	0.1028	
2	4.803	4.803	0.001	91921	0.1000	0.1020	
2	5.116	5.115	0.001	83344	0.1000	0.1033	
2	5.257	5.257	0.000	169141	0.1000	0.1016	
		Average of Peak Amounts =				0.1026	
						RPD = 4.60	
$ 15 DCB Decachlorobiphenyl							
1	5.647	5.647	0.000	37397	0.002500	0.002557	
2	6.707	6.706	0.001	42664	0.002500	0.002870	
						RPD = 11.52	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.1_00014 Amount Added: 1.00 Units: mL

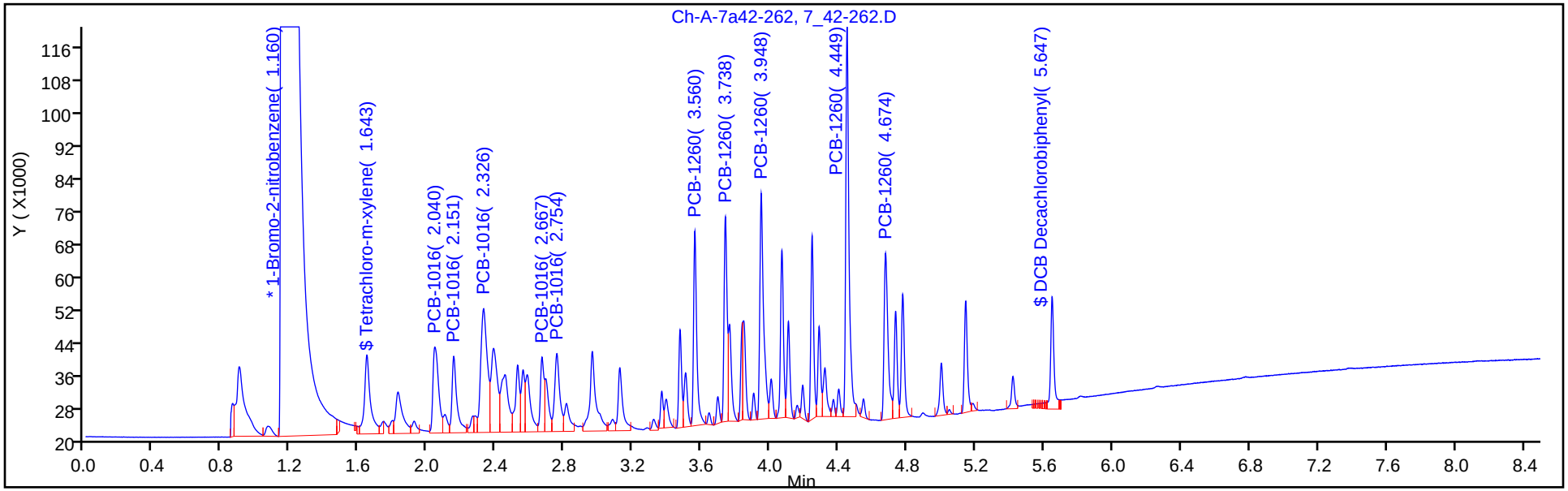
Report Date: 17-May-2019 15:19:01 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

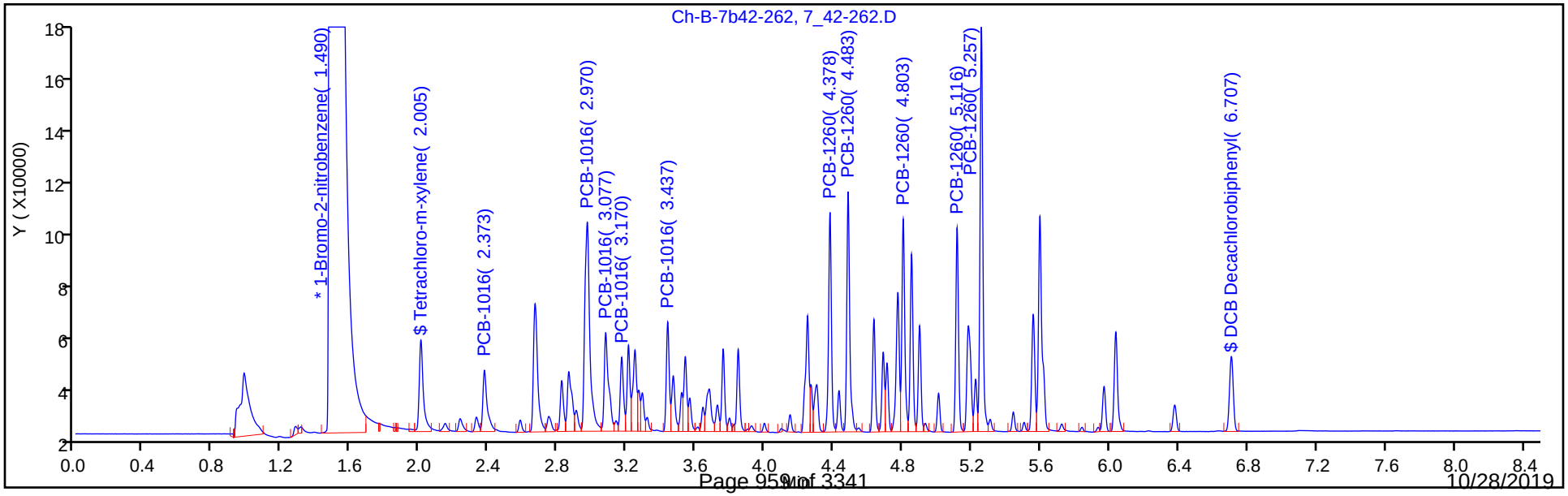
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D

Injection Date:	10-May-2019 19:49:15	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	25
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

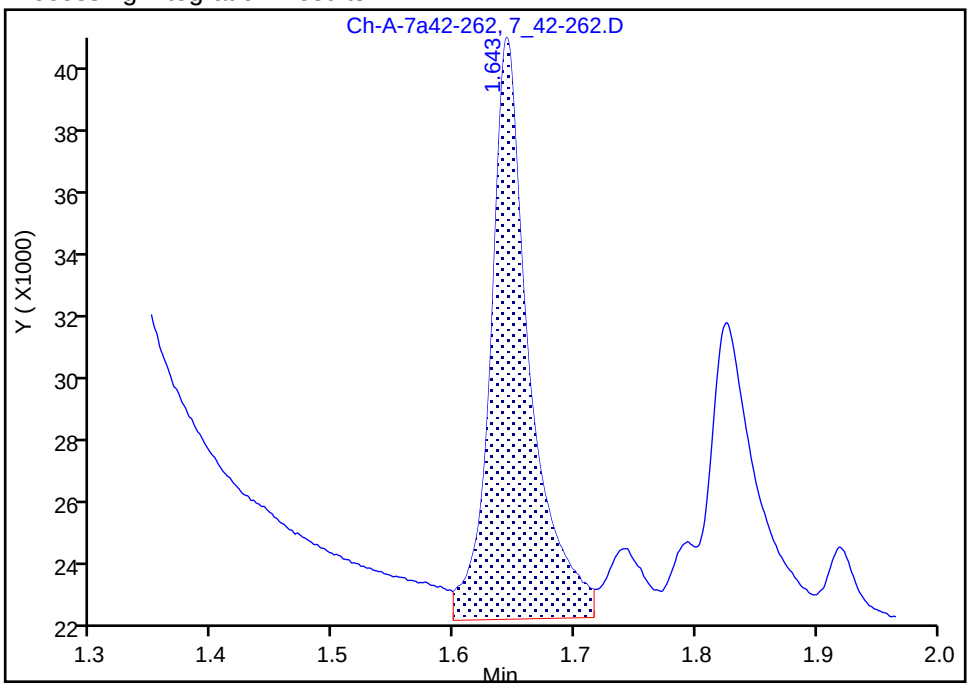
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D
Injection Date: 10-May-2019 19:49:15 Instrument ID: HP6890-7
Lims ID: IC 3
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

$ 6 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

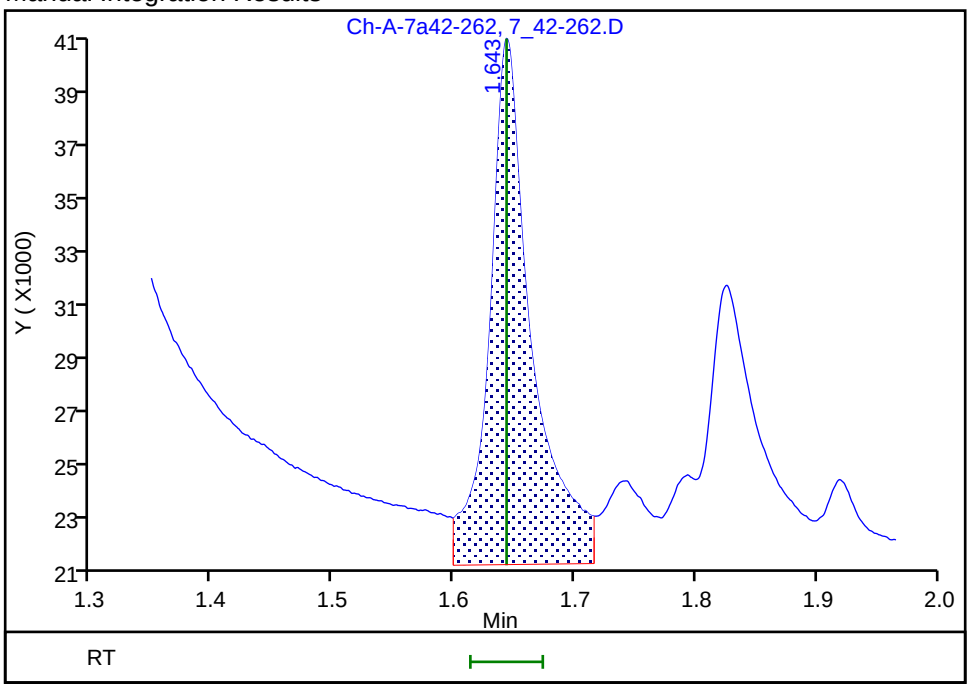
Processing Integration Results

RT: 1.64
Area: 41060
Amount: 0.002365
Amount Units: ng/uL



Manual Integration Results

RT: 1.64
Area: 46846
Amount: 0.002814
Amount Units: ng/uL



Reviewer: clarkda, 17-May-2019 13:55:05
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:19:01 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D

Injection Date: 10-May-2019 19:49:15 Instrument ID: HP6890-7

Lims ID: IC 3

Client ID:

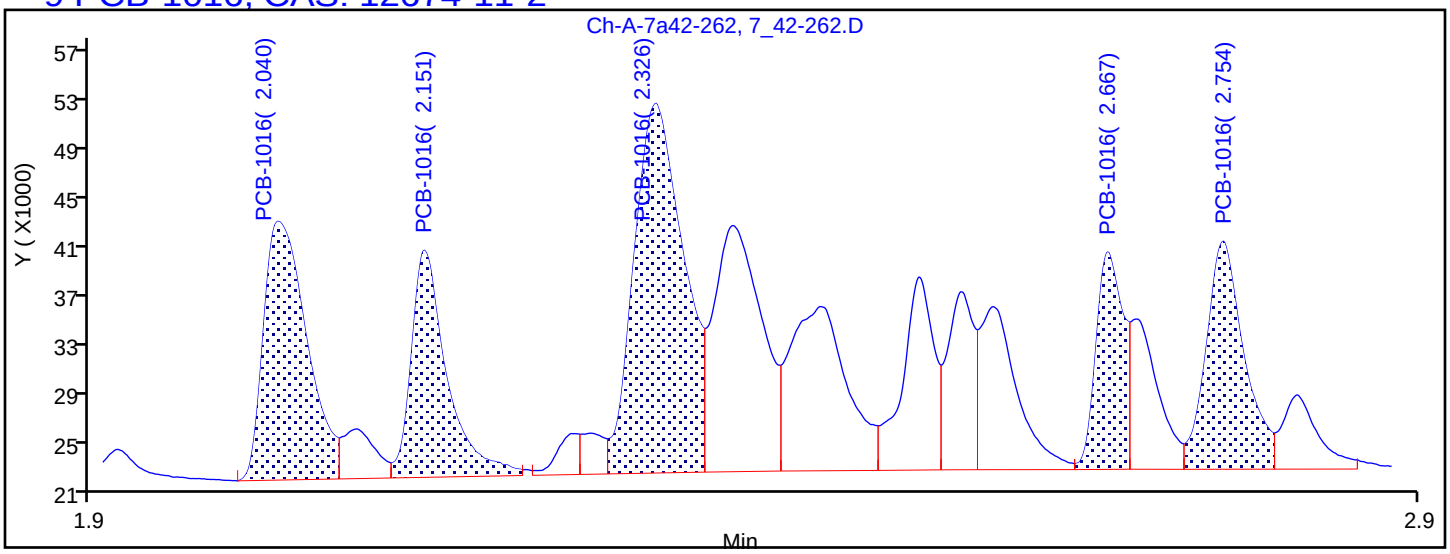
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 25

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

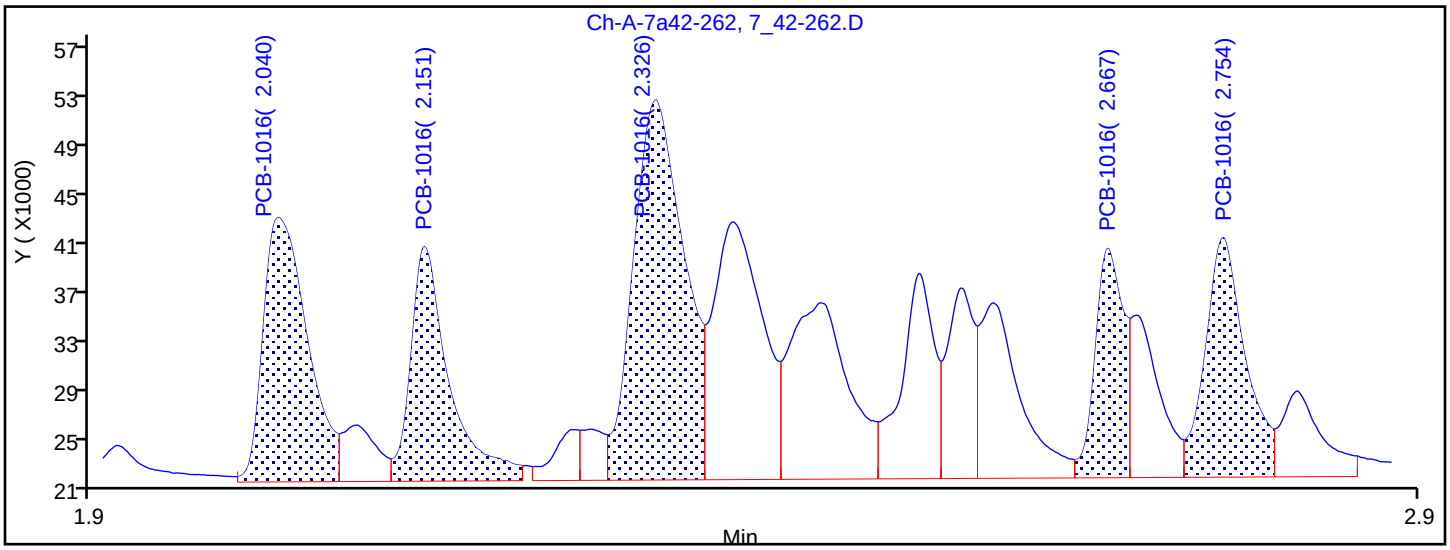
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

2.040	Response = 46396
2.151	Response = 33550
2.326	Response = 76544
2.667	Response = 24695
2.754	Response = 36139



Manual Integration Results

2.040	Response = 48583	M
2.151	Response = 37462	M
2.326	Response = 80385	M
2.667	Response = 27146	M
2.754	Response = 40013	M

Reviewer: clarkda, 17-May-2019 13:55:05

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-May-2019 20:05:05 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:05 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:46:14

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4737397	0.5000	0.5000	
2	1.489	1.489	0.000	6684686	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	-0.001	27131	0.001250	0.001415	M
2	2.004	2.004	0.000	28556	0.001250	0.001405	
						RPD = 0.66	
9 PCB-1016							M
1	2.040	2.038	0.002	25217	0.0500	0.0576	M
1	2.151	2.149	0.002	17587	0.0500	0.0547	M
1	2.328	2.317	0.011	38213	0.0500	0.0489	M
1	2.667	2.665	0.002	13231	0.0500	0.0557	M
1	2.753	2.751	0.002	19321	0.0500	0.0535	M
		Average of Peak Amounts =				0.0541	
2	2.373	2.372	0.001	19520	0.0500	0.0589	
2	2.970	2.968	0.002	81950	0.0500	0.0570	
2	3.077	3.075	0.002	33111	0.0500	0.0590	
2	3.169	3.168	0.001	18136	0.0500	0.0569	
2	3.436	3.436	0.000	24991	0.0500	0.0571	
		Average of Peak Amounts =				0.0578	
						RPD = 6.57	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.559	0.001	31277	0.0500	0.0533	
1	3.738	3.736	0.002	29649	0.0500	0.0495	
1	3.948	3.945	0.003	40667	0.0500	0.0492	
1	4.450	4.447	0.003	59764	0.0500	0.0501	
1	4.673	4.672	0.001	31977	0.0500	0.0528	
		Average of Peak Amounts =				0.0510	
2	4.378	4.378	0.000	47955	0.0500	0.0569	
2	4.483	4.483	0.001	55660	0.0500	0.0579	
2	4.803	4.803	0.001	47026	0.0500	0.0558	
2	5.116	5.115	0.001	43081	0.0500	0.0571	
2	5.257	5.257	0.000	84253	0.0500	0.0542	
		Average of Peak Amounts =				0.0564	
						RPD = 10.05	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.647	0.001	22034	0.001250	0.001239	
2	6.708	6.706	0.002	22297	0.001250	0.001605	
						RPD = 25.77	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is.05_00013 Amount Added: 1.00 Units: mL

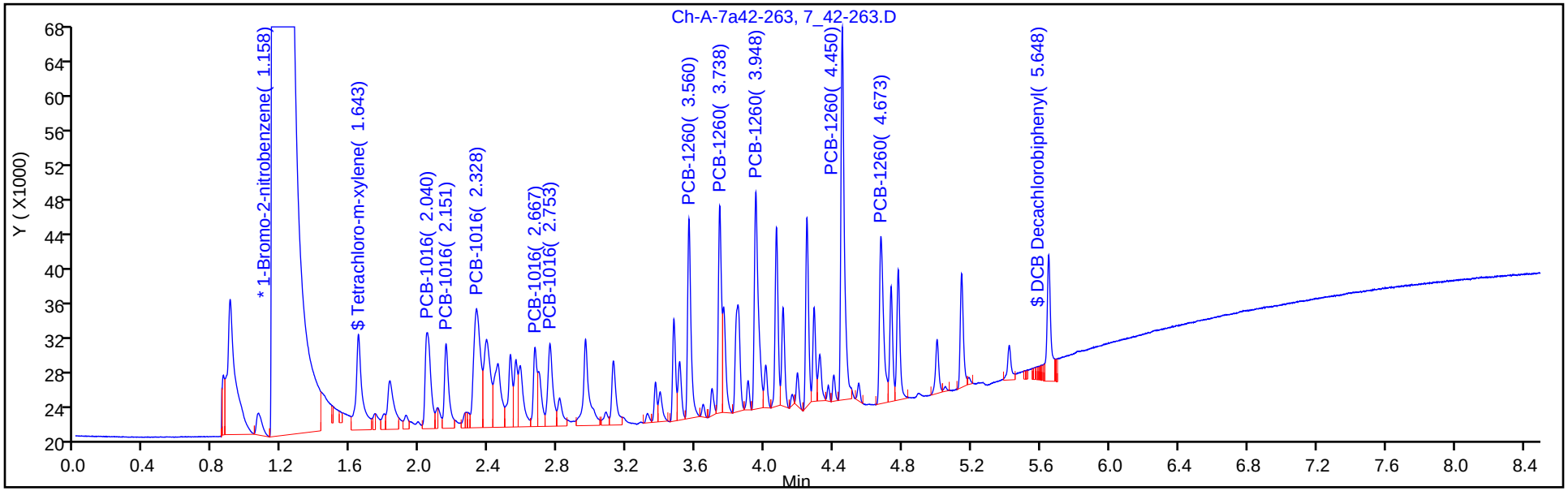
Report Date: 17-May-2019 15:19:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

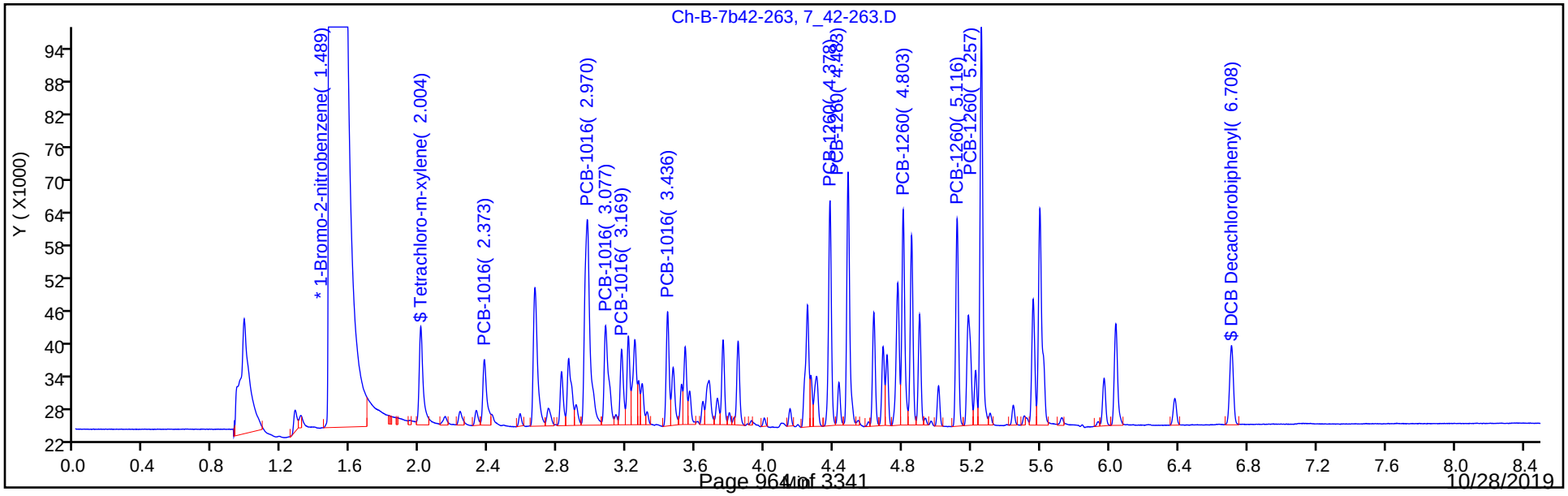
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D

Injection Date:	10-May-2019 20:05:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	26
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

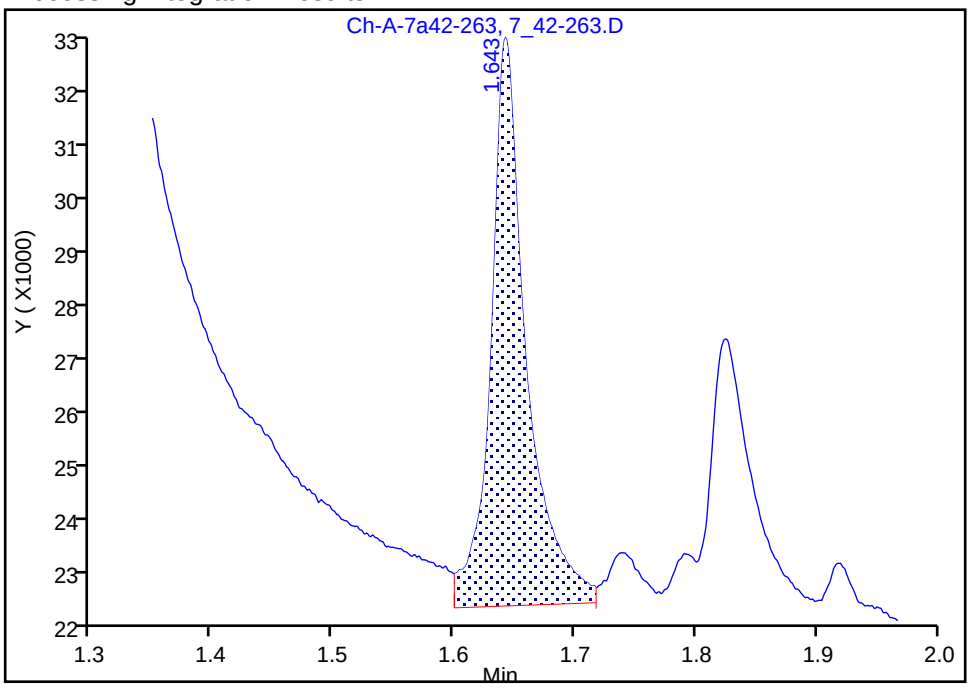
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D
Injection Date: 10-May-2019 20:05:05 Instrument ID: HP6890-7
Lims ID: IC 2
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

$ 6 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

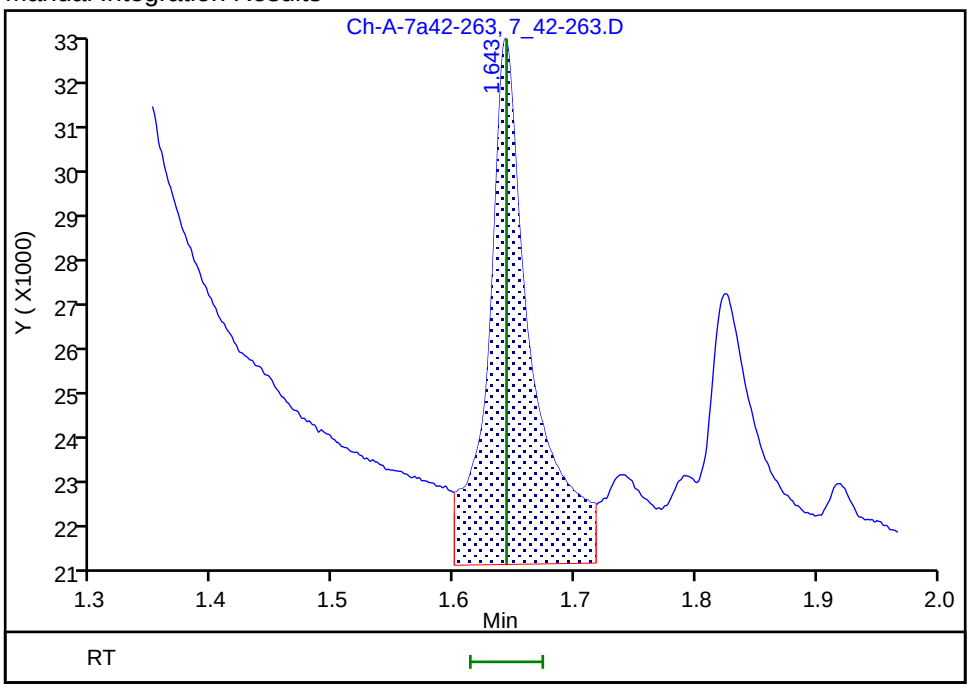
Processing Integration Results

RT: 1.64
Area: 20525
Amount: 0.001172
Amount Units: ng/uL



Manual Integration Results

RT: 1.64
Area: 27131
Amount: 0.001415
Amount Units: ng/uL



Reviewer: clarkda, 17-May-2019 13:54:40
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:19:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D

Injection Date: 10-May-2019 20:05:05 Instrument ID: HP6890-7

Lims ID: IC 2

Client ID:

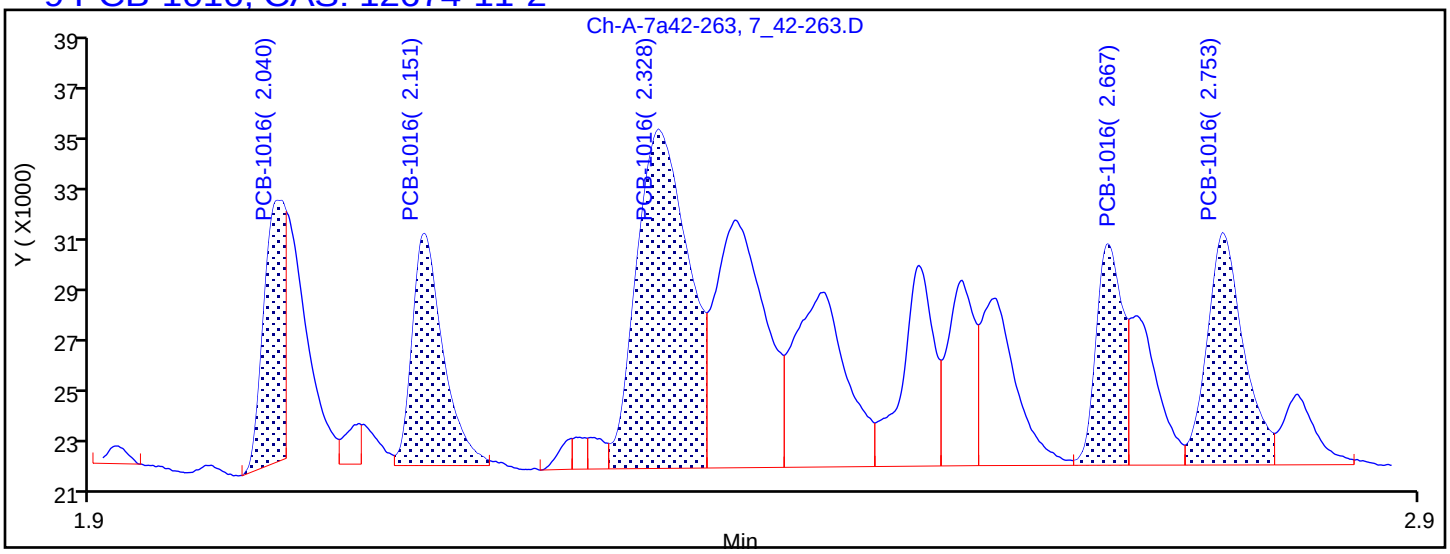
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 26

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

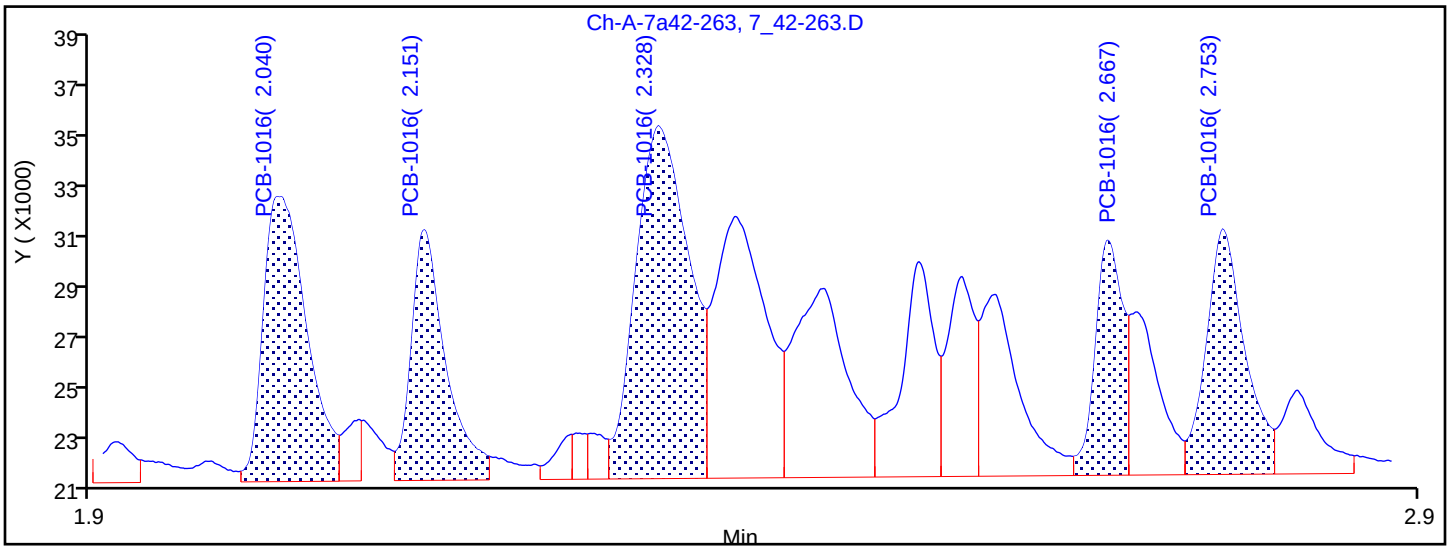
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

2.040	Response = 11102
2.151	Response = 14441
2.328	Response = 35734
2.667	Response = 11848
2.753	Response = 17193



Manual Integration Results

2.040	Response = 25217	M
2.151	Response = 17587	M
2.328	Response = 38213	M
2.667	Response = 13231	M
2.753	Response = 19321	M

Reviewer: clarkda, 17-May-2019 13:54:40

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-May-2019 20:21:00 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:08 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:48:31

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4754717	0.5000	0.5000	
2	1.488	1.488	0.000	6719325	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.642	1.642	0.000	13767	0.000500	0.000289	M
2	2.003	2.003	0.000	12657	0.000500	0.000620	
						RPD = 72.66	
9 PCB-1016							M
1	2.042	2.042	0.000	11197	0.0200	0.0255	M
1	2.151	2.151	0.000	7295	0.0200	0.0226	M
1	2.330	2.330	0.000	14680	0.0200	0.0187	M
1	2.667	2.667	0.000	5141	0.0200	0.0216	M
1	2.754	2.754	0.000	7763	0.0200	0.0214	M
		Average of Peak Amounts =				0.0220	
2	2.373	2.373	0.000	7284	0.0200	0.0219	
2	2.971	2.971	0.000	34566	0.0200	0.0239	
2	3.077	3.077	0.000	13255	0.0200	0.0235	
2	3.169	3.169	0.000	7077	0.0200	0.0221	
2	3.435	3.435	0.000	11183	0.0200	0.0254	
		Average of Peak Amounts =				0.0234	
						RPD = 6.13	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.560	0.000	13168	0.0200	0.0224	
1	3.739	3.739	0.000	12576	0.0200	0.0209	
1	3.948	3.948	0.000	16974	0.0200	0.0205	
1	4.450	4.450	0.000	23824	0.0200	0.0199	
1	4.675	4.675	0.000	13132	0.0200	0.0216	
		Average of Peak Amounts =				0.0211	
2	4.378	4.378	0.000	21589	0.0200	0.0255	
2	4.483	4.483	0.000	24987	0.0200	0.0259	
2	4.803	4.803	0.000	21232	0.0200	0.0251	
2	5.115	5.115	0.000	19057	0.0200	0.0251	
2	5.257	5.257	0.000	37116	0.0200	0.0237	
		Average of Peak Amounts =				0.0251	
						RPD = 17.38	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	14330	0.000500	0.000449	
2	6.707	6.707	0.000	9987	0.000500	0.000715	
						RPD = 45.84	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is.02_00015 Amount Added: 1.00 Units: mL

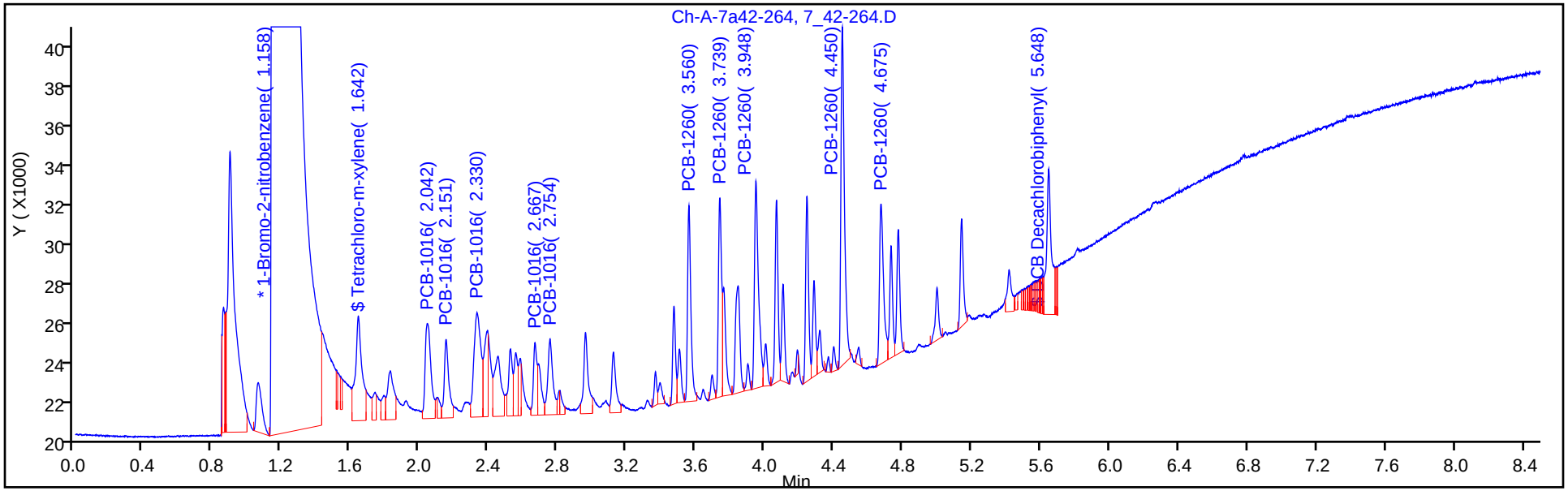
Report Date: 17-May-2019 15:19:09 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

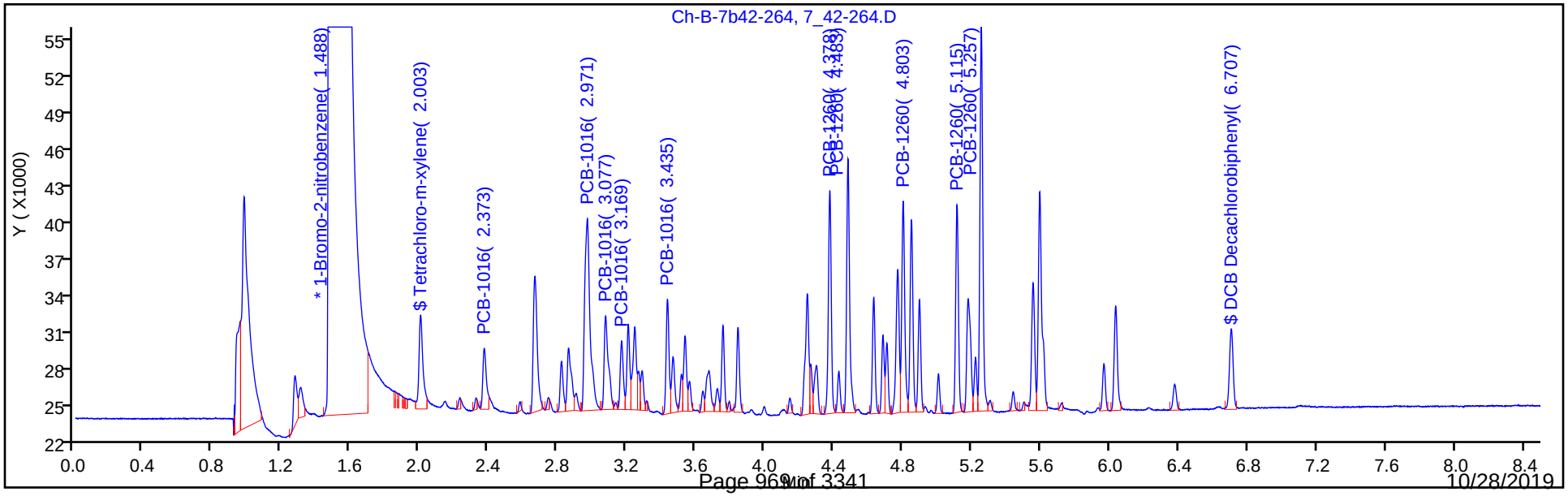
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D

Injection Date:	10-May-2019 20:21:00	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	27
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

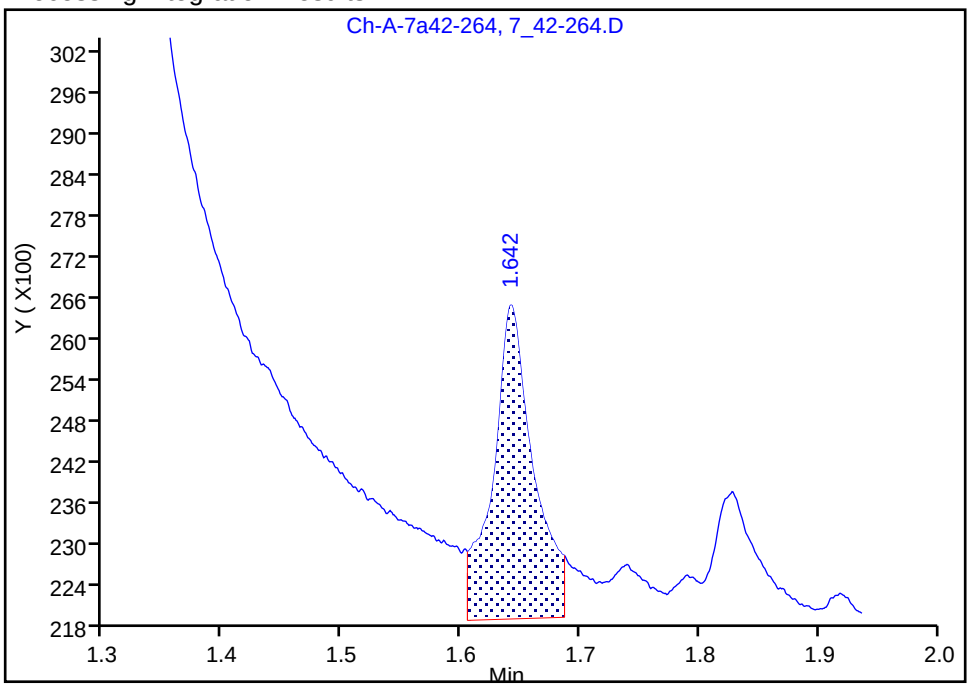
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D
Injection Date: 10-May-2019 20:21:00 Instrument ID: HP6890-7
Lims ID: IC 1
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

$ 6 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

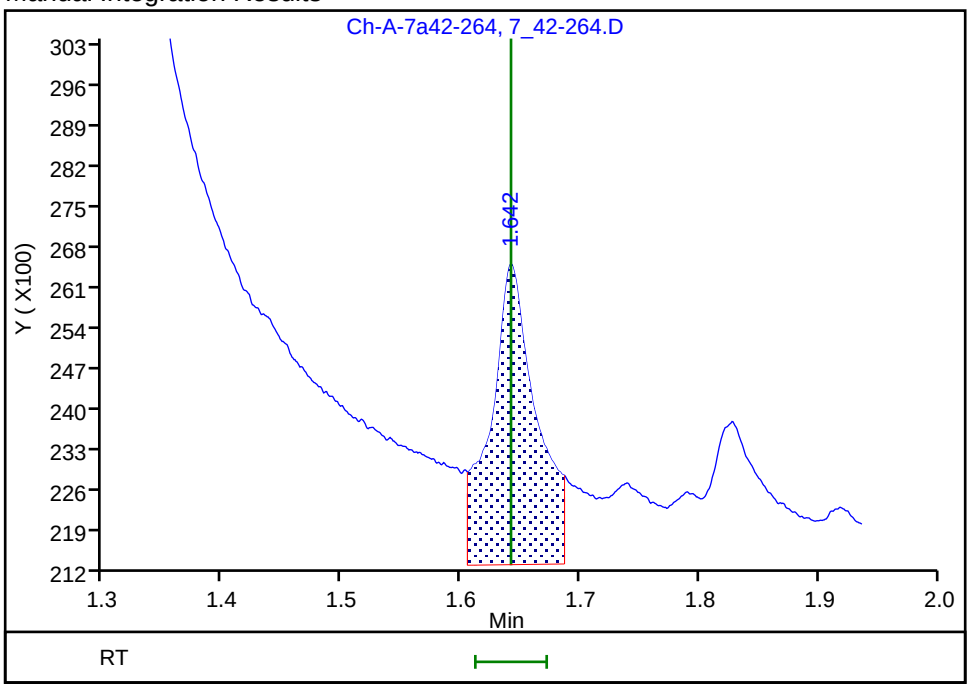
Processing Integration Results

RT: 1.64
Area: 10751
Amount: 0.000345
Amount Units: ng/uL



Manual Integration Results

RT: 1.64
Area: 13767
Amount: 0.000289
Amount Units: ng/uL



Reviewer: clarkda, 17-May-2019 13:54:28
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:19:09 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D

Injection Date: 10-May-2019 20:21:00 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

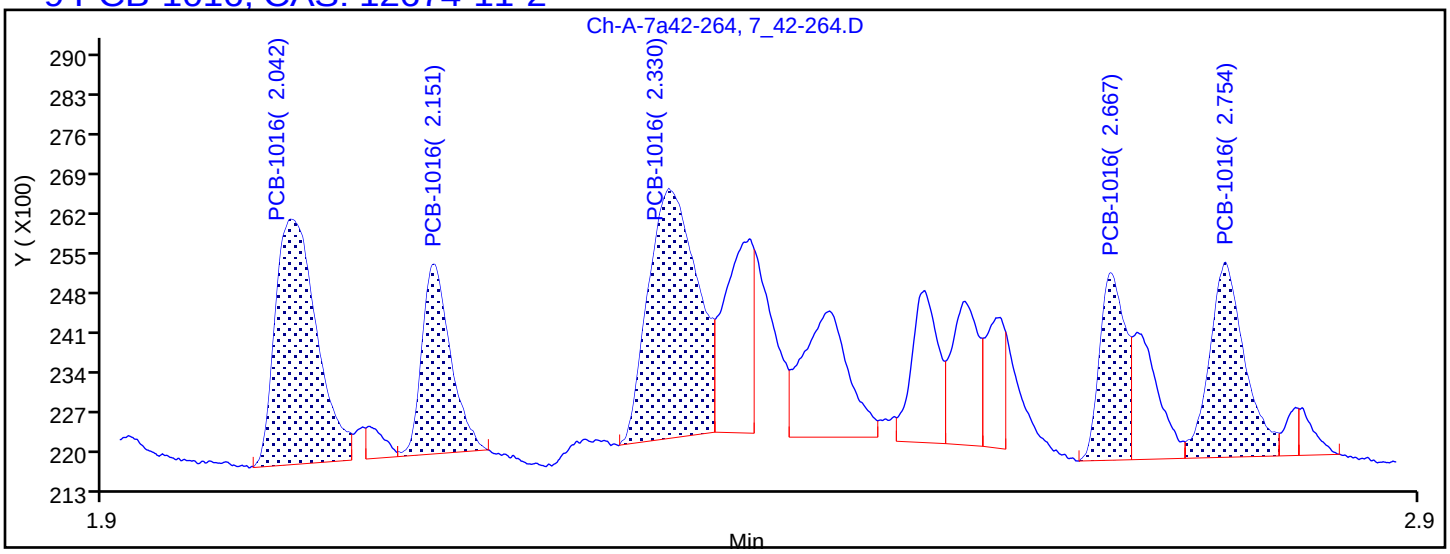
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 27

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

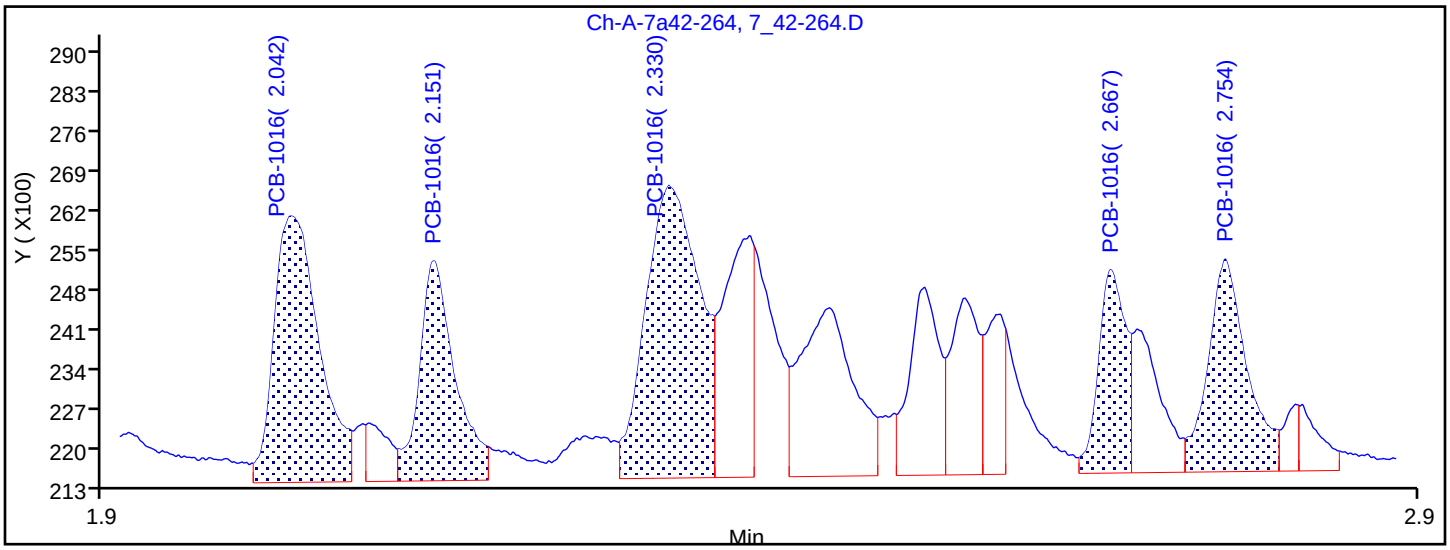
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

2.042	Response = 9472
2.151	Response = 5045
2.330	Response = 11400
2.667	Response = 4462
2.754	Response = 6410



Manual Integration Results

2.042	Response = 11197	M
2.151	Response = 7295	M
2.330	Response = 14680	M
2.667	Response = 5141	M
2.754	Response = 7763	M

Reviewer: clarkda, 17-May-2019 13:54:28

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 18:45 Calibration End Date: 05/10/2019 20:21 Calibration ID: 36954

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/27	7_42-264.D
Level 2	IC 480-472294/26	7_42-263.D
Level 3	IC 480-472294/25	7_42-262.D
Level 4	IC 480-472294/24	7_42-261.D
Level 5	ICIS 480-472294/23	7_42-260.D
Level 6	IC 480-472294/22	7_42-259.D
Level 7	IC 480-472294/21	7_42-258.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
PCB-1016 Peak 1	0.0271 0.0213	0.0292 0.0197	0.0278	0.0255	0.0228	Ave		0.0248				14.4		20.0			
PCB-1016 Peak 2	0.1286 0.0962	0.1226 0.0929	0.1106	0.1039	0.0984	Ave		0.1076				12.7		20.0			
PCB-1016 Peak 3	0.0493 0.0360	0.0495 0.0345	0.0450	0.0415	0.0380	Ave		0.0420				14.7		20.0			
PCB-1016 Peak 4	0.0263 0.0214	0.0271 0.0209	0.0253	0.0237	0.0221	Ave		0.0239				10.3		20.0			
PCB-1016 Peak 5	0.0416 0.0284	0.0374 0.0282	0.0337	0.0312	0.0288	Ave		0.0328				15.7		20.0			
PCB-1260 Peak 1	0.0803 0.0547	0.0717 0.0529	0.0652	0.0605	0.0563	Ave		0.0631				15.9		20.0			
PCB-1260 Peak 2	0.0930 0.0609	0.0833 0.0596	0.0739	0.0692	0.0632	Ave		0.0719				17.3		20.0			
PCB-1260 Peak 3	0.0790 0.0548	0.0703 0.0555	0.0642	0.0608	0.0563	Ave		0.0630				14.3		20.0			
PCB-1260 Peak 4	0.0709 0.0491	0.0644 0.0479	0.0582	0.0544	0.0498	Ave		0.0564				15.4		20.0			
PCB-1260 Peak 5	0.1381 0.1068	0.1260 0.1042	0.1182	0.1136	0.1074	Ave		0.1163				10.5		20.0			
Tetrachloro-m-xylene	1.8837 1.3241	1.7087 1.3057	1.5756	1.4811	1.3593	Ave		1.5198				14.3		20.0			
DCB Decachlorobiphenyl	+++++ 0.8613	1.3342 0.8164	1.1926	1.0795	0.9488	Ave		1.0388				19.3		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 18:45 Calibration End Date: 05/10/2019 20:21 Calibration ID: 36954

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/27	7_42-264.D
Level 2	IC 480-472294/26	7_42-263.D
Level 3	IC 480-472294/25	7_42-262.D
Level 4	IC 480-472294/24	7_42-261.D
Level 5	ICIS 480-472294/23	7_42-260.D
Level 6	IC 480-472294/22	7_42-259.D
Level 7	IC 480-472294/21	7_42-258.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
PCB-1016 Peak 1	BNB	Ave	7284 292658	19520 559937	39725	66728	154658	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 2	BNB	Ave	34566 1322641	81950 2640811	158201	271804	665910	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 3	BNB	Ave	13255 495450	33111 980258	64371	108401	257380	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 4	BNB	Ave	7077 294895	18136 595538	36234	62087	149320	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1016 Peak 5	BNB	Ave	11183 389919	24991 803082	48244	81472	195124	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 1	BNB	Ave	21589 751997	47955 1503875	93287	158281	381139	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 2	BNB	Ave	24987 837265	55660 1696039	105712	180837	427896	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 3	BNB	Ave	21232 753689	47026 1577674	91921	159068	381365	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 4	BNB	Ave	19057 675662	43081 1361142	83344	142378	337287	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
PCB-1260 Peak 5	BNB	Ave	37116 1468840	84253 2962532	169141	296999	727246	0.0200 1.00	0.0500 2.00	0.100	0.200	0.500
Tetrachloro-m-xylene	BNB	Ave	12657 455252	28556 928208	56368	96824	230059	0.000500 0.0250	0.00125 0.0500	0.00250	0.00500	0.0125
DCB Decachlorobiphenyl	BNB	Ave	+++++ 296133	22297 580394	42664	70570	160577	+++++ 0.0250	0.00125 0.0500	0.00250	0.00500	0.0125

Curve Type Legend:
Ave = Average ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-258.D
Lims ID: IC 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 10-May-2019 18:45:49 ALS Bottle#: 0 Worklist Smp#: 21
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:44:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	5024466	0.5000	0.5000	
2	1.490	1.490	0.000	7109137	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.642	0.001	638054	0.0500	0.0496	
2	2.005	2.003	0.002	928208	0.0500	0.0430	
						RPD = 14.37	
9 PCB-1016							
1	2.037	2.042	-0.005	772240	2.00	1.66	
1	2.148	2.151	-0.003	576505	2.00	1.69	
1	2.311	2.330	-0.019	1807677	2.00	2.18	
1	2.663	2.667	-0.005	468674	2.00	1.86	
1	2.748	2.754	-0.006	726884	2.00	1.90	
		Average of Peak Amounts =				1.86	
2	2.372	2.373	0.000	559937	2.00	1.59	
2	2.968	2.971	-0.003	2640811	2.00	1.73	
2	3.075	3.077	-0.002	980258	2.00	1.64	
2	3.168	3.169	-0.001	595538	2.00	1.76	
2	3.436	3.435	0.001	803082	2.00	1.72	
		Average of Peak Amounts =				1.69	
						RPD = 9.66	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.558	3.560	-0.002	1174156	2.00	1.89	
1	3.733	3.739	-0.006	1301052	2.00	2.05	
1	3.942	3.948	-0.006	1790717	2.00	2.04	
1	4.445	4.450	-0.005	2479260	2.00	1.96	
1	4.669	4.675	-0.006	1236960	2.00	1.93	
		Average of Peak Amounts =				1.97	
2	4.378	4.378	0.000	1503875	2.00	1.68	
2	4.483	4.483	0.000	1696039	2.00	1.66	
2	4.803	4.803	-0.001	1577674	2.00	1.76	
2	5.116	5.115	0.001	1361142	2.00	1.70	
2	5.256	5.257	-0.001	2962532	2.00	1.79	
		Average of Peak Amounts =				1.72	
						RPD = 13.85	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	522803	0.0500	0.0492	
2	6.707	6.707	0.000	580394	0.0500	0.0393	
						RPD = 22.43	

Reagents:

1660sur/is2.0_00015 Amount Added: 1.00 Units: mL

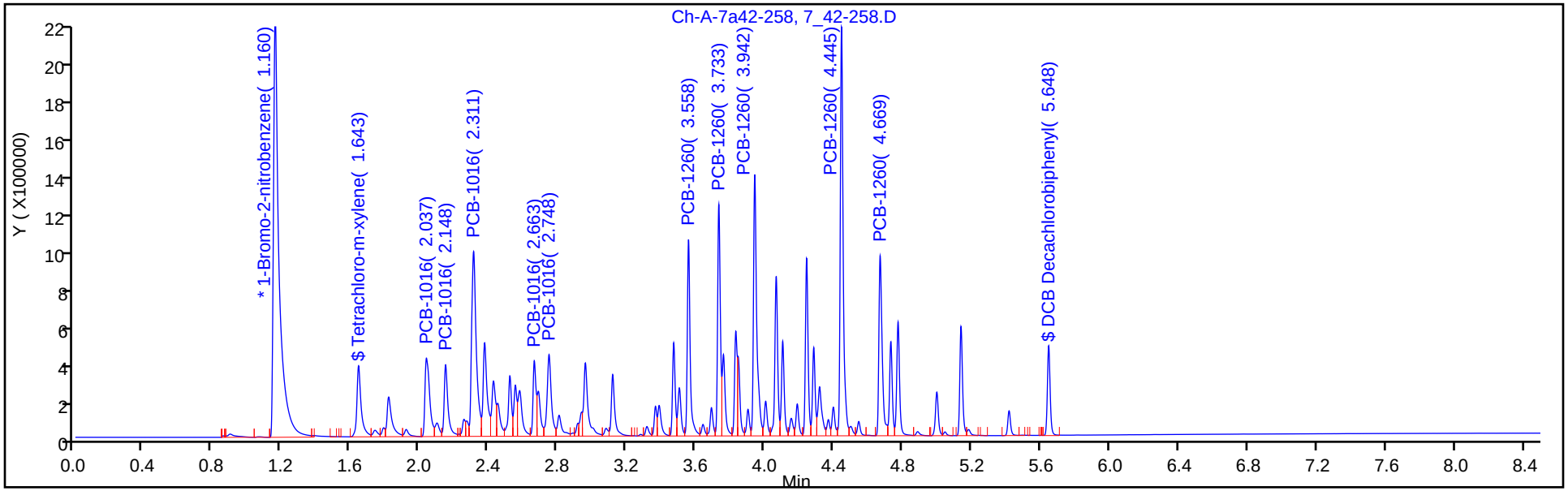
Report Date: 17-May-2019 15:18:45 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

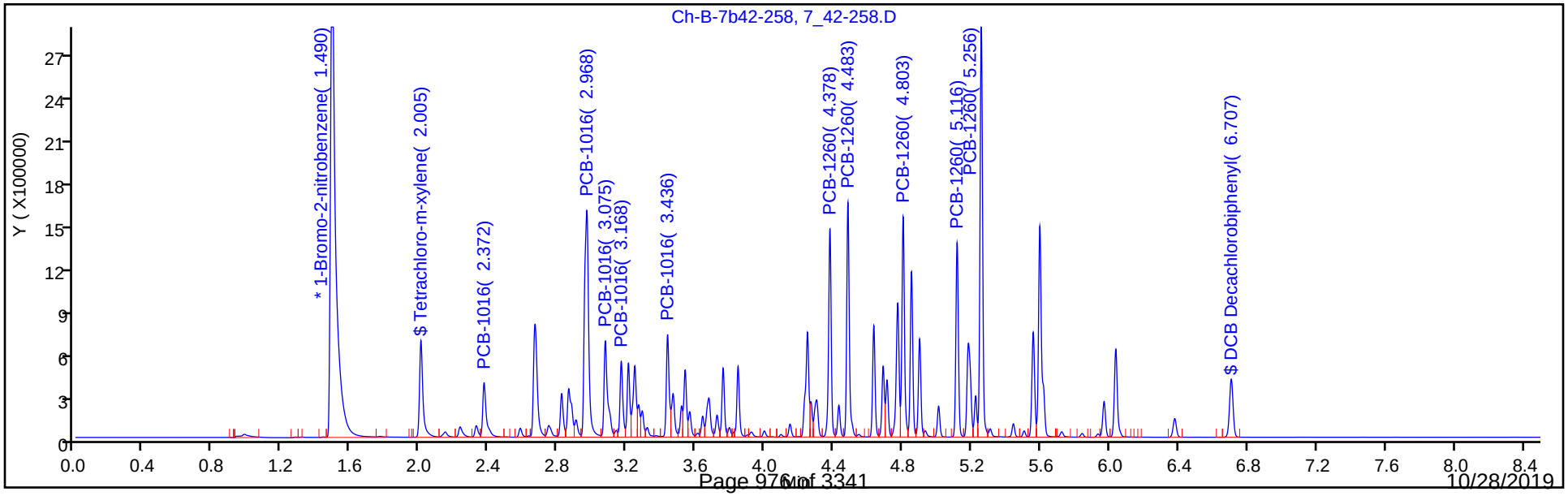
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-258.D

Injection Date:	10-May-2019 18:45:49	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 7			Worklist Smp#:	21
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-259.D
Lims ID: IC 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 10-May-2019 19:01:36 ALS Bottle#: 0 Worklist Smp#: 22
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:48 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:59:01

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4830758	0.5000	0.5000	
2	1.488	1.490	-0.002	6876428	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.642	0.000	307771	0.0250	0.0245	
2	2.003	2.003	0.000	455252	0.0250	0.0218	
						RPD = 11.58	
9 PCB-1016							
1	2.038	2.042	-0.004	373175	1.00	0.8366	
1	2.148	2.151	-0.003	288083	1.00	0.8785	
1	2.313	2.330	-0.017	836853	1.00	1.05	
1	2.663	2.667	-0.004	220295	1.00	0.9091	
1	2.749	2.754	-0.005	346715	1.00	0.9421	
		Average of Peak Amounts =				0.9235	
2	2.371	2.373	-0.001	292658	1.00	0.8591	
2	2.968	2.971	-0.003	1322641	1.00	0.8939	
2	3.075	3.077	-0.002	495450	1.00	0.8583	
2	3.168	3.169	-0.001	294895	1.00	0.8990	
2	3.436	3.435	0.001	389919	1.00	0.8656	
		Average of Peak Amounts =				0.8752	
						RPD = 5.37	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.558	3.560	-0.002	568479	1.00	0.9505	
1	3.734	3.739	-0.005	622491	1.00	1.02	
1	3.943	3.948	-0.005	861212	1.00	1.02	
1	4.447	4.450	-0.003	1235279	1.00	1.02	
1	4.670	4.675	-0.005	599989	1.00	0.9712	
		Average of Peak Amounts =				1.00	
2	4.378	4.378	0.000	751997	1.00	0.8666	
2	4.483	4.483	0.000	837265	1.00	0.8472	
2	4.803	4.803	0.000	753689	1.00	0.8698	
2	5.116	5.115	0.001	675662	1.00	0.8709	
2	5.256	5.257	-0.001	1468840	1.00	0.9181	
		Average of Peak Amounts =				0.8745	
						RPD = 12.96	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	261462	0.0250	0.0251	
2	6.707	6.707	0.000	296133	0.0250	0.0207	
						RPD = 19.16	

Reagents:

1660sur/is1.0_00014 Amount Added: 1.00 Units: mL

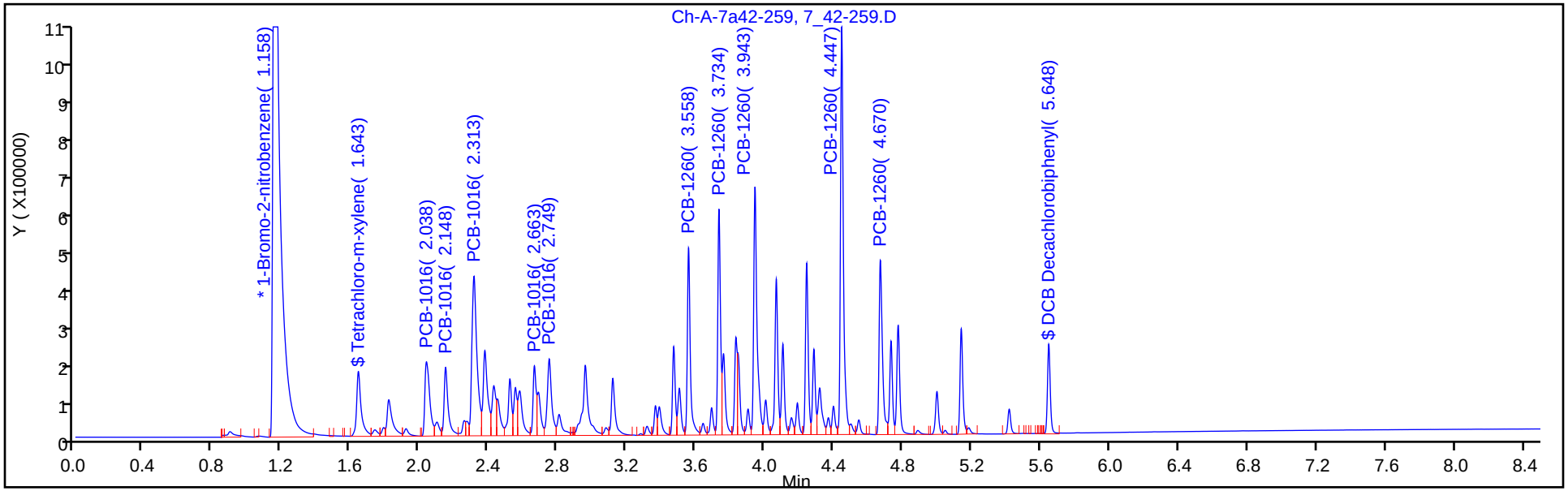
Report Date: 17-May-2019 15:18:50 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

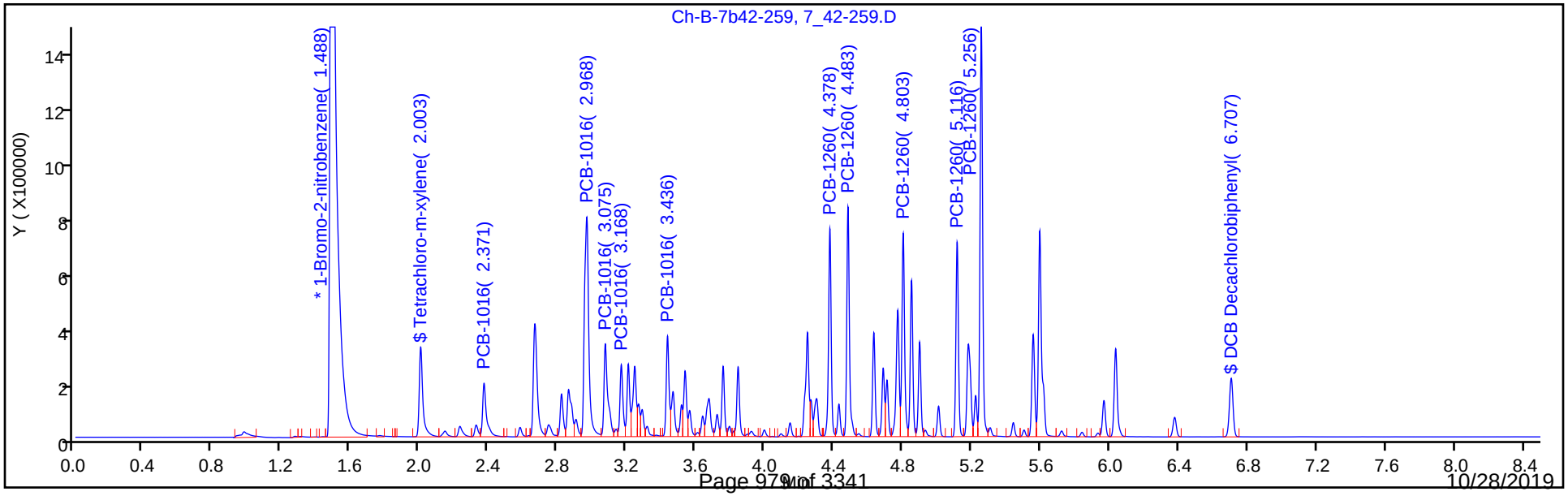
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-259.D

Injection Date:	10-May-2019 19:01:36	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 6			Worklist Smp#:	22
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-260.D
Lims ID: ICIS
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 10-May-2019 19:17:32 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:52 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:59:06

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4757621	0.5000	0.5000	
2	1.489	1.489	0.000	6769847	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.643	1.643	0.000	153942	0.0125	0.0120	
2	2.004	2.004	0.000	230059	0.0125	0.0112	
						RPD = 7.06	
9 PCB-1016							
1	2.038	2.038	0.000	186049	0.5000	0.4235	
1	2.149	2.149	0.000	141094	0.5000	0.4369	
1	2.317	2.317	0.000	385447	0.5000	0.4915	
1	2.665	2.665	0.000	105945	0.5000	0.4439	
1	2.751	2.751	0.000	165530	0.5000	0.4567	
		Average of Peak Amounts =				0.4505	
2	2.372	2.372	0.000	154658	0.5000	0.4611	
2	2.968	2.968	0.000	665910	0.5000	0.4571	
2	3.075	3.075	0.000	257380	0.5000	0.4529	
2	3.168	3.168	0.000	149320	0.5000	0.4624	
2	3.436	3.436	0.000	195124	0.5000	0.4400	
		Average of Peak Amounts =				0.4547	
						RPD = 0.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.559	3.559	0.000	278001	0.5000	0.4720	
1	3.736	3.736	0.000	293956	0.5000	0.4885	
1	3.945	3.945	0.000	412054	0.5000	0.4966	
1	4.447	4.447	0.000	598980	0.5000	0.5002	
1	4.672	4.672	0.000	289141	0.5000	0.4752	
		Average of Peak Amounts =				0.4865	
2	4.378	4.378	0.000	381139	0.5000	0.4462	
2	4.483	4.483	0.000	427896	0.5000	0.4398	
2	4.803	4.803	0.000	381365	0.5000	0.4471	
2	5.115	5.115	0.000	337287	0.5000	0.4416	
2	5.257	5.257	0.000	727246	0.5000	0.4617	
		Average of Peak Amounts =				0.4473	
						RPD = 8.40	
$ 15 DCB Decachlorobiphenyl							
1	5.647	5.647	0.000	135858	0.0125	0.0128	
2	6.706	6.706	0.000	160577	0.0125	0.0114	
						RPD = 11.25	

Reagents:

1660sur/is0.5_00070 Amount Added: 1.00 Units: mL

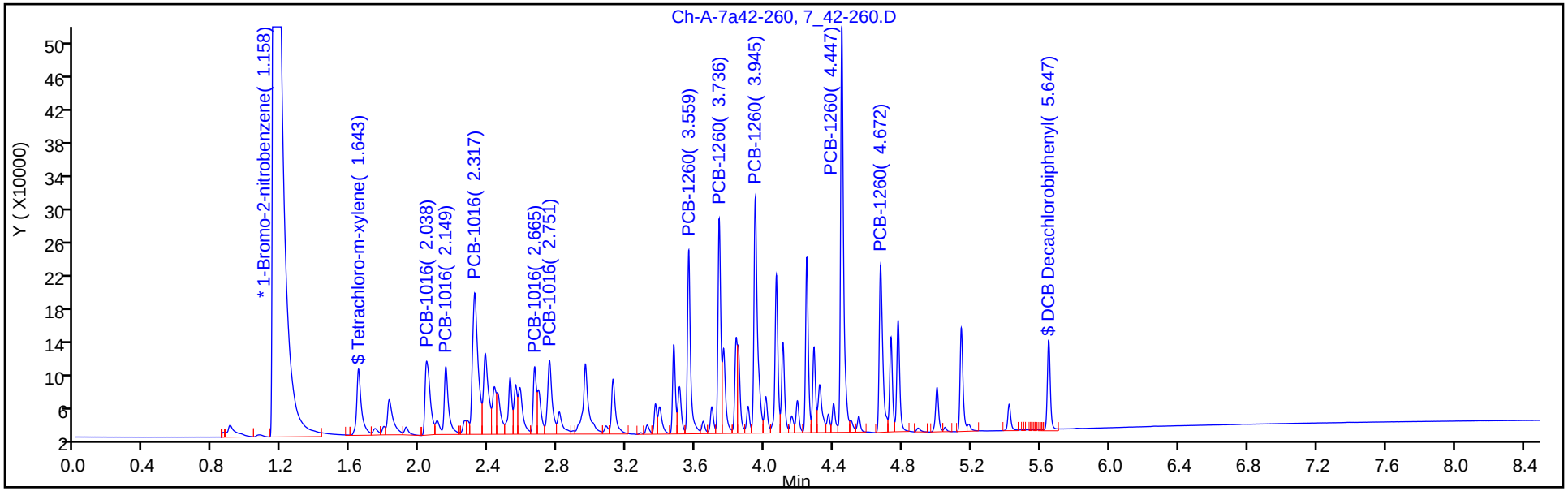
Report Date: 17-May-2019 15:18:54 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

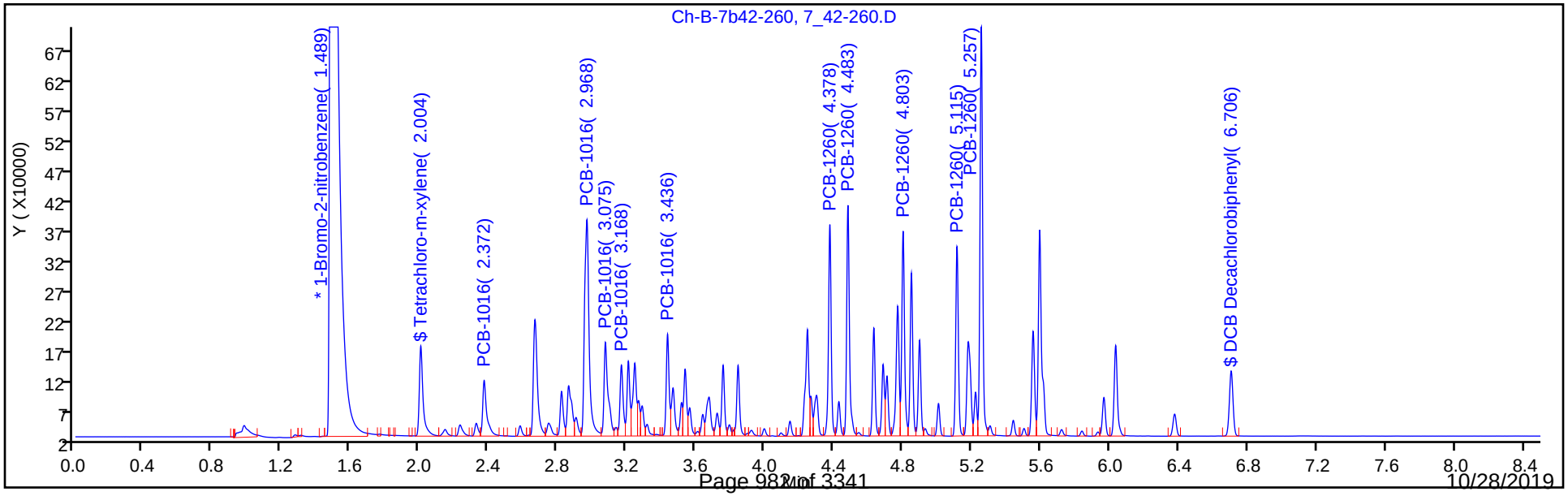
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-260.D

Injection Date:	10-May-2019 19:17:32	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	ICIS			Worklist Smp#:	23
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D
Lims ID: IC 4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 10-May-2019 19:33:25 ALS Bottle#: 0 Worklist Smp#: 24
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:56 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:52:33

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.159	1.158	0.001	4617786	0.5000	0.5000	
2	1.490	1.489	0.001	6537148	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	0.000	81663	0.005000	0.006167	M
2	2.005	2.004	0.001	96824	0.005000	0.004873	
						RPD = 23.44	
9 PCB-1016							M
1	2.040	2.038	0.002	86753	0.2000	0.2035	M
1	2.151	2.149	0.002	68296	0.2000	0.2179	M
1	2.323	2.317	0.005	151813	0.2000	0.1994	M
1	2.666	2.665	0.001	46948	0.2000	0.2027	M
1	2.753	2.751	0.002	71466	0.2000	0.2032	M
		Average of Peak Amounts =				0.2053	
2	2.373	2.372	0.001	66728	0.2000	0.2060	
2	2.969	2.968	0.001	271804	0.2000	0.1932	
2	3.077	3.075	0.002	108401	0.2000	0.1975	
2	3.169	3.168	0.001	62087	0.2000	0.1991	
2	3.437	3.436	0.001	81472	0.2000	0.1902	
		Average of Peak Amounts =				0.1972	
						RPD = 4.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.559	3.559	0.000	113460	0.2000	0.1985	
1	3.737	3.736	0.001	115316	0.2000	0.1974	
1	3.947	3.945	0.002	161081	0.2000	0.2000	
1	4.448	4.447	0.001	234777	0.2000	0.2020	
1	4.674	4.672	0.002	115106	0.2000	0.1949	
		Average of Peak Amounts =				0.1986	
2	4.378	4.378	0.000	158281	0.2000	0.1919	
2	4.483	4.483	0.001	180837	0.2000	0.1925	
2	4.803	4.803	0.001	159068	0.2000	0.1931	
2	5.117	5.115	0.002	142378	0.2000	0.1931	
2	5.257	5.257	0.000	296999	0.2000	0.1953	
		Average of Peak Amounts =				0.1932	
						RPD = 2.76	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.647	0.001	61149	0.005000	0.005386	
2	6.708	6.706	0.002	70570	0.005000	0.005196	
						RPD = 3.59	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.2_00013 Amount Added: 1.00 Units: mL

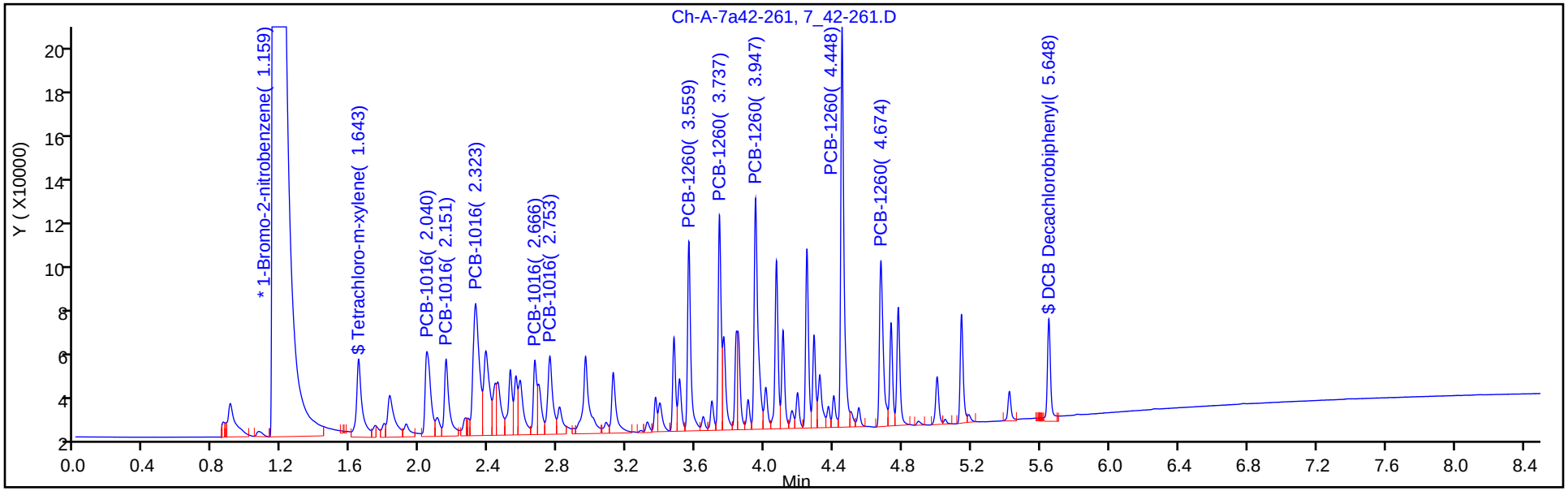
Report Date: 17-May-2019 15:18:57 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

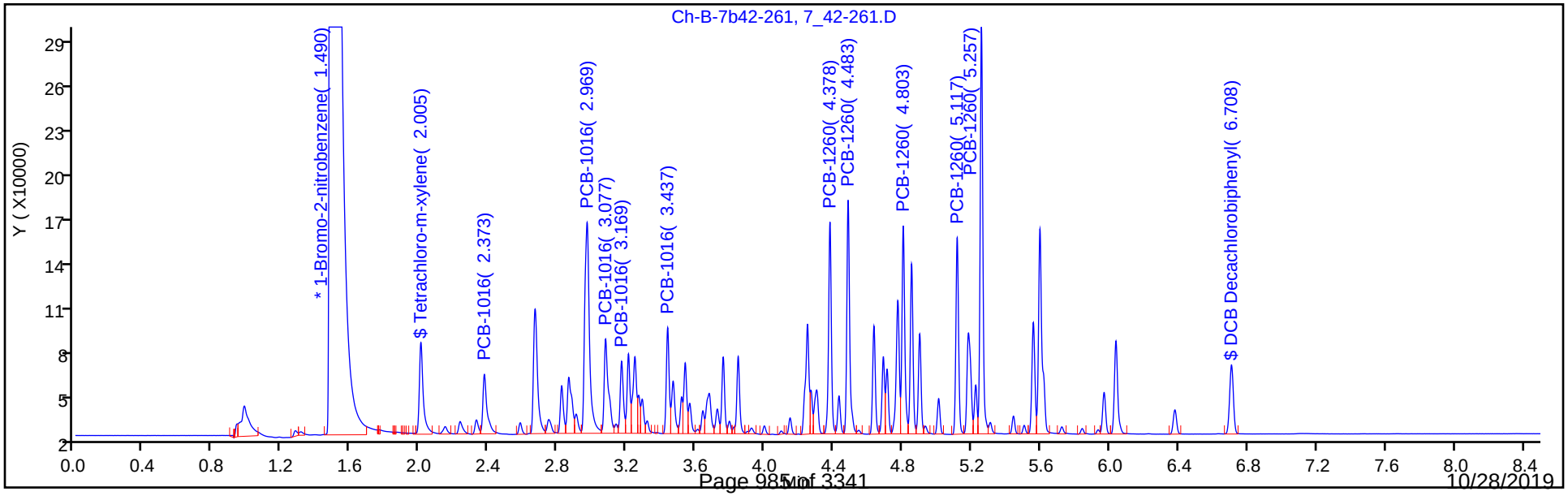
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-261.D

Injection Date:	10-May-2019 19:33:25	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 4			Worklist Smp#:	24
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-May-2019 19:49:15 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:00 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:52:21

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	5065617	0.5000	0.5000	
2	1.490	1.489	0.001	7154905	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	0.000	46846	0.002500	0.002814	M
2	2.005	2.004	0.001	56368	0.002500	0.002592	
						RPD = 8.22	
9 PCB-1016							M
1	2.040	2.038	0.002	48583	0.1000	0.1039	M
1	2.151	2.149	0.002	37462	0.1000	0.1089	M
1	2.326	2.317	0.009	80385	0.1000	0.0963	M
1	2.667	2.665	0.002	27146	0.1000	0.1068	M
1	2.754	2.751	0.003	40013	0.1000	0.1037	M
		Average of Peak Amounts =				0.1039	
2	2.373	2.372	0.001	39725	0.1000	0.1121	
2	2.970	2.968	0.002	158201	0.1000	0.1028	
2	3.077	3.075	0.002	64371	0.1000	0.1072	
2	3.170	3.168	0.002	36234	0.1000	0.1062	
2	3.437	3.436	0.001	48244	0.1000	0.1029	
		Average of Peak Amounts =				0.1062	
						RPD = 2.19	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.559	0.001	61745	0.1000	0.0985	
1	3.738	3.736	0.002	61360	0.1000	0.0958	
1	3.948	3.945	0.003	84413	0.1000	0.0955	
1	4.449	4.447	0.002	126904	0.1000	0.0995	
1	4.674	4.672	0.002	65142	0.1000	0.1006	
		Average of Peak Amounts =				0.0980	
2	4.378	4.378	0.000	93287	0.1000	0.1033	
2	4.483	4.483	0.001	105712	0.1000	0.1028	
2	4.803	4.803	0.001	91921	0.1000	0.1020	
2	5.116	5.115	0.001	83344	0.1000	0.1033	
2	5.257	5.257	0.000	169141	0.1000	0.1016	
		Average of Peak Amounts =				0.1026	
						RPD = 4.60	
$ 15 DCB Decachlorobiphenyl							
1	5.647	5.647	0.000	37397	0.002500	0.002557	
2	6.707	6.706	0.001	42664	0.002500	0.002870	
						RPD = 11.52	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.1_00014 Amount Added: 1.00 Units: mL

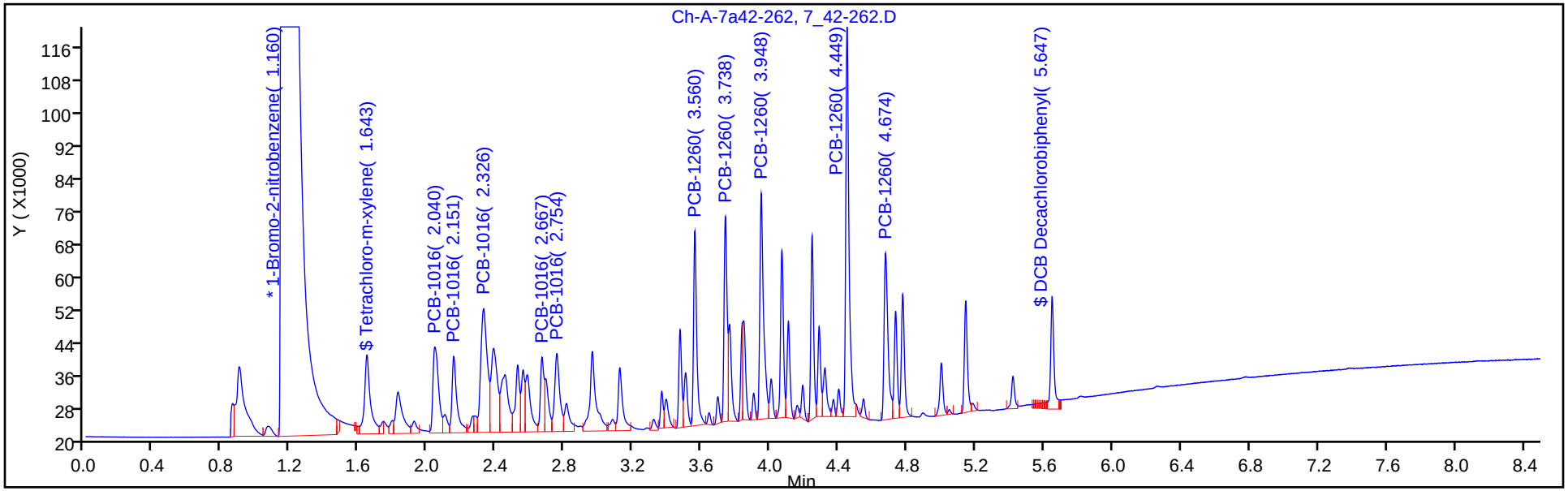
Report Date: 17-May-2019 15:19:01 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

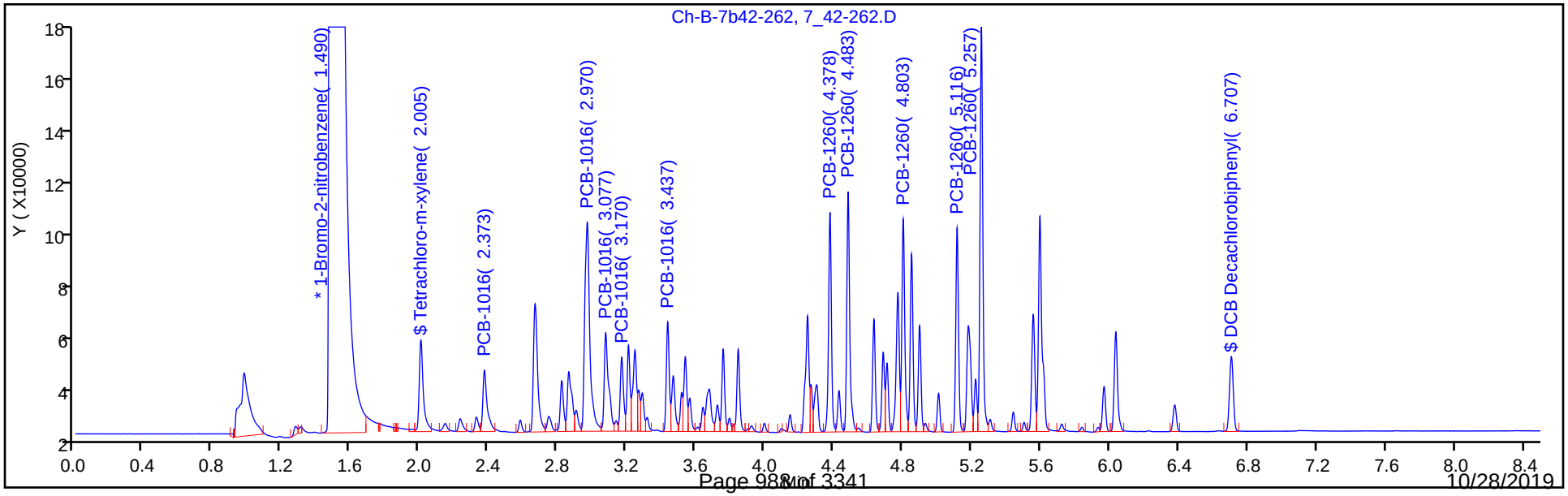
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-262.D

Injection Date:	10-May-2019 19:49:15	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	25
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-May-2019 20:05:05 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:05 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:46:14

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4737397	0.5000	0.5000	
2	1.489	1.489	0.000	6684686	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.643	1.643	-0.001	27131	0.001250	0.001415	M
2	2.004	2.004	0.000	28556	0.001250	0.001405	
						RPD = 0.66	
9 PCB-1016							M
1	2.040	2.038	0.002	25217	0.0500	0.0576	M
1	2.151	2.149	0.002	17587	0.0500	0.0547	M
1	2.328	2.317	0.011	38213	0.0500	0.0489	M
1	2.667	2.665	0.002	13231	0.0500	0.0557	M
1	2.753	2.751	0.002	19321	0.0500	0.0535	M
		Average of Peak Amounts =				0.0541	
2	2.373	2.372	0.001	19520	0.0500	0.0589	
2	2.970	2.968	0.002	81950	0.0500	0.0570	
2	3.077	3.075	0.002	33111	0.0500	0.0590	
2	3.169	3.168	0.001	18136	0.0500	0.0569	
2	3.436	3.436	0.000	24991	0.0500	0.0571	
		Average of Peak Amounts =				0.0578	
						RPD = 6.57	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.559	0.001	31277	0.0500	0.0533	
1	3.738	3.736	0.002	29649	0.0500	0.0495	
1	3.948	3.945	0.003	40667	0.0500	0.0492	
1	4.450	4.447	0.003	59764	0.0500	0.0501	
1	4.673	4.672	0.001	31977	0.0500	0.0528	
		Average of Peak Amounts =				0.0510	
2	4.378	4.378	0.000	47955	0.0500	0.0569	
2	4.483	4.483	0.001	55660	0.0500	0.0579	
2	4.803	4.803	0.001	47026	0.0500	0.0558	
2	5.116	5.115	0.001	43081	0.0500	0.0571	
2	5.257	5.257	0.000	84253	0.0500	0.0542	
		Average of Peak Amounts =				0.0564	
						RPD = 10.05	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.647	0.001	22034	0.001250	0.001239	
2	6.708	6.706	0.002	22297	0.001250	0.001605	
						RPD = 25.77	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is.05_00013 Amount Added: 1.00 Units: mL

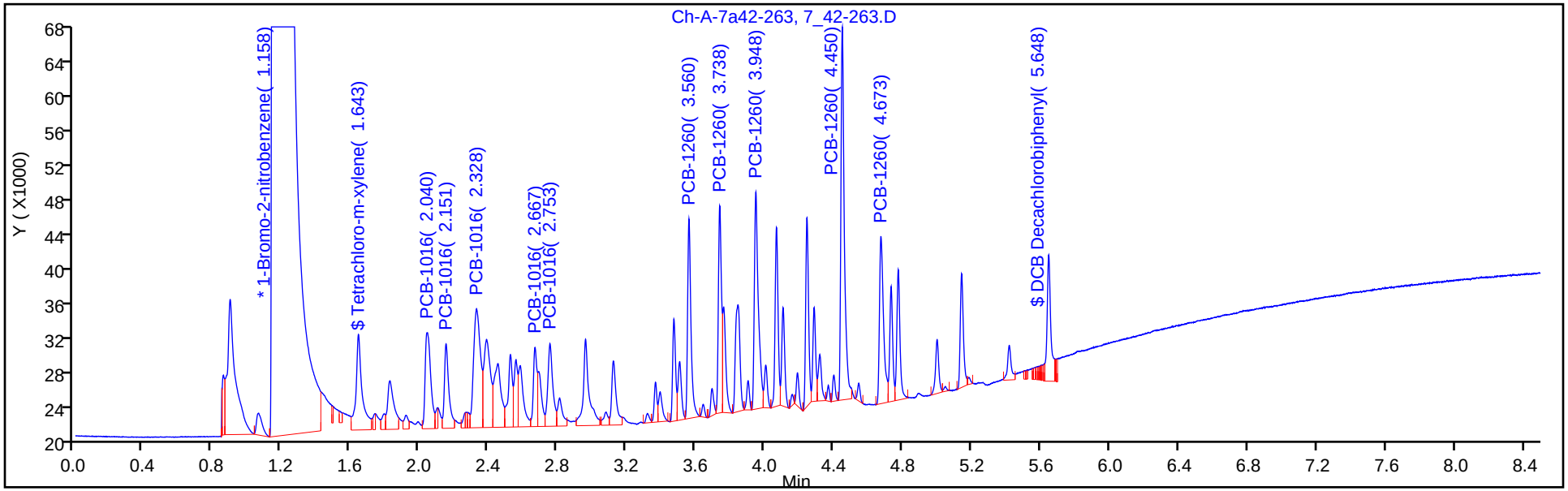
Report Date: 17-May-2019 15:19:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

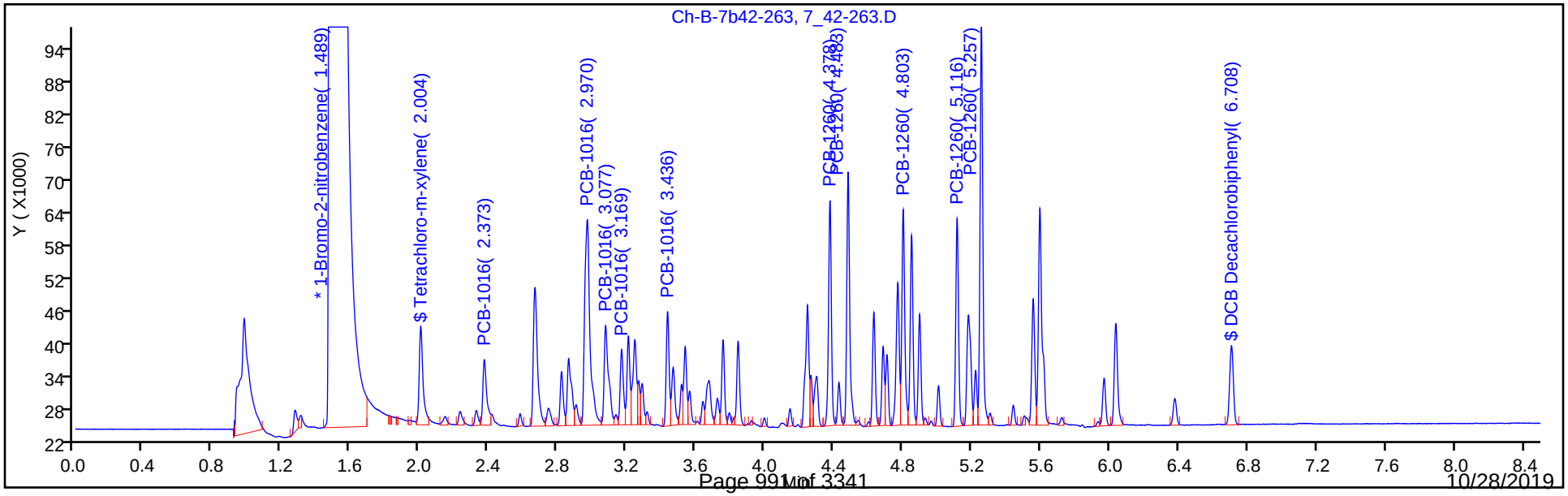
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-263.D

Injection Date:	10-May-2019 20:05:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	26
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-May-2019 20:21:00 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:19:08 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 18:48:31

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4754717	0.5000	0.5000	
2	1.488	1.488	0.000	6719325	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.642	1.642	0.000	13767	0.000500	0.000289	M
2	2.003	2.003	0.000	12657	0.000500	0.000620	
						RPD = 72.66	
9 PCB-1016							M
1	2.042	2.042	0.000	11197	0.0200	0.0255	M
1	2.151	2.151	0.000	7295	0.0200	0.0226	M
1	2.330	2.330	0.000	14680	0.0200	0.0187	M
1	2.667	2.667	0.000	5141	0.0200	0.0216	M
1	2.754	2.754	0.000	7763	0.0200	0.0214	M
		Average of Peak Amounts =				0.0220	
2	2.373	2.373	0.000	7284	0.0200	0.0219	
2	2.971	2.971	0.000	34566	0.0200	0.0239	
2	3.077	3.077	0.000	13255	0.0200	0.0235	
2	3.169	3.169	0.000	7077	0.0200	0.0221	
2	3.435	3.435	0.000	11183	0.0200	0.0254	
		Average of Peak Amounts =				0.0234	
						RPD = 6.13	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.560	3.560	0.000	13168	0.0200	0.0224	
1	3.739	3.739	0.000	12576	0.0200	0.0209	
1	3.948	3.948	0.000	16974	0.0200	0.0205	
1	4.450	4.450	0.000	23824	0.0200	0.0199	
1	4.675	4.675	0.000	13132	0.0200	0.0216	
		Average of Peak Amounts =				0.0211	
2	4.378	4.378	0.000	21589	0.0200	0.0255	
2	4.483	4.483	0.000	24987	0.0200	0.0259	
2	4.803	4.803	0.000	21232	0.0200	0.0251	
2	5.115	5.115	0.000	19057	0.0200	0.0251	
2	5.257	5.257	0.000	37116	0.0200	0.0237	
		Average of Peak Amounts =				0.0251	
						RPD = 17.38	
$ 15 DCB Decachlorobiphenyl							
1	5.648	5.648	0.000	14330	0.000500	0.000449	
2	6.707	6.707	0.000	9987	0.000500	0.000715	
						RPD = 45.84	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

1660sur/is.02_00015 Amount Added: 1.00 Units: mL

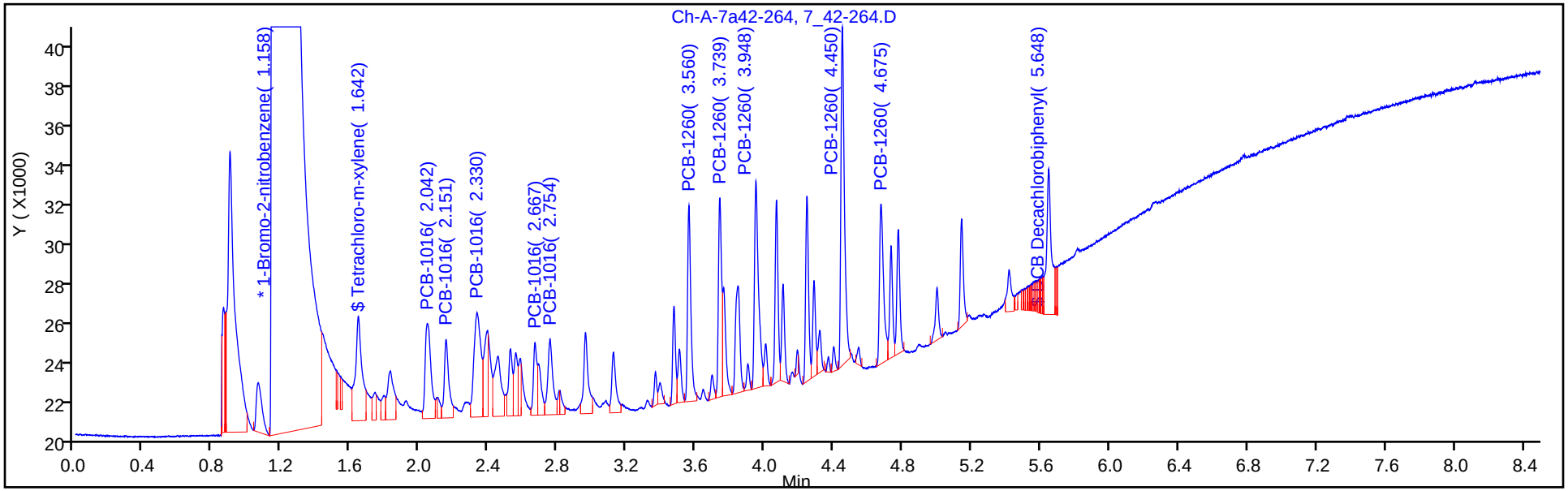
Report Date: 17-May-2019 15:19:10 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

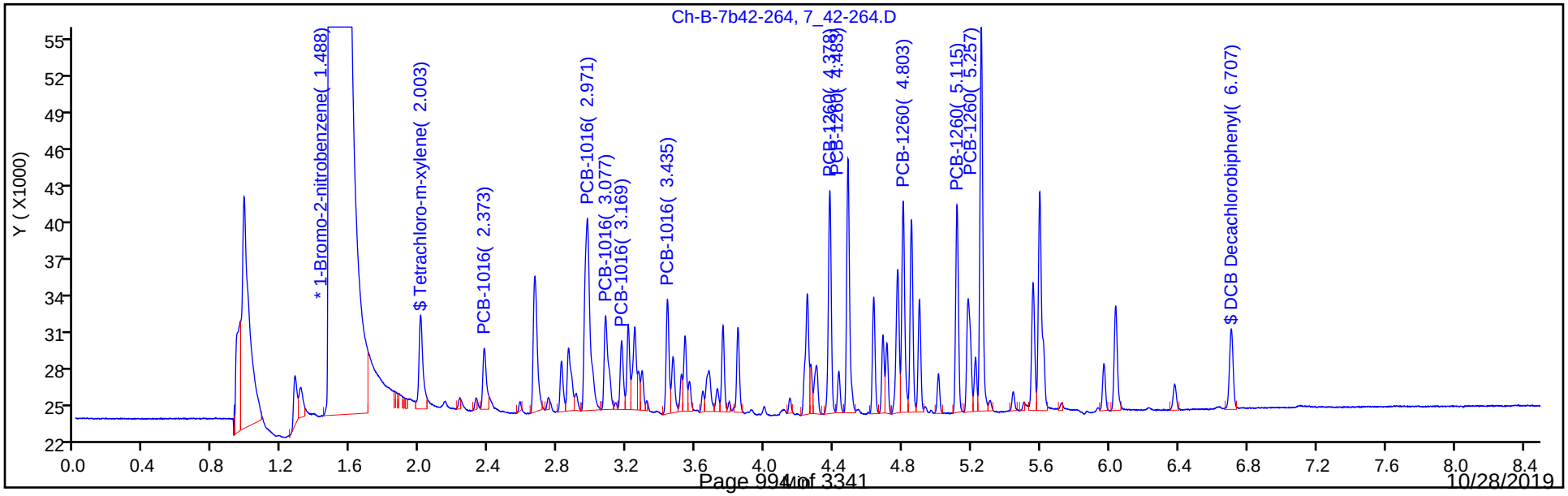
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-264.D

Injection Date:	10-May-2019 20:21:00	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	27
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 21:56 Calibration End Date: 05/10/2019 22:28 Calibration ID: 36957

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/35	7_42-272.D
Level 2	IC 480-472294/34	7_42-271.D
Level 3	IC 480-472294/33	7_42-270.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1221 Peak 1	0.0170	0.0057	0.0052			Lin1	0.0002	0.0051				4.4			1.0000		0.9900
PCB-1221 Peak 2	0.0207	0.0114	0.0112			Lin1	0.0002	0.0111				0.9			1.0000		0.9900
PCB-1221 Peak 3	0.0096	0.0070	0.0067			Lin1	0.0001	0.0067				3.8			1.0000		0.9900
PCB-1221 Peak 4	0.0429	0.0395	0.0359			Ave		0.0394				9.0		20.0			
PCB-1254 Peak 1	0.0686	0.0716	0.0582			Ave		0.0661				10.6		20.0			
PCB-1254 Peak 2	0.0783	0.0742	0.0723			Ave		0.0749				4.1		20.0			
PCB-1254 Peak 3	0.0446	0.0454	0.0454			Ave		0.0451				1.0		20.0			
PCB-1254 Peak 4	0.0929	0.0922	0.0899			Ave		0.0917				1.7		20.0			
PCB-1254 Peak 5	0.0874	0.0846	0.0828			Ave		0.0849				2.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 21:56 Calibration End Date: 05/10/2019 22:28 Calibration ID: 36957

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/35	7_42-272.D
Level 2	IC 480-472294/34	7_42-271.D
Level 3	IC 480-472294/33	7_42-270.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1221 Peak 1	BNB	Lin1	2992	24197	89305			0.0200	0.500	2.00		
PCB-1221 Peak 2	BNB	Lin1	3636	48168	194622			0.0200	0.500	2.00		
PCB-1221 Peak 3	BNB	Lin1	1683	29571	115527			0.0200	0.500	2.00		
PCB-1221 Peak 4	BNB	Ave	7546	166474	621035			0.0200	0.500	2.00		
PCB-1254 Peak 1	BNB	Ave	12048	301725	1007349			0.0200	0.500	2.00		
PCB-1254 Peak 2	BNB	Ave	13768	312729	1251714			0.0200	0.500	2.00		
PCB-1254 Peak 3	BNB	Ave	7837	191252	785914			0.0200	0.500	2.00		
PCB-1254 Peak 4	BNB	Ave	16332	388712	1556595			0.0200	0.500	2.00		
PCB-1254 Peak 5	BNB	Ave	15355	356820	1434366			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-May-2019 21:56:15 ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:22 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 19:44:10

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4328697	0.5000	0.5000	
2	1.488	1.492	-0.004	6070013	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.621	1.622	-0.001	89305	2.00	1.98	M
1	1.737	1.738	-0.001	194622	2.00	2.00	M
1	1.785	1.788	-0.003	115527	2.00	1.99	M
1	1.816	1.826	-0.010	621035	2.00	1.82	M
		Average of Peak Amounts =				1.95	
2	2.143	2.144	-0.001	126799	2.00	1.97	M
2	2.230	2.233	-0.002	353590	2.00	1.97	M
2	2.324	2.326	-0.002	200429	2.00	1.96	M
2	2.370	2.374	-0.004	817684	2.00	1.97	M
		Average of Peak Amounts =				1.97	
						RPD = 1.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.957	2.959	-0.002	1007349	2.00	1.76	M
1	3.114	3.119	-0.005	1251714	2.00	1.93	M
1	3.311	3.318	-0.007	785914	2.00	2.01	M
1	3.383	3.391	-0.009	1556595	2.00	1.96	M
1	3.942	3.949	-0.007	1434366	2.00	1.95	M
		Average of Peak Amounts =				1.92	
2	3.758	3.758	0.000	954960	2.00	1.98	M
2	3.843	3.845	-0.002	1291101	2.00	1.72	M
2	4.231	4.233	-0.001	1950659	2.00	1.80	M
2	4.675	4.683	-0.007	1197192	2.00	1.79	M
2	4.802	4.803	0.000	1394713	2.00	1.75	M
		Average of Peak Amounts =				1.81	
						RPD = 6.15	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@2.0_00016 Amount Added: 1.00 Units: mL

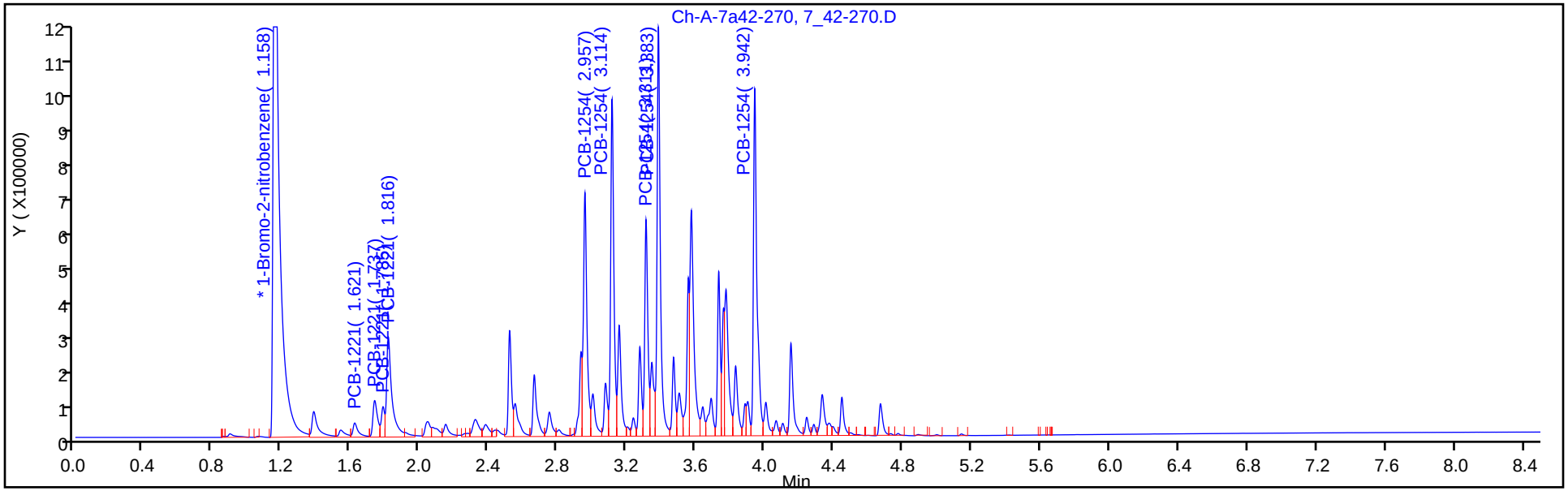
Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

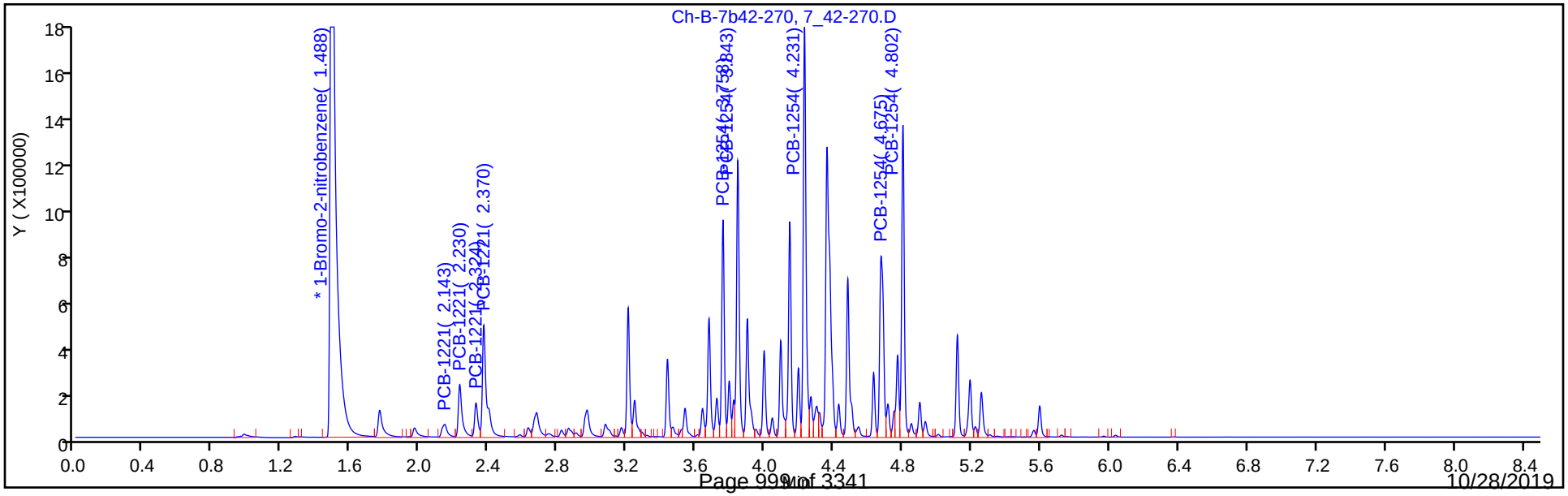
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date:	10-May-2019 21:56:15	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	33
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date: 10-May-2019 21:56:15 Instrument ID: HP6890-7

Lims ID: IC 3

Client ID:

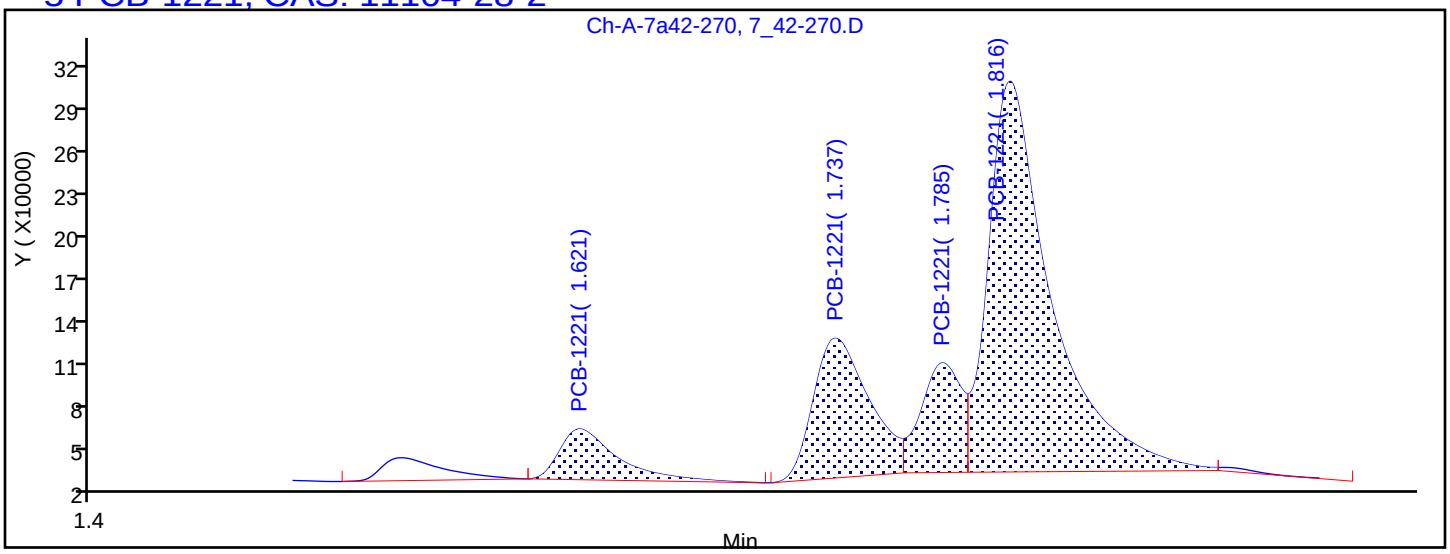
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 33

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

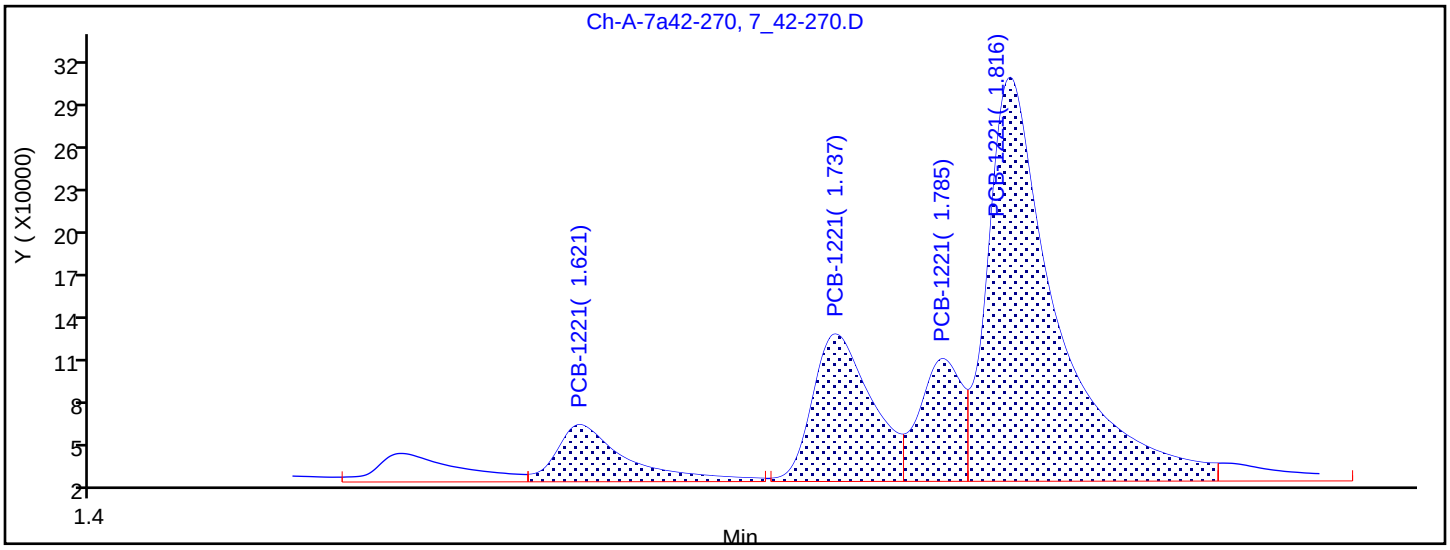
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

1.621	Response = 65527
1.737	Response = 174263
1.785	Response = 99209
1.816	Response = 552716



Manual Integration Results

1.621	Response = 89305	M
1.737	Response = 194622	M
1.785	Response = 115527	M
1.816	Response = 621035	M

Reviewer: clarkda, 17-May-2019 14:57:10

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date: 10-May-2019 21:56:15 Instrument ID: HP6890-7

Lims ID: IC 3

Client ID:

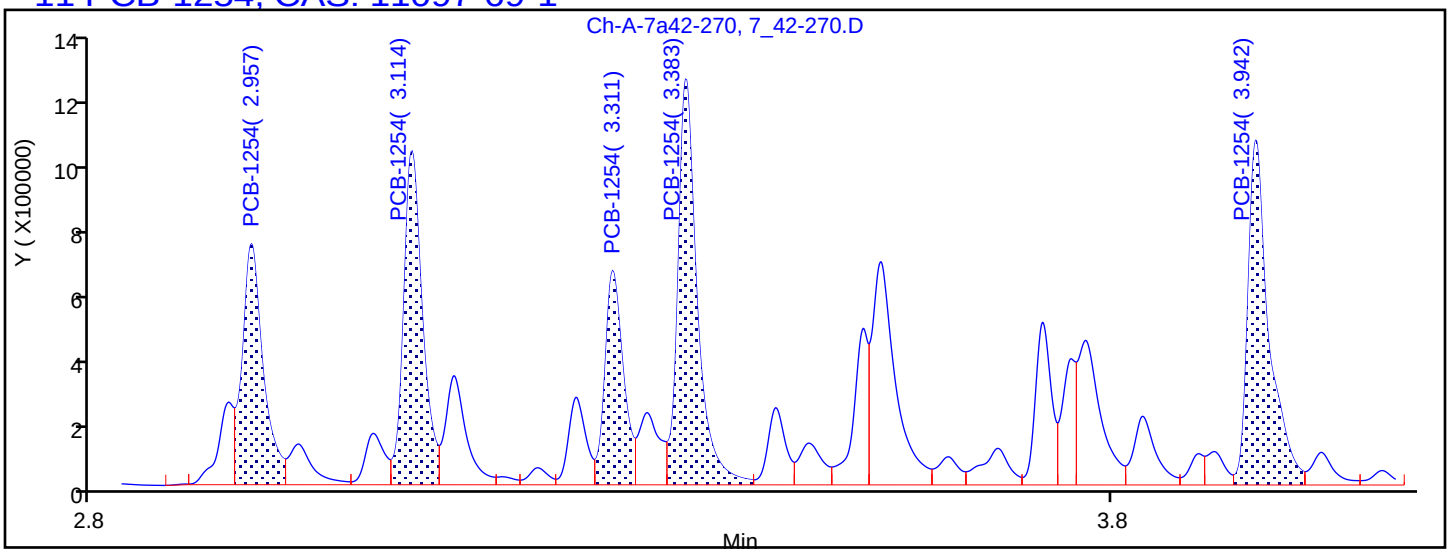
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 33

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

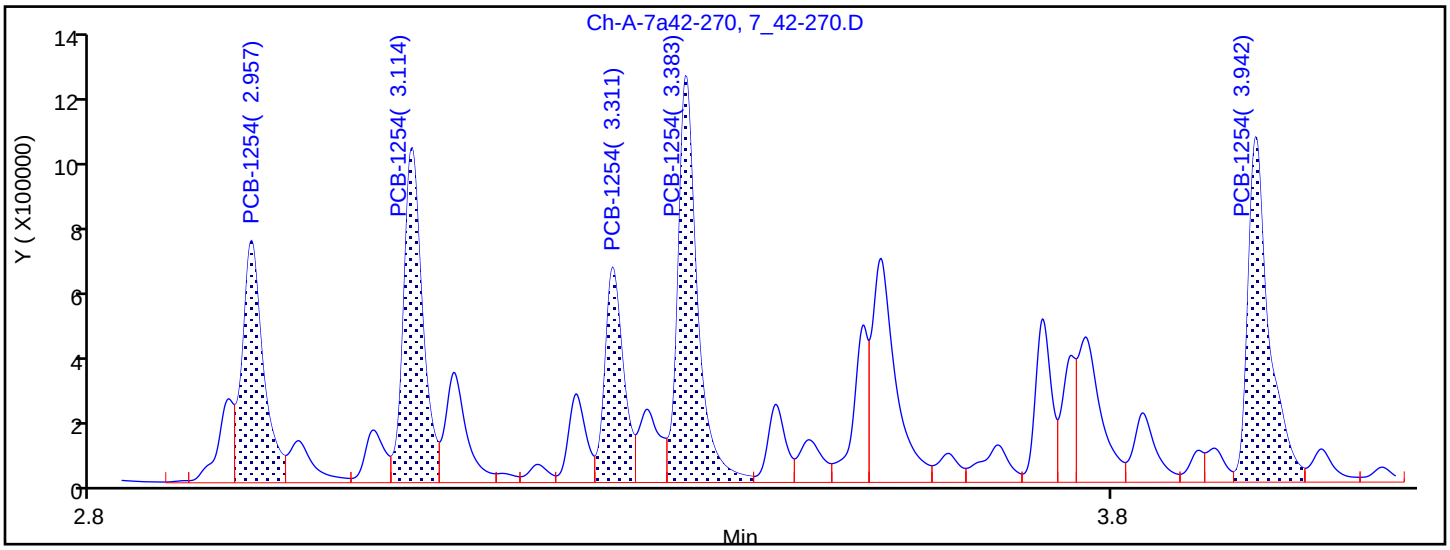
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

2.957	Response = 995067
3.114	Response = 1241133
3.311	Response = 778185
3.383	Response = 1541361
3.942	Response = 1427596



Manual Integration Results

2.957	Response = 1007349	M
3.114	Response = 1251714	M
3.311	Response = 785914	M
3.383	Response = 1556595	M
3.942	Response = 1434366	M

Reviewer: clarkda, 17-May-2019 14:57:10

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-271.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-May-2019 22:12:07 ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:27 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 20:10:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4216266	0.5000	0.5000	
2	1.490	1.492	-0.002	6027215	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							
1	1.621	1.622	-0.001	24197	0.5000	0.5173	
1	1.738	1.738	0.000	48168	0.5000	0.4963	
1	1.788	1.788	0.000	29571	0.5000	0.5151	
1	1.819	1.826	-0.007	166474	0.5000	0.5007	
		Average of Peak Amounts =				0.5074	
2	2.144	2.144	0.000	35083	0.5000	0.5336	
2	2.232	2.233	0.000	95709	0.5000	0.5293	
2	2.326	2.326	0.000	55360	0.5000	0.5369	
2	2.372	2.374	-0.002	224459	0.5000	0.5332	
		Average of Peak Amounts =				0.5332	
						RPD = 4.98	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.957	2.959	-0.002	301725	0.5000	0.5413	M
1	3.115	3.119	-0.004	312729	0.5000	0.4949	M
1	3.313	3.318	-0.006	191252	0.5000	0.5027	M
1	3.385	3.391	-0.006	388712	0.5000	0.5028	M
1	3.943	3.949	-0.006	356820	0.5000	0.4981	M
		Average of Peak Amounts =				0.5080	
2	3.758	3.758	0.000	255831	0.5000	0.5256	
2	3.845	3.845	0.000	340482	0.5000	0.4580	
2	4.232	4.233	0.000	503306	0.5000	0.4665	
2	4.679	4.683	-0.003	303790	0.5000	0.4584	
2	4.803	4.803	0.000	363217	0.5000	0.4593	
		Average of Peak Amounts =				0.4736	
						RPD = 7.01	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00047 Amount Added: 1.00 Units: mL

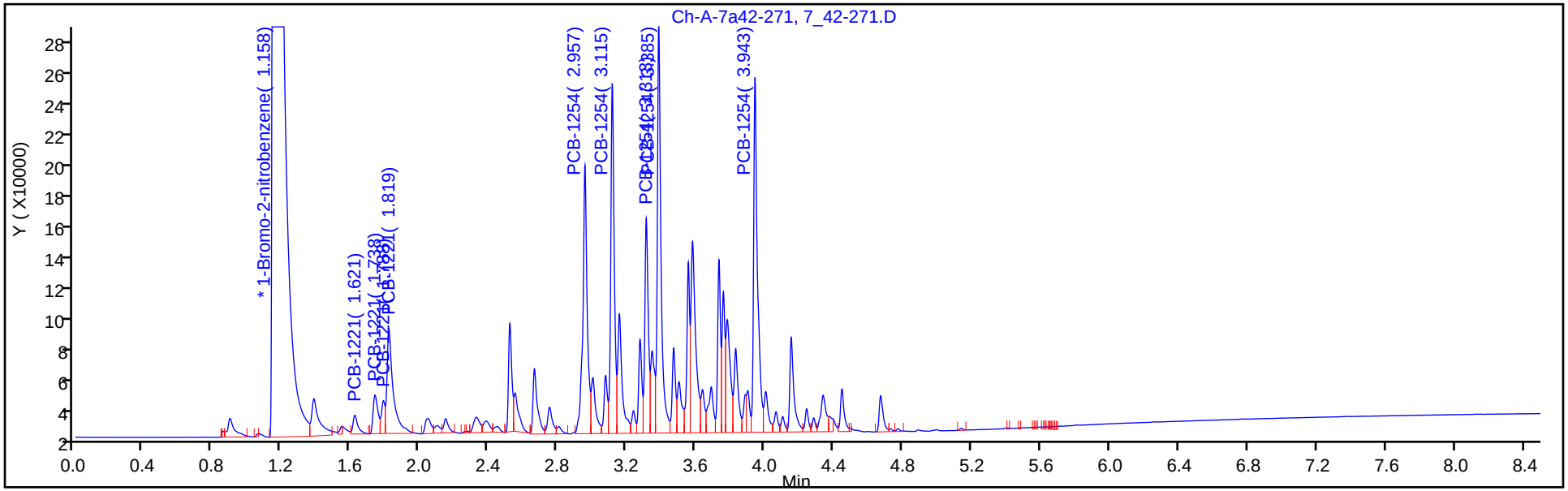
Report Date: 17-May-2019 15:18:29 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

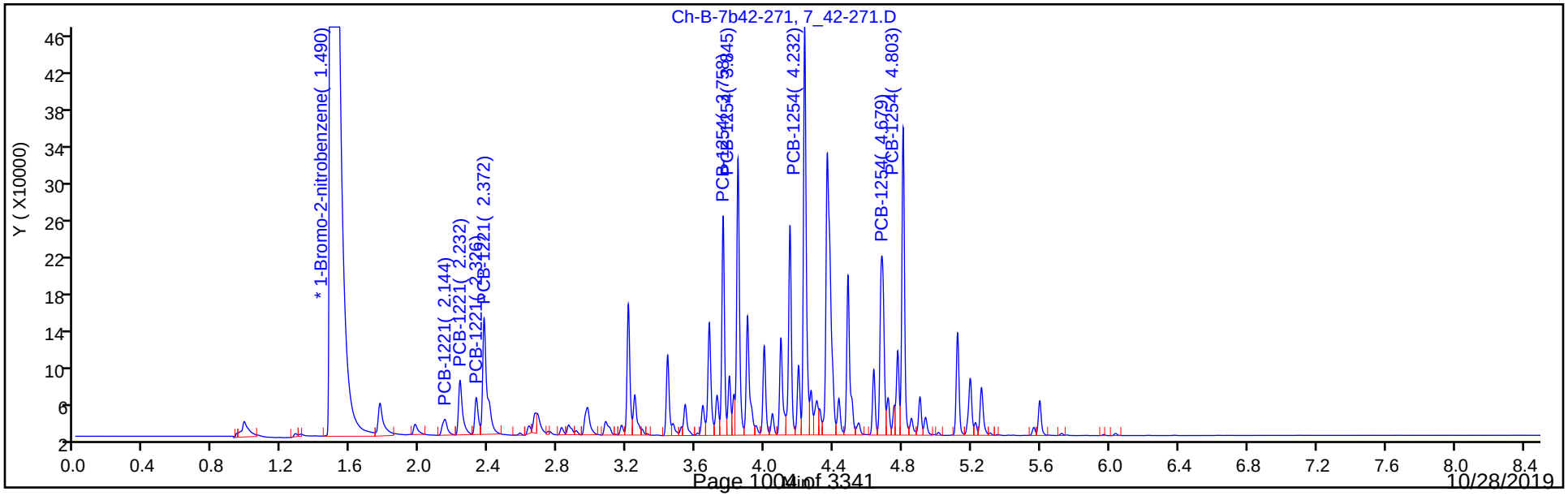
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-271.D

Injection Date:	10-May-2019 22:12:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	34
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:29 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-271.D

Injection Date: 10-May-2019 22:12:07 Instrument ID: HP6890-7

Lims ID: IC 2

Client ID:

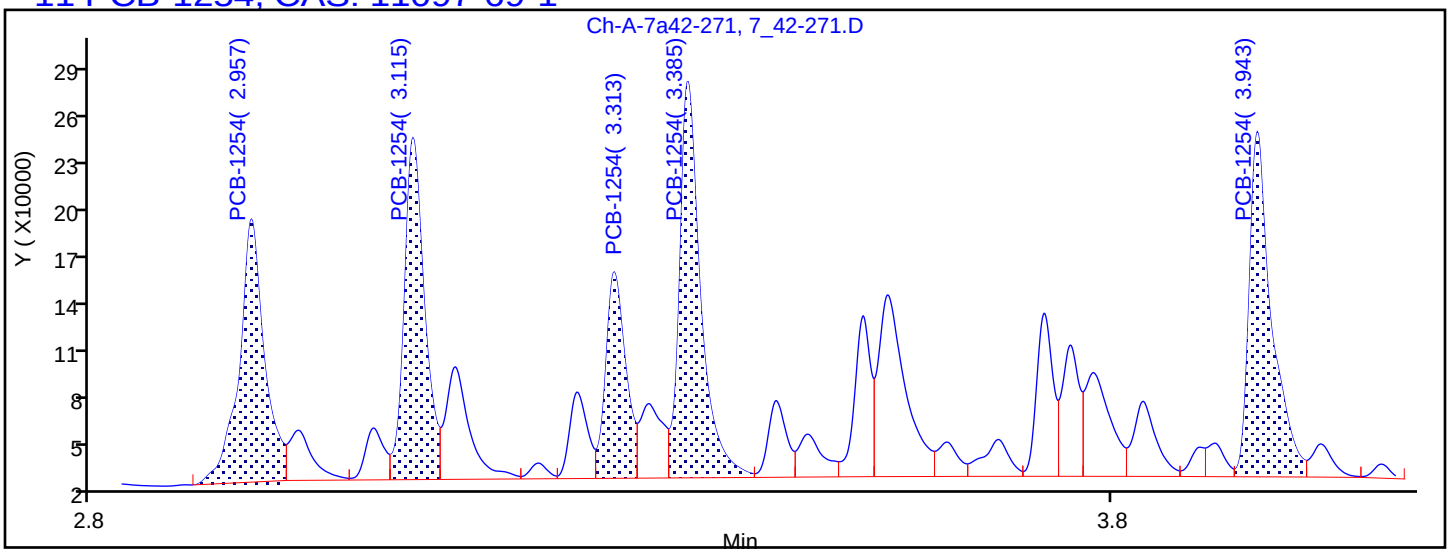
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 34

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

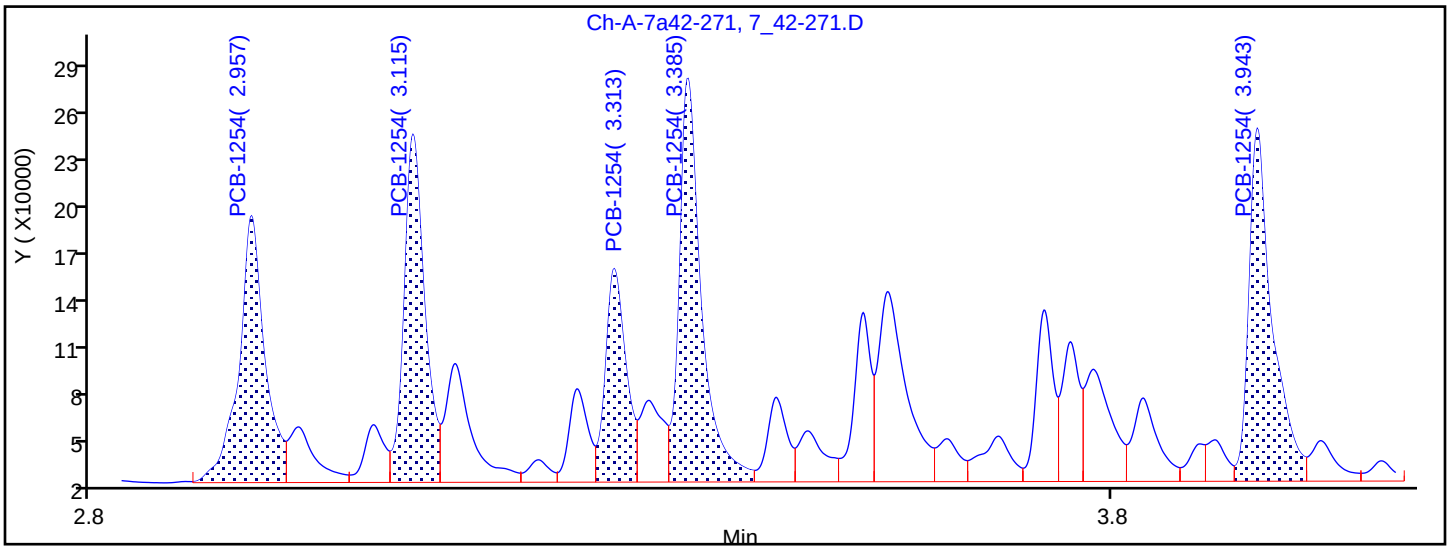
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

2.957	Response = 290406
3.115	Response = 301294
3.313	Response = 180126
3.385	Response = 364290
3.943	Response = 336085



Manual Integration Results

2.957	Response = 301725	M
3.115	Response = 312729	M
3.313	Response = 191252	M
3.385	Response = 388712	M
3.943	Response = 356820	M

Reviewer: clarkda, 17-May-2019 15:01:57

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-May-2019 22:28:05 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:32 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 20:12:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4393178	0.5000	0.5000	
2	1.490	1.490	0.000	6304087	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.622	1.622	0.000	2992	0.0200	0.0195	M
1	1.738	1.738	0.000	3636	0.0200	0.0201	M
1	1.788	1.788	0.000	1683	0.0200	0.0195	M
1	1.826	1.826	0.000	7546	0.0200	0.0218	M
		Average of Peak Amounts =				0.0202	
2	2.144	2.144	0.000	2602	0.0200	0.0190	M
2	2.233	2.233	0.000	5621	0.0200	0.0191	M
2	2.326	2.326	0.000	3376	0.0200	0.0189	M
2	2.374	2.374	0.000	14518	0.0200	0.0190	M
		Average of Peak Amounts =				0.0190	
						RPD = 6.30	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.959	2.959	0.000	12048	0.0200	0.0207	M
1	3.119	3.119	0.000	13768	0.0200	0.0209	M
1	3.318	3.318	0.000	7837	0.0200	0.0198	M
1	3.391	3.391	0.000	16332	0.0200	0.0203	M
1	3.949	3.949	0.000	15355	0.0200	0.0206	M
		Average of Peak Amounts =				0.0205	
2	3.758	3.758	0.000	14565	0.0200	0.0192	M
2	3.845	3.845	0.000	18999	0.0200	0.0244	M
2	4.233	4.233	0.000	26389	0.0200	0.0234	M
2	4.683	4.683	0.000	16448	0.0200	0.0237	M
2	4.803	4.803	0.000	19945	0.0200	0.0241	M
		Average of Peak Amounts =				0.0230	
						RPD = 11.62	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@.02_00013 Amount Added: 1.00 Units: mL

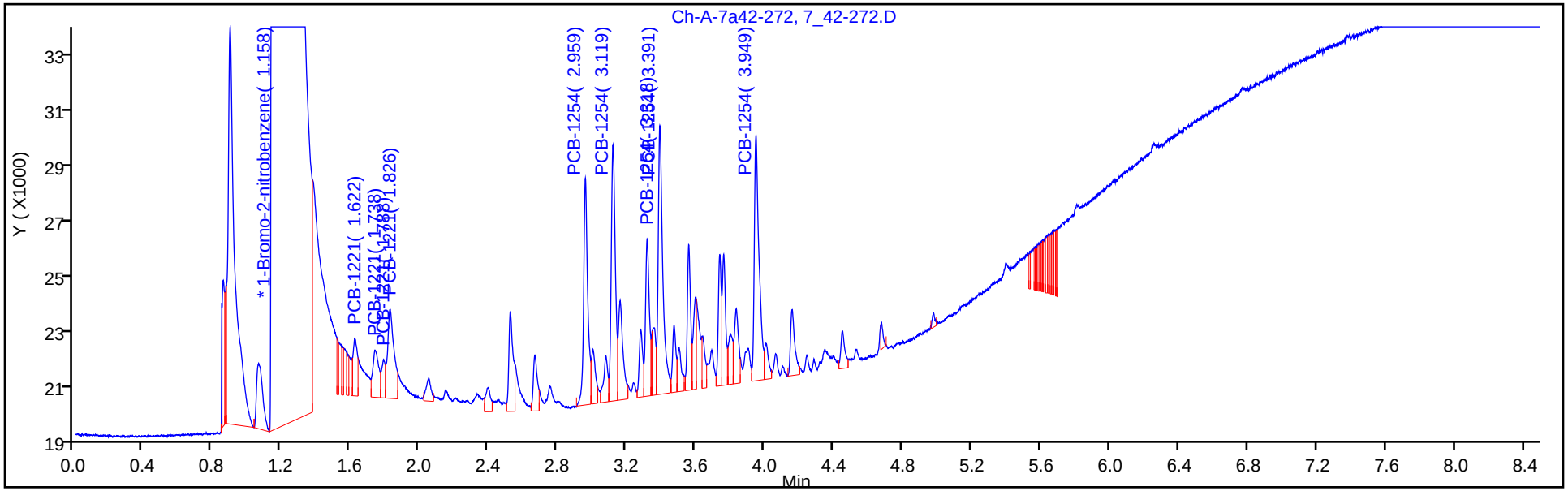
Report Date: 17-May-2019 15:18:32 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

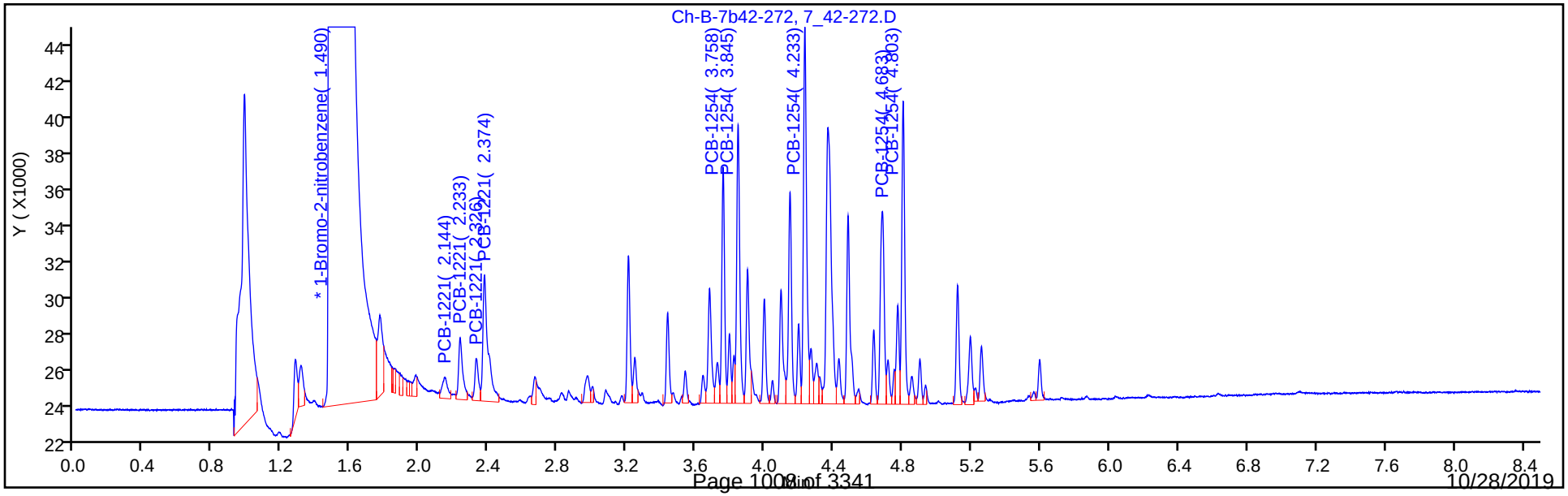
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date:	10-May-2019 22:28:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	35
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:32 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date: 10-May-2019 22:28:05 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

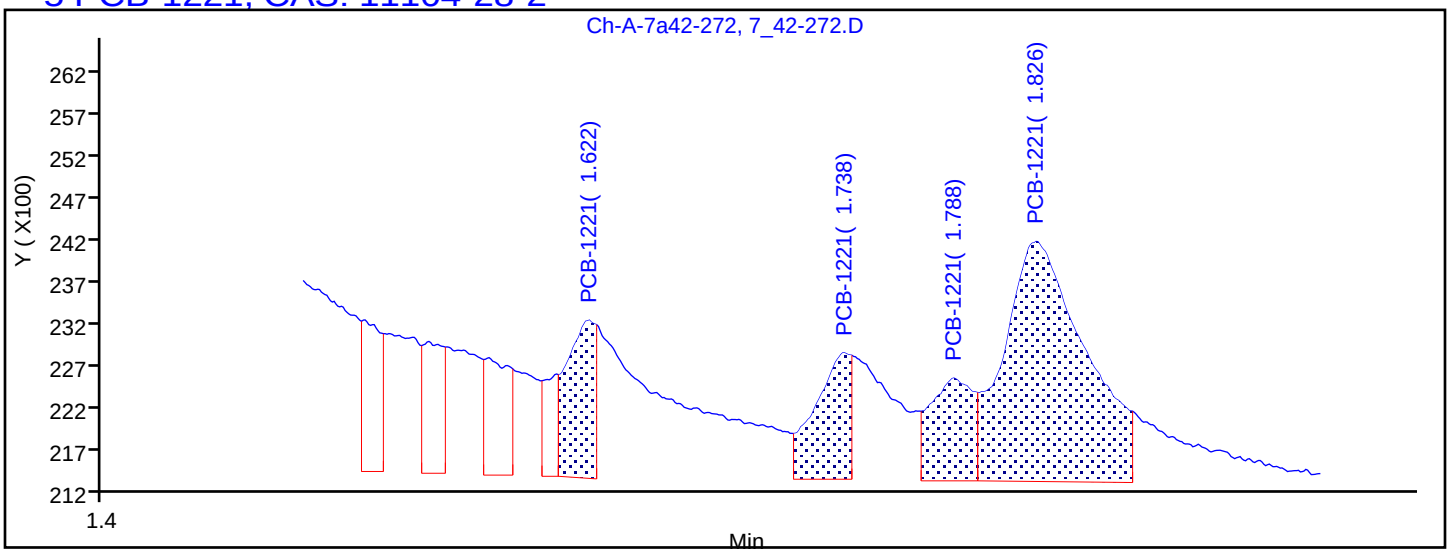
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 35

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

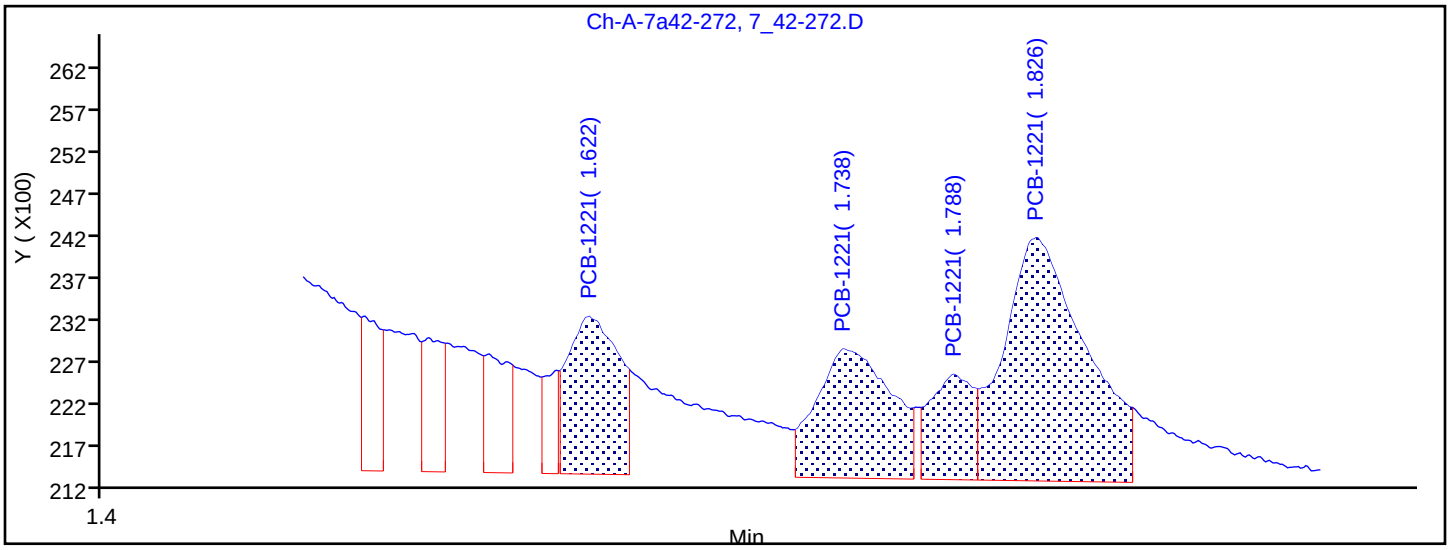
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

1.622	Response = 1681
1.738	Response = 1670
1.788	Response = 1637
1.826	Response = 7380



Manual Integration Results

1.622	Response = 2992	M
1.738	Response = 3636	M
1.788	Response = 1683	M
1.826	Response = 7546	M

Reviewer: clarkda, 17-May-2019 15:01:04

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:18:32 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date: 10-May-2019 22:28:05 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

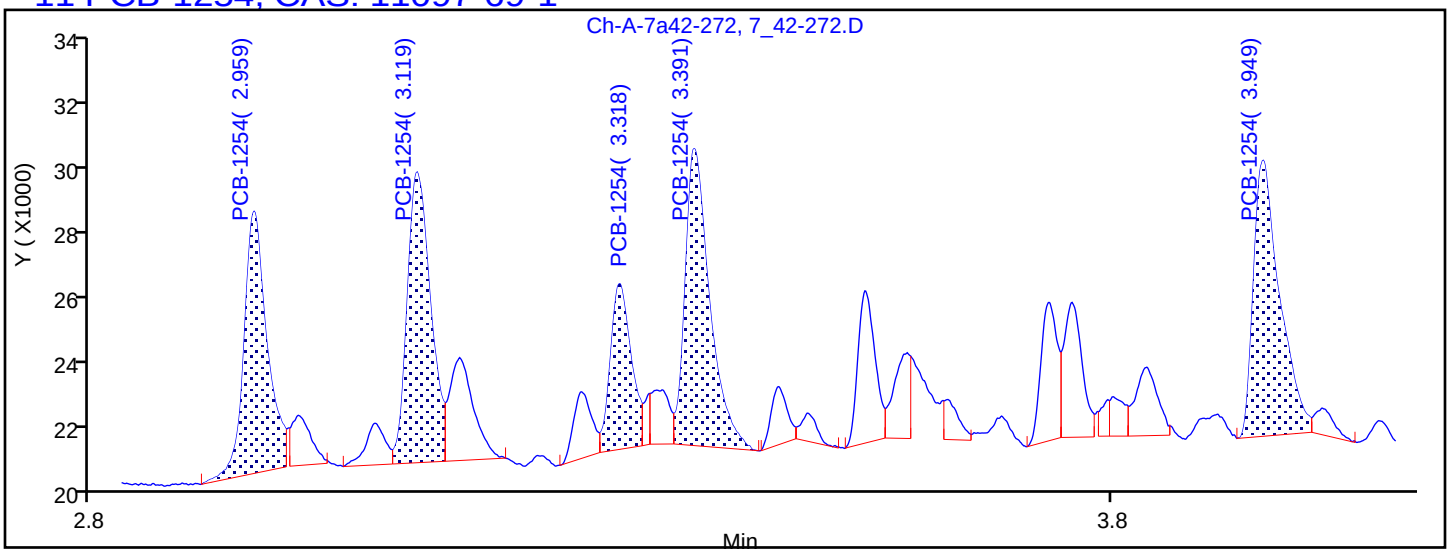
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 35

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

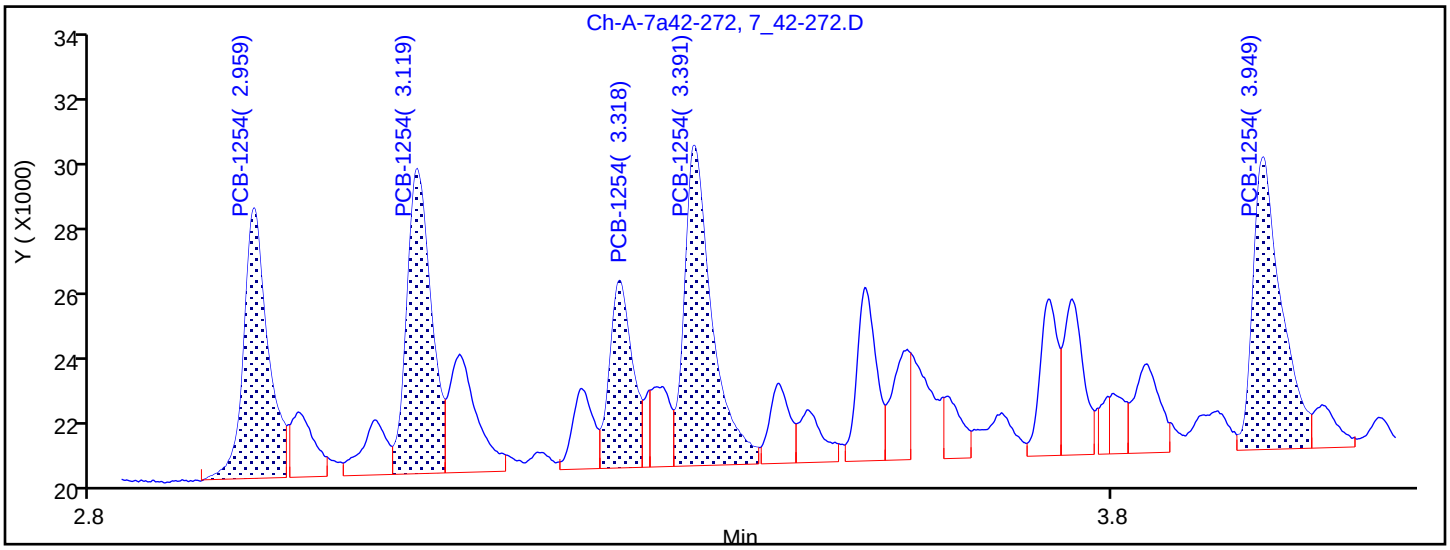
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

2.959	Response = 11175
3.119	Response = 12564
3.318	Response = 6339
3.391	Response = 13467
3.949	Response = 13304



Manual Integration Results

2.959	Response = 12048	M
3.119	Response = 13768	M
3.318	Response = 7837	M
3.391	Response = 16332	M
3.949	Response = 15355	M

Reviewer: clarkda, 17-May-2019 14:58:29

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 21:56 Calibration End Date: 05/10/2019 22:28 Calibration ID: 36958

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/35	7_42-272.D
Level 2	IC 480-472294/34	7_42-271.D
Level 3	IC 480-472294/33	7_42-270.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1221 Peak 1	0.0103	0.0058	0.0052			Lin1	0.0001	0.0053				8.6			0.9990		0.9900
PCB-1221 Peak 2	0.0223	0.0159	0.0146			Lin1	0.0002	0.0147				7.5			0.9990		0.9900
PCB-1221 Peak 3	0.0134	0.0092	0.0083			Lin1	0.0001	0.0083				9.4			0.9990		0.9900
PCB-1221 Peak 4	0.0576	0.0372	0.0337			Lin1	0.0005	0.0340				8.5			0.9990		0.9900
PCB-1254 Peak 1	0.0578	0.0424	0.0393			Lin1	0.0004	0.0396				6.6			0.9990		0.9900
PCB-1254 Peak 2	0.0753	0.0565	0.0532			Ave		0.0617				19.4		20.0			
PCB-1254 Peak 3	0.1047	0.0835	0.0803			Ave		0.0895				14.8		20.0			
PCB-1254 Peak 4	0.0652	0.0504	0.0493			Ave		0.0550				16.2		20.0			
PCB-1254 Peak 5	0.0791	0.0603	0.0574			Ave		0.0656				17.9		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/10/2019 21:56 Calibration End Date: 05/10/2019 22:28 Calibration ID: 36958

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/35	7_42-272.D
Level 2	IC 480-472294/34	7_42-271.D
Level 3	IC 480-472294/33	7_42-270.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1221 Peak 1	BNB	Lin1	2602	35083	126799			0.0200	0.500	2.00		
PCB-1221 Peak 2	BNB	Lin1	5621	95709	353590			0.0200	0.500	2.00		
PCB-1221 Peak 3	BNB	Lin1	3376	55360	200429			0.0200	0.500	2.00		
PCB-1221 Peak 4	BNB	Lin1	14518	224459	817684			0.0200	0.500	2.00		
PCB-1254 Peak 1	BNB	Lin1	14565	255831	954960			0.0200	0.500	2.00		
PCB-1254 Peak 2	BNB	Ave	18999	340482	1291101			0.0200	0.500	2.00		
PCB-1254 Peak 3	BNB	Ave	26389	503306	1950659			0.0200	0.500	2.00		
PCB-1254 Peak 4	BNB	Ave	16448	303790	1197192			0.0200	0.500	2.00		
PCB-1254 Peak 5	BNB	Ave	19945	363217	1394713			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 10-May-2019 21:56:15 ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:22 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 19:44:10

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4328697	0.5000	0.5000	
2	1.488	1.492	-0.004	6070013	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.621	1.622	-0.001	89305	2.00	1.98	M
1	1.737	1.738	-0.001	194622	2.00	2.00	M
1	1.785	1.788	-0.003	115527	2.00	1.99	M
1	1.816	1.826	-0.010	621035	2.00	1.82	M
		Average of Peak Amounts =				1.95	
2	2.143	2.144	-0.001	126799	2.00	1.97	M
2	2.230	2.233	-0.002	353590	2.00	1.97	M
2	2.324	2.326	-0.002	200429	2.00	1.96	M
2	2.370	2.374	-0.004	817684	2.00	1.97	M
		Average of Peak Amounts =				1.97	
						RPD = 1.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.957	2.959	-0.002	1007349	2.00	1.76	M
1	3.114	3.119	-0.005	1251714	2.00	1.93	M
1	3.311	3.318	-0.007	785914	2.00	2.01	M
1	3.383	3.391	-0.009	1556595	2.00	1.96	M
1	3.942	3.949	-0.007	1434366	2.00	1.95	M
		Average of Peak Amounts =				1.92	
2	3.758	3.758	0.000	954960	2.00	1.98	M
2	3.843	3.845	-0.002	1291101	2.00	1.72	M
2	4.231	4.233	-0.001	1950659	2.00	1.80	M
2	4.675	4.683	-0.007	1197192	2.00	1.79	M
2	4.802	4.803	0.000	1394713	2.00	1.75	M
		Average of Peak Amounts =				1.81	
						RPD = 6.15	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@2.0_00016 Amount Added: 1.00 Units: mL

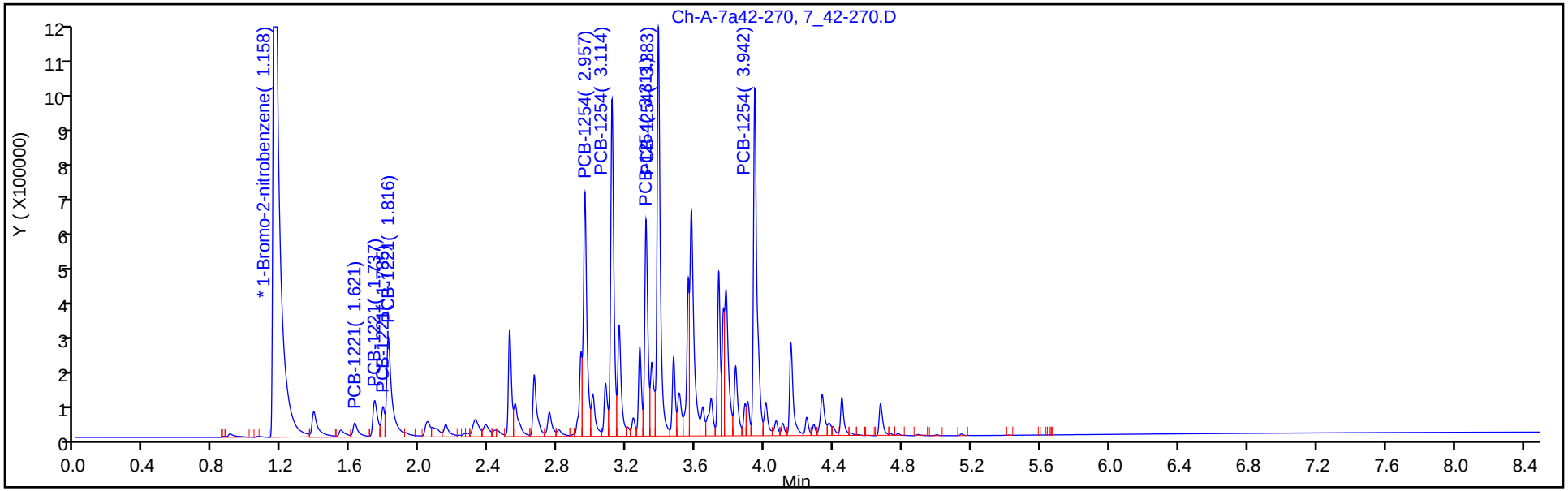
Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

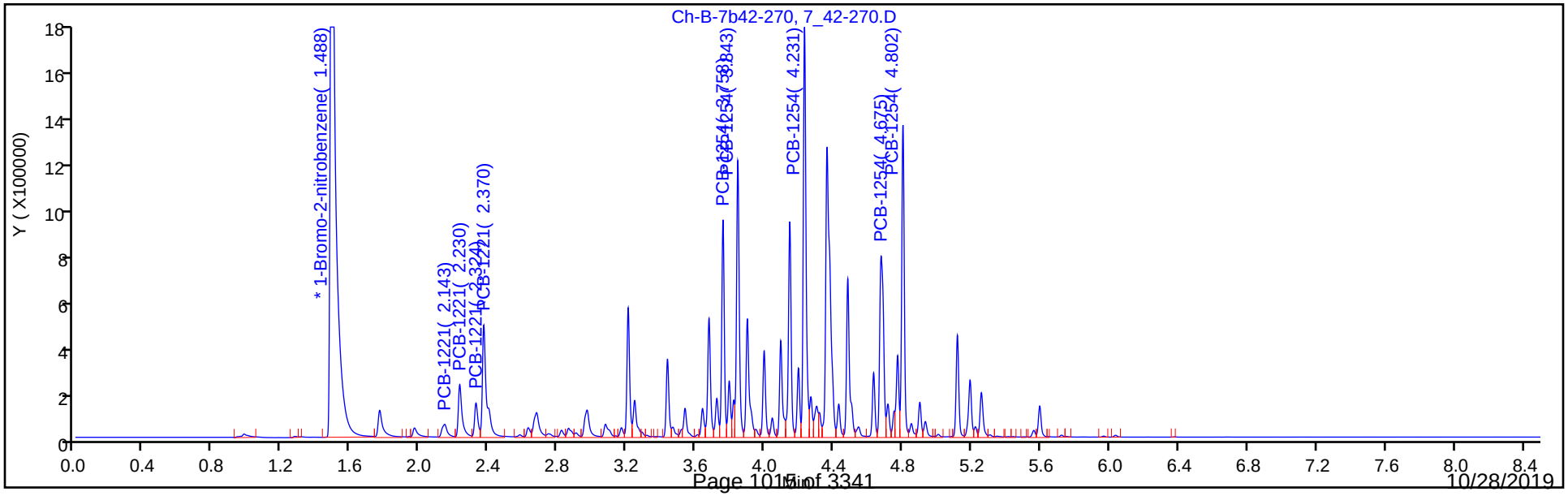
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date:	10-May-2019 21:56:15	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	33
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date: 10-May-2019 21:56:15 Instrument ID: HP6890-7

Lims ID: IC 3

Client ID:

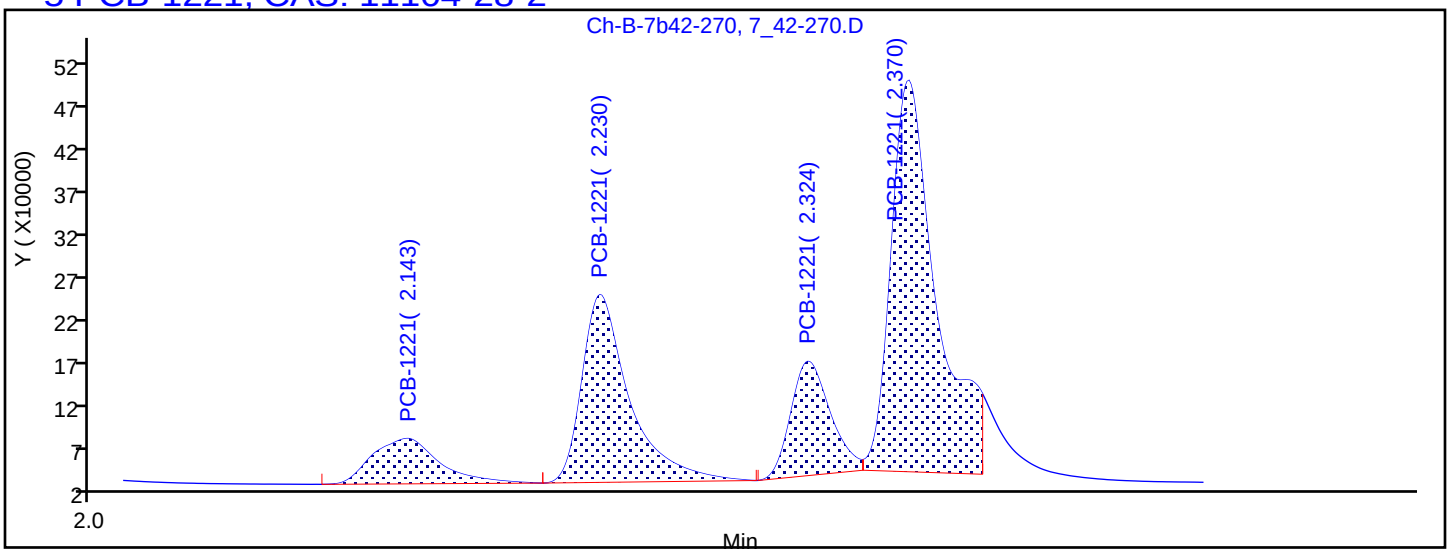
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 33

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

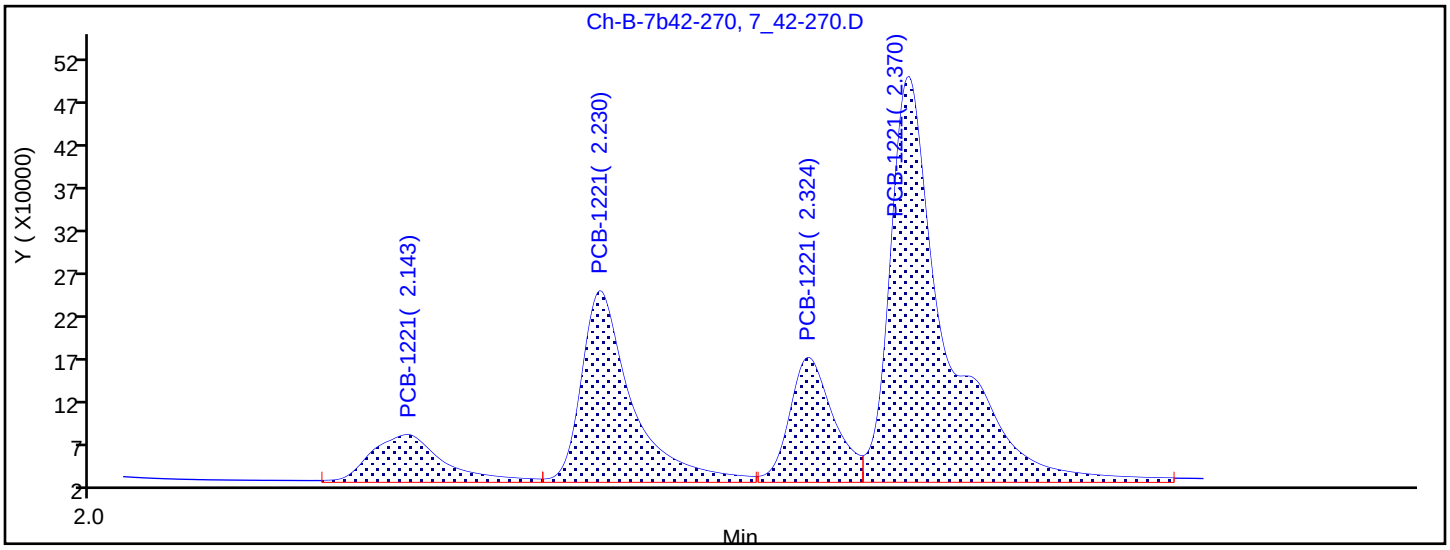
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

2.143	Response = 110197
2.230	Response = 324561
2.324	Response = 164836
2.370	Response = 651027



Manual Integration Results

2.143	Response = 126799	M
2.230	Response = 353590	M
2.324	Response = 200429	M
2.370	Response = 817684	M

Reviewer: clarkda, 17-May-2019 14:57:16

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:18:23 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-270.D

Injection Date: 10-May-2019 21:56:15 Instrument ID: HP6890-7

Lims ID: IC 3

Client ID:

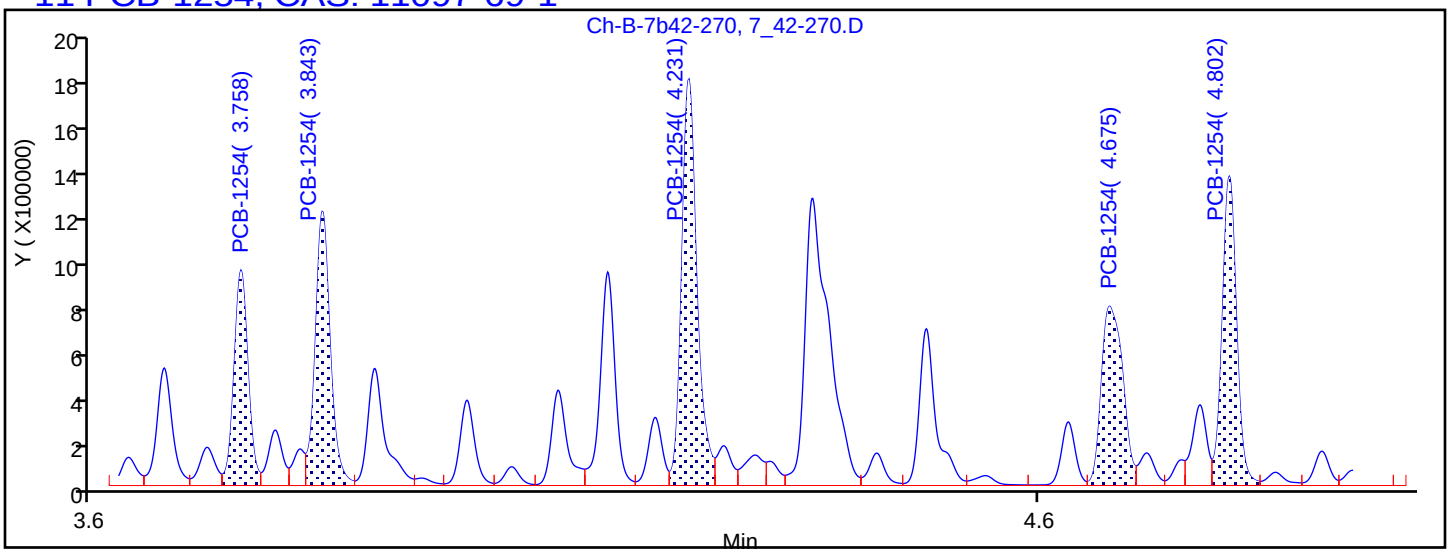
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 33

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

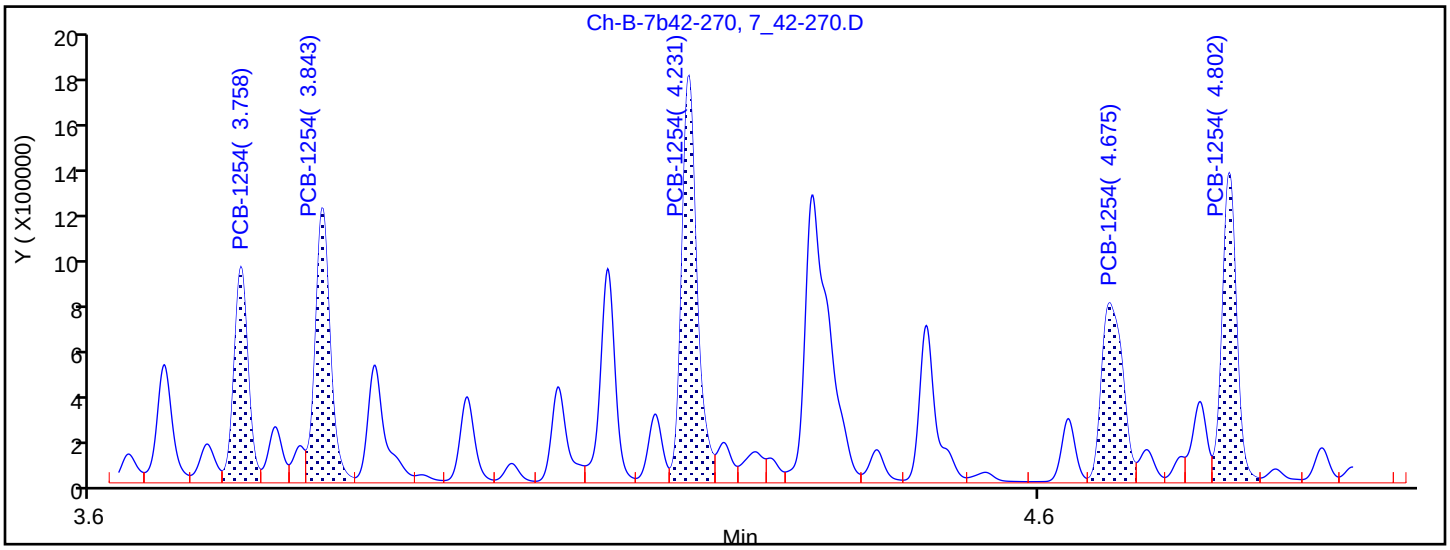
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

3.758	Response = 948604
3.843	Response = 1282962
4.231	Response = 1942685
4.675	Response = 1188455
4.802	Response = 1386148



Manual Integration Results

3.758	Response = 954960	M
3.843	Response = 1291101	M
4.231	Response = 1950659	M
4.675	Response = 1197192	M
4.802	Response = 1394713	M

Reviewer: clarkda, 17-May-2019 14:57:16

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-271.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 10-May-2019 22:12:07 ALS Bottle#: 0 Worklist Smp#: 34
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:27 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 20:10:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4216266	0.5000	0.5000	
2	1.490	1.492	-0.002	6027215	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							
1	1.621	1.622	-0.001	24197	0.5000	0.5173	
1	1.738	1.738	0.000	48168	0.5000	0.4963	
1	1.788	1.788	0.000	29571	0.5000	0.5151	
1	1.819	1.826	-0.007	166474	0.5000	0.5007	
		Average of Peak Amounts =				0.5074	
2	2.144	2.144	0.000	35083	0.5000	0.5336	
2	2.232	2.233	0.000	95709	0.5000	0.5293	
2	2.326	2.326	0.000	55360	0.5000	0.5369	
2	2.372	2.374	-0.002	224459	0.5000	0.5332	
		Average of Peak Amounts =				0.5332	
						RPD = 4.98	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.957	2.959	-0.002	301725	0.5000	0.5413	M
1	3.115	3.119	-0.004	312729	0.5000	0.4949	M
1	3.313	3.318	-0.006	191252	0.5000	0.5027	M
1	3.385	3.391	-0.006	388712	0.5000	0.5028	M
1	3.943	3.949	-0.006	356820	0.5000	0.4981	M
		Average of Peak Amounts =				0.5080	
2	3.758	3.758	0.000	255831	0.5000	0.5256	
2	3.845	3.845	0.000	340482	0.5000	0.4580	
2	4.232	4.233	0.000	503306	0.5000	0.4665	
2	4.679	4.683	-0.003	303790	0.5000	0.4584	
2	4.803	4.803	0.000	363217	0.5000	0.4593	
		Average of Peak Amounts =				0.4736	
						RPD = 7.01	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00047 Amount Added: 1.00 Units: mL

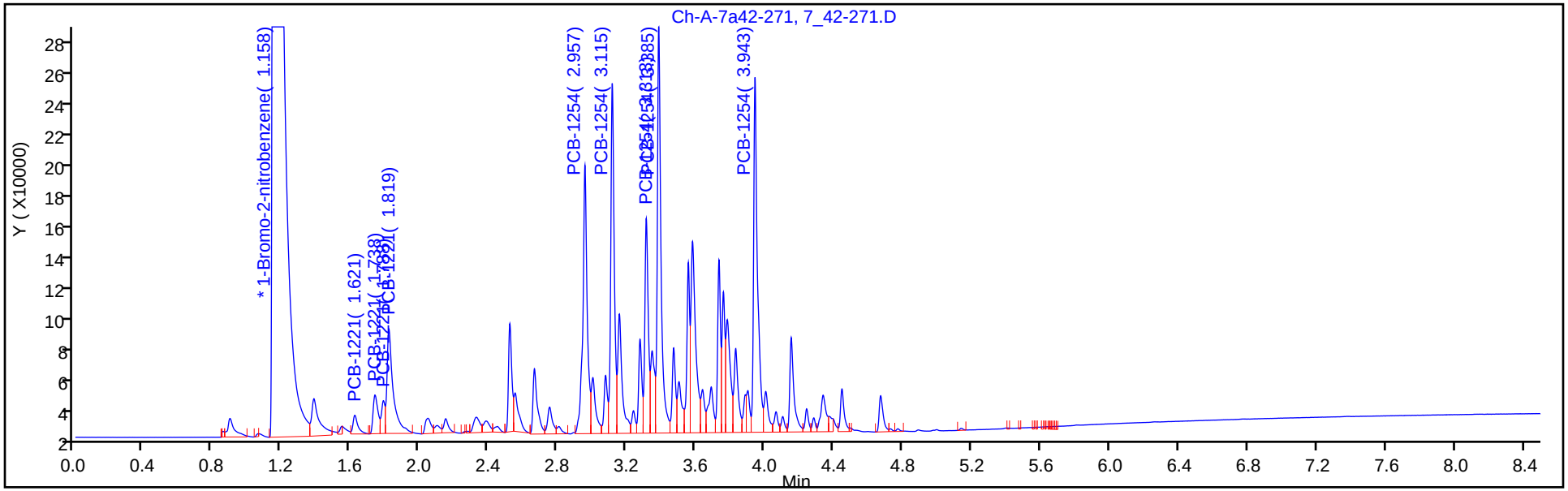
Report Date: 17-May-2019 15:18:29 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

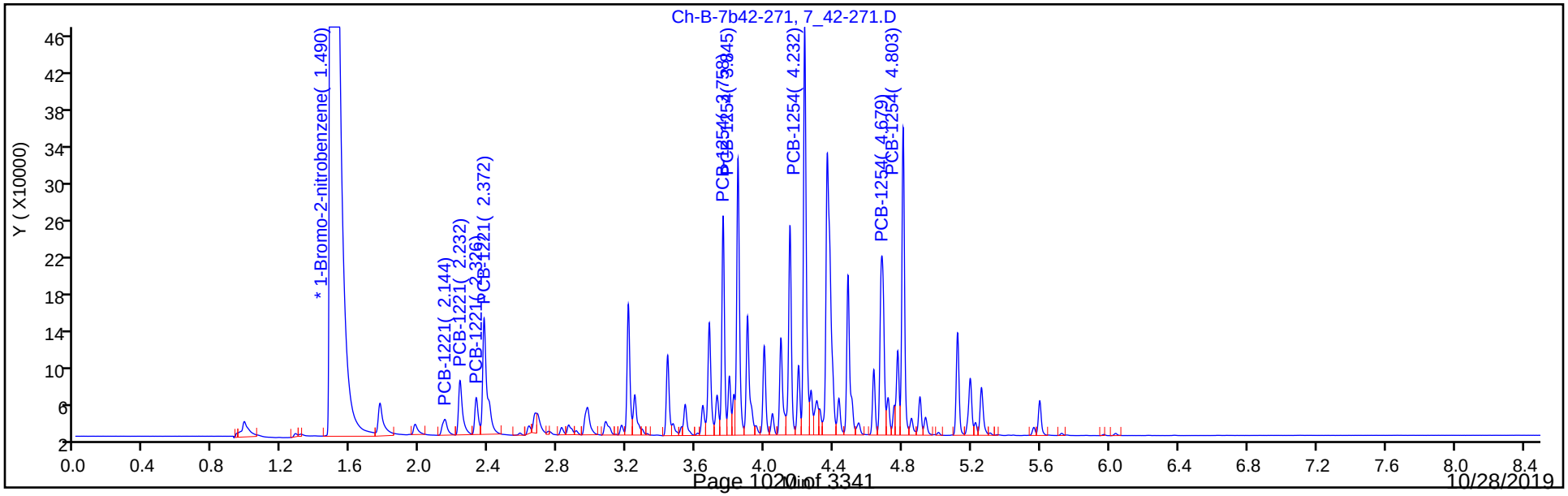
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-271.D

Injection Date:	10-May-2019 22:12:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	34
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 10-May-2019 22:28:05 ALS Bottle#: 0 Worklist Smp#: 35
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:32 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 13-May-2019 20:12:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4393178	0.5000	0.5000	
2	1.490	1.490	0.000	6304087	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.622	1.622	0.000	2992	0.0200	0.0195	M
1	1.738	1.738	0.000	3636	0.0200	0.0201	M
1	1.788	1.788	0.000	1683	0.0200	0.0195	M
1	1.826	1.826	0.000	7546	0.0200	0.0218	M
		Average of Peak Amounts =				0.0202	
2	2.144	2.144	0.000	2602	0.0200	0.0190	M
2	2.233	2.233	0.000	5621	0.0200	0.0191	M
2	2.326	2.326	0.000	3376	0.0200	0.0189	M
2	2.374	2.374	0.000	14518	0.0200	0.0190	M
		Average of Peak Amounts =				0.0190	
						RPD = 6.30	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.959	2.959	0.000	12048	0.0200	0.0207	M
1	3.119	3.119	0.000	13768	0.0200	0.0209	M
1	3.318	3.318	0.000	7837	0.0200	0.0198	M
1	3.391	3.391	0.000	16332	0.0200	0.0203	M
1	3.949	3.949	0.000	15355	0.0200	0.0206	M
		Average of Peak Amounts =				0.0205	
2	3.758	3.758	0.000	14565	0.0200	0.0192	M
2	3.845	3.845	0.000	18999	0.0200	0.0244	M
2	4.233	4.233	0.000	26389	0.0200	0.0234	M
2	4.683	4.683	0.000	16448	0.0200	0.0237	M
2	4.803	4.803	0.000	19945	0.0200	0.0241	M
		Average of Peak Amounts =				0.0230	
						RPD = 11.62	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@.02_00013 Amount Added: 1.00 Units: mL

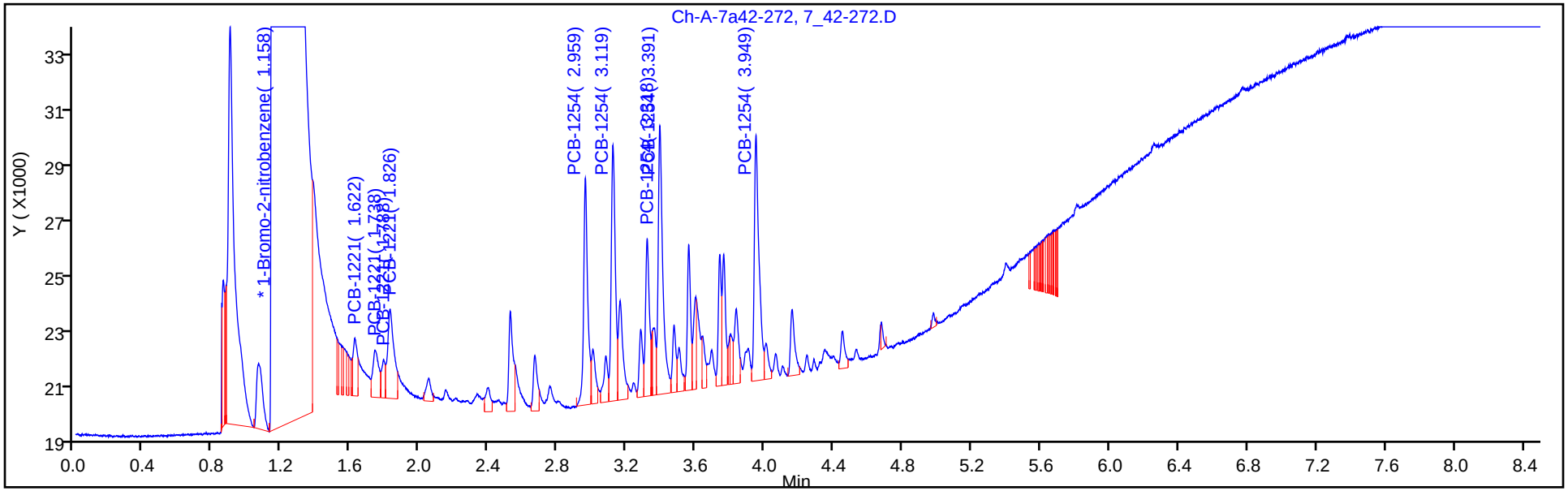
Report Date: 17-May-2019 15:18:33 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

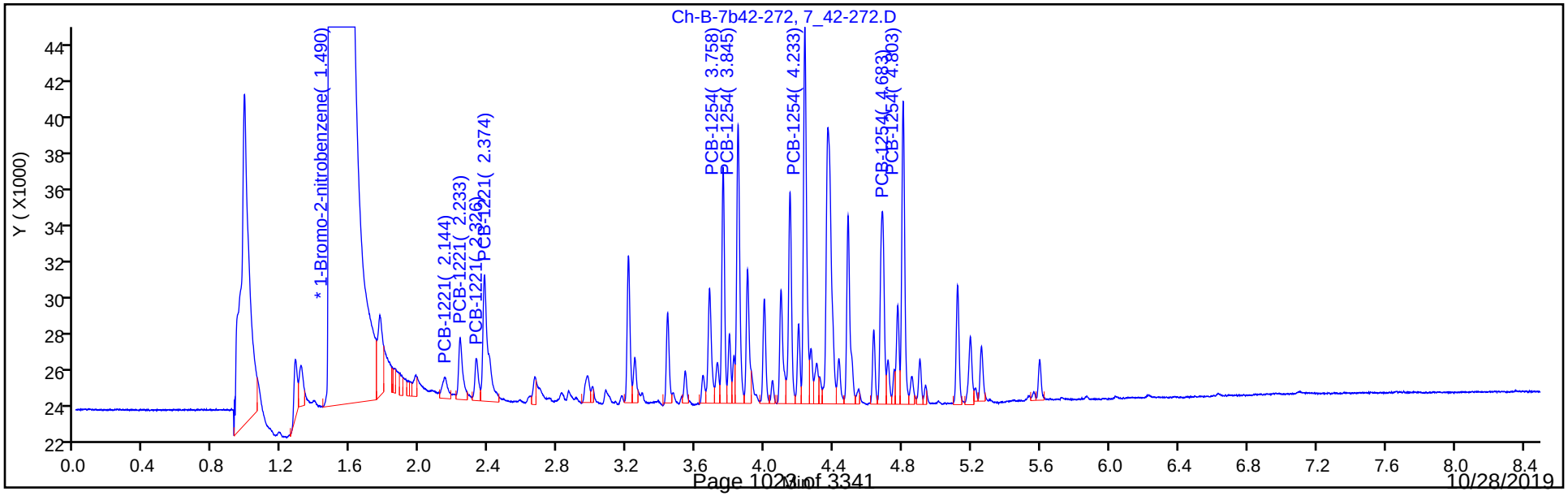
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date:	10-May-2019 22:28:05	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	35
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:33 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date: 10-May-2019 22:28:05 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

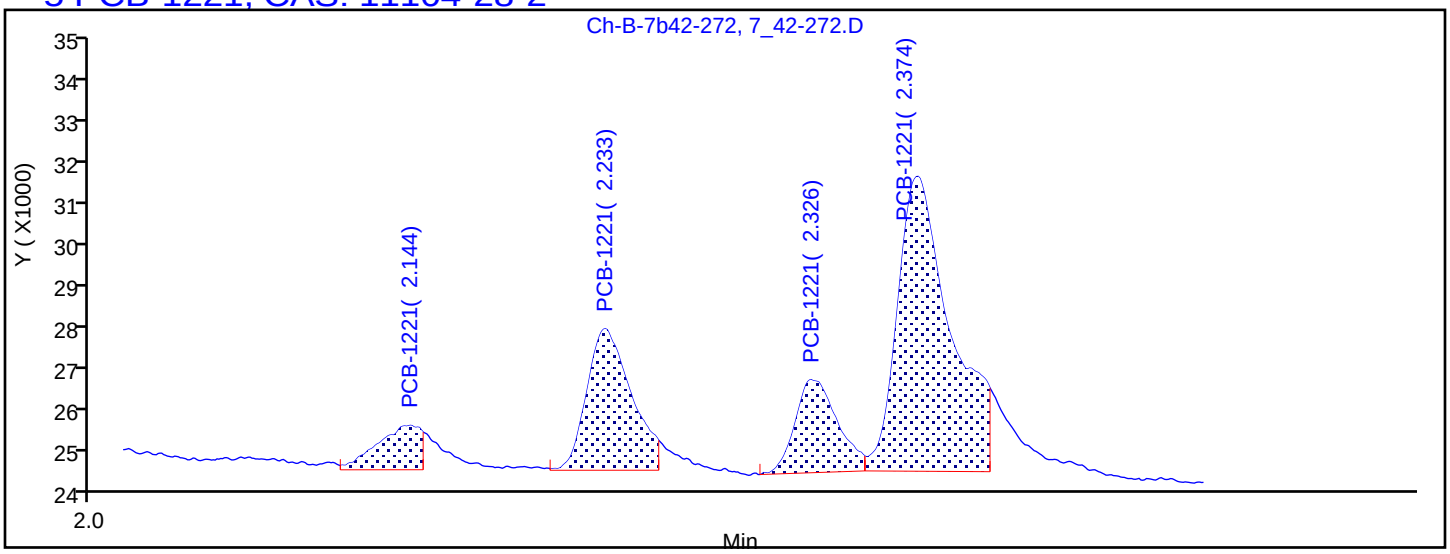
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 35

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

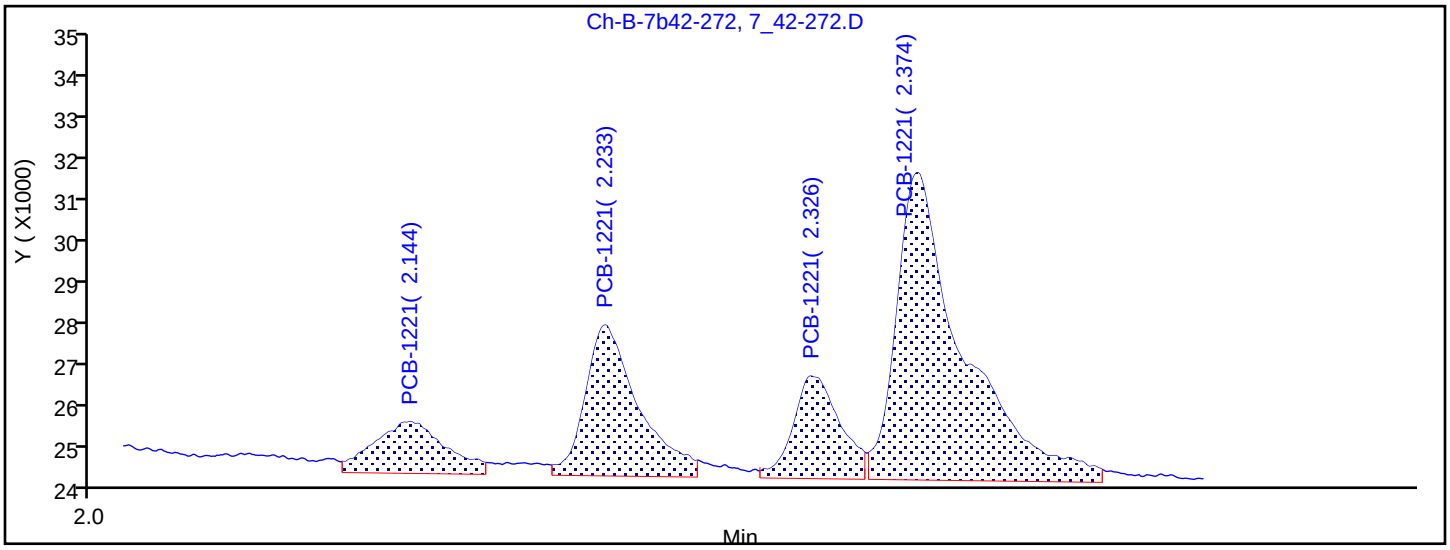
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

2.144	Response = 1346
2.233	Response = 4403
2.326	Response = 2760
2.374	Response = 11067



Manual Integration Results

2.144	Response = 2602	M
2.233	Response = 5621	M
2.326	Response = 3376	M
2.374	Response = 14518	M

Reviewer: clarkda, 17-May-2019 15:01:18

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 17-May-2019 15:18:33 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-272.D

Injection Date: 10-May-2019 22:28:05 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

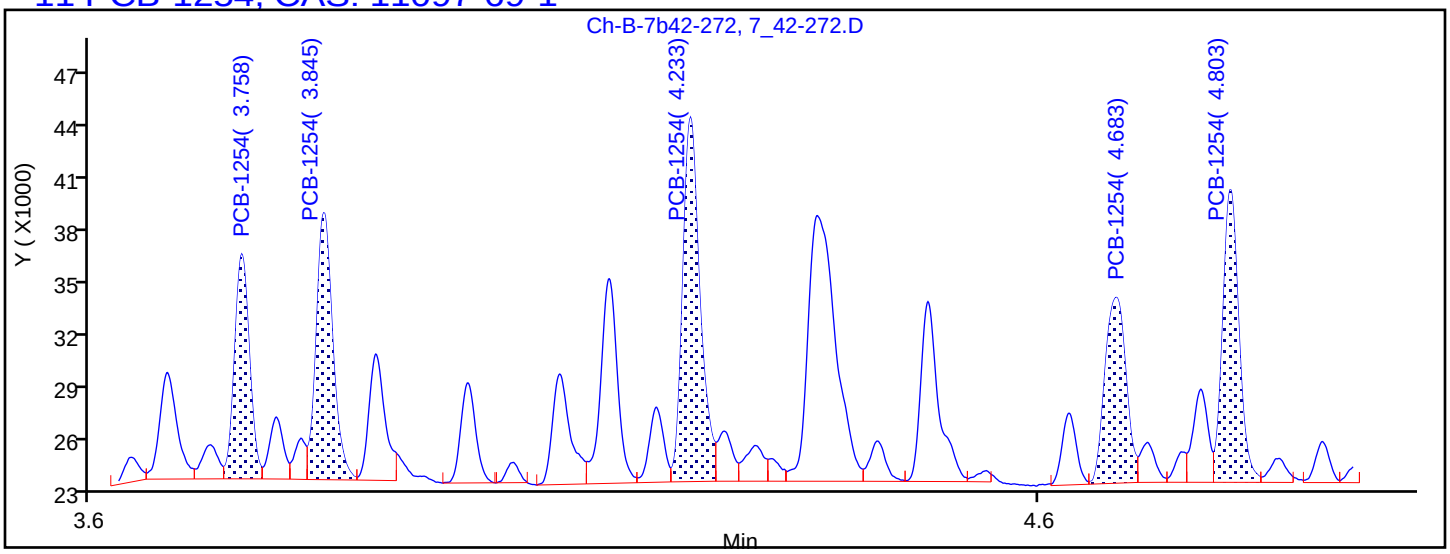
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 35

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

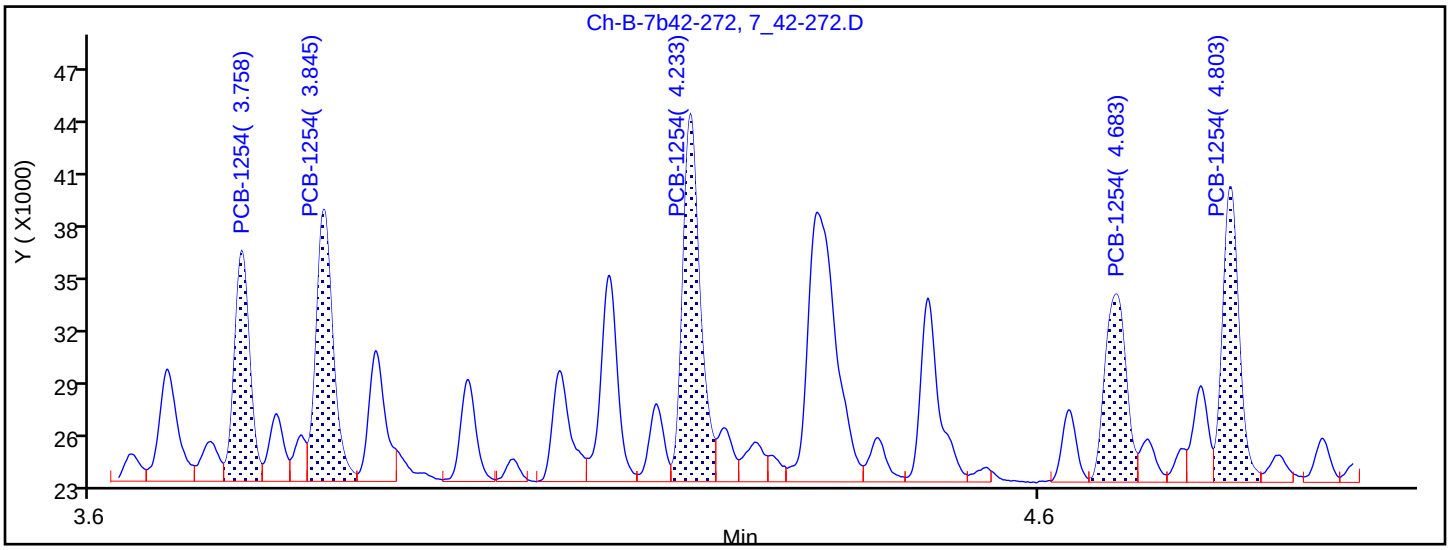
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

3.758	Response = 13786
3.845	Response = 18143
4.233	Response = 25842
4.683	Response = 16084
4.803	Response = 19408



Manual Integration Results

3.758	Response = 14565	M
3.845	Response = 18999	M
4.233	Response = 26389	M
4.683	Response = 16448	M
4.803	Response = 19945	M

Reviewer: clarkda, 17-May-2019 14:59:27

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 00:03 Calibration End Date: 05/11/2019 00:35 Calibration ID: 36961

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/43	7_42-280.D
Level 2	IC 480-472294/42	7_42-279.D
Level 3	IC 480-472294/41	7_42-278.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1242 Peak 1	0.0211	0.0196	0.0170			Ave		0.0193				10.9		20.0			
PCB-1242 Peak 2	0.0454	0.0360	0.0335			Ave		0.0383				16.4		20.0			
PCB-1242 Peak 3	0.0518	0.0693	0.0751			Ave		0.0654				18.6		20.0			
PCB-1242 Peak 4	0.0444	0.0381	0.0335			Ave		0.0387				14.1		20.0			
PCB-1242 Peak 5	0.0285	0.0324	0.0311			Ave		0.0306				6.5		20.0			
PCB-1268 Peak 1	0.1864	0.1808	0.1787			Ave		0.1820				2.2		20.0			
PCB-1268 Peak 2	0.1829	0.1782	0.1753			Ave		0.1788				2.1		20.0			
PCB-1268 Peak 3	0.1566	0.1438	0.1449			Ave		0.1485				4.8		20.0			
PCB-1268 Peak 4	0.4840	0.4768	0.4431			Ave		0.4680				4.7		20.0			
PCB-1268 Peak 5	0.1399	0.0917	0.0904			Lin1	0.0010	0.0899				0.3			1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 00:03 Calibration End Date: 05/11/2019 00:35 Calibration ID: 36961

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/43	7_42-280.D
Level 2	IC 480-472294/42	7_42-279.D
Level 3	IC 480-472294/41	7_42-278.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1242 Peak 1	BNB	Ave	3784	83421	297473			0.0200	0.500	2.00		
PCB-1242 Peak 2	BNB	Ave	8129	153126	586913			0.0200	0.500	2.00		
PCB-1242 Peak 3	BNB	Ave	9266	294813	1314662			0.0200	0.500	2.00		
PCB-1242 Peak 4	BNB	Ave	7947	162008	586319			0.0200	0.500	2.00		
PCB-1242 Peak 5	BNB	Ave	5093	137604	543684			0.0200	0.500	2.00		
PCB-1268 Peak 1	BNB	Ave	33374	768770	3127298			0.0200	0.500	2.00		
PCB-1268 Peak 2	BNB	Ave	32732	757690	3068502			0.0200	0.500	2.00		
PCB-1268 Peak 3	BNB	Ave	28034	611680	2536798			0.0200	0.500	2.00		
PCB-1268 Peak 4	BNB	Ave	86628	2027824	7755036			0.0200	0.500	2.00		
PCB-1268 Peak 5	BNB	Lin1	25041	389904	1582639			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-278.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-May-2019 00:03:16 ALS Bottle#: 0 Worklist Smp#: 41
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:55 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 11:22:08

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.161	1.158	0.003	4375389	0.5000	0.5000	
2	1.493	1.489	0.004	6275611	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.818	1.826	-0.008	297473	2.00	1.77	
1	2.038	2.043	-0.004	586913	2.00	1.75	
1	2.312	2.335	-0.023	1314662	2.00	2.30	
1	2.375	2.393	-0.017	586319	2.00	1.73	
1	2.748	2.753	-0.005	543684	2.00	2.03	
		Average of Peak Amounts =				1.91	
2	2.374	2.375	-0.001	460969	2.00	1.81	
2	2.668	2.668	0.000	958703	2.00	1.97	
2	2.969	2.973	-0.003	2100545	2.00	1.82	
2	3.077	3.078	-0.001	786195	2.00	1.78	
2	3.678	3.680	-0.002	789584	2.00	1.77	
		Average of Peak Amounts =				1.83	
						RPD = 4.55	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.729	4.732	-0.003	3127298	2.00	1.96	
1	4.768	4.772	-0.004	3068502	2.00	1.96	
1	4.984	4.986	-0.002	2536798	2.00	1.95	
1	5.414	5.416	-0.002	7755036	2.00	1.89	
1	5.645	5.646	-0.001	1582639	2.00	2.00	
		Average of Peak Amounts =				1.95	
2	5.557	5.557	0.000	3507135	2.00	1.82	
2	5.596	5.596	0.000	3360921	2.00	1.82	
2	5.842	5.842	0.000	2756396	2.00	1.82	
2	6.379	6.379	0.000	8586146	2.00	1.86	
2	6.708	6.708	0.000	1721951	2.00	1.98	
		Average of Peak Amounts =				1.86	
						RPD = 4.90	

Reagents:

42-68w/IS@2.0_00015 Amount Added: 1.00 Units: mL

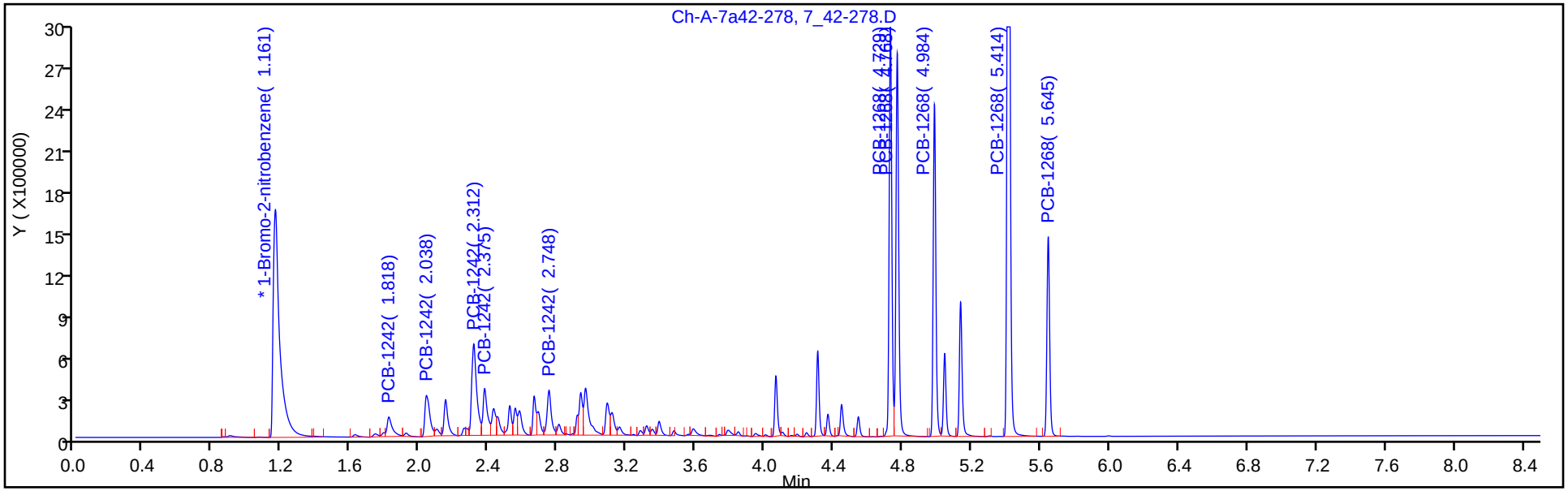
Report Date: 17-May-2019 15:17:56 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

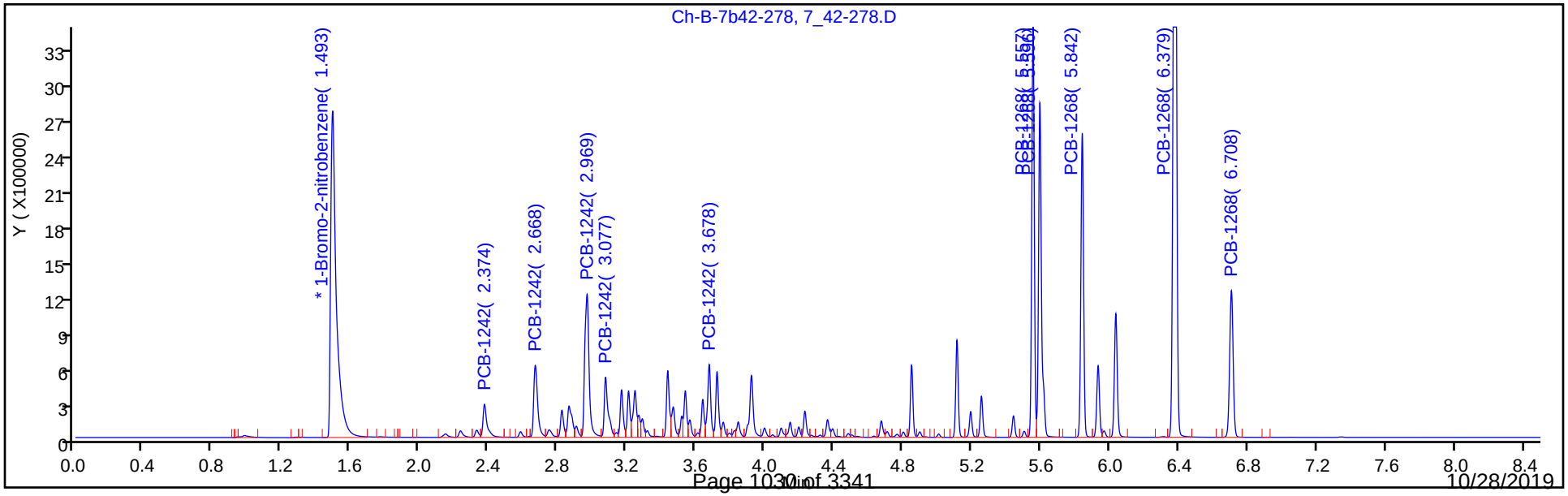
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-278.D

Injection Date:	11-May-2019 00:03:16	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	41
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-279.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-May-2019 00:19:07 ALS Bottle#: 0 Worklist Smp#: 42
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:00 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:11:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.161	1.158	0.003	4252853	0.5000	0.5000	
2	1.493	1.489	0.003	6099253	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.822	1.826	-0.004	83421	0.5000	0.5095	
1	2.038	2.043	-0.004	153126	0.5000	0.4698	
1	2.318	2.335	-0.017	294813	0.5000	0.5300	
1	2.379	2.393	-0.013	162008	0.5000	0.4926	
1	2.750	2.753	-0.003	137604	0.5000	0.5283	
		Average of Peak Amounts =				0.5060	
2	2.373	2.375	-0.002	126276	0.5000	0.5109	
2	2.668	2.668	0.000	256216	0.5000	0.5338	
2	2.970	2.973	-0.002	520731	0.5000	0.4635	
2	3.077	3.078	-0.001	201933	0.5000	0.4711	
2	3.678	3.680	-0.002	195635	0.5000	0.4510	
		Average of Peak Amounts =				0.4861	
						RPD = 4.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.728	4.732	-0.004	768770	0.5000	0.4967	
1	4.768	4.772	-0.004	757690	0.5000	0.4983	
1	4.984	4.986	-0.002	611680	0.5000	0.4844	
1	5.413	5.416	-0.003	2027824	0.5000	0.5095	
1	5.644	5.646	-0.002	389904	0.5000	0.4989	
		Average of Peak Amounts =				0.4975	
2	5.557	5.557	0.000	868074	0.5000	0.4643	
2	5.596	5.596	0.000	820700	0.5000	0.4585	
2	5.842	5.842	0.000	676557	0.5000	0.4595	
2	6.379	6.379	0.000	2210997	0.5000	0.4915	
2	6.708	6.708	0.000	443515	0.5000	0.5179	
		Average of Peak Amounts =				0.4784	
						RPD = 3.93	

Reagents:

42-68w/IS@0.5_00050 Amount Added: 1.00 Units: mL

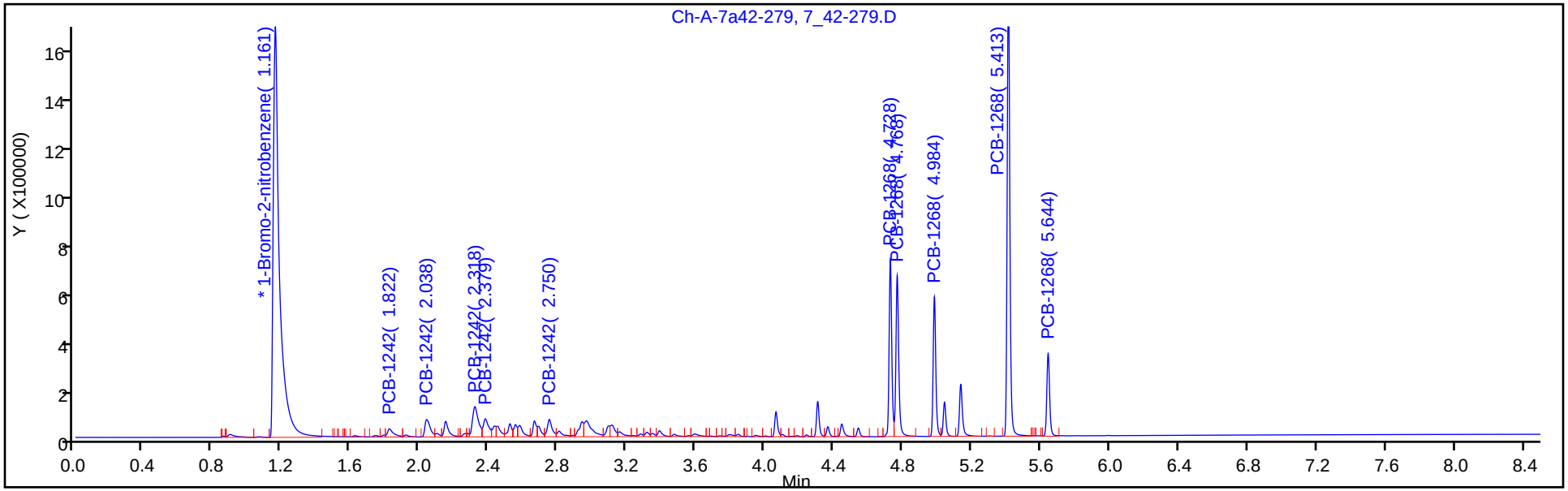
Report Date: 17-May-2019 15:18:01 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

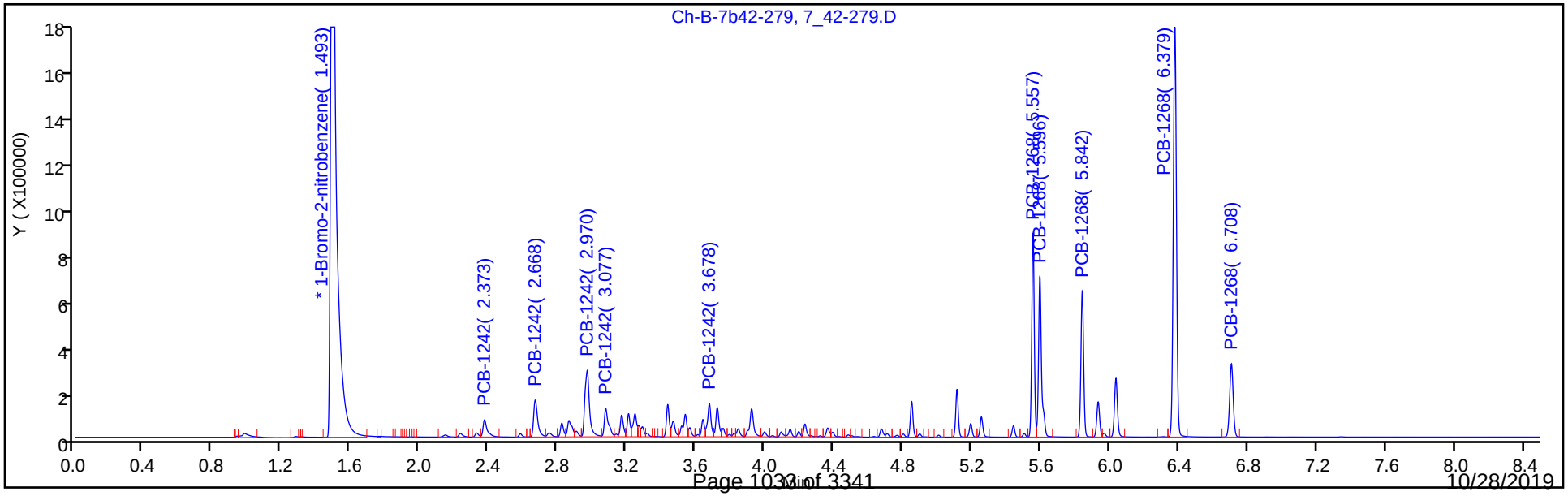
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-279.D

Injection Date:	11-May-2019 00:19:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	42
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-280.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-May-2019 00:35:07 ALS Bottle#: 0 Worklist Smp#: 43
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:05 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:12:38

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4474959	0.5000	0.5000	
2	1.490	1.490	0.000	6373533	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							M
1	1.826	1.826	0.000	3784	0.0200	0.0220	M
1	2.043	2.043	0.000	8129	0.0200	0.0237	M
1	2.335	2.335	0.000	9266	0.0200	0.0158	M
1	2.393	2.393	0.000	7947	0.0200	0.0230	M
1	2.753	2.753	0.000	5093	0.0200	0.0186	M
		Average of Peak Amounts =				0.0206	
2	2.375	2.375	0.000	5537	0.0200	0.0214	
2	2.668	2.668	0.000	14183	0.0200	0.0190	
2	2.973	2.973	0.000	27348	0.0200	0.0233	
2	3.078	3.078	0.000	10449	0.0200	0.0233	
2	3.680	3.680	0.000	10998	0.0200	0.0243	
		Average of Peak Amounts =				0.0223	
						RPD = 7.70	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.732	4.732	0.000	33374	0.0200	0.0205	
1	4.772	4.772	0.000	32732	0.0200	0.0205	
1	4.986	4.986	0.000	28034	0.0200	0.0211	
1	5.416	5.416	0.000	86628	0.0200	0.0207	
1	5.646	5.646	0.000	25041	0.0200	0.0200	
		Average of Peak Amounts =				0.0206	
2	5.557	5.557	0.000	45313	0.0200	0.0232	
2	5.596	5.596	0.000	43783	0.0200	0.0234	
2	5.842	5.842	0.000	36043	0.0200	0.0234	
2	6.379	6.379	0.000	102420	0.0200	0.0218	
2	6.708	6.708	0.000	26021	0.0200	0.0195	
		Average of Peak Amounts =				0.0223	
						RPD = 7.95	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

42-68w/IS@.02_00014 Amount Added: 1.00 Units: mL

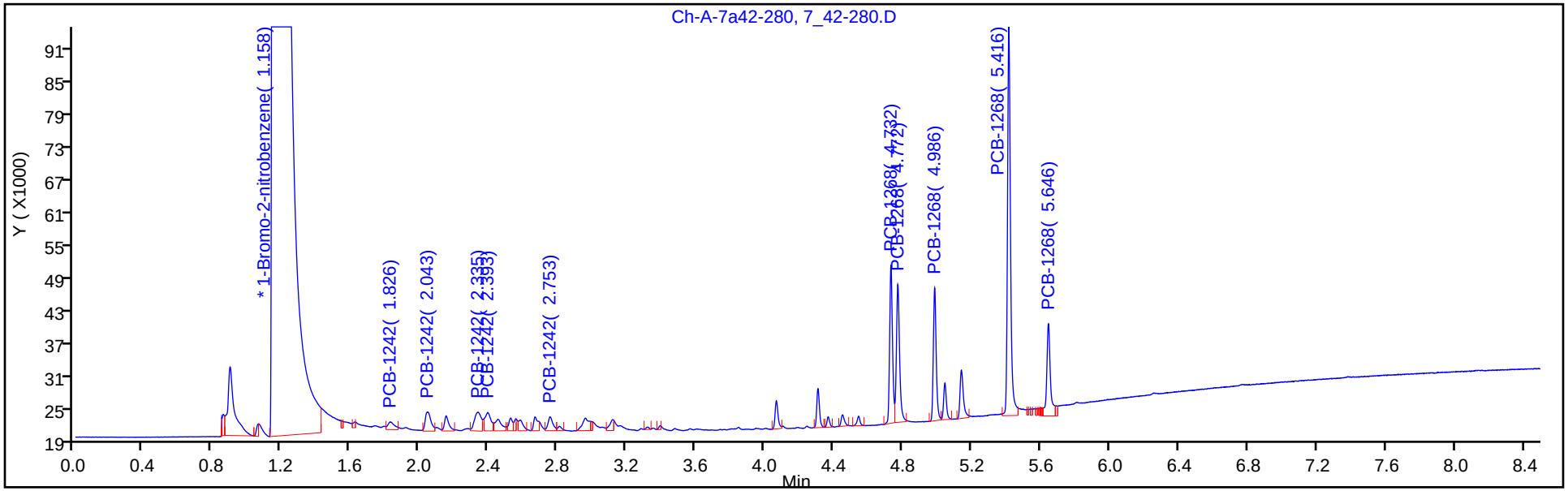
Report Date: 17-May-2019 15:18:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

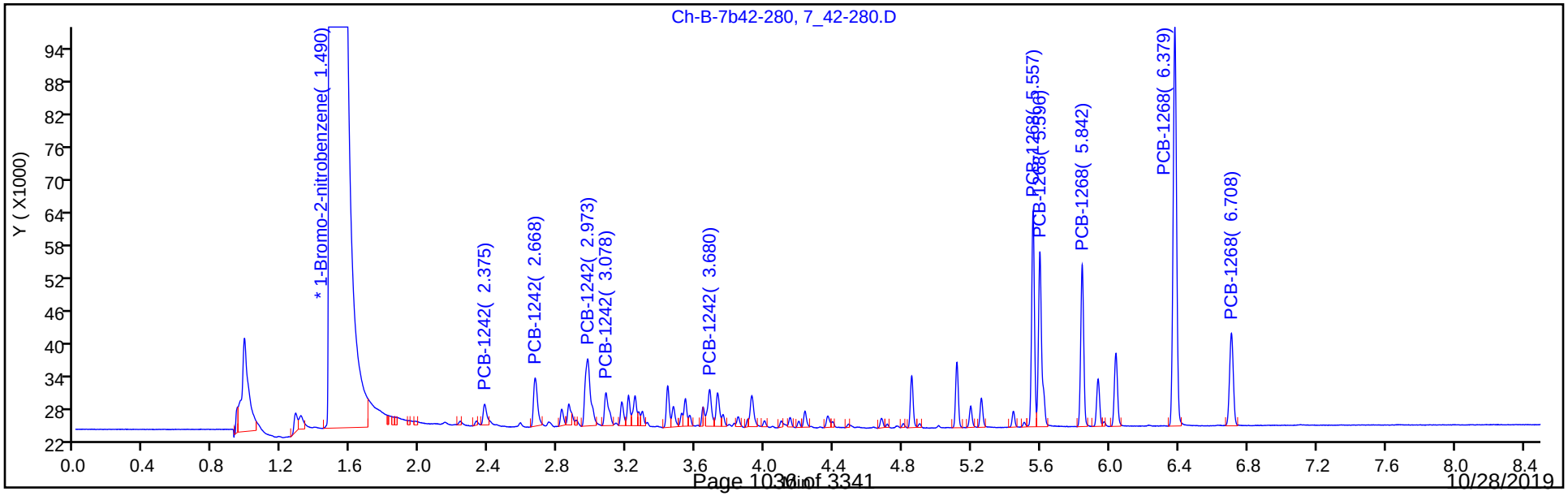
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-280.D

Injection Date:	11-May-2019 00:35:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	43
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-280.D

Injection Date: 11-May-2019 00:35:07 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

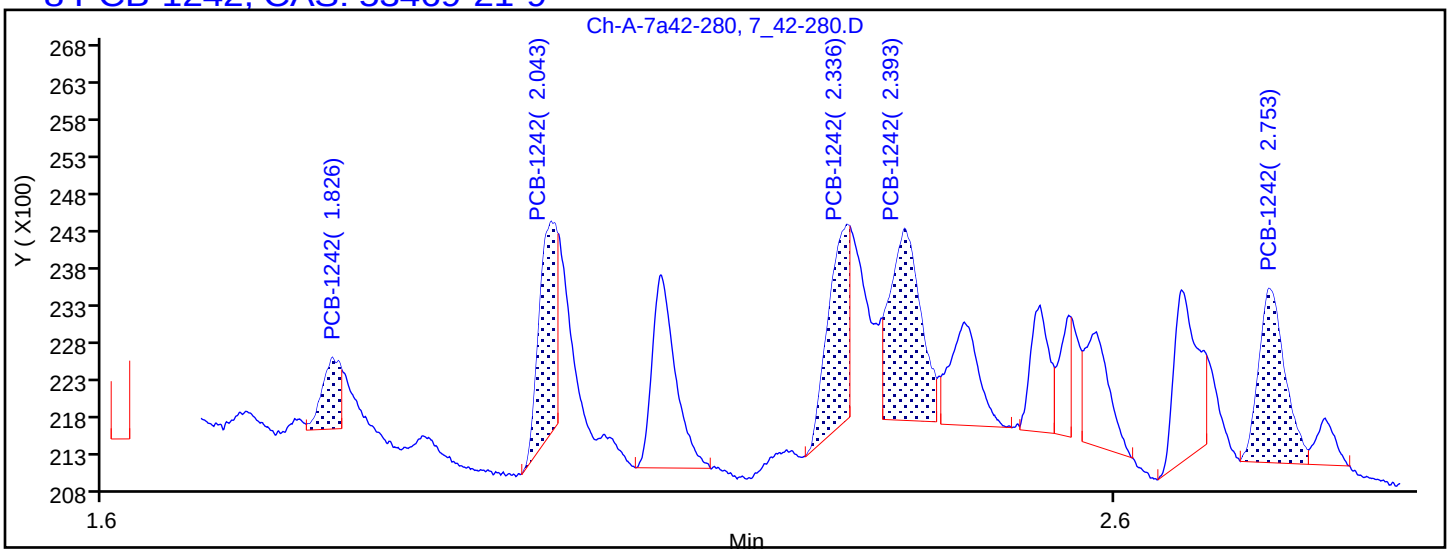
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 43

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

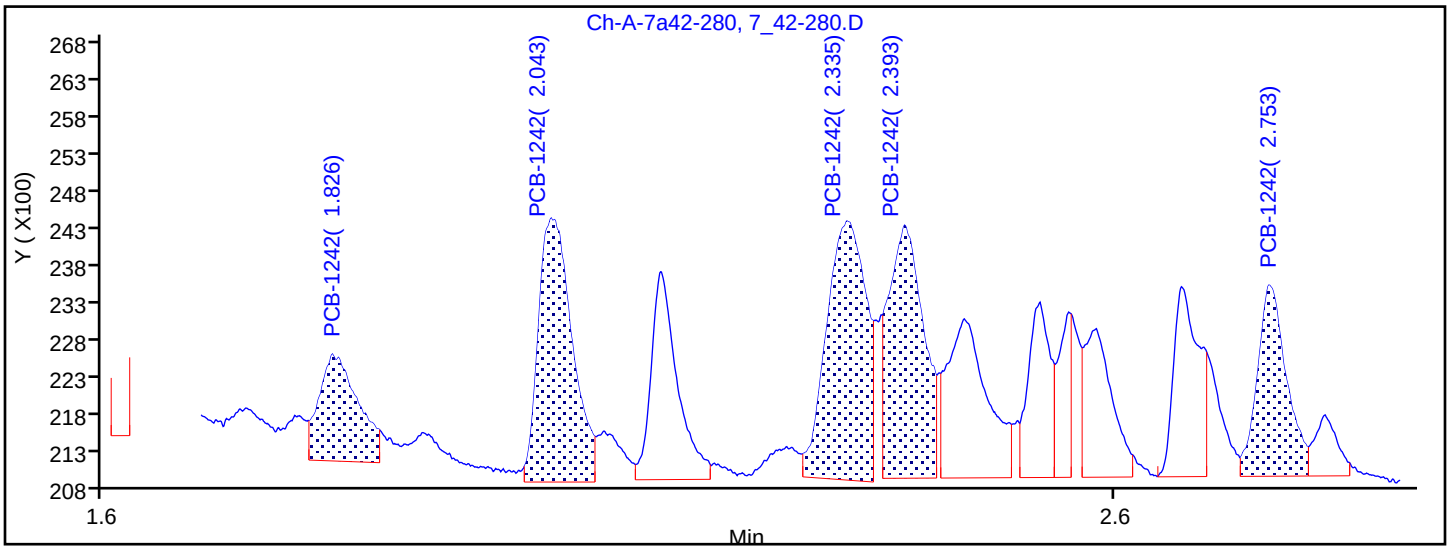
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

8 PCB-1242, CAS: 53469-21-9



Processing Integration Results

1.826	Response = 1157
2.043	Response = 3423
2.336	Response = 3753
2.393	Response = 5358
2.753	Response = 4198



Manual Integration Results

1.826	Response = 3784	M
2.043	Response = 8129	M
2.335	Response = 9266	M
2.393	Response = 7947	M
2.753	Response = 5093	M

Reviewer: clarkda, 17-May-2019 15:06:59

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 00:03 Calibration End Date: 05/11/2019 00:35 Calibration ID: 36962

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/43	7_42-280.D
Level 2	IC 480-472294/42	7_42-279.D
Level 3	IC 480-472294/41	7_42-278.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1242 Peak 1	0.0217	0.0207	0.0184			Ave		0.0203				8.5		20.0			
PCB-1242 Peak 2	0.0556	0.0420	0.0382			Lin1	0.0004	0.0386				8.6			0.9990		0.9900
PCB-1242 Peak 3	0.1073	0.0854	0.0837			Ave		0.0921				14.3		20.0			
PCB-1242 Peak 4	0.0410	0.0331	0.0313			Ave		0.0351				14.6		20.0			
PCB-1242 Peak 5	0.0431	0.0321	0.0315			Ave		0.0356				18.5		20.0			
PCB-1268 Peak 1	0.1777	0.1423	0.1397			Ave		0.1533				13.9		20.0			
PCB-1268 Peak 2	0.1717	0.1346	0.1339			Ave		0.1467				14.8		20.0			
PCB-1268 Peak 3	0.1414	0.1109	0.1098			Ave		0.1207				14.8		20.0			
PCB-1268 Peak 4	0.4017	0.3625	0.3420			Ave		0.3688				8.2		20.0			
PCB-1268 Peak 5	0.1021	0.0727	0.0686			Lin1	0.0007	0.0688				4.6			1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 00:03 Calibration End Date: 05/11/2019 00:35 Calibration ID: 36962

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/43	7_42-280.D
Level 2	IC 480-472294/42	7_42-279.D
Level 3	IC 480-472294/41	7_42-278.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1242 Peak 1	BNB	Ave	5537	126276	460969			0.0200	0.500	2.00		
PCB-1242 Peak 2	BNB	Lin1	14183	256216	958703			0.0200	0.500	2.00		
PCB-1242 Peak 3	BNB	Ave	27348	520731	2100545			0.0200	0.500	2.00		
PCB-1242 Peak 4	BNB	Ave	10449	201933	786195			0.0200	0.500	2.00		
PCB-1242 Peak 5	BNB	Ave	10998	195635	789584			0.0200	0.500	2.00		
PCB-1268 Peak 1	BNB	Ave	45313	868074	3507135			0.0200	0.500	2.00		
PCB-1268 Peak 2	BNB	Ave	43783	820700	3360921			0.0200	0.500	2.00		
PCB-1268 Peak 3	BNB	Ave	36043	676557	2756396			0.0200	0.500	2.00		
PCB-1268 Peak 4	BNB	Ave	102420	2210997	8586146			0.0200	0.500	2.00		
PCB-1268 Peak 5	BNB	Lin1	26021	443515	1721951			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-278.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-May-2019 00:03:16 ALS Bottle#: 0 Worklist Smp#: 41
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:55 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 11:22:08

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.161	1.158	0.003	4375389	0.5000	0.5000	
2	1.493	1.489	0.004	6275611	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.818	1.826	-0.008	297473	2.00	1.77	
1	2.038	2.043	-0.004	586913	2.00	1.75	
1	2.312	2.335	-0.023	1314662	2.00	2.30	
1	2.375	2.393	-0.017	586319	2.00	1.73	
1	2.748	2.753	-0.005	543684	2.00	2.03	
		Average of Peak Amounts =				1.91	
2	2.374	2.375	-0.001	460969	2.00	1.81	
2	2.668	2.668	0.000	958703	2.00	1.97	
2	2.969	2.973	-0.003	2100545	2.00	1.82	
2	3.077	3.078	-0.001	786195	2.00	1.78	
2	3.678	3.680	-0.002	789584	2.00	1.77	
		Average of Peak Amounts =				1.83	
						RPD = 4.55	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.729	4.732	-0.003	3127298	2.00	1.96	
1	4.768	4.772	-0.004	3068502	2.00	1.96	
1	4.984	4.986	-0.002	2536798	2.00	1.95	
1	5.414	5.416	-0.002	7755036	2.00	1.89	
1	5.645	5.646	-0.001	1582639	2.00	2.00	
		Average of Peak Amounts =				1.95	
2	5.557	5.557	0.000	3507135	2.00	1.82	
2	5.596	5.596	0.000	3360921	2.00	1.82	
2	5.842	5.842	0.000	2756396	2.00	1.82	
2	6.379	6.379	0.000	8586146	2.00	1.86	
2	6.708	6.708	0.000	1721951	2.00	1.98	
		Average of Peak Amounts =				1.86	
						RPD = 4.90	

Reagents:

42-68w/IS@2.0_00015 Amount Added: 1.00 Units: mL

Report Date: 17-May-2019 15:17:56 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-278.D

Injection Date: 11-May-2019 00:03:16 Instrument ID: HP6890-7 Operator ID: BufTCHROM

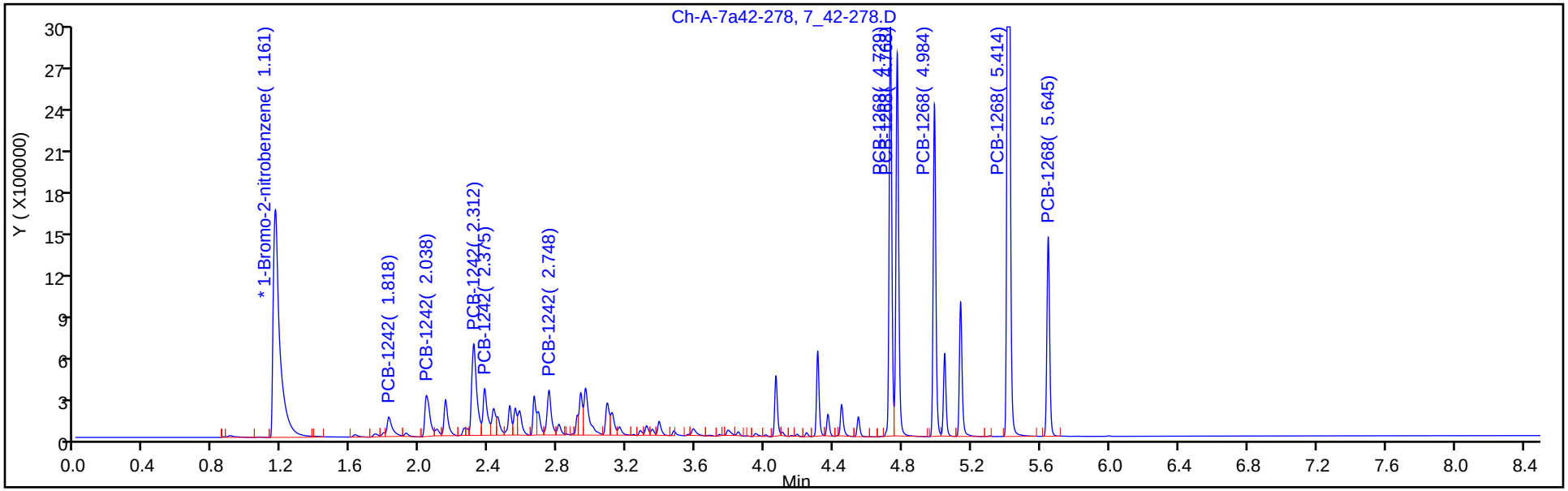
Lims ID: IC 3 Worklist Smp#: 41

Client ID:

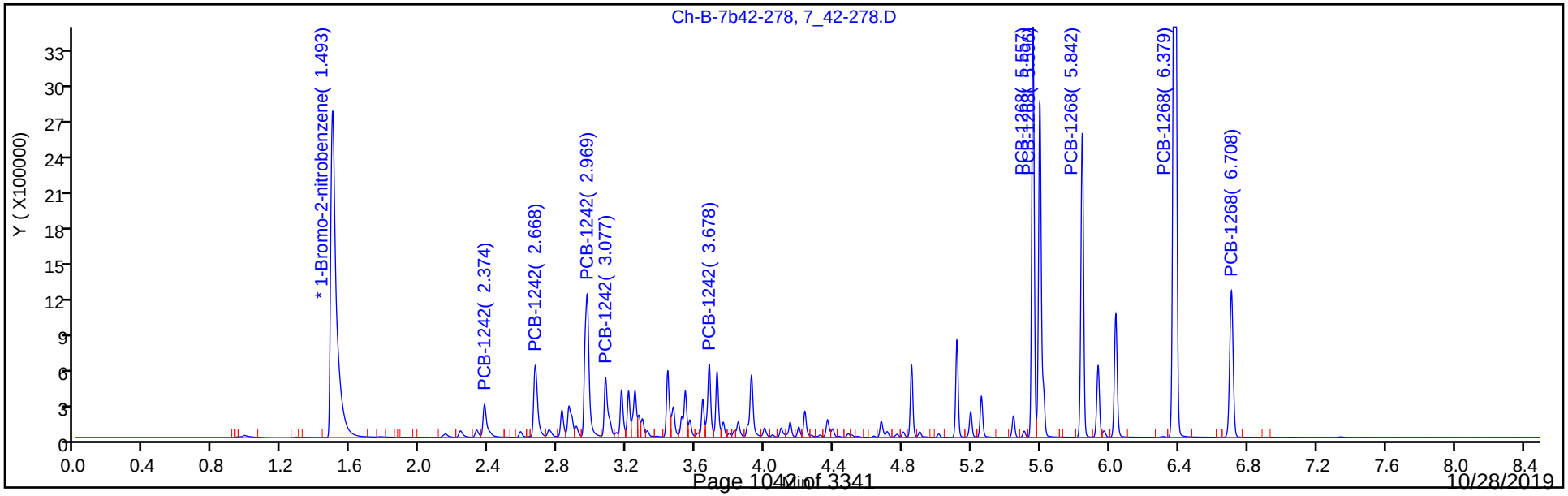
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-279.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-May-2019 00:19:07 ALS Bottle#: 0 Worklist Smp#: 42
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:00 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:11:51

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.161	1.158	0.003	4252853	0.5000	0.5000	
2	1.493	1.489	0.003	6099253	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.822	1.826	-0.004	83421	0.5000	0.5095	
1	2.038	2.043	-0.004	153126	0.5000	0.4698	
1	2.318	2.335	-0.017	294813	0.5000	0.5300	
1	2.379	2.393	-0.013	162008	0.5000	0.4926	
1	2.750	2.753	-0.003	137604	0.5000	0.5283	
		Average of Peak Amounts =				0.5060	
2	2.373	2.375	-0.002	126276	0.5000	0.5109	
2	2.668	2.668	0.000	256216	0.5000	0.5338	
2	2.970	2.973	-0.002	520731	0.5000	0.4635	
2	3.077	3.078	-0.001	201933	0.5000	0.4711	
2	3.678	3.680	-0.002	195635	0.5000	0.4510	
		Average of Peak Amounts =				0.4861	
						RPD = 4.02	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.728	4.732	-0.004	768770	0.5000	0.4967	
1	4.768	4.772	-0.004	757690	0.5000	0.4983	
1	4.984	4.986	-0.002	611680	0.5000	0.4844	
1	5.413	5.416	-0.003	2027824	0.5000	0.5095	
1	5.644	5.646	-0.002	389904	0.5000	0.4989	
		Average of Peak Amounts =				0.4975	
2	5.557	5.557	0.000	868074	0.5000	0.4643	
2	5.596	5.596	0.000	820700	0.5000	0.4585	
2	5.842	5.842	0.000	676557	0.5000	0.4595	
2	6.379	6.379	0.000	2210997	0.5000	0.4915	
2	6.708	6.708	0.000	443515	0.5000	0.5179	
		Average of Peak Amounts =				0.4784	
						RPD = 3.93	

Reagents:

42-68w/IS@0.5_00050 Amount Added: 1.00 Units: mL

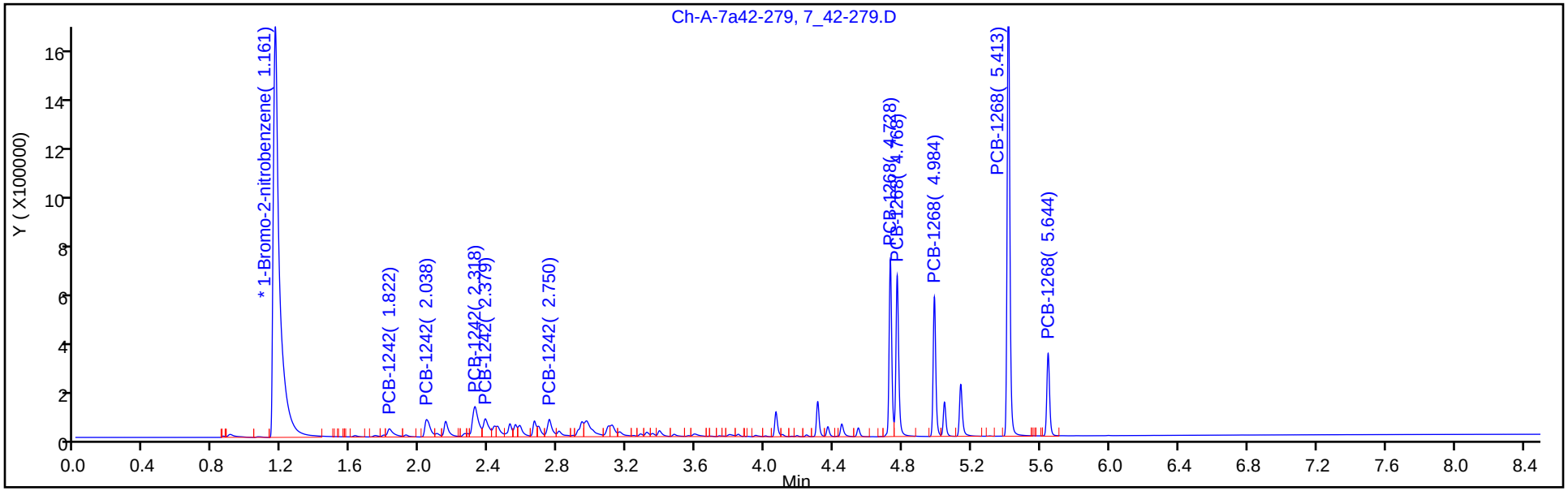
Report Date: 17-May-2019 15:18:01 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

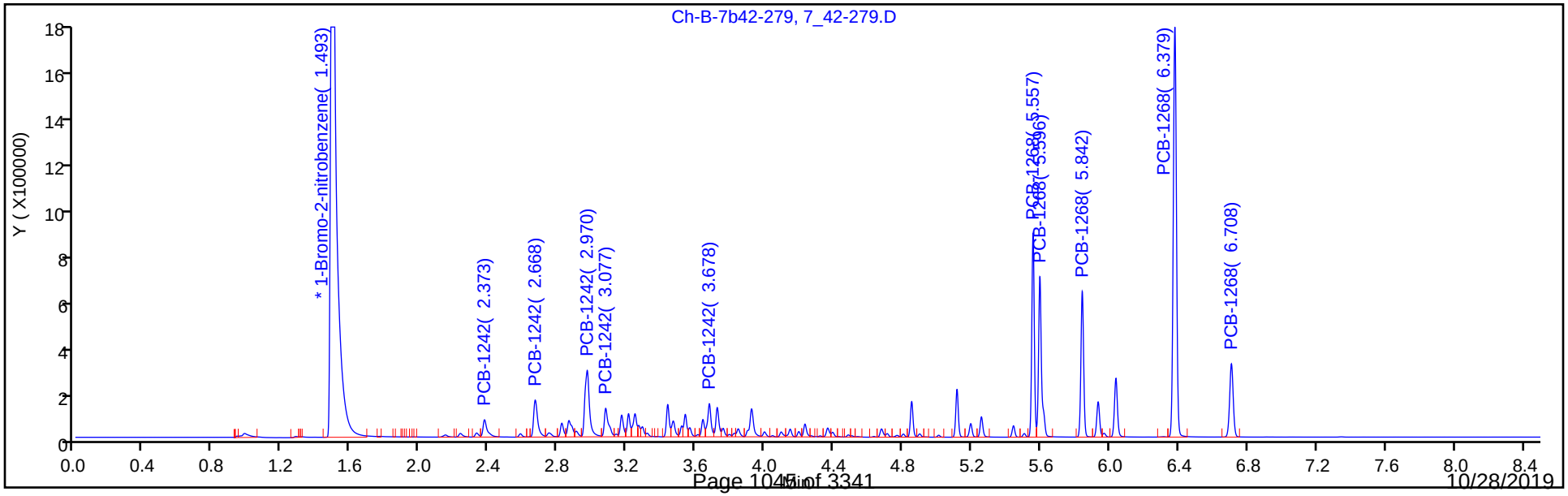
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-279.D

Injection Date:	11-May-2019 00:19:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	42
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-280.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-May-2019 00:35:07 ALS Bottle#: 0 Worklist Smp#: 43
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:05 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:12:38

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4474959	0.5000	0.5000	
2	1.490	1.490	0.000	6373533	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							M
1	1.826	1.826	0.000	3784	0.0200	0.0220	M
1	2.043	2.043	0.000	8129	0.0200	0.0237	M
1	2.335	2.335	0.000	9266	0.0200	0.0158	M
1	2.393	2.393	0.000	7947	0.0200	0.0230	M
1	2.753	2.753	0.000	5093	0.0200	0.0186	M
		Average of Peak Amounts =				0.0206	
2	2.375	2.375	0.000	5537	0.0200	0.0214	
2	2.668	2.668	0.000	14183	0.0200	0.0190	
2	2.973	2.973	0.000	27348	0.0200	0.0233	
2	3.078	3.078	0.000	10449	0.0200	0.0233	
2	3.680	3.680	0.000	10998	0.0200	0.0243	
		Average of Peak Amounts =				0.0223	
						RPD = 7.70	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.732	4.732	0.000	33374	0.0200	0.0205	
1	4.772	4.772	0.000	32732	0.0200	0.0205	
1	4.986	4.986	0.000	28034	0.0200	0.0211	
1	5.416	5.416	0.000	86628	0.0200	0.0207	
1	5.646	5.646	0.000	25041	0.0200	0.0200	
		Average of Peak Amounts =				0.0206	
2	5.557	5.557	0.000	45313	0.0200	0.0232	
2	5.596	5.596	0.000	43783	0.0200	0.0234	
2	5.842	5.842	0.000	36043	0.0200	0.0234	
2	6.379	6.379	0.000	102420	0.0200	0.0218	
2	6.708	6.708	0.000	26021	0.0200	0.0195	
		Average of Peak Amounts =				0.0223	
						RPD = 7.95	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

42-68w/IS@.02_00014 Amount Added: 1.00 Units: mL

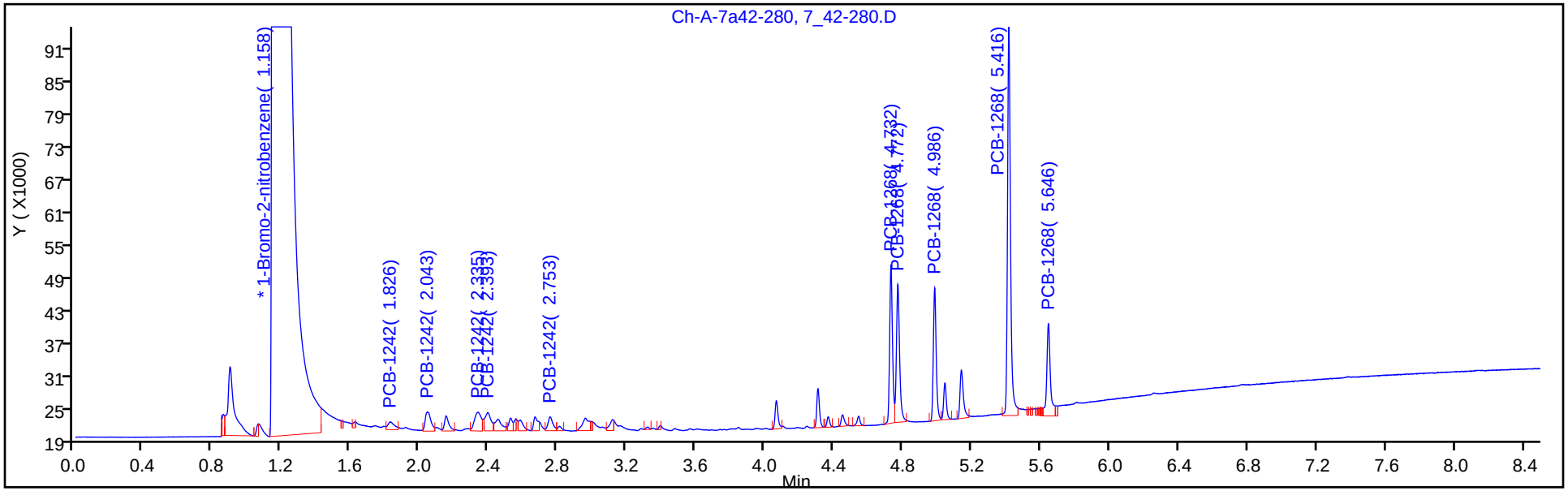
Report Date: 17-May-2019 15:18:06 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

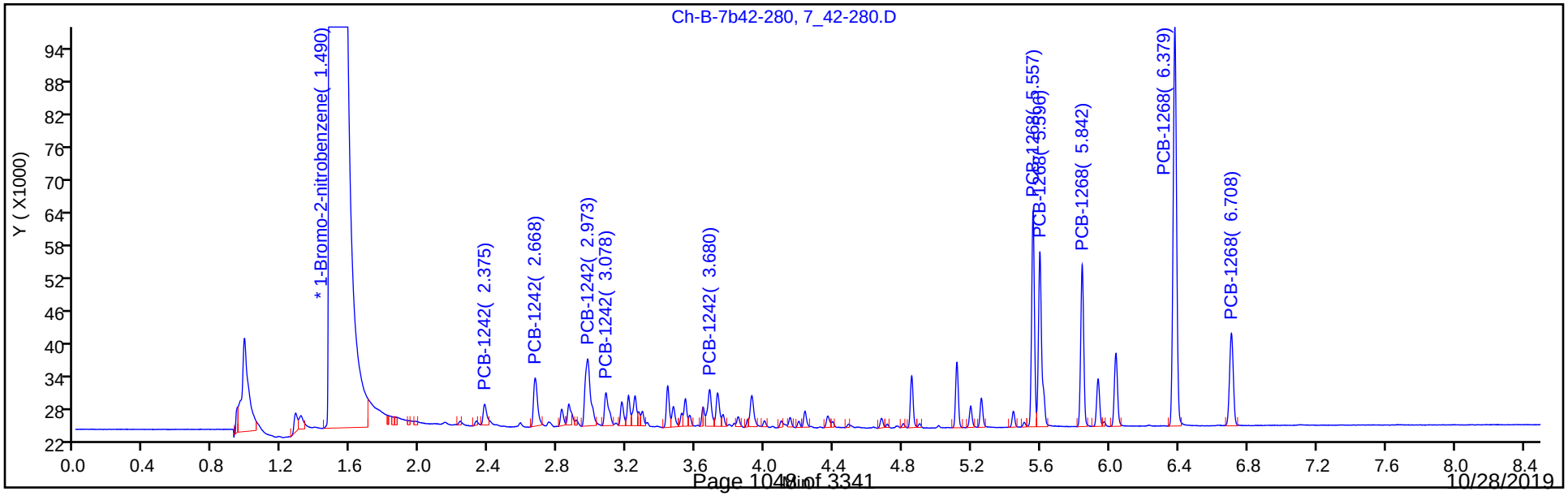
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-280.D

Injection Date:	11-May-2019 00:35:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	43
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 01:06 Calibration End Date: 05/11/2019 01:38 Calibration ID: 36965

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/47	7_42-284.D
Level 2	IC 480-472294/46	7_42-283.D
Level 3	IC 480-472294/45	7_42-282.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1248 Peak 1	0.0552	0.0300	0.0288			Lin1	0.0005	0.0286				1.2			1.0000		0.9900
PCB-1248 Peak 2	0.0408	0.0219	0.0209			Lin1	0.0004	0.0208				2.2			1.0000		0.9900
PCB-1248 Peak 3	0.0908	0.0386	0.0344			Lin1	0.0012	0.0343				7.4			0.9990		0.9900
PCB-1248 Peak 4	0.0751	0.0438	0.0433			Lin1	0.0006	0.0429				1.0			1.0000		0.9900
PCB-1248 Peak 5	0.0458	0.0282	0.0265			Lin1	0.0004	0.0265				4.4			1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 01:06 Calibration End Date: 05/11/2019 01:38 Calibration ID: 36965

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/47	7_42-284.D
Level 2	IC 480-472294/46	7_42-283.D
Level 3	IC 480-472294/45	7_42-282.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1248 Peak 1	BNB	Lin1	9282	130068	523477			0.0200	0.500	2.00		
PCB-1248 Peak 2	BNB	Lin1	6861	95283	379562			0.0200	0.500	2.00		
PCB-1248 Peak 3	BNB	Lin1	15251	167745	625540			0.0200	0.500	2.00		
PCB-1248 Peak 4	BNB	Lin1	12616	190203	786316			0.0200	0.500	2.00		
PCB-1248 Peak 5	BNB	Lin1	7689	122497	480978			0.0200	0.500	2.00		

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-282.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-May-2019 01:06:48 ALS Bottle#: 0 Worklist Smp#: 45
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:12 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:30:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.157	1.158	-0.001	4540939	0.5000	0.5000	
2	1.490	1.490	0.000	6465536	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							
1	2.518	2.525	-0.007	523477	2.00	2.00	
1	2.550	2.557	-0.007	379562	2.00	1.99	
1	2.660	2.667	-0.007	625540	2.00	1.97	
1	2.746	2.754	-0.008	786316	2.00	2.00	
1	3.383	3.394	-0.011	480978	2.00	1.98	
		Average of Peak Amounts =				1.99	
2	3.208	3.209	-0.001	739114	2.00	1.98	
2	3.436	3.438	-0.002	932414	2.00	1.99	
2	3.677	3.680	-0.003	1263192	2.00	2.00	
2	3.922	3.924	-0.002	1020573	2.00	2.01	
2	4.232	4.233	-0.001	598422	2.00	1.99	
		Average of Peak Amounts =				1.99	
						RPD = 0.22	

Reagents:

1248w/IS@ 2.0_00013 Amount Added: 1.00 Units: mL

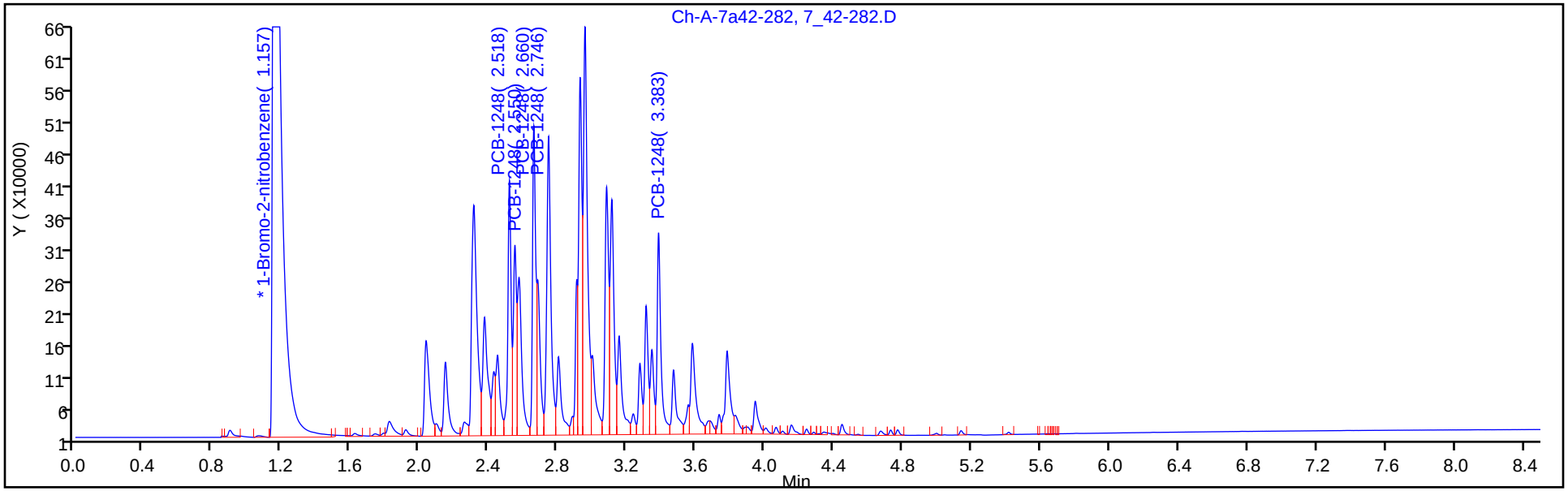
Report Date: 17-May-2019 15:18:13 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

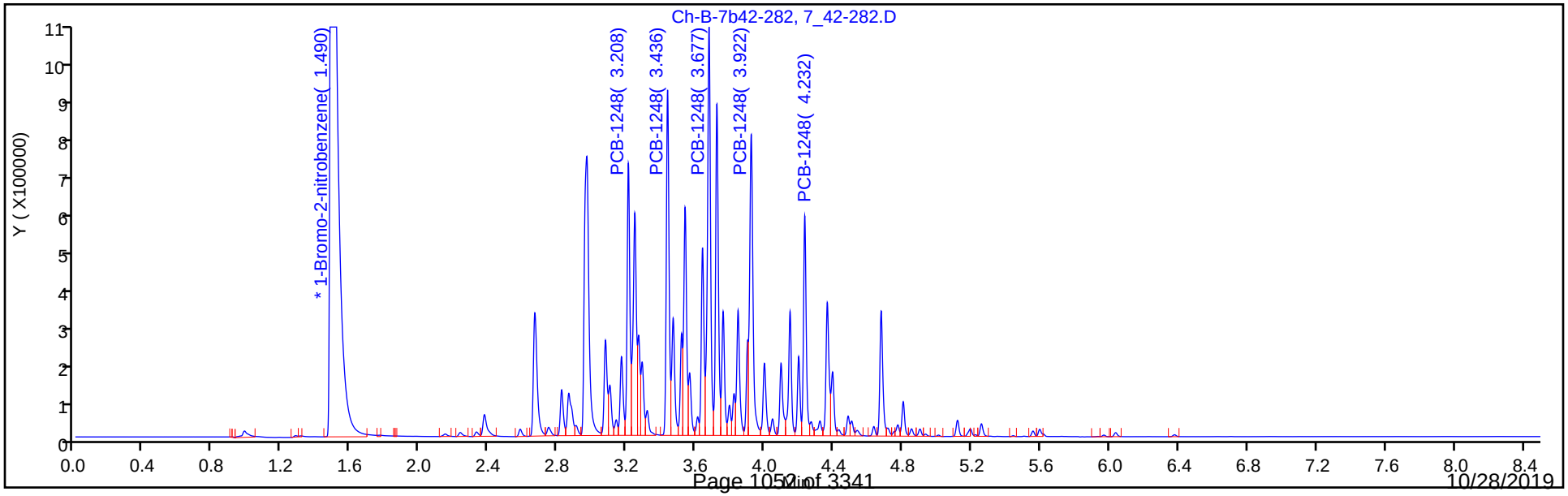
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-282.D

Injection Date:	11-May-2019 01:06:48	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	45
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-283.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-May-2019 01:22:38 ALS Bottle#: 0 Worklist Smp#: 46
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:15 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:31:10

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	4341296	0.5000	0.5000	
2	1.493	1.490	0.002	6190483	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.523	2.525	-0.003	130068	0.5000	0.5047	M
1	2.554	2.557	-0.003	95283	0.5000	0.5086	M
1	2.664	2.667	-0.003	167745	0.5000	0.5289	M
1	2.750	2.754	-0.004	190203	0.5000	0.4959	M
1	3.388	3.394	-0.006	122497	0.5000	0.5173	M
		Average of Peak Amounts =				0.5111	
2	3.210	3.209	0.001	192556	0.5000	0.5176	
2	3.438	3.438	0.000	237330	0.5000	0.5093	
2	3.678	3.680	-0.002	317083	0.5000	0.5037	
2	3.923	3.924	-0.001	248597	0.5000	0.4929	
2	4.233	4.233	-0.001	153003	0.5000	0.5094	
		Average of Peak Amounts =				0.5066	
						RPD = 0.88	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ 0.5_00047 Amount Added: 1.00 Units: mL

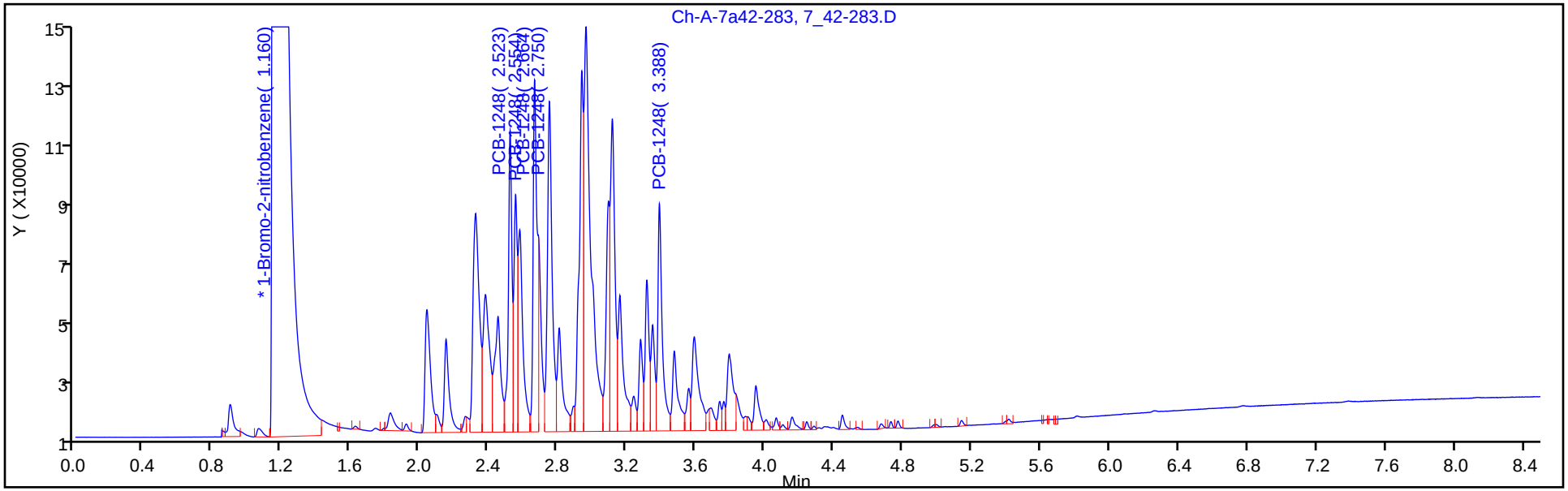
Report Date: 17-May-2019 15:18:16 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

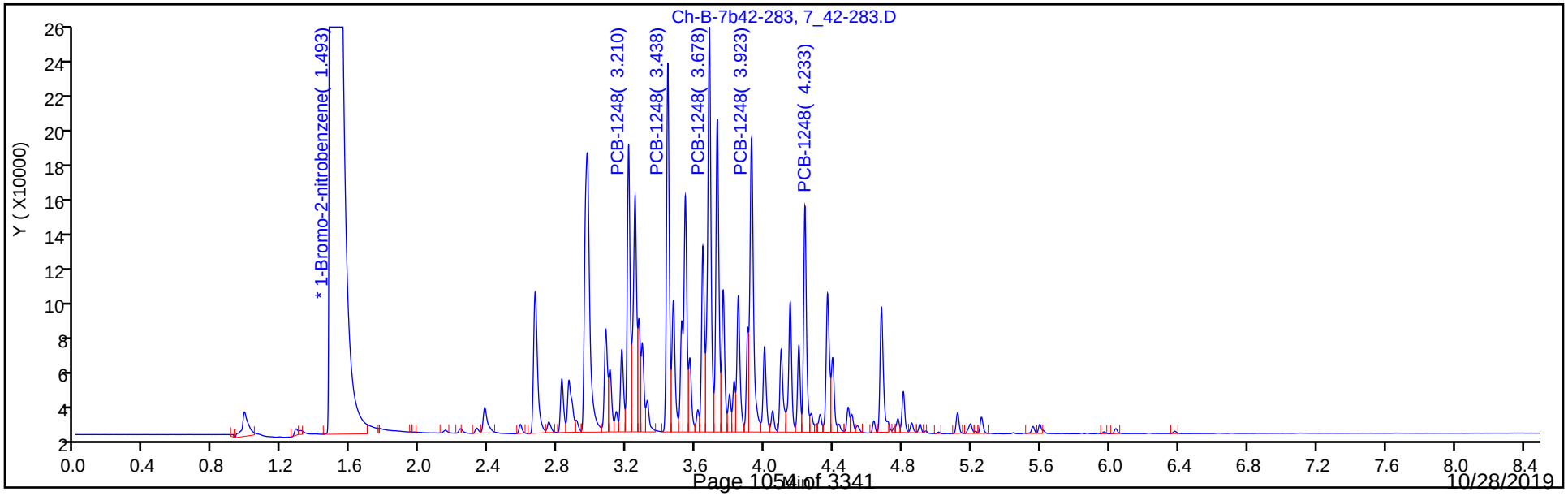
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-283.D

Injection Date:	11-May-2019 01:22:38	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	46
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:16 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-283.D

Injection Date: 11-May-2019 01:22:38 Instrument ID: HP6890-7

Lims ID: IC 2

Client ID:

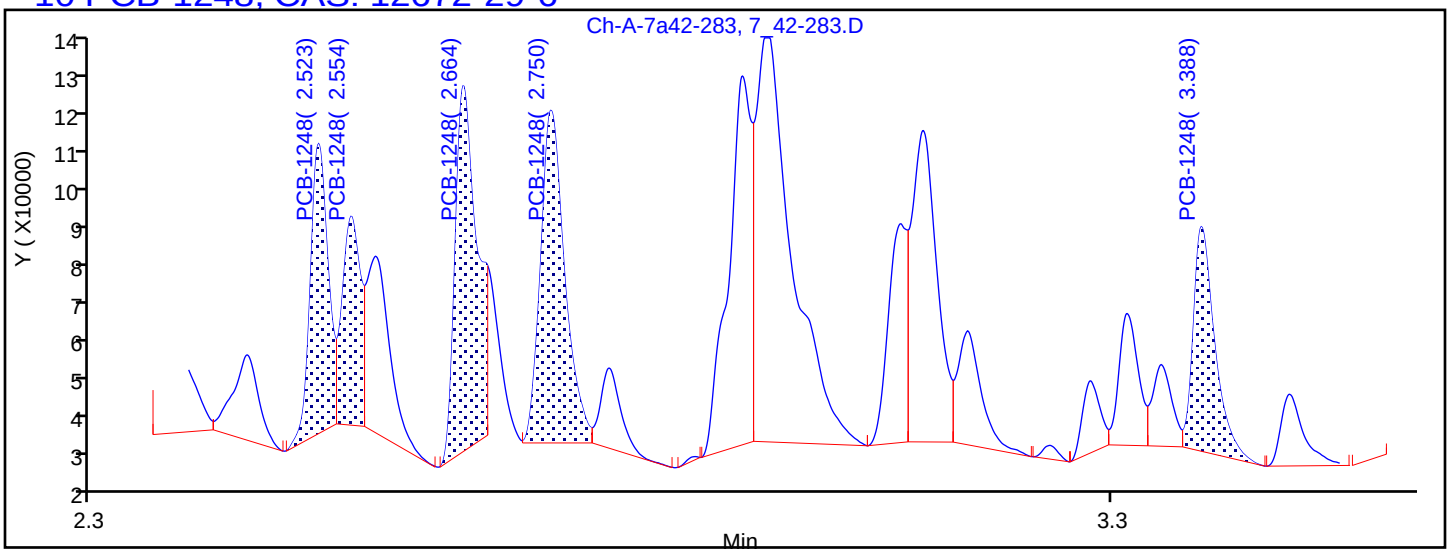
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 46

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

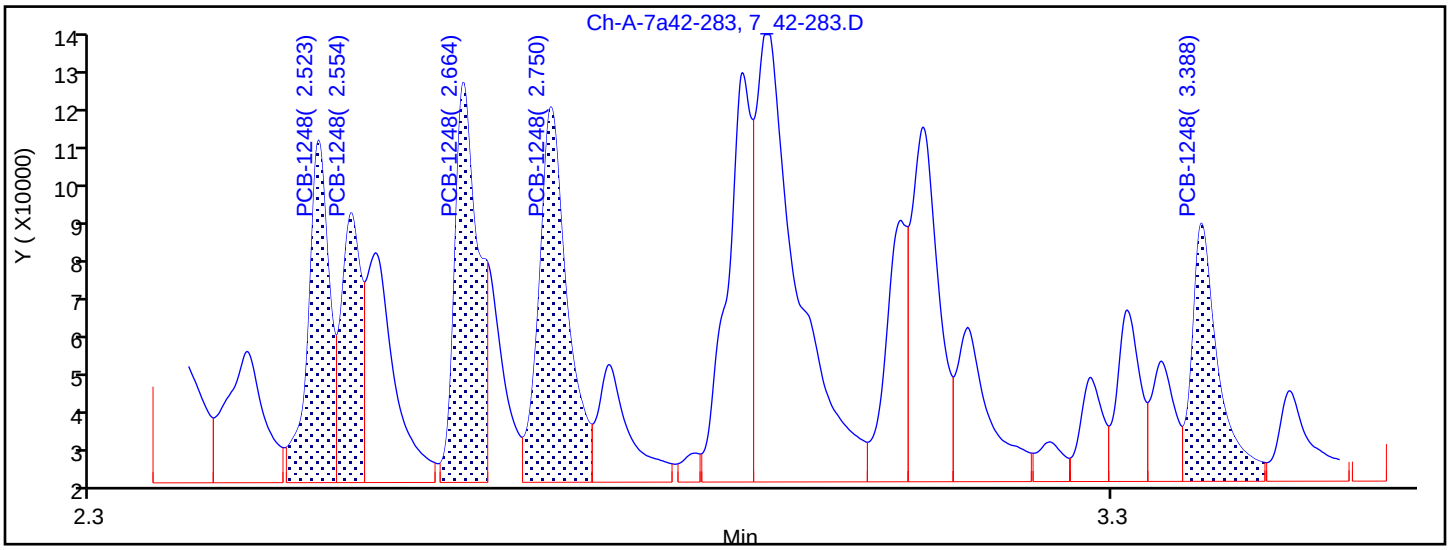
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.523	Response = 92438
2.554	Response = 68888
2.664	Response = 142198
2.750	Response = 144127
3.388	Response = 86476



Manual Integration Results

2.523	Response = 130068	M
2.554	Response = 95283	M
2.664	Response = 167745	M
2.750	Response = 190203	M
3.388	Response = 122497	M

Reviewer: clarkda, 17-May-2019 15:15:54

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-May-2019 01:38:37 ALS Bottle#: 0 Worklist Smp#: 47
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:18 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:31:47

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.160	0.000	4201370	0.5000	0.5000	
2	1.492	1.492	0.000	6007191	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.525	2.525	0.000	9282	0.0200	0.0199	M
1	2.557	2.557	0.000	6861	0.0200	0.0197	M
1	2.667	2.667	0.000	15251	0.0200	0.0191	M
1	2.754	2.754	0.000	12616	0.0200	0.0201	M
1	3.394	3.394	0.000	7689	0.0200	0.0195	M
		Average of Peak Amounts =				0.0197	
2	3.209	3.209	0.000	16918	0.0200	0.0195	M
2	3.438	3.438	0.000	20137	0.0200	0.0197	M
2	3.680	3.680	0.000	27021	0.0200	0.0199	M
2	3.924	3.924	0.000	20475	0.0200	0.0202	M
2	4.233	4.233	0.000	13776	0.0200	0.0197	M
		Average of Peak Amounts =				0.0198	
						RPD = 0.69	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ .02_00013 Amount Added: 1.00 Units: mL

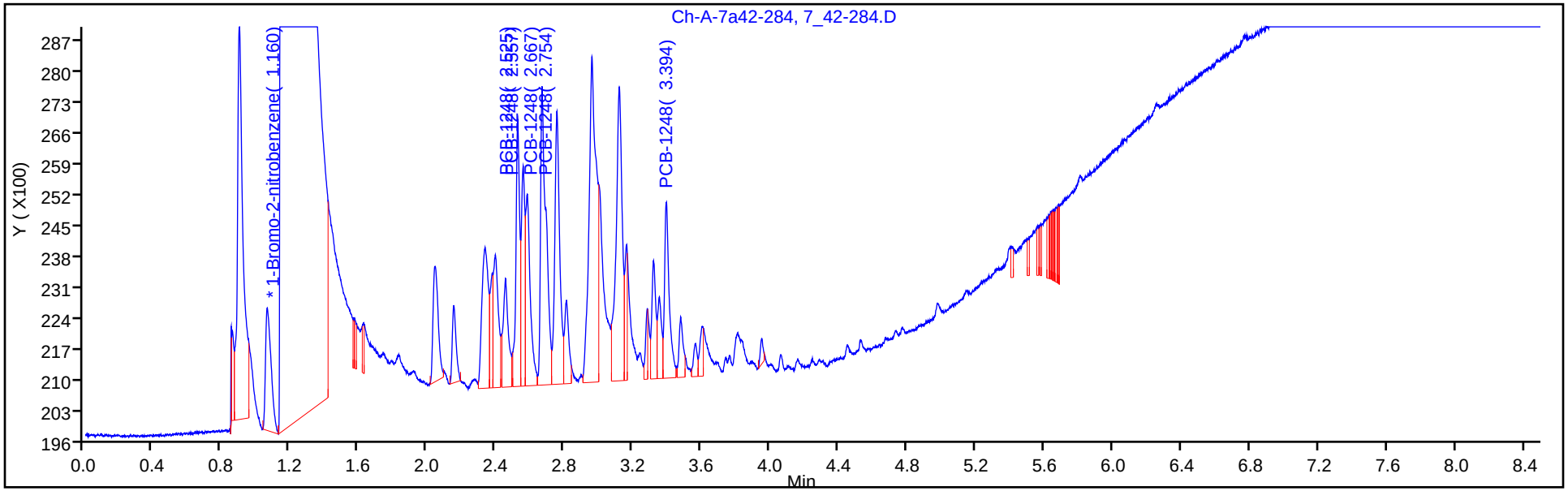
Report Date: 17-May-2019 15:18:19 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

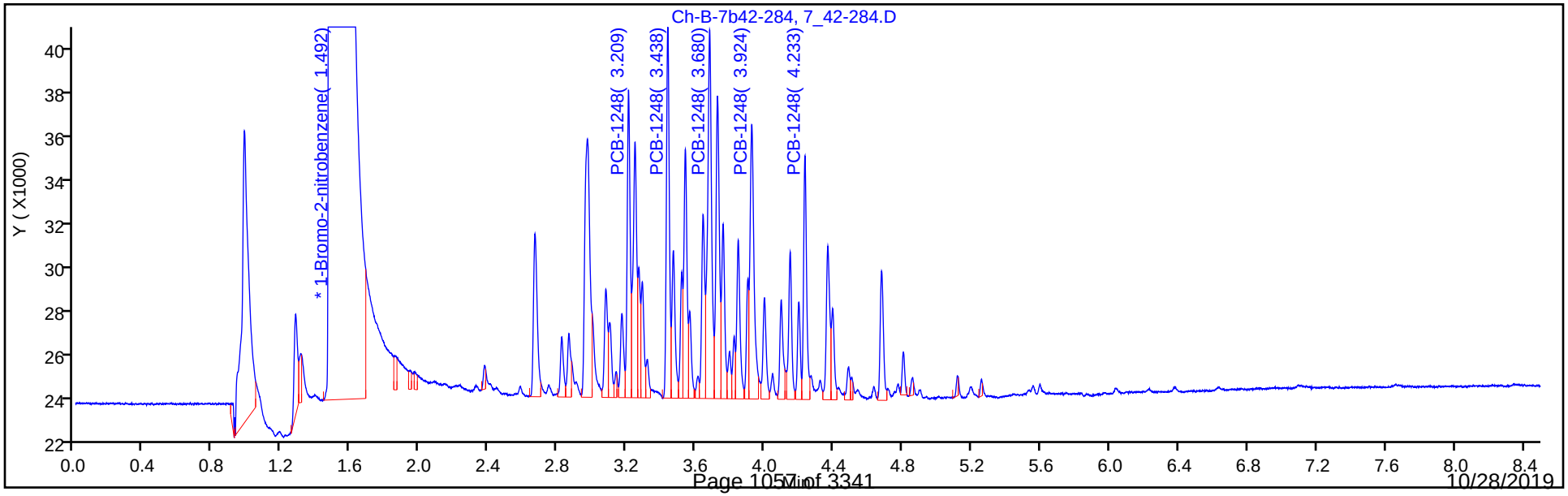
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D

Injection Date:	11-May-2019 01:38:37	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	47
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:19 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D

Injection Date: 11-May-2019 01:38:37 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

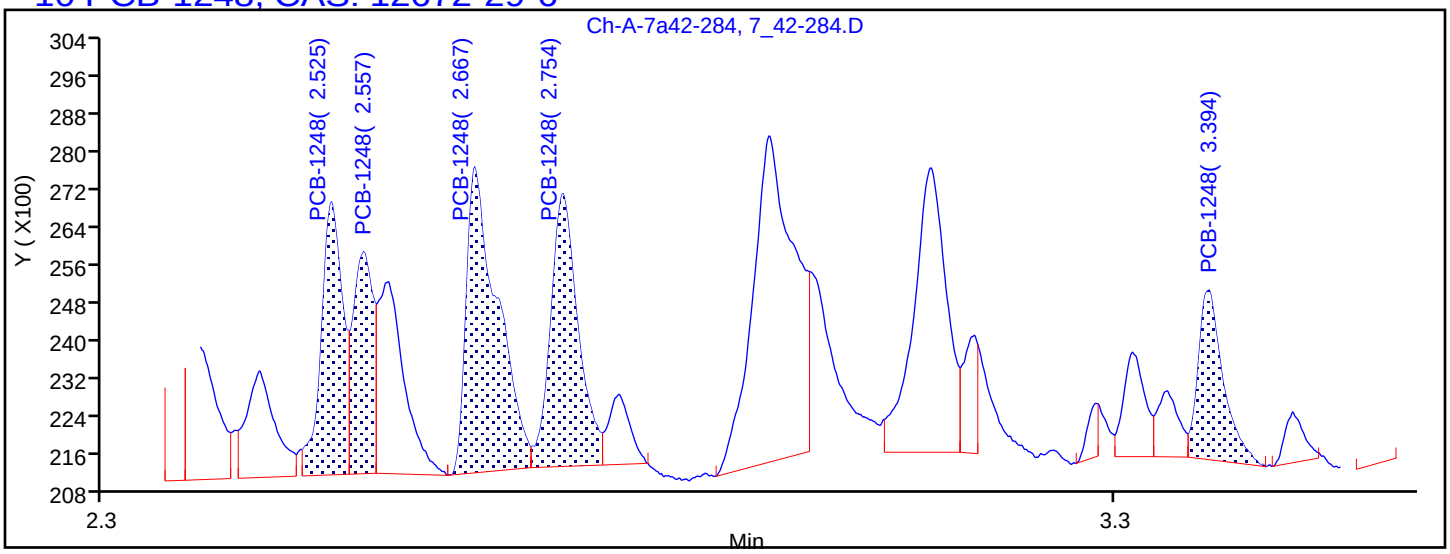
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 47

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

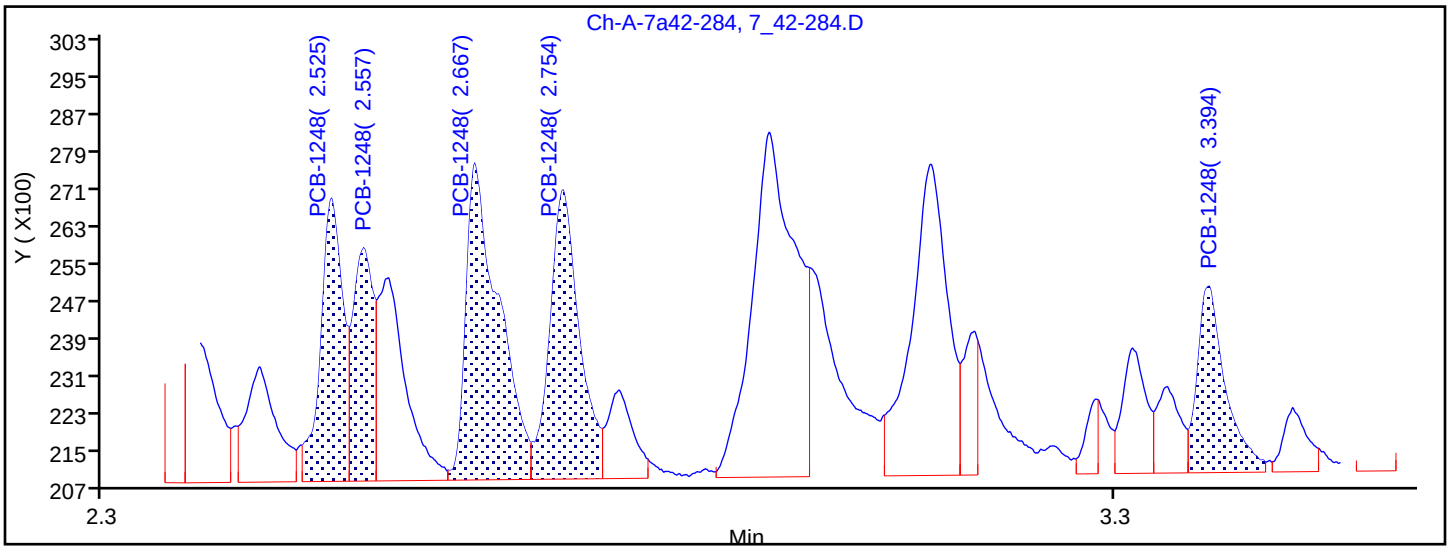
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.525	Response = 8637
2.557	Response = 6458
2.667	Response = 13902
2.754	Response = 11060
3.394	Response = 6212



Manual Integration Results

2.525	Response = 9282	M
2.557	Response = 6861	M
2.667	Response = 15251	M
2.754	Response = 12616	M
3.394	Response = 7689	M

Reviewer: clarkda, 17-May-2019 15:16:25

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 01:06 Calibration End Date: 05/11/2019 01:38 Calibration ID: 36966

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/47	7_42-284.D
Level 2	IC 480-472294/46	7_42-283.D
Level 3	IC 480-472294/45	7_42-282.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1248 Peak 1	0.0704	0.0311	0.0286			Lin1	0.0009	0.0284				4.5			1.0000		0.9900
PCB-1248 Peak 2	0.0838	0.0383	0.0361			Lin1	0.0010	0.0357				2.4			1.0000		0.9900
PCB-1248 Peak 3	0.1125	0.0512	0.0488			Lin1	0.0013	0.0483				0.9			1.0000		0.9900
PCB-1248 Peak 4	0.0852	0.0402	0.0395			Lin1	0.0009	0.0389				1.8			1.0000		0.9900
PCB-1248 Peak 5	0.0573	0.0247	0.0231			Lin1	0.0007	0.0229				2.4			1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/11/2019 01:06 Calibration End Date: 05/11/2019 01:38 Calibration ID: 36966

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/47	7_42-284.D
Level 2	IC 480-472294/46	7_42-283.D
Level 3	IC 480-472294/45	7_42-282.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1248 Peak 1	BNB	Lin1	16918	192556	739114			0.0200	0.500	2.00		
PCB-1248 Peak 2	BNB	Lin1	20137	237330	932414			0.0200	0.500	2.00		
PCB-1248 Peak 3	BNB	Lin1	27021	317083	1263192			0.0200	0.500	2.00		
PCB-1248 Peak 4	BNB	Lin1	20475	248597	1020573			0.0200	0.500	2.00		
PCB-1248 Peak 5	BNB	Lin1	13776	153003	598422			0.0200	0.500	2.00		

Curve Type Legend:
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-282.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 11-May-2019 01:06:48 ALS Bottle#: 0 Worklist Smp#: 45
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:12 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:30:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.157	1.158	-0.001	4540939	0.5000	0.5000	
2	1.490	1.490	0.000	6465536	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							
1	2.518	2.525	-0.007	523477	2.00	2.00	
1	2.550	2.557	-0.007	379562	2.00	1.99	
1	2.660	2.667	-0.007	625540	2.00	1.97	
1	2.746	2.754	-0.008	786316	2.00	2.00	
1	3.383	3.394	-0.011	480978	2.00	1.98	
		Average of Peak Amounts =				1.99	
2	3.208	3.209	-0.001	739114	2.00	1.98	
2	3.436	3.438	-0.002	932414	2.00	1.99	
2	3.677	3.680	-0.003	1263192	2.00	2.00	
2	3.922	3.924	-0.002	1020573	2.00	2.01	
2	4.232	4.233	-0.001	598422	2.00	1.99	
		Average of Peak Amounts =				1.99	
						RPD = 0.22	

Reagents:

1248w/IS@ 2.0_00013 Amount Added: 1.00 Units: mL

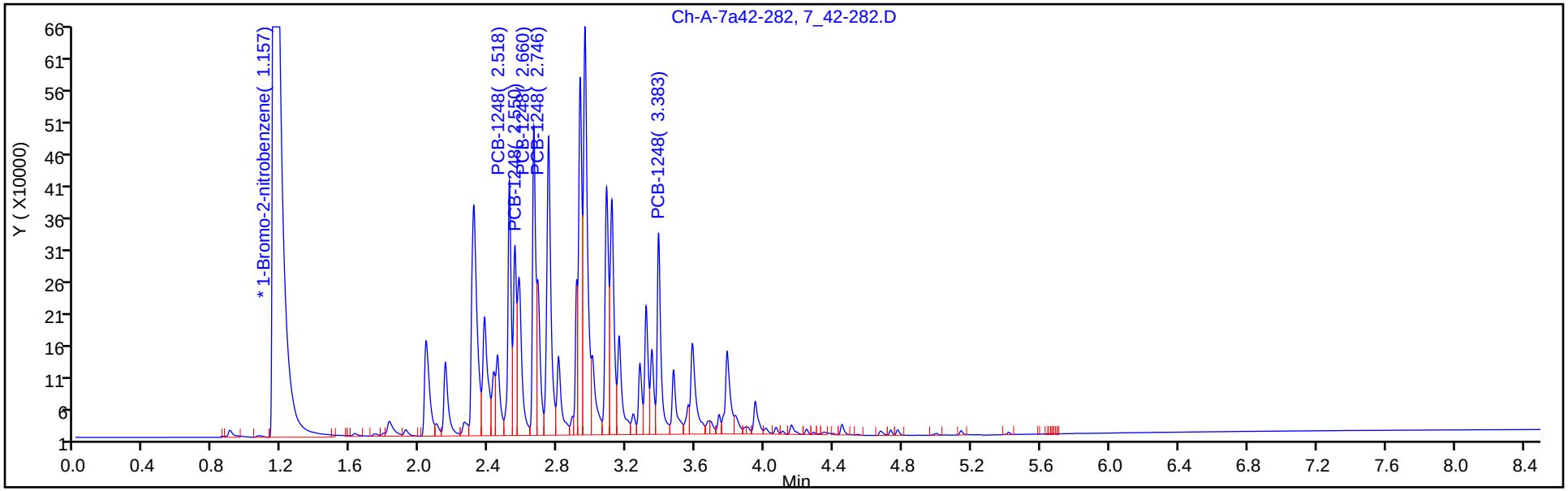
Report Date: 17-May-2019 15:18:13 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

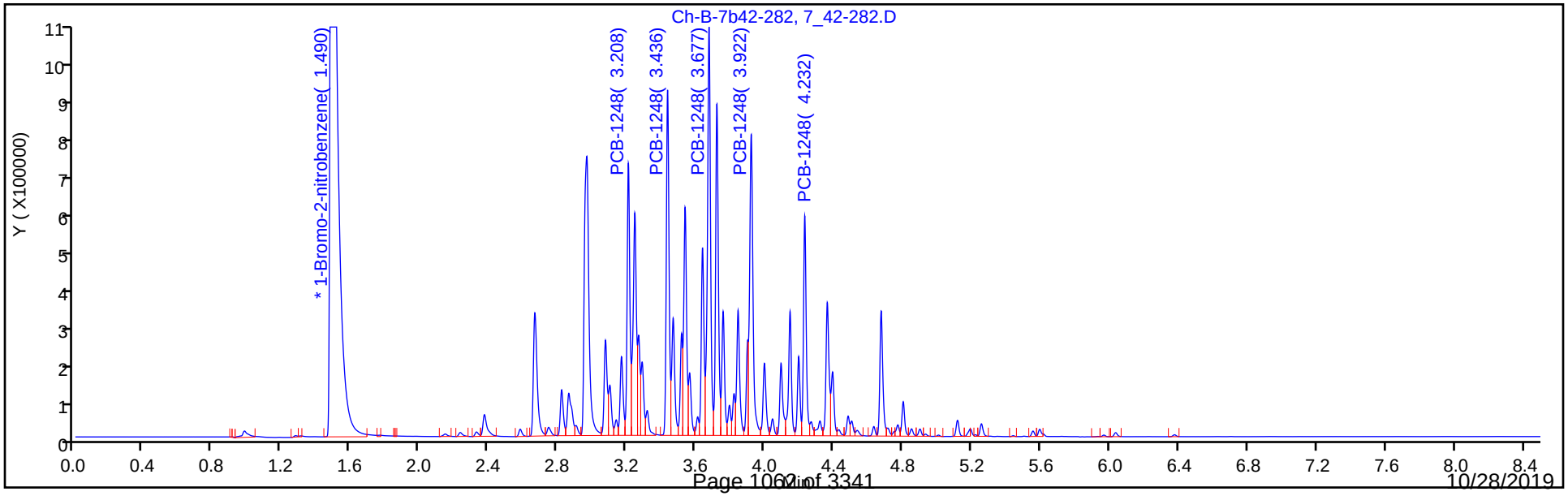
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-282.D

Injection Date:	11-May-2019 01:06:48	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	45
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-283.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 11-May-2019 01:22:38 ALS Bottle#: 0 Worklist Smp#: 46
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:15 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:31:10

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.158	0.002	4341296	0.5000	0.5000	
2	1.493	1.490	0.002	6190483	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.523	2.525	-0.003	130068	0.5000	0.5047	M
1	2.554	2.557	-0.003	95283	0.5000	0.5086	M
1	2.664	2.667	-0.003	167745	0.5000	0.5289	M
1	2.750	2.754	-0.004	190203	0.5000	0.4959	M
1	3.388	3.394	-0.006	122497	0.5000	0.5173	M
		Average of Peak Amounts =				0.5111	
2	3.210	3.209	0.001	192556	0.5000	0.5176	
2	3.438	3.438	0.000	237330	0.5000	0.5093	
2	3.678	3.680	-0.002	317083	0.5000	0.5037	
2	3.923	3.924	-0.001	248597	0.5000	0.4929	
2	4.233	4.233	-0.001	153003	0.5000	0.5094	
		Average of Peak Amounts =				0.5066	
						RPD = 0.88	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ 0.5_00047 Amount Added: 1.00 Units: mL

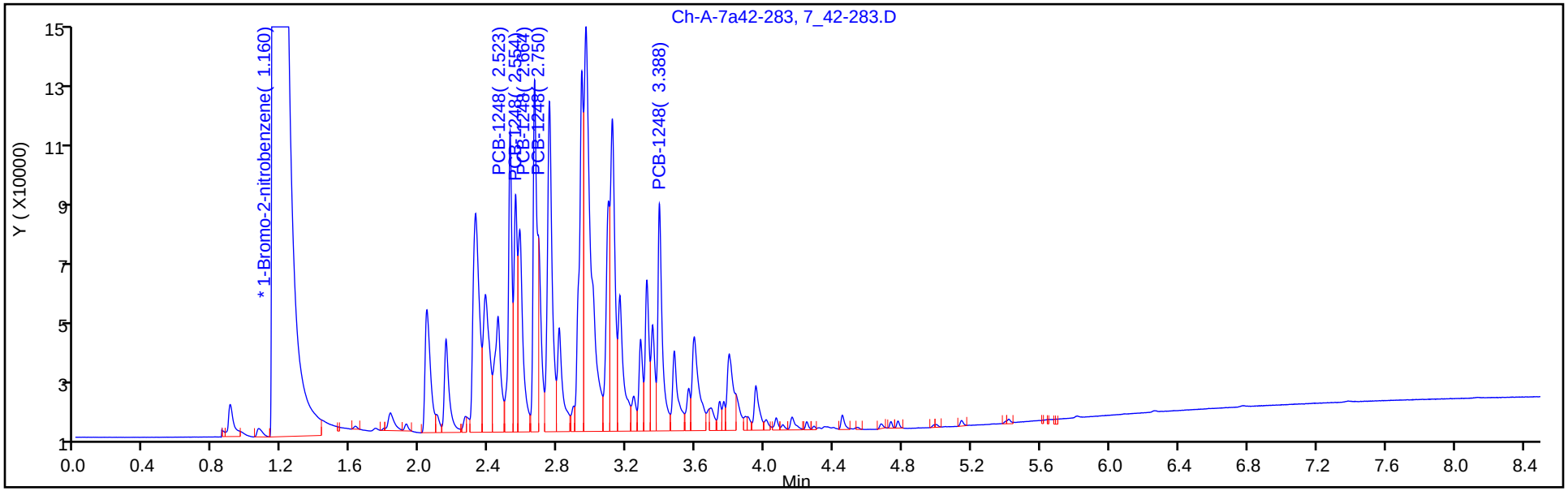
Report Date: 17-May-2019 15:18:16 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

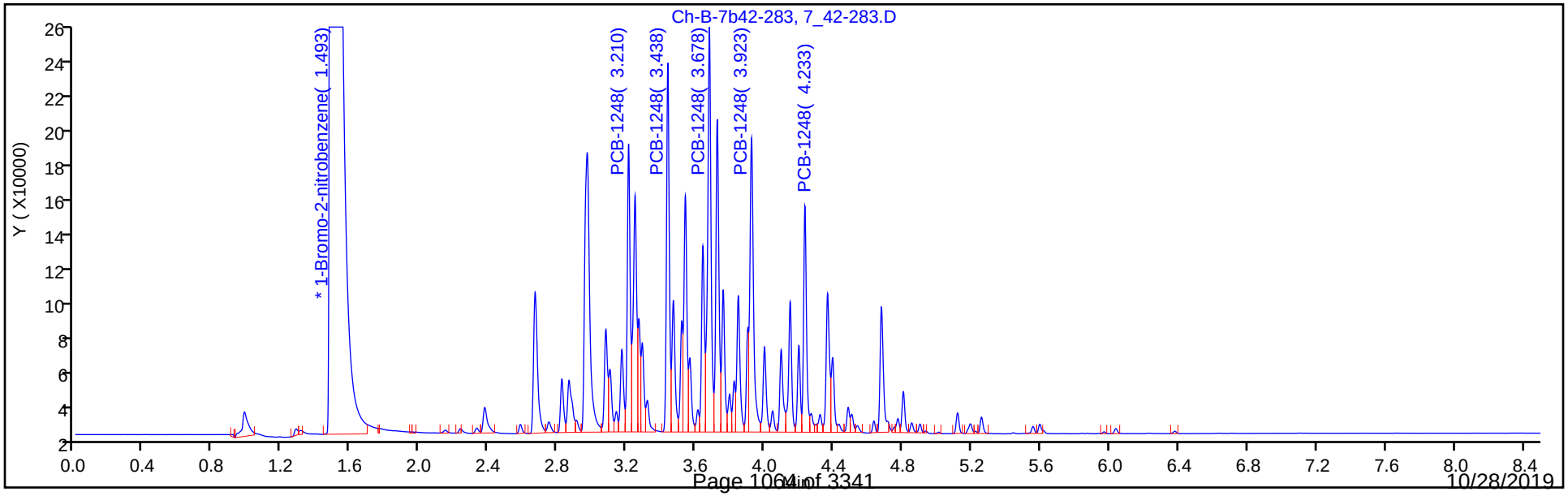
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-283.D

Injection Date:	11-May-2019 01:22:38	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	46
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 11-May-2019 01:38:37 ALS Bottle#: 0 Worklist Smp#: 47
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:18:18 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:31:47

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.160	1.160	0.000	4201370	0.5000	0.5000	
2	1.492	1.492	0.000	6007191	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.525	2.525	0.000	9282	0.0200	0.0199	M
1	2.557	2.557	0.000	6861	0.0200	0.0197	M
1	2.667	2.667	0.000	15251	0.0200	0.0191	M
1	2.754	2.754	0.000	12616	0.0200	0.0201	M
1	3.394	3.394	0.000	7689	0.0200	0.0195	M
		Average of Peak Amounts =				0.0197	
2	3.209	3.209	0.000	16918	0.0200	0.0195	M
2	3.438	3.438	0.000	20137	0.0200	0.0197	M
2	3.680	3.680	0.000	27021	0.0200	0.0199	M
2	3.924	3.924	0.000	20475	0.0200	0.0202	M
2	4.233	4.233	0.000	13776	0.0200	0.0197	M
		Average of Peak Amounts =				0.0198	
						RPD = 0.69	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ .02_00013 Amount Added: 1.00 Units: mL

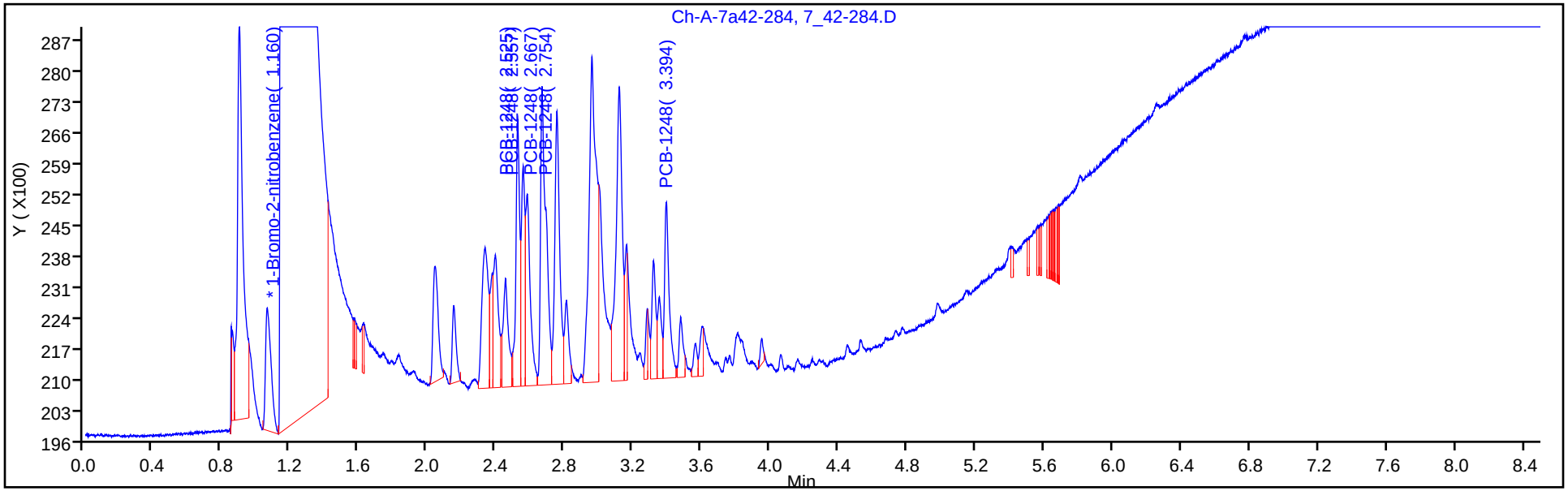
Report Date: 17-May-2019 15:18:19 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

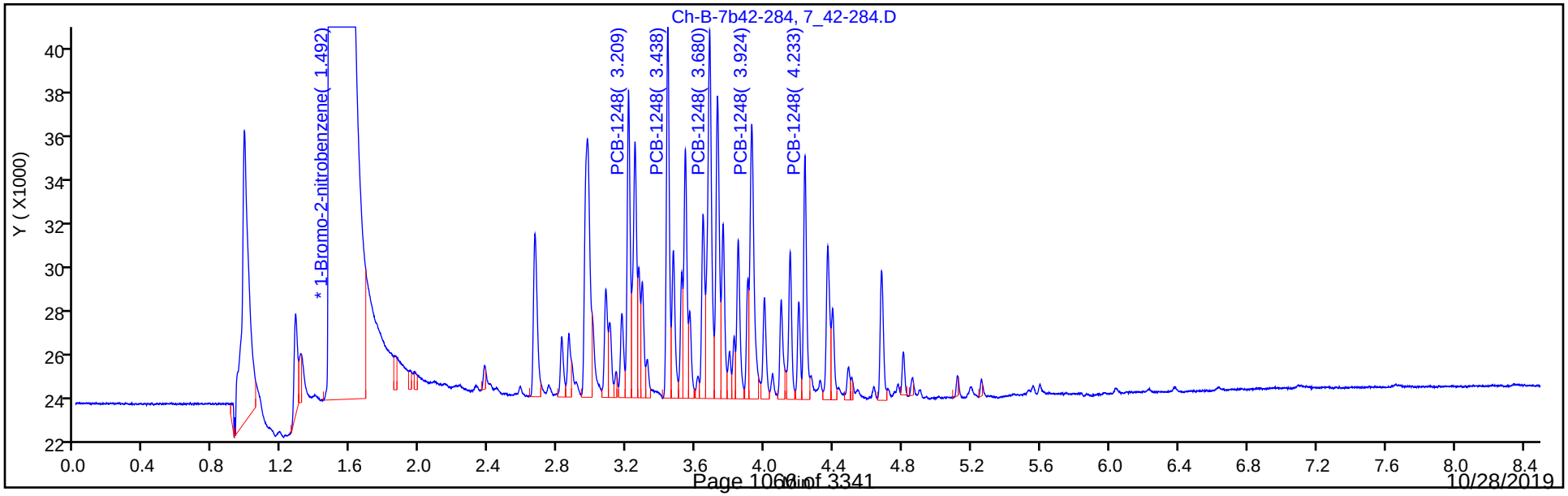
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D

Injection Date:	11-May-2019 01:38:37	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	47
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 17-May-2019 15:18:19 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-284.D

Injection Date: 11-May-2019 01:38:37 Instrument ID: HP6890-7

Lims ID: IC 1

Client ID:

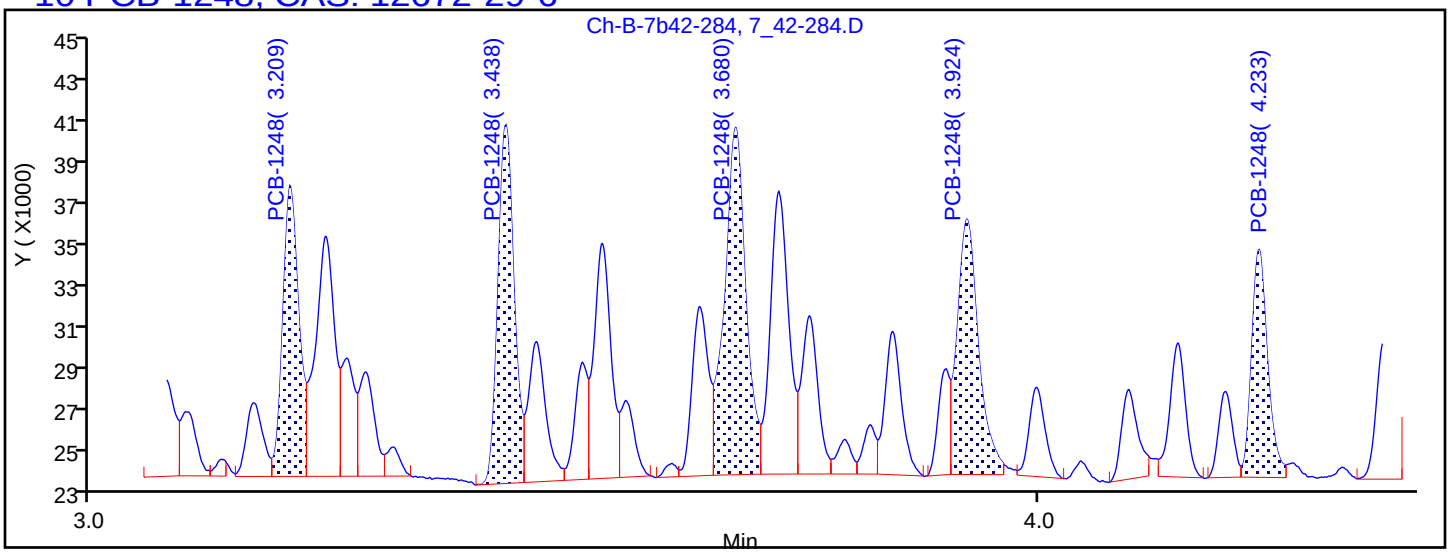
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 47

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

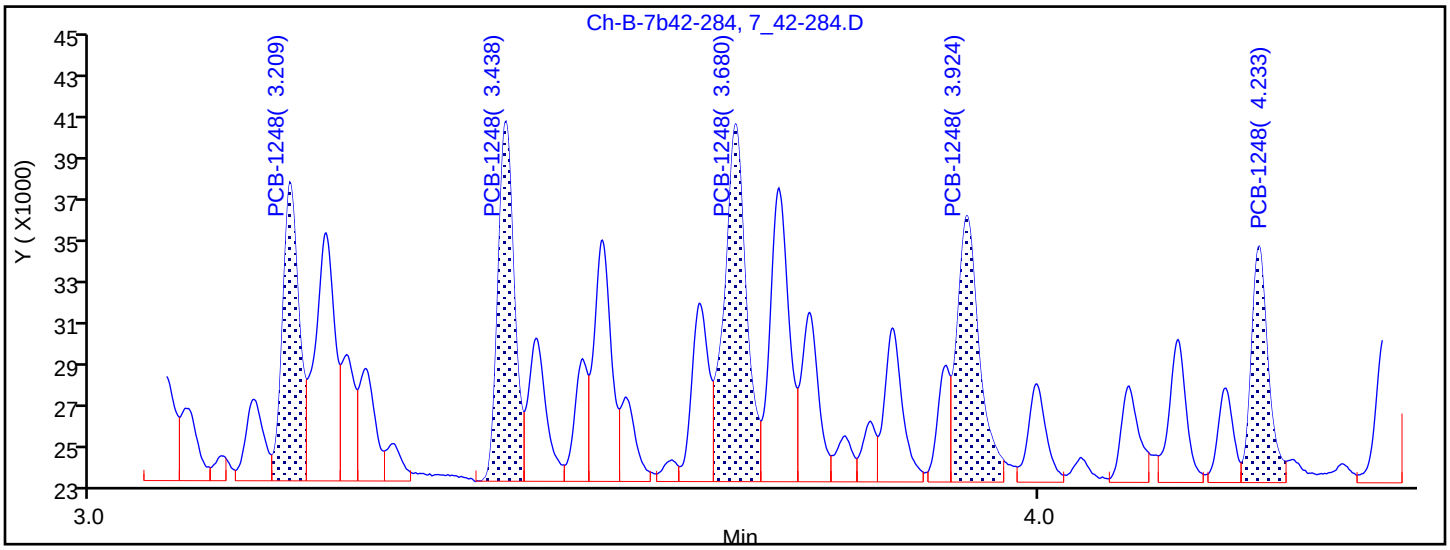
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

3.209	Response = 16100
3.438	Response = 19999
3.680	Response = 25551
3.924	Response = 18743
4.233	Response = 12608



Manual Integration Results

3.209	Response = 16918	M
3.438	Response = 20137	M
3.680	Response = 27021	M
3.924	Response = 20475	M
4.233	Response = 13776	M

Reviewer: clarkda, 17-May-2019 15:16:17

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/12/2019 16:00 Calibration End Date: 05/12/2019 16:32 Calibration ID: 36969

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/56	7_42-293.D
Level 2	IC 480-472294/55	7_42-292.D
Level 3	IC 480-472294/54	7_42-291.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1232 Peak 1	0.0243	0.0269	0.0246			Ave		0.0253				5.6		20.0			
PCB-1232 Peak 2	0.0135	0.0193	0.0180			Ave		0.0169				18.1		20.0			
PCB-1232 Peak 3	0.0124	0.0149	0.0125			Ave		0.0132				10.8		20.0			
PCB-1232 Peak 4	0.0109	0.0345	0.0371			Lin1	-0.001	0.0370				5.0			1.0000		0.9900
PCB-1232 Peak 5	0.0111	0.0135	0.0134			Ave		0.0127				11.0		20.0			
PCB-1262 Peak 1	0.0571	0.0447	0.0450			Ave		0.0490				14.5		20.0			
PCB-1262 Peak 2	0.0858	0.0675	0.0672			Ave		0.0735				14.5		20.0			
PCB-1262 Peak 3	0.1469	0.1360	0.1267			Ave		0.1365				7.4		20.0			
PCB-1262 Peak 4	0.0691	0.0548	0.0515			Ave		0.0585				16.0		20.0			
PCB-1262 Peak 5	0.0734	0.0624	0.0582			Ave		0.0647				12.2		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-5 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/12/2019 16:00 Calibration End Date: 05/12/2019 16:32 Calibration ID: 36969

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/56	7_42-293.D
Level 2	IC 480-472294/55	7_42-292.D
Level 3	IC 480-472294/54	7_42-291.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1232 Peak 1	BNB	Ave	4375	120319	443156			0.0200	0.500	2.00		
PCB-1232 Peak 2	BNB	Ave	2421	86260	324419			0.0200	0.500	2.00		
PCB-1232 Peak 3	BNB	Ave	2224	66564	224088			0.0200	0.500	2.00		
PCB-1232 Peak 4	BNB	Lin1	1955	154018	666812			0.0200	0.500	2.00		
PCB-1232 Peak 5	BNB	Ave	1988	60286	241652			0.0200	0.500	2.00		
PCB-1262 Peak 1	BNB	Ave	10276	199797	810139			0.0200	0.500	2.00		
PCB-1262 Peak 2	BNB	Ave	15427	301663	1208623			0.0200	0.500	2.00		
PCB-1262 Peak 3	BNB	Ave	26417	607839	2278610			0.0200	0.500	2.00		
PCB-1262 Peak 4	BNB	Ave	12427	244913	925697			0.0200	0.500	2.00		
PCB-1262 Peak 5	BNB	Ave	13206	278704	1047546			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-291.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 12-May-2019 16:00:41 ALS Bottle#: 0 Worklist Smp#: 54
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:39 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: clarkda Date: 17-May-2019 14:36:35

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4497002	0.5000	0.5000	
2	1.490	1.492	-0.002	6558911	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.815	1.824	-0.009	443156	2.00	1.95	
1	2.036	2.043	-0.007	324419	2.00	2.13	
1	2.147	2.149	-0.002	224088	2.00	1.88	
1	2.313	2.329	-0.017	666812	2.00	2.02	
1	2.748	2.751	-0.003	241652	2.00	2.12	
		Average of Peak Amounts =				2.02	
2	2.370	2.373	-0.002	632971	2.00	1.79	
2	2.667	2.667	0.000	569508	2.00	1.96	
2	2.967	2.972	-0.005	1096311	2.00	1.80	
2	3.074	3.076	-0.002	417544	2.00	1.98	
2	3.435	3.435	0.000	297105	2.00	1.99	
		Average of Peak Amounts =				1.90	
						RPD = 5.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.554	3.557	-0.003	810139	2.00	1.84	
1	4.063	4.065	-0.003	1208623	2.00	1.83	
1	4.442	4.448	-0.006	2278610	2.00	1.86	
1	4.728	4.729	-0.001	925697	2.00	1.76	
1	4.769	4.771	-0.002	1047546	2.00	1.80	
		Average of Peak Amounts =				1.82	
2	4.377	4.377	0.000	1071179	2.00	1.99	
2	4.482	4.483	0.000	1146869	2.00	1.99	
2	4.850	4.851	-0.001	1549139	2.00	2.00	
2	5.555	5.556	-0.001	1282775	2.00	2.00	
2	5.594	5.595	-0.001	1556729	2.00	2.00	
		Average of Peak Amounts =				2.00	
						RPD = 9.38	

Reagents:

32-62w/IS@2.0_00012 Amount Added: 1.00 Units: mL

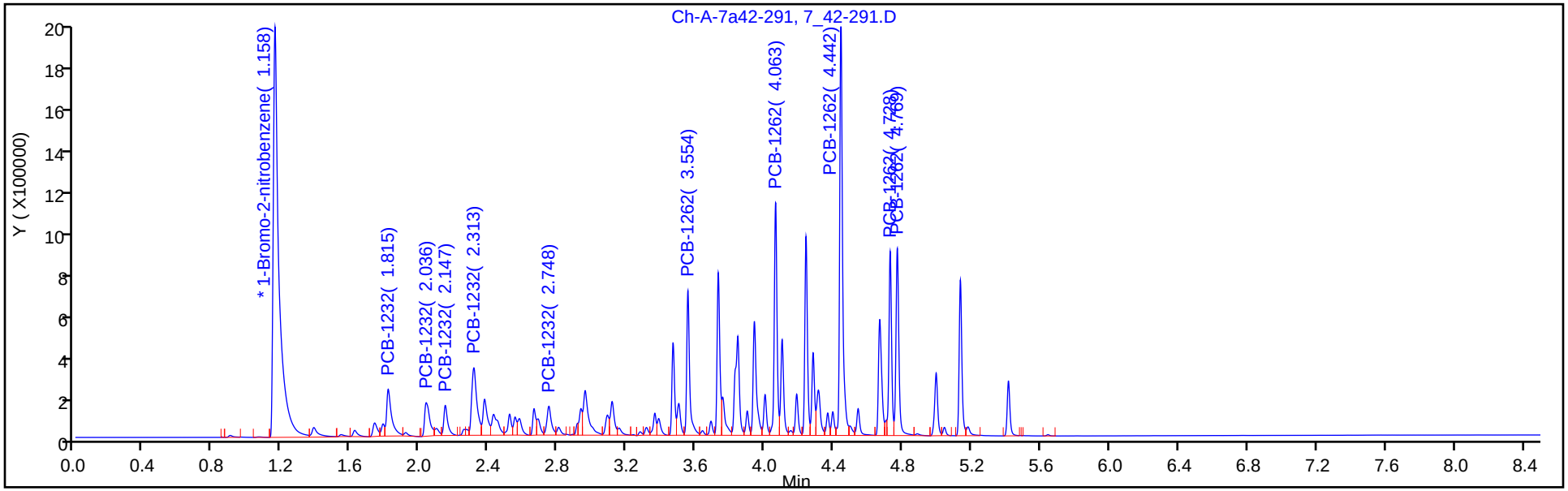
Report Date: 17-May-2019 15:17:40 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

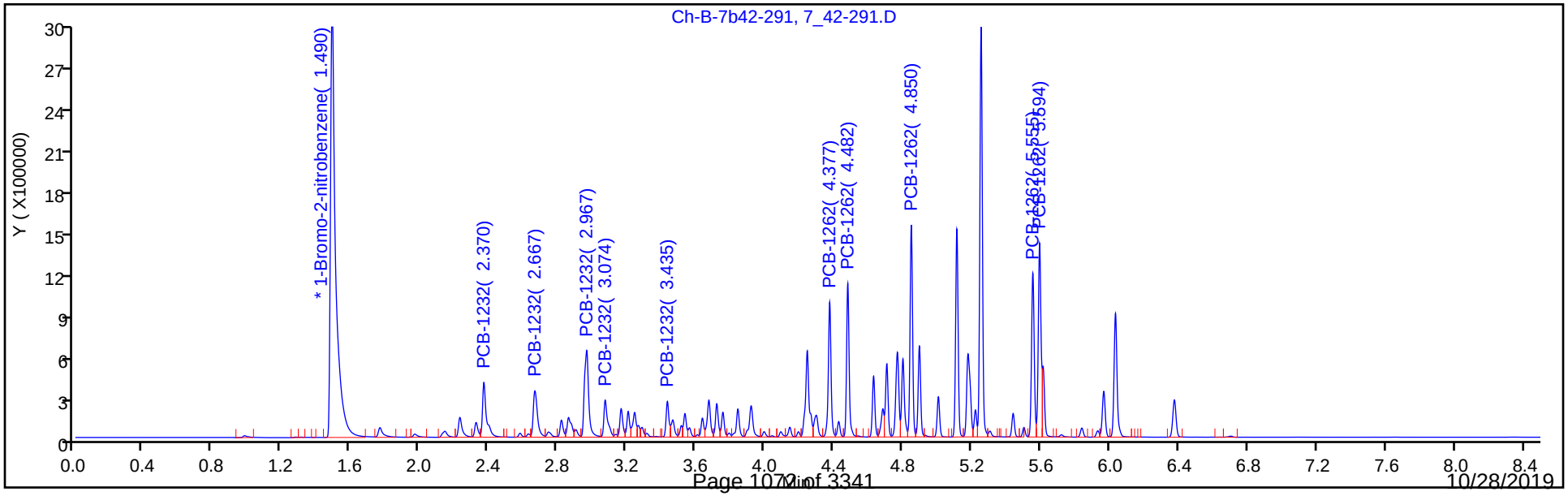
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-291.D

Injection Date:	12-May-2019 16:00:41	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	54
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-292.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 12-May-2019 16:16:23 ALS Bottle#: 0 Worklist Smp#: 55
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:39:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.157	1.160	-0.003	4469025	0.5000	0.5000	
2	1.490	1.492	-0.002	6673202	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.818	1.824	-0.006	120319	0.5000	0.5322	
1	2.036	2.043	-0.007	86260	0.5000	0.5699	
1	2.147	2.149	-0.002	66564	0.5000	0.5625	
1	2.318	2.329	-0.011	154018	0.5000	0.4805	
1	2.748	2.751	-0.003	60286	0.5000	0.5328	
		Average of Peak Amounts =				0.5356	
2	2.372	2.373	0.000	182023	0.5000	0.5059	
2	2.667	2.667	0.000	162413	0.5000	0.5419	
2	2.968	2.972	-0.004	286617	0.5000	0.4637	
2	3.075	3.076	-0.001	114449	0.5000	0.5253	
2	3.435	3.435	0.000	78695	0.5000	0.5101	
		Average of Peak Amounts =				0.5094	
						RPD = 5.01	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.553	3.557	-0.004	199797	0.5000	0.4565	
1	4.062	4.065	-0.003	301663	0.5000	0.4592	
1	4.441	4.448	-0.007	607839	0.5000	0.4981	
1	4.726	4.729	-0.003	244913	0.5000	0.4687	
1	4.768	4.771	-0.003	278704	0.5000	0.4821	
		Average of Peak Amounts =				0.4729	
2	4.377	4.377	0.000	285876	0.5000	0.5116	
2	4.482	4.483	0.000	306676	0.5000	0.5123	
2	4.850	4.851	-0.001	399567	0.5000	0.4988	
2	5.555	5.556	-0.001	335275	0.5000	0.5034	
2	5.594	5.595	-0.001	396586	0.5000	0.4951	
		Average of Peak Amounts =				0.5042	
						RPD = 6.40	

Reagents:

32-62w/IS@0.5_00048 Amount Added: 1.00 Units: mL

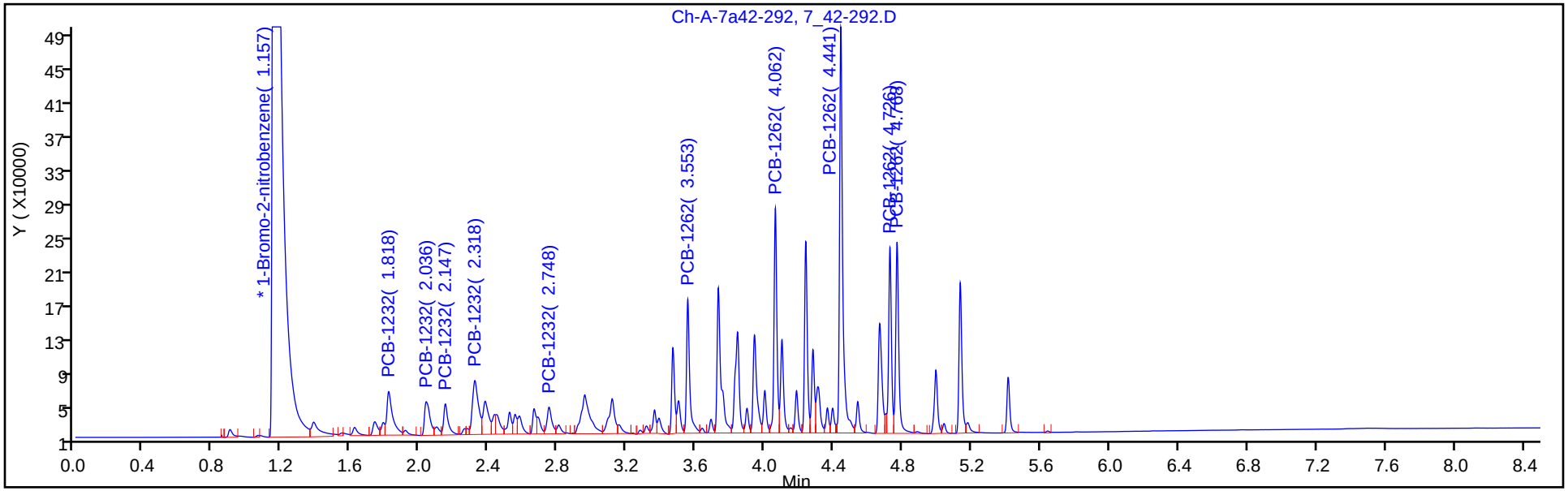
Report Date: 17-May-2019 15:17:44 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

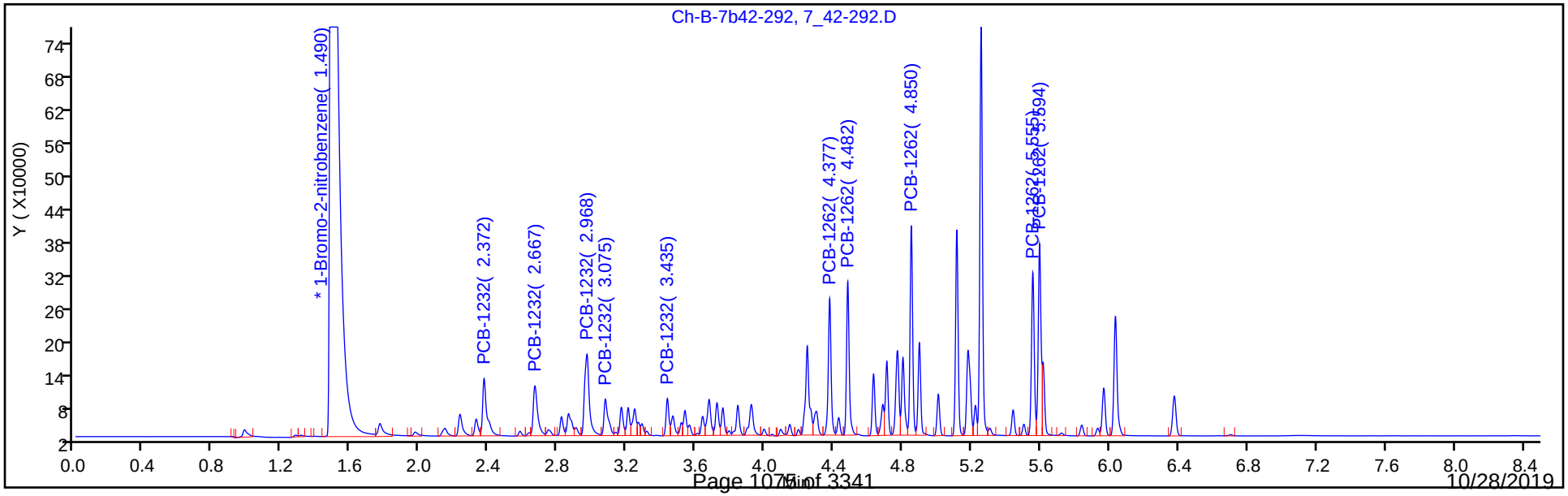
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-292.D

Injection Date:	12-May-2019 16:16:23	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	55
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 12-May-2019 16:32:12 ALS Bottle#: 0 Worklist Smp#: 56
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:47:19

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4495596	0.5000	0.5000	
2	1.489	1.489	0.000	6575568	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.824	1.824	0.000	4375	0.0200	0.0192	
1	2.043	2.043	0.000	2421	0.0200	0.0159	
1	2.149	2.149	0.000	2224	0.0200	0.0187	
1	2.329	2.329	0.000	1955	0.0200	0.0206	
1	2.751	2.751	0.000	1988	0.0200	0.0175	
		Average of Peak Amounts =				0.0184	
2	2.373	2.373	0.000	7754	0.0200	0.0219	
2	2.667	2.667	0.000	8378	0.0200	0.0187	
2	2.972	2.972	0.000	14255	0.0200	0.0234	
2	3.076	3.076	0.000	6032	0.0200	0.0192	
2	3.435	3.435	0.000	4550	0.0200	0.0197	
		Average of Peak Amounts =				0.0206	
						RPD = 11.35	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.557	3.557	0.000	10276	0.0200	0.0233	
1	4.065	4.065	0.000	15427	0.0200	0.0233	
1	4.448	4.448	0.000	26417	0.0200	0.0215	
1	4.729	4.729	0.000	12427	0.0200	0.0236	
1	4.771	4.771	0.000	13206	0.0200	0.0227	
		Average of Peak Amounts =				0.0229	
2	4.377	4.377	0.000	17866	0.0200	0.0196	
2	4.483	4.483	0.000	19231	0.0200	0.0196	
2	4.851	4.851	0.000	24259	0.0200	0.0200	
2	5.556	5.556	0.000	20953	0.0200	0.0199	
2	5.595	5.595	0.000	22781	0.0200	0.0201	
		Average of Peak Amounts =				0.0199	
						RPD = 14.21	

Reagents:

32-62w/IS@.02_00012 Amount Added: 1.00 Units: mL

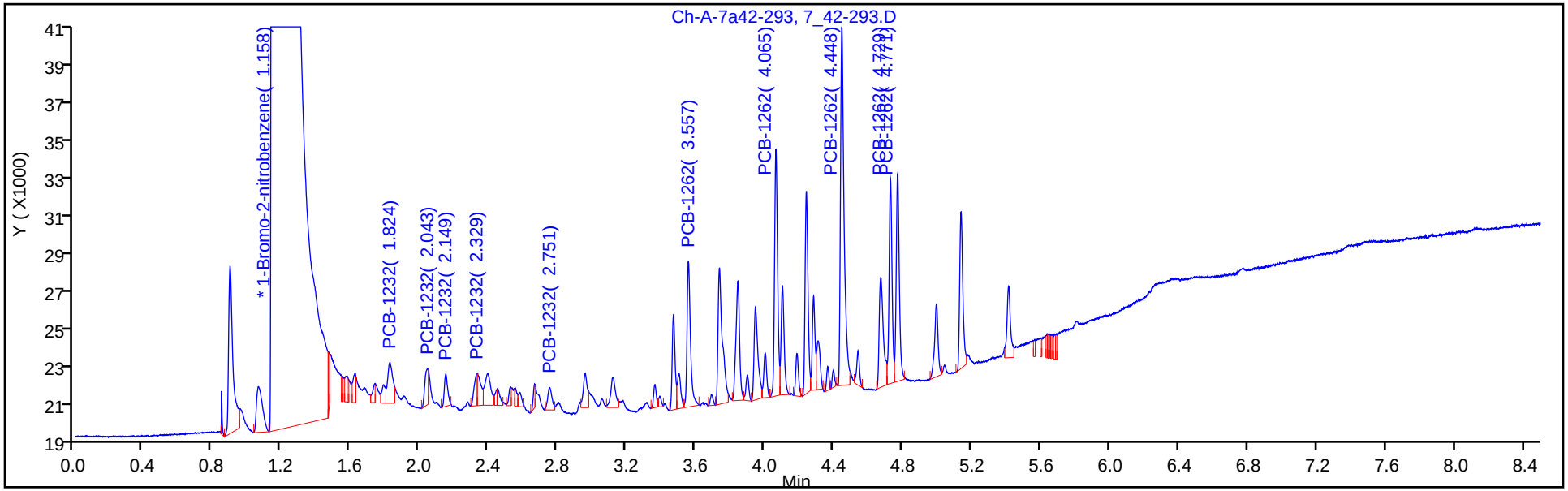
Report Date: 17-May-2019 15:17:47 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

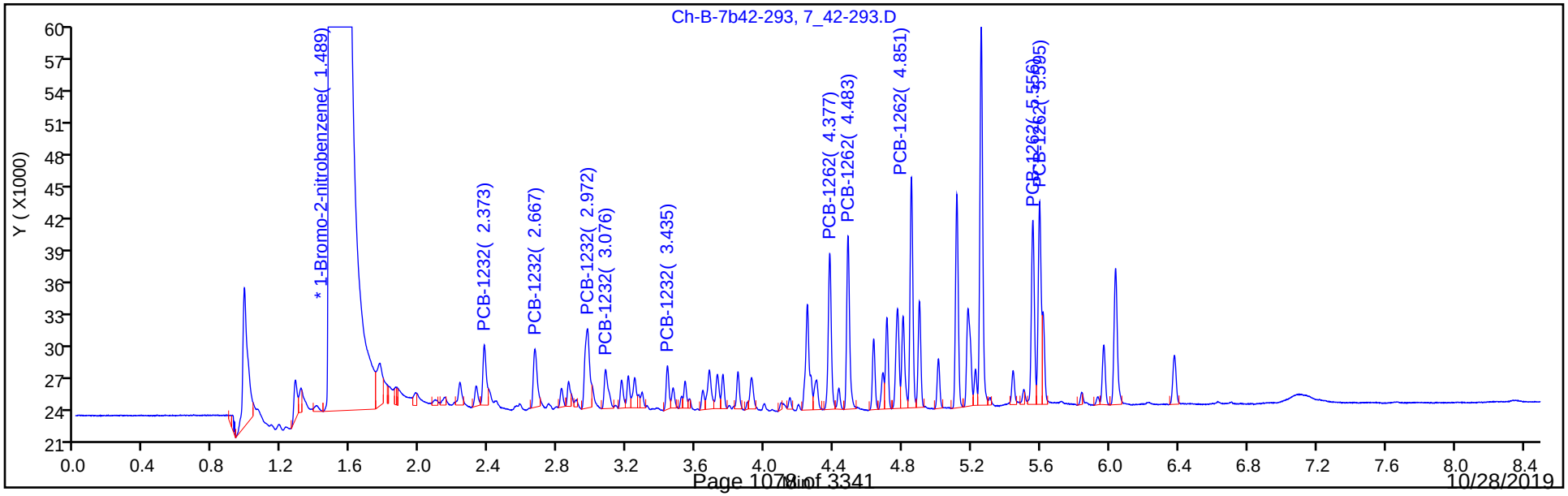
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Injection Date:	12-May-2019 16:32:12	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	56
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/12/2019 16:00 Calibration End Date: 05/12/2019 16:32 Calibration ID: 36970

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/56	7_42-293.D
Level 2	IC 480-472294/55	7_42-292.D
Level 3	IC 480-472294/54	7_42-291.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3				B	M1	M2								
PCB-1232 Peak 1	0.0295	0.0273	0.0241			Ave		0.0270				10.0		20.0			
PCB-1232 Peak 2	0.0319	0.0243	0.0217			Lin1	0.0002	0.0220				10.7			0.9980		0.9900
PCB-1232 Peak 3	0.0542	0.0430	0.0418			Ave		0.0463				14.8		20.0			
PCB-1232 Peak 4	0.0229	0.0172	0.0159			Lin1	0.0002	0.0160				6.5			0.9990		0.9900
PCB-1232 Peak 5	0.0173	0.0118	0.0113			Lin1	0.0001	0.0113				2.6			1.0000		0.9900
PCB-1262 Peak 1	0.0679	0.0428	0.0408			Lin1	0.0006	0.0408				3.0			1.0000		0.9900
PCB-1262 Peak 2	0.0731	0.0460	0.0437			Lin1	0.0006	0.0437				3.1			1.0000		0.9900
PCB-1262 Peak 3	0.0922	0.0599	0.0590			Lin1	0.0007	0.0587				0.3			1.0000		0.9900
PCB-1262 Peak 4	0.0797	0.0502	0.0489			Lin1	0.0006	0.0487				0.9			1.0000		0.9900
PCB-1262 Peak 5	0.0866	0.0594	0.0593			Lin1	0.0005	0.0589				1.3			1.0000		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
PCBS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 472294

SDG No.:

Instrument ID: HP6890-7 GC Column: ZB-35 ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 05/12/2019 16:00 Calibration End Date: 05/12/2019 16:32 Calibration ID: 36970

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-472294/56	7_42-293.D
Level 2	IC 480-472294/55	7_42-292.D
Level 3	IC 480-472294/54	7_42-291.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1	LVL 2	LVL 3			LVL 1	LVL 2	LVL 3		
PCB-1232 Peak 1	BNB	Ave	7754	182023	632971			0.0200	0.500	2.00		
PCB-1232 Peak 2	BNB	Lin1	8378	162413	569508			0.0200	0.500	2.00		
PCB-1232 Peak 3	BNB	Ave	14255	286617	1096311			0.0200	0.500	2.00		
PCB-1232 Peak 4	BNB	Lin1	6032	114449	417544			0.0200	0.500	2.00		
PCB-1232 Peak 5	BNB	Lin1	4550	78695	297105			0.0200	0.500	2.00		
PCB-1262 Peak 1	BNB	Lin1	17866	285876	1071179			0.0200	0.500	2.00		
PCB-1262 Peak 2	BNB	Lin1	19231	306676	1146869			0.0200	0.500	2.00		
PCB-1262 Peak 3	BNB	Lin1	24259	399567	1549139			0.0200	0.500	2.00		
PCB-1262 Peak 4	BNB	Lin1	20953	335275	1282775			0.0200	0.500	2.00		
PCB-1262 Peak 5	BNB	Lin1	22781	396586	1556729			0.0200	0.500	2.00		

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-291.D
Lims ID: IC 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 12-May-2019 16:00:41 ALS Bottle#: 0 Worklist Smp#: 54
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:39 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: clarkda Date: 17-May-2019 14:36:35

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.160	-0.002	4497002	0.5000	0.5000	
2	1.490	1.492	-0.002	6558911	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.815	1.824	-0.009	443156	2.00	1.95	
1	2.036	2.043	-0.007	324419	2.00	2.13	
1	2.147	2.149	-0.002	224088	2.00	1.88	
1	2.313	2.329	-0.017	666812	2.00	2.02	
1	2.748	2.751	-0.003	241652	2.00	2.12	
		Average of Peak Amounts =				2.02	
2	2.370	2.373	-0.002	632971	2.00	1.79	
2	2.667	2.667	0.000	569508	2.00	1.96	
2	2.967	2.972	-0.005	1096311	2.00	1.80	
2	3.074	3.076	-0.002	417544	2.00	1.98	
2	3.435	3.435	0.000	297105	2.00	1.99	
		Average of Peak Amounts =				1.90	
						RPD = 5.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.554	3.557	-0.003	810139	2.00	1.84	
1	4.063	4.065	-0.003	1208623	2.00	1.83	
1	4.442	4.448	-0.006	2278610	2.00	1.86	
1	4.728	4.729	-0.001	925697	2.00	1.76	
1	4.769	4.771	-0.002	1047546	2.00	1.80	
		Average of Peak Amounts =				1.82	
2	4.377	4.377	0.000	1071179	2.00	1.99	
2	4.482	4.483	0.000	1146869	2.00	1.99	
2	4.850	4.851	-0.001	1549139	2.00	2.00	
2	5.555	5.556	-0.001	1282775	2.00	2.00	
2	5.594	5.595	-0.001	1556729	2.00	2.00	
		Average of Peak Amounts =				2.00	
						RPD = 9.38	

Reagents:

32-62w/IS@2.0_00012 Amount Added: 1.00 Units: mL

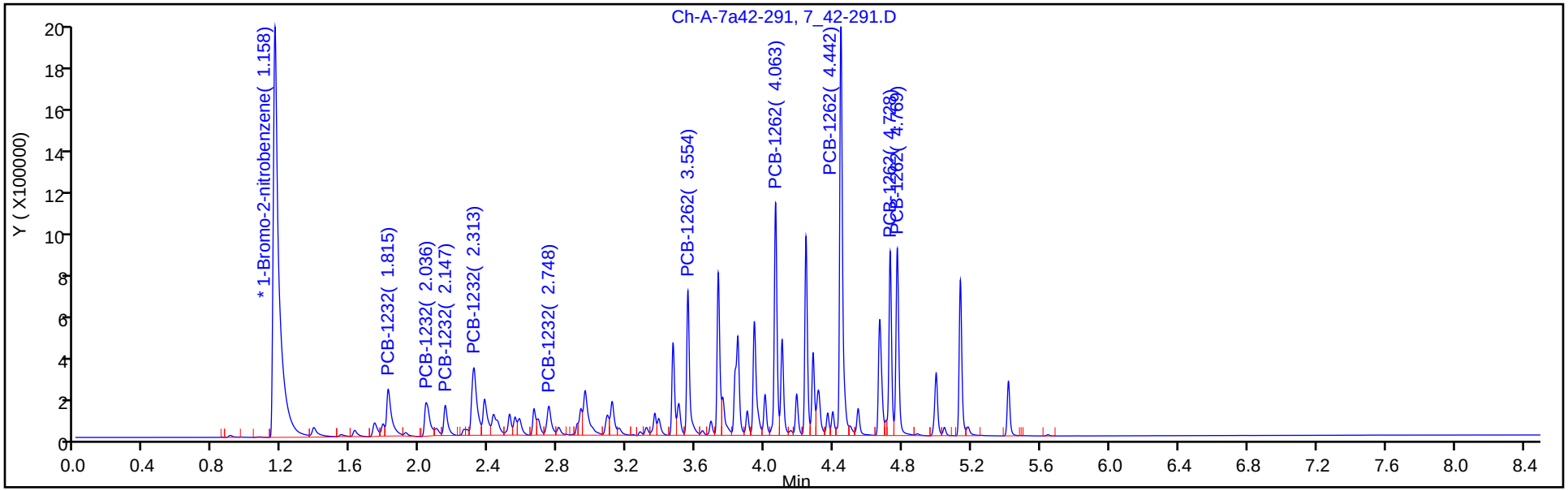
Report Date: 17-May-2019 15:17:40 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

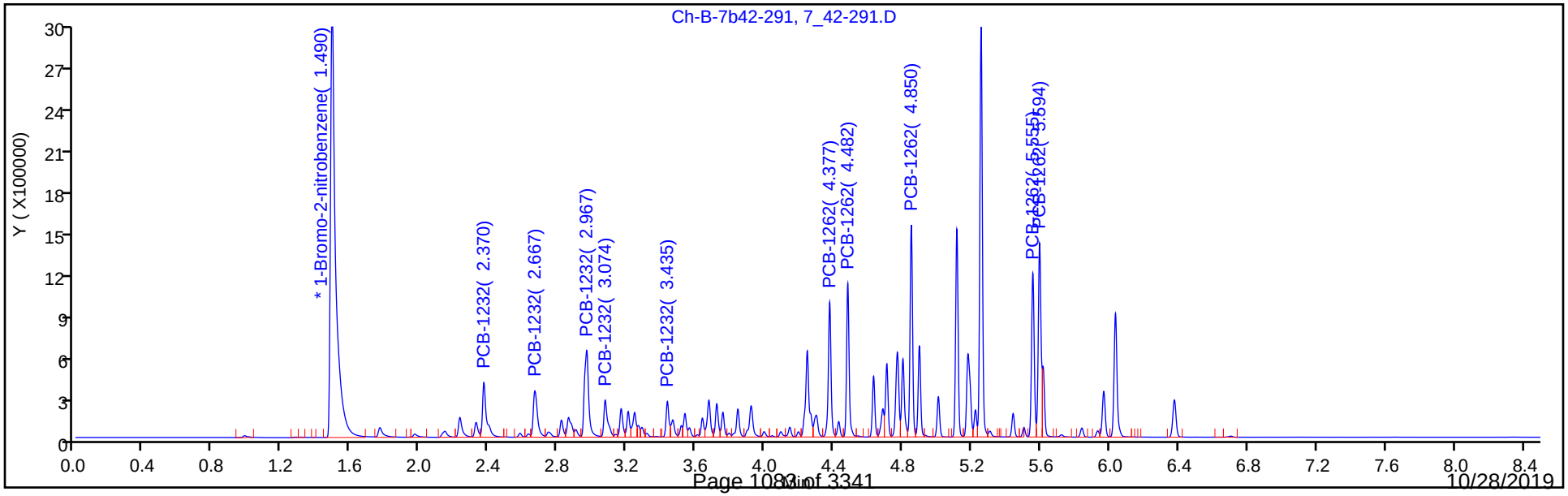
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-291.D

Injection Date:	12-May-2019 16:00:41	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 3			Worklist Smp#:	54
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-292.D
Lims ID: IC 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 12-May-2019 16:16:23 ALS Bottle#: 0 Worklist Smp#: 55
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:39:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.157	1.160	-0.003	4469025	0.5000	0.5000	
2	1.490	1.492	-0.002	6673202	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.818	1.824	-0.006	120319	0.5000	0.5322	
1	2.036	2.043	-0.007	86260	0.5000	0.5699	
1	2.147	2.149	-0.002	66564	0.5000	0.5625	
1	2.318	2.329	-0.011	154018	0.5000	0.4805	
1	2.748	2.751	-0.003	60286	0.5000	0.5328	
		Average of Peak Amounts =				0.5356	
2	2.372	2.373	0.000	182023	0.5000	0.5059	
2	2.667	2.667	0.000	162413	0.5000	0.5419	
2	2.968	2.972	-0.004	286617	0.5000	0.4637	
2	3.075	3.076	-0.001	114449	0.5000	0.5253	
2	3.435	3.435	0.000	78695	0.5000	0.5101	
		Average of Peak Amounts =				0.5094	
						RPD = 5.01	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.553	3.557	-0.004	199797	0.5000	0.4565	
1	4.062	4.065	-0.003	301663	0.5000	0.4592	
1	4.441	4.448	-0.007	607839	0.5000	0.4981	
1	4.726	4.729	-0.003	244913	0.5000	0.4687	
1	4.768	4.771	-0.003	278704	0.5000	0.4821	
		Average of Peak Amounts =				0.4729	
2	4.377	4.377	0.000	285876	0.5000	0.5116	
2	4.482	4.483	0.000	306676	0.5000	0.5123	
2	4.850	4.851	-0.001	399567	0.5000	0.4988	
2	5.555	5.556	-0.001	335275	0.5000	0.5034	
2	5.594	5.595	-0.001	396586	0.5000	0.4951	
		Average of Peak Amounts =				0.5042	
						RPD = 6.40	

Reagents:

32-62w/IS@0.5_00048 Amount Added: 1.00 Units: mL

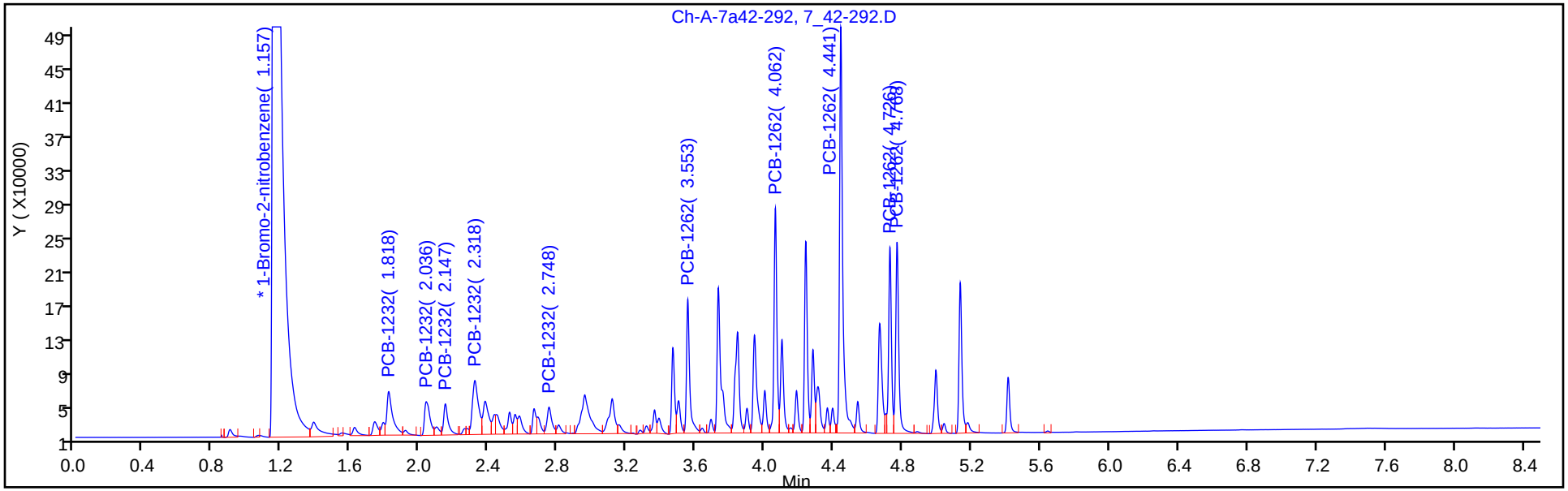
Report Date: 17-May-2019 15:17:44 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

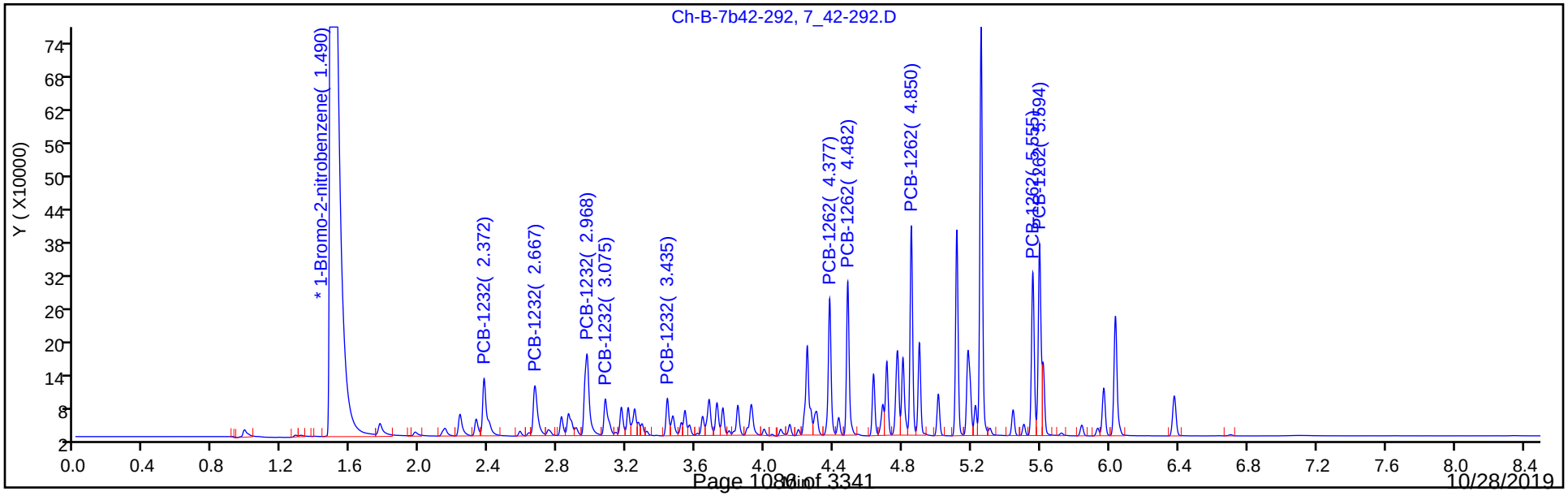
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-292.D

Injection Date:	12-May-2019 16:16:23	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 2			Worklist Smp#:	55
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D
Lims ID: IC 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 12-May-2019 16:32:12 ALS Bottle#: 0 Worklist Smp#: 56
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 17-May-2019 15:17:46 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0340

First Level Reviewer: RudzG Date: 14-May-2019 12:47:19

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	1.158	1.158	0.000	4495596	0.5000	0.5000	
2	1.489	1.489	0.000	6575568	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.824	1.824	0.000	4375	0.0200	0.0192	
1	2.043	2.043	0.000	2421	0.0200	0.0159	
1	2.149	2.149	0.000	2224	0.0200	0.0187	
1	2.329	2.329	0.000	1955	0.0200	0.0206	
1	2.751	2.751	0.000	1988	0.0200	0.0175	
		Average of Peak Amounts =				0.0184	
2	2.373	2.373	0.000	7754	0.0200	0.0219	
2	2.667	2.667	0.000	8378	0.0200	0.0187	
2	2.972	2.972	0.000	14255	0.0200	0.0234	
2	3.076	3.076	0.000	6032	0.0200	0.0192	
2	3.435	3.435	0.000	4550	0.0200	0.0197	
		Average of Peak Amounts =				0.0206	
						RPD = 11.35	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.557	3.557	0.000	10276	0.0200	0.0233	
1	4.065	4.065	0.000	15427	0.0200	0.0233	
1	4.448	4.448	0.000	26417	0.0200	0.0215	
1	4.729	4.729	0.000	12427	0.0200	0.0236	
1	4.771	4.771	0.000	13206	0.0200	0.0227	
		Average of Peak Amounts =				0.0229	
2	4.377	4.377	0.000	17866	0.0200	0.0196	
2	4.483	4.483	0.000	19231	0.0200	0.0196	
2	4.851	4.851	0.000	24259	0.0200	0.0200	
2	5.556	5.556	0.000	20953	0.0200	0.0199	
2	5.595	5.595	0.000	22781	0.0200	0.0201	
		Average of Peak Amounts =				0.0199	
						RPD = 14.21	

Reagents:

32-62w/IS@.02_00012 Amount Added: 1.00 Units: mL

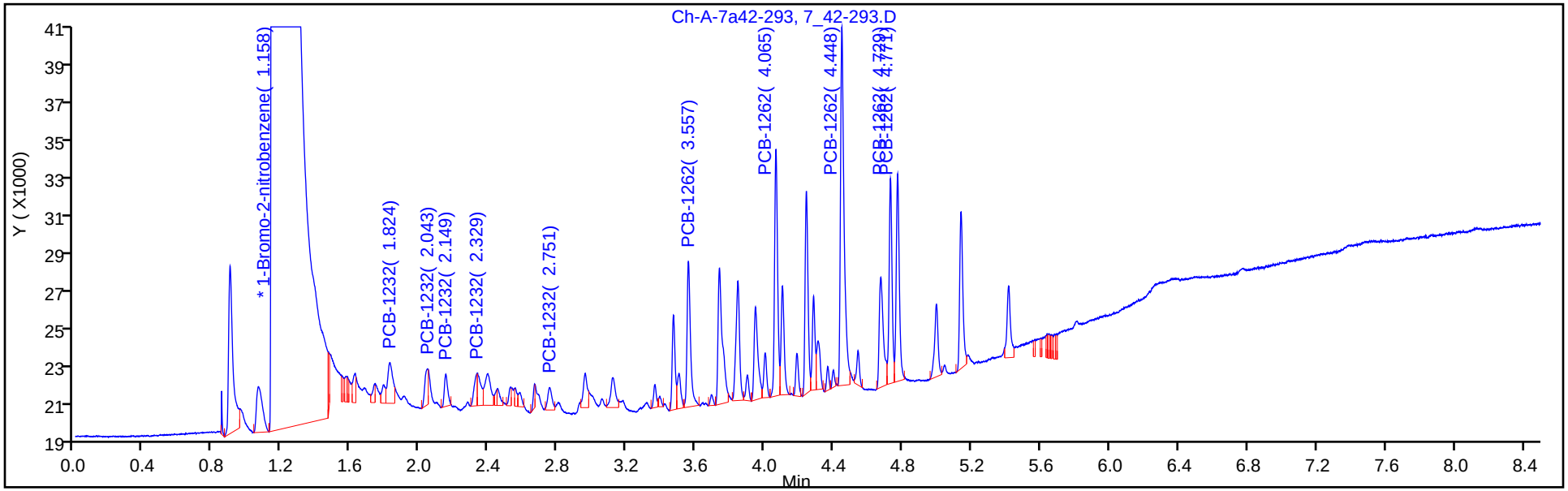
Report Date: 17-May-2019 15:17:47 Chrom Revision: 2.3 03-May-2019 15:52:00

Eurofins TestAmerica, Buffalo

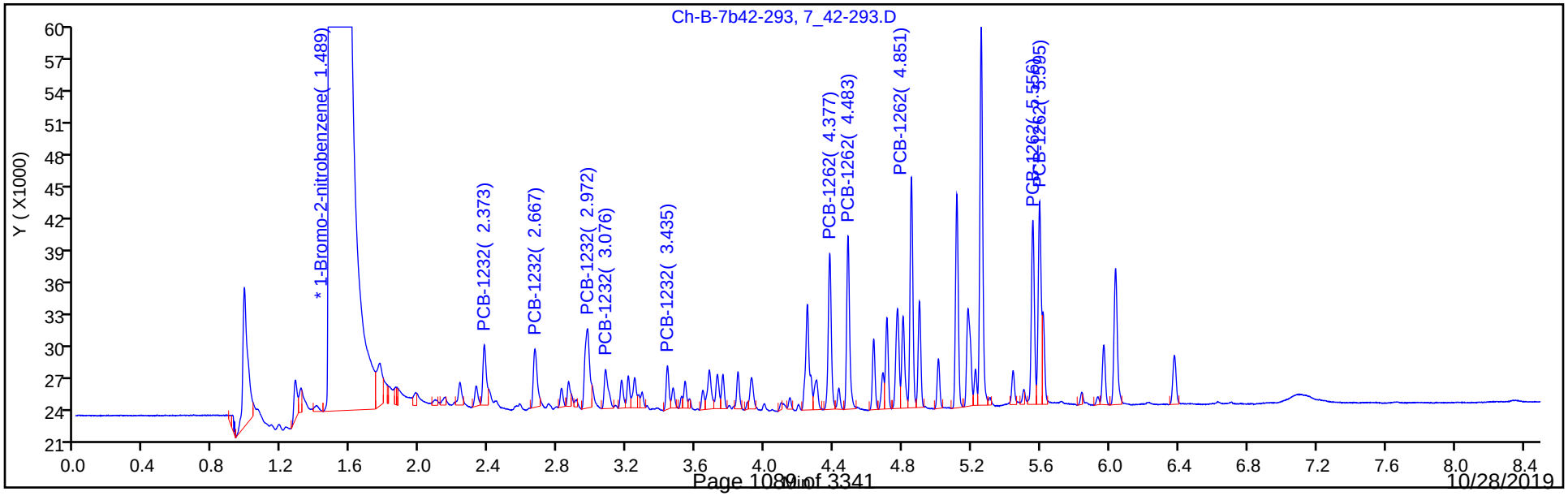
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Injection Date:	12-May-2019 16:32:12	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	IC 1			Worklist Smp#:	56
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494086/3 Calibration Date: 09/25/2019 15:49

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-276.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0462	0.0349		0.378	0.500	-24.4*	20.0
PCB-1016 Peak 2	Ave	0.0339	0.0281		0.414	0.500	-17.3	20.0
PCB-1016 Peak 3	Ave	0.0824	0.0759		0.461	0.500	-7.9	20.0
PCB-1016 Peak 4	Ave	0.0251	0.0216		0.431	0.500	-13.8	20.0
PCB-1016 Peak 5	Ave	0.0381	0.0272		0.357	0.500	-28.6*	20.0
PCB-1260 Peak 1	Ave	0.0619	0.0520		0.420	0.500	-16.0	20.0
PCB-1260 Peak 2	Ave	0.0632	0.0532		0.421	0.500	-15.8	20.0
PCB-1260 Peak 3	Ave	0.0872	0.0742		0.425	0.500	-14.9	20.0
PCB-1260 Peak 4	Ave	0.1258	0.1185		0.471	0.500	-5.8	20.0
PCB-1260 Peak 5	Ave	0.0639	0.0578		0.452	0.500	-9.6	20.0
Tetrachloro-m-xylene	Lin1		1.068		0.00975	0.0125	-22.0*	20.0
DCB Decachlorobiphenyl	Lin1		0.998		0.0110	0.0125	-11.7	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494086/3 Calibration Date: 09/25/2019 15:49

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-276.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	1.78	1.75	1.81
PCB-1016 Peak 2	1.89	1.86	1.92
PCB-1016 Peak 3	2.05	2.02	2.08
PCB-1016 Peak 4	2.39	2.36	2.42
PCB-1016 Peak 5	2.47	2.44	2.50
PCB-1260 Peak 1	3.27	3.24	3.30
PCB-1260 Peak 2	3.45	3.42	3.48
PCB-1260 Peak 3	3.65	3.62	3.68
PCB-1260 Peak 4	4.15	4.12	4.18
PCB-1260 Peak 5	4.37	4.34	4.40
Tetrachloro-m-xylene	1.40	1.37	1.43
DCB Decachlorobiphenyl	5.34	5.31	5.37

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 25-Sep-2019 15:49:01 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:25 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:22:17

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.955	0.955	0.000	7556141	0.5000	0.5000	
2	1.254	1.254	0.000	10661391	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.401	1.401	0.000	201830	0.0125	0.009754	M
2	1.737	1.737	0.000	338069	0.0125	0.0104	
						RPD = 6.72	
9 PCB-1016							M
1	1.784	1.784	0.000	263713	0.5000	0.3780	M
1	1.887	1.887	0.000	212110	0.5000	0.4135	M
1	2.048	2.048	0.000	573604	0.5000	0.4605	M
1	2.389	2.389	0.000	163408	0.5000	0.4311	M
1	2.473	2.473	0.000	205418	0.5000	0.3569	M
		Average of Peak Amounts =				0.4080	
2	2.090	2.090	0.000	219909	0.5000	0.4163	
2	2.668	2.668	0.000	1071547	0.5000	0.4671	
2	2.773	2.773	0.000	410257	0.5000	0.4584	
2	2.863	2.863	0.000	246754	0.5000	0.4852	
2	3.126	3.126	0.000	303774	0.5000	0.4349	
		Average of Peak Amounts =				0.4524	
						RPD = 10.32	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							M
1	3.269	3.269	0.000	393110	0.5000	0.4202	M
1	3.445	3.445	0.000	402154	0.5000	0.4208	M
1	3.650	3.650	0.000	560573	0.5000	0.4253	M
1	4.150	4.150	0.000	895534	0.5000	0.4709	M
1	4.372	4.372	0.000	436598	0.5000	0.4518	M
		Average of Peak Amounts =				0.4378	
2	4.053	4.053	0.000	616892	0.5000	0.4585	
2	4.159	4.159	0.000	701115	0.5000	0.4576	
2	4.473	4.473	0.000	596790	0.5000	0.4442	
2	4.781	4.781	0.000	569771	0.5000	0.4737	
2	4.923	4.923	0.000	1198273	0.5000	0.4831	
		Average of Peak Amounts =				0.4634	
						RPD = 5.68	
2 1260 Res 1							M
1	4.372	4.372	0.000	436598	NC	NC	M
2	4.923	4.923	0.000	1198273	NC	NC	
4 1260 Res 2							M
1	4.433	4.433	0.000	211235	NC	NC	M
2	5.218	5.218	0.000	340788	NC	NC	
3 1260 Res 3							M
1	4.474	4.474	0.000	283010	NC	NC	M
2	5.254	5.254	0.000	774762	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.336	5.336	0.000	188438	0.0125	0.0110	
2	6.242	6.242	0.000	237894	0.0125	0.0107	
						RPD = 2.68	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:25 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D

Injection Date: 25-Sep-2019 15:49:01 Instrument ID: HP6890-7 Operator ID: BufTCHROM

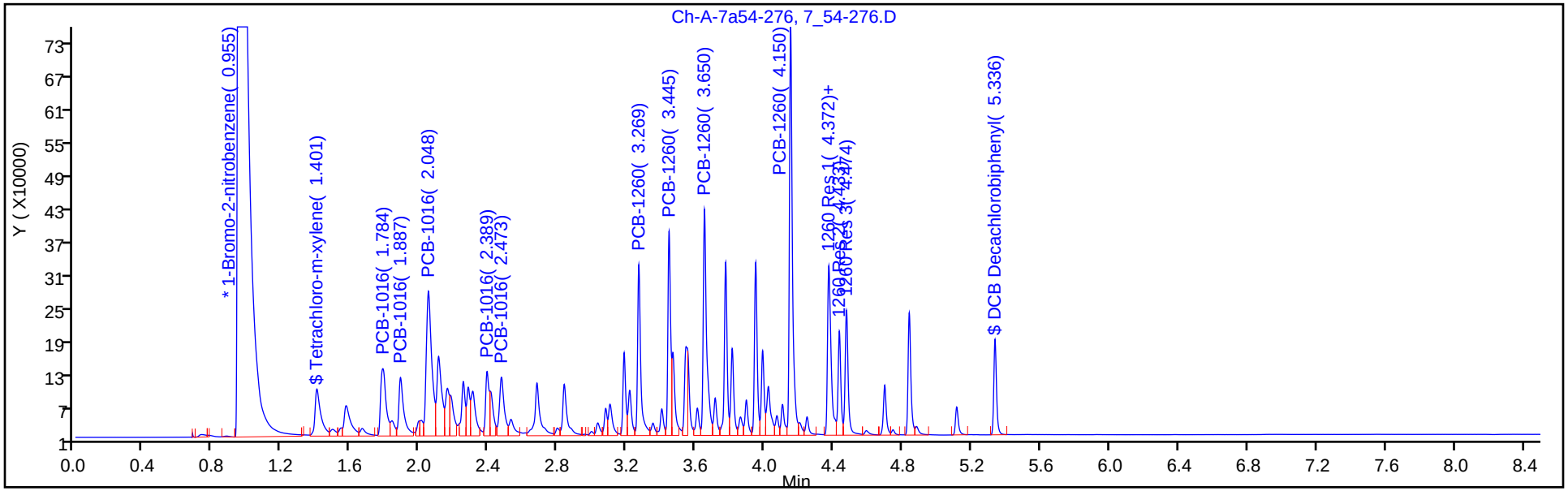
Lims ID: CCVIS Worklist Smp#: 3

Client ID:

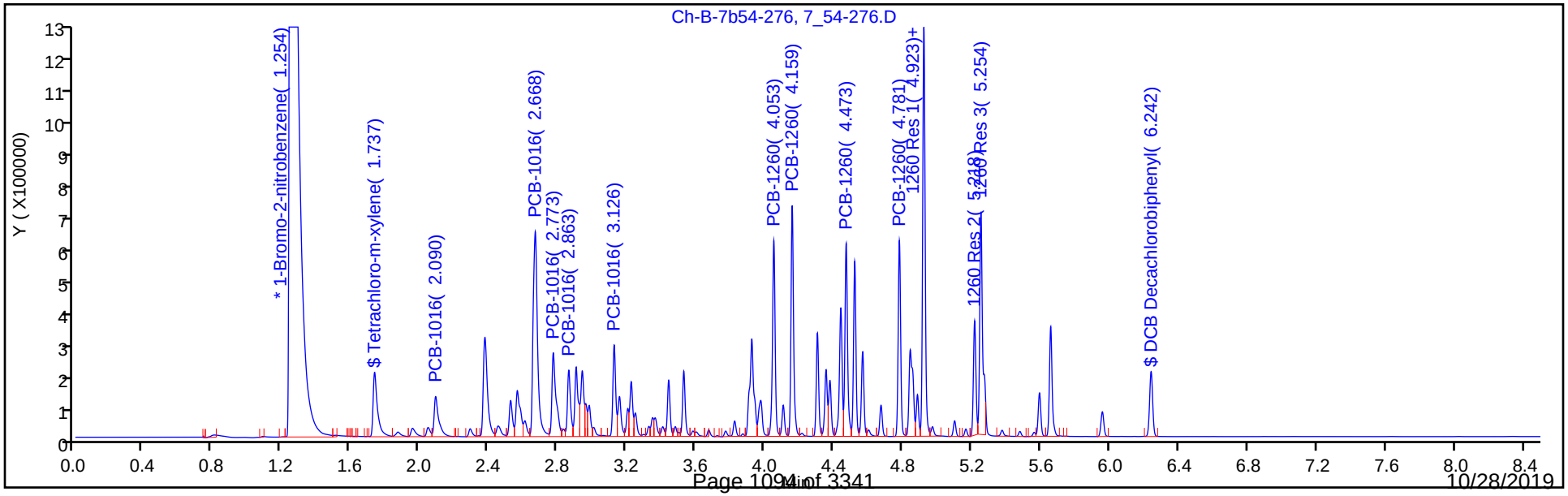
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

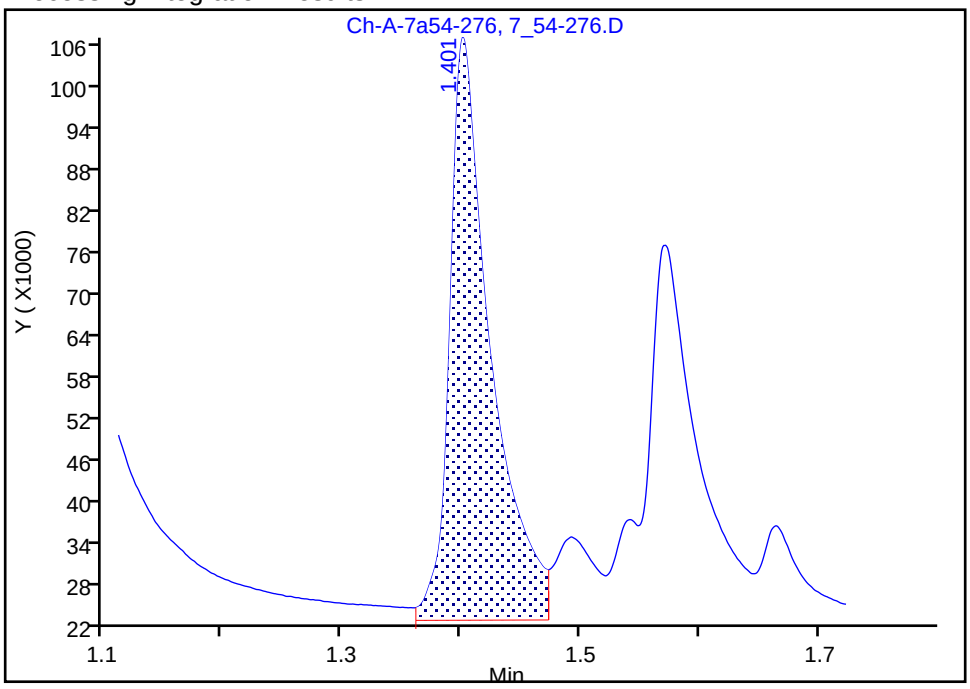
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D
Injection Date: 25-Sep-2019 15:49:01 Instrument ID: HP6890-7
Lims ID: CCVIS
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

$ 6 Tetrachloro-m-xylene, CAS: 877-09-8

Signal: 1

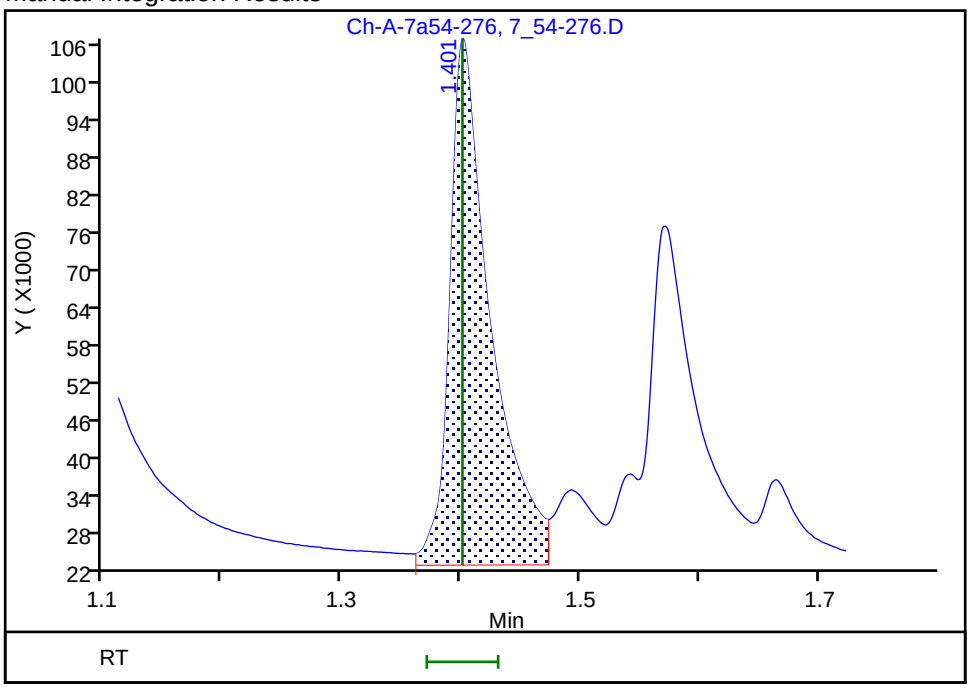
Processing Integration Results

RT: 1.40
Area: 171429
Amount: 0.008155
Amount Units: ng/uL



Manual Integration Results

RT: 1.40
Area: 201830
Amount: 0.009754
Amount Units: ng/uL



Reviewer: clarkda, 25-Sep-2019 16:21:36
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 26-Sep-2019 15:10:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D

Injection Date: 25-Sep-2019 15:49:01 Instrument ID: HP6890-7

Lims ID: CCVIS

Client ID:

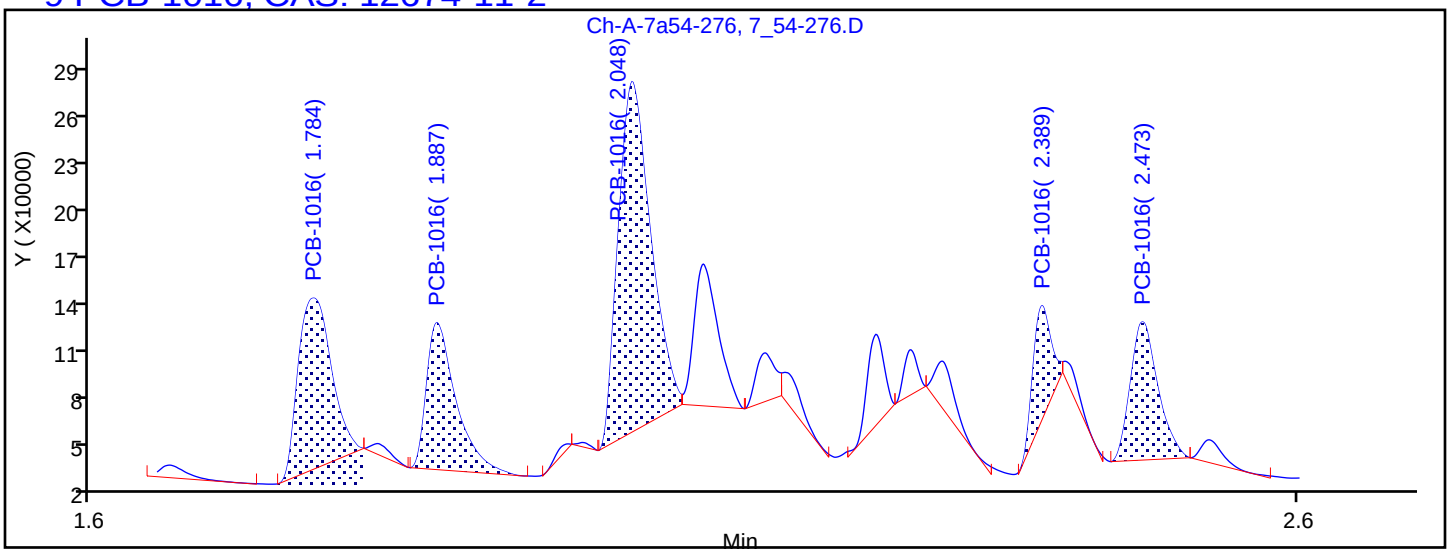
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

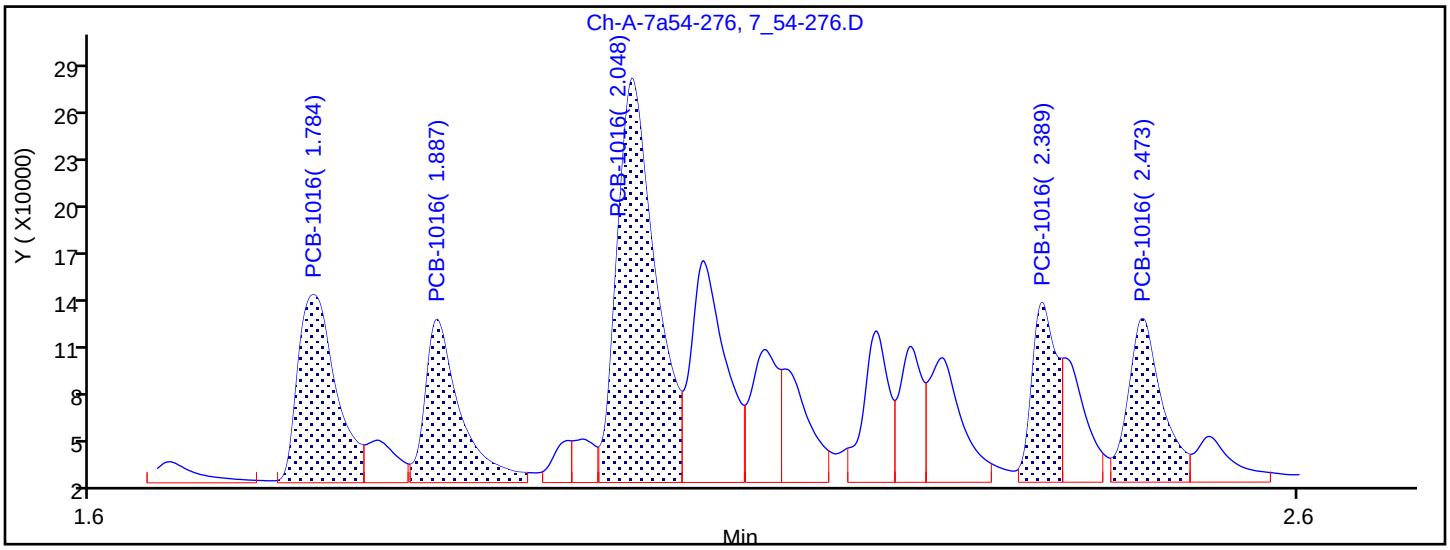
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

1.784	Response = 209000
1.887	Response = 159454
2.048	Response = 418295
2.389	Response = 75515
2.473	Response = 140022



Manual Integration Results

1.784	Response = 263713	M
1.887	Response = 212110	M
2.048	Response = 573604	M
2.389	Response = 163408	M
2.473	Response = 205418	M

Reviewer: clarkda, 25-Sep-2019 16:21:36

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 26-Sep-2019 15:10:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D

Injection Date: 25-Sep-2019 15:49:01 Instrument ID: HP6890-7

Lims ID: CCVIS

Client ID:

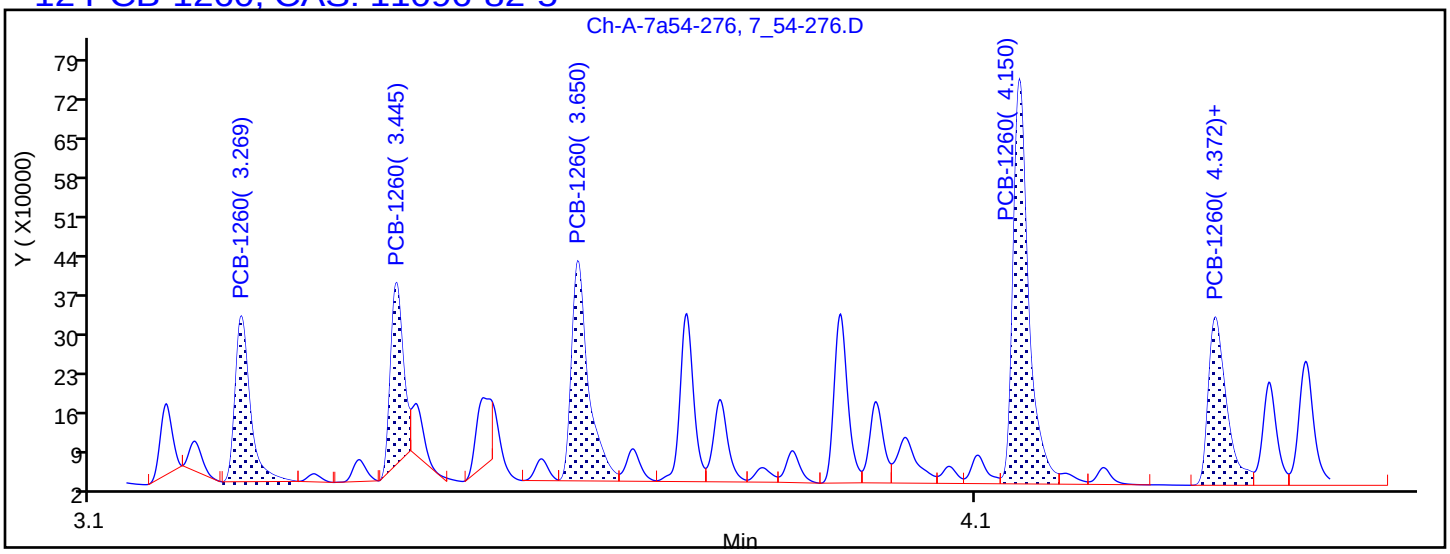
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 3

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

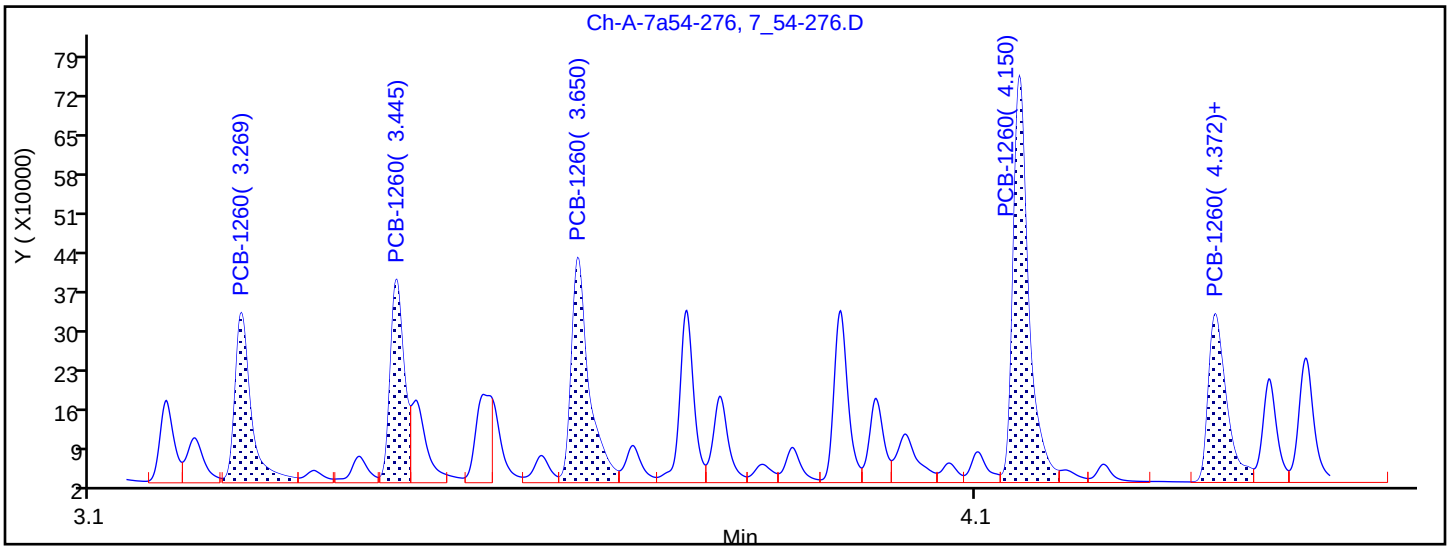
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

12 PCB-1260, CAS: 11096-82-5



Processing Integration Results

3.269	Response = 351173
3.445	Response = 324986
3.650	Response = 523138
4.150	Response = 881778
4.372	Response = 432600



Manual Integration Results

3.269	Response = 393110	M
3.445	Response = 402154	M
3.650	Response = 560573	M
4.150	Response = 895534	M
4.372	Response = 436598	M

Reviewer: clarkda, 25-Sep-2019 16:21:36

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494086/3 Calibration Date: 09/25/2019 15:49

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-276.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0248	0.0206		0.416	0.500	-16.7	20.0
PCB-1016 Peak 2	Ave	0.1076	0.1005		0.467	0.500	-6.6	20.0
PCB-1016 Peak 3	Ave	0.0420	0.0385		0.458	0.500	-8.3	20.0
PCB-1016 Peak 4	Ave	0.0239	0.0231		0.485	0.500	-3.0	20.0
PCB-1016 Peak 5	Ave	0.0328	0.0285		0.435	0.500	-13.0	20.0
PCB-1260 Peak 1	Ave	0.0631	0.0579		0.459	0.500	-8.3	20.0
PCB-1260 Peak 2	Ave	0.0719	0.0658		0.458	0.500	-8.5	20.0
PCB-1260 Peak 3	Ave	0.0630	0.0560		0.444	0.500	-11.2	20.0
PCB-1260 Peak 4	Ave	0.0564	0.0534		0.474	0.500	-5.3	20.0
PCB-1260 Peak 5	Ave	0.1163	0.1124		0.483	0.500	-3.4	20.0
Tetrachloro-m-xylene	Ave	1.520	1.268		0.0104	0.0125	-16.5	20.0
DCB Decachlorobiphenyl	Ave	1.039	0.8925		0.0107	0.0125	-14.1	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494086/3 Calibration Date: 09/25/2019 15:49

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-276.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	2.09	2.06	2.12
PCB-1016 Peak 2	2.67	2.64	2.70
PCB-1016 Peak 3	2.77	2.74	2.80
PCB-1016 Peak 4	2.86	2.83	2.89
PCB-1016 Peak 5	3.13	3.10	3.16
PCB-1260 Peak 1	4.05	4.02	4.08
PCB-1260 Peak 2	4.16	4.13	4.19
PCB-1260 Peak 3	4.47	4.44	4.50
PCB-1260 Peak 4	4.78	4.75	4.81
PCB-1260 Peak 5	4.92	4.89	4.95
Tetrachloro-m-xylene	1.74	1.71	1.77
DCB Decachlorobiphenyl	6.24	6.21	6.27

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 25-Sep-2019 15:49:01 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:25 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:22:17

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.955	0.955	0.000	7556141	0.5000	0.5000	
2	1.254	1.254	0.000	10661391	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							M
1	1.401	1.401	0.000	201830	0.0125	0.009754	M
2	1.737	1.737	0.000	338069	0.0125	0.0104	
						RPD = 6.72	
9 PCB-1016							M
1	1.784	1.784	0.000	263713	0.5000	0.3780	M
1	1.887	1.887	0.000	212110	0.5000	0.4135	M
1	2.048	2.048	0.000	573604	0.5000	0.4605	M
1	2.389	2.389	0.000	163408	0.5000	0.4311	M
1	2.473	2.473	0.000	205418	0.5000	0.3569	M
		Average of Peak Amounts =				0.4080	
2	2.090	2.090	0.000	219909	0.5000	0.4163	
2	2.668	2.668	0.000	1071547	0.5000	0.4671	
2	2.773	2.773	0.000	410257	0.5000	0.4584	
2	2.863	2.863	0.000	246754	0.5000	0.4852	
2	3.126	3.126	0.000	303774	0.5000	0.4349	
		Average of Peak Amounts =				0.4524	
						RPD = 10.32	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							M
1	3.269	3.269	0.000	393110	0.5000	0.4202	M
1	3.445	3.445	0.000	402154	0.5000	0.4208	M
1	3.650	3.650	0.000	560573	0.5000	0.4253	M
1	4.150	4.150	0.000	895534	0.5000	0.4709	M
1	4.372	4.372	0.000	436598	0.5000	0.4518	M
		Average of Peak Amounts =				0.4378	
2	4.053	4.053	0.000	616892	0.5000	0.4585	
2	4.159	4.159	0.000	701115	0.5000	0.4576	
2	4.473	4.473	0.000	596790	0.5000	0.4442	
2	4.781	4.781	0.000	569771	0.5000	0.4737	
2	4.923	4.923	0.000	1198273	0.5000	0.4831	
		Average of Peak Amounts =				0.4634	
						RPD = 5.68	
2 1260 Res 1							M
1	4.372	4.372	0.000	436598	NC	NC	M
2	4.923	4.923	0.000	1198273	NC	NC	
4 1260 Res 2							M
1	4.433	4.433	0.000	211235	NC	NC	M
2	5.218	5.218	0.000	340788	NC	NC	
3 1260 Res 3							M
1	4.474	4.474	0.000	283010	NC	NC	M
2	5.254	5.254	0.000	774762	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.336	5.336	0.000	188438	0.0125	0.0110	
2	6.242	6.242	0.000	237894	0.0125	0.0107	
						RPD = 2.68	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

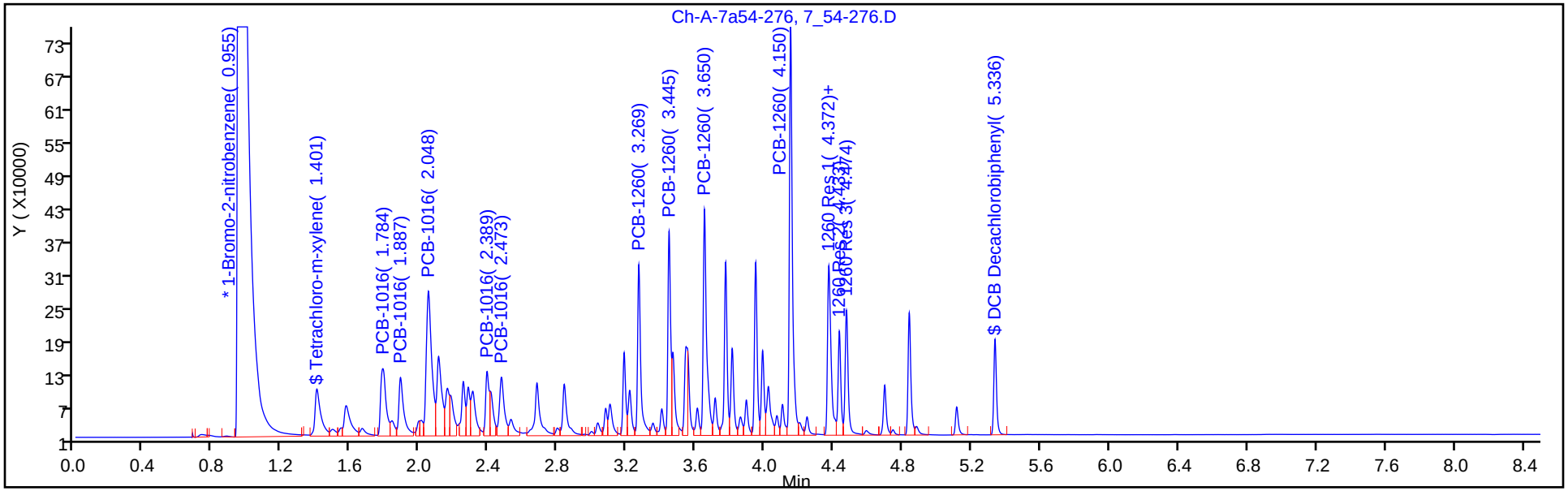
Report Date: 26-Sep-2019 15:10:26 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

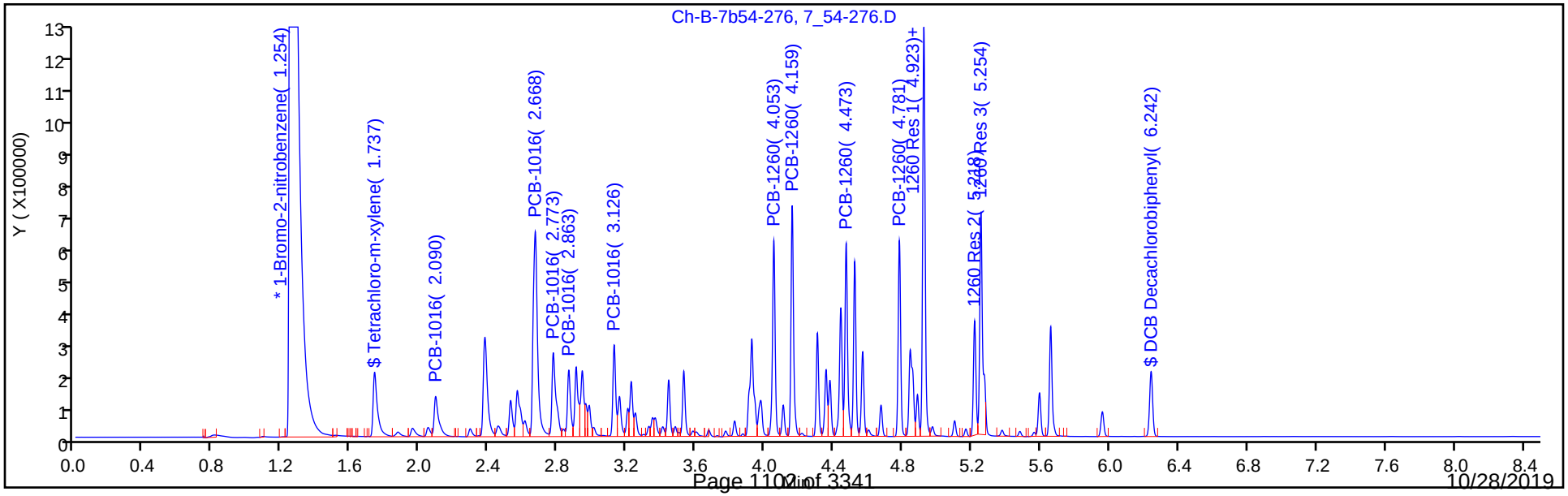
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-276.D

Injection Date:	25-Sep-2019 15:49:01	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/4 Calibration Date: 09/25/2019 16:01

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_54-277.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Lin1		0.0064		0.583	0.500	16.5	20.0
PCB-1221 Peak 2	Lin1		0.0096		0.415	0.500	-16.9	20.0
PCB-1221 Peak 3	Lin1		0.0056		0.406	0.500	-18.8	20.0
PCB-1221 Peak 4	Ave	0.0394	0.0315		0.399	0.500	-20.1*	20.0
PCB-1254 Peak 1	Ave	0.0661	0.0467		0.353	0.500	-29.3*	20.0
PCB-1254 Peak 2	Ave	0.0749	0.0565		0.377	0.500	-24.7*	20.0
PCB-1254 Peak 3	Ave	0.0451	0.0343		0.380	0.500	-24.0*	20.0
PCB-1254 Peak 4	Ave	0.0917	0.0709		0.386	0.500	-22.7*	20.0
PCB-1254 Peak 5	Ave	0.0849	0.0669		0.394	0.500	-21.3*	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/4 Calibration Date: 09/25/2019 16:01

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_54-277.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	1.38	1.35	1.41
PCB-1221 Peak 2	1.49	1.46	1.52
PCB-1221 Peak 3	1.54	1.51	1.57
PCB-1221 Peak 4	1.57	1.54	1.60
PCB-1254 Peak 1	2.68	2.65	2.71
PCB-1254 Peak 2	2.83	2.80	2.86
PCB-1254 Peak 3	3.03	3.00	3.06
PCB-1254 Peak 4	3.10	3.07	3.13
PCB-1254 Peak 5	3.65	3.62	3.68

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:01:28 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:28 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:24:00

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	7754722	0.5000	0.5000	
2	1.256	1.256	0.000	10924360	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.383	1.383	0.000	49655	0.5000	0.5827	M
1	1.494	1.494	0.000	74618	0.5000	0.4154	M
1	1.540	1.540	0.000	43056	0.5000	0.4058	M
1	1.570	1.570	0.000	244270	0.5000	0.3994	M
		Average of Peak Amounts =				0.4508	
2	1.871	1.871	0.000	50243	0.5000	0.4173	
2	1.957	1.957	0.000	144518	0.5000	0.4391	
2	2.047	2.047	0.000	80839	0.5000	0.4300	
2	2.090	2.090	0.000	333574	0.5000	0.4345	
		Average of Peak Amounts =				0.4302	
						RPD = 4.68	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.676	2.676	0.000	362304	0.5000	0.3534	M
1	2.833	2.833	0.000	437813	0.5000	0.3767	M
1	3.026	3.026	0.000	265971	0.5000	0.3801	M
1	3.098	3.098	0.000	549386	0.5000	0.3864	M
1	3.650	3.650	0.000	518477	0.5000	0.3935	M
		Average of Peak Amounts =				0.3780	
2	3.442	3.442	0.000	407336	0.5000	0.4605	
2	3.529	3.529	0.000	542830	0.5000	0.4029	
2	3.908	3.908	0.000	840495	0.5000	0.4298	
2	4.348	4.348	0.000	525377	0.5000	0.4374	
2	4.472	4.472	0.000	595210	0.5000	0.4153	
		Average of Peak Amounts =				0.4292	
						RPD = 12.67	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00055 Amount Added: 1.00 Units: mL

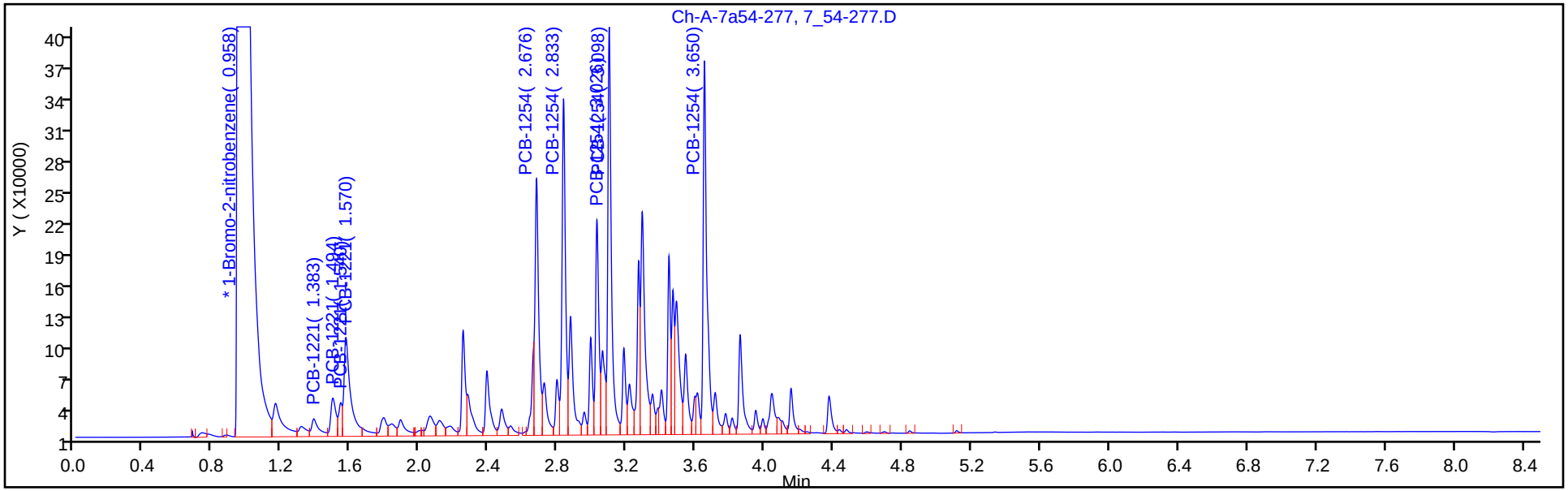
Report Date: 26-Sep-2019 15:10:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

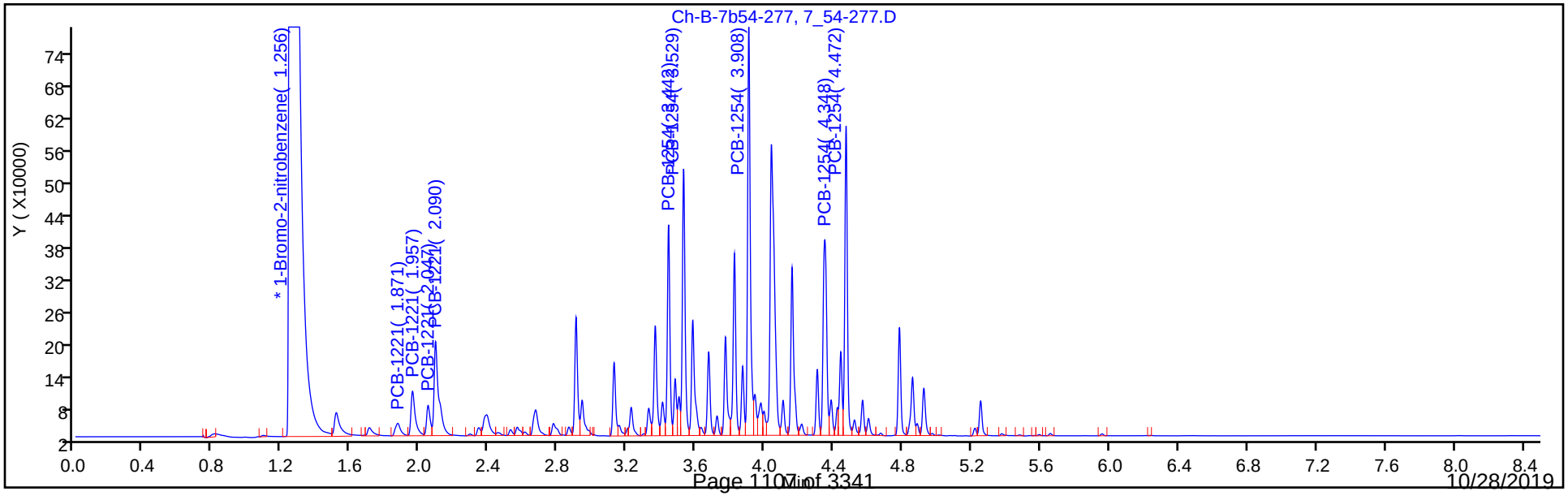
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D

Injection Date:	25-Sep-2019 16:01:28	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D

Injection Date: 25-Sep-2019 16:01:28 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

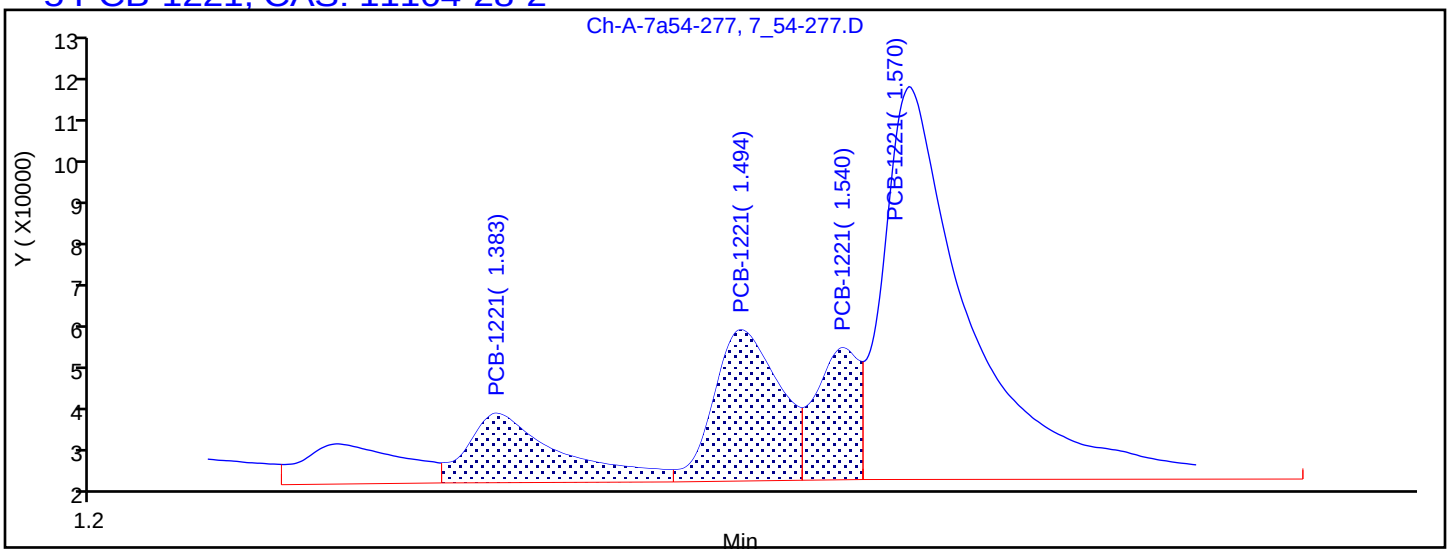
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

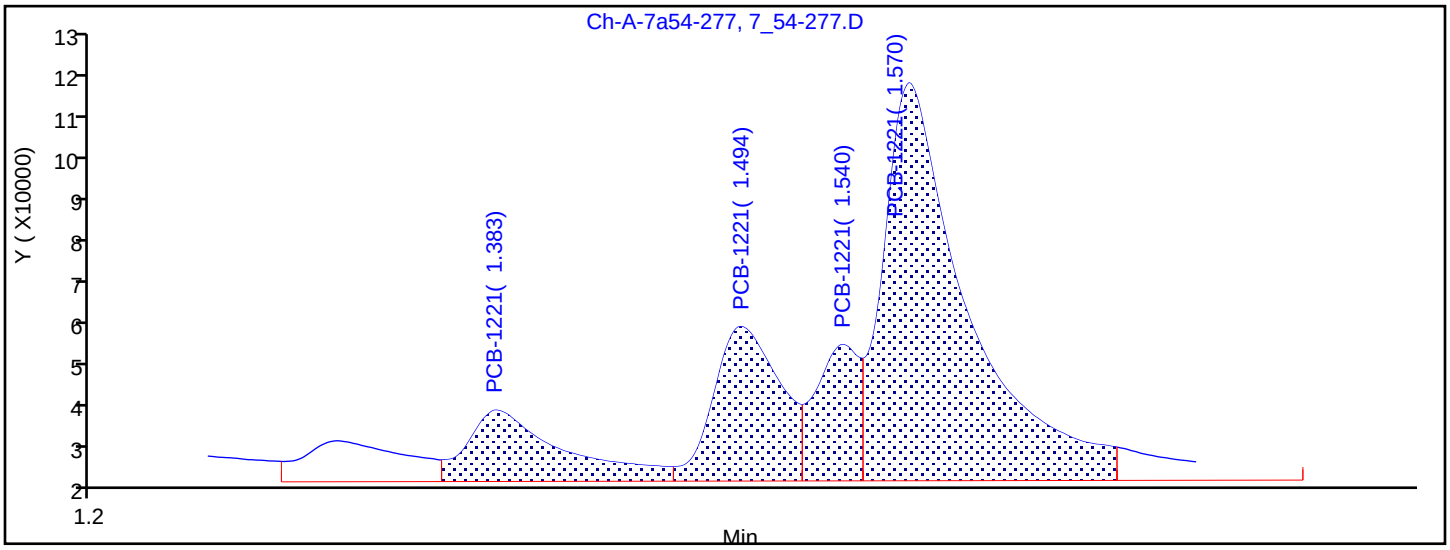
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

1.383	Response = 46798
1.494	Response = 72196
1.540	Response = 41517
1.570	Response = 255108



Manual Integration Results

1.383	Response = 49655	M
1.494	Response = 74618	M
1.540	Response = 43056	M
1.570	Response = 244270	M

Reviewer: clarkda, 25-Sep-2019 16:22:52

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 26-Sep-2019 15:10:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D

Injection Date: 25-Sep-2019 16:01:28 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

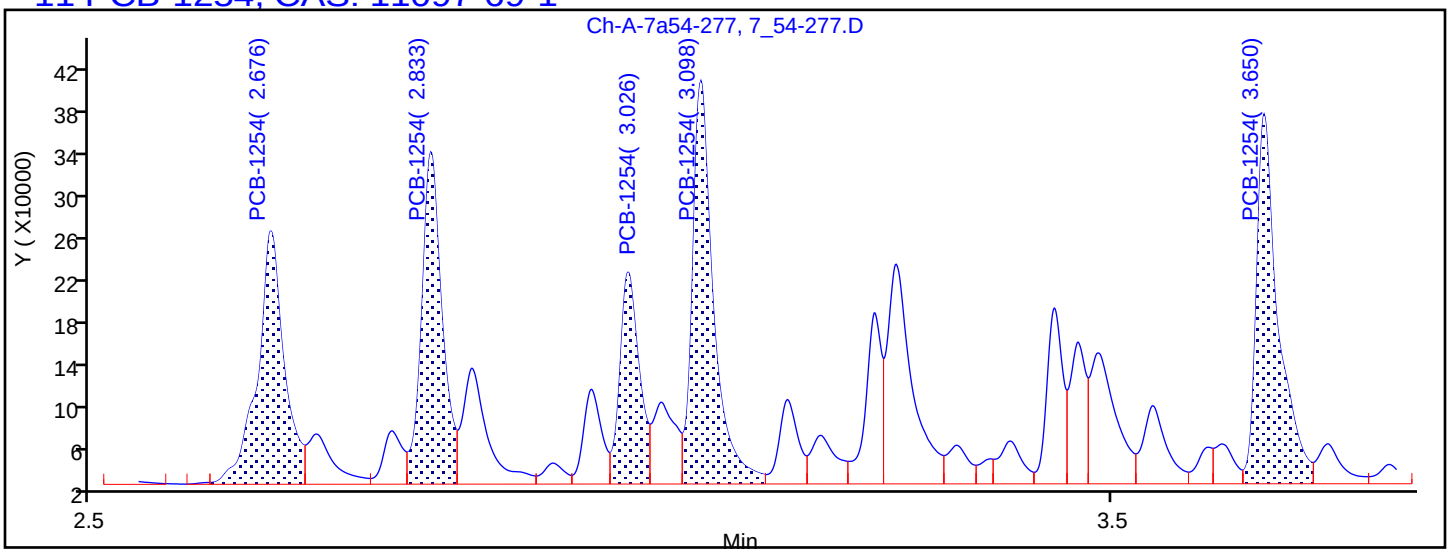
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 4

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

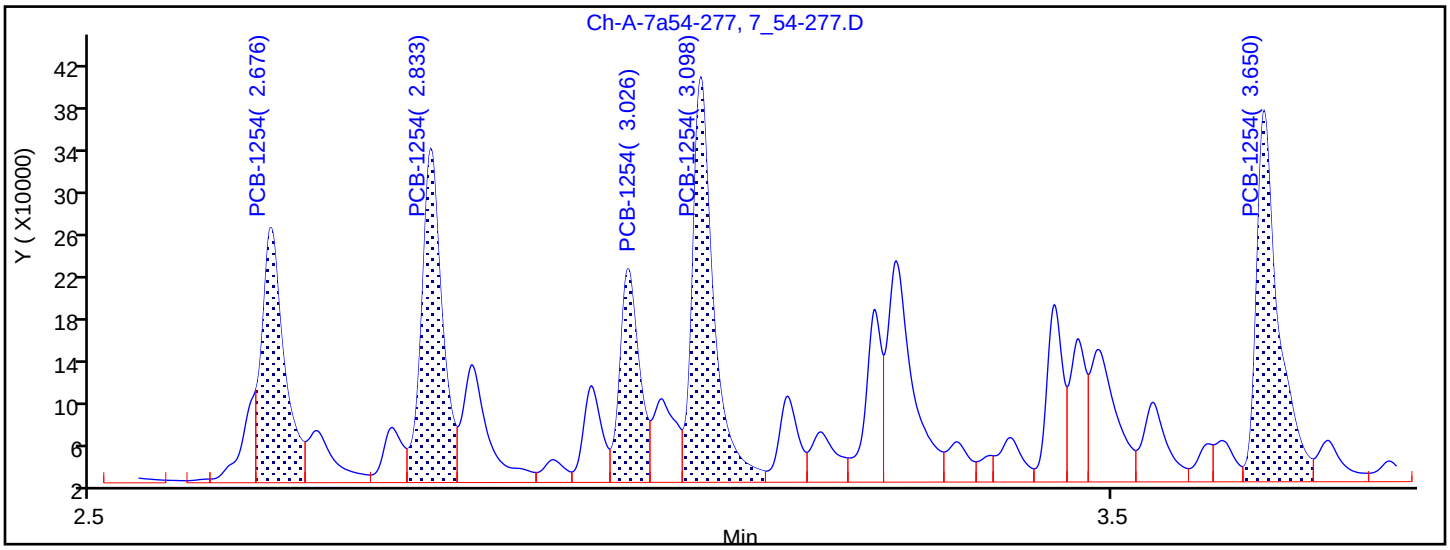
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

2.676	Response = 432361
2.833	Response = 432709
3.026	Response = 262028
3.098	Response = 541394
3.650	Response = 512893



Manual Integration Results

2.676	Response = 362304	M
2.833	Response = 437813	M
3.026	Response = 265971	M
3.098	Response = 549386	M
3.650	Response = 518477	M

Reviewer: clarkda, 25-Sep-2019 16:22:52

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/4 Calibration Date: 09/25/2019 16:01

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_54-277.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Lin1		0.0046		0.417	0.500	-16.5	20.0
PCB-1221 Peak 2	Lin1		0.0132		0.439	0.500	-12.2	20.0
PCB-1221 Peak 3	Lin1		0.0074		0.430	0.500	-14.0	20.0
PCB-1221 Peak 4	Lin1		0.0305		0.435	0.500	-13.1	20.0
PCB-1254 Peak 1	Lin1		0.0373		0.461	0.500	-7.9	20.0
PCB-1254 Peak 2	Ave	0.0617	0.0497		0.403	0.500	-19.4	20.0
PCB-1254 Peak 3	Ave	0.0895	0.0769		0.430	0.500	-14.0	20.0
PCB-1254 Peak 4	Ave	0.0550	0.0481		0.437	0.500	-12.5	20.0
PCB-1254 Peak 5	Ave	0.0656	0.0545		0.415	0.500	-16.9	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/4 Calibration Date: 09/25/2019 16:01

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_54-277.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	1.87	1.84	1.90
PCB-1221 Peak 2	1.96	1.93	1.99
PCB-1221 Peak 3	2.05	2.02	2.08
PCB-1221 Peak 4	2.09	2.06	2.12
PCB-1254 Peak 1	3.44	3.41	3.47
PCB-1254 Peak 2	3.53	3.50	3.56
PCB-1254 Peak 3	3.91	3.88	3.94
PCB-1254 Peak 4	4.35	4.32	4.38
PCB-1254 Peak 5	4.47	4.44	4.50

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:01:28 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:28 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:24:00

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	7754722	0.5000	0.5000	
2	1.256	1.256	0.000	10924360	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.383	1.383	0.000	49655	0.5000	0.5827	M
1	1.494	1.494	0.000	74618	0.5000	0.4154	M
1	1.540	1.540	0.000	43056	0.5000	0.4058	M
1	1.570	1.570	0.000	244270	0.5000	0.3994	M
		Average of Peak Amounts =				0.4508	
2	1.871	1.871	0.000	50243	0.5000	0.4173	
2	1.957	1.957	0.000	144518	0.5000	0.4391	
2	2.047	2.047	0.000	80839	0.5000	0.4300	
2	2.090	2.090	0.000	333574	0.5000	0.4345	
		Average of Peak Amounts =				0.4302	
						RPD = 4.68	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.676	2.676	0.000	362304	0.5000	0.3534	M
1	2.833	2.833	0.000	437813	0.5000	0.3767	M
1	3.026	3.026	0.000	265971	0.5000	0.3801	M
1	3.098	3.098	0.000	549386	0.5000	0.3864	M
1	3.650	3.650	0.000	518477	0.5000	0.3935	M
		Average of Peak Amounts =				0.3780	
2	3.442	3.442	0.000	407336	0.5000	0.4605	
2	3.529	3.529	0.000	542830	0.5000	0.4029	
2	3.908	3.908	0.000	840495	0.5000	0.4298	
2	4.348	4.348	0.000	525377	0.5000	0.4374	
2	4.472	4.472	0.000	595210	0.5000	0.4153	
		Average of Peak Amounts =				0.4292	
						RPD = 12.67	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00055 Amount Added: 1.00 Units: mL

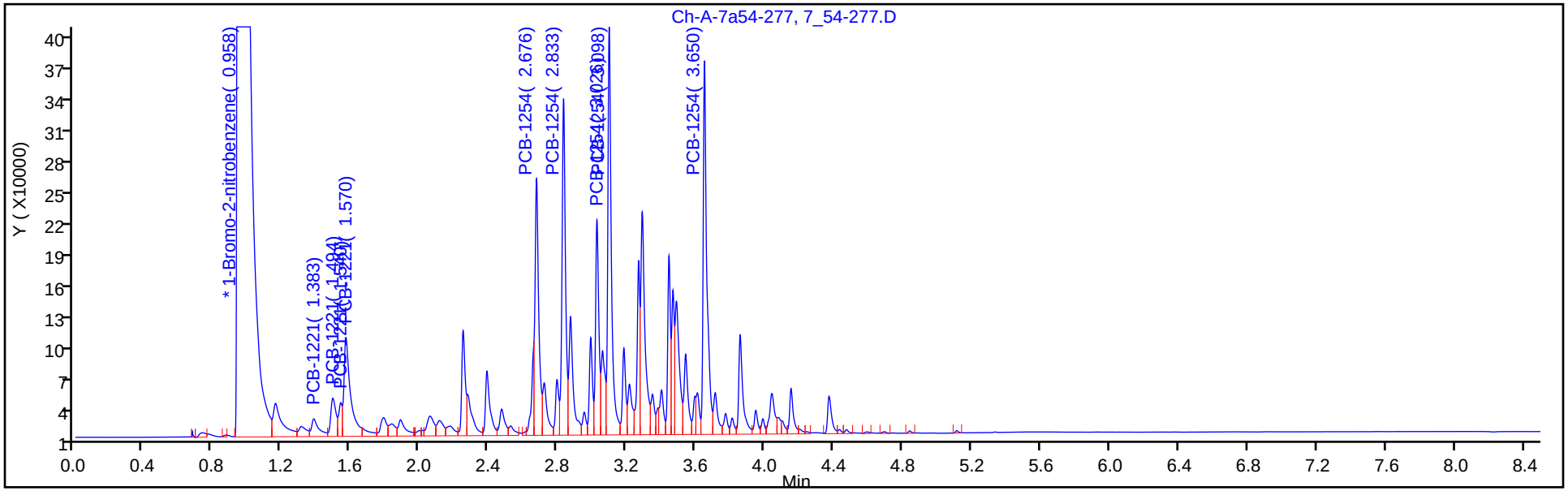
Report Date: 26-Sep-2019 15:10:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

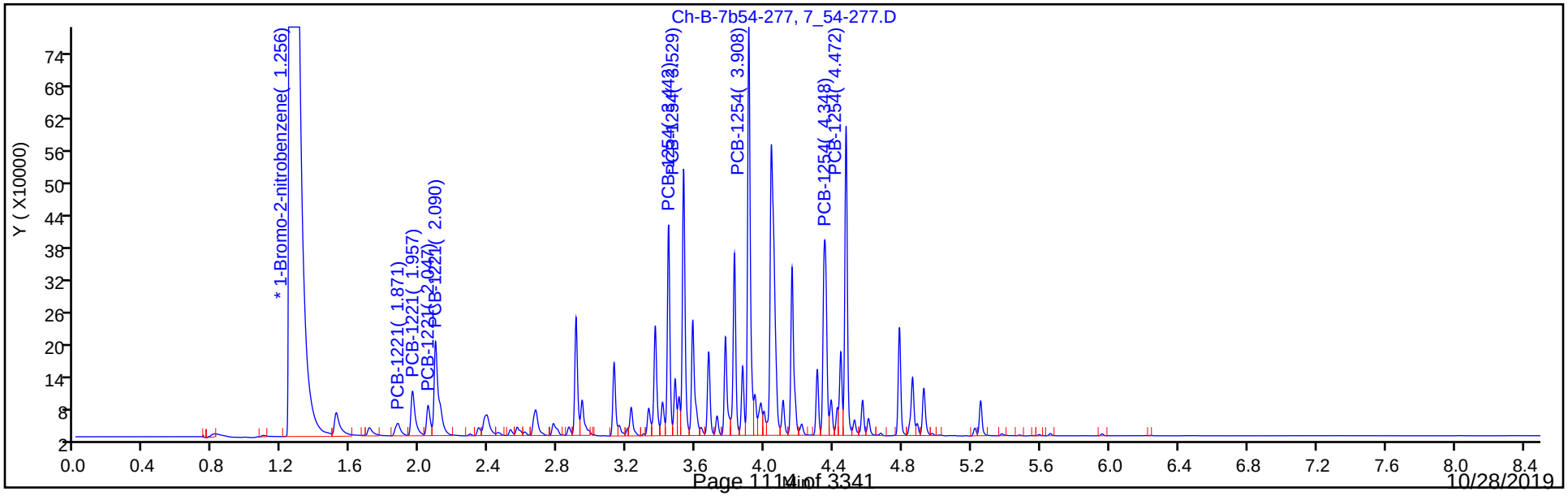
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-277.D

Injection Date:	25-Sep-2019 16:01:28	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/5 Calibration Date: 09/25/2019 16:13

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_54-278.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0253	0.0270		0.534	0.500	6.9	20.0
PCB-1232 Peak 2	Ave	0.0169	0.0185		0.546	0.500	9.2	20.0
PCB-1232 Peak 3	Ave	0.0132	0.0157		0.594	0.500	18.9	20.0
PCB-1232 Peak 4	Lin1		0.0355		0.494	0.500	-1.2	20.0
PCB-1232 Peak 5	Ave	0.0127	0.0147		0.579	0.500	15.9	20.0
PCB-1262 Peak 1	Ave	0.0490	0.0487		0.497	0.500	-0.5	20.0
PCB-1262 Peak 2	Ave	0.0735	0.0770		0.524	0.500	4.8	20.0
PCB-1262 Peak 3	Ave	0.1365	0.1532		0.561	0.500	12.2	20.0
PCB-1262 Peak 4	Ave	0.0585	0.0596		0.510	0.500	1.9	20.0
PCB-1262 Peak 5	Ave	0.0647	0.0687		0.531	0.500	6.2	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/5 Calibration Date: 09/25/2019 16:13

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_54-278.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	1.57	1.54	1.60
PCB-1232 Peak 2	1.78	1.75	1.81
PCB-1232 Peak 3	1.89	1.86	1.92
PCB-1232 Peak 4	2.05	2.02	2.08
PCB-1232 Peak 5	2.47	2.44	2.50
PCB-1262 Peak 1	3.27	3.24	3.30
PCB-1262 Peak 2	3.77	3.74	3.80
PCB-1262 Peak 3	4.15	4.12	4.18
PCB-1262 Peak 4	4.43	4.40	4.46
PCB-1262 Peak 5	4.47	4.44	4.50

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:13:54 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:32 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:48:28

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.957	0.957	0.000	6651083	0.5000	0.5000	
2	1.256	1.256	0.000	9647878	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							M
1	1.570	1.570	0.000	179790	0.5000	0.5343	M
1	1.784	1.784	0.000	122960	0.5000	0.5459	M
1	1.887	1.887	0.000	104669	0.5000	0.5943	M
1	2.053	2.053	0.000	235964	0.5000	0.4942	M
1	2.473	2.473	0.000	97550	0.5000	0.5793	M
		Average of Peak Amounts =				0.5496	
2	2.091	2.091	0.000	262970	0.5000	0.5055	
2	2.377	2.377	0.000	244791	0.5000	0.5654	
2	2.669	2.669	0.000	463109	0.5000	0.5182	
2	2.773	2.773	0.000	182612	0.5000	0.5808	
2	3.127	3.127	0.000	125613	0.5000	0.5643	
		Average of Peak Amounts =				0.5468	
						RPD = 0.51	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13	PCB-1262						M
1	3.268	3.268	0.000	323952	0.5000	0.4974	M
1	3.772	3.772	0.000	512114	0.5000	0.5238	M
1	4.148	4.148	0.000	1019203	0.5000	0.5612	M
1	4.432	4.432	0.000	396329	0.5000	0.5097	M
1	4.472	4.472	0.000	456798	0.5000	0.5309	M
		Average of Peak Amounts =				0.5246	
2	4.053	4.053	0.000	507542	0.5000	0.6313	
2	4.159	4.159	0.000	559253	0.5000	0.6498	
2	4.522	4.522	0.000	747934	0.5000	0.6492	
2	5.216	5.216	0.000	573824	0.5000	0.5983	
2	5.253	5.253	0.000	711315	0.5000	0.6164	
		Average of Peak Amounts =				0.6290	
						RPD = 18.10	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

32-62w/IS@0.5_00056 Amount Added: 1.00 Units: mL

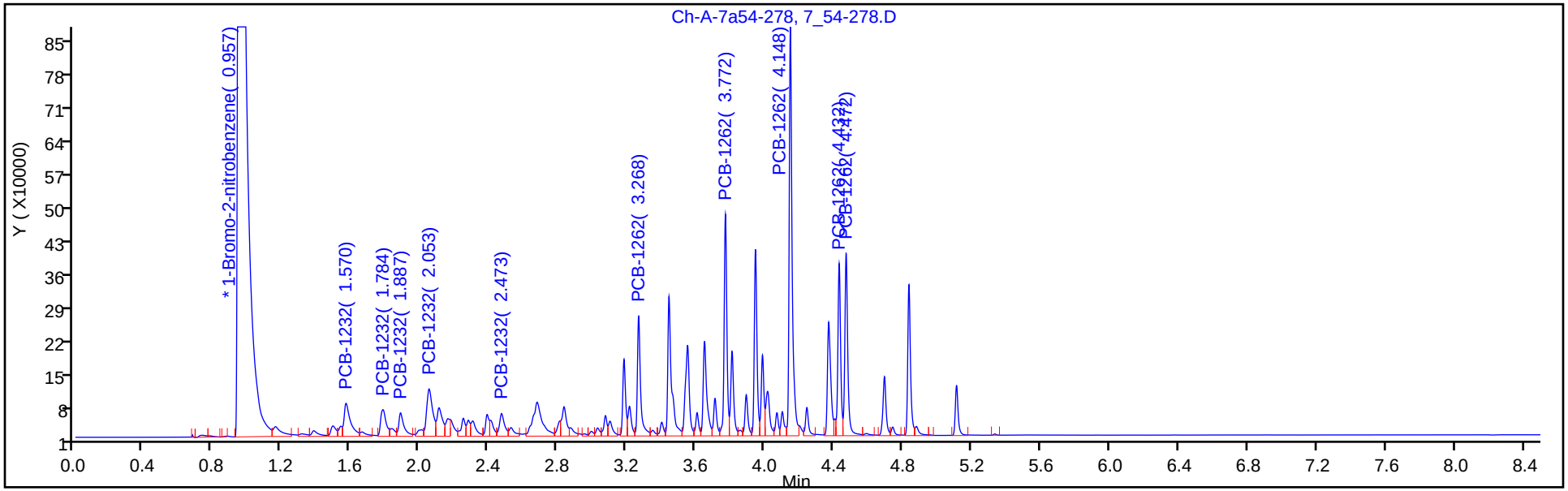
Report Date: 26-Sep-2019 15:10:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

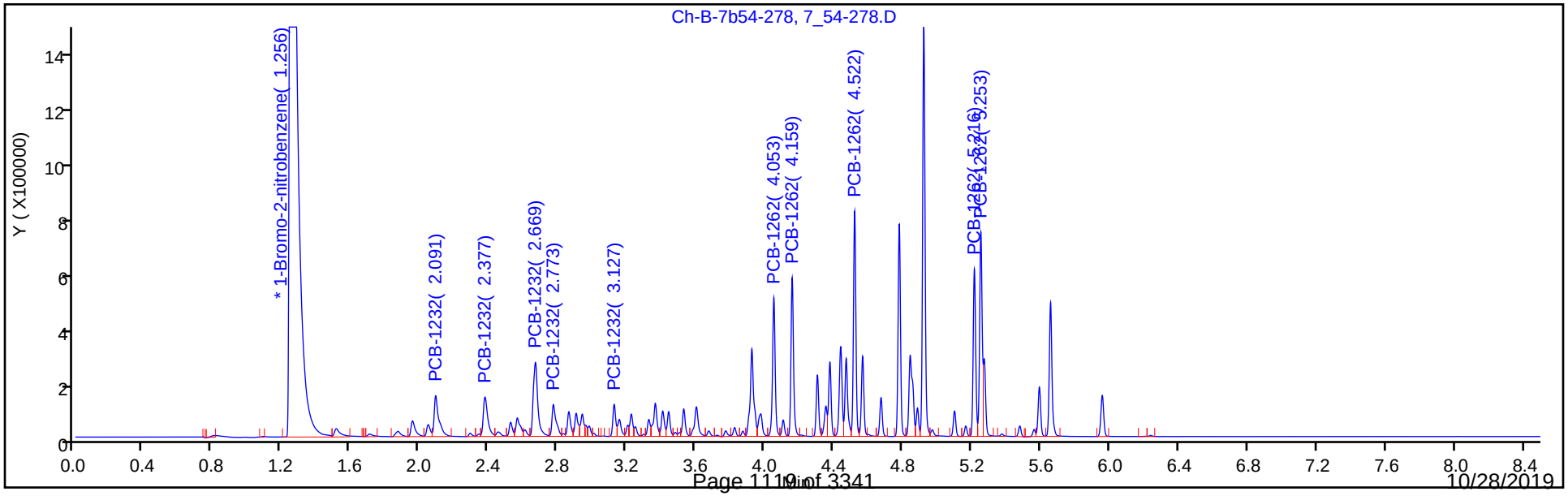
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D

Injection Date:	25-Sep-2019 16:13:54	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D

Injection Date: 25-Sep-2019 16:13:54 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

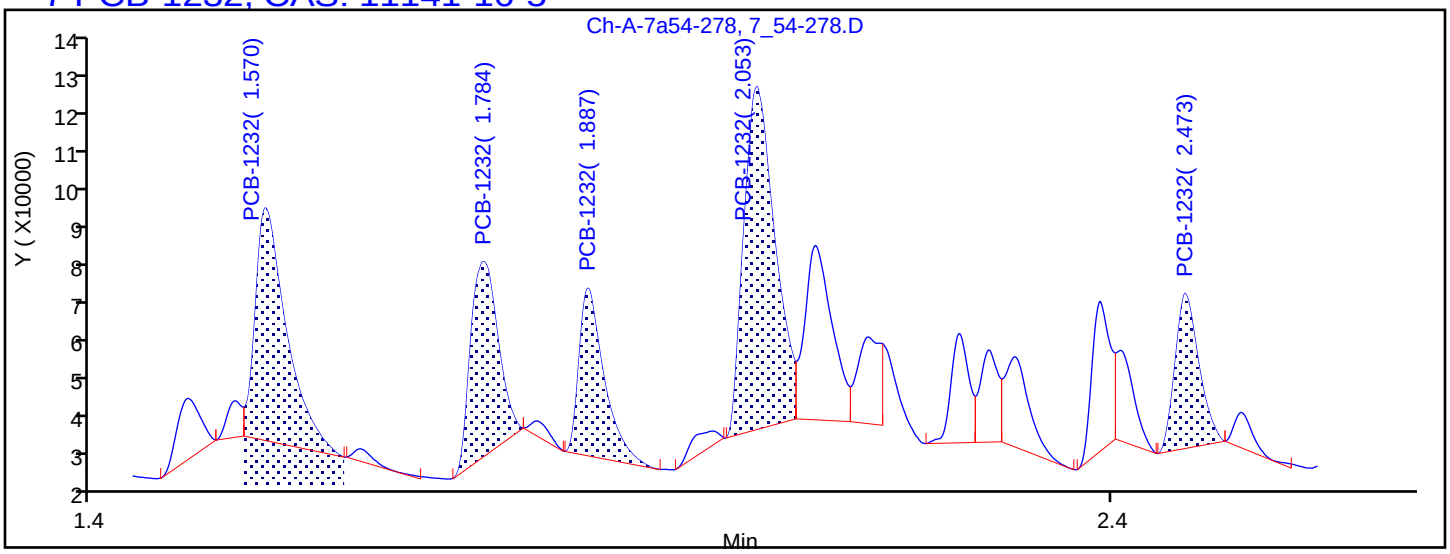
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

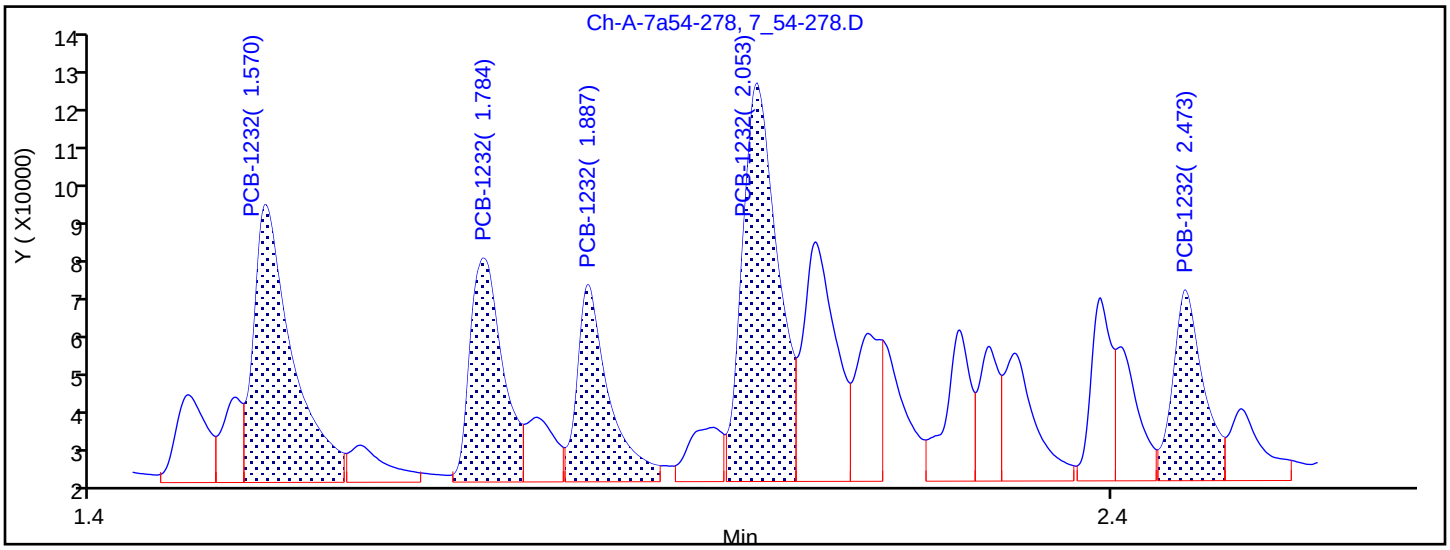
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

7 PCB-1232, CAS: 11141-16-5



Processing Integration Results

1.570	Response = 122416
1.784	Response = 90076
1.887	Response = 70318
2.053	Response = 178584
2.473	Response = 61526



Manual Integration Results

1.570	Response = 179790	M
1.784	Response = 122960	M
1.887	Response = 104669	M
2.053	Response = 235964	M
2.473	Response = 97550	M

Reviewer: clarkda, 25-Sep-2019 16:47:36

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Report Date: 26-Sep-2019 15:10:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D

Injection Date: 25-Sep-2019 16:13:54 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

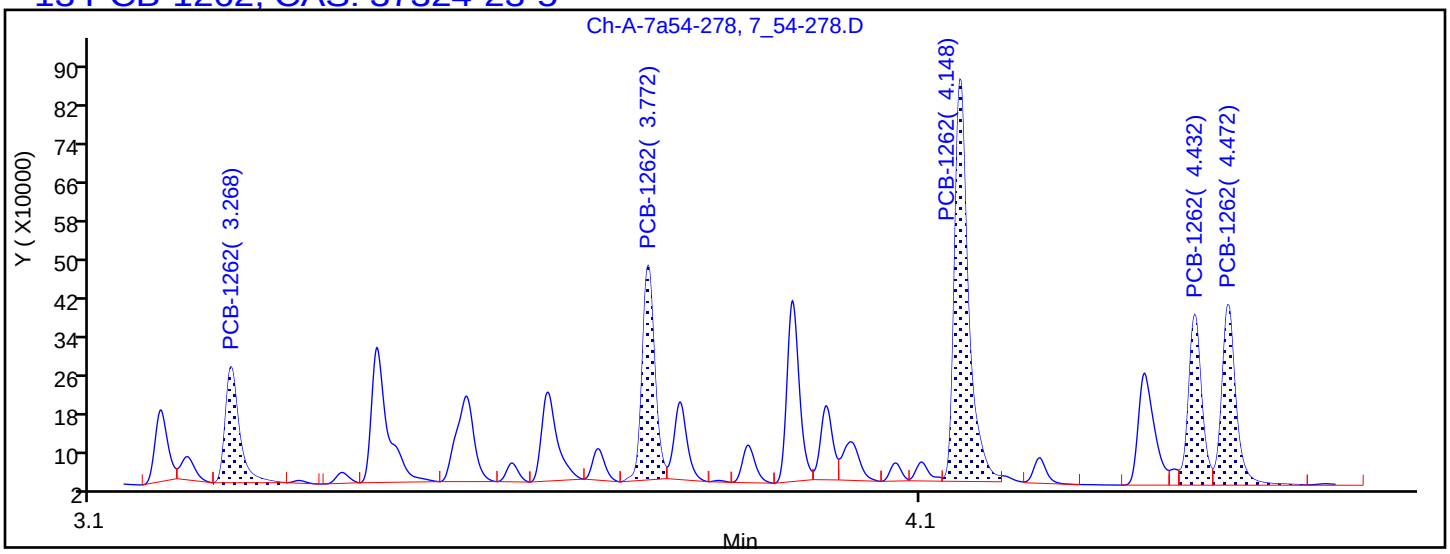
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

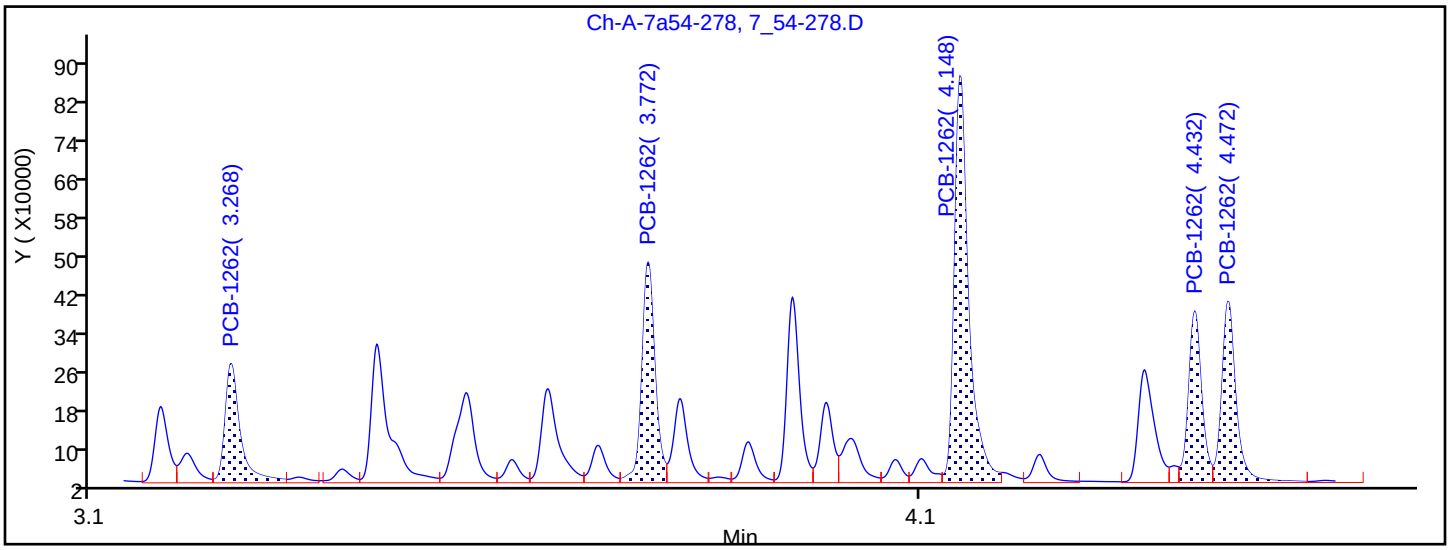
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

13 PCB-1262, CAS: 37324-23-5



Processing Integration Results

3.268	Response = 286224
3.772	Response = 471547
4.148	Response = 979316
4.432	Response = 392634
4.472	Response = 447283



Manual Integration Results

3.268	Response = 323952	M
3.772	Response = 512114	M
4.148	Response = 1019203	M
4.432	Response = 396329	M
4.472	Response = 456798	M

Reviewer: clarkda, 25-Sep-2019 16:47:36

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/5 Calibration Date: 09/25/2019 16:13

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_54-278.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0270	0.0273		0.505	0.500	1.1	20.0
PCB-1232 Peak 2	Lin1		0.0254		0.565	0.500	13.1	20.0
PCB-1232 Peak 3	Ave	0.0463	0.0480		0.518	0.500	3.6	20.0
PCB-1232 Peak 4	Lin1		0.0189		0.581	0.500	16.2	20.0
PCB-1232 Peak 5	Lin1		0.0130		0.564	0.500	12.9	20.0
PCB-1262 Peak 1	Lin1		0.0526		0.631	0.500	26.3*	20.0
PCB-1262 Peak 2	Lin1		0.0580		0.650	0.500	30.0*	20.0
PCB-1262 Peak 3	Lin1		0.0775		0.649	0.500	29.8*	20.0
PCB-1262 Peak 4	Lin1		0.0595		0.598	0.500	19.7	20.0
PCB-1262 Peak 5	Lin1		0.0737		0.616	0.500	23.3*	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/5 Calibration Date: 09/25/2019 16:13

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_54-278.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	2.09	2.06	2.12
PCB-1232 Peak 2	2.38	2.35	2.41
PCB-1232 Peak 3	2.67	2.64	2.70
PCB-1232 Peak 4	2.77	2.74	2.80
PCB-1232 Peak 5	3.13	3.10	3.16
PCB-1262 Peak 1	4.05	4.02	4.08
PCB-1262 Peak 2	4.16	4.13	4.19
PCB-1262 Peak 3	4.52	4.49	4.55
PCB-1262 Peak 4	5.22	5.19	5.25
PCB-1262 Peak 5	5.25	5.22	5.28

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:13:54 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:32 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:48:28

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.957	0.957	0.000	6651083	0.5000	0.5000	
2	1.256	1.256	0.000	9647878	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							M
1	1.570	1.570	0.000	179790	0.5000	0.5343	M
1	1.784	1.784	0.000	122960	0.5000	0.5459	M
1	1.887	1.887	0.000	104669	0.5000	0.5943	M
1	2.053	2.053	0.000	235964	0.5000	0.4942	M
1	2.473	2.473	0.000	97550	0.5000	0.5793	M
		Average of Peak Amounts =				0.5496	
2	2.091	2.091	0.000	262970	0.5000	0.5055	
2	2.377	2.377	0.000	244791	0.5000	0.5654	
2	2.669	2.669	0.000	463109	0.5000	0.5182	
2	2.773	2.773	0.000	182612	0.5000	0.5808	
2	3.127	3.127	0.000	125613	0.5000	0.5643	
		Average of Peak Amounts =				0.5468	
						RPD = 0.51	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13	PCB-1262						M
1	3.268	3.268	0.000	323952	0.5000	0.4974	M
1	3.772	3.772	0.000	512114	0.5000	0.5238	M
1	4.148	4.148	0.000	1019203	0.5000	0.5612	M
1	4.432	4.432	0.000	396329	0.5000	0.5097	M
1	4.472	4.472	0.000	456798	0.5000	0.5309	M
		Average of Peak Amounts =				0.5246	
2	4.053	4.053	0.000	507542	0.5000	0.6313	
2	4.159	4.159	0.000	559253	0.5000	0.6498	
2	4.522	4.522	0.000	747934	0.5000	0.6492	
2	5.216	5.216	0.000	573824	0.5000	0.5983	
2	5.253	5.253	0.000	711315	0.5000	0.6164	
		Average of Peak Amounts =				0.6290	
						RPD = 18.10	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

32-62w/IS@0.5_00056 Amount Added: 1.00 Units: mL

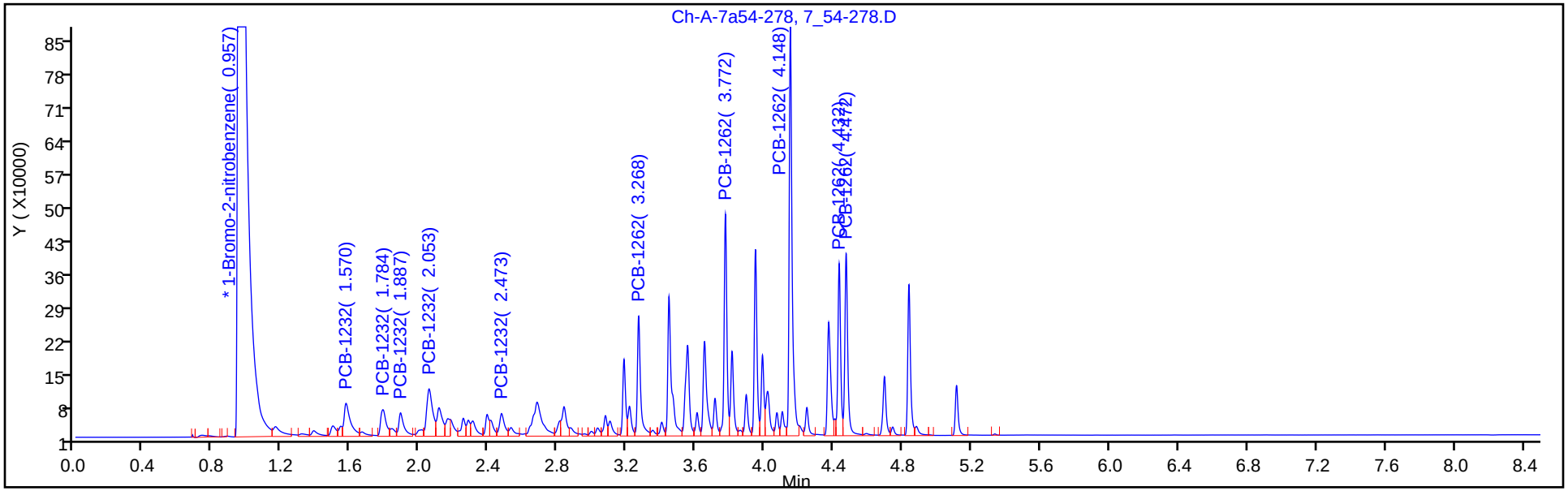
Report Date: 26-Sep-2019 15:10:33 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

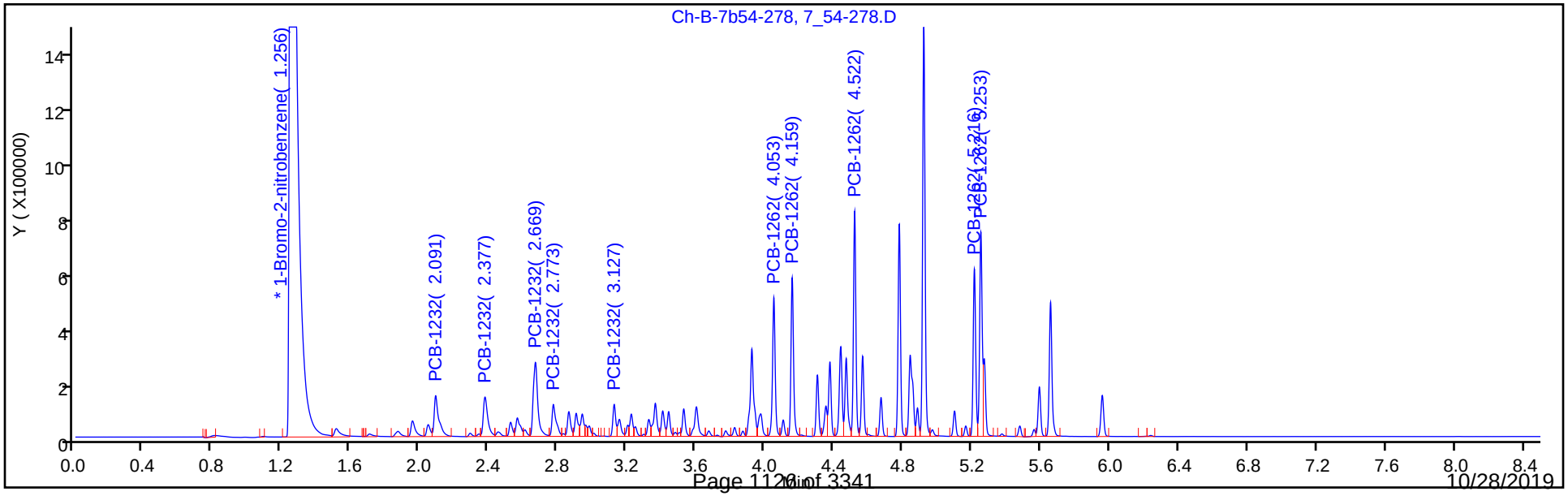
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-278.D

Injection Date:	25-Sep-2019 16:13:54	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/6 Calibration Date: 09/25/2019 16:26

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_54-279.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Ave	0.0193	0.0158		0.411	0.500	-17.8	20.0
PCB-1242 Peak 2	Ave	0.0383	0.0274		0.357	0.500	-28.5*	20.0
PCB-1242 Peak 3	Ave	0.0654	0.0580		0.443	0.500	-11.4	20.0
PCB-1242 Peak 4	Ave	0.0387	0.0300		0.388	0.500	-22.4*	20.0
PCB-1242 Peak 5	Ave	0.0306	0.0253		0.412	0.500	-17.5	20.0
PCB-1268 Peak 1	Ave	0.1820	0.1579		0.434	0.500	-13.2	20.0
PCB-1268 Peak 2	Ave	0.1788	0.1568		0.439	0.500	-12.3	20.0
PCB-1268 Peak 3	Ave	0.1485	0.1303		0.439	0.500	-12.3	20.0
PCB-1268 Peak 4	Ave	0.4680	0.4109		0.439	0.500	-12.2	20.0
PCB-1268 Peak 5	Lin1		0.0826		0.448	0.500	-10.4	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/6 Calibration Date: 09/25/2019 16:26

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_54-279.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	1.57	1.54	1.60
PCB-1242 Peak 2	1.79	1.76	1.82
PCB-1242 Peak 3	2.05	2.02	2.08
PCB-1242 Peak 4	2.11	2.08	2.14
PCB-1242 Peak 5	2.47	2.44	2.50
PCB-1268 Peak 1	4.43	4.40	4.46
PCB-1268 Peak 2	4.47	4.44	4.50
PCB-1268 Peak 3	4.68	4.65	4.71
PCB-1268 Peak 4	5.11	5.08	5.14
PCB-1268 Peak 5	5.34	5.31	5.37

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-279.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:26:29 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:35 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:59:24

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.954	0.954	0.000	7276201	0.5000	0.5000	
2	1.253	1.253	0.000	10436182	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.571	1.571	0.000	115164	0.5000	0.4111	
1	1.785	1.785	0.000	199269	0.5000	0.3574	
1	2.049	2.049	0.000	421835	0.5000	0.4432	
1	2.108	2.108	0.000	218402	0.5000	0.3882	
1	2.472	2.472	0.000	183813	0.5000	0.4125	
		Average of Peak Amounts =				0.4025	
2	2.090	2.090	0.000	185029	0.5000	0.4375	
2	2.376	2.376	0.000	386772	0.5000	0.4698	
2	2.669	2.669	0.000	820861	0.5000	0.4270	
2	2.773	2.773	0.000	315523	0.5000	0.4302	
2	3.365	3.365	0.000	319138	0.5000	0.4300	
		Average of Peak Amounts =				0.4389	
						RPD = 8.66	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.432	4.432	0.000	1148969	0.5000	0.4339	
1	4.471	4.471	0.000	1140960	0.5000	0.4385	
1	4.684	4.684	0.000	947878	0.5000	0.4387	
1	5.111	5.111	0.000	2989818	0.5000	0.4390	
1	5.335	5.335	0.000	600718	0.5000	0.4482	
		Average of Peak Amounts =				0.4397	
2	5.217	5.217	0.000	1502217	0.5000	0.4696	
2	5.255	5.255	0.000	1503978	0.5000	0.4911	
2	5.480	5.480	0.000	1251781	0.5000	0.4969	
2	5.959	5.959	0.000	3883974	0.5000	0.5046	
2	6.242	6.242	0.000	739815	0.5000	0.5047	
		Average of Peak Amounts =				0.4934	
						RPD = 11.51	

Reagents:

42-68w/IS@0.5_00058 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:35 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-279.D

Injection Date: 25-Sep-2019 16:26:29 Instrument ID: HP6890-7 Operator ID: BufTCHROM

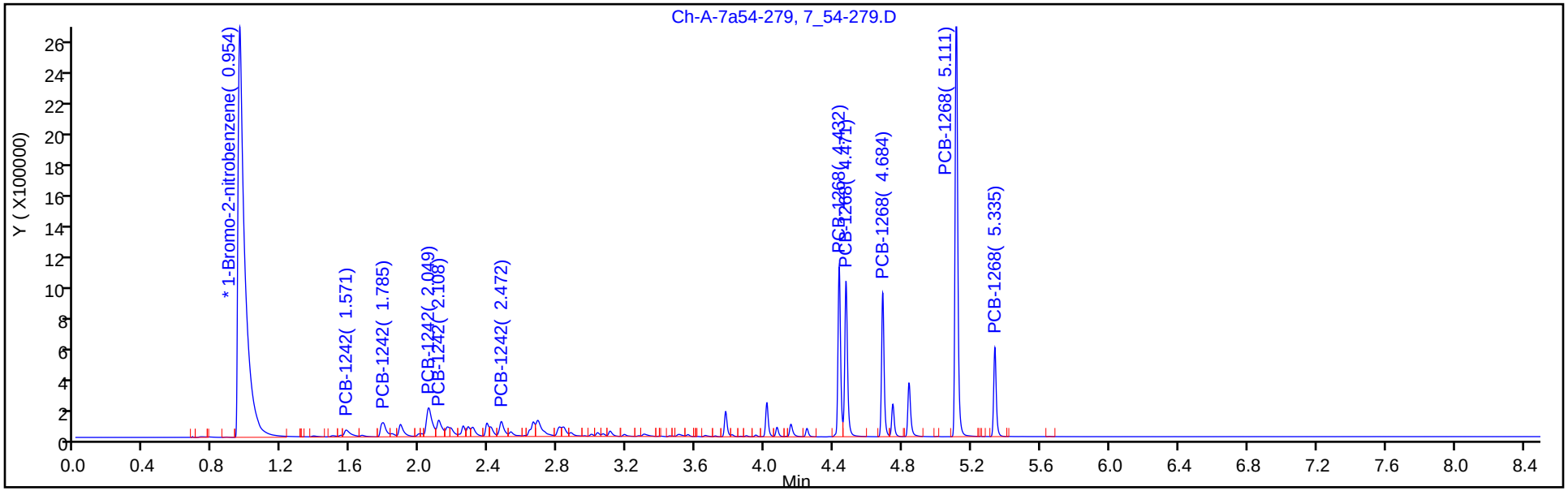
Lims ID: CCV Worklist Smp#: 6

Client ID:

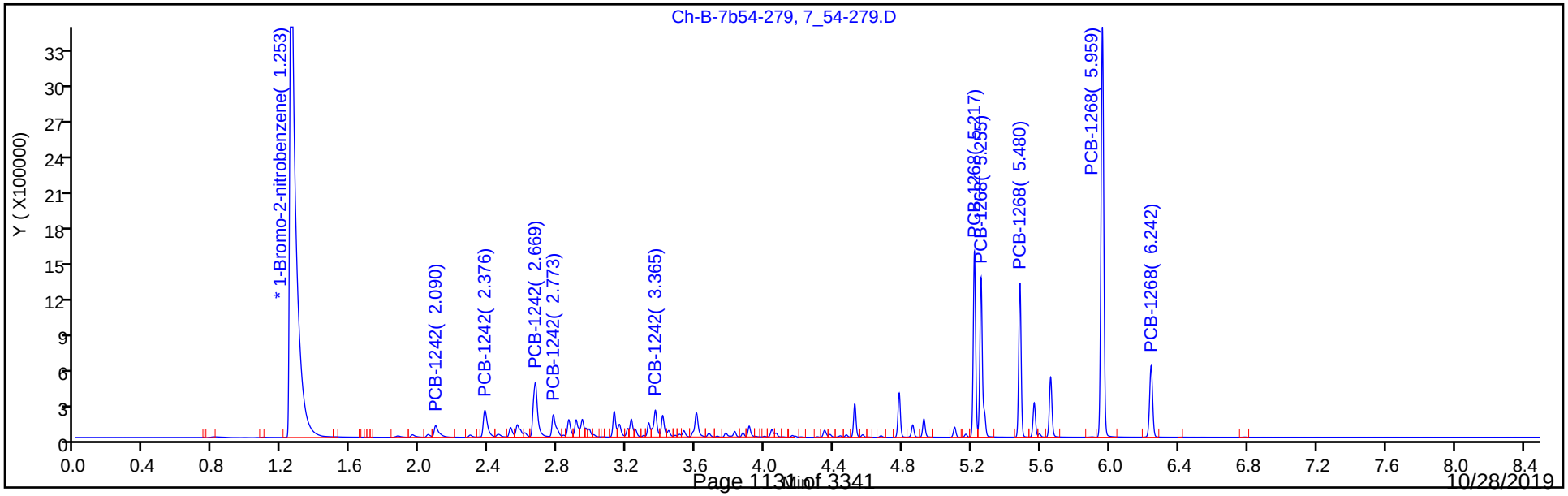
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/6 Calibration Date: 09/25/2019 16:26

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_54-279.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Ave	0.0203	0.0177		0.438	0.500	-12.5	20.0
PCB-1242 Peak 2	Lin1		0.0371		0.470	0.500	-6.0	20.0
PCB-1242 Peak 3	Ave	0.0921	0.0787		0.427	0.500	-14.6	20.0
PCB-1242 Peak 4	Ave	0.0351	0.0302		0.430	0.500	-14.0	20.0
PCB-1242 Peak 5	Ave	0.0356	0.0306		0.430	0.500	-14.0	20.0
PCB-1268 Peak 1	Ave	0.1533	0.1439		0.470	0.500	-6.1	20.0
PCB-1268 Peak 2	Ave	0.1467	0.1441		0.491	0.500	-1.8	20.0
PCB-1268 Peak 3	Ave	0.1207	0.1200		0.497	0.500	-0.6	20.0
PCB-1268 Peak 4	Ave	0.3688	0.3722		0.505	0.500	0.9	20.0
PCB-1268 Peak 5	Lin1		0.0709		0.505	0.500	0.9	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/6 Calibration Date: 09/25/2019 16:26

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_54-279.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	2.09	2.06	2.12
PCB-1242 Peak 2	2.38	2.35	2.41
PCB-1242 Peak 3	2.67	2.64	2.70
PCB-1242 Peak 4	2.77	2.74	2.80
PCB-1242 Peak 5	3.37	3.34	3.40
PCB-1268 Peak 1	5.22	5.19	5.25
PCB-1268 Peak 2	5.26	5.23	5.29
PCB-1268 Peak 3	5.48	5.45	5.51
PCB-1268 Peak 4	5.96	5.93	5.99
PCB-1268 Peak 5	6.24	6.21	6.27

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-279.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:26:29 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:35 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 16:59:24

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.954	0.954	0.000	7276201	0.5000	0.5000	
2	1.253	1.253	0.000	10436182	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.571	1.571	0.000	115164	0.5000	0.4111	
1	1.785	1.785	0.000	199269	0.5000	0.3574	
1	2.049	2.049	0.000	421835	0.5000	0.4432	
1	2.108	2.108	0.000	218402	0.5000	0.3882	
1	2.472	2.472	0.000	183813	0.5000	0.4125	
		Average of Peak Amounts =				0.4025	
2	2.090	2.090	0.000	185029	0.5000	0.4375	
2	2.376	2.376	0.000	386772	0.5000	0.4698	
2	2.669	2.669	0.000	820861	0.5000	0.4270	
2	2.773	2.773	0.000	315523	0.5000	0.4302	
2	3.365	3.365	0.000	319138	0.5000	0.4300	
		Average of Peak Amounts =				0.4389	
						RPD = 8.66	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.432	4.432	0.000	1148969	0.5000	0.4339	
1	4.471	4.471	0.000	1140960	0.5000	0.4385	
1	4.684	4.684	0.000	947878	0.5000	0.4387	
1	5.111	5.111	0.000	2989818	0.5000	0.4390	
1	5.335	5.335	0.000	600718	0.5000	0.4482	
		Average of Peak Amounts =				0.4397	
2	5.217	5.217	0.000	1502217	0.5000	0.4696	
2	5.255	5.255	0.000	1503978	0.5000	0.4911	
2	5.480	5.480	0.000	1251781	0.5000	0.4969	
2	5.959	5.959	0.000	3883974	0.5000	0.5046	
2	6.242	6.242	0.000	739815	0.5000	0.5047	
		Average of Peak Amounts =				0.4934	
						RPD = 11.51	

Reagents:

42-68w/IS@0.5_00058 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:35 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-279.D

Injection Date: 25-Sep-2019 16:26:29 Instrument ID: HP6890-7 Operator ID: BufTCHROM

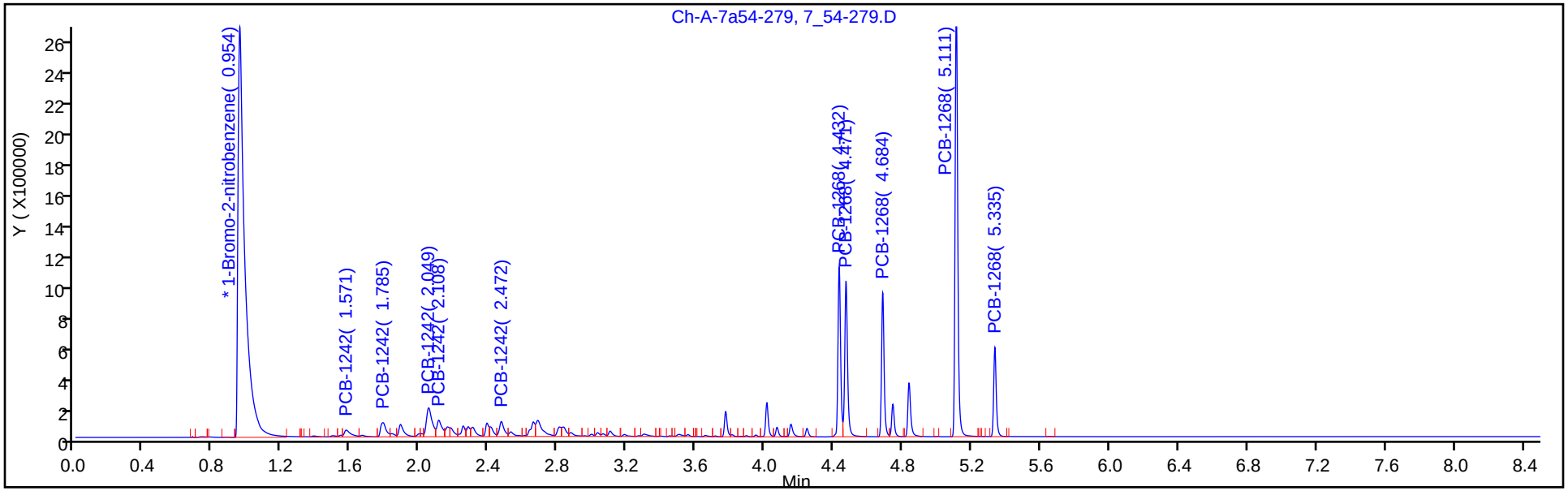
Lims ID: CCV Worklist Smp#: 6

Client ID:

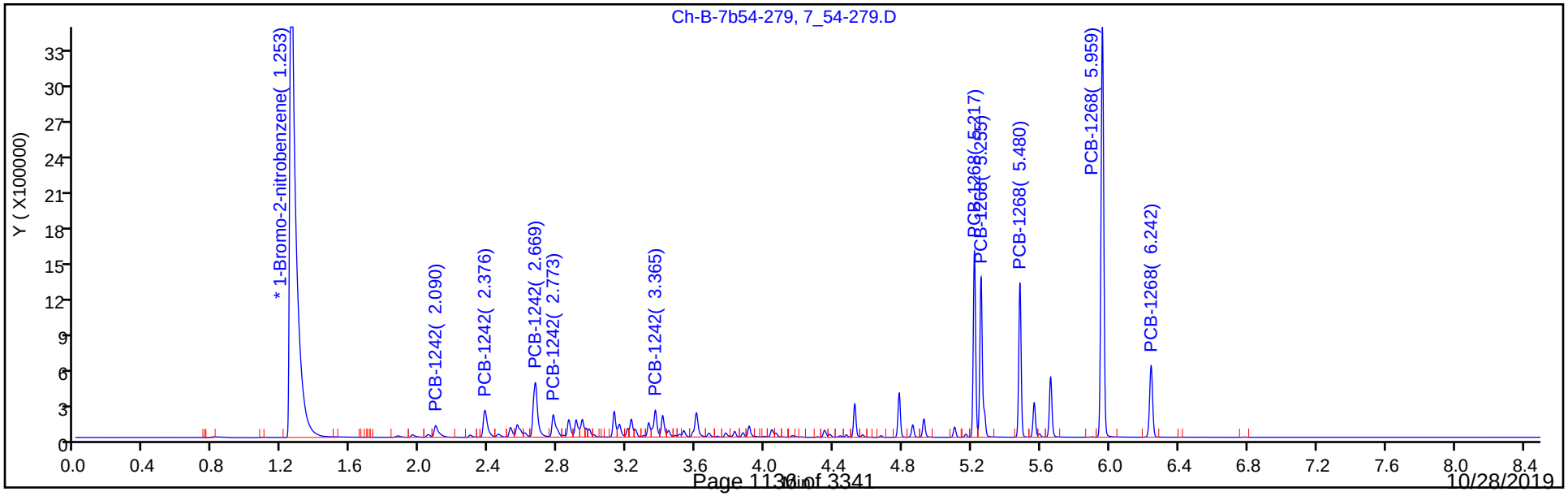
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/7 Calibration Date: 09/25/2019 16:38

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_54-280.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Lin1		0.0249		0.416	0.500	-16.8	20.0
PCB-1248 Peak 2	Lin1		0.0184		0.423	0.500	-15.3	20.0
PCB-1248 Peak 3	Lin1		0.0282		0.377	0.500	-24.6*	20.0
PCB-1248 Peak 4	Lin1		0.0385		0.434	0.500	-13.1	20.0
PCB-1248 Peak 5	Lin1		0.0250		0.456	0.500	-8.8	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/7 Calibration Date: 09/25/2019 16:38

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_54-280.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	2.25	2.22	2.28
PCB-1248 Peak 2	2.28	2.25	2.31
PCB-1248 Peak 3	2.39	2.36	2.42
PCB-1248 Peak 4	2.47	2.44	2.50
PCB-1248 Peak 5	3.10	3.07	3.13

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:38:50 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:37 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 17:15:46

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.954	0.954	0.000	7261601	0.5000	0.5000	
2	1.253	1.253	0.000	10369341	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.249	2.249	0.000	180768	0.5000	0.4162	M
1	2.278	2.278	0.000	133647	0.5000	0.4233	M
1	2.388	2.388	0.000	204804	0.5000	0.3769	M
1	2.471	2.471	0.000	279874	0.5000	0.4345	M
1	3.101	3.101	0.000	181331	0.5000	0.4561	M
		Average of Peak Amounts =				0.4214	
2	2.906	2.906	0.000	340031	0.5000	0.5473	
2	3.127	3.127	0.000	397136	0.5000	0.5088	
2	3.364	3.364	0.000	565846	0.5000	0.5384	
2	3.603	3.603	0.000	469479	0.5000	0.5588	M
2	3.909	3.909	0.000	275345	0.5000	0.5495	
		Average of Peak Amounts =				0.5406	
						RPD = 24.78	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ 0.5_00055 Amount Added: 1.00 Units: mL

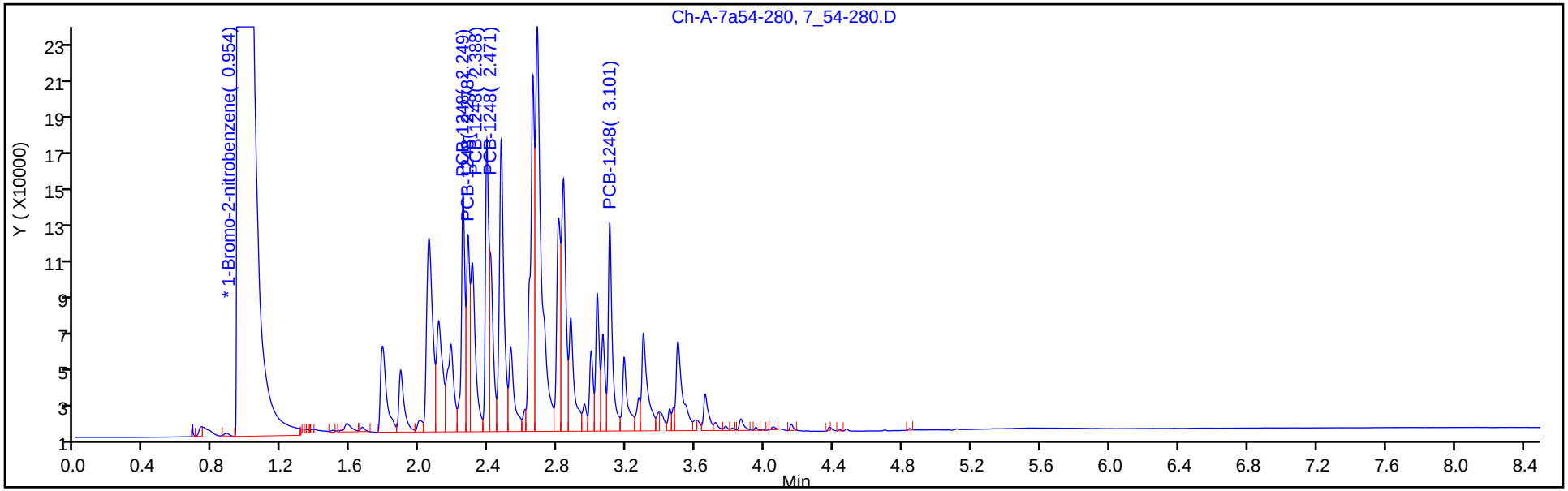
Report Date: 26-Sep-2019 15:10:38 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

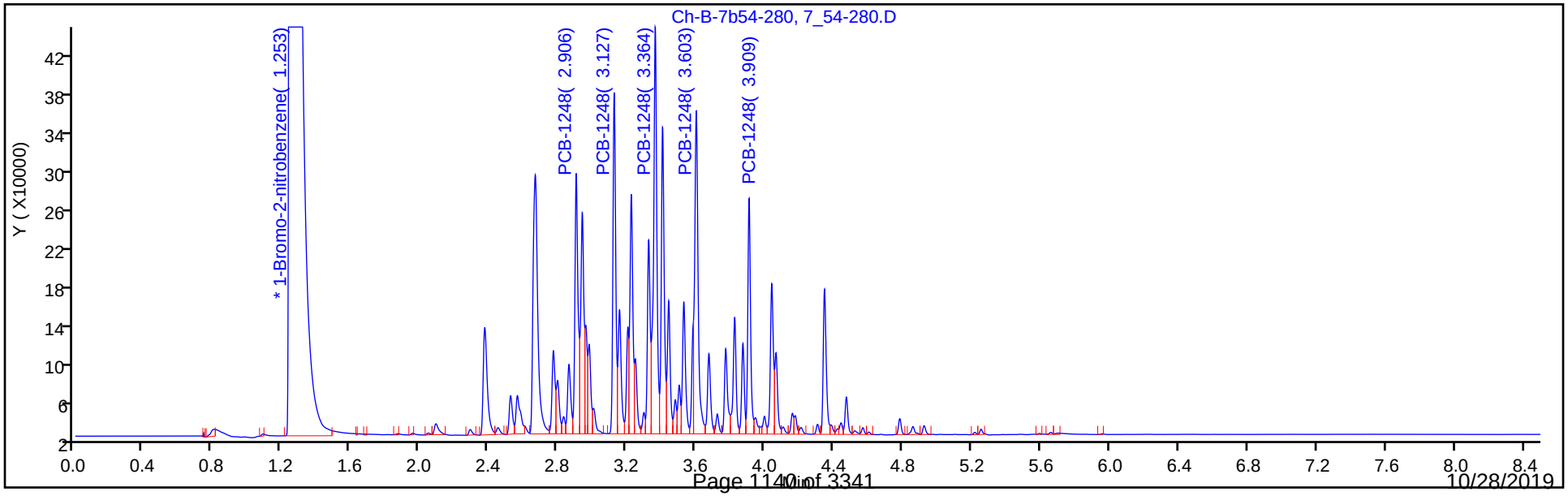
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D

Injection Date:	25-Sep-2019 16:38:50	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:39 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D

Injection Date: 25-Sep-2019 16:38:50 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

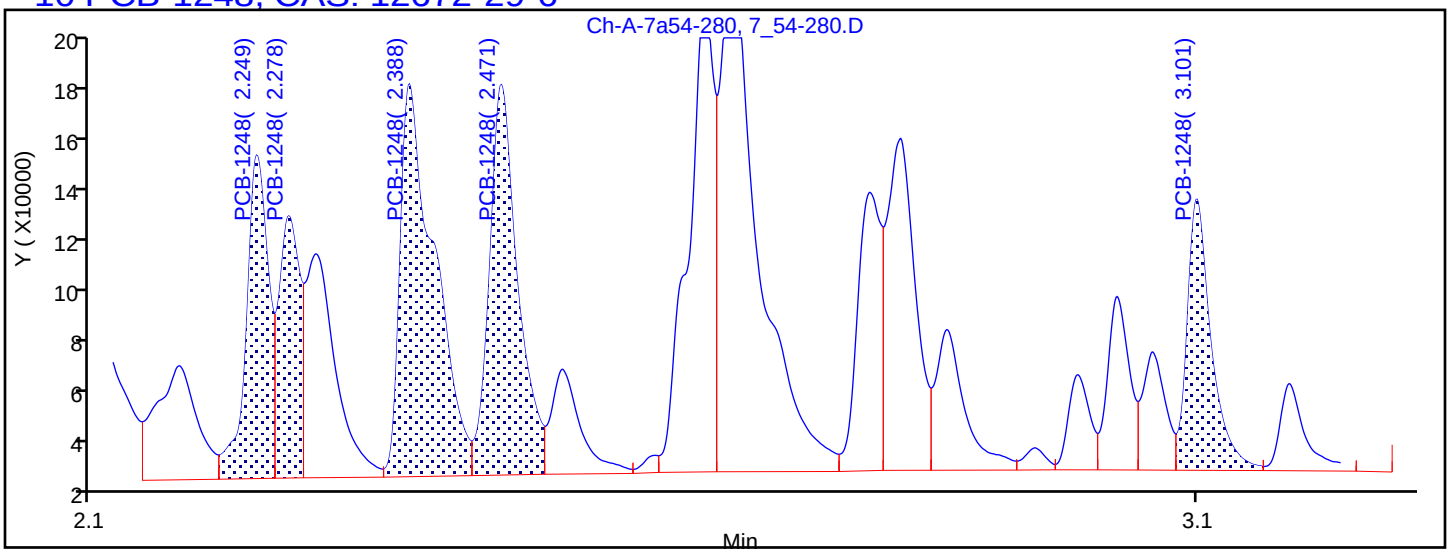
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 7

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

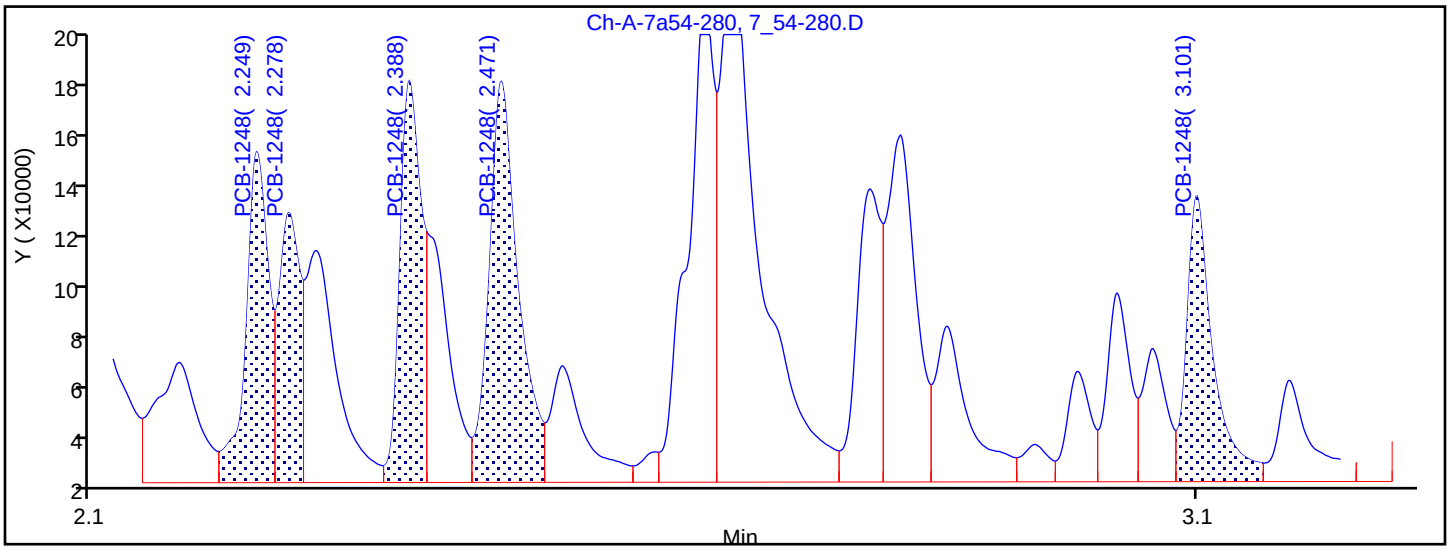
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.249	Response = 172279
2.278	Response = 128938
2.388	Response = 319595
2.471	Response = 263647
3.101	Response = 155035



Manual Integration Results

2.249	Response = 180768	M
2.278	Response = 133647	M
2.388	Response = 204804	M
2.471	Response = 279874	M
3.101	Response = 181331	M

Reviewer: clarkda, 25-Sep-2019 17:01:50

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/7 Calibration Date: 09/25/2019 16:38

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_54-280.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Lin1		0.0328		0.547	0.500	9.5	20.0
PCB-1248 Peak 2	Lin1		0.0383		0.509	0.500	1.8	20.0
PCB-1248 Peak 3	Lin1		0.0546		0.538	0.500	7.7	20.0
PCB-1248 Peak 4	Lin1		0.0453		0.559	0.500	11.8	20.0
PCB-1248 Peak 5	Lin1		0.0266		0.550	0.500	9.9	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/7 Calibration Date: 09/25/2019 16:38

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_54-280.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	2.91	2.88	2.94
PCB-1248 Peak 2	3.13	3.10	3.16
PCB-1248 Peak 3	3.36	3.33	3.39
PCB-1248 Peak 4	3.60	3.57	3.63
PCB-1248 Peak 5	3.91	3.88	3.94

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 16:38:50 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:37 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 25-Sep-2019 17:15:46

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.954	0.954	0.000	7261601	0.5000	0.5000	
2	1.253	1.253	0.000	10369341	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.249	2.249	0.000	180768	0.5000	0.4162	M
1	2.278	2.278	0.000	133647	0.5000	0.4233	M
1	2.388	2.388	0.000	204804	0.5000	0.3769	M
1	2.471	2.471	0.000	279874	0.5000	0.4345	M
1	3.101	3.101	0.000	181331	0.5000	0.4561	M
		Average of Peak Amounts =				0.4214	
2	2.906	2.906	0.000	340031	0.5000	0.5473	
2	3.127	3.127	0.000	397136	0.5000	0.5088	
2	3.364	3.364	0.000	565846	0.5000	0.5384	
2	3.603	3.603	0.000	469479	0.5000	0.5588	M
2	3.909	3.909	0.000	275345	0.5000	0.5495	
		Average of Peak Amounts =				0.5406	
						RPD = 24.78	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

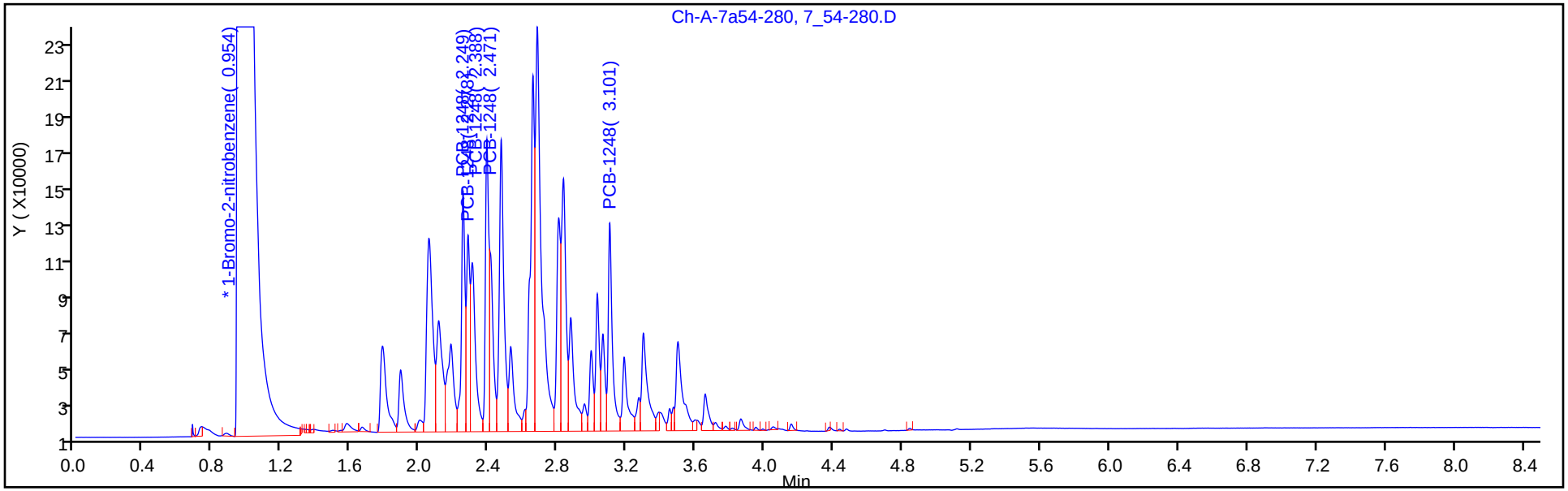
1248w/IS@ 0.5_00055 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:39 Chrom Revision: 2.3 17-Sep-2019 16:19:08

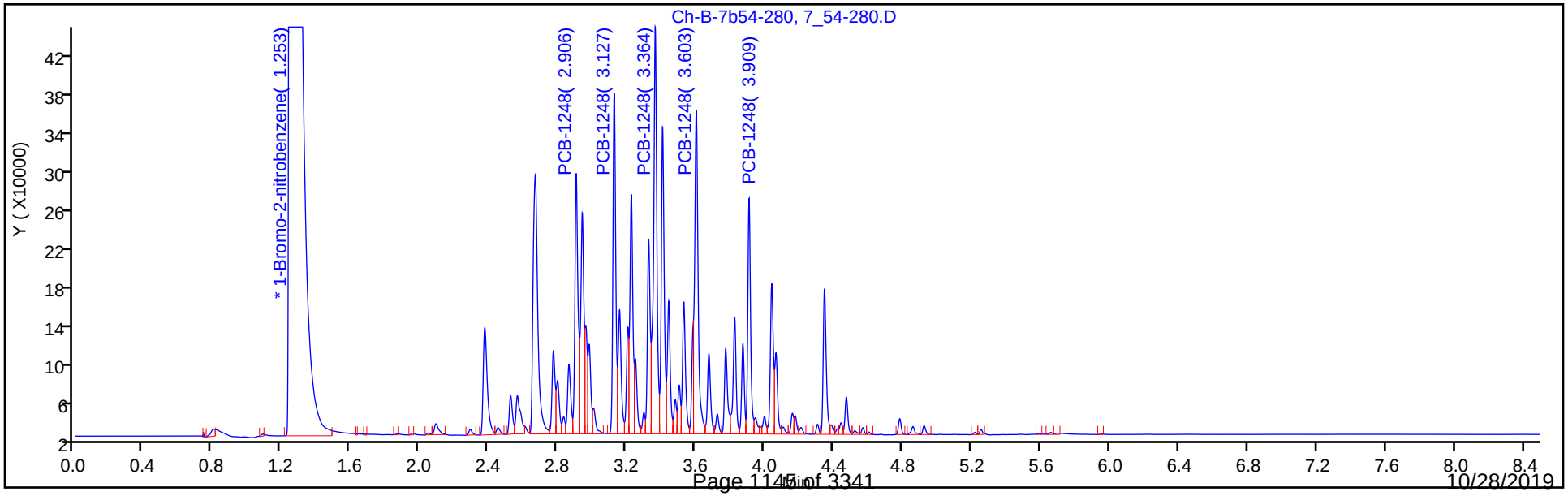
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D				
Injection Date:	25-Sep-2019 16:38:50	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:39 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-280.D

Injection Date: 25-Sep-2019 16:38:50 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

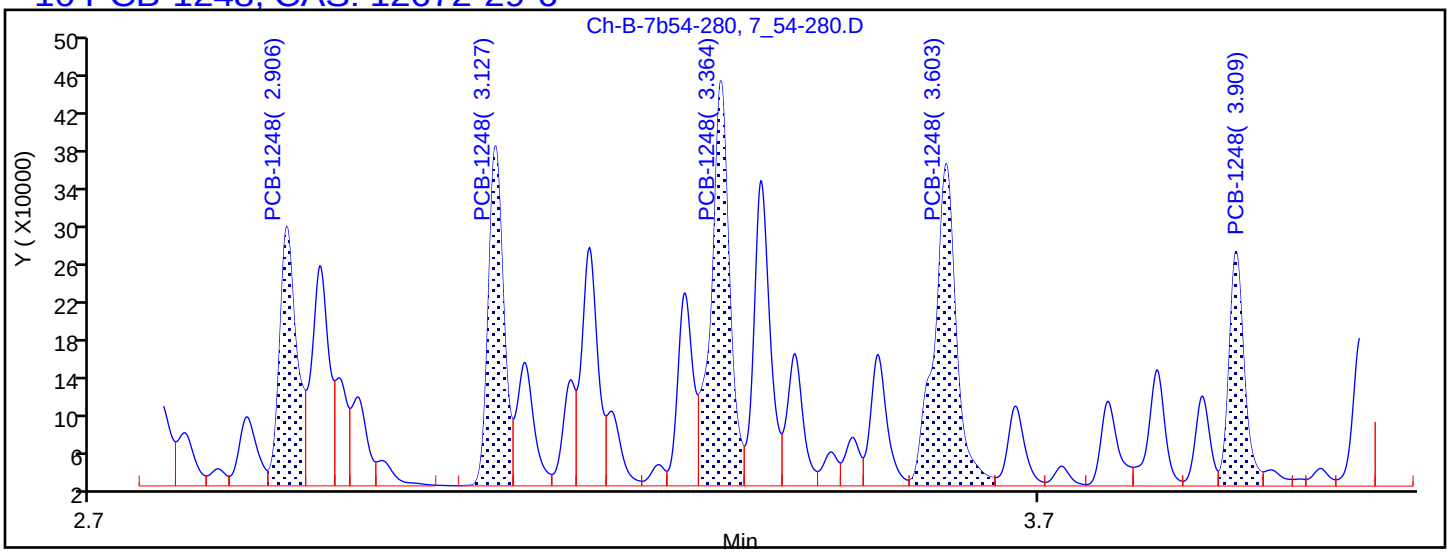
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 7

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

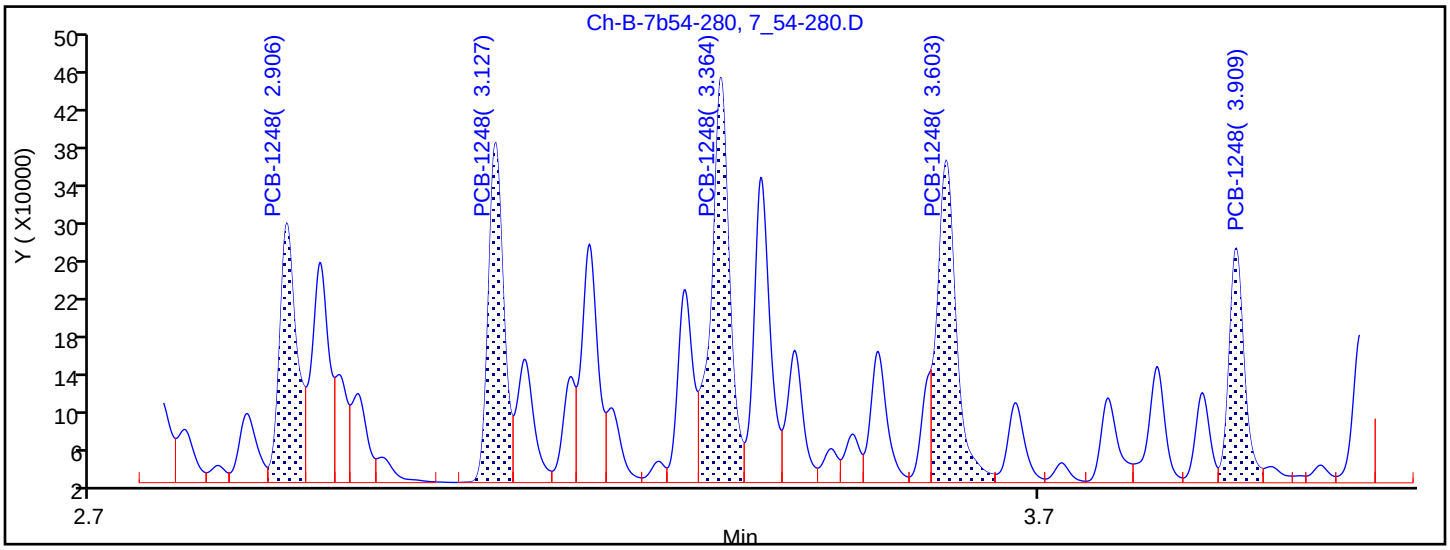
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.906	Response = 340031
3.127	Response = 397136
3.364	Response = 565846
3.603	Response = 547527
3.909	Response = 275345



Manual Integration Results

2.906	Response = 340031	
3.127	Response = 397136	
3.364	Response = 565846	
3.603	Response = 469479	M
3.909	Response = 275345	

Reviewer: clarkda, 25-Sep-2019 17:01:35

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/29 Calibration Date: 09/25/2019 21:15

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-302.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0462	0.0540		0.585	0.500	17.0	20.0
PCB-1016 Peak 2	Ave	0.0339	0.0401		0.590	0.500	18.1	20.0
PCB-1016 Peak 3	Ave	0.0824	0.1171		0.710	0.500	42.0*	20.0
PCB-1016 Peak 4	Ave	0.0251	0.0299		0.595	0.500	19.0	20.0
PCB-1016 Peak 5	Ave	0.0381	0.0409		0.537	0.500	7.4	20.0
PCB-1260 Peak 1	Ave	0.0619	0.0760		0.614	0.500	22.8*	20.0
PCB-1260 Peak 2	Ave	0.0632	0.0801		0.633	0.500	26.6*	20.0
PCB-1260 Peak 3	Ave	0.0872	0.1068		0.612	0.500	22.4*	20.0
PCB-1260 Peak 4	Ave	0.1258	0.1676		0.666	0.500	33.2*	20.0
PCB-1260 Peak 5	Ave	0.0639	0.0807		0.631	0.500	26.2*	20.0
Tetrachloro-m-xylene	Lin1		1.632		0.0154	0.0125	22.8*	20.0
DCB Decachlorobiphenyl	Lin1		1.300		0.0147	0.0125	17.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/29 Calibration Date: 09/25/2019 21:15

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-302.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	1.79	1.75	1.81
PCB-1016 Peak 2	1.89	1.86	1.92
PCB-1016 Peak 3	2.05	2.02	2.08
PCB-1016 Peak 4	2.39	2.36	2.42
PCB-1016 Peak 5	2.47	2.44	2.50
PCB-1260 Peak 1	3.27	3.24	3.30
PCB-1260 Peak 2	3.45	3.42	3.48
PCB-1260 Peak 3	3.65	3.62	3.68
PCB-1260 Peak 4	4.15	4.12	4.18
PCB-1260 Peak 5	4.37	4.34	4.40
Tetrachloro-m-xylene	1.41	1.37	1.43
DCB Decachlorobiphenyl	5.34	5.31	5.37

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-302.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 21:15:07 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:23 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:43:18

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.954	0.004	4935105	0.5000	0.5000	
2	1.259	1.253	0.006	6877281	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.408	1.401	0.007	201382	0.0125	0.0154	
2	1.743	1.737	0.006	322063	0.0125	0.0154	
						RPD = 0.33	
9 PCB-1016							M
1	1.788	1.784	0.004	266681	0.5000	0.5852	
1	1.890	1.887	0.003	197809	0.5000	0.5905	
1	2.050	2.048	0.002	577781	0.5000	0.7102	
1	2.391	2.389	0.002	147325	0.5000	0.5951	M
1	2.473	2.473	0.001	201956	0.5000	0.5372	
		Average of Peak Amounts =				0.6036	
2	2.095	2.090	0.005	206584	0.5000	0.6063	
2	2.671	2.668	0.003	990568	0.5000	0.6694	
2	2.776	2.773	0.004	371035	0.5000	0.6427	
2	2.866	2.863	0.003	224966	0.5000	0.6857	
2	3.129	3.126	0.003	275890	0.5000	0.6124	
		Average of Peak Amounts =				0.6433	
						RPD = 6.36	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.269	3.269	0.000	375126	0.5000	0.6140	
1	3.445	3.445	0.000	395222	0.5000	0.6332	
1	3.650	3.650	0.000	526805	0.5000	0.6120	
1	4.149	4.150	-0.001	827339	0.5000	0.6661	
1	4.369	4.372	-0.003	398240	0.5000	0.6310	
		Average of Peak Amounts =				0.6313	
2	4.055	4.053	0.003	546638	0.5000	0.6299	
2	4.161	4.159	0.002	619762	0.5000	0.6271	
2	4.473	4.473	0.001	512287	0.5000	0.5911	
2	4.782	4.781	0.001	466361	0.5000	0.6011	
2	4.923	4.923	0.000	1052209	0.5000	0.6576	
		Average of Peak Amounts =				0.6214	
						RPD = 1.58	
2 1260 Res 1							
1	4.369	4.383	-0.003	398240	NC	NC	
2	4.923	4.940	0.000	1052209	NC	NC	
4 1260 Res 2							
1	4.433	4.444	0.000	186152	NC	NC	
2	5.255	5.235	0.037	627995	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.335	5.336	-0.001	160401	0.0125	0.0147	
2	6.242	6.242	0.000	197385	0.0125	0.0138	
						RPD = 6.09	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

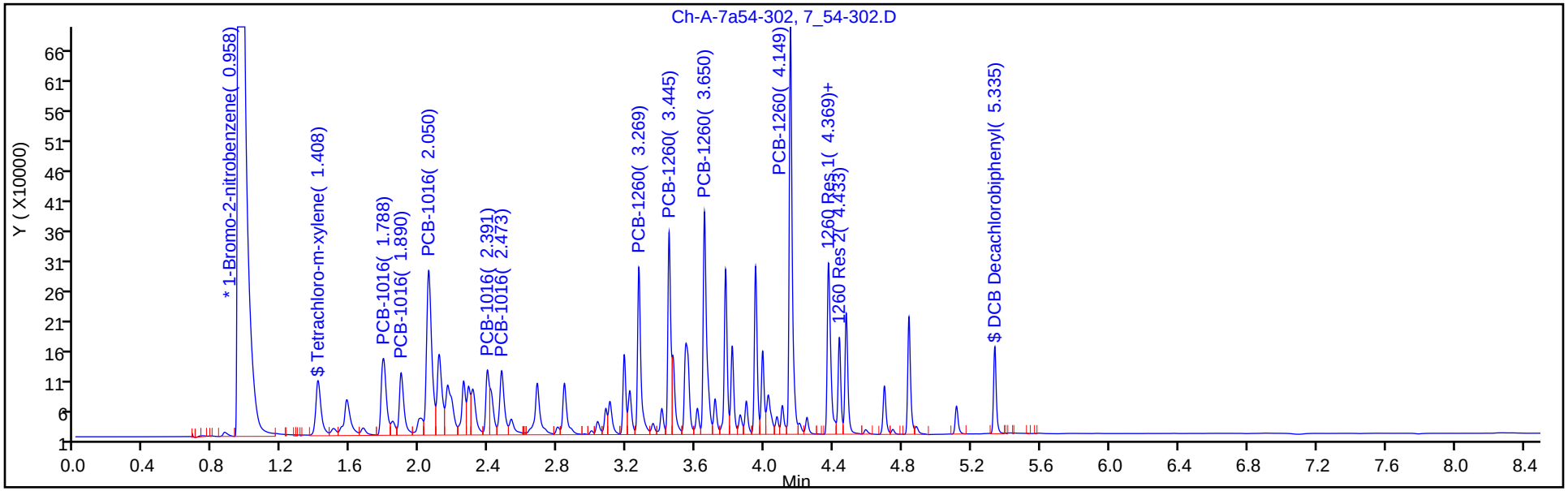
1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

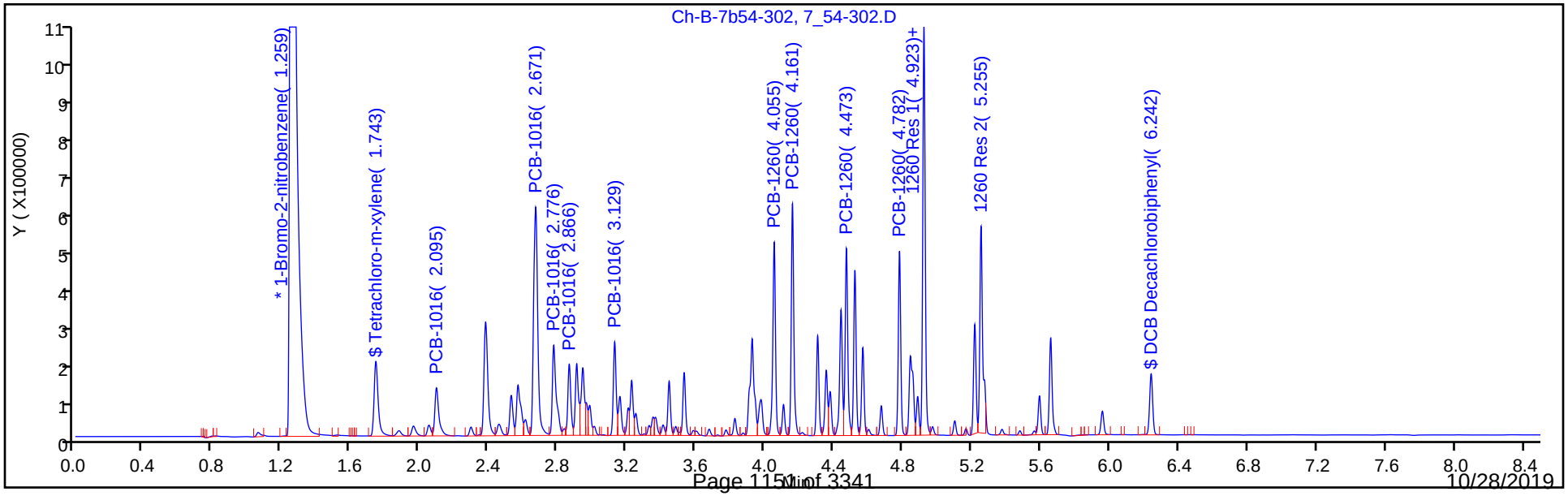
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-302.D				
Injection Date:	25-Sep-2019 21:15:07	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	29
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-302.D

Injection Date: 25-Sep-2019 21:15:07 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

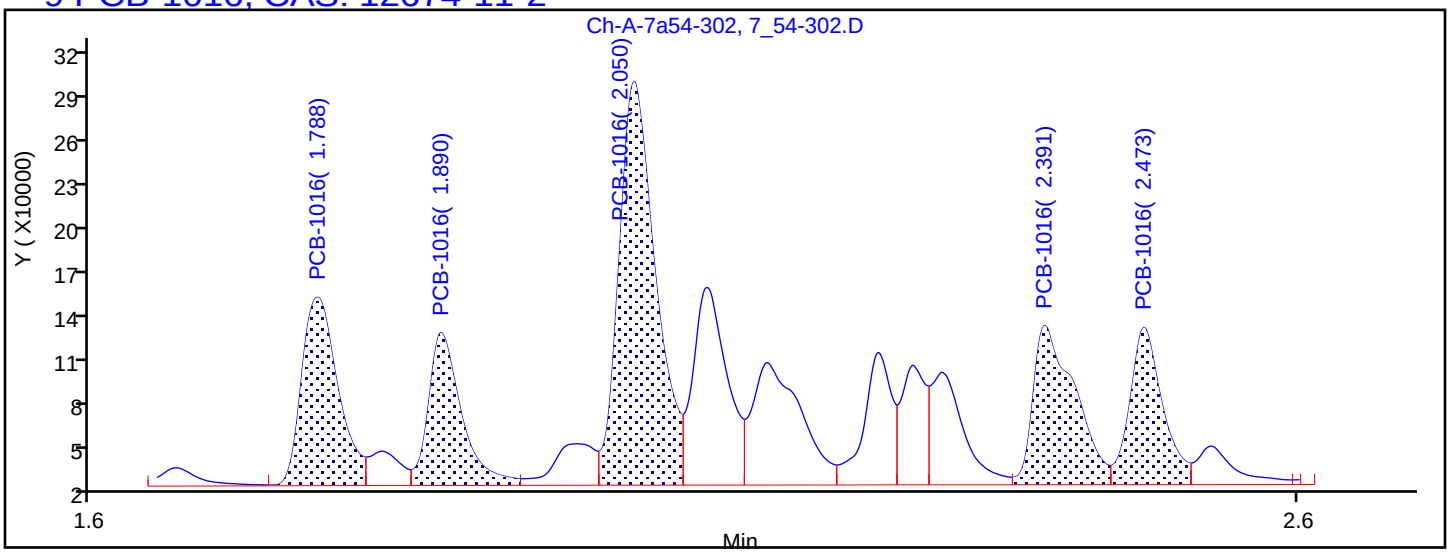
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 29

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

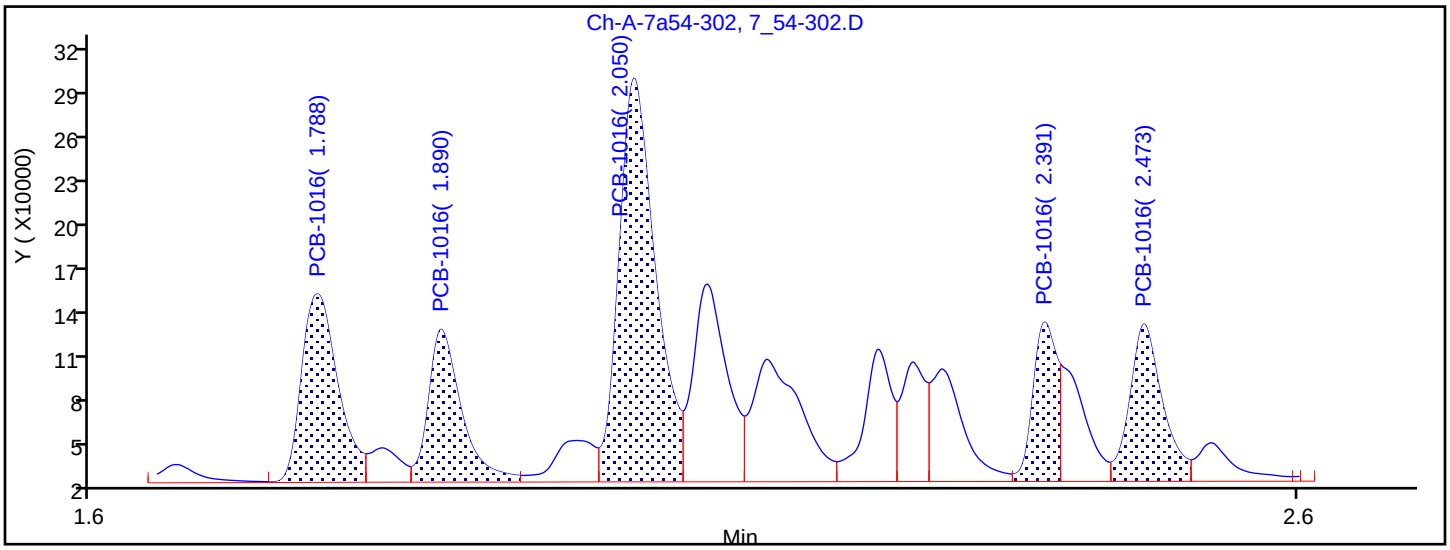
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

1.788	Response = 266681
1.890	Response = 197809
2.050	Response = 577781
2.391	Response = 258953
2.473	Response = 201956



Manual Integration Results

1.788	Response = 266681	
1.890	Response = 197809	
2.050	Response = 577781	
2.391	Response = 147325	M
2.473	Response = 201956	

Reviewer: clarkda, 26-Sep-2019 13:43:08

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/29 Calibration Date: 09/25/2019 21:15

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-302.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0248	0.0300		0.606	0.500	21.3*	20.0
PCB-1016 Peak 2	Ave	0.1076	0.1440		0.669	0.500	33.9*	20.0
PCB-1016 Peak 3	Ave	0.0420	0.0540		0.643	0.500	28.5*	20.0
PCB-1016 Peak 4	Ave	0.0239	0.0327		0.686	0.500	37.1*	20.0
PCB-1016 Peak 5	Ave	0.0328	0.0401		0.612	0.500	22.5*	20.0
PCB-1260 Peak 1	Ave	0.0631	0.0795		0.630	0.500	26.0*	20.0
PCB-1260 Peak 2	Ave	0.0719	0.0901		0.627	0.500	25.4*	20.0
PCB-1260 Peak 3	Ave	0.0630	0.0745		0.591	0.500	18.2	20.0
PCB-1260 Peak 4	Ave	0.0564	0.0678		0.601	0.500	20.2*	20.0
PCB-1260 Peak 5	Ave	0.1163	0.1530		0.658	0.500	31.5*	20.0
Tetrachloro-m-xylene	Ave	1.520	1.873		0.0154	0.0125	23.3*	20.0
DCB Decachlorobiphenyl	Ave	1.039	1.148		0.0138	0.0125	10.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494086/29 Calibration Date: 09/25/2019 21:15

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_54-302.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	2.10	2.06	2.12
PCB-1016 Peak 2	2.67	2.64	2.70
PCB-1016 Peak 3	2.78	2.74	2.80
PCB-1016 Peak 4	2.87	2.83	2.89
PCB-1016 Peak 5	3.13	3.10	3.16
PCB-1260 Peak 1	4.06	4.02	4.08
PCB-1260 Peak 2	4.16	4.13	4.19
PCB-1260 Peak 3	4.47	4.44	4.50
PCB-1260 Peak 4	4.78	4.75	4.81
PCB-1260 Peak 5	4.92	4.89	4.95
Tetrachloro-m-xylene	1.74	1.71	1.77
DCB Decachlorobiphenyl	6.24	6.21	6.27

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-302.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 25-Sep-2019 21:15:07 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:10:23 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:43:18

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.954	0.004	4935105	0.5000	0.5000	
2	1.259	1.253	0.006	6877281	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.408	1.401	0.007	201382	0.0125	0.0154	
2	1.743	1.737	0.006	322063	0.0125	0.0154	
						RPD = 0.33	
9 PCB-1016							M
1	1.788	1.784	0.004	266681	0.5000	0.5852	
1	1.890	1.887	0.003	197809	0.5000	0.5905	
1	2.050	2.048	0.002	577781	0.5000	0.7102	
1	2.391	2.389	0.002	147325	0.5000	0.5951	M
1	2.473	2.473	0.001	201956	0.5000	0.5372	
		Average of Peak Amounts =				0.6036	
2	2.095	2.090	0.005	206584	0.5000	0.6063	
2	2.671	2.668	0.003	990568	0.5000	0.6694	
2	2.776	2.773	0.004	371035	0.5000	0.6427	
2	2.866	2.863	0.003	224966	0.5000	0.6857	
2	3.129	3.126	0.003	275890	0.5000	0.6124	
		Average of Peak Amounts =				0.6433	
						RPD = 6.36	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.269	3.269	0.000	375126	0.5000	0.6140	
1	3.445	3.445	0.000	395222	0.5000	0.6332	
1	3.650	3.650	0.000	526805	0.5000	0.6120	
1	4.149	4.150	-0.001	827339	0.5000	0.6661	
1	4.369	4.372	-0.003	398240	0.5000	0.6310	
		Average of Peak Amounts =				0.6313	
2	4.055	4.053	0.003	546638	0.5000	0.6299	
2	4.161	4.159	0.002	619762	0.5000	0.6271	
2	4.473	4.473	0.001	512287	0.5000	0.5911	
2	4.782	4.781	0.001	466361	0.5000	0.6011	
2	4.923	4.923	0.000	1052209	0.5000	0.6576	
		Average of Peak Amounts =				0.6214	
						RPD = 1.58	
2 1260 Res 1							
1	4.369	4.383	-0.003	398240	NC	NC	
2	4.923	4.940	0.000	1052209	NC	NC	
4 1260 Res 2							
1	4.433	4.444	0.000	186152	NC	NC	
2	5.255	5.235	0.037	627995	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.335	5.336	-0.001	160401	0.0125	0.0147	
2	6.242	6.242	0.000	197385	0.0125	0.0138	
						RPD = 6.09	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

Report Date: 26-Sep-2019 15:10:24 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-302.D

Injection Date: 25-Sep-2019 21:15:07 Instrument ID: HP6890-7 Operator ID: BufTCHROM

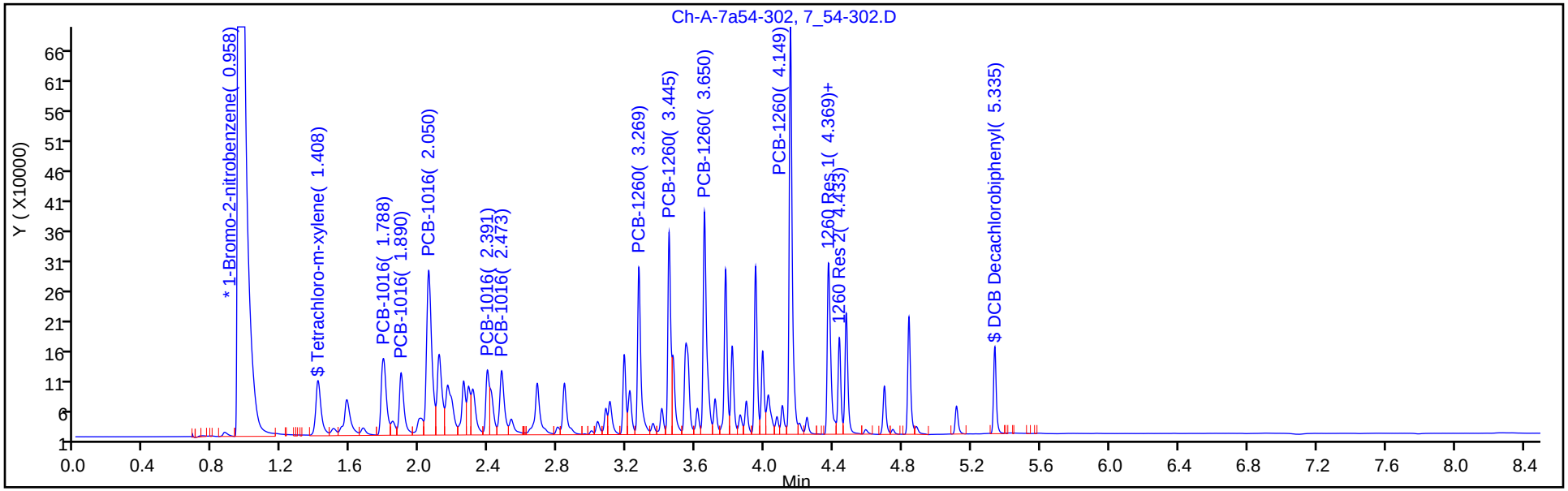
Lims ID: CCV Worklist Smp#: 29

Client ID:

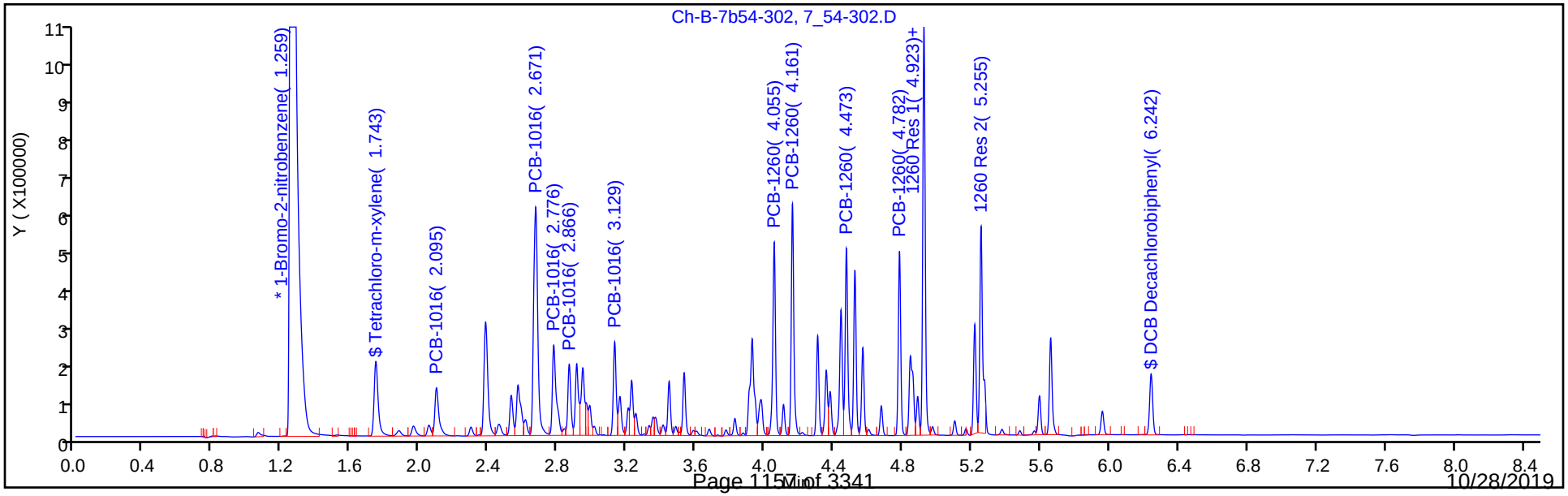
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494480/5 Calibration Date: 09/27/2019 09:10

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_55-005.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0462	0.0365		0.395	0.500	-21.0*	20.0
PCB-1016 Peak 2	Ave	0.0339	0.0271		0.399	0.500	-20.2*	20.0
PCB-1016 Peak 3	Ave	0.0824	0.0792		0.480	0.500	-4.0	20.0
PCB-1016 Peak 4	Ave	0.0251	0.0198		0.395	0.500	-21.0*	20.0
PCB-1016 Peak 5	Ave	0.0381	0.0269		0.353	0.500	-29.4*	20.0
PCB-1260 Peak 1	Ave	0.0619	0.0544		0.440	0.500	-12.1	20.0
PCB-1260 Peak 2	Ave	0.0632	0.0566		0.447	0.500	-10.5	20.0
PCB-1260 Peak 3	Ave	0.0872	0.0787		0.451	0.500	-9.8	20.0
PCB-1260 Peak 4	Ave	0.1258	0.1246		0.495	0.500	-1.0	20.0
PCB-1260 Peak 5	Ave	0.0639	0.0604		0.473	0.500	-5.5	20.0
Tetrachloro-m-xylene	Lin1		1.114		0.0102	0.0125	-18.3	20.0
DCB Decachlorobiphenyl	Lin1		1.056		0.0117	0.0125	-6.1	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494480/5 Calibration Date: 09/27/2019 09:10

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_55-005.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	1.78	1.75	1.81
PCB-1016 Peak 2	1.89	1.86	1.92
PCB-1016 Peak 3	2.05	2.02	2.08
PCB-1016 Peak 4	2.39	2.36	2.42
PCB-1016 Peak 5	2.47	2.44	2.50
PCB-1260 Peak 1	3.26	3.23	3.29
PCB-1260 Peak 2	3.44	3.41	3.47
PCB-1260 Peak 3	3.64	3.61	3.67
PCB-1260 Peak 4	4.14	4.11	4.17
PCB-1260 Peak 5	4.36	4.33	4.39
Tetrachloro-m-xylene	1.40	1.37	1.43
DCB Decachlorobiphenyl	5.33	5.30	5.36

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-005.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Sep-2019 09:10:40 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:22 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 13:11:53

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.961	0.961	0.000	6868001	0.5000	0.5000	
2	1.260	1.260	0.000	9836775	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.403	1.403	0.000	191335	0.0125	0.0102	
2	1.739	1.739	0.000	327130	0.0125	0.0109	
						RPD = 6.91	
9 PCB-1016							M
1	1.780	1.780	0.000	250412	0.5000	0.3949	
1	1.885	1.885	0.000	186056	0.5000	0.3991	
1	2.045	2.045	0.000	543582	0.5000	0.4801	
1	2.385	2.385	0.000	136031	0.5000	0.3949	
1	2.468	2.468	0.000	184810	0.5000	0.3532	
		Average of Peak Amounts =				0.4044	
2	2.092	2.092	0.000	221053	0.5000	0.4536	
2	2.668	2.668	0.000	1063421	0.5000	0.5024	M
2	2.773	2.773	0.000	409329	0.5000	0.4957	M
2	2.863	2.863	0.000	247935	0.5000	0.5283	M
2	3.126	3.126	0.000	301826	0.5000	0.4684	M
		Average of Peak Amounts =				0.4897	
						RPD = 19.07	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.263	3.263	0.000	373784	0.5000	0.4396	
1	3.438	3.438	0.000	388698	0.5000	0.4475	
1	3.643	3.643	0.000	540257	0.5000	0.4510	
1	4.142	4.142	0.000	855902	0.5000	0.4951	
1	4.363	4.363	0.000	415084	0.5000	0.4726	
		Average of Peak Amounts =				0.4612	
2	4.052	4.052	0.000	604156	0.5000	0.4867	
2	4.158	4.158	0.000	683834	0.5000	0.4837	
2	4.471	4.471	0.000	604138	0.5000	0.4874	
2	4.778	4.778	0.000	567889	0.5000	0.5117	
2	4.920	4.920	0.000	1212063	0.5000	0.5296	
		Average of Peak Amounts =				0.4998	
						RPD = 8.05	
2 1260 Res 1							
1	4.424	4.424	0.000	198640	NC	NC	
2	4.971	4.971	0.000	31328	NC	NC	
4 1260 Res 2							
1	4.465	4.465	0.000	264154	NC	NC	
2	5.252	5.252	0.000	769819	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.326	5.326	0.000	181372	0.0125	0.0117	
2	6.236	6.236	0.000	243080	0.0125	0.0119	
						RPD = 1.29	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

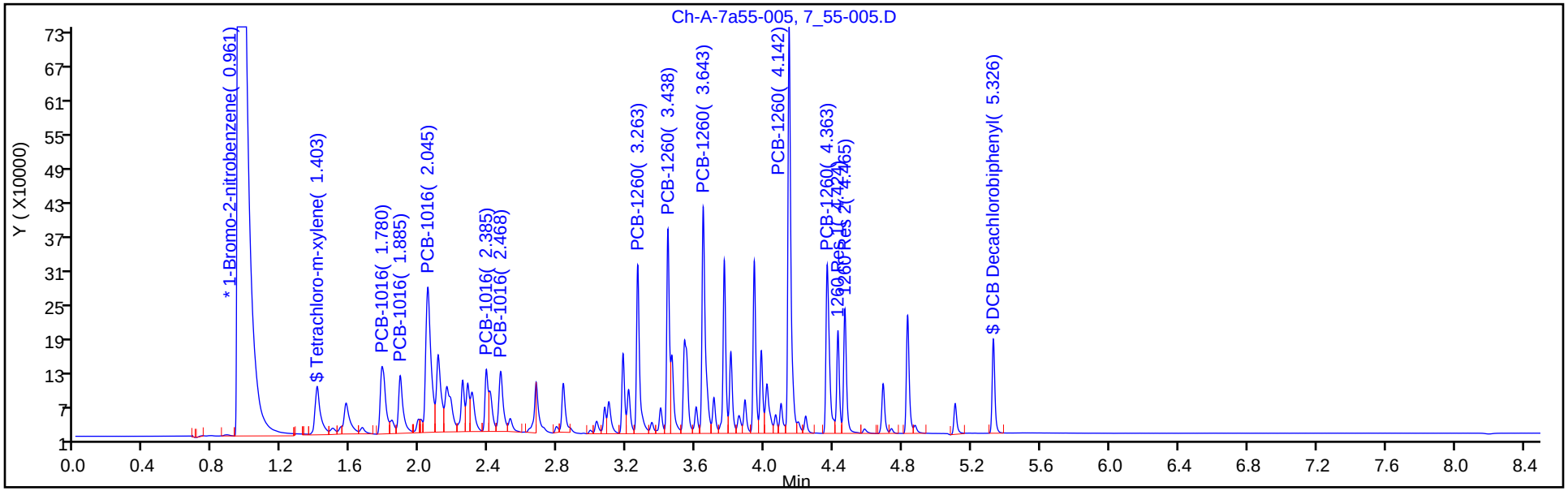
Report Date: 29-Sep-2019 14:17:23 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

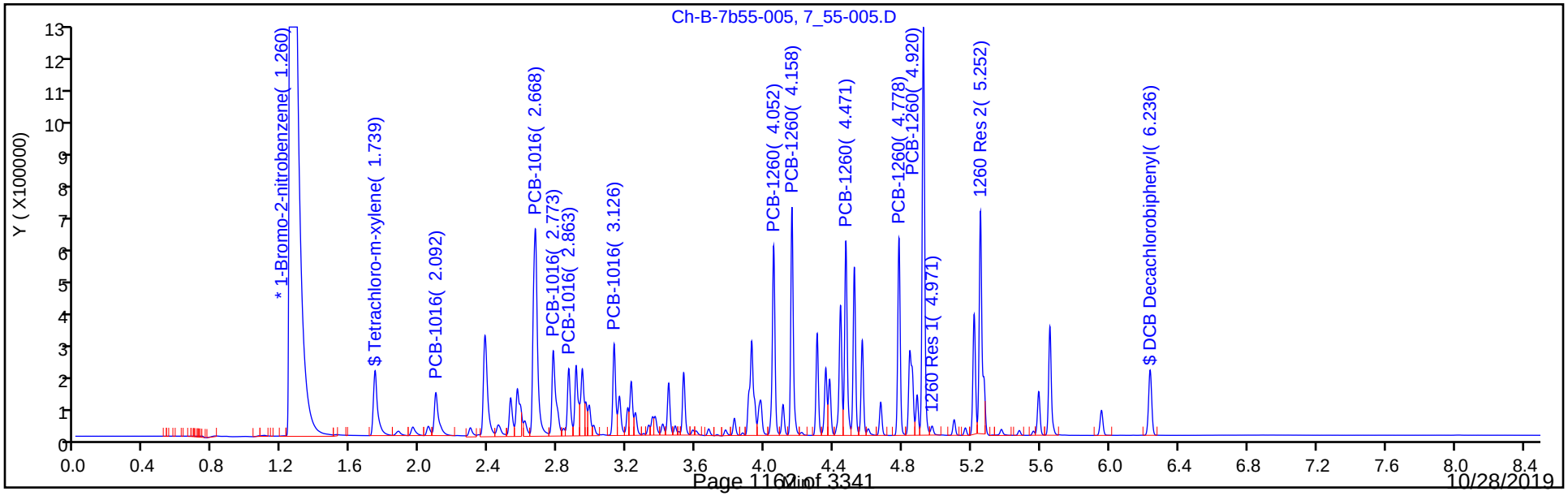
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-005.D

Injection Date:	27-Sep-2019 09:10:40	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCVIS			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494480/5 Calibration Date: 09/27/2019 09:10

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_55-005.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1016 Peak 1	Ave	0.0248	0.0225		0.454	0.500	-9.3	20.0
PCB-1016 Peak 2	Ave	0.1076	0.1081		0.502	0.500	0.5	20.0
PCB-1016 Peak 3	Ave	0.0420	0.0416		0.496	0.500	-0.9	20.0
PCB-1016 Peak 4	Ave	0.0239	0.0252		0.528	0.500	5.7	20.0
PCB-1016 Peak 5	Ave	0.0328	0.0307		0.468	0.500	-6.3	20.0
PCB-1260 Peak 1	Ave	0.0631	0.0614		0.487	0.500	-2.7	20.0
PCB-1260 Peak 2	Ave	0.0719	0.0695		0.484	0.500	-3.3	20.0
PCB-1260 Peak 3	Ave	0.0630	0.0614		0.487	0.500	-2.5	20.0
PCB-1260 Peak 4	Ave	0.0564	0.0577		0.512	0.500	2.3	20.0
PCB-1260 Peak 5	Ave	0.1163	0.1232		0.530	0.500	5.9	20.0
Tetrachloro-m-xylene	Ave	1.520	1.330		0.0109	0.0125	-12.5	20.0
DCB Decachlorobiphenyl	Ave	1.039	0.9885		0.0119	0.0125	-4.8	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVIS 480-494480/5 Calibration Date: 09/27/2019 09:10

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 18:45

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 20:21

Lab File ID: 7_55-005.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1016 Peak 1	2.09	2.06	2.12
PCB-1016 Peak 2	2.67	2.64	2.70
PCB-1016 Peak 3	2.77	2.74	2.80
PCB-1016 Peak 4	2.86	2.83	2.89
PCB-1016 Peak 5	3.13	3.10	3.16
PCB-1260 Peak 1	4.05	4.02	4.08
PCB-1260 Peak 2	4.16	4.13	4.19
PCB-1260 Peak 3	4.47	4.44	4.50
PCB-1260 Peak 4	4.78	4.75	4.81
PCB-1260 Peak 5	4.92	4.89	4.95
Tetrachloro-m-xylene	1.74	1.71	1.77
DCB Decachlorobiphenyl	6.24	6.21	6.27

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-005.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 27-Sep-2019 09:10:40 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub6

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:22 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 13:11:53

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.961	0.961	0.000	6868001	0.5000	0.5000	
2	1.260	1.260	0.000	9836775	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.403	1.403	0.000	191335	0.0125	0.0102	
2	1.739	1.739	0.000	327130	0.0125	0.0109	
						RPD = 6.91	
9 PCB-1016							M
1	1.780	1.780	0.000	250412	0.5000	0.3949	
1	1.885	1.885	0.000	186056	0.5000	0.3991	
1	2.045	2.045	0.000	543582	0.5000	0.4801	
1	2.385	2.385	0.000	136031	0.5000	0.3949	
1	2.468	2.468	0.000	184810	0.5000	0.3532	
		Average of Peak Amounts =				0.4044	
2	2.092	2.092	0.000	221053	0.5000	0.4536	
2	2.668	2.668	0.000	1063421	0.5000	0.5024	M
2	2.773	2.773	0.000	409329	0.5000	0.4957	M
2	2.863	2.863	0.000	247935	0.5000	0.5283	M
2	3.126	3.126	0.000	301826	0.5000	0.4684	M
		Average of Peak Amounts =				0.4897	
						RPD = 19.07	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.263	3.263	0.000	373784	0.5000	0.4396	
1	3.438	3.438	0.000	388698	0.5000	0.4475	
1	3.643	3.643	0.000	540257	0.5000	0.4510	
1	4.142	4.142	0.000	855902	0.5000	0.4951	
1	4.363	4.363	0.000	415084	0.5000	0.4726	
		Average of Peak Amounts =				0.4612	
2	4.052	4.052	0.000	604156	0.5000	0.4867	
2	4.158	4.158	0.000	683834	0.5000	0.4837	
2	4.471	4.471	0.000	604138	0.5000	0.4874	
2	4.778	4.778	0.000	567889	0.5000	0.5117	
2	4.920	4.920	0.000	1212063	0.5000	0.5296	
		Average of Peak Amounts =				0.4998	
						RPD = 8.05	
2 1260 Res 1							
1	4.424	4.424	0.000	198640	NC	NC	
2	4.971	4.971	0.000	31328	NC	NC	
4 1260 Res 2							
1	4.465	4.465	0.000	264154	NC	NC	
2	5.252	5.252	0.000	769819	NC	NC	
$ 15 DCB Decachlorobiphenyl							
1	5.326	5.326	0.000	181372	0.0125	0.0117	
2	6.236	6.236	0.000	243080	0.0125	0.0119	
						RPD = 1.29	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

1660sur/is0.5_00081 Amount Added: 1.00 Units: mL

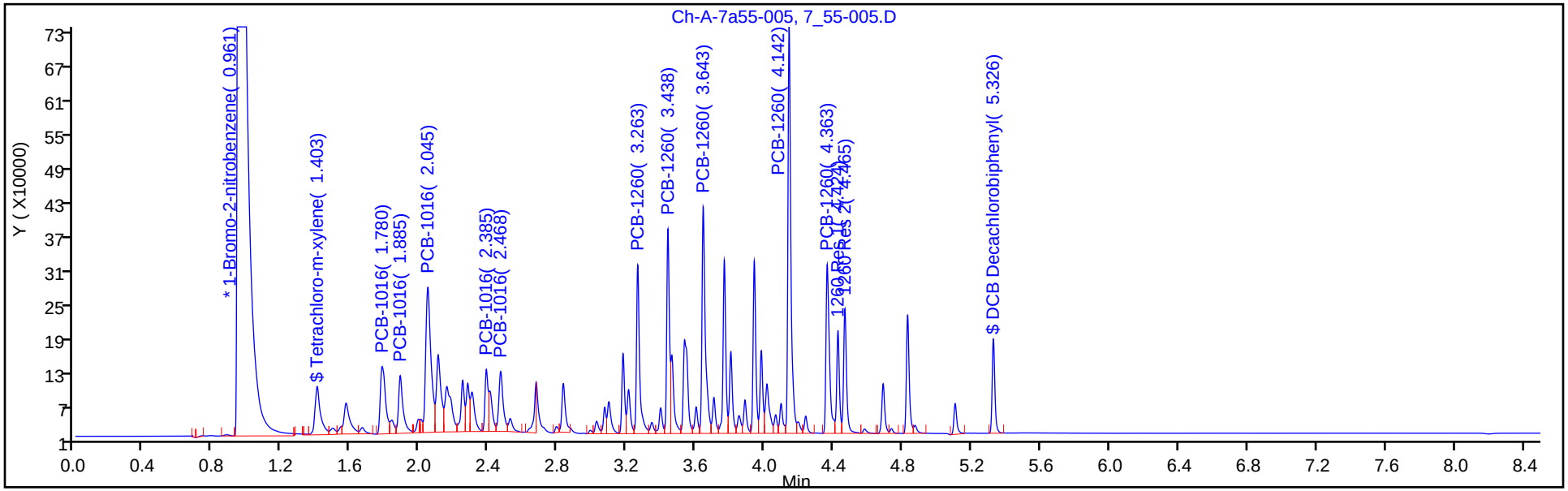
Report Date: 29-Sep-2019 14:17:24 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

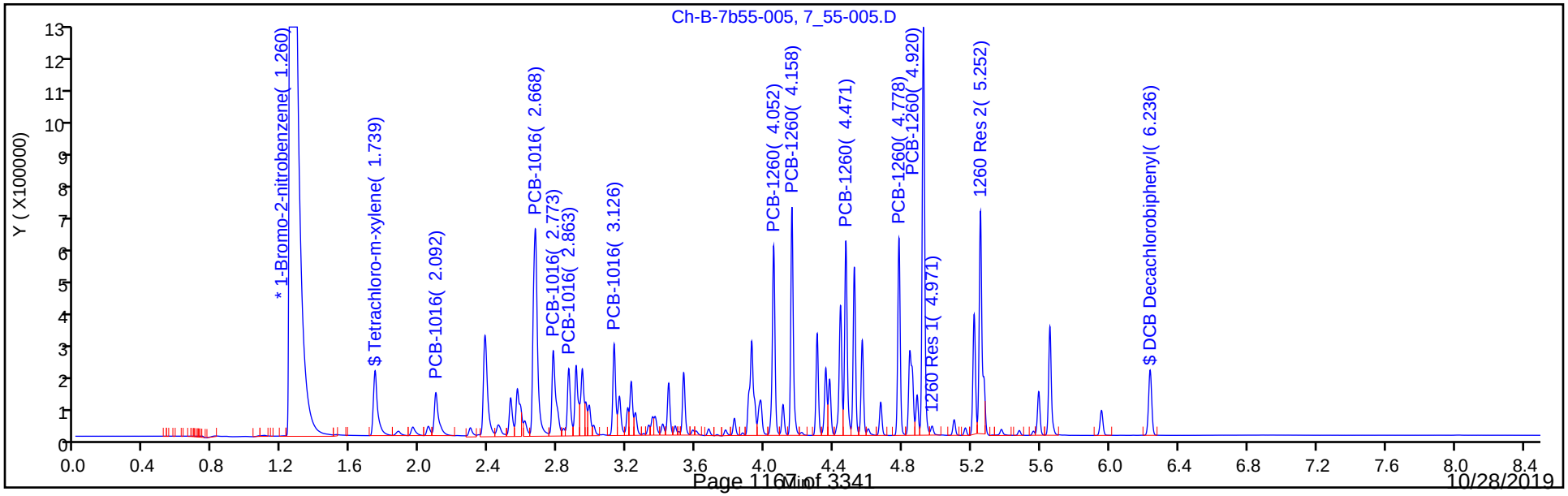
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-005.D

Injection Date:	27-Sep-2019 09:10:40	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCVIS			Worklist Smp#:	5
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 29-Sep-2019 14:17:24 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-005.D

Injection Date: 27-Sep-2019 09:10:40 Instrument ID: HP6890-7

Lims ID: CCVIS

Client ID:

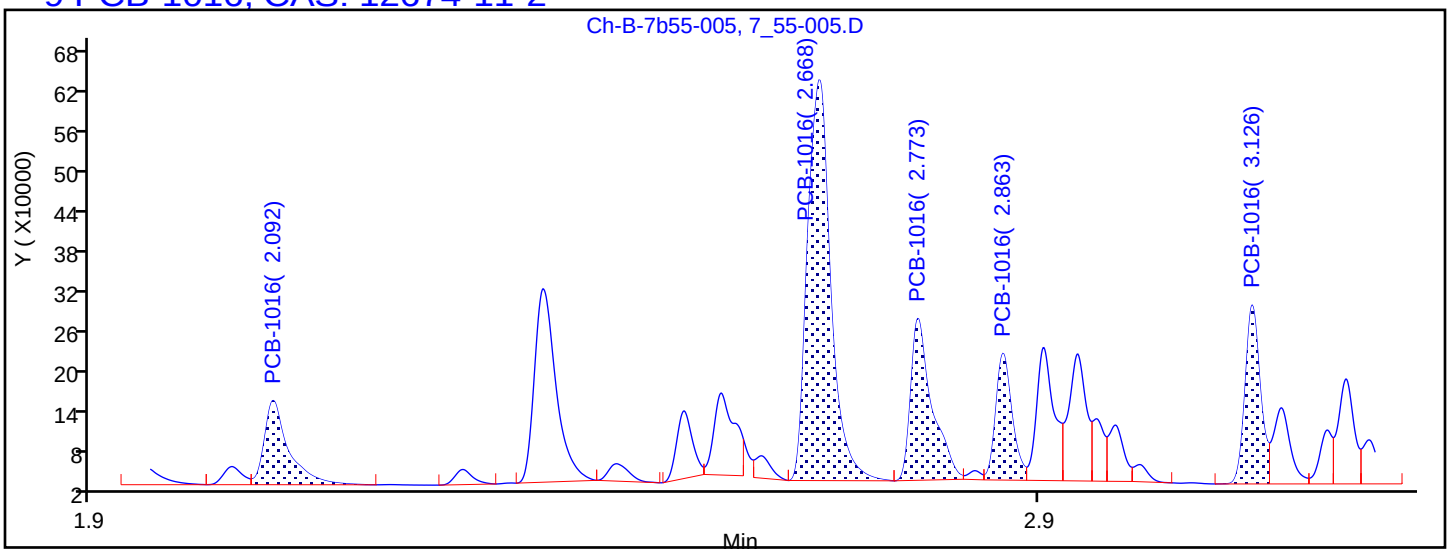
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 5

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

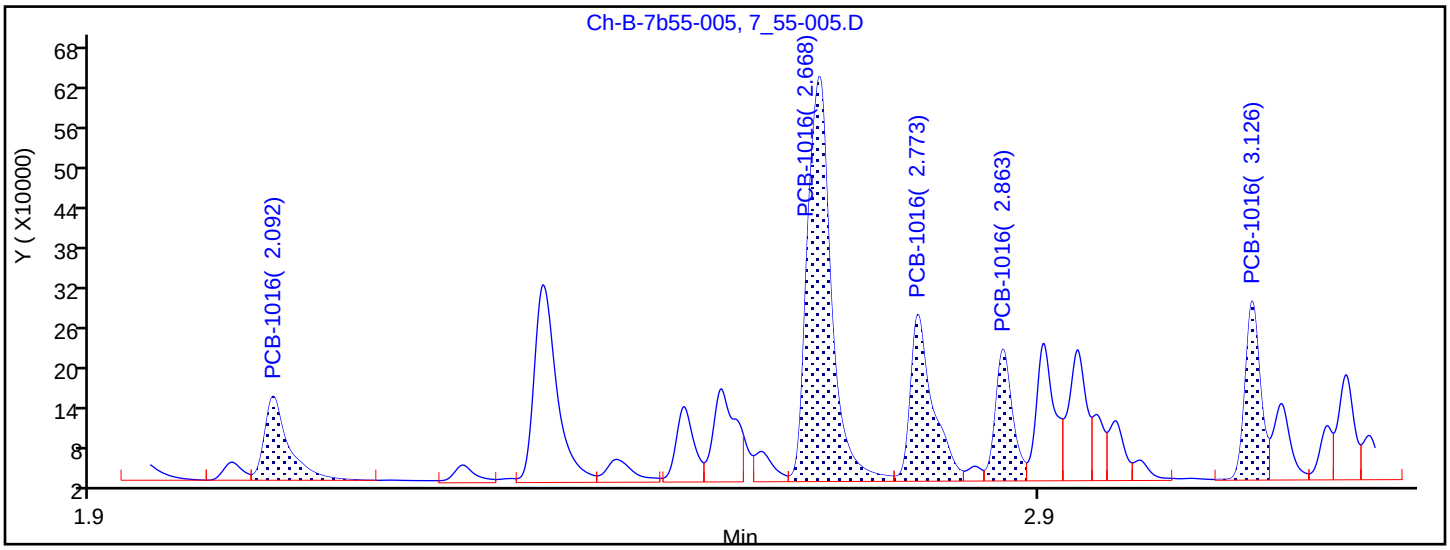
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

2.092	Response = 221053
2.668	Response = 1010484
2.773	Response = 372444
2.863	Response = 226521
3.126	Response = 298357



Manual Integration Results

2.092	Response = 221053	
2.668	Response = 1063421	M
2.773	Response = 409329	M
2.863	Response = 247935	M
3.126	Response = 301826	M

Reviewer: clarkda, 27-Sep-2019 13:11:07

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/6 Calibration Date: 09/27/2019 09:23

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_55-006.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Lin1		0.0056		0.507	0.500	1.3	20.0
PCB-1221 Peak 2	Lin1		0.0093		0.400	0.500	-19.9	20.0
PCB-1221 Peak 3	Lin1		0.0050		0.367	0.500	-26.6*	20.0
PCB-1221 Peak 4	Ave	0.0394	0.0308		0.390	0.500	-22.0*	20.0
PCB-1254 Peak 1	Ave	0.0661	0.0500		0.378	0.500	-24.4*	20.0
PCB-1254 Peak 2	Ave	0.0749	0.0589		0.393	0.500	-21.4*	20.0
PCB-1254 Peak 3	Ave	0.0451	0.0379		0.420	0.500	-16.0	20.0
PCB-1254 Peak 4	Ave	0.0917	0.0753		0.411	0.500	-17.8	20.0
PCB-1254 Peak 5	Ave	0.0849	0.0720		0.424	0.500	-15.3	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/6 Calibration Date: 09/27/2019 09:23

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_55-006.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	1.38	1.35	1.41
PCB-1221 Peak 2	1.50	1.47	1.53
PCB-1221 Peak 3	1.54	1.51	1.57
PCB-1221 Peak 4	1.57	1.54	1.60
PCB-1254 Peak 1	2.67	2.64	2.70
PCB-1254 Peak 2	2.83	2.80	2.86
PCB-1254 Peak 3	3.02	2.99	3.05
PCB-1254 Peak 4	3.09	3.06	3.12
PCB-1254 Peak 5	3.65	3.62	3.68

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:23:10 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:28 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 09:36:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	6789536	0.5000	0.5000	
2	1.258	1.258	0.000	9899970	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.384	1.384	0.000	38224	0.5000	0.5066	
1	1.495	1.495	0.000	63077	0.5000	0.4004	
1	1.540	1.540	0.000	34158	0.5000	0.3669	
1	1.571	1.571	0.000	208815	0.5000	0.3900	M
		Average of Peak Amounts =				0.4160	
2	1.872	1.872	0.000	48101	0.5000	0.4420	
2	1.958	1.958	0.000	139251	0.5000	0.4675	
2	2.048	2.048	0.000	76428	0.5000	0.4491	
2	2.092	2.092	0.000	330464	0.5000	0.4764	
		Average of Peak Amounts =				0.4588	
						RPD = 9.79	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.674	2.674	0.000	339182	0.5000	0.3779	M
1	2.830	2.830	0.000	399937	0.5000	0.3930	
1	3.023	3.023	0.000	257211	0.5000	0.4198	
1	3.094	3.094	0.000	511557	0.5000	0.4109	
1	3.646	3.646	0.000	488738	0.5000	0.4237	
		Average of Peak Amounts =				0.4051	
2	3.443	3.443	0.000	371437	0.5000	0.4635	
2	3.530	3.530	0.000	522140	0.5000	0.4276	
2	3.908	3.908	0.000	806786	0.5000	0.4553	
2	4.347	4.347	0.000	515580	0.5000	0.4736	
2	4.472	4.472	0.000	607301	0.5000	0.4676	
		Average of Peak Amounts =				0.4575	
						RPD = 12.16	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00055 Amount Added: 1.00 Units: mL

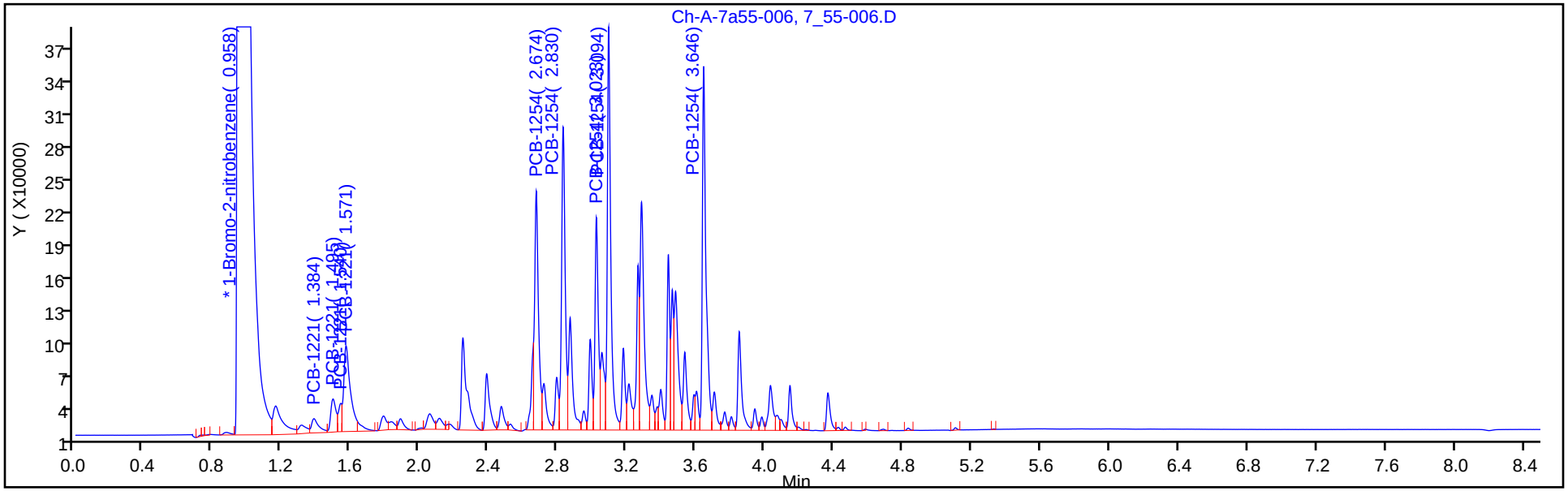
Report Date: 29-Sep-2019 14:17:28 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

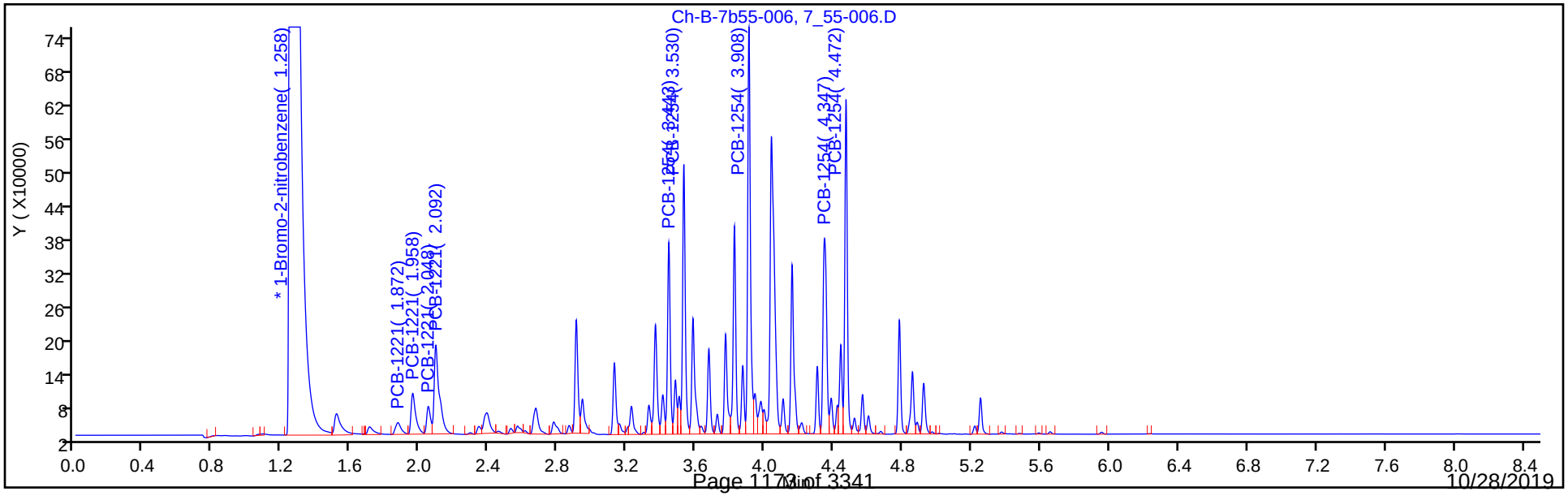
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D

Injection Date:	27-Sep-2019 09:23:10	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 29-Sep-2019 14:17:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D

Injection Date: 27-Sep-2019 09:23:10 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

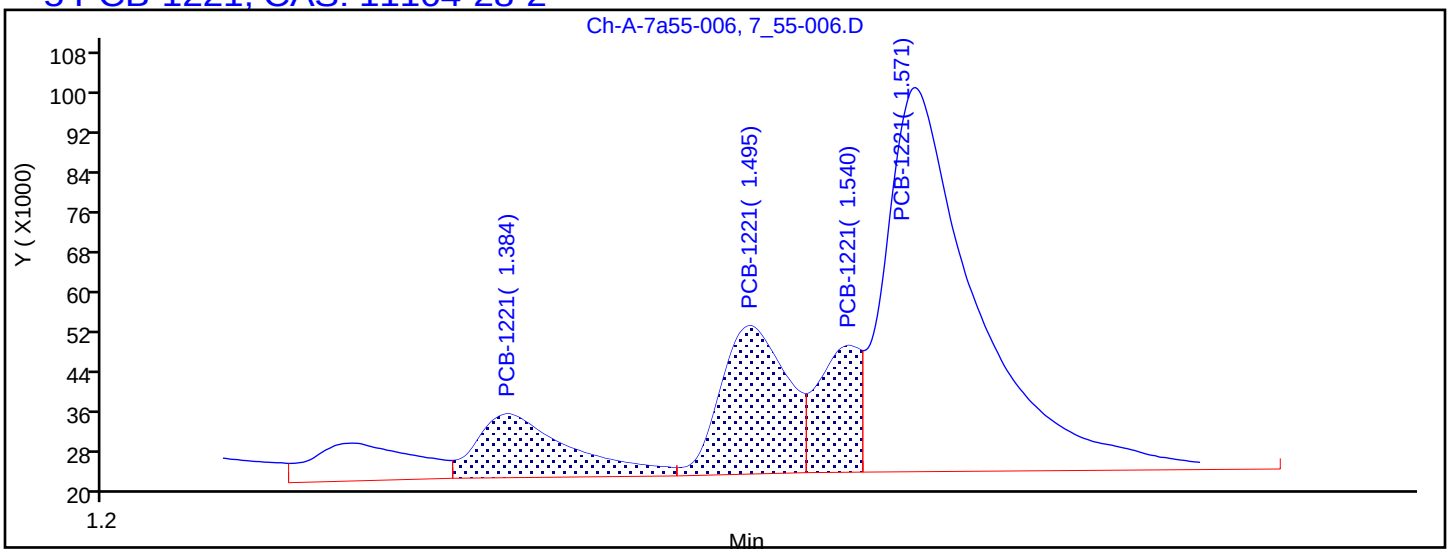
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 6

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

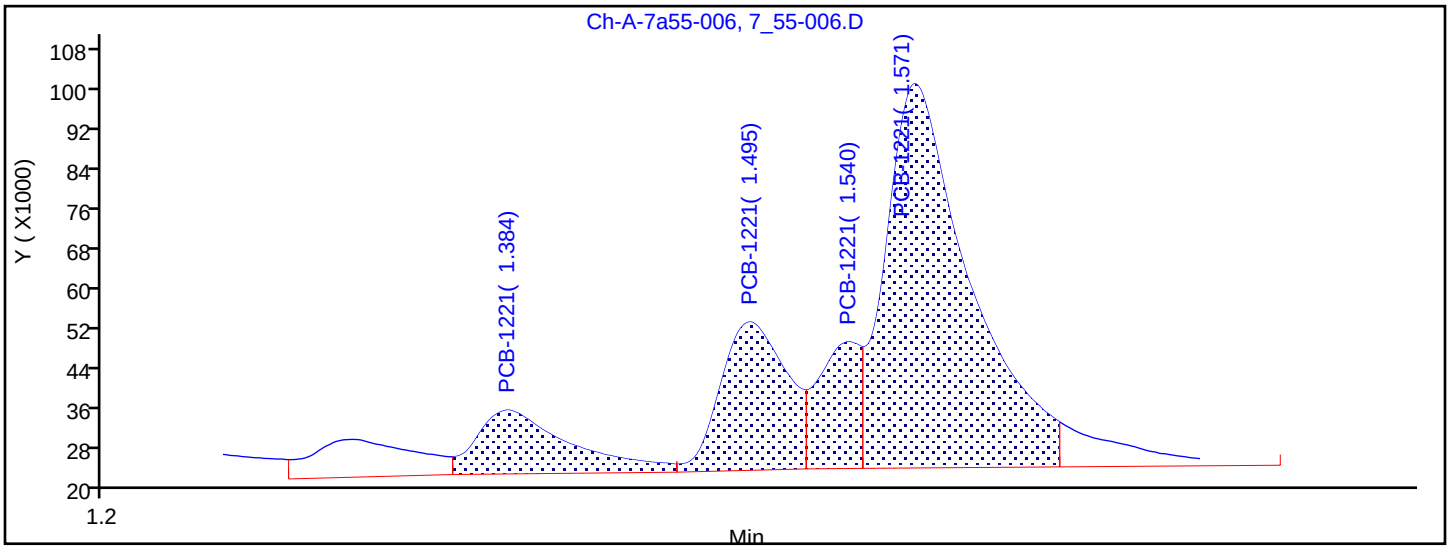
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

5 PCB-1221, CAS: 11104-28-2



Processing Integration Results

1.384	Response = 38224
1.495	Response = 63077
1.540	Response = 34158
1.571	Response = 227248



Manual Integration Results

1.384	Response = 38224	
1.495	Response = 63077	
1.540	Response = 34158	
1.571	Response = 208815	M

Reviewer: salversonj, 27-Sep-2019 09:35:19

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Report Date: 29-Sep-2019 14:17:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D

Injection Date: 27-Sep-2019 09:23:10 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

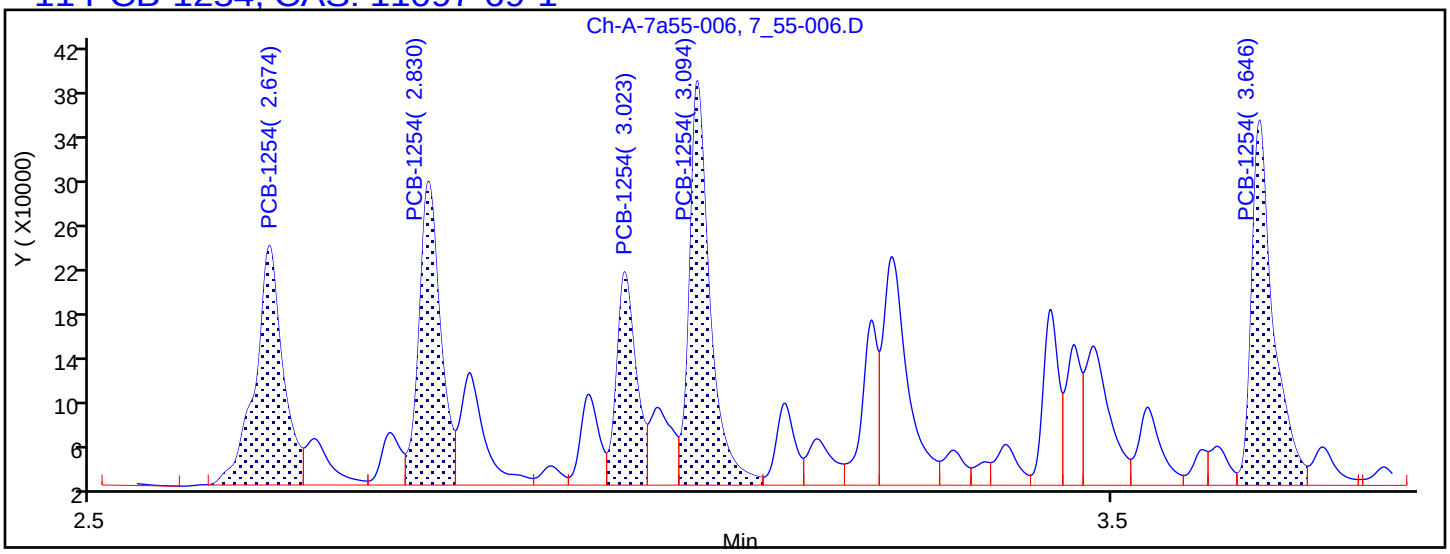
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 6

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

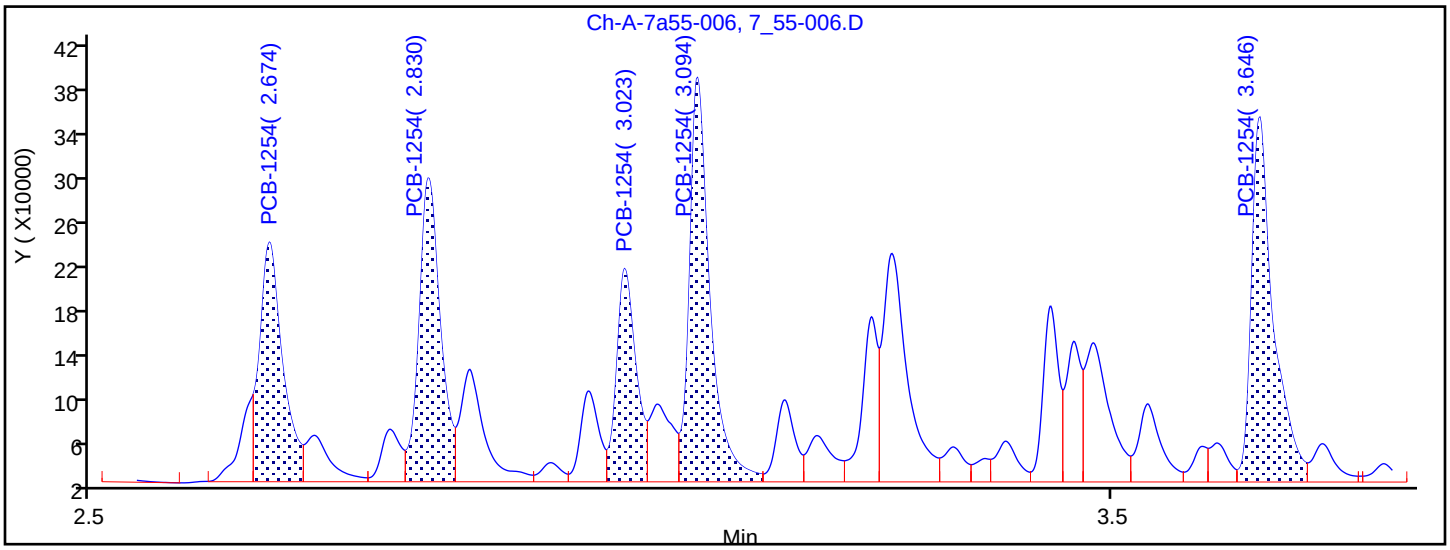
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

11 PCB-1254, CAS: 11097-69-1



Processing Integration Results

2.674	Response = 409487
2.830	Response = 399937
3.023	Response = 257211
3.094	Response = 511557
3.646	Response = 488738



Manual Integration Results

2.674	Response = 339182	M
2.830	Response = 399937	
3.023	Response = 257211	
3.094	Response = 511557	
3.646	Response = 488738	

Reviewer: salversonj, 27-Sep-2019 09:35:42

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/6 Calibration Date: 09/27/2019 09:23

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_55-006.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1221 Peak 1	Lin1		0.0049		0.442	0.500	-11.6	20.0
PCB-1221 Peak 2	Lin1		0.0141		0.468	0.500	-6.5	20.0
PCB-1221 Peak 3	Lin1		0.0077		0.449	0.500	-10.2	20.0
PCB-1221 Peak 4	Lin1		0.0334		0.476	0.500	-4.7	20.0
PCB-1254 Peak 1	Lin1		0.0375		0.463	0.500	-7.3	20.0
PCB-1254 Peak 2	Ave	0.0617	0.0527		0.428	0.500	-14.5	20.0
PCB-1254 Peak 3	Ave	0.0895	0.0815		0.455	0.500	-8.9	20.0
PCB-1254 Peak 4	Ave	0.0550	0.0521		0.474	0.500	-5.3	20.0
PCB-1254 Peak 5	Ave	0.0656	0.0613		0.468	0.500	-6.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/6 Calibration Date: 09/27/2019 09:23

Instrument ID: HP6890-7 Calib Start Date: 05/10/2019 21:56

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/10/2019 22:28

Lab File ID: 7_55-006.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1221 Peak 1	1.87	1.84	1.90
PCB-1221 Peak 2	1.96	1.93	1.99
PCB-1221 Peak 3	2.05	2.02	2.08
PCB-1221 Peak 4	2.09	2.06	2.12
PCB-1254 Peak 1	3.44	3.41	3.47
PCB-1254 Peak 2	3.53	3.50	3.56
PCB-1254 Peak 3	3.91	3.88	3.94
PCB-1254 Peak 4	4.35	4.32	4.38
PCB-1254 Peak 5	4.47	4.44	4.50

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:23:10 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:28 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 09:36:50

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	6789536	0.5000	0.5000	
2	1.258	1.258	0.000	9899970	0.5000	0.5000	
						RPD = 0.00	
5 PCB-1221							M
1	1.384	1.384	0.000	38224	0.5000	0.5066	
1	1.495	1.495	0.000	63077	0.5000	0.4004	
1	1.540	1.540	0.000	34158	0.5000	0.3669	
1	1.571	1.571	0.000	208815	0.5000	0.3900	M
		Average of Peak Amounts =				0.4160	
2	1.872	1.872	0.000	48101	0.5000	0.4420	
2	1.958	1.958	0.000	139251	0.5000	0.4675	
2	2.048	2.048	0.000	76428	0.5000	0.4491	
2	2.092	2.092	0.000	330464	0.5000	0.4764	
		Average of Peak Amounts =				0.4588	
						RPD = 9.79	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
11 PCB-1254							M
1	2.674	2.674	0.000	339182	0.5000	0.3779	M
1	2.830	2.830	0.000	399937	0.5000	0.3930	
1	3.023	3.023	0.000	257211	0.5000	0.4198	
1	3.094	3.094	0.000	511557	0.5000	0.4109	
1	3.646	3.646	0.000	488738	0.5000	0.4237	
		Average of Peak Amounts =				0.4051	
2	3.443	3.443	0.000	371437	0.5000	0.4635	
2	3.530	3.530	0.000	522140	0.5000	0.4276	
2	3.908	3.908	0.000	806786	0.5000	0.4553	
2	4.347	4.347	0.000	515580	0.5000	0.4736	
2	4.472	4.472	0.000	607301	0.5000	0.4676	
		Average of Peak Amounts =				0.4575	
						RPD = 12.16	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

21-54w/IS@0.5_00055 Amount Added: 1.00 Units: mL

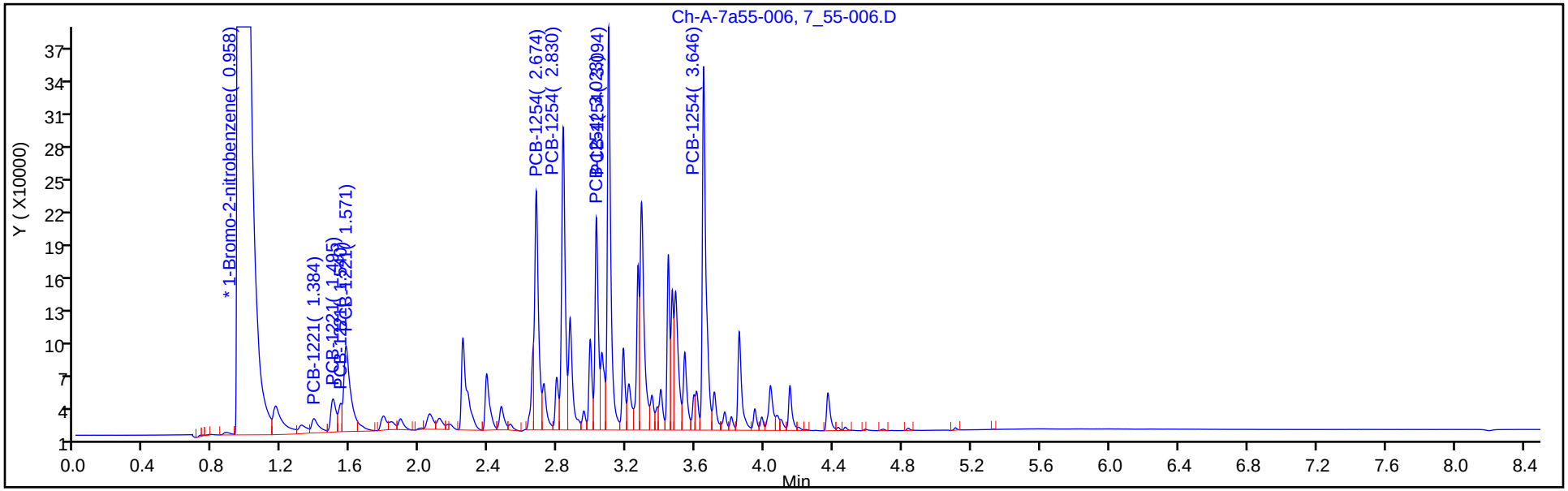
Report Date: 29-Sep-2019 14:17:29 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

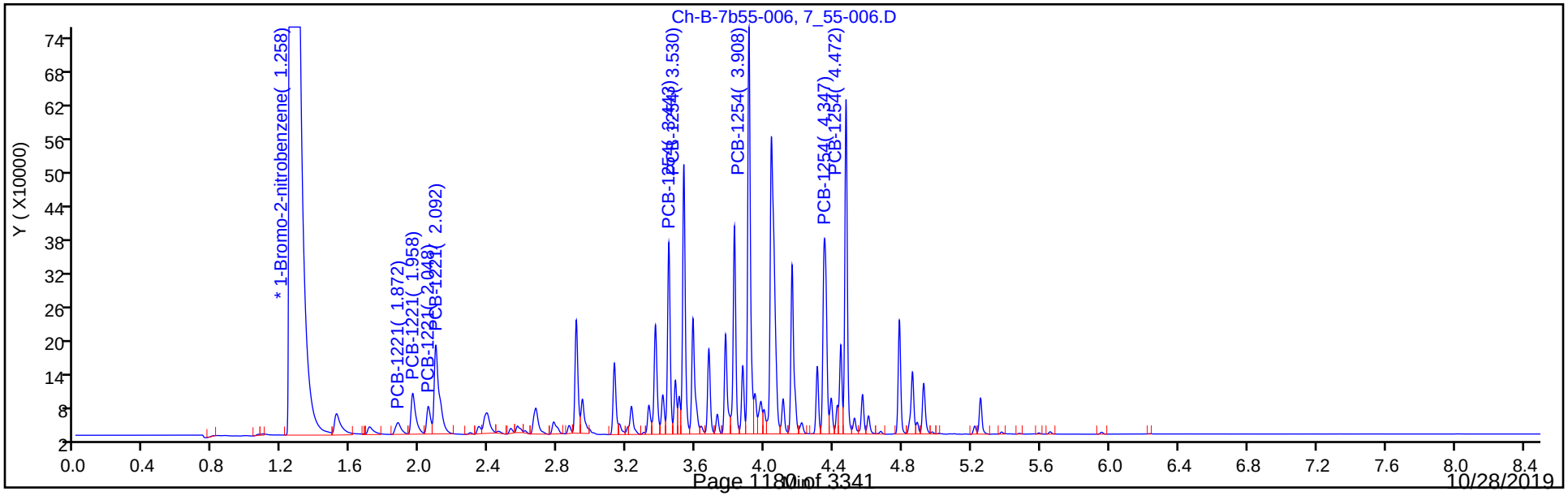
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-006.D

Injection Date:	27-Sep-2019 09:23:10	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/7 Calibration Date: 09/27/2019 09:35

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_55-007.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0253	0.0283		0.559	0.500	11.7	20.0
PCB-1232 Peak 2	Ave	0.0169	0.0186		0.550	0.500	10.0	20.0
PCB-1232 Peak 3	Ave	0.0132	0.0147		0.556	0.500	11.2	20.0
PCB-1232 Peak 4	Lin1		0.0368		0.512	0.500	2.3	20.0
PCB-1232 Peak 5	Ave	0.0127	0.0135		0.535	0.500	7.0	20.0
PCB-1262 Peak 1	Ave	0.0490	0.0471		0.481	0.500	-3.9	20.0
PCB-1262 Peak 2	Ave	0.0735	0.0785		0.534	0.500	6.8	20.0
PCB-1262 Peak 3	Ave	0.1365	0.1622		0.594	0.500	18.8	20.0
PCB-1262 Peak 4	Ave	0.0585	0.0638		0.545	0.500	9.1	20.0
PCB-1262 Peak 5	Ave	0.0647	0.0734		0.568	0.500	13.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/7 Calibration Date: 09/27/2019 09:35

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_55-007.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	1.57	1.54	1.60
PCB-1232 Peak 2	1.78	1.75	1.81
PCB-1232 Peak 3	1.89	1.86	1.92
PCB-1232 Peak 4	2.05	2.02	2.08
PCB-1232 Peak 5	2.47	2.44	2.50
PCB-1262 Peak 1	3.26	3.23	3.29
PCB-1262 Peak 2	3.77	3.74	3.80
PCB-1262 Peak 3	4.14	4.11	4.17
PCB-1262 Peak 4	4.43	4.40	4.46
PCB-1262 Peak 5	4.47	4.44	4.50

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-007.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:35:32 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:34 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 09:48:17

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	5908161	0.5000	0.5000	
2	1.258	1.258	0.000	8782955	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.570	1.570	0.000	166972	0.5000	0.5586	
1	1.783	1.783	0.000	110036	0.5000	0.5499	
1	1.885	1.885	0.000	86964	0.5000	0.5559	
1	2.050	2.050	0.000	217256	0.5000	0.5117	
1	2.470	2.470	0.000	80019	0.5000	0.5349	
		Average of Peak Amounts =				0.5422	
2	2.091	2.091	0.000	270328	0.5000	0.5708	
2	2.378	2.378	0.000	242041	0.5000	0.6149	
2	2.669	2.669	0.000	451412	0.5000	0.5549	
2	2.773	2.773	0.000	180451	0.5000	0.6312	
2	3.127	3.127	0.000	123838	0.5000	0.6120	
		Average of Peak Amounts =				0.5968	
						RPD = 9.58	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.263	3.263	0.000	278126	0.5000	0.4807	
1	3.767	3.767	0.000	463922	0.5000	0.5342	
1	4.143	4.143	0.000	958397	0.5000	0.5941	
1	4.426	4.426	0.000	376633	0.5000	0.5453	
1	4.466	4.466	0.000	433794	0.5000	0.5676	
		Average of Peak Amounts =				0.5444	
2	4.053	4.053	0.000	493168	0.5000	0.6748	
2	4.158	4.158	0.000	544992	0.5000	0.6966	
2	4.520	4.520	0.000	739422	0.5000	0.7060	
2	5.214	5.214	0.000	596788	0.5000	0.6853	
2	5.252	5.252	0.000	712839	0.5000	0.6795	
		Average of Peak Amounts =				0.6884	
						RPD = 23.37	

Reagents:

32-62w/IS@0.5_00056 Amount Added: 1.00 Units: mL

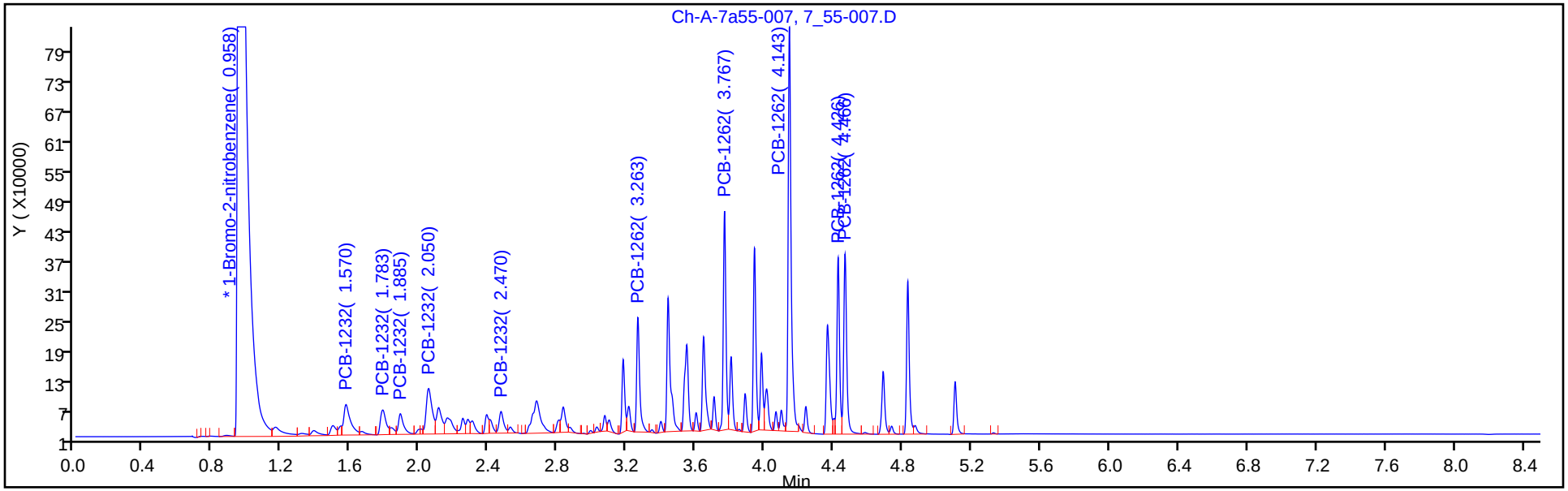
Report Date: 29-Sep-2019 14:17:35 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

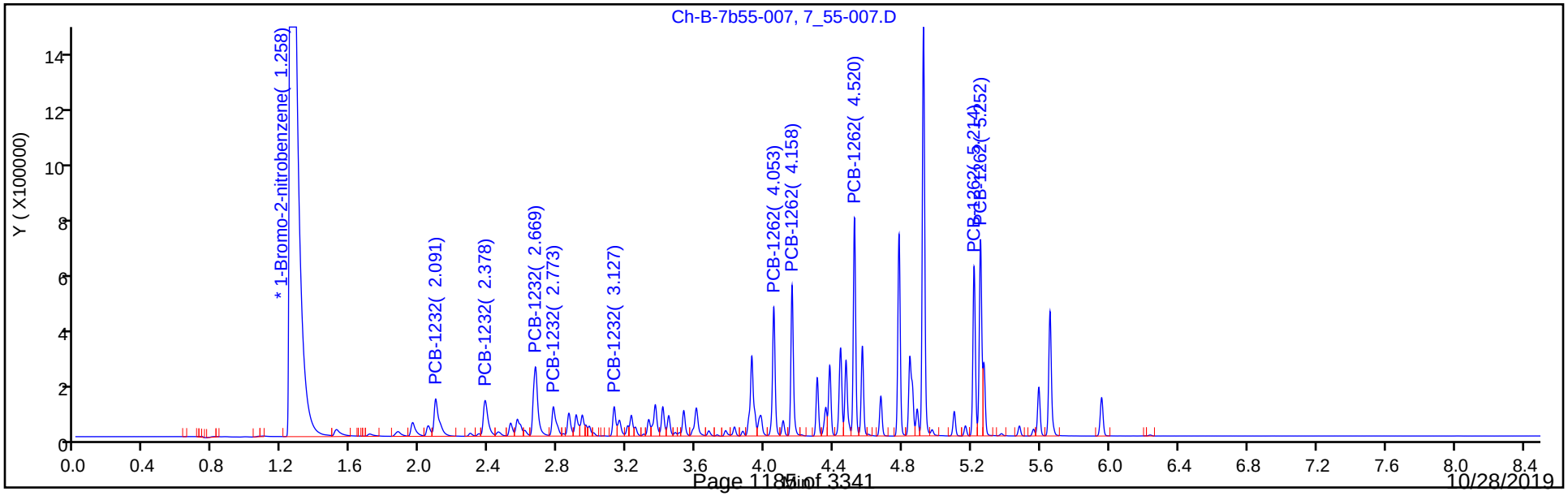
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-007.D

Injection Date:	27-Sep-2019 09:35:32	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/7 Calibration Date: 09/27/2019 09:35

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_55-007.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1232 Peak 1	Ave	0.0270	0.0308		0.571	0.500	14.2	20.0
PCB-1232 Peak 2	Lin1		0.0276		0.615	0.500	23.0*	20.0
PCB-1232 Peak 3	Ave	0.0463	0.0514		0.555	0.500	11.0	20.0
PCB-1232 Peak 4	Lin1		0.0206		0.631	0.500	26.2*	20.0
PCB-1232 Peak 5	Lin1		0.0141		0.612	0.500	22.4*	20.0
PCB-1262 Peak 1	Lin1		0.0562		0.675	0.500	35.0*	20.0
PCB-1262 Peak 2	Lin1		0.0621		0.697	0.500	39.3*	20.0
PCB-1262 Peak 3	Lin1		0.0842		0.706	0.500	41.2*	20.0
PCB-1262 Peak 4	Lin1		0.0680		0.685	0.500	37.1*	20.0
PCB-1262 Peak 5	Lin1		0.0812		0.679	0.500	35.9*	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/7 Calibration Date: 09/27/2019 09:35

Instrument ID: HP6890-7 Calib Start Date: 05/12/2019 16:00

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/12/2019 16:32

Lab File ID: 7_55-007.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1232 Peak 1	2.09	2.06	2.12
PCB-1232 Peak 2	2.38	2.35	2.41
PCB-1232 Peak 3	2.67	2.64	2.70
PCB-1232 Peak 4	2.77	2.74	2.80
PCB-1232 Peak 5	3.13	3.10	3.16
PCB-1262 Peak 1	4.05	4.02	4.08
PCB-1262 Peak 2	4.16	4.13	4.19
PCB-1262 Peak 3	4.52	4.49	4.55
PCB-1262 Peak 4	5.21	5.18	5.24
PCB-1262 Peak 5	5.25	5.22	5.28

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-007.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:35:32 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub8

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:34 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 09:48:17

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.958	0.000	5908161	0.5000	0.5000	
2	1.258	1.258	0.000	8782955	0.5000	0.5000	
						RPD = 0.00	
7 PCB-1232							
1	1.570	1.570	0.000	166972	0.5000	0.5586	
1	1.783	1.783	0.000	110036	0.5000	0.5499	
1	1.885	1.885	0.000	86964	0.5000	0.5559	
1	2.050	2.050	0.000	217256	0.5000	0.5117	
1	2.470	2.470	0.000	80019	0.5000	0.5349	
		Average of Peak Amounts =				0.5422	
2	2.091	2.091	0.000	270328	0.5000	0.5708	
2	2.378	2.378	0.000	242041	0.5000	0.6149	
2	2.669	2.669	0.000	451412	0.5000	0.5549	
2	2.773	2.773	0.000	180451	0.5000	0.6312	
2	3.127	3.127	0.000	123838	0.5000	0.6120	
		Average of Peak Amounts =				0.5968	
						RPD = 9.58	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
13 PCB-1262							
1	3.263	3.263	0.000	278126	0.5000	0.4807	
1	3.767	3.767	0.000	463922	0.5000	0.5342	
1	4.143	4.143	0.000	958397	0.5000	0.5941	
1	4.426	4.426	0.000	376633	0.5000	0.5453	
1	4.466	4.466	0.000	433794	0.5000	0.5676	
		Average of Peak Amounts =				0.5444	
2	4.053	4.053	0.000	493168	0.5000	0.6748	
2	4.158	4.158	0.000	544992	0.5000	0.6966	
2	4.520	4.520	0.000	739422	0.5000	0.7060	
2	5.214	5.214	0.000	596788	0.5000	0.6853	
2	5.252	5.252	0.000	712839	0.5000	0.6795	
		Average of Peak Amounts =				0.6884	
						RPD = 23.37	

Reagents:

32-62w/IS@0.5_00056 Amount Added: 1.00 Units: mL

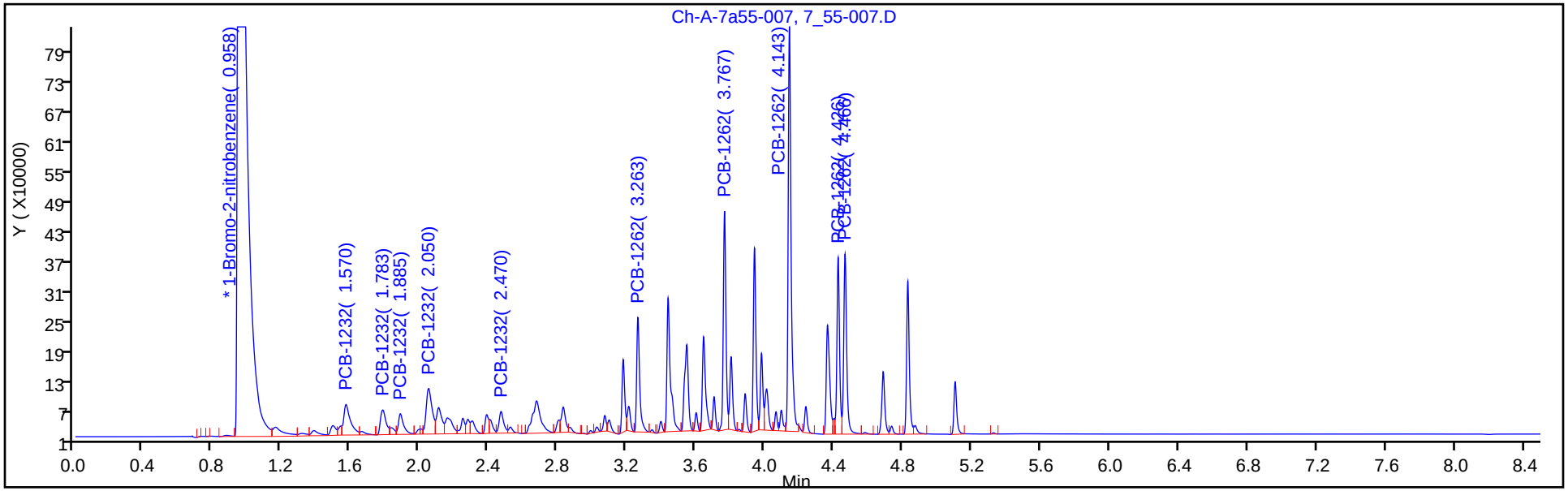
Report Date: 29-Sep-2019 14:17:37 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

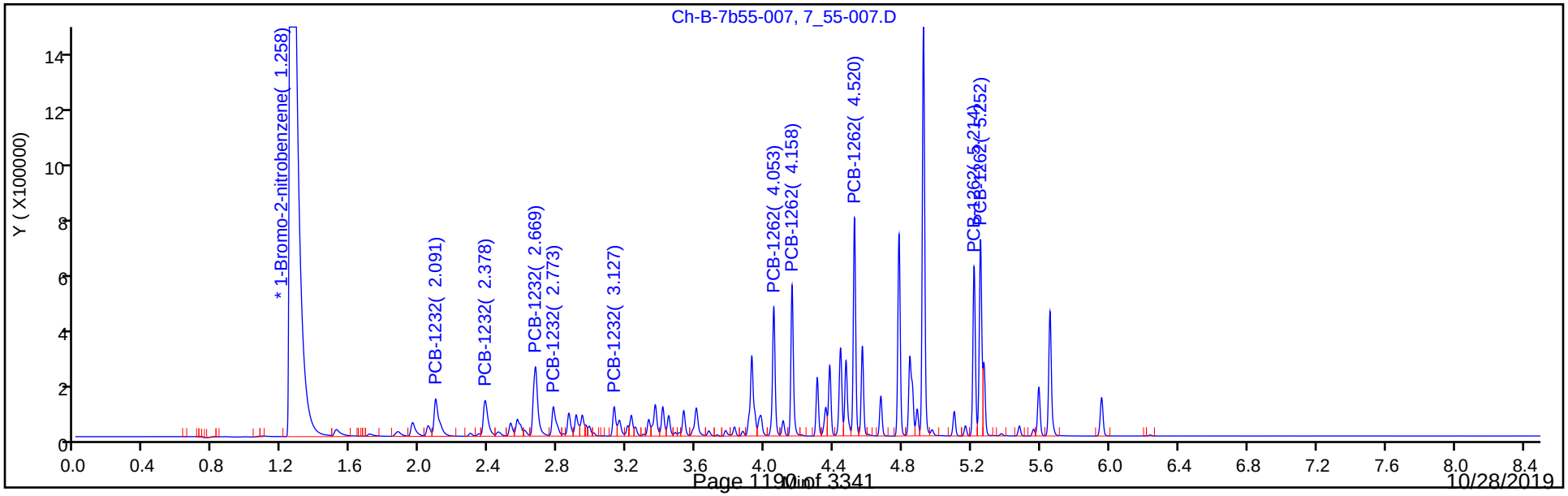
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-007.D

Injection Date:	27-Sep-2019 09:35:32	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/8 Calibration Date: 09/27/2019 09:47

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_55-008.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Ave	0.0193	0.0162		0.421	0.500	-15.8	20.0
PCB-1242 Peak 2	Ave	0.0383	0.0290		0.378	0.500	-24.3*	20.0
PCB-1242 Peak 3	Ave	0.0654	0.0607		0.464	0.500	-7.2	20.0
PCB-1242 Peak 4	Ave	0.0387	0.0301		0.390	0.500	-22.1*	20.0
PCB-1242 Peak 5	Ave	0.0306	0.0266		0.434	0.500	-13.3	20.0
PCB-1268 Peak 1	Ave	0.1820	0.1707		0.469	0.500	-6.2	20.0
PCB-1268 Peak 2	Ave	0.1788	0.1721		0.481	0.500	-3.7	20.0
PCB-1268 Peak 3	Ave	0.1485	0.1424		0.479	0.500	-4.1	20.0
PCB-1268 Peak 4	Ave	0.4680	0.4505		0.481	0.500	-3.7	20.0
PCB-1268 Peak 5	Lin1		0.0876		0.476	0.500	-4.7	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/8 Calibration Date: 09/27/2019 09:47

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_55-008.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	1.57	1.54	1.60
PCB-1242 Peak 2	1.78	1.75	1.81
PCB-1242 Peak 3	2.05	2.02	2.08
PCB-1242 Peak 4	2.11	2.08	2.14
PCB-1242 Peak 5	2.47	2.44	2.50
PCB-1268 Peak 1	4.43	4.40	4.46
PCB-1268 Peak 2	4.46	4.43	4.49
PCB-1268 Peak 3	4.68	4.65	4.71
PCB-1268 Peak 4	5.10	5.07	5.13
PCB-1268 Peak 5	5.33	5.30	5.36

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-008.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:47:55 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 13:14:31

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.957	0.957	0.000	6464560	0.5000	0.5000	
2	1.257	1.257	0.000	9452314	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.571	1.571	0.000	104839	0.5000	0.4212	
1	1.782	1.782	0.000	187394	0.5000	0.3783	
1	2.048	2.048	0.000	392358	0.5000	0.4640	
1	2.106	2.106	0.000	194750	0.5000	0.3896	
1	2.469	2.469	0.000	171672	0.5000	0.4336	
		Average of Peak Amounts =				0.4173	
2	2.093	2.093	0.000	187145	0.5000	0.4886	
2	2.378	2.378	0.000	376518	0.5000	0.5057	
2	2.670	2.670	0.000	796427	0.5000	0.4574	
2	2.774	2.774	0.000	306161	0.5000	0.4609	
2	3.366	3.366	0.000	310859	0.5000	0.4625	
		Average of Peak Amounts =				0.4750	
						RPD = 12.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.425	4.425	0.000	1103302	0.5000	0.4690	
1	4.463	4.463	0.000	1112573	0.5000	0.4813	
1	4.677	4.677	0.000	920373	0.5000	0.4795	
1	5.104	5.104	0.000	2912113	0.5000	0.4813	
1	5.327	5.327	0.000	566479	0.5000	0.4764	
		Average of Peak Amounts =				0.4775	
2	5.214	5.214	0.000	1410522	0.5000	0.4868	
2	5.252	5.252	0.000	1403478	0.5000	0.5060	
2	5.478	5.478	0.000	1121020	0.5000	0.4913	
2	5.955	5.955	0.000	3570107	0.5000	0.5121	
2	6.237	6.237	0.000	732275	0.5000	0.5525	
		Average of Peak Amounts =				0.5097	
						RPD = 6.53	

Reagents:

42-68w/IS@0.5_00058 Amount Added: 1.00 Units: mL

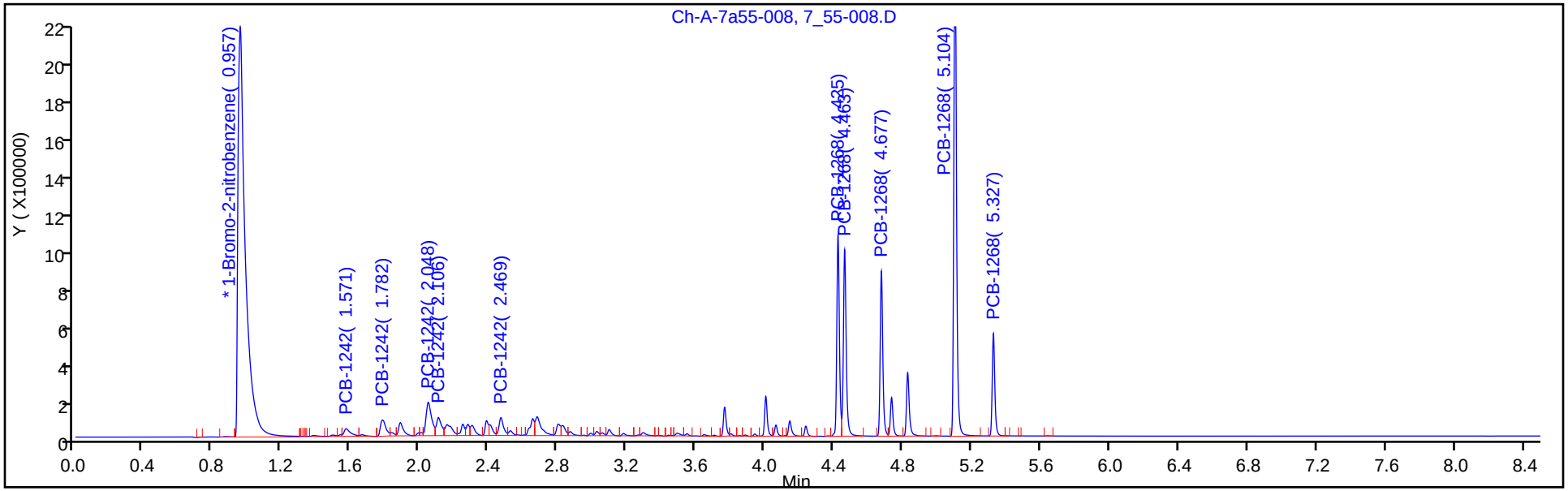
Report Date: 29-Sep-2019 14:17:43 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

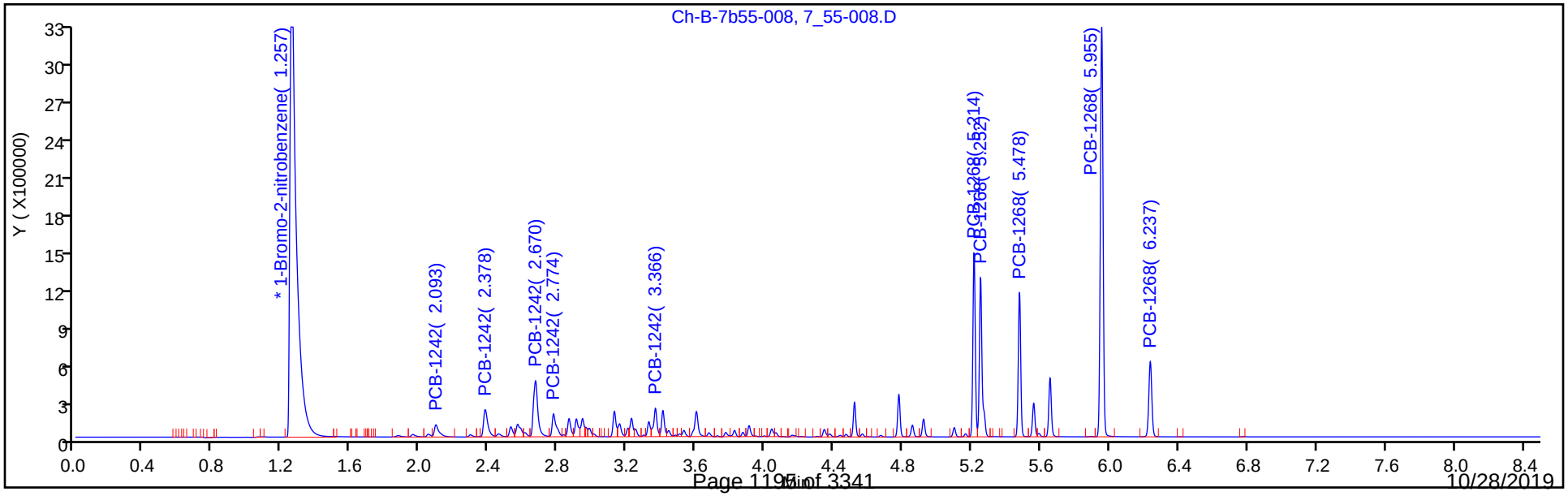
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-008.D

Injection Date:	27-Sep-2019 09:47:55	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/8 Calibration Date: 09/27/2019 09:47

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_55-008.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1242 Peak 1	Ave	0.0203	0.0198		0.489	0.500	-2.3	20.0
PCB-1242 Peak 2	Lin1		0.0398		0.506	0.500	1.1	20.0
PCB-1242 Peak 3	Ave	0.0921	0.0843		0.457	0.500	-8.5	20.0
PCB-1242 Peak 4	Ave	0.0351	0.0324		0.461	0.500	-7.8	20.0
PCB-1242 Peak 5	Ave	0.0356	0.0329		0.462	0.500	-7.5	20.0
PCB-1268 Peak 1	Ave	0.1533	0.1492		0.487	0.500	-2.6	20.0
PCB-1268 Peak 2	Ave	0.1467	0.1485		0.506	0.500	1.2	20.0
PCB-1268 Peak 3	Ave	0.1207	0.1186		0.491	0.500	-1.7	20.0
PCB-1268 Peak 4	Ave	0.3688	0.3777		0.512	0.500	2.4	20.0
PCB-1268 Peak 5	Lin1		0.0775		0.552	0.500	10.5	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/8 Calibration Date: 09/27/2019 09:47

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 00:03

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 00:35

Lab File ID: 7_55-008.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1242 Peak 1	2.09	2.06	2.12
PCB-1242 Peak 2	2.38	2.35	2.41
PCB-1242 Peak 3	2.67	2.64	2.70
PCB-1242 Peak 4	2.77	2.74	2.80
PCB-1242 Peak 5	3.37	3.34	3.40
PCB-1268 Peak 1	5.21	5.18	5.24
PCB-1268 Peak 2	5.25	5.22	5.28
PCB-1268 Peak 3	5.48	5.45	5.51
PCB-1268 Peak 4	5.96	5.93	5.99
PCB-1268 Peak 5	6.24	6.21	6.27

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-008.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 09:47:55 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub9

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:43 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: clarkda Date: 27-Sep-2019 13:14:31

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.957	0.957	0.000	6464560	0.5000	0.5000	
2	1.257	1.257	0.000	9452314	0.5000	0.5000	
						RPD = 0.00	
8 PCB-1242							
1	1.571	1.571	0.000	104839	0.5000	0.4212	
1	1.782	1.782	0.000	187394	0.5000	0.3783	
1	2.048	2.048	0.000	392358	0.5000	0.4640	
1	2.106	2.106	0.000	194750	0.5000	0.3896	
1	2.469	2.469	0.000	171672	0.5000	0.4336	
		Average of Peak Amounts =				0.4173	
2	2.093	2.093	0.000	187145	0.5000	0.4886	
2	2.378	2.378	0.000	376518	0.5000	0.5057	
2	2.670	2.670	0.000	796427	0.5000	0.4574	
2	2.774	2.774	0.000	306161	0.5000	0.4609	
2	3.366	3.366	0.000	310859	0.5000	0.4625	
		Average of Peak Amounts =				0.4750	
						RPD = 12.93	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
14 PCB-1268							
1	4.425	4.425	0.000	1103302	0.5000	0.4690	
1	4.463	4.463	0.000	1112573	0.5000	0.4813	
1	4.677	4.677	0.000	920373	0.5000	0.4795	
1	5.104	5.104	0.000	2912113	0.5000	0.4813	
1	5.327	5.327	0.000	566479	0.5000	0.4764	
		Average of Peak Amounts =				0.4775	
2	5.214	5.214	0.000	1410522	0.5000	0.4868	
2	5.252	5.252	0.000	1403478	0.5000	0.5060	
2	5.478	5.478	0.000	1121020	0.5000	0.4913	
2	5.955	5.955	0.000	3570107	0.5000	0.5121	
2	6.237	6.237	0.000	732275	0.5000	0.5525	
		Average of Peak Amounts =				0.5097	
						RPD = 6.53	

Reagents:

42-68w/IS@0.5_00058 Amount Added: 1.00 Units: mL

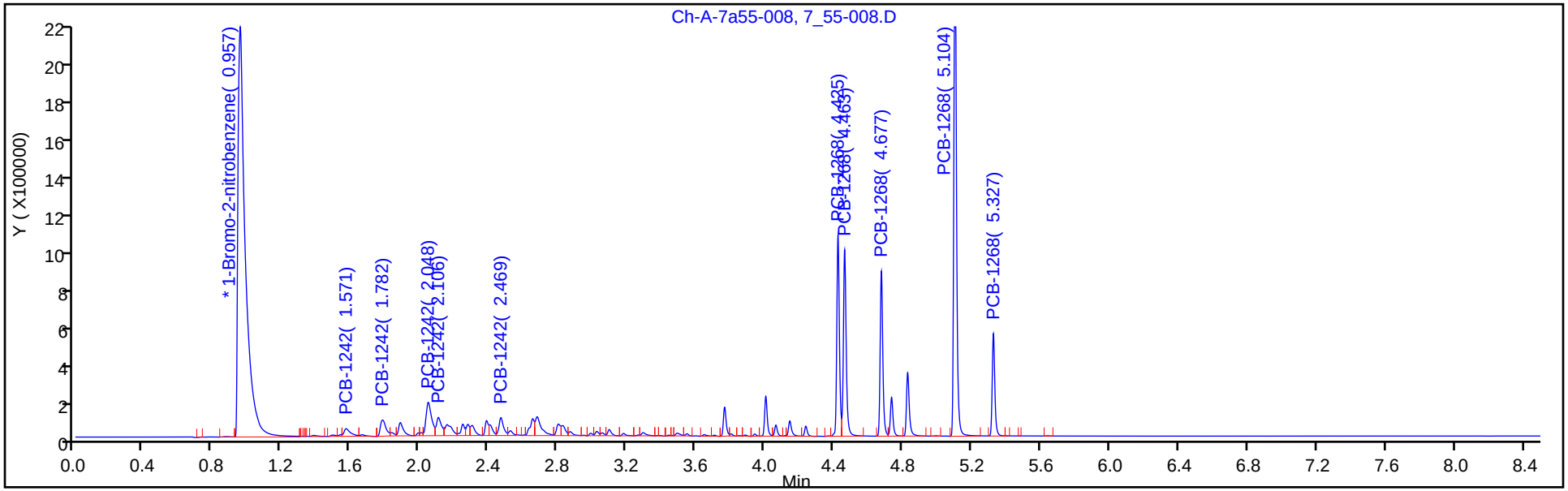
Report Date: 29-Sep-2019 14:17:45 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

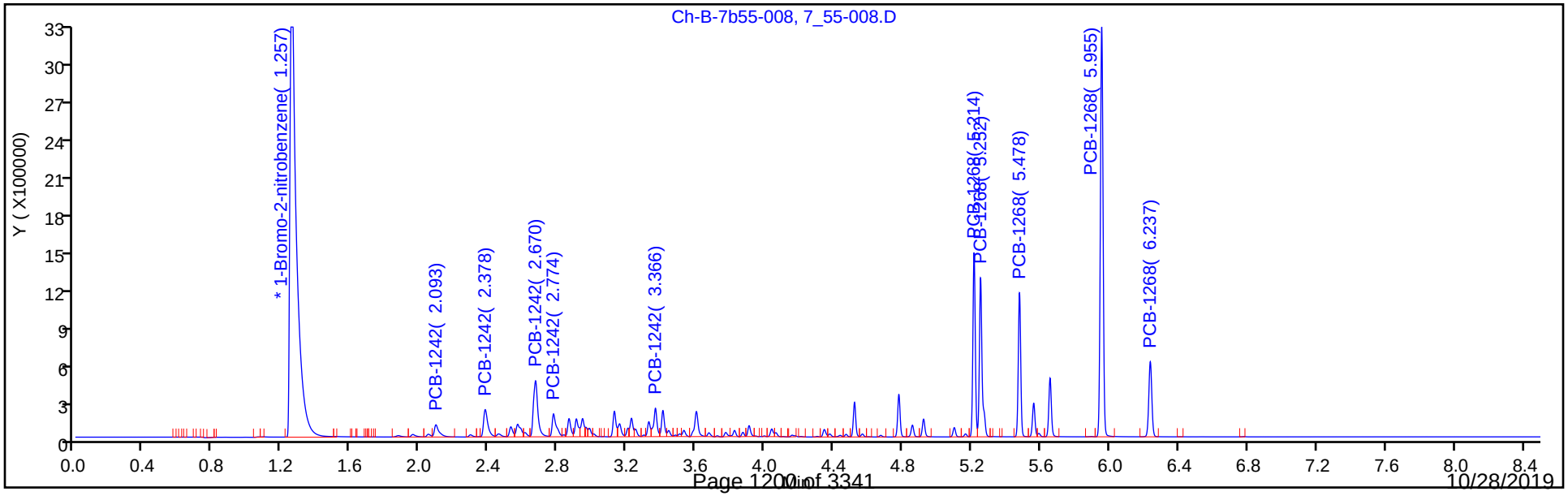
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-008.D

Injection Date:	27-Sep-2019 09:47:55	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/9 Calibration Date: 09/27/2019 10:00

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_55-009.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Lin1		0.0259		0.434	0.500	-13.3	20.0
PCB-1248 Peak 2	Lin1		0.0204		0.472	0.500	-5.7	20.0
PCB-1248 Peak 3	Lin1		0.0281		0.376	0.500	-24.9*	20.0
PCB-1248 Peak 4	Lin1		0.0421		0.476	0.500	-4.7	20.0
PCB-1248 Peak 5	Lin1		0.0245		0.447	0.500	-10.6	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/9 Calibration Date: 09/27/2019 10:00

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-5 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_55-009.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	2.25	2.22	2.28
PCB-1248 Peak 2	2.28	2.25	2.31
PCB-1248 Peak 3	2.38	2.35	2.41
PCB-1248 Peak 4	2.47	2.44	2.50
PCB-1248 Peak 5	3.10	3.07	3.13

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 10:00:19 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:53 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 10:22:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.955	0.955	0.000	6280655	0.5000	0.5000	
2	1.255	1.255	0.000	9226687	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.247	2.247	0.000	162581	0.5000	0.4335	M
1	2.276	2.276	0.000	128190	0.5000	0.4716	M
1	2.384	2.384	0.000	176582	0.5000	0.3756	M
1	2.468	2.468	0.000	264642	0.5000	0.4764	M
1	3.095	3.095	0.000	153752	0.5000	0.4468	M
		Average of Peak Amounts =				0.4408	
2	2.906	2.906	0.000	331962	0.5000	0.6034	
2	3.127	3.127	0.000	382684	0.5000	0.5532	
2	3.364	3.364	0.000	555189	0.5000	0.5964	
2	3.602	3.602	0.000	441239	0.5000	0.5915	M
2	3.908	3.908	0.000	259332	0.5000	0.5834	
		Average of Peak Amounts =				0.5856	
						RPD = 28.22	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ 0.5_00055 Amount Added: 1.00 Units: mL

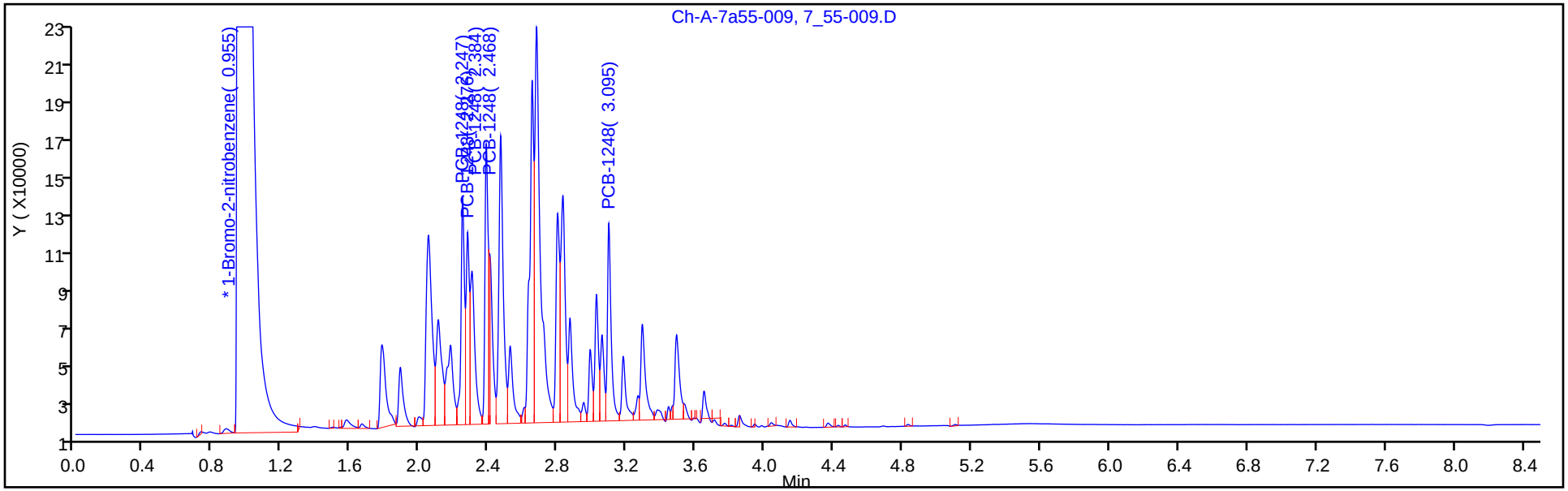
Report Date: 29-Sep-2019 14:17:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

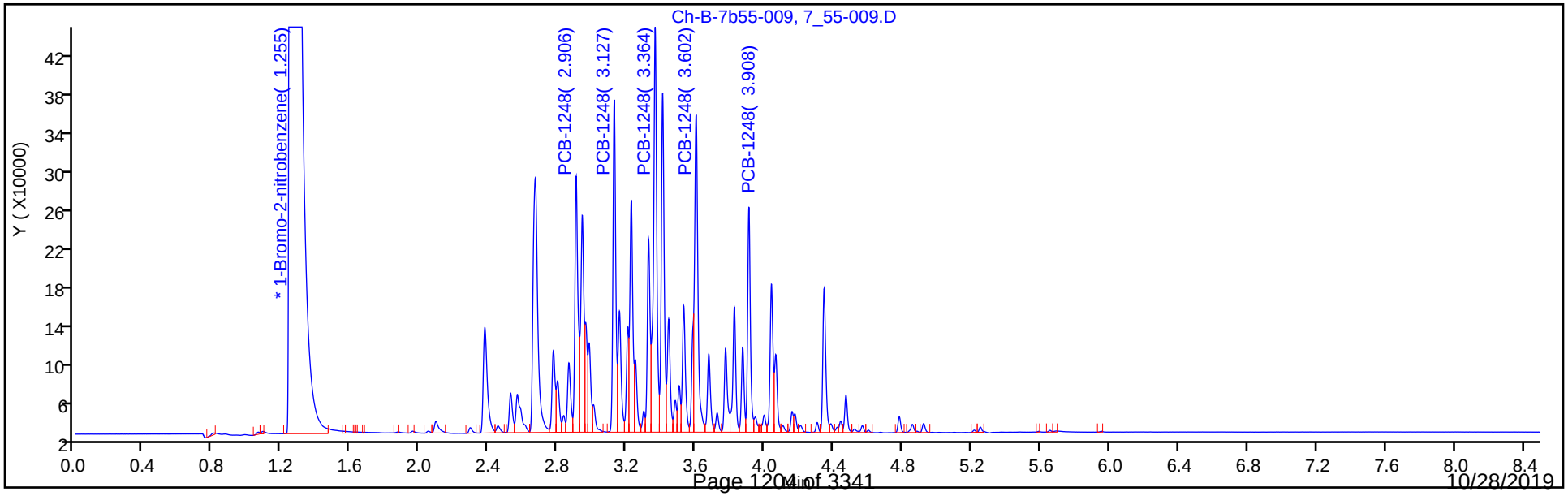
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D

Injection Date:	27-Sep-2019 10:00:19	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 29-Sep-2019 14:17:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D

Injection Date: 27-Sep-2019 10:00:19 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

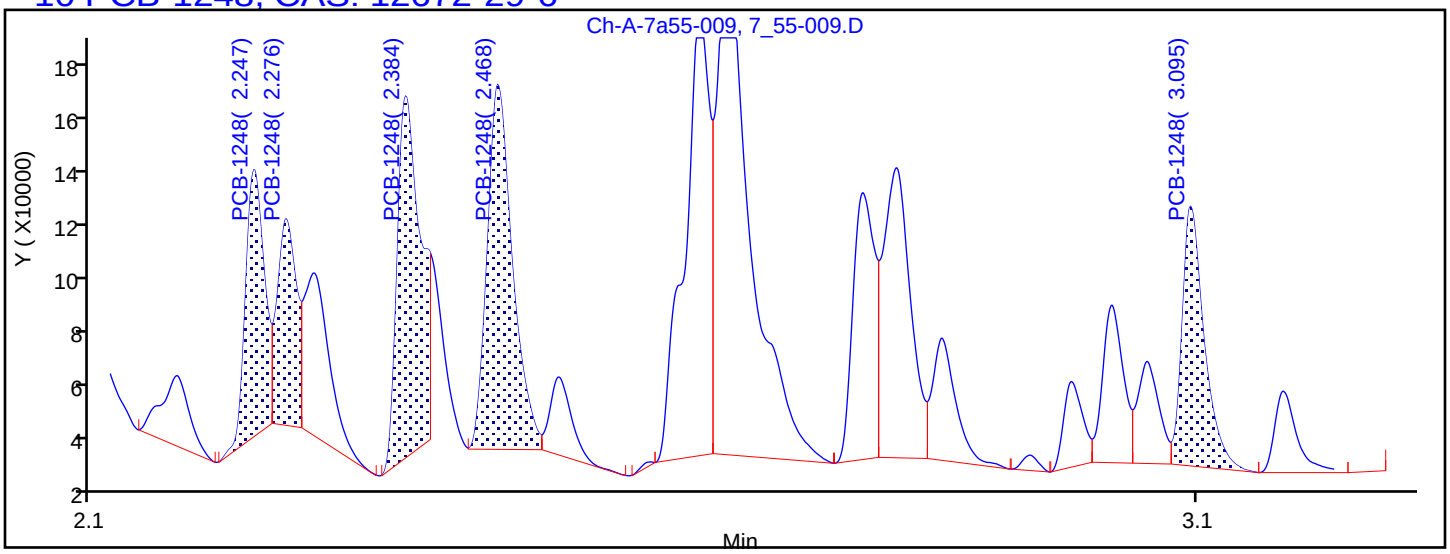
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 9

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

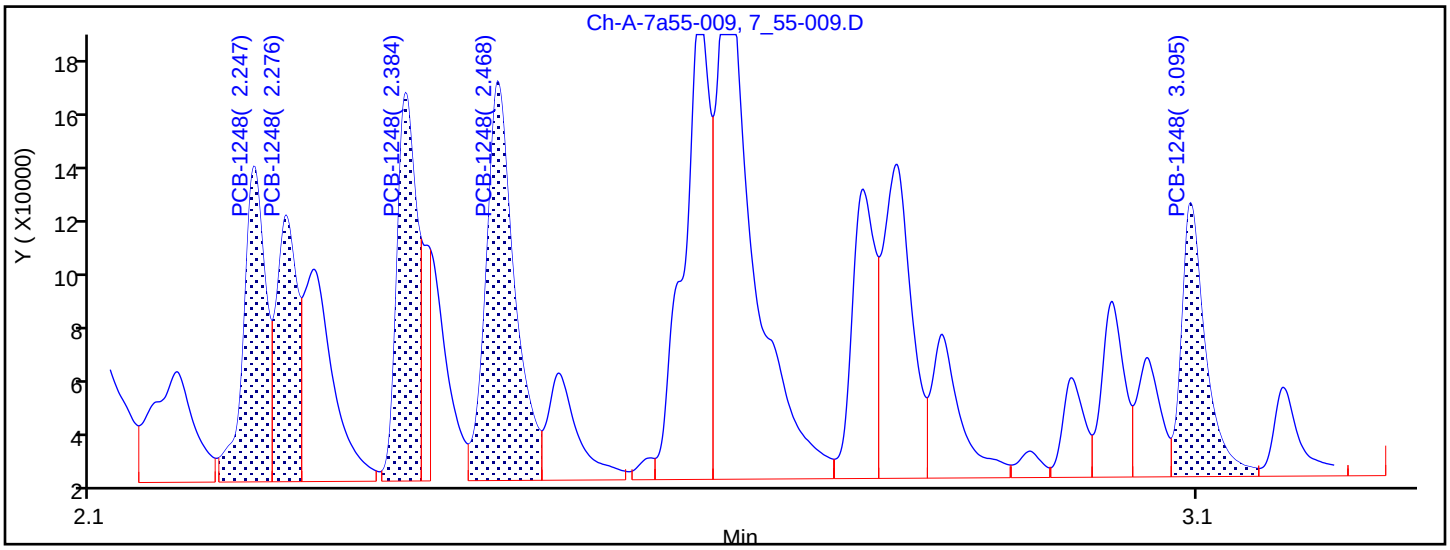
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.247	Response = 116571
2.276	Response = 92727
2.384	Response = 193223
2.468	Response = 212952
3.095	Response = 132275



Manual Integration Results

2.247	Response = 162581	M
2.276	Response = 128190	M
2.384	Response = 176582	M
2.468	Response = 264642	M
3.095	Response = 153752	M

Reviewer: salversonj, 27-Sep-2019 10:21:22

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM VII
PCBS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/9 Calibration Date: 09/27/2019 10:00

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_55-009.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
PCB-1248 Peak 1	Lin1		0.0360		0.603	0.500	20.7*	20.0
PCB-1248 Peak 2	Lin1		0.0415		0.553	0.500	10.6	20.0
PCB-1248 Peak 3	Lin1		0.0602		0.596	0.500	19.3	20.0
PCB-1248 Peak 4	Lin1		0.0478		0.592	0.500	18.3	20.0
PCB-1248 Peak 5	Lin1		0.0281		0.583	0.500	16.7	20.0

FORM VII
PCBS CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-494480/9 Calibration Date: 09/27/2019 10:00

Instrument ID: HP6890-7 Calib Start Date: 05/11/2019 01:06

GC Column: ZB-35 ID: 0.53(mm) Calib End Date: 05/11/2019 01:38

Lab File ID: 7_55-009.D

Analyte	RT	RT WINDOW	
		FROM	TO
PCB-1248 Peak 1	2.91	2.88	2.94
PCB-1248 Peak 2	3.13	3.10	3.16
PCB-1248 Peak 3	3.36	3.33	3.39
PCB-1248 Peak 4	3.60	3.57	3.63
PCB-1248 Peak 5	3.91	3.88	3.94

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 27-Sep-2019 10:00:19 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7
Sublist: chrom-7-IS PCB*sub10

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 29-Sep-2019 14:17:53 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0305

First Level Reviewer: salversonj Date: 27-Sep-2019 10:22:52

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.955	0.955	0.000	6280655	0.5000	0.5000	
2	1.255	1.255	0.000	9226687	0.5000	0.5000	
						RPD = 0.00	
10 PCB-1248							M
1	2.247	2.247	0.000	162581	0.5000	0.4335	M
1	2.276	2.276	0.000	128190	0.5000	0.4716	M
1	2.384	2.384	0.000	176582	0.5000	0.3756	M
1	2.468	2.468	0.000	264642	0.5000	0.4764	M
1	3.095	3.095	0.000	153752	0.5000	0.4468	M
		Average of Peak Amounts =				0.4408	
2	2.906	2.906	0.000	331962	0.5000	0.6034	
2	3.127	3.127	0.000	382684	0.5000	0.5532	
2	3.364	3.364	0.000	555189	0.5000	0.5964	
2	3.602	3.602	0.000	441239	0.5000	0.5915	M
2	3.908	3.908	0.000	259332	0.5000	0.5834	
		Average of Peak Amounts =				0.5856	
						RPD = 28.22	

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

1248w/IS@ 0.5_00055 Amount Added: 1.00 Units: mL

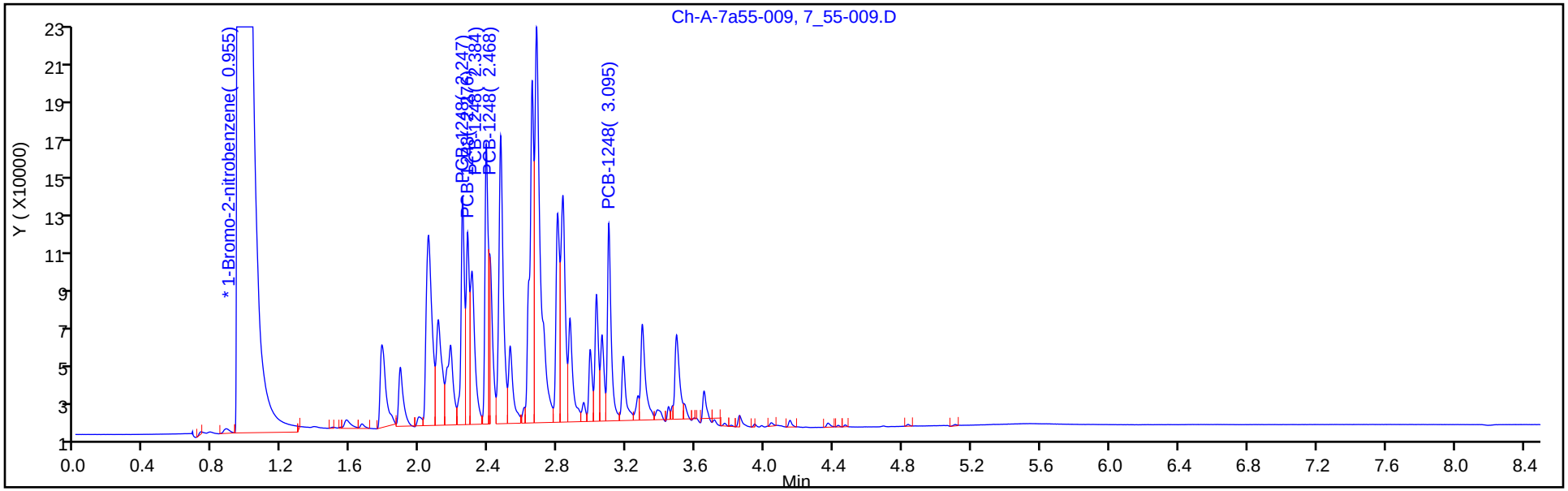
Report Date: 29-Sep-2019 14:17:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

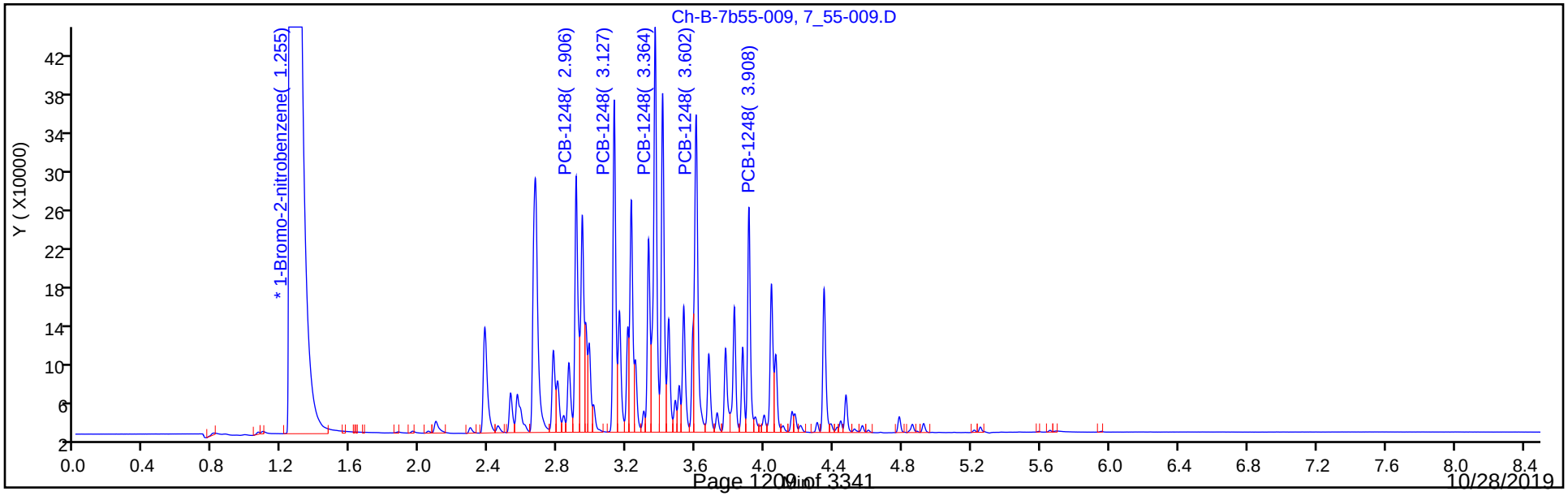
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D

Injection Date:	27-Sep-2019 10:00:19	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	CCV			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 29-Sep-2019 14:17:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190927-84522.b\7_55-009.D

Injection Date: 27-Sep-2019 10:00:19 Instrument ID: HP6890-7

Lims ID: CCV

Client ID:

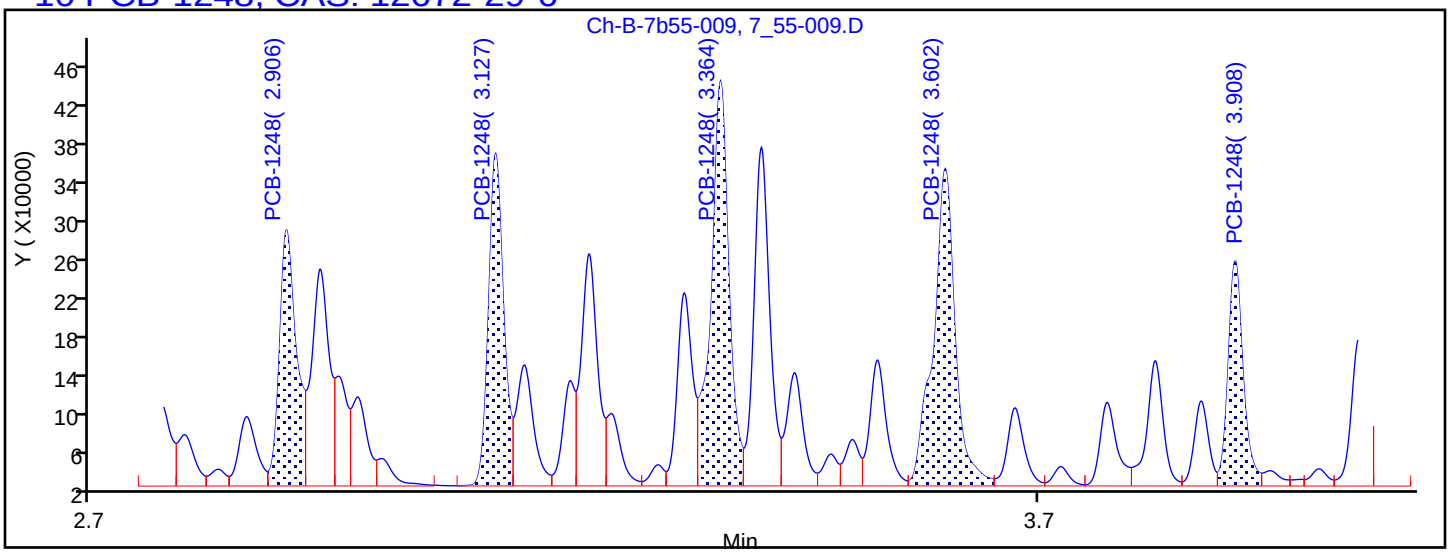
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 9

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

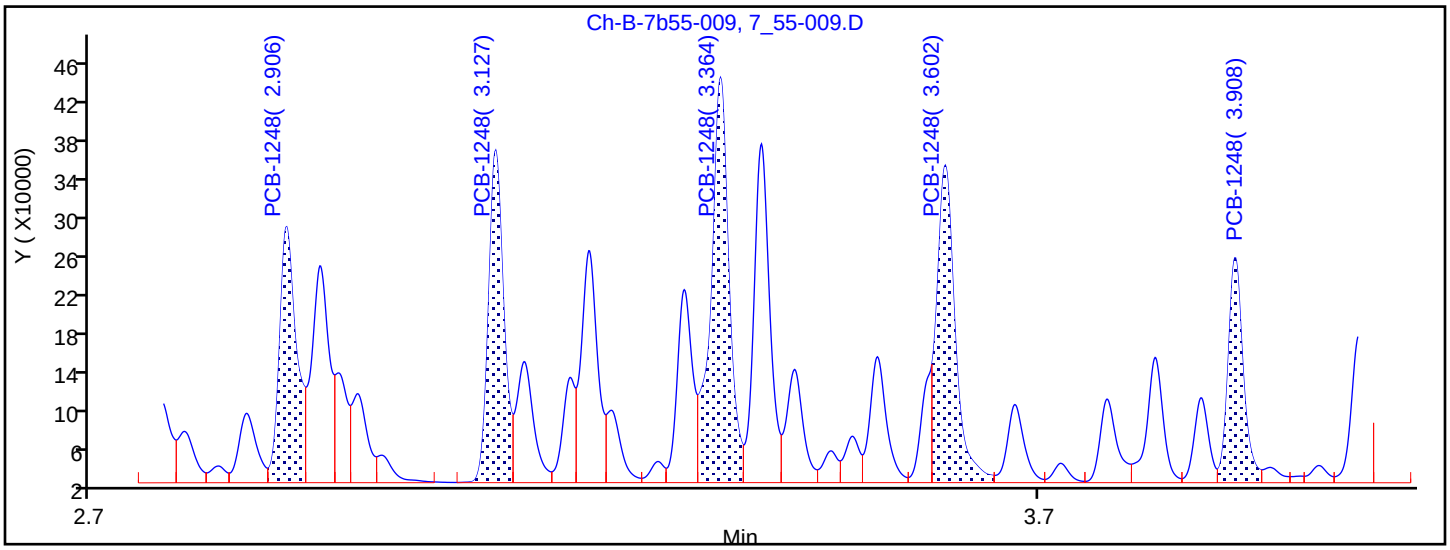
Column: ZB-35 (0.53 mm) Detector Ch-B-7b136

10 PCB-1248, CAS: 12672-29-6



Processing Integration Results

2.906	Response = 331962
3.127	Response = 382684
3.364	Response = 555189
3.602	Response = 528291
3.908	Response = 259332



Manual Integration Results

2.906	Response = 331962	
3.127	Response = 382684	
3.364	Response = 555189	
3.602	Response = 441239	M
3.908	Response = 259332	

Reviewer: salversonj, 27-Sep-2019 10:22:06

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493640/1-A

Matrix: Solid Lab File ID: 7_54-298.D

Analysis Method: 8082A Date Collected:

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.35(g) Date Analyzed: 09/25/2019 20:25

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	111		65-174
877-09-8	Tetrachloro-m-xylene	99		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-298.D
Lims ID: MB 480-493640/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Sep-2019 20:25:19 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:41:30

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.954	0.004	5193741	0.5000	0.5000	
2	1.258	1.253	0.005	7257338	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.407	1.401	0.006	270220	0.0200	0.0198	
2	1.743	1.737	0.006	434173	0.0200	0.0197	
						RPD = 0.68	
4 1260 Res 2							
1	4.448	4.444	0.015	1155		NC	
2	5.238	5.235	0.021	14583		NC	
$ 15 DCB Decachlorobiphenyl							
1	5.335	5.336	-0.001	250218	0.0200	0.0222	
2	6.243	6.242	0.000	252480	0.0200	0.0167	
						RPD = 28.23	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

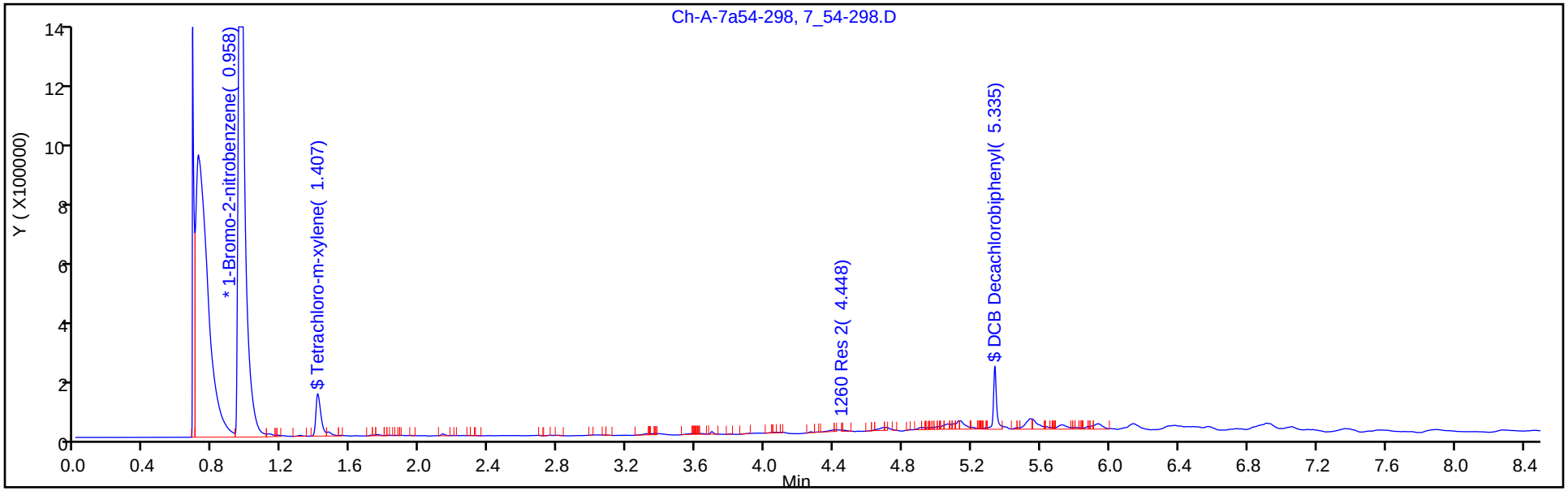
Report Date: 26-Sep-2019 15:10:15 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

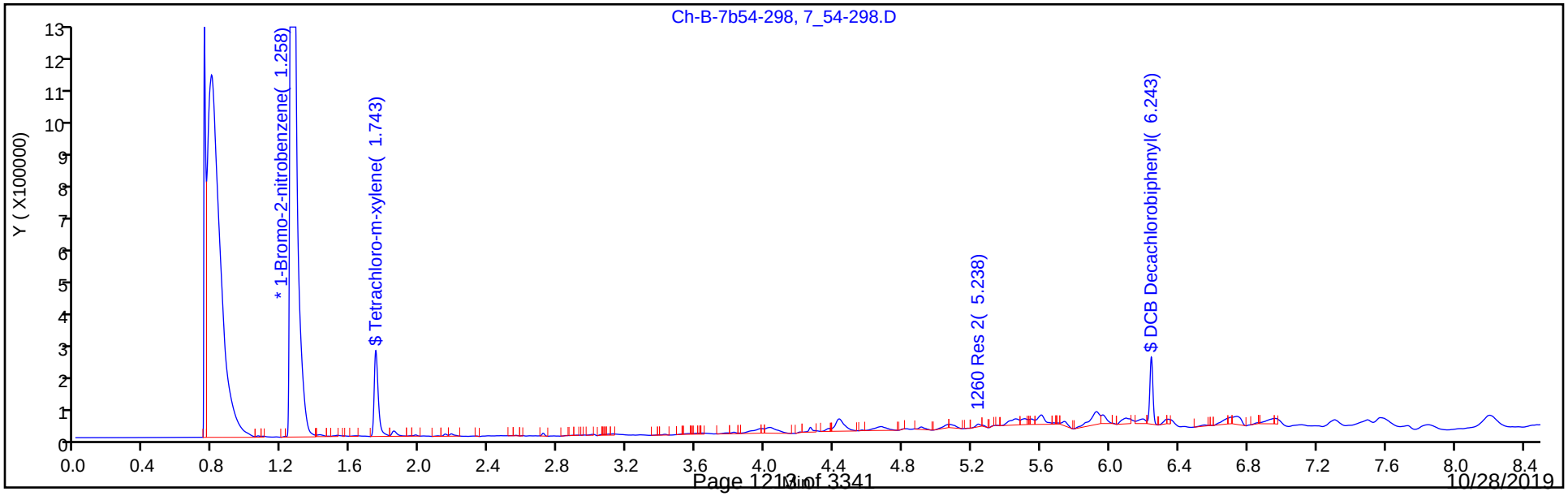
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-298.D

Injection Date:	25-Sep-2019 20:25:19	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	MB 480-493640/1-A			Worklist Smp#:	25
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493640/1-A

Matrix: Solid Lab File ID: 7_54-298.D

Analysis Method: 8082A Date Collected:

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.35(g) Date Analyzed: 09/25/2019 20:25

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	ND		0.21	0.042
11104-28-2	PCB-1221	ND		0.21	0.042
11141-16-5	PCB-1232	ND		0.21	0.042
53469-21-9	PCB-1242	ND		0.21	0.042
12672-29-6	PCB-1248	ND		0.21	0.042
11097-69-1	PCB-1254	ND		0.21	0.10
11096-82-5	PCB-1260	ND		0.21	0.10
37324-23-5	PCB-1262	ND		0.21	0.10
11100-14-4	PCB-1268	ND		0.21	0.10
1336-36-3	Polychlorinated biphenyls, Total	ND		0.21	0.10

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	84		65-174
877-09-8	Tetrachloro-m-xylene	98		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-298.D
Lims ID: MB 480-493640/1-A
Client ID:
Sample Type: MB
Inject. Date: 25-Sep-2019 20:25:19 ALS Bottle#: 0 Worklist Smp#: 25
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:41:30

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.958	0.954	0.004	5193741	0.5000	0.5000	
2	1.258	1.253	0.005	7257338	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.407	1.401	0.006	270220	0.0200	0.0198	
2	1.743	1.737	0.006	434173	0.0200	0.0197	
						RPD = 0.68	
4 1260 Res 2							
1	4.448	4.444	0.015	1155		NC	
2	5.238	5.235	0.021	14583		NC	
$ 15 DCB Decachlorobiphenyl							
1	5.335	5.336	-0.001	250218	0.0200	0.0222	
2	6.243	6.242	0.000	252480	0.0200	0.0167	
						RPD = 28.23	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

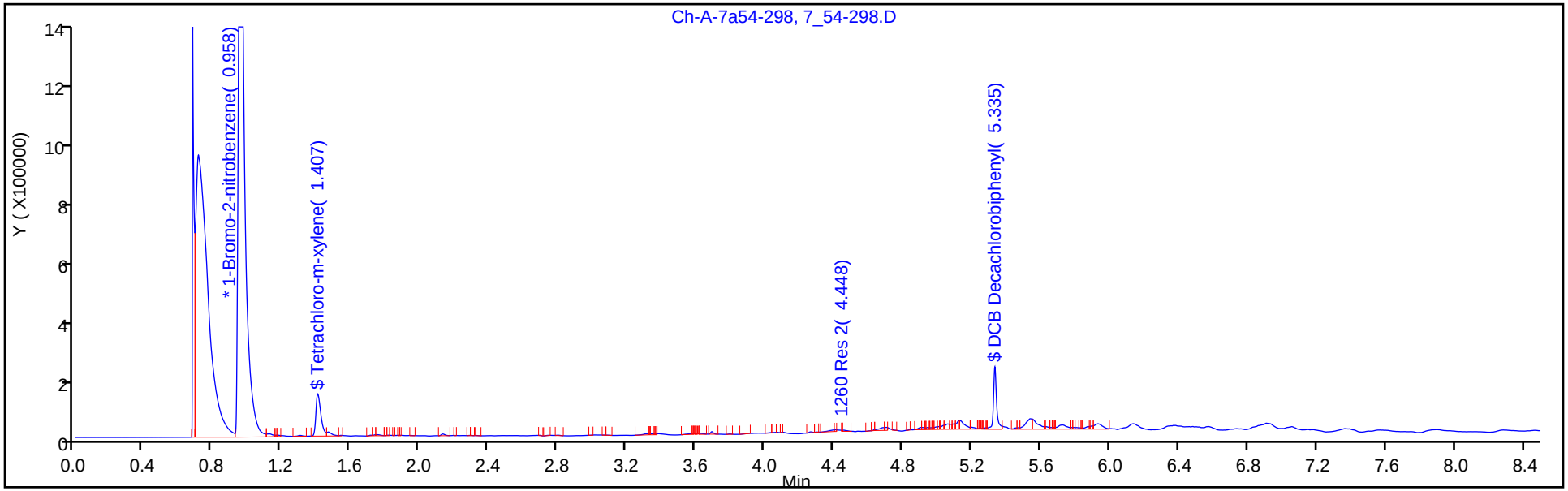
Report Date: 26-Sep-2019 15:10:16 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

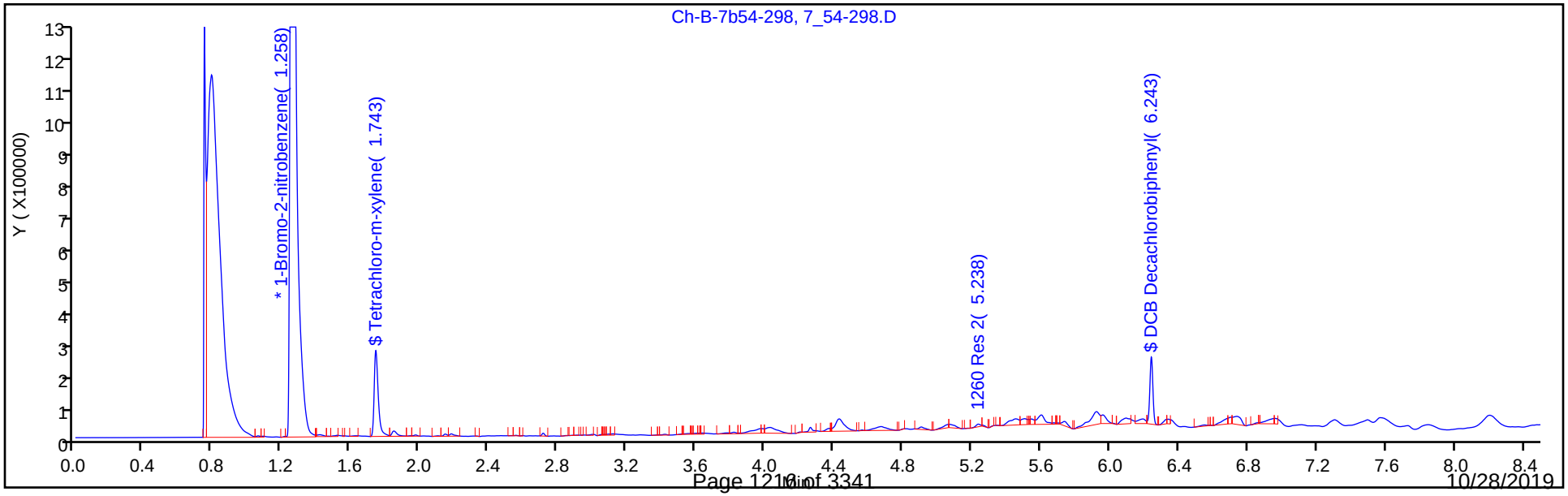
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-298.D

Injection Date:	25-Sep-2019 20:25:19	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	MB 480-493640/1-A			Worklist Smp#:	25
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493640/2-A

Matrix: Solid Lab File ID: 7_54-299.D

Analysis Method: 8082A Date Collected:

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.75(g) Date Analyzed: 09/25/2019 20:37

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-5 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	125		65-174
877-09-8	Tetrachloro-m-xylene	131		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-299.D
Lims ID: LCS 480-493640/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Sep-2019 20:37:56 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:42:13

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.963	0.954	0.008	5144635	0.5000	0.5000	
2	1.263	1.253	0.009	6980111	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.411	1.401	0.010	349171	0.0200	0.0261	
2	1.746	1.737	0.009	514111	0.0200	0.0242	
						RPD = 7.47	
9 PCB-1016							M
1	1.792	1.784	0.008	269164	0.5000	0.5666	
1	1.893	1.887	0.006	192410	0.5000	0.5509	
1	2.052	2.048	0.004	601537	0.5000	0.7093	
1	2.393	2.389	0.004	149157	0.5000	0.5780	M
1	2.475	2.473	0.003	193816	0.5000	0.4945	
		Average of Peak Amounts =				0.5799	
2	2.097	2.090	0.007	190342	0.5000	0.5504	
2	2.673	2.668	0.004	1018929	0.5000	0.6784	
2	2.777	2.773	0.005	368083	0.5000	0.6282	
2	2.866	2.863	0.003	227392	0.5000	0.6829	
2	3.130	3.126	0.004	310314	0.5000	0.6786	
		Average of Peak Amounts =				0.6437	
						RPD = 10.43	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.271	3.269	0.002	367174	0.5000	0.5765	
1	3.447	3.445	0.002	398417	0.5000	0.6123	
1	3.652	3.650	0.002	537566	0.5000	0.5991	
1	4.151	4.150	0.001	759831	0.5000	0.5868	
1	4.372	4.372	0.000	338227	0.5000	0.5141	
		Average of Peak Amounts =				0.5778	
2	4.056	4.053	0.004	516162	0.5000	0.5860	
2	4.162	4.159	0.003	597982	0.5000	0.5961	
2	4.474	4.473	0.002	414004	0.5000	0.4707	
2	4.783	4.781	0.001	420214	0.5000	0.5336	
2	4.924	4.923	0.001	1012475	0.5000	0.6234	
		Average of Peak Amounts =				0.5620	
						RPD = 2.77	
$ 15 DCB Decachlorobiphenyl							
1	5.336	5.336	0.000	276930	0.0200	0.0250	
2	6.243	6.242	0.000	336984	0.0200	0.0232	
						RPD = 7.22	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

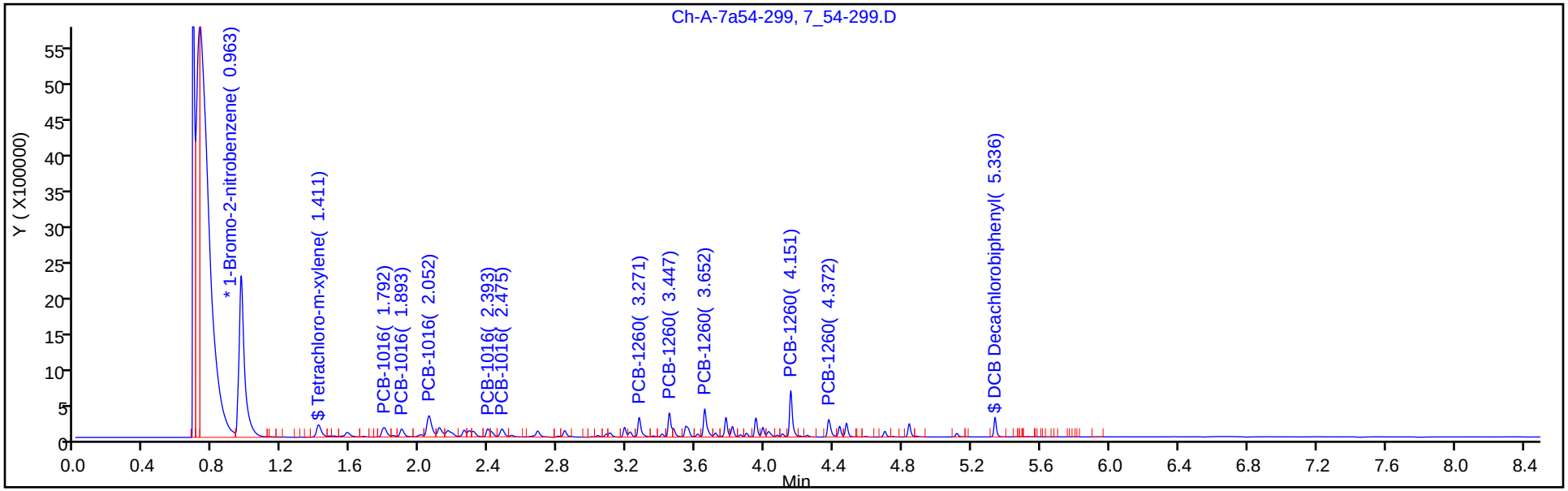
Report Date: 26-Sep-2019 15:10:17 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

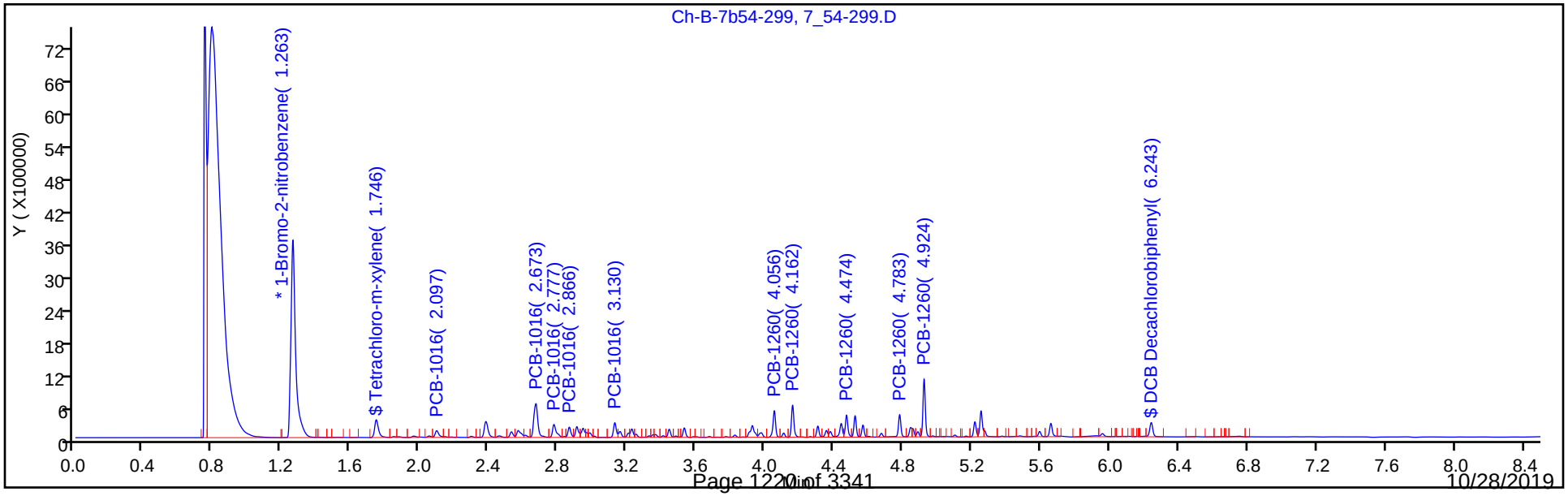
Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-299.D

Injection Date:	25-Sep-2019 20:37:56	Instrument ID:	HP6890-7	Operator ID:	BufTCHROM
Lims ID:	LCS 480-493640/2-A			Worklist Smp#:	26
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	7-IS PCB	Limit Group:	GC - 8082A PCB IS ICAL		

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Report Date: 26-Sep-2019 15:10:17 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-299.D

Injection Date: 25-Sep-2019 20:37:56 Instrument ID: HP6890-7

Lims ID: LCS 480-493640/2-A

Client ID:

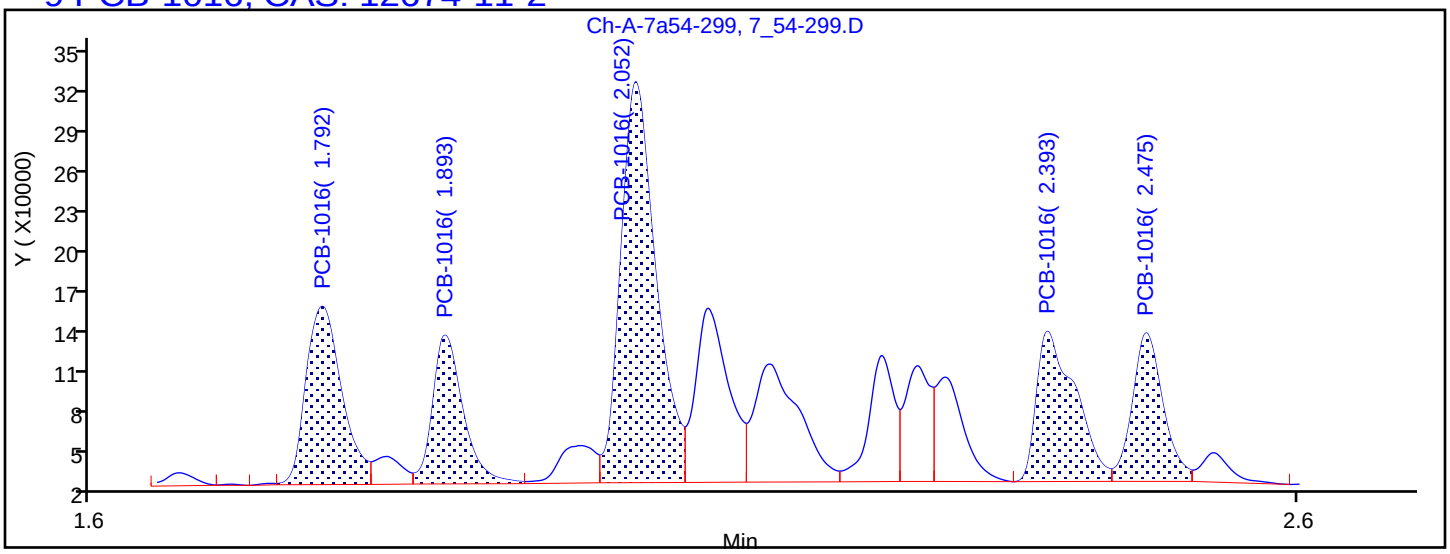
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 26

Injection Vol: 1.0 ul Dil. Factor: 1.0000

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

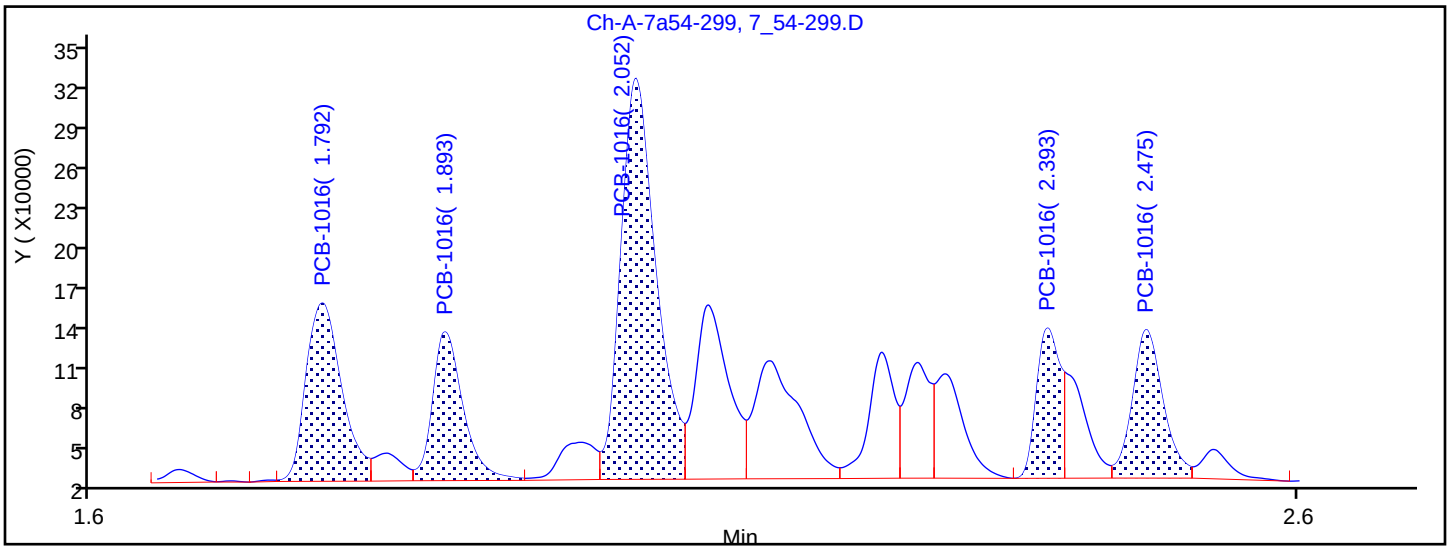
Column: ZB-5 (0.53 mm) Detector Ch-A-7A136

9 PCB-1016, CAS: 12674-11-2



Processing Integration Results

1.792	Response = 269164
1.893	Response = 192410
2.052	Response = 601537
2.393	Response = 245628
2.475	Response = 193816



Manual Integration Results

1.792	Response = 269164	
1.893	Response = 192410	
2.052	Response = 601537	
2.393	Response = 149157	M
2.475	Response = 193816	

Reviewer: clarkda, 26-Sep-2019 13:42:00

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM I
PCBS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493640/2-A

Matrix: Solid Lab File ID: 7_54-299.D

Analysis Method: 8082A Date Collected:

Extraction Method: 3550C Date Extracted: 09/24/2019 05:51

Sample wt/vol: 2.75(g) Date Analyzed: 09/25/2019 20:37

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: ZB-35 ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 494086 Units: mg/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
12674-11-2	PCB-1016	2.34		0.18	0.036
11096-82-5	PCB-1260	2.04		0.18	0.085
1336-36-3	Polychlorinated biphenyls, Total	4.38		0.18	0.085

CAS NO.	SURROGATE	%REC	Q	LIMITS
2051-24-3	DCB Decachlorobiphenyl	116		65-174
877-09-8	Tetrachloro-m-xylene	121		60-154

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-299.D
Lims ID: LCS 480-493640/2-A
Client ID:
Sample Type: LCS
Inject. Date: 25-Sep-2019 20:37:56 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP6890-7

Method: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7-IS PCB.m
Limit Group: GC - 8082A PCB IS ICAL
Last Update: 26-Sep-2019 15:05:17 Calib Date: 12-May-2019 16:32:12
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP6890-07\20190510-80985.b\7_42-293.D

Column 1 : ZB-5 (0.53 mm) Det: Ch-A-7A136
Column 2 : ZB-35 (0.53 mm) Det: Ch-B-7b136
Process Host: CTX0303

First Level Reviewer: clarkda Date: 26-Sep-2019 13:42:13

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
* 1 1-Bromo-2-nitrobenzene							
1	0.963	0.954	0.008	5144635	0.5000	0.5000	
2	1.263	1.253	0.009	6980111	0.5000	0.5000	
						RPD = 0.00	
$ 6 Tetrachloro-m-xylene							
1	1.411	1.401	0.010	349171	0.0200	0.0261	
2	1.746	1.737	0.009	514111	0.0200	0.0242	
						RPD = 7.47	
9 PCB-1016							M
1	1.792	1.784	0.008	269164	0.5000	0.5666	
1	1.893	1.887	0.006	192410	0.5000	0.5509	
1	2.052	2.048	0.004	601537	0.5000	0.7093	
1	2.393	2.389	0.004	149157	0.5000	0.5780	M
1	2.475	2.473	0.003	193816	0.5000	0.4945	
		Average of Peak Amounts =				0.5799	
2	2.097	2.090	0.007	190342	0.5000	0.5504	
2	2.673	2.668	0.004	1018929	0.5000	0.6784	
2	2.777	2.773	0.005	368083	0.5000	0.6282	
2	2.866	2.863	0.003	227392	0.5000	0.6829	
2	3.130	3.126	0.004	310314	0.5000	0.6786	
		Average of Peak Amounts =				0.6437	
						RPD = 10.43	

Col	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/uL	OnCol Amt ng/uL	Flags
12 PCB-1260							
1	3.271	3.269	0.002	367174	0.5000	0.5765	
1	3.447	3.445	0.002	398417	0.5000	0.6123	
1	3.652	3.650	0.002	537566	0.5000	0.5991	
1	4.151	4.150	0.001	759831	0.5000	0.5868	
1	4.372	4.372	0.000	338227	0.5000	0.5141	
		Average of Peak Amounts =				0.5778	
2	4.056	4.053	0.004	516162	0.5000	0.5860	
2	4.162	4.159	0.003	597982	0.5000	0.5961	
2	4.474	4.473	0.002	414004	0.5000	0.4707	
2	4.783	4.781	0.001	420214	0.5000	0.5336	
2	4.924	4.923	0.001	1012475	0.5000	0.6234	
		Average of Peak Amounts =				0.5620	
						RPD = 2.77	
$ 15 DCB Decachlorobiphenyl							
1	5.336	5.336	0.000	276930	0.0200	0.0250	
2	6.243	6.242	0.000	336984	0.0200	0.0232	
						RPD = 7.22	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

PCB IS 1B2NB_00055 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 26-Sep-2019 15:10:17 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

Data File: \\chromna\Buffalo\ChromData\HP6890-07\20190925-84471.b\7_54-299.D

Injection Date: 25-Sep-2019 20:37:56 Instrument ID: HP6890-7 Operator ID: BufTCHROM

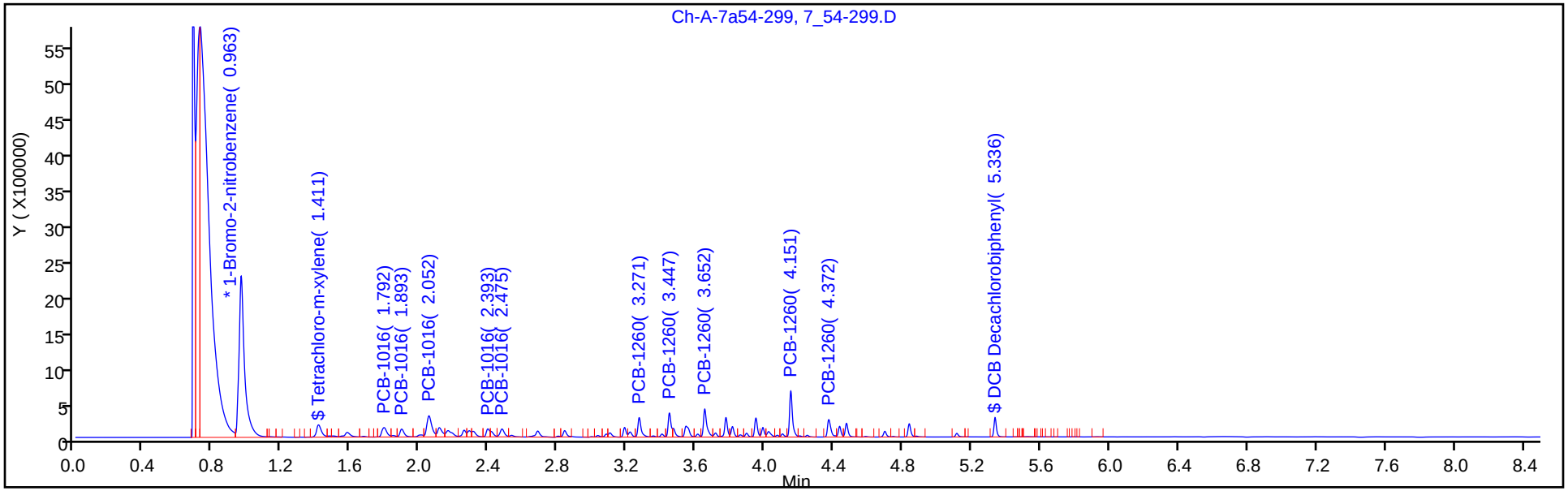
Lims ID: LCS 480-493640/2-A Worklist Smp#: 26

Client ID:

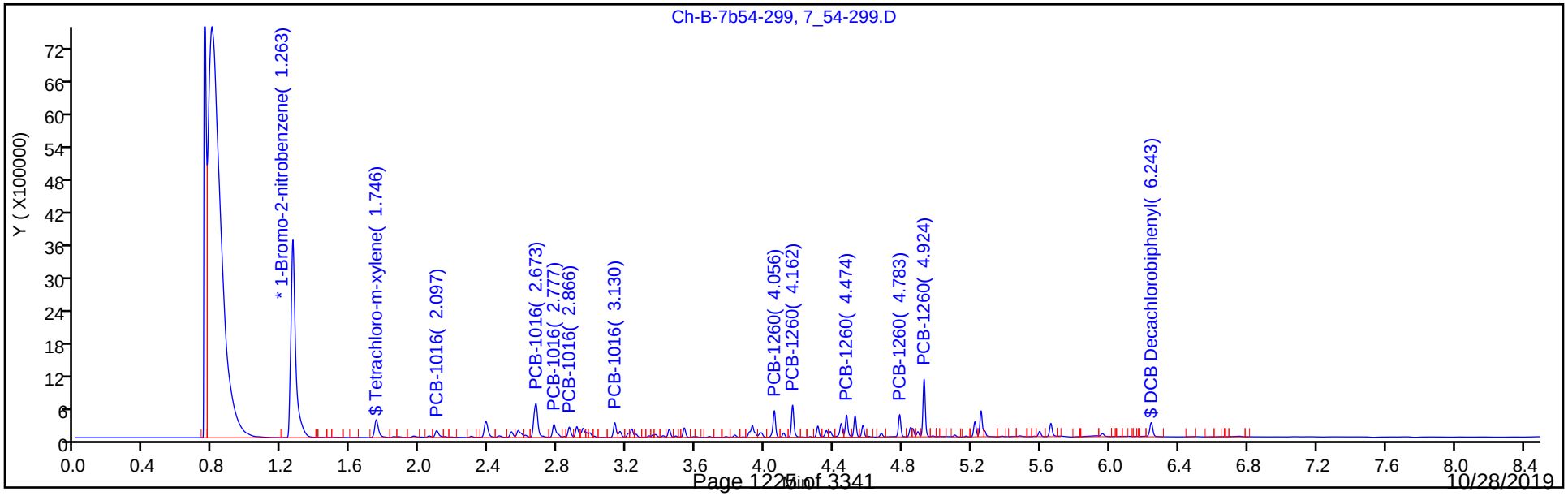
Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 7-IS PCB Limit Group: GC - 8082A PCB IS ICAL

Column: ZB-5 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



Column: ZB-35 (0.53 mm) Y Scaling: Method Defined: Scale to the Nth Largest Peak: 2



PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 05/10/2019 18:45

Analysis Batch Number: 472294 End Date: 05/12/2019 16:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 480-472294/21		05/10/2019 18:45	1	7_42-258.D	ZB-5 0.53(mm)
IC 480-472294/21		05/10/2019 18:45	1	7_42-258.D	ZB-35 0.53(mm)
IC 480-472294/22		05/10/2019 19:01	1	7_42-259.D	ZB-5 0.53(mm)
IC 480-472294/22		05/10/2019 19:01	1	7_42-259.D	ZB-35 0.53(mm)
ICIS 480-472294/23		05/10/2019 19:17	1	7_42-260.D	ZB-5 0.53(mm)
ICIS 480-472294/23		05/10/2019 19:17	1	7_42-260.D	ZB-35 0.53(mm)
IC 480-472294/24		05/10/2019 19:33	1	7_42-261.D	ZB-5 0.53(mm)
IC 480-472294/24		05/10/2019 19:33	1	7_42-261.D	ZB-35 0.53(mm)
IC 480-472294/25		05/10/2019 19:49	1	7_42-262.D	ZB-5 0.53(mm)
IC 480-472294/25		05/10/2019 19:49	1	7_42-262.D	ZB-35 0.53(mm)
IC 480-472294/26		05/10/2019 20:05	1	7_42-263.D	ZB-5 0.53(mm)
IC 480-472294/26		05/10/2019 20:05	1	7_42-263.D	ZB-35 0.53(mm)
IC 480-472294/27		05/10/2019 20:21	1	7_42-264.D	ZB-5 0.53(mm)
IC 480-472294/27		05/10/2019 20:21	1	7_42-264.D	ZB-35 0.53(mm)
ICV 480-472294/28		05/10/2019 20:36	1		ZB-5 0.53(mm)
ICV 480-472294/28		05/10/2019 20:36	1		ZB-35 0.53(mm)
CCV 480-472294/29		05/10/2019 20:52	1		ZB-5 0.53(mm)
CCV 480-472294/29		05/10/2019 20:52	1		ZB-35 0.53(mm)
IC 480-472294/33		05/10/2019 21:56	1	7_42-270.D	ZB-5 0.53(mm)
IC 480-472294/33		05/10/2019 21:56	1	7_42-270.D	ZB-35 0.53(mm)
IC 480-472294/34		05/10/2019 22:12	1	7_42-271.D	ZB-5 0.53(mm)
IC 480-472294/34		05/10/2019 22:12	1	7_42-271.D	ZB-35 0.53(mm)
IC 480-472294/35		05/10/2019 22:28	1	7_42-272.D	ZB-5 0.53(mm)
IC 480-472294/35		05/10/2019 22:28	1	7_42-272.D	ZB-35 0.53(mm)
ICV 480-472294/36		05/10/2019 22:43	1		ZB-5 0.53(mm)
ICV 480-472294/36		05/10/2019 22:43	1		ZB-35 0.53(mm)
IC 480-472294/41		05/11/2019 00:03	1	7_42-278.D	ZB-5 0.53(mm)
IC 480-472294/41		05/11/2019 00:03	1	7_42-278.D	ZB-35 0.53(mm)
IC 480-472294/42		05/11/2019 00:19	1	7_42-279.D	ZB-5 0.53(mm)
IC 480-472294/42		05/11/2019 00:19	1	7_42-279.D	ZB-35 0.53(mm)
IC 480-472294/43		05/11/2019 00:35	1	7_42-280.D	ZB-5 0.53(mm)
IC 480-472294/43		05/11/2019 00:35	1	7_42-280.D	ZB-35 0.53(mm)
ICV 480-472294/44		05/11/2019 00:50	1		ZB-5 0.53(mm)
ICV 480-472294/44		05/11/2019 00:50	1		ZB-35 0.53(mm)
IC 480-472294/45		05/11/2019 01:06	1	7_42-282.D	ZB-5 0.53(mm)
IC 480-472294/45		05/11/2019 01:06	1	7_42-282.D	ZB-35 0.53(mm)
IC 480-472294/46		05/11/2019 01:22	1	7_42-283.D	ZB-5 0.53(mm)
IC 480-472294/46		05/11/2019 01:22	1	7_42-283.D	ZB-35 0.53(mm)
IC 480-472294/47		05/11/2019 01:38	1	7_42-284.D	ZB-5 0.53(mm)
IC 480-472294/47		05/11/2019 01:38	1	7_42-284.D	ZB-35 0.53(mm)
ICV 480-472294/48		05/11/2019 01:54	1		ZB-5 0.53(mm)
ICV 480-472294/48		05/11/2019 01:54	1		ZB-35 0.53(mm)
IC 480-472294/54		05/12/2019 16:00	1	7_42-291.D	ZB-5 0.53(mm)
IC 480-472294/54		05/12/2019 16:00	1	7_42-291.D	ZB-35 0.53(mm)
IC 480-472294/55		05/12/2019 16:16	1	7_42-292.D	ZB-5 0.53(mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 05/10/2019 18:45

Analysis Batch Number: 472294 End Date: 05/12/2019 16:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 480-472294/55		05/12/2019 16:16	1	7_42-292.D	ZB-35 0.53(mm)
IC 480-472294/56		05/12/2019 16:32	1	7_42-293.D	ZB-5 0.53(mm)
IC 480-472294/56		05/12/2019 16:32	1	7_42-293.D	ZB-35 0.53(mm)
ICV 480-472294/57		05/12/2019 16:48	1		ZB-5 0.53(mm)
ICV 480-472294/57		05/12/2019 16:48	1		ZB-35 0.53(mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 09/25/2019 15:49

Analysis Batch Number: 494086 End Date: 09/26/2019 01:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVIS 480-494086/3		09/25/2019 15:49	1	7_54-276.D	ZB-5 0.53(mm)
CCVIS 480-494086/3		09/25/2019 15:49	1	7_54-276.D	ZB-35 0.53(mm)
CCV 480-494086/4		09/25/2019 16:01	1	7_54-277.D	ZB-5 0.53(mm)
CCV 480-494086/4		09/25/2019 16:01	1	7_54-277.D	ZB-35 0.53(mm)
CCV 480-494086/5		09/25/2019 16:13	1	7_54-278.D	ZB-5 0.53(mm)
CCV 480-494086/5		09/25/2019 16:13	1	7_54-278.D	ZB-35 0.53(mm)
CCV 480-494086/6		09/25/2019 16:26	1	7_54-279.D	ZB-5 0.53(mm)
CCV 480-494086/6		09/25/2019 16:26	1	7_54-279.D	ZB-35 0.53(mm)
CCV 480-494086/7		09/25/2019 16:38	1	7_54-280.D	ZB-5 0.53(mm)
CCV 480-494086/7		09/25/2019 16:38	1	7_54-280.D	ZB-35 0.53(mm)
ZZZZZ		09/25/2019 17:06	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 17:06	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 17:18	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 17:18	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 17:31	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 17:31	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 17:43	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 17:43	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 17:56	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 17:56	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 18:08	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 18:08	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 18:21	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 18:21	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 18:33	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 18:33	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 18:46	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 18:46	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 18:58	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 18:58	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 19:10	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 19:10	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 19:23	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 19:23	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 19:35	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 19:35	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 19:48	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 19:48	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 20:00	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 20:00	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 20:13	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 20:13	1		ZB-35 0.53(mm)
MB 480-493640/1-A		09/25/2019 20:25	1	7_54-298.D	ZB-5 0.53(mm)
MB 480-493640/1-A		09/25/2019 20:25	1	7_54-298.D	ZB-35 0.53(mm)
LCS 480-493640/2-A		09/25/2019 20:37	1	7_54-299.D	ZB-5 0.53(mm)

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PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 09/25/2019 15:49

Analysis Batch Number: 494086 End Date: 09/26/2019 01:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
LCS 480-493640/2-A		09/25/2019 20:37	1	7_54-299.D	ZB-35 0.53(mm)
ZZZZZ		09/25/2019 20:50	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 20:50	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 21:02	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 21:02	1		ZB-35 0.53(mm)
CCV 480-494086/29		09/25/2019 21:15	1	7_54-302.D	ZB-5 0.53(mm)
CCV 480-494086/29		09/25/2019 21:15	1	7_54-302.D	ZB-35 0.53(mm)
ZZZZZ		09/25/2019 21:40	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 21:40	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 21:52	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 21:52	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 22:04	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 22:04	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 22:17	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 22:17	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 22:29	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 22:29	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 22:42	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 22:42	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 22:54	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 22:54	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 23:07	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 23:07	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 23:19	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 23:19	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 23:31	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 23:31	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 23:44	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 23:44	1		ZB-35 0.53(mm)
ZZZZZ		09/25/2019 23:56	1		ZB-5 0.53(mm)
ZZZZZ		09/25/2019 23:56	1		ZB-35 0.53(mm)
480-159547-20		09/26/2019 00:09	1	7_54-316.D	ZB-5 0.53(mm)
480-159547-20		09/26/2019 00:09	1	7_54-316.D	ZB-35 0.53(mm)
ZZZZZ		09/26/2019 00:21	1		ZB-5 0.53(mm)
ZZZZZ		09/26/2019 00:21	1		ZB-35 0.53(mm)
ZZZZZ		09/26/2019 00:33	1		ZB-5 0.53(mm)
ZZZZZ		09/26/2019 00:33	1		ZB-35 0.53(mm)
ZZZZZ		09/26/2019 00:46	1		ZB-5 0.53(mm)
ZZZZZ		09/26/2019 00:46	1		ZB-35 0.53(mm)
ZZZZZ		09/26/2019 00:58	1		ZB-5 0.53(mm)
ZZZZZ		09/26/2019 00:58	1		ZB-35 0.53(mm)
ZZZZZ		09/26/2019 01:11	1		ZB-5 0.53(mm)
ZZZZZ		09/26/2019 01:11	1		ZB-35 0.53(mm)

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 09/27/2019 09:10

Analysis Batch Number: 494480 End Date: 09/28/2019 00:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVIS 480-494480/5		09/27/2019 09:10	1	7_55-005.D	ZB-5 0.53(mm)
CCVIS 480-494480/5		09/27/2019 09:10	1	7_55-005.D	ZB-35 0.53(mm)
CCV 480-494480/6		09/27/2019 09:23	1	7_55-006.D	ZB-5 0.53(mm)
CCV 480-494480/6		09/27/2019 09:23	1	7_55-006.D	ZB-35 0.53(mm)
CCV 480-494480/7		09/27/2019 09:35	1	7_55-007.D	ZB-5 0.53(mm)
CCV 480-494480/7		09/27/2019 09:35	1	7_55-007.D	ZB-35 0.53(mm)
CCV 480-494480/8		09/27/2019 09:47	1	7_55-008.D	ZB-5 0.53(mm)
CCV 480-494480/8		09/27/2019 09:47	1	7_55-008.D	ZB-35 0.53(mm)
CCV 480-494480/9		09/27/2019 10:00	1	7_55-009.D	ZB-5 0.53(mm)
CCV 480-494480/9		09/27/2019 10:00	1	7_55-009.D	ZB-35 0.53(mm)
ZZZZZ		09/27/2019 13:20	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 13:20	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 14:56	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 14:56	1		ZB-35 0.53(mm)
480-159547-7		09/27/2019 15:08	1	7_55-013.D	ZB-5 0.53(mm)
480-159547-7		09/27/2019 15:08	1	7_55-013.D	ZB-35 0.53(mm)
480-159547-8		09/27/2019 15:21	1	7_55-014.D	ZB-5 0.53(mm)
480-159547-8		09/27/2019 15:21	1	7_55-014.D	ZB-35 0.53(mm)
480-159547-18		09/27/2019 15:33	1	7_55-015.D	ZB-5 0.53(mm)
480-159547-18		09/27/2019 15:33	1	7_55-015.D	ZB-35 0.53(mm)
480-159547-19		09/27/2019 15:45	1	7_55-016.D	ZB-5 0.53(mm)
480-159547-19		09/27/2019 15:45	1	7_55-016.D	ZB-35 0.53(mm)
480-159547-30		09/27/2019 15:58	1	7_55-017.D	ZB-5 0.53(mm)
480-159547-30		09/27/2019 15:58	1	7_55-017.D	ZB-35 0.53(mm)
480-159547-31		09/27/2019 16:10	1	7_55-018.D	ZB-5 0.53(mm)
480-159547-31		09/27/2019 16:10	1	7_55-018.D	ZB-35 0.53(mm)
480-159547-32		09/27/2019 16:23	1	7_55-019.D	ZB-5 0.53(mm)
480-159547-32		09/27/2019 16:23	1	7_55-019.D	ZB-35 0.53(mm)
480-159547-39		09/27/2019 16:35	1	7_55-020.D	ZB-5 0.53(mm)
480-159547-39		09/27/2019 16:35	1	7_55-020.D	ZB-35 0.53(mm)
480-159547-40		09/27/2019 16:47	1	7_55-021.D	ZB-5 0.53(mm)
480-159547-40		09/27/2019 16:47	1	7_55-021.D	ZB-35 0.53(mm)
ZZZZZ		09/27/2019 17:00	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 17:00	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 17:12	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 17:12	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 17:25	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 17:25	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 17:37	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 17:37	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 17:49	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 17:49	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 18:02	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 18:02	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 18:14	1		ZB-5 0.53(mm)

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PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 09/27/2019 09:10

Analysis Batch Number: 494480 End Date: 09/28/2019 00:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		09/27/2019 18:14	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 18:27	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 18:27	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 18:39	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 18:39	1		ZB-35 0.53(mm)
CCV 480-494480/31		09/27/2019 18:51	1		ZB-5 0.53(mm)
CCV 480-494480/31		09/27/2019 18:51	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 19:16	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 19:16	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 19:28	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 19:28	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 19:41	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 19:41	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 19:53	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 19:53	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 20:06	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 20:06	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 20:18	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 20:18	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 20:31	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 20:31	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 20:43	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 20:43	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 20:55	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 20:55	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 21:08	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 21:08	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 21:20	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 21:20	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 21:32	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 21:32	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 21:45	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 21:45	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 21:57	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 21:57	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 22:10	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 22:10	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 22:22	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 22:22	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 22:34	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 22:34	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 22:47	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 22:47	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 22:59	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 22:59	1		ZB-35 0.53(mm)

8082A

PCBS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP6890-7 Start Date: 09/27/2019 09:10

Analysis Batch Number: 494480 End Date: 09/28/2019 00:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		09/27/2019 23:12	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 23:12	1		ZB-35 0.53(mm)
CCV 480-494480/53		09/27/2019 23:24	1		ZB-5 0.53(mm)
CCV 480-494480/53		09/27/2019 23:24	1		ZB-35 0.53(mm)
ZZZZZ		09/27/2019 23:49	1		ZB-5 0.53(mm)
ZZZZZ		09/27/2019 23:49	1		ZB-35 0.53(mm)
ZZZZZ		09/28/2019 00:01	1		ZB-5 0.53(mm)
ZZZZZ		09/28/2019 00:01	1		ZB-35 0.53(mm)
ZZZZZ		09/28/2019 00:14	1		ZB-5 0.53(mm)
ZZZZZ		09/28/2019 00:14	1		ZB-35 0.53(mm)
ZZZZZ		09/28/2019 00:26	1		ZB-5 0.53(mm)
ZZZZZ		09/28/2019 00:26	1		ZB-35 0.53(mm)

PCBS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493640 Batch Start Date: 09/24/19 05:51 Batch Analyst: Palermo, Stephan M

Batch Method: 3550C Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	O_8081/82surr 00126	O_8082spike 00072	AnalysisComment	
MB 480-493640/1		3550C, 8082A		2.35 g	10 mL	1 mL			
LCS 480-493640/2		3550C, 8082A		2.75 g	10 mL	1 mL	1 mL		
480-159547-F-7	RUSSO-TS-COMP 1	3550C, 8082A	T	2.12 g	10 mL	1 mL			
480-159547-D-8	RUSSO-TS-COMP 2	3550C, 8082A	T	2.75 g	10 mL	1 mL		decanted	
480-159547-D-18	RUSSO-CF-COMP 1	3550C, 8082A	T	2.45 g	10 mL	1 mL			
480-159547-D-19	RUSSO-CF-COMP 2	3550C, 8082A	T	2.89 g	10 mL	1 mL			
480-159547-E-20	RUSSO-CF-COMP 3	3550C, 8082A	T	2.56 g	10 mL	1 mL			
480-159547-E-30	GERNATT-CF-COMP 1	3550C, 8082A	T	2.88 g	10 mL	1 mL			
480-159547-D-31	GERNATT-CF-COMP 2	3550C, 8082A	T	2.85 g	10 mL	1 mL			
480-159547-E-32	GERNATT-CF-COMP 3	3550C, 8082A	T	2.27 g	10 mL	1 mL			
480-159547-F-39	GERNATT-TS-COMP 1	3550C, 8082A	T	2.15 g	10 mL	1 mL			
480-159547-F-40	GERNATT-TS-COMP 2	3550C, 8082A	T	2.26 g	10 mL	1 mL			

Batch Notes	
Acid used for Clean Up ID	5510050
Blank Matrix ID	5393118
Copper ID	5330325
Analyst ID - Clean Up	ES 9/24/19
Analyst ID - Extraction	SP, ES
Method/Fraction	3550C/8082A
Na2SO4 ID	5393118
Prep Solvent ID	5453121
Analyst ID - Spike Analyst	SP
Analyst ID - Spike Witness Analyst	SP
Sufficient Volume for Batch QC	Yes
Vial Lot Number	0103701

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PCBS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493640 Batch Start Date: 09/24/19 05:51 Batch Analyst: Palermo, Stephan M

Batch Method: 3550C Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method 8151A

Herbicides (GC) by Method 8151A

FORM II
HERBICIDES SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.32(mm)

Client Sample ID	Lab Sample ID	DCPAA1 #	DCPAA2 #
RUSSO-TS-COMP 1	480-159547-7	80	68
RUSSO-TS-COMP 2	480-159547-8	67	70
RUSSO-CF-COMP 1	480-159547-18	80	62
RUSSO-CF-COMP 2	480-159547-19	83	76
RUSSO-CF-COMP 3	480-159547-20	78	68
GERNATT-CF-COMP 1	480-159547-30	74	68
GERNATT-CF-COMP 2	480-159547-31	80	63
GERNATT-CF-COMP 3	480-159547-32	81	65
GERNATT-TS-COMP 1	480-159547-39	74	75
GERNATT-TS-COMP 2	480-159547-40	73	62
	MB 480-493889/1-A	83	68
	LCS 480-493889/2-A	80	72
RUSSO-TS-COMP 1 MS	480-159547-7 MS	89	76
RUSSO-TS-COMP 1 MSD	480-159547-7 MSD	81	75

	QC LIMITS
DCPAA = 2,4-Dichlorophenylacetic acid	28-129

Column to be used to flag recovery values

FORM II 8151A

FORM III
HERBICIDES LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 13_23-307.D

Lab ID: LCS 480-493889/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Silvex (2,4,5-TP)	65.5	54.8	84	39-125	

Column to be used to flag recovery and RPD values

FORM III 8151A

FORM III
HERBICIDES MATRIX SPIKE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 13_23-308.D

Lab ID: 480-159547-7 MS Client ID: RUSSO-TS-COMP 1 MS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	QC LIMITS REC	#
Silvex (2,4,5-TP)	84.2	ND	72.5	86	22-140	

Column to be used to flag recovery and RPD values

FORM III 8151A

FORM III
HERBICIDES MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 13_23-309.D

Lab ID: 480-159547-7 MSD Client ID: RUSSO-TS-COMP 1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Silvex (2,4,5-TP)	83.8	68.6	82	6	50	22-140	

Column to be used to flag recovery and RPD values

FORM III 8151A

FORM IV
HERBICIDES METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: MB 480-493889/1-A

Matrix: Solid Date Extracted: 09/25/2019 05:49

Lab File ID:(1) 13_23-306.D Lab File ID:(2) 13_23-306.D

Date Analyzed:(1) 10/01/2019 09:19 Date Analyzed:(2) 10/01/2019 09:19

Instrument ID:(1) HP5890-13 Instrument ID:(2) HP5890-13

GC Column:(1) RTX-CLPI ID: 0.53(mm) GC Column:(2) RTX-CLPII ID: 0.32(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 480-493889/2-A	10/01/2019 09:49	10/01/2019 09:49
RUSSO-TS-COMP 1 MS	480-159547-7 MS	10/01/2019 10:19	10/01/2019 10:19
RUSSO-TS-COMP 1 MSD	480-159547-7 MSD	10/01/2019 10:48	10/01/2019 10:48
RUSSO-TS-COMP 1	480-159547-7	10/01/2019 11:18	10/01/2019 11:18
RUSSO-TS-COMP 2	480-159547-8	10/01/2019 11:48	10/01/2019 11:48
RUSSO-CF-COMP 1	480-159547-18	10/01/2019 12:18	10/01/2019 12:18
RUSSO-CF-COMP 2	480-159547-19	10/01/2019 12:47	10/01/2019 12:47
RUSSO-CF-COMP 3	480-159547-20	10/01/2019 13:17	10/01/2019 13:17
GERNATT-CF-COMP 1	480-159547-30	10/01/2019 14:47	10/01/2019 14:47
GERNATT-CF-COMP 2	480-159547-31	10/01/2019 15:16	10/01/2019 15:16
GERNATT-CF-COMP 3	480-159547-32	10/01/2019 15:46	10/01/2019 15:46
GERNATT-TS-COMP 1	480-159547-39	10/01/2019 16:16	10/01/2019 16:16
GERNATT-TS-COMP 2	480-159547-40	10/01/2019 20:08	10/01/2019 20:08

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MS Lab Sample ID: 480-159547-7 MS

Instrument ID (1): HP5890-13 Instrument ID (2): HP5890-13

Date Analyzed (1): 10/01/2019 10:19 Date Analyzed (2): 10/01/2019 10:19

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Silvex (2,4,5-TP)	1		12.71	12.69	12.75	72.5		4.8
	2		14.63	14.60	14.66	69.1		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MSD Lab Sample ID: 480-159547-7 MSD

Instrument ID (1): HP5890-13 Instrument ID (2): HP5890-13

Date Analyzed (1): 10/01/2019 10:48 Date Analyzed (2): 10/01/2019 10:48

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Silvex (2,4,5-TP)	1		12.71	12.69	12.75	68.6		2.0
	2		14.63	14.60	14.66	70.0		

FORM X
IDENTIFICATION SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493889/2-A

Instrument ID (1): HP5890-13 Instrument ID (2): HP5890-13

Date Analyzed (1): 10/01/2019 09:49 Date Analyzed (2): 10/01/2019 09:49

GC Column (1): RTX-CLPI ID: 0.53(mm) GC Column (2): RTX-CLPII ID: 0.32(mm)

ANALYTE	COL	PEAK	RT	RT WINDOW		CONCENTRATION		RPD
				FROM	TO	PEAK	MEAN	
Silvex (2,4,5-TP)	1		12.71	12.69	12.75	54.8		0.1
	2		14.63	14.60	14.66	54.7		

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 13_23-310.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.24(g) Date Analyzed: 10/01/2019 11:18

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		21	7.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	80		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-310.D
Lims ID: 480-159547-E-7-F
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 11:18:41 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 12:30:15

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						M
1	10.533	10.540	-0.007	693926	0.3990	
2	11.887	11.893	-0.006	495754	0.3387	M
					RPD = 16.36	
4 Pentachlorophenol						
1	12.127	12.120	0.007	149818	0.0104	
2	14.080	14.093	-0.013	3901	0.000287	
					RPD = 189.27	
7 Picloram						
1	15.213	15.240	-0.027	56355	0.0106	
2	19.740	19.733	0.007	216821	0.0464	
					RPD = 125.78	

QC Flag Legend

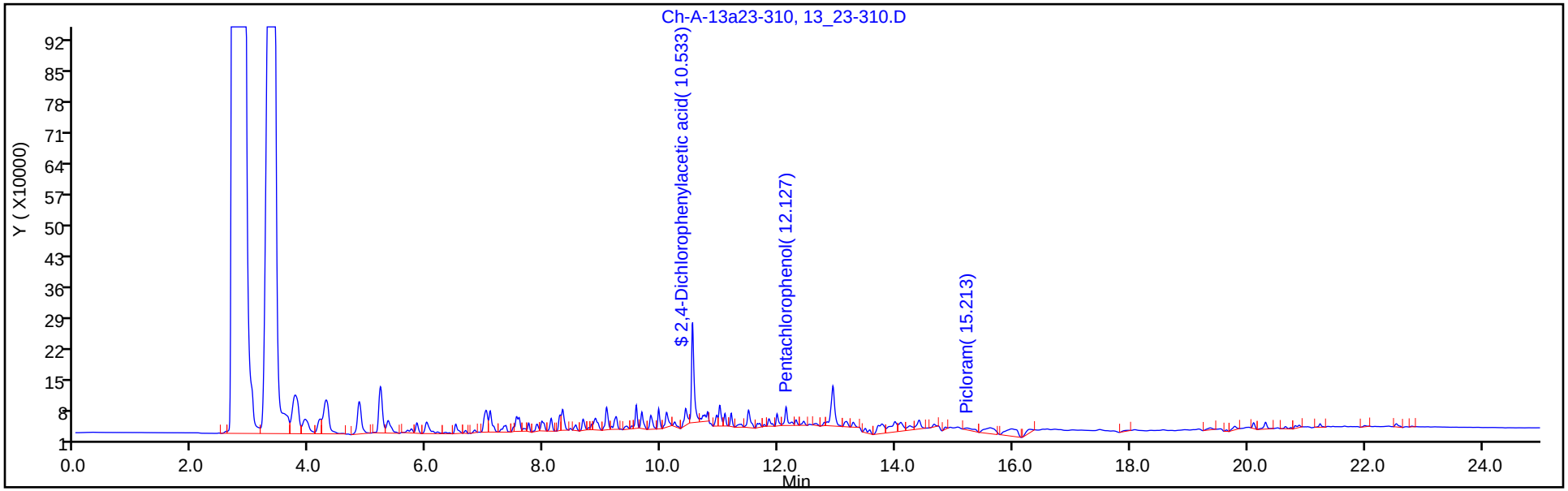
Review Flags
M - Manually Integrated

Report Date: 01-Oct-2019 14:18:42 Chrom Revision: 2.3 17-Sep-2019 16:19:08

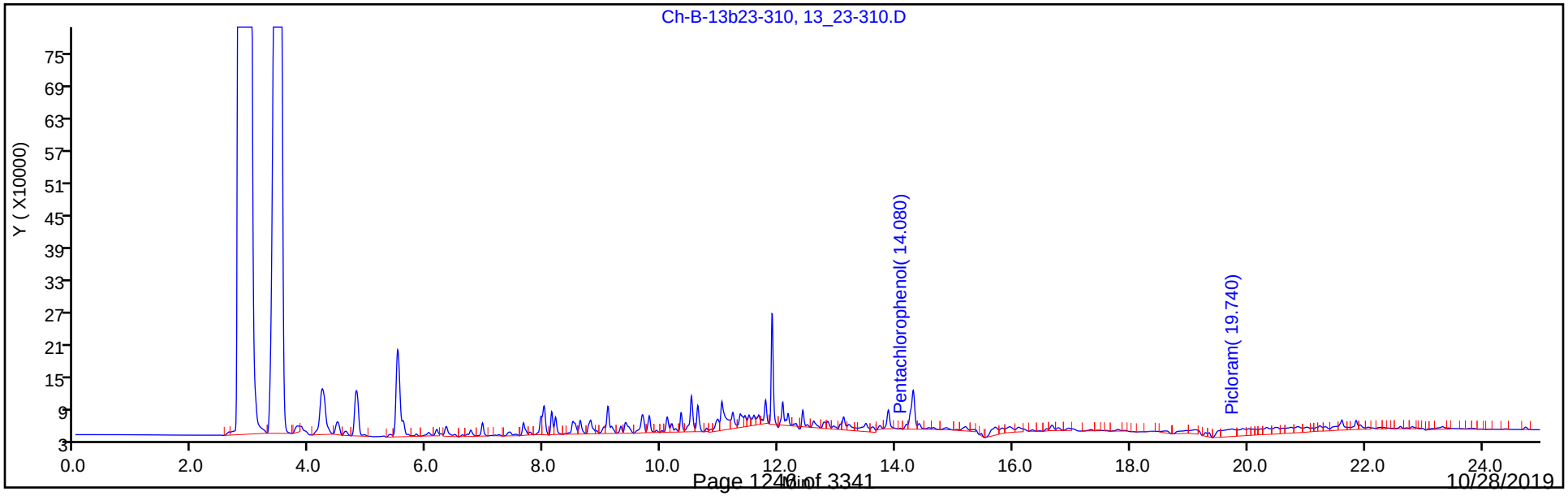
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-310.D				
Injection Date:	01-Oct-2019 11:18:41	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-F	Lab Sample ID:	480-159547-7	Worklist Smp#:	10
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 13_23-310.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.24(g) Date Analyzed: 10/01/2019 11:18

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	68		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-310.D
Lims ID: 480-159547-E-7-F
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 11:18:41 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 12:30:15

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						M
1	10.533	10.540	-0.007	693926	0.3990	
2	11.887	11.893	-0.006	495754	0.3387	M
					RPD = 16.36	
4 Pentachlorophenol						
1	12.127	12.120	0.007	149818	0.0104	
2	14.080	14.093	-0.013	3901	0.000287	
					RPD = 189.27	
7 Picloram						
1	15.213	15.240	-0.027	56355	0.0106	
2	19.740	19.733	0.007	216821	0.0464	
					RPD = 125.78	

QC Flag Legend

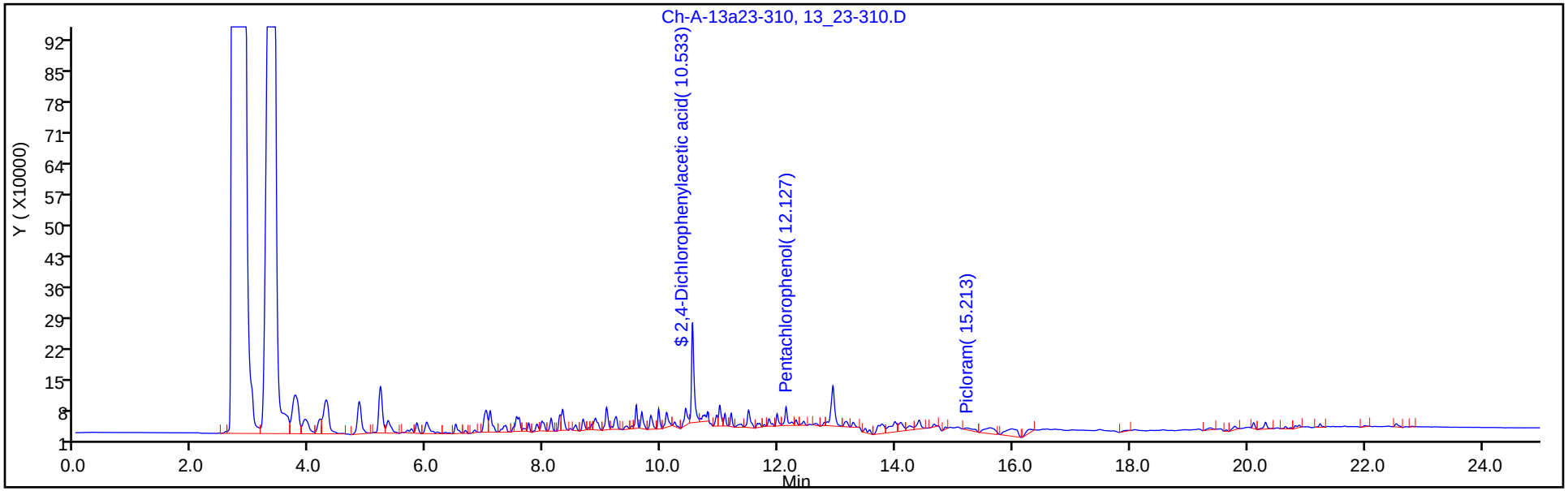
Review Flags
M - Manually Integrated

Report Date: 01-Oct-2019 14:18:42 Chrom Revision: 2.3 17-Sep-2019 16:19:08

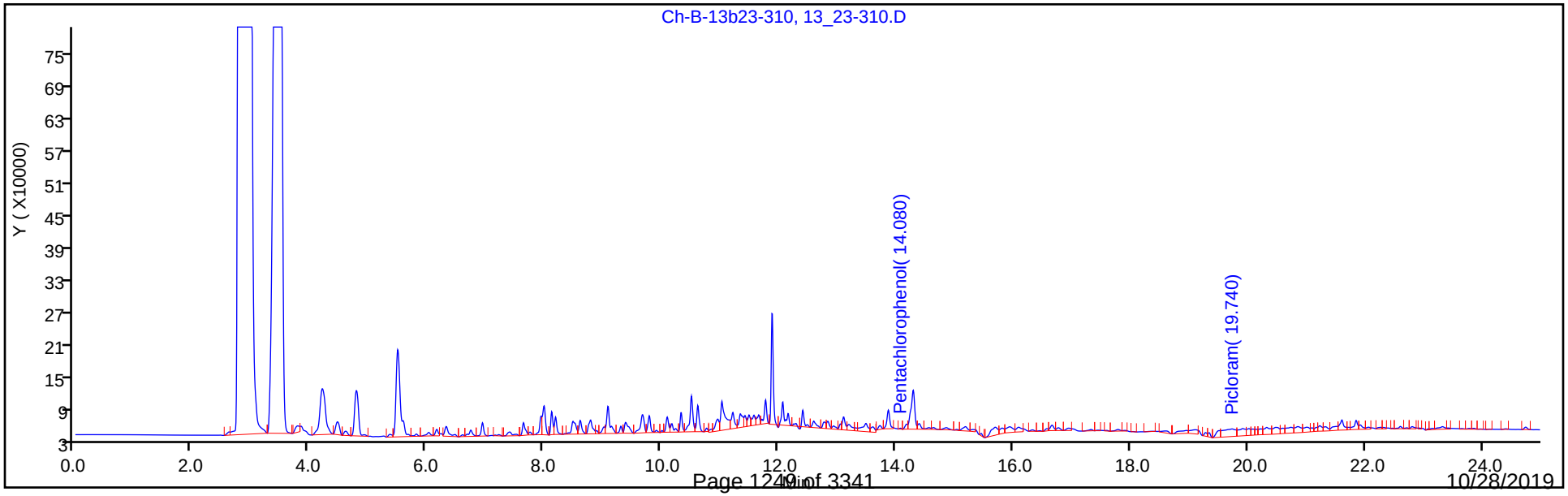
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-310.D				
Injection Date:	01-Oct-2019 11:18:41	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-F	Lab Sample ID:	480-159547-7	Worklist Smp#:	10
Client ID:	RUSSO-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

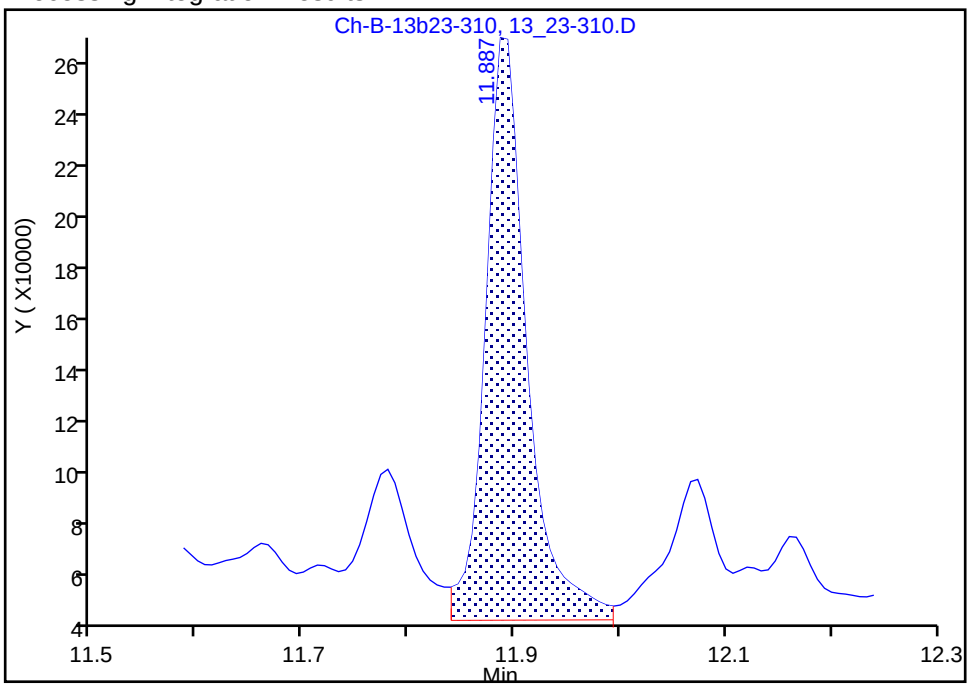
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-310.D				
Injection Date:	01-Oct-2019 11:18:41	Instrument ID:	HP5890-13		
Lims ID:	480-159547-E-7-F	Lab Sample ID:	480-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

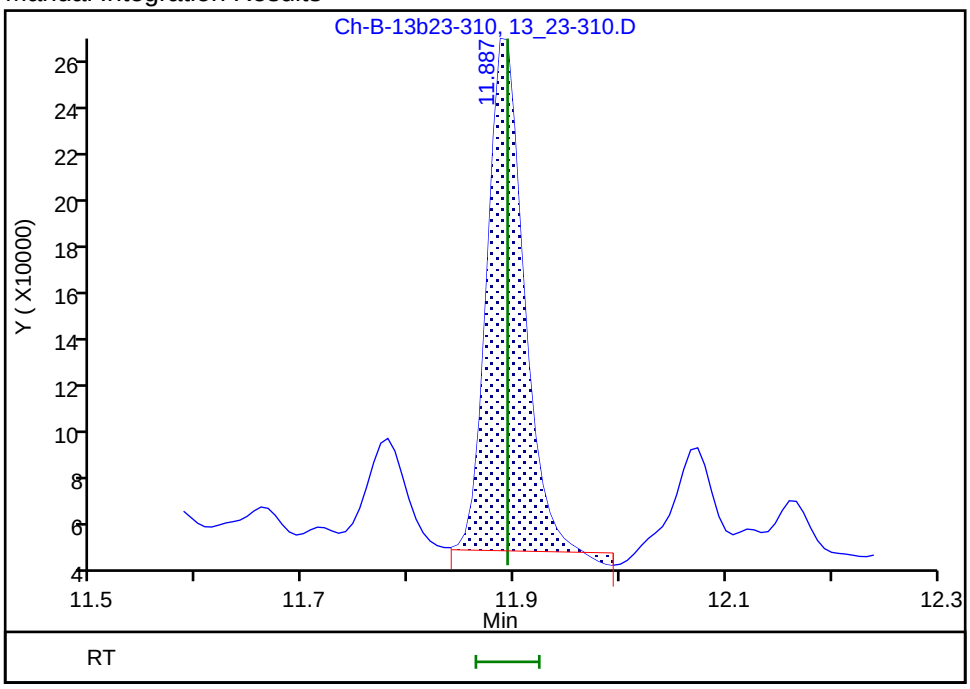
Processing Integration Results

RT: 11.89
Area: 595657
Amount: 0.406945
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 495754
Amount: 0.338693
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 12:29:57

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 13_23-311.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:40

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.38(g) Date Analyzed: 10/01/2019 11:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		23	8.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	67		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-311.D				
Lims ID:	480-159547-F-8-B				
Client ID:	RUSSO-TS-COMP 2				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 11:48:28	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

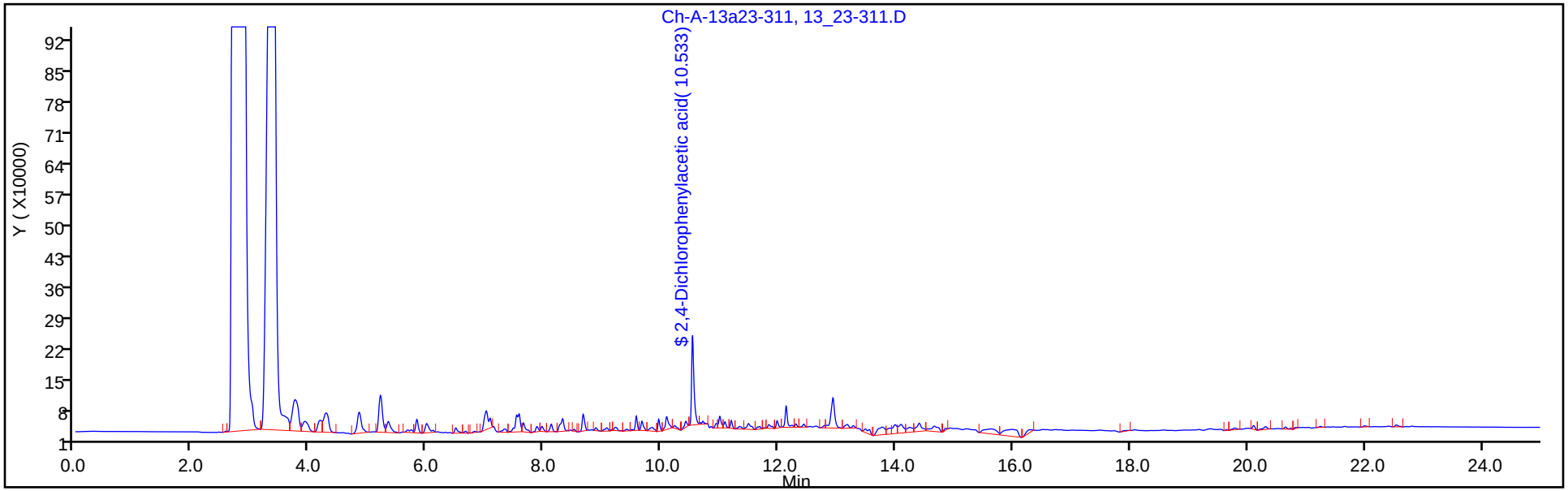
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	580982	0.3341	
2	11.887	11.893	-0.006	512619	0.3502	
					RPD = 4.71	

Report Date: 01-Oct-2019 14:18:45 Chrom Revision: 2.3 17-Sep-2019 16:19:08

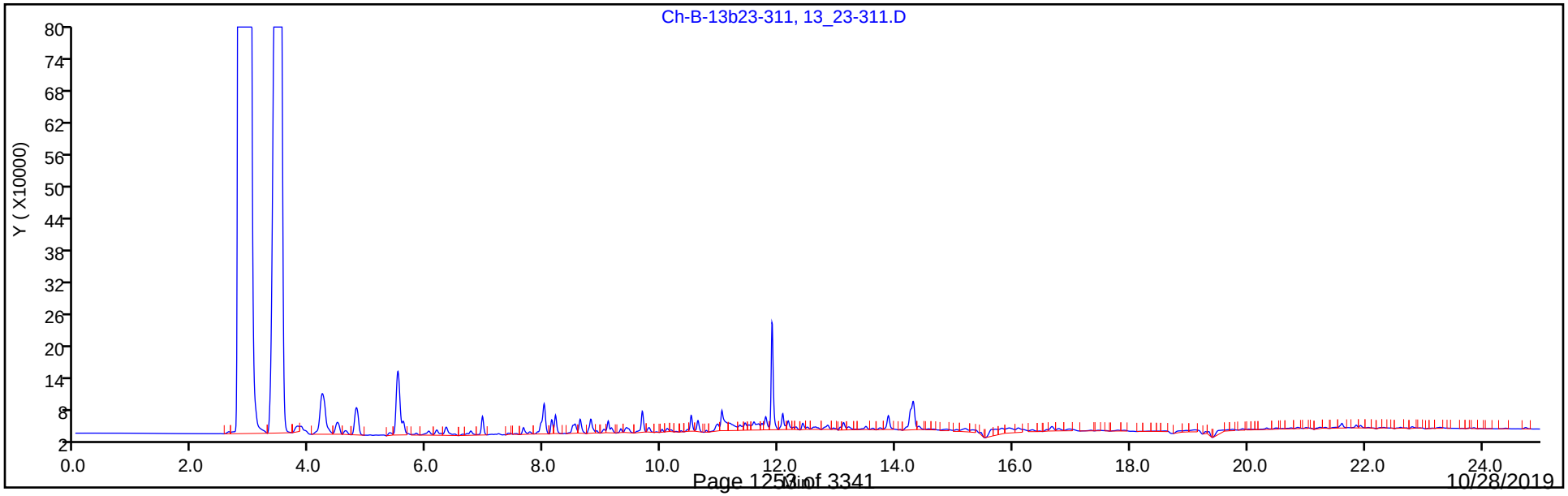
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-311.D				
Injection Date:	01-Oct-2019 11:48:28	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-8-B	Lab Sample ID:	480-159547-8	Worklist Smp#:	11
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 13_23-311.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:40

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.38(g) Date Analyzed: 10/01/2019 11:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	70		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-311.D				
Lims ID:	480-159547-F-8-B				
Client ID:	RUSSO-TS-COMP 2				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 11:48:28	ALS Bottle#:	0	Worklist Smp#:	11
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

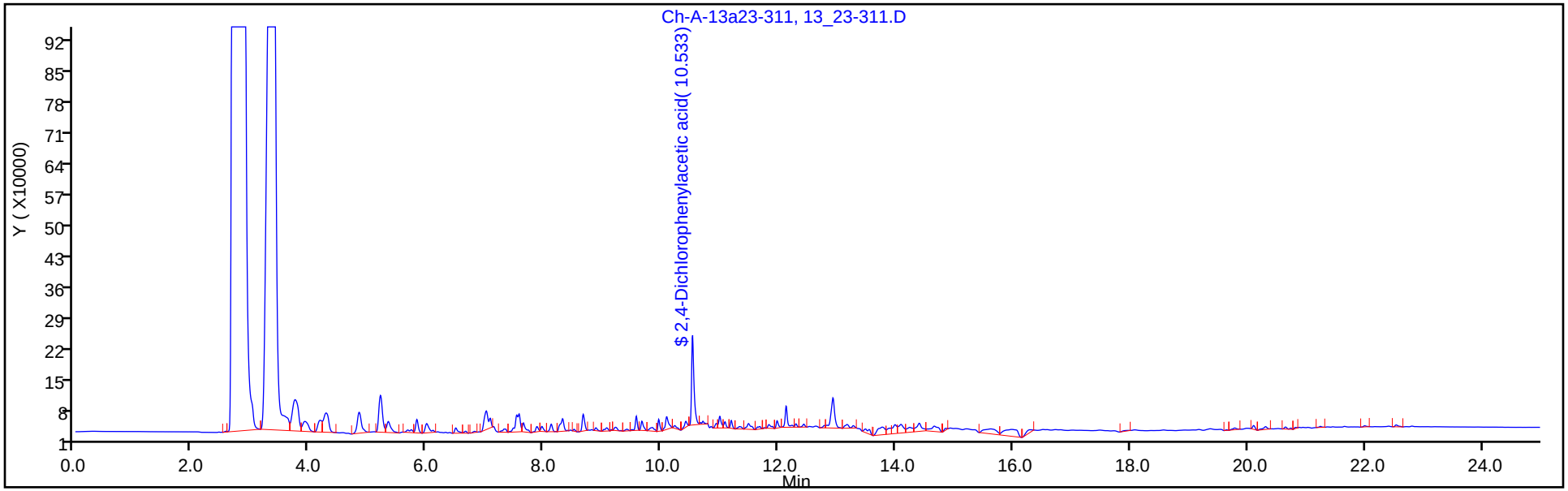
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	580982	0.3341	
2	11.887	11.893	-0.006	512619	0.3502	
					RPD = 4.71	

Report Date: 01-Oct-2019 14:18:45 Chrom Revision: 2.3 17-Sep-2019 16:19:08

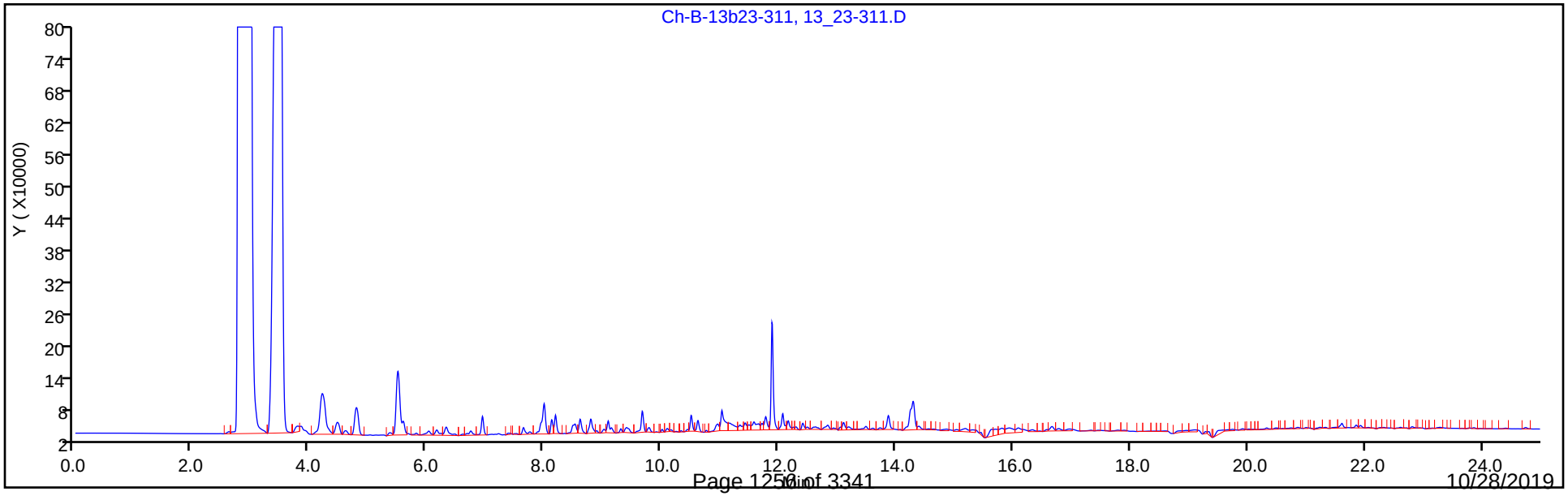
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-311.D				
Injection Date:	01-Oct-2019 11:48:28	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-8-B	Lab Sample ID:	480-159547-8	Worklist Smp#:	11
Client ID:	RUSSO-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 13_23-312.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:50

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.95(g) Date Analyzed: 10/01/2019 12:18

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		18	6.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	80		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-312.D				
Lims ID:	480-159547-F-18-B				
Client ID:	RUSSO-CF-COMP 1				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 12:18:10	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

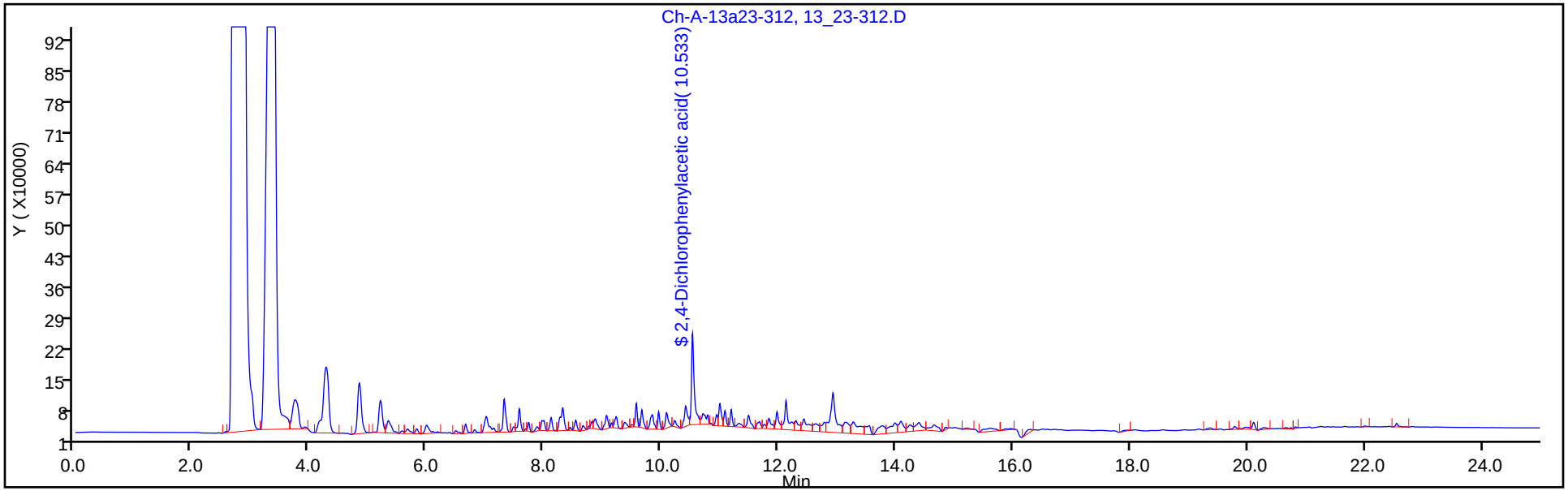
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	693946	0.3990	
2	11.887	11.893	-0.006	456781	0.3121	
					RPD = 24.46	

Report Date: 01-Oct-2019 14:18:48 Chrom Revision: 2.3 17-Sep-2019 16:19:08

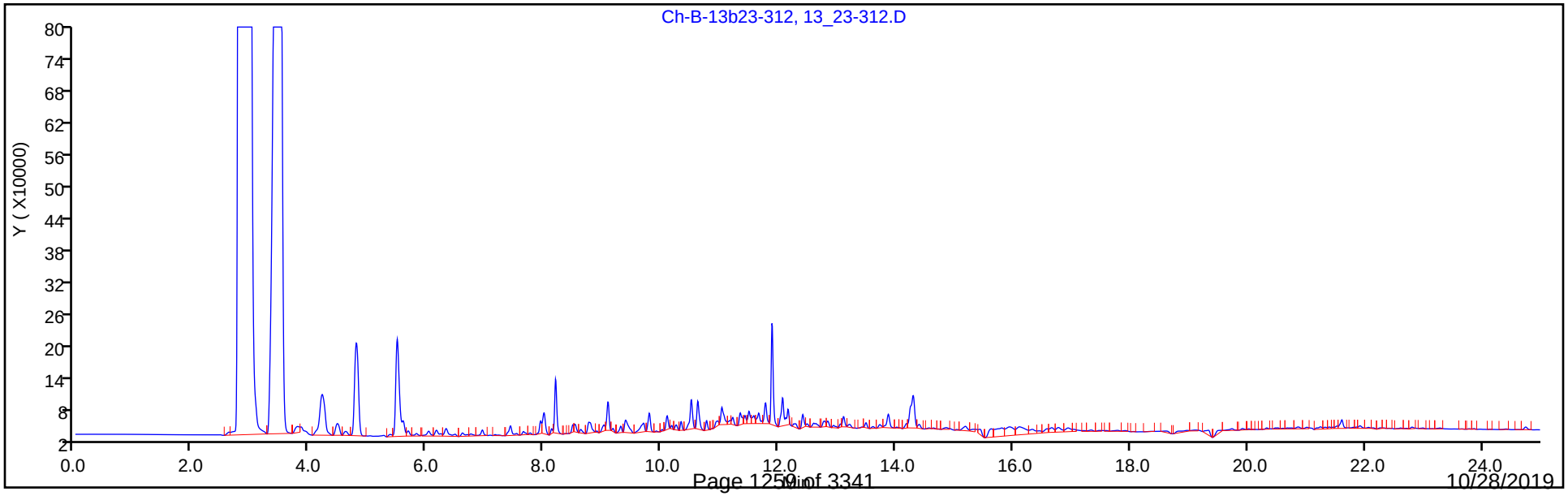
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-312.D				
Injection Date:	01-Oct-2019 12:18:10	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-18-B	Lab Sample ID:	480-159547-18	Worklist Smp#:	12
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 13_23-312.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:50

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.95(g) Date Analyzed: 10/01/2019 12:18

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	62		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-312.D				
Lims ID:	480-159547-F-18-B				
Client ID:	RUSSO-CF-COMP 1				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 12:18:10	ALS Bottle#:	0	Worklist Smp#:	12
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

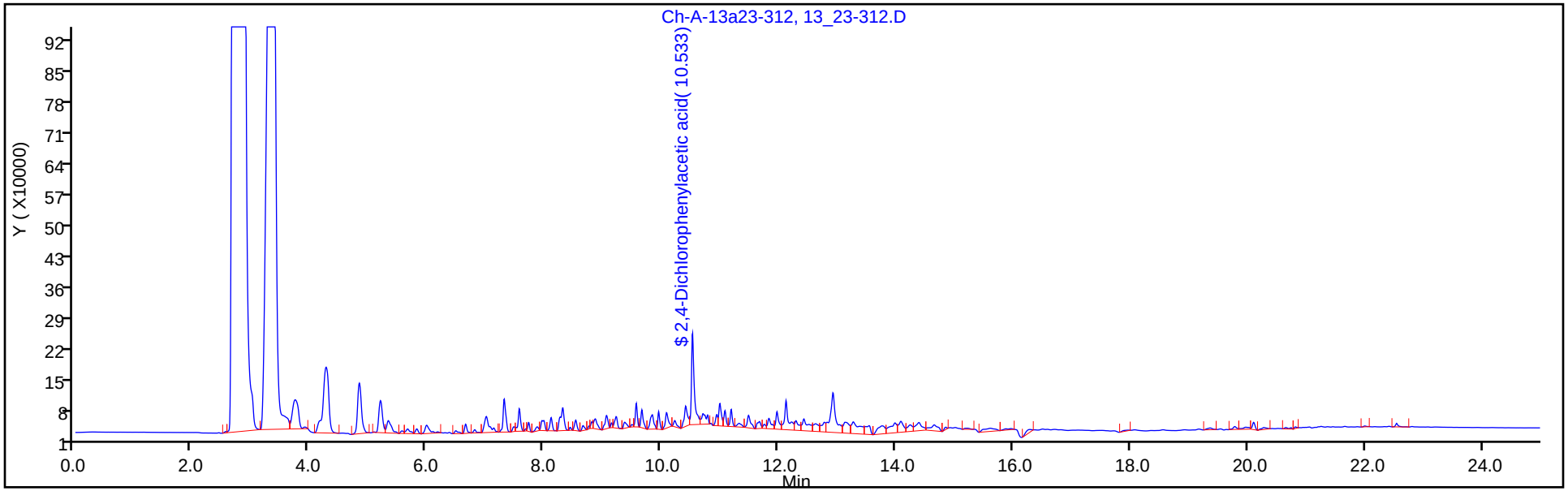
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	693946	0.3990	
2	11.887	11.893	-0.006	456781	0.3121	
					RPD = 24.46	

Report Date: 01-Oct-2019 14:18:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

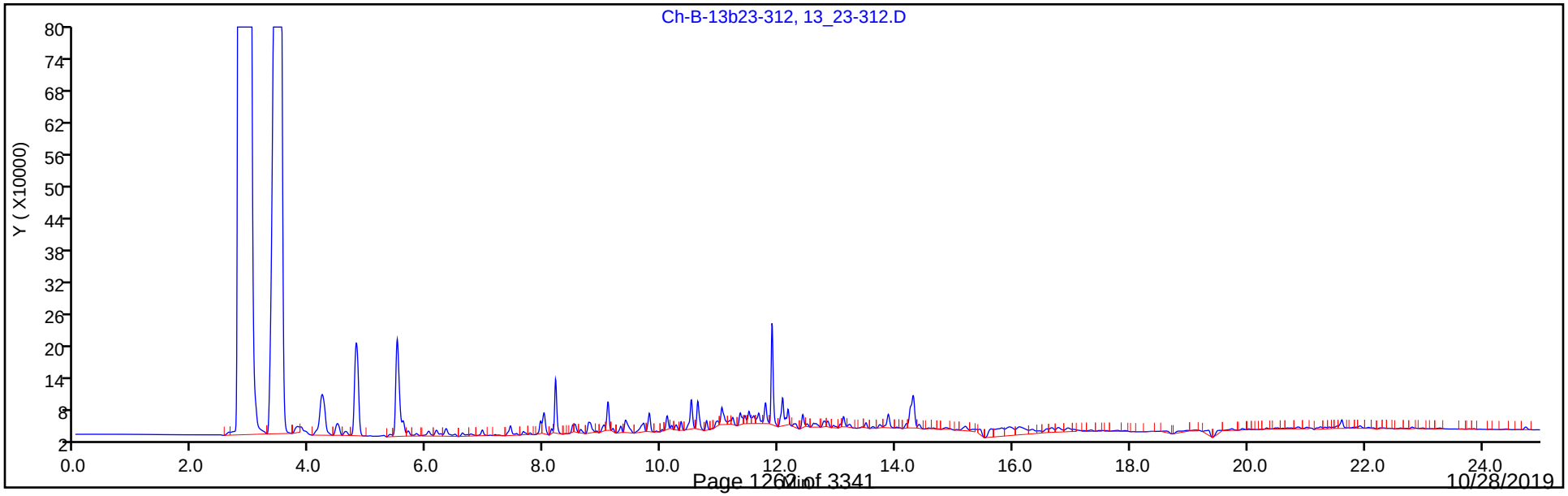
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-312.D				
Injection Date:	01-Oct-2019 12:18:10	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-18-B	Lab Sample ID:	480-159547-18	Worklist Smp#:	12
Client ID:	RUSSO-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 13_23-313.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:52

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.31(g) Date Analyzed: 10/01/2019 12:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		18	6.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	83		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-313.D				
Lims ID:	480-159547-F-19-B				
Client ID:	RUSSO-CF-COMP 2				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 12:47:54	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

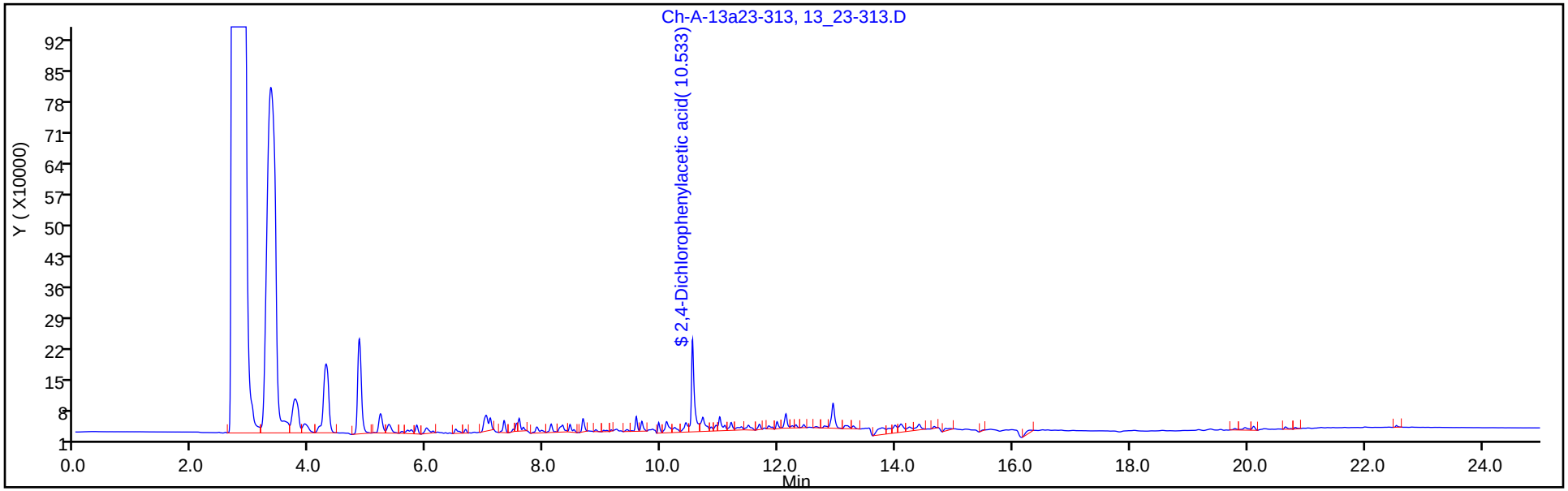
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	723529	0.4161	
2	11.887	11.893	-0.006	556919	0.3805	
					RPD = 8.93	

Report Date: 01-Oct-2019 14:18:51 Chrom Revision: 2.3 17-Sep-2019 16:19:08

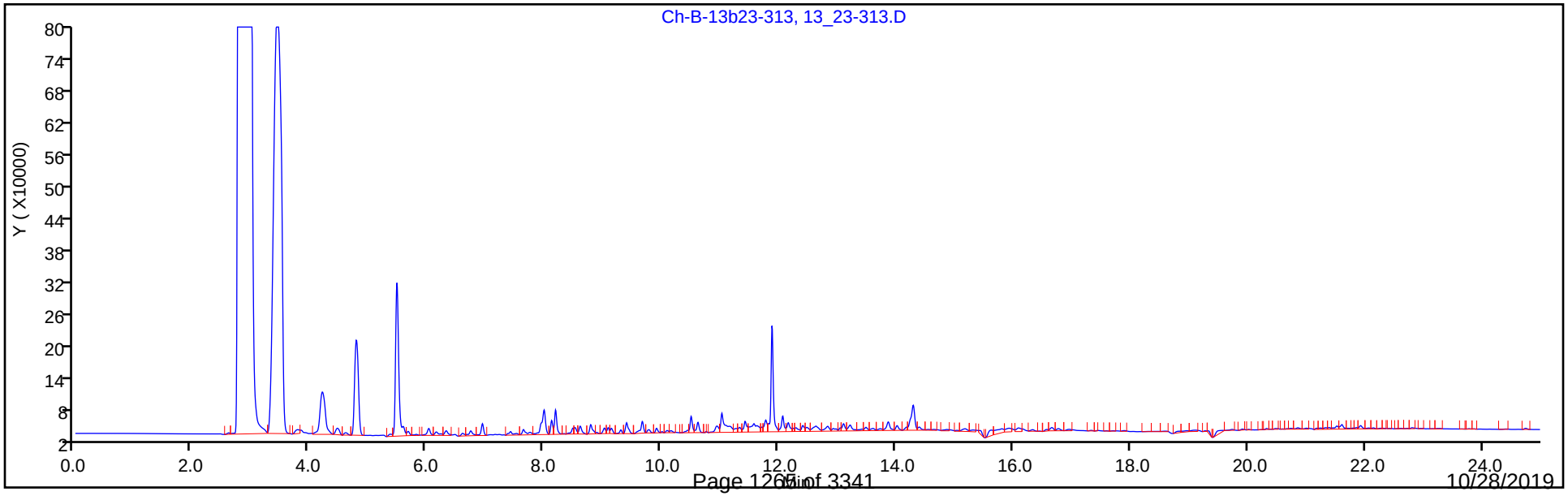
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-313.D				
Injection Date:	01-Oct-2019 12:47:54	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-19-B	Lab Sample ID:	480-159547-19	Worklist Smp#:	13
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 13_23-313.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:52

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.31(g) Date Analyzed: 10/01/2019 12:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	76		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-313.D				
Lims ID:	480-159547-F-19-B				
Client ID:	RUSSO-CF-COMP 2				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 12:47:54	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	723529	0.4161	
2	11.887	11.893	-0.006	556919	0.3805	
					RPD = 8.93	

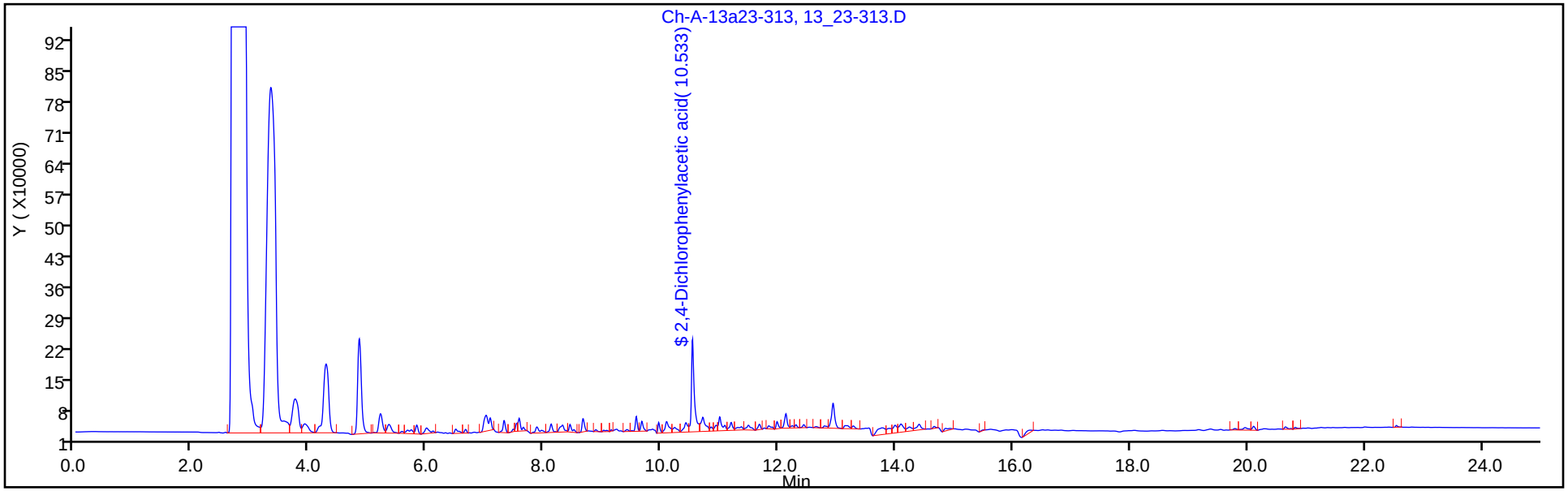
Report Date: 01-Oct-2019 14:18:52 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

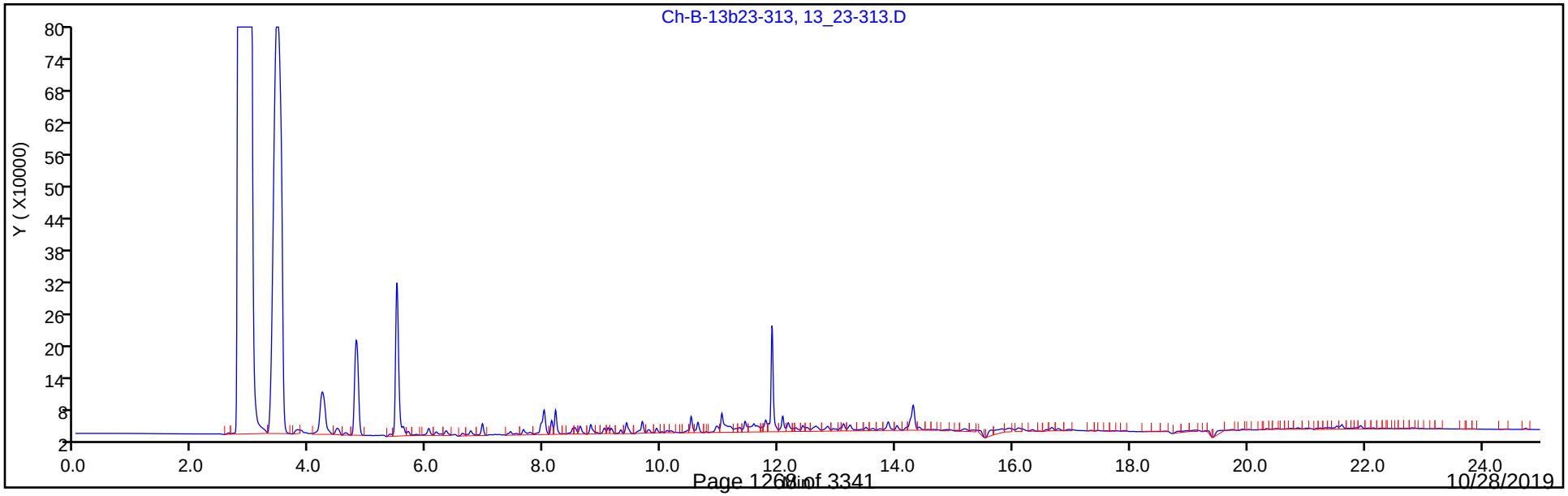
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-313.D

Injection Date:	01-Oct-2019 12:47:54	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-19-B	Lab Sample ID:	480-159547-19	Worklist Smp#:	13
Client ID:	RUSSO-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 13_23-314.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:55

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.52(g) Date Analyzed: 10/01/2019 13:17

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		18	6.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	78		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-314.D				
Lims ID:	480-159547-D-20-B				
Client ID:	RUSSO-CF-COMP 3				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 13:17:37	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

First Level Reviewer: NearyM Date: 01-Oct-2019 13:56:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1	2,4-Dichlorophenylacetic acid					M
1	10.533	10.540	-0.007	680906	0.3915	
2	11.887	11.893	-0.006	495429	0.3385	M
					RPD = 14.54	

QC Flag Legend

Review Flags
M - Manually Integrated

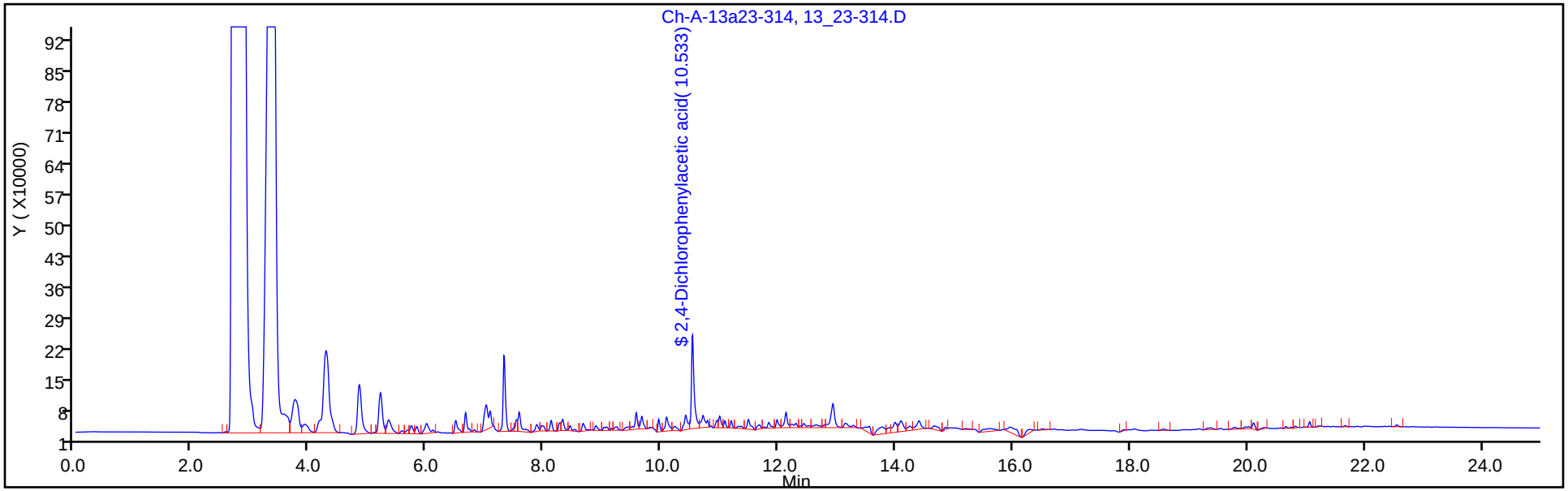
Report Date: 01-Oct-2019 14:18:55 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

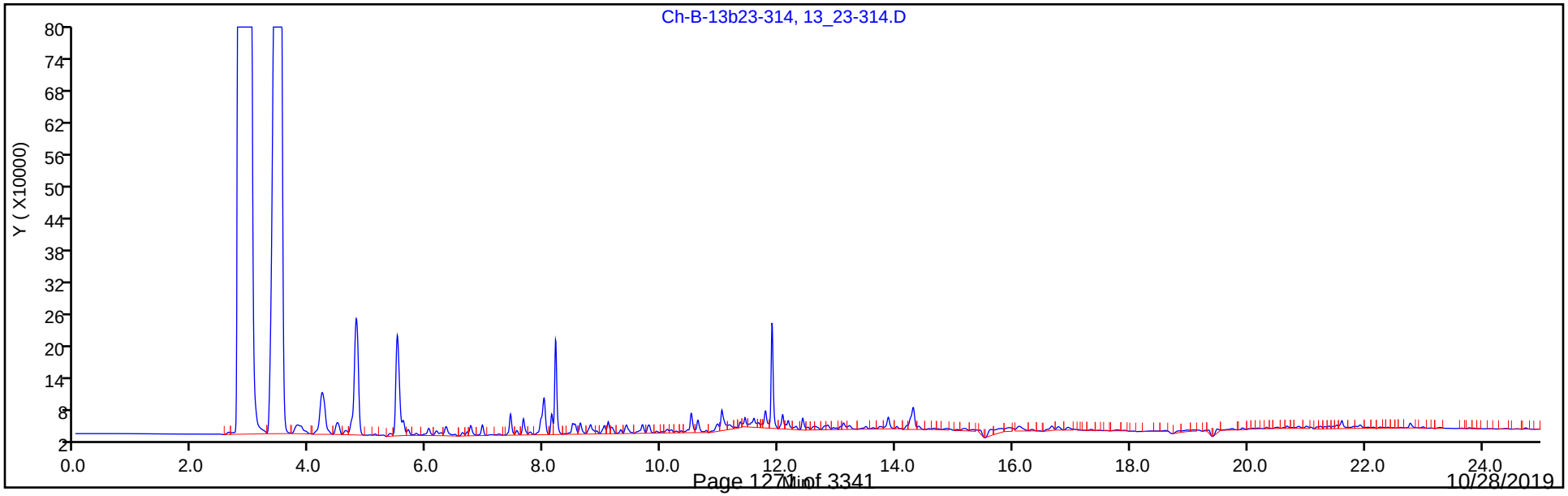
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-314.D

Injection Date:	01-Oct-2019 13:17:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-20-B	Lab Sample ID:	480-159547-20	Worklist Smp#:	14
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 13_23-314.D

Analysis Method: 8151A Date Collected: 09/16/2019 11:55

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.52(g) Date Analyzed: 10/01/2019 13:17

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	68		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-314.D				
Lims ID:	480-159547-D-20-B				
Client ID:	RUSSO-CF-COMP 3				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 13:17:37	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	01-Oct-2019 14:18:11	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0326				

First Level Reviewer: NearyM Date: 01-Oct-2019 13:56:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1	2,4-Dichlorophenylacetic acid					M
1	10.533	10.540	-0.007	680906	0.3915	
2	11.887	11.893	-0.006	495429	0.3385	M
					RPD = 14.54	

QC Flag Legend

Review Flags
M - Manually Integrated

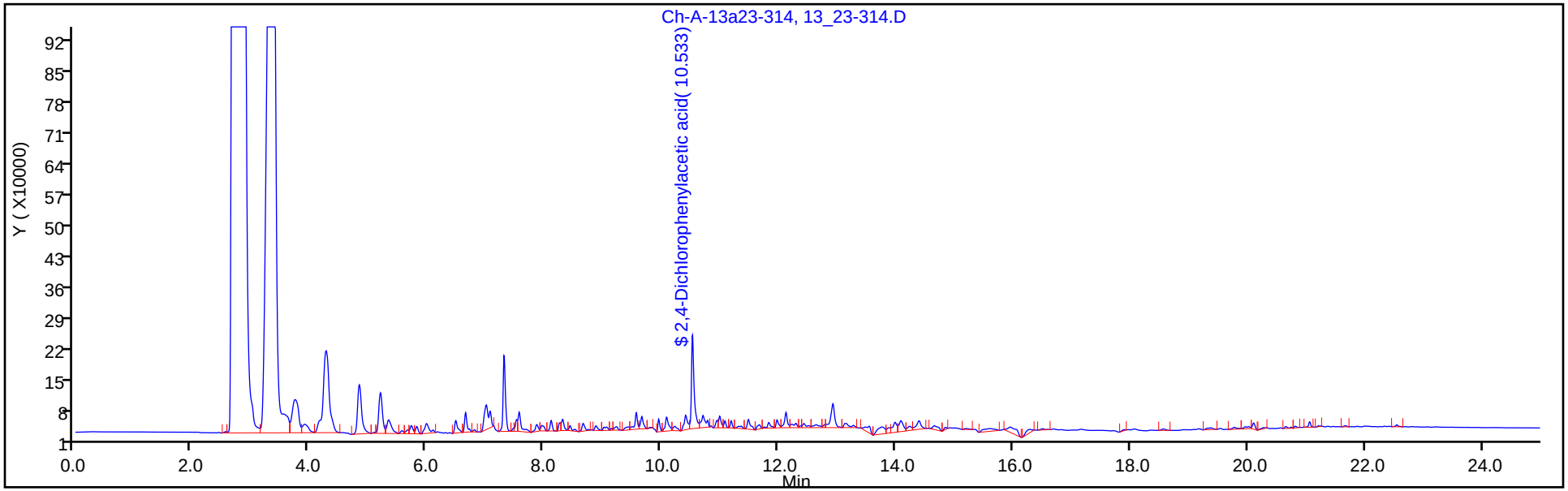
Report Date: 01-Oct-2019 14:18:55 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

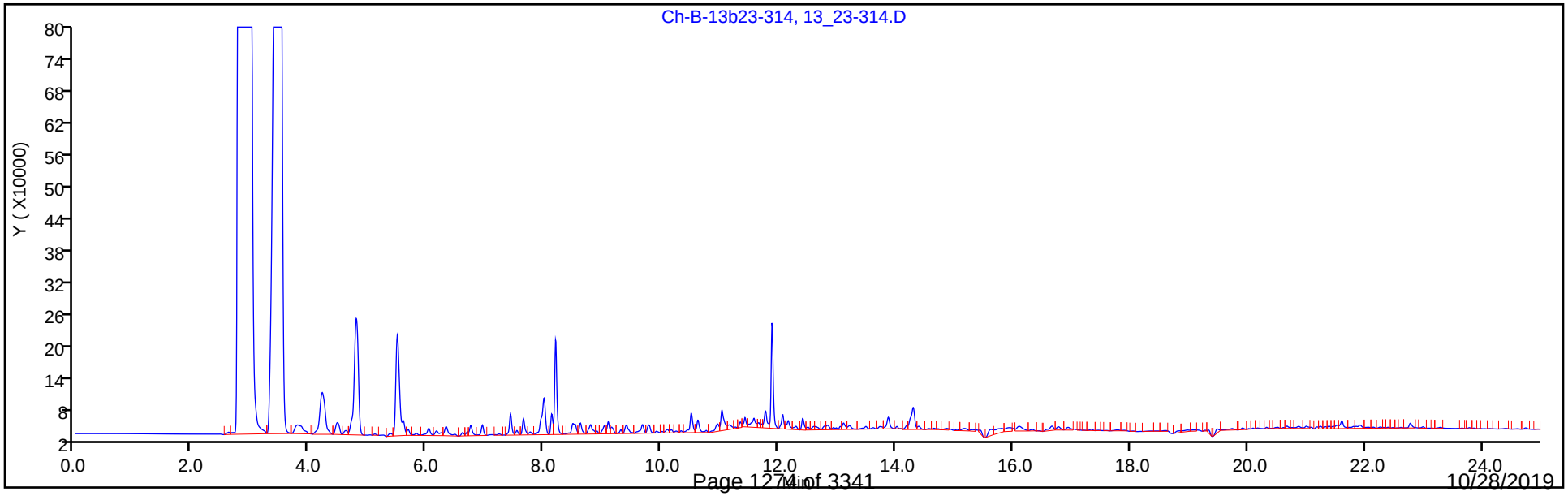
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-314.D

Injection Date:	01-Oct-2019 13:17:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-20-B	Lab Sample ID:	480-159547-20	Worklist Smp#:	14
Client ID:	RUSSO-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

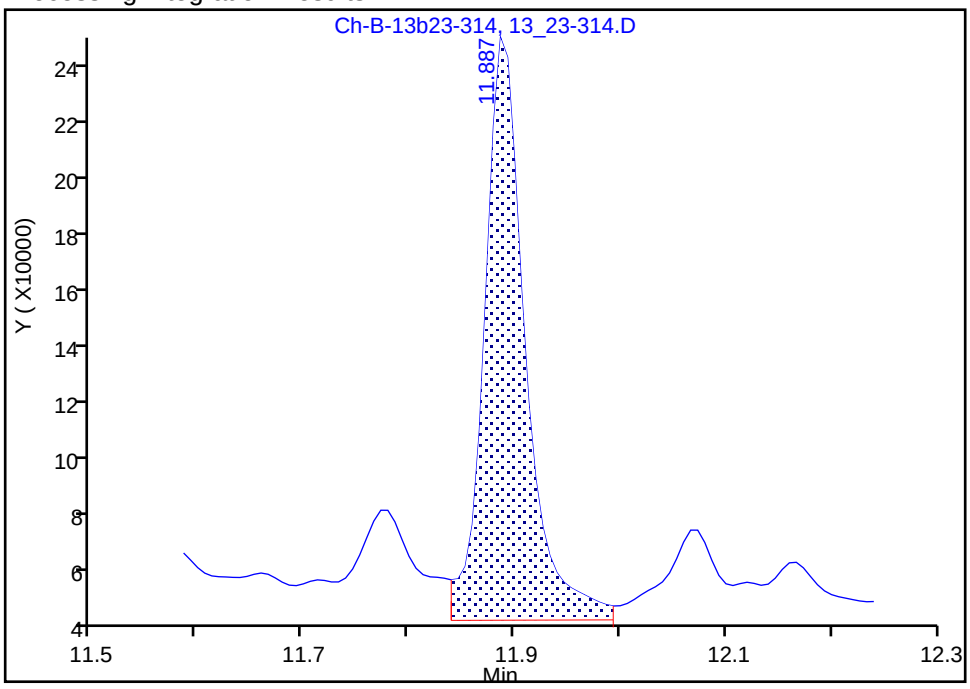
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-314.D				
Injection Date:	01-Oct-2019 13:17:37	Instrument ID:	HP5890-13		
Lims ID:	480-159547-D-20-B	Lab Sample ID:	480-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	14
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

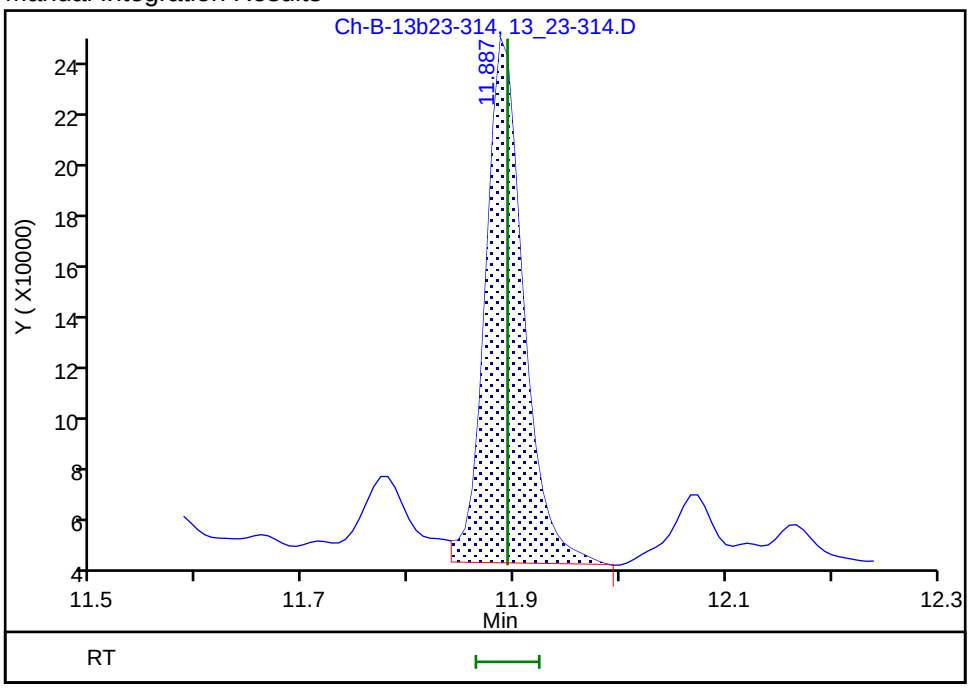
Processing Integration Results

RT: 11.89
Area: 547763
Amount: 0.374225
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 495429
Amount: 0.338471
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 13:56:27

Audit Action: Assigned New Baseline Audit Reason: Shouldering

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 13_23-317.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:50

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.37(g) Date Analyzed: 10/01/2019 14:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		18	6.4

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	74		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-317.D
Lims ID: 480-159547-D-30-B
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 14:47:05 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

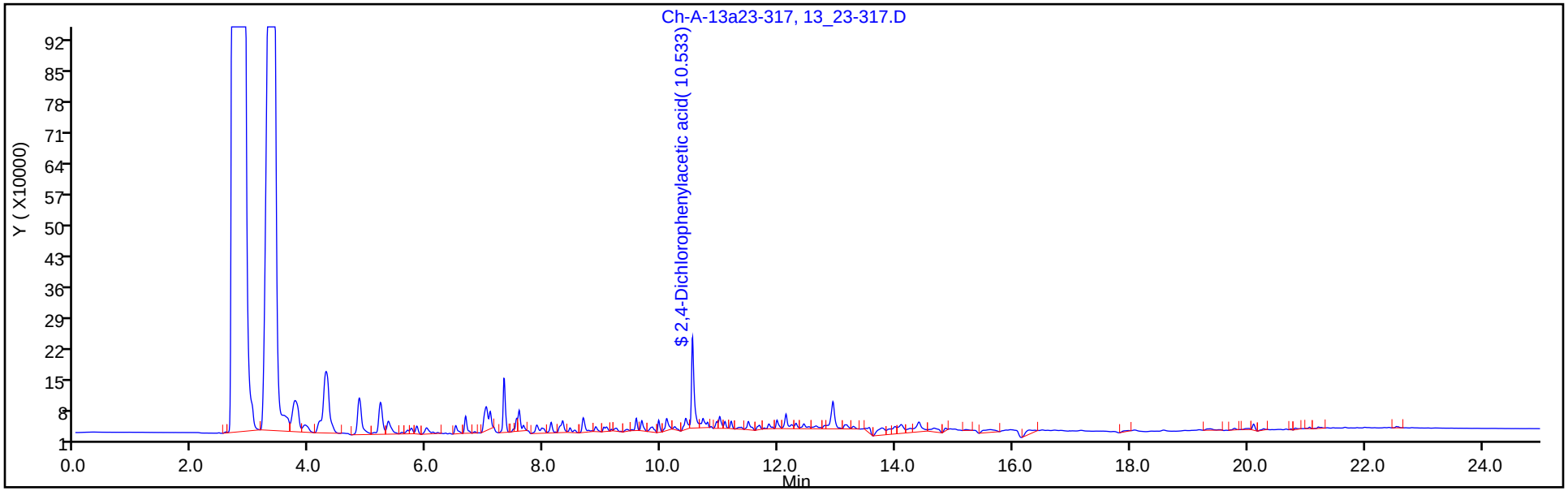
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	644173	0.3704	
2	11.887	11.893	-0.006	500167	0.3417	
					RPD = 8.07	

Report Date: 02-Oct-2019 06:50:44 Chrom Revision: 2.3 17-Sep-2019 16:19:08

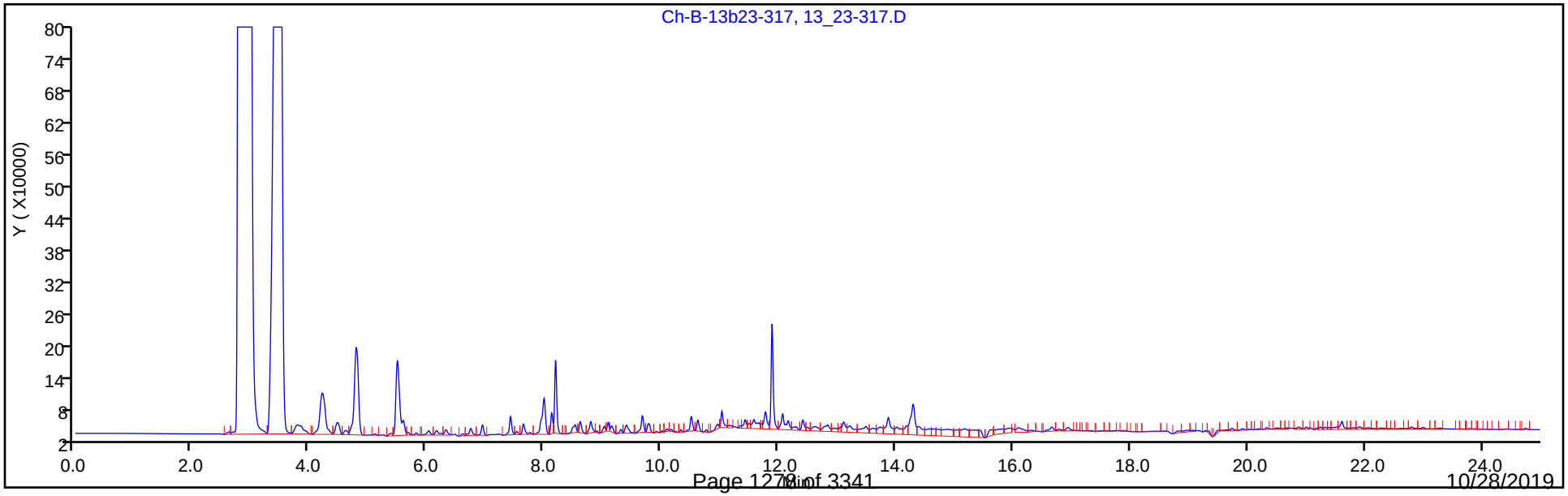
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-317.D				
Injection Date:	01-Oct-2019 14:47:05	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-30-B	Lab Sample ID:	480-159547-30	Worklist Smp#:	16
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 13_23-317.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:50

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.37(g) Date Analyzed: 10/01/2019 14:47

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	68		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-317.D
Lims ID: 480-159547-D-30-B
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 14:47:05 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	644173	0.3704	
2	11.887	11.893	-0.006	500167	0.3417	
					RPD = 8.07	

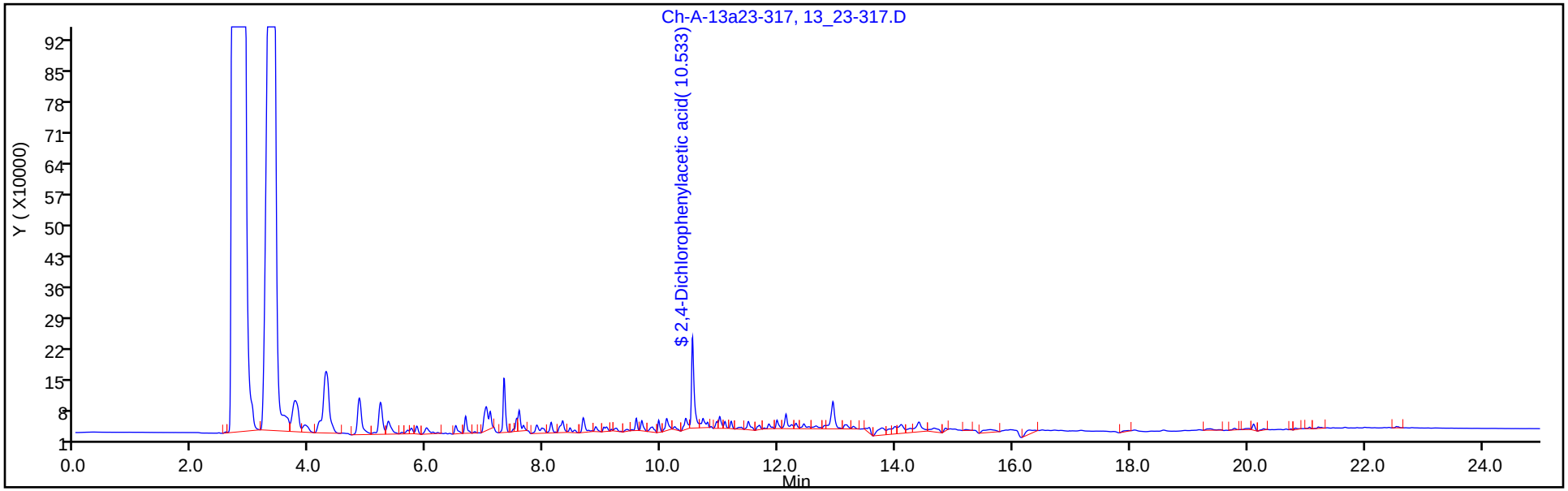
Report Date: 02-Oct-2019 06:50:45 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

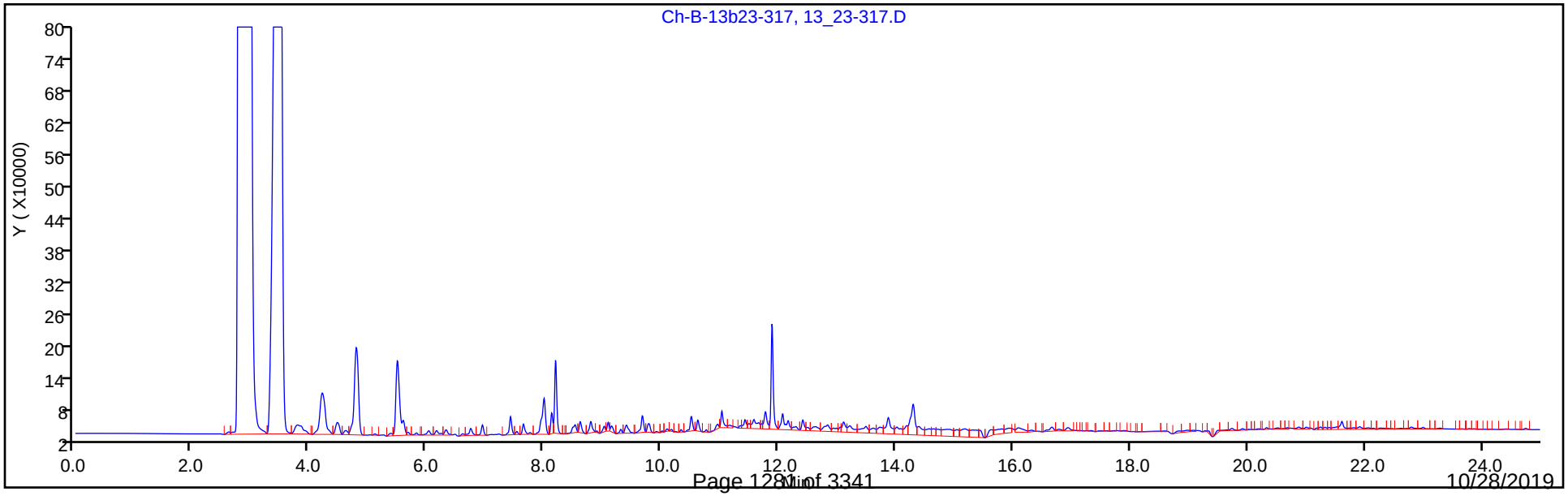
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-317.D

Injection Date:	01-Oct-2019 14:47:05	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-D-30-B	Lab Sample ID:	480-159547-30	Worklist Smp#:	16
Client ID:	GERNATT-CF-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 13_23-318.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:53

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.63(g) Date Analyzed: 10/01/2019 15:16

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		17	6.2

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	80		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-318.D
Lims ID: 480-159547-E-31-A
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 01-Oct-2019 15:16:47 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

First Level Reviewer: NearyM Date: 02-Oct-2019 06:25:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1	2,4-Dichlorophenylacetic acid					M
1	10.533	10.540	-0.007	693794	0.3990	
2	11.887	11.893	-0.006	459785	0.3141	M
					RPD = 23.80	

QC Flag Legend

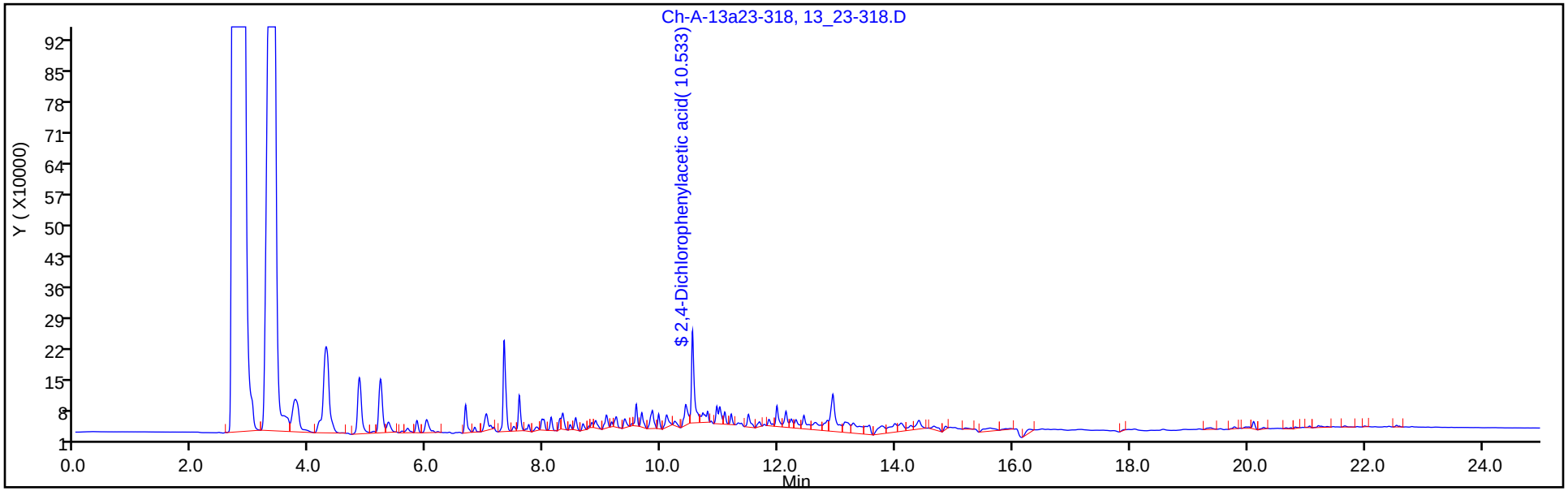
Review Flags
M - Manually Integrated

Report Date: 02-Oct-2019 06:50:46 Chrom Revision: 2.3 17-Sep-2019 16:19:08

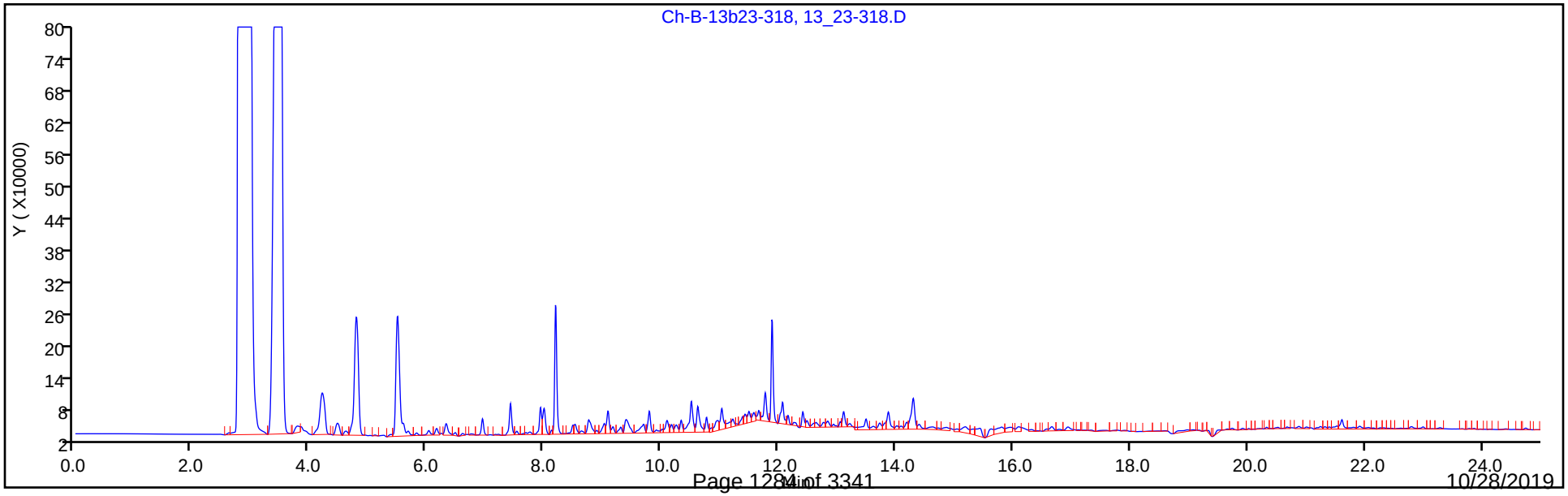
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-318.D				
Injection Date:	01-Oct-2019 15:16:47	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-31-A	Lab Sample ID:	480-159547-31	Worklist Smp#:	17
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 13_23-318.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:53

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.63(g) Date Analyzed: 10/01/2019 15:16

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	63		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-318.D
Lims ID: 480-159547-E-31-A
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 01-Oct-2019 15:16:47 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

First Level Reviewer: NearyM Date: 02-Oct-2019 06:25:53

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1	2,4-Dichlorophenylacetic acid					M
1	10.533	10.540	-0.007	693794	0.3990	
2	11.887	11.893	-0.006	459785	0.3141	M
					RPD = 23.80	

QC Flag Legend

Review Flags
M - Manually Integrated

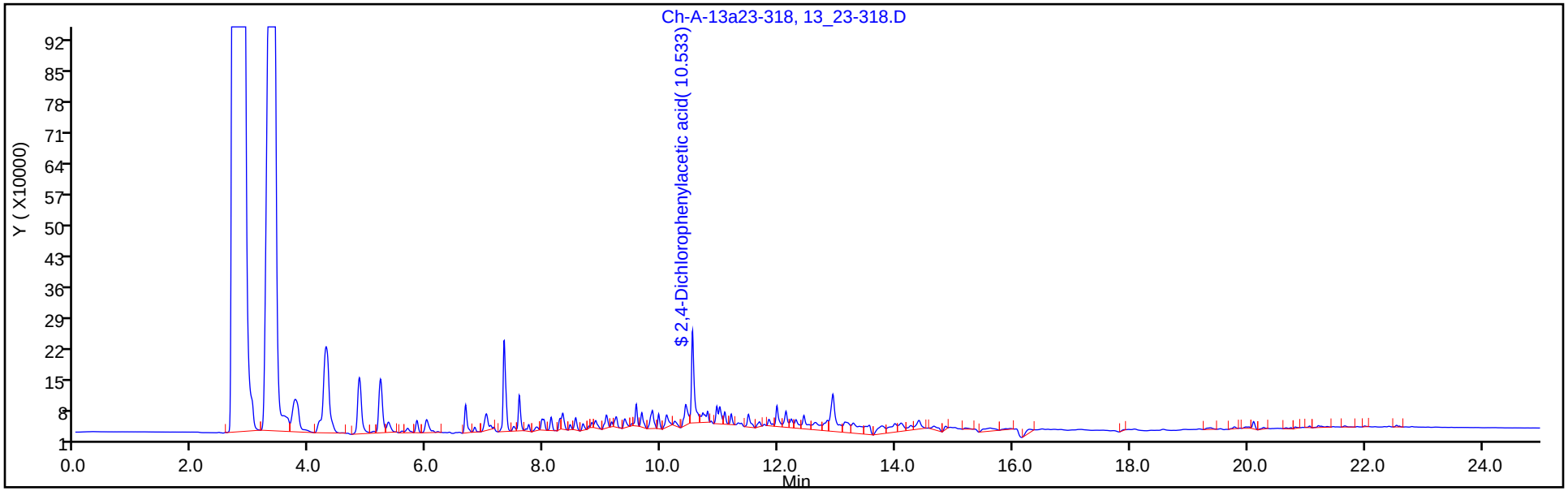
Report Date: 02-Oct-2019 06:50:47 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

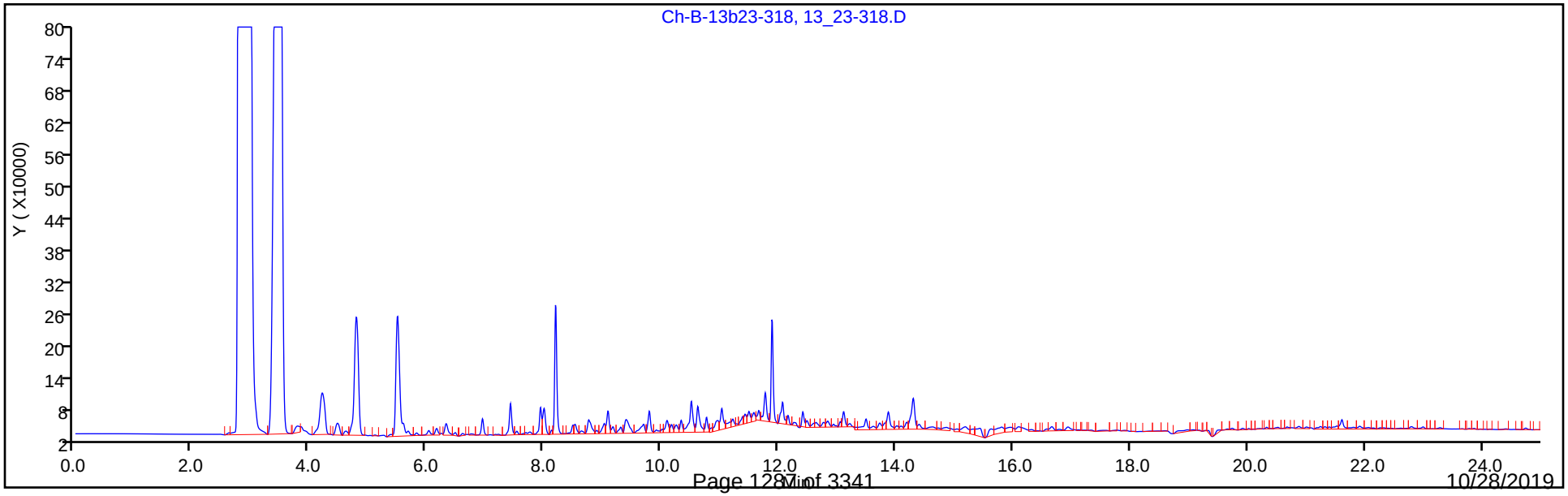
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-318.D

Injection Date:	01-Oct-2019 15:16:47	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-31-A	Lab Sample ID:	480-159547-31	Worklist Smp#:	17
Client ID:	GERNATT-CF-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

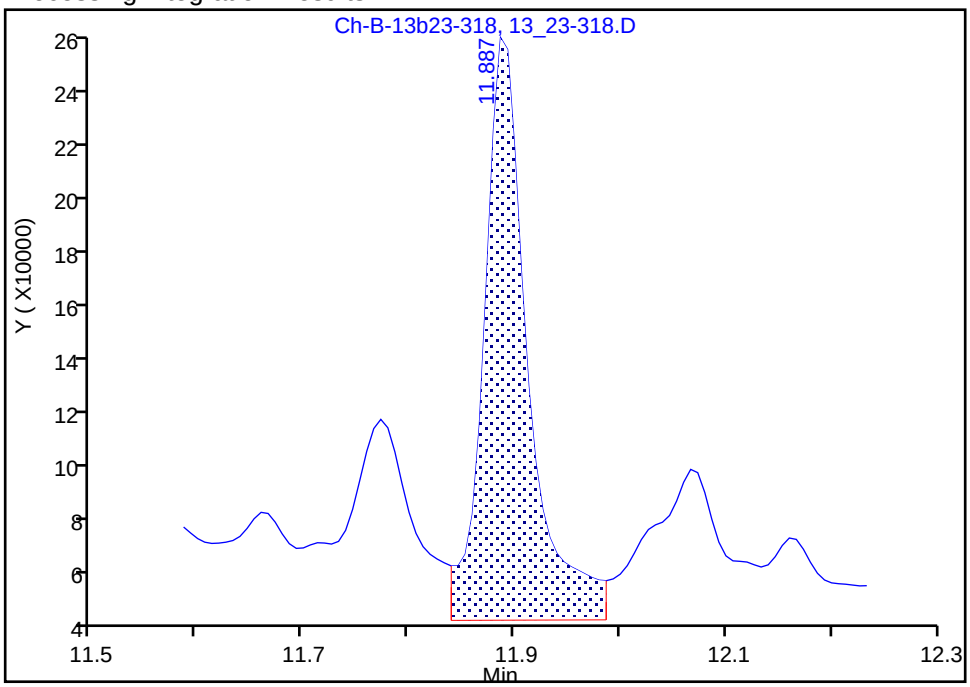
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-318.D				
Injection Date:	01-Oct-2019 15:16:47	Instrument ID:	HP5890-13		
Lims ID:	480-159547-E-31-A	Lab Sample ID:	480-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	17
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

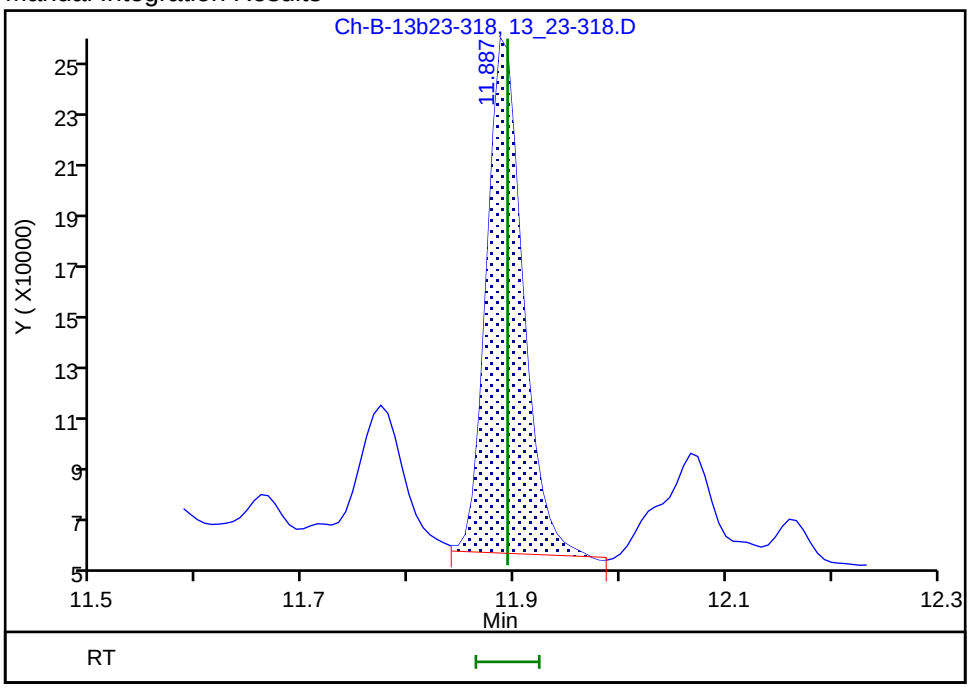
Processing Integration Results

RT: 11.89
Area: 604272
Amount: 0.412831
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 459785
Amount: 0.314119
Amount Units: ng/ul



Reviewer: NearyM, 02-Oct-2019 06:25:31

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 13_23-319.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:57

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.38(g) Date Analyzed: 10/01/2019 15:46

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		18	6.4

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	81		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-319.D
Lims ID: 480-159547-E-32-B
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 01-Oct-2019 15:46:33 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	705806	0.4059	
2	11.887	11.893	-0.006	475998	0.3252	
					RPD = 22.07	

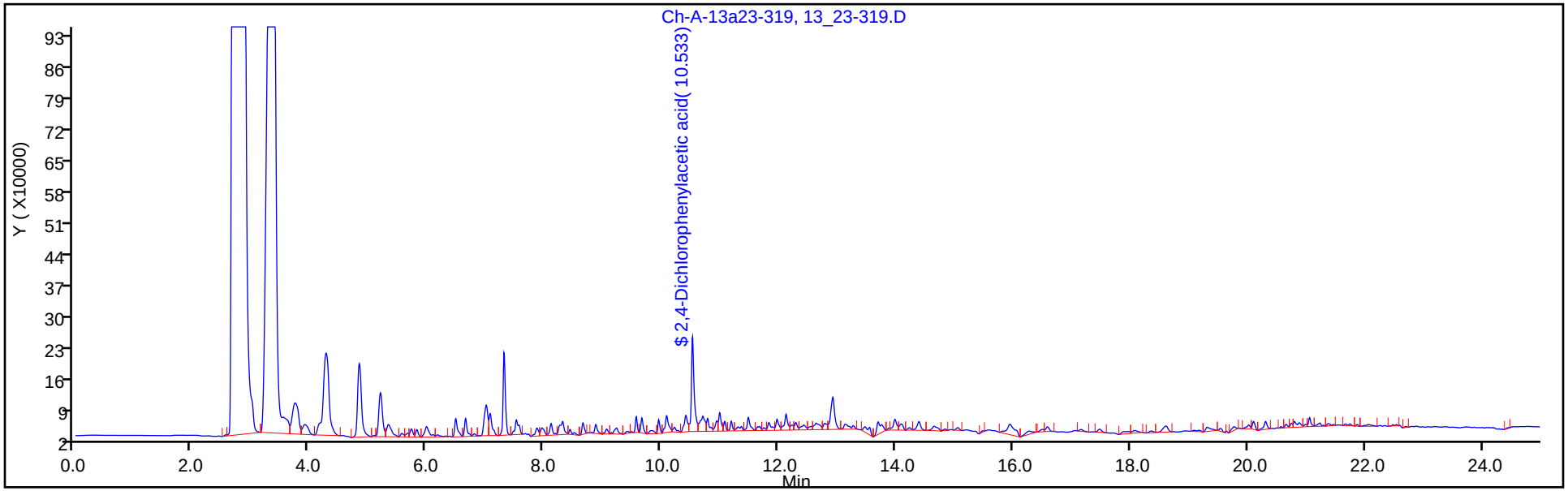
Report Date: 02-Oct-2019 06:50:47 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

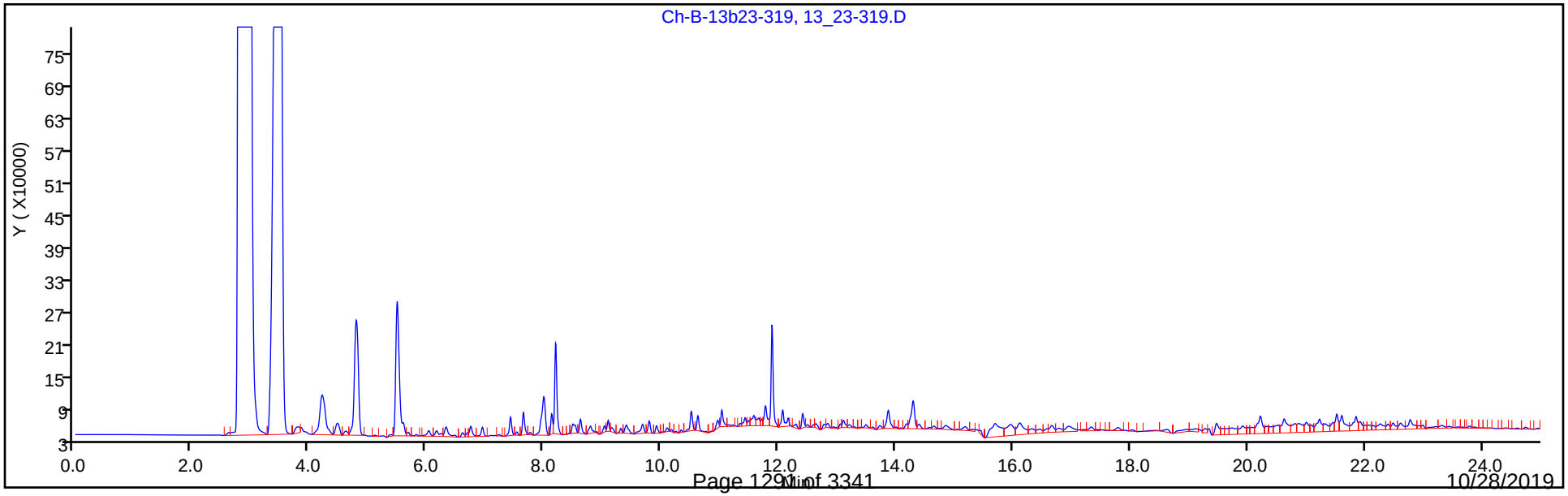
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-319.D

Injection Date:	01-Oct-2019 15:46:33	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-B	Lab Sample ID:	480-159547-32	Worklist Smp#:	18
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 13_23-319.D

Analysis Method: 8151A Date Collected: 09/16/2019 13:57

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.38(g) Date Analyzed: 10/01/2019 15:46

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	65		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-319.D
Lims ID: 480-159547-E-32-B
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 01-Oct-2019 15:46:33 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

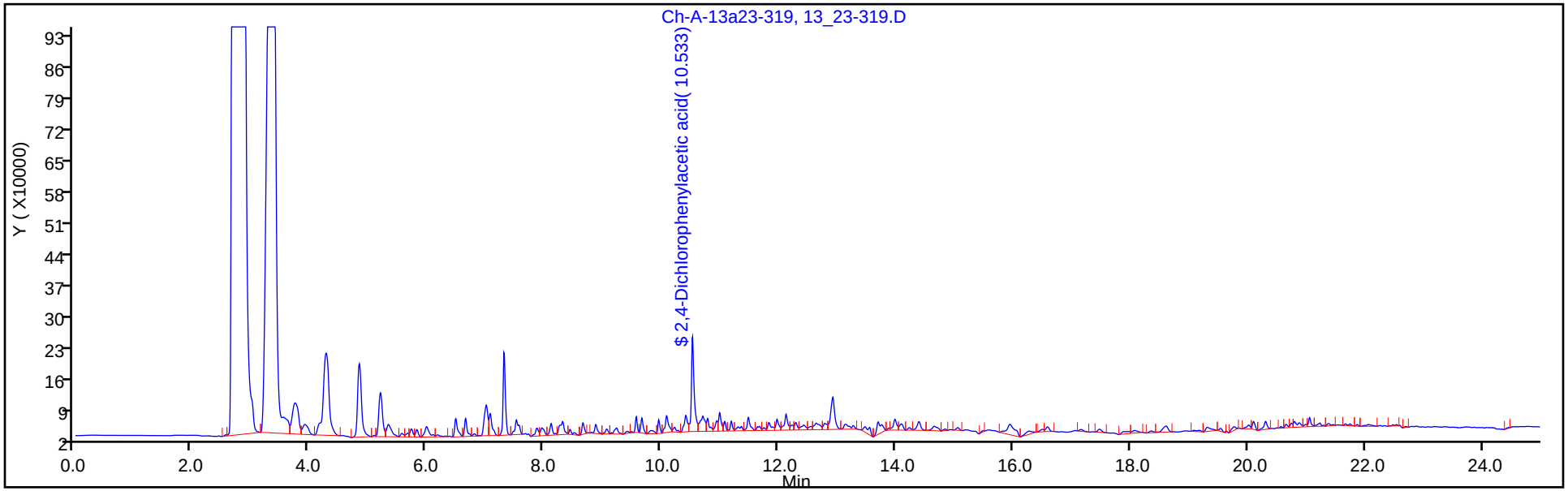
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	705806	0.4059	
2	11.887	11.893	-0.006	475998	0.3252	
					RPD = 22.07	

Report Date: 02-Oct-2019 06:50:48 Chrom Revision: 2.3 17-Sep-2019 16:19:08

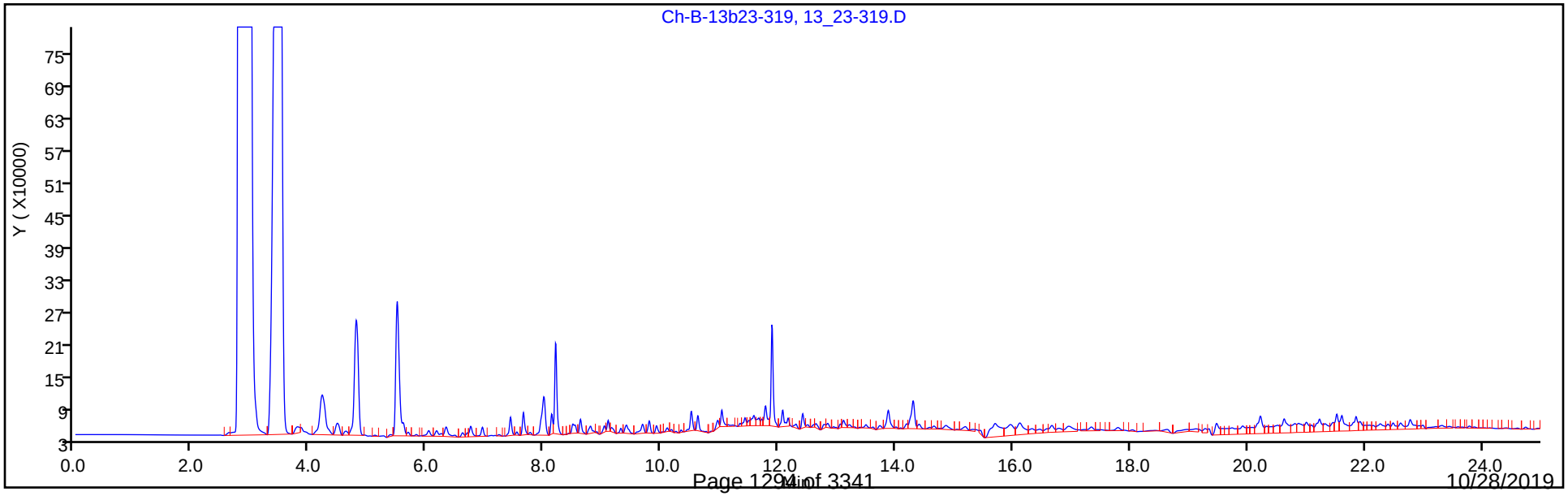
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-319.D				
Injection Date:	01-Oct-2019 15:46:33	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-32-B	Lab Sample ID:	480-159547-32	Worklist Smp#:	18
Client ID:	GERNATT-CF-COMP 3				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 13_23-320.D

Analysis Method: 8151A Date Collected: 09/16/2019 14:30

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.28(g) Date Analyzed: 10/01/2019 16:16

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		19	6.7

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	74		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-320.D
Lims ID: 480-159547-F-39-B
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 16:16:18 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

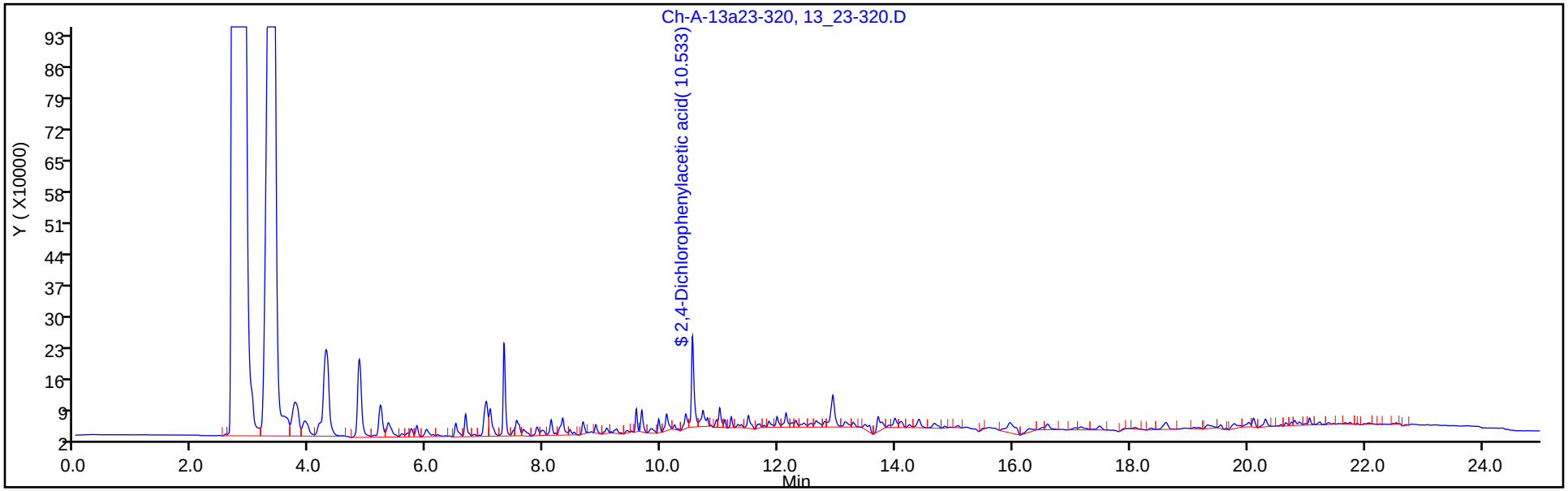
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	643248	0.3699	
2	11.887	11.893	-0.006	550408	0.3760	
					RPD = 1.65	

Report Date: 02-Oct-2019 06:50:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

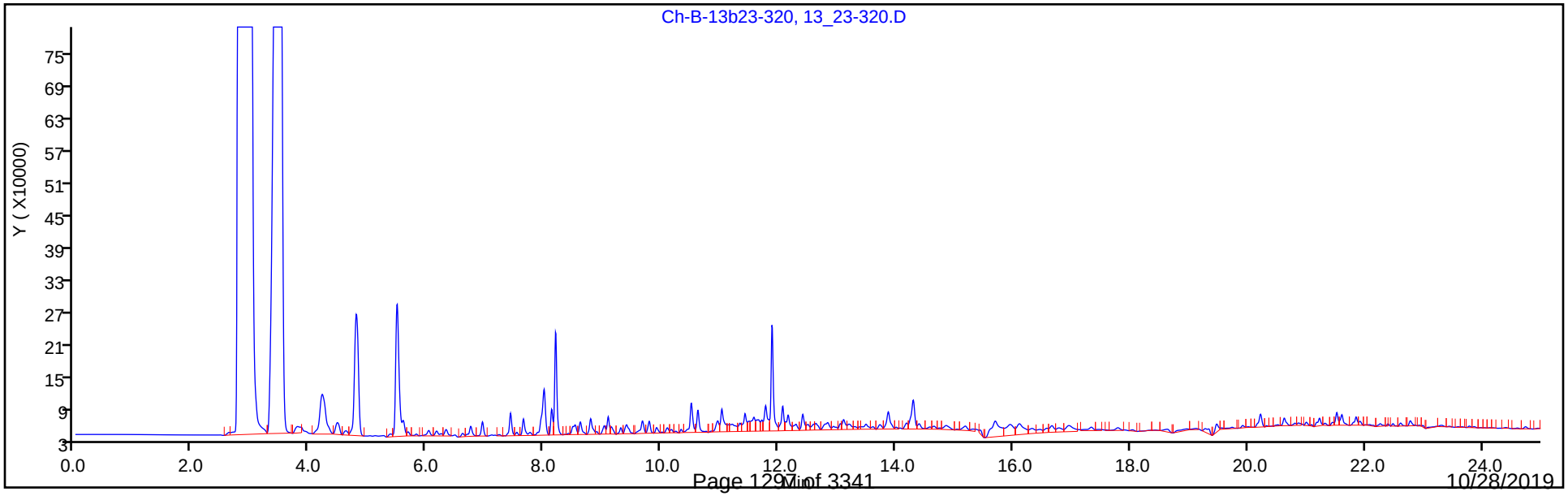
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-320.D				
Injection Date:	01-Oct-2019 16:16:18	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-B	Lab Sample ID:	480-159547-39	Worklist Smp#:	19
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 13_23-320.D

Analysis Method: 8151A Date Collected: 09/16/2019 14:30

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.28(g) Date Analyzed: 10/01/2019 16:16

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	75		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-320.D
Lims ID: 480-159547-F-39-B
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 01-Oct-2019 16:16:18 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

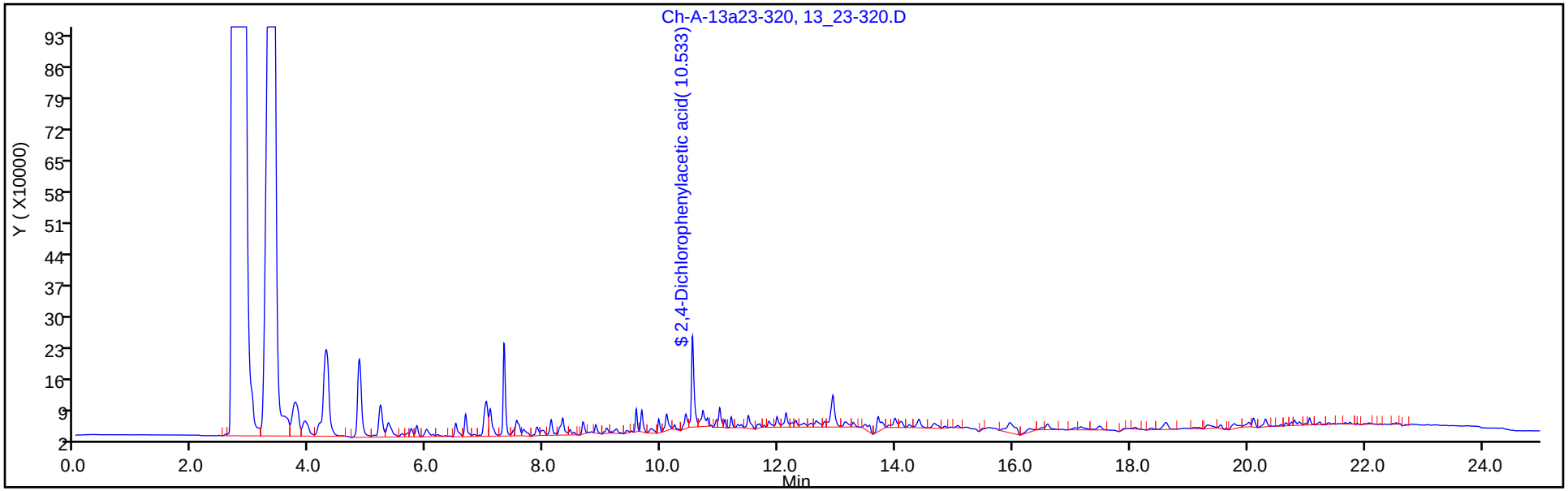
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.533	10.540	-0.007	643248	0.3699	
2	11.887	11.893	-0.006	550408	0.3760	
					RPD = 1.65	

Report Date: 02-Oct-2019 06:50:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

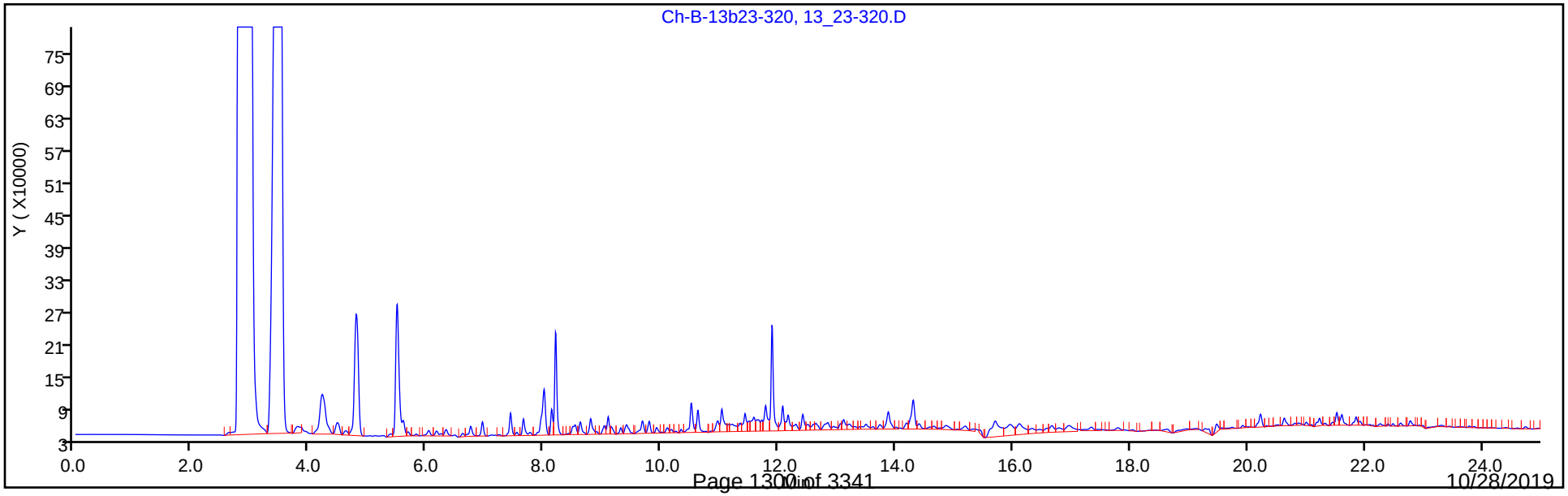
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-320.D				
Injection Date:	01-Oct-2019 16:16:18	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-39-B	Lab Sample ID:	480-159547-39	Worklist Smp#:	19
Client ID:	GERNATT-TS-COMP 1				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 13_23-321.D

Analysis Method: 8151A Date Collected: 09/16/2019 14:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.33(g) Date Analyzed: 10/01/2019 20:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		19	6.8

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	73		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-321.D				
Lims ID:	480-159547-F-40-B				
Client ID:	GERNATT-TS-COMP 2				
Sample Type:	Client				
Inject. Date:	01-Oct-2019 20:08:47	ALS Bottle#:	0	Worklist Smp#:	20
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:					
Operator ID:	BufTCHROM	Instrument ID:	HP5890-13		
Method:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m				
Limit Group:	GC - 8151A - ICAL				
Last Update:	02-Oct-2019 06:46:58	Calib Date:	19-Sep-2019 17:26:54		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D				
Column 1 :	RTX-CLPI (0.53 mm)		Det: Ch-A-13A01239		
Column 2 :	RTX-CLPII (0.32 mm)		Det: Ch-B-13b01239		
Process Host:	CTX0330				

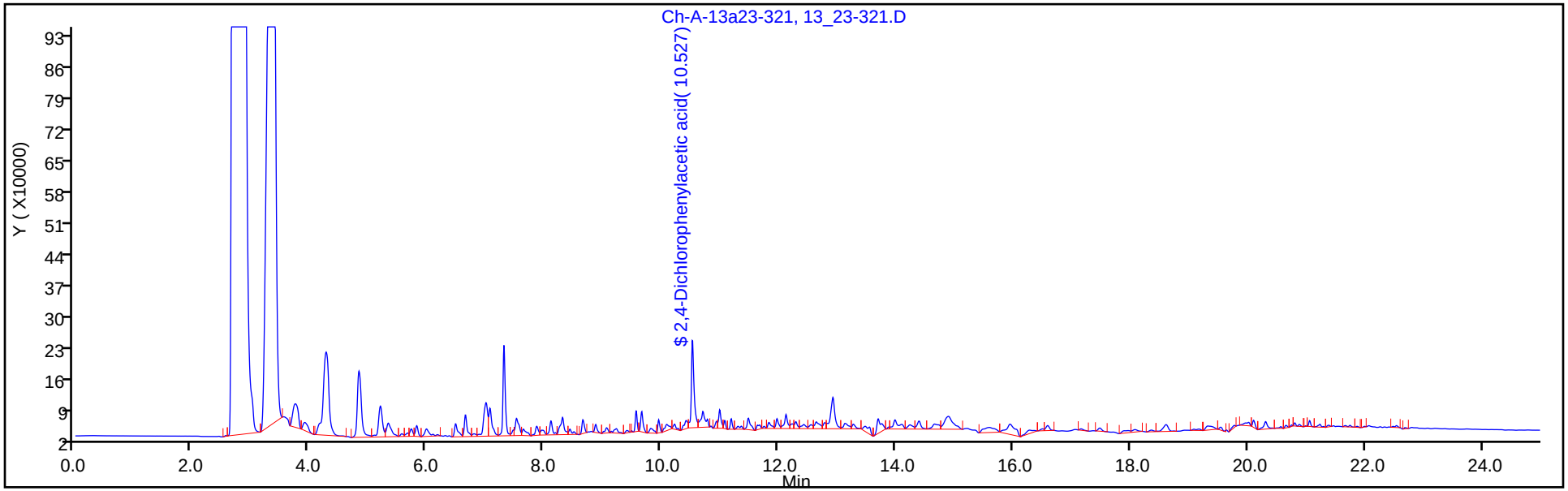
Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.527	10.540	-0.013	637065	0.3663	
2	11.887	11.893	-0.006	452822	0.3094	
					RPD = 16.86	

Report Date: 02-Oct-2019 06:50:50 Chrom Revision: 2.3 17-Sep-2019 16:19:08

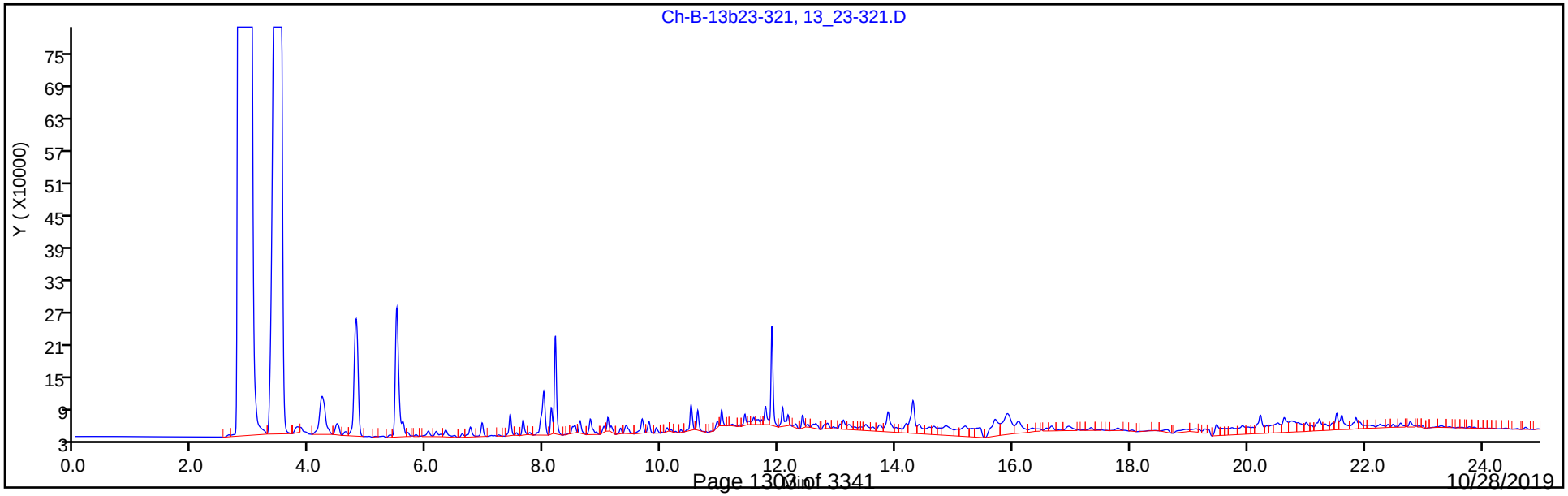
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-321.D				
Injection Date:	01-Oct-2019 20:08:47	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-B	Lab Sample ID:	480-159547-40	Worklist Smp#:	20
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 13_23-321.D

Analysis Method: 8151A Date Collected: 09/16/2019 14:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.33(g) Date Analyzed: 10/01/2019 20:08

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	62		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-321.D
Lims ID: 480-159547-F-40-B
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 01-Oct-2019 20:08:47 ALS Bottle#: 0 Worklist Smp#: 20
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:46:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid						
1	10.527	10.540	-0.013	637065	0.3663	
2	11.887	11.893	-0.006	452822	0.3094	
					RPD = 16.86	

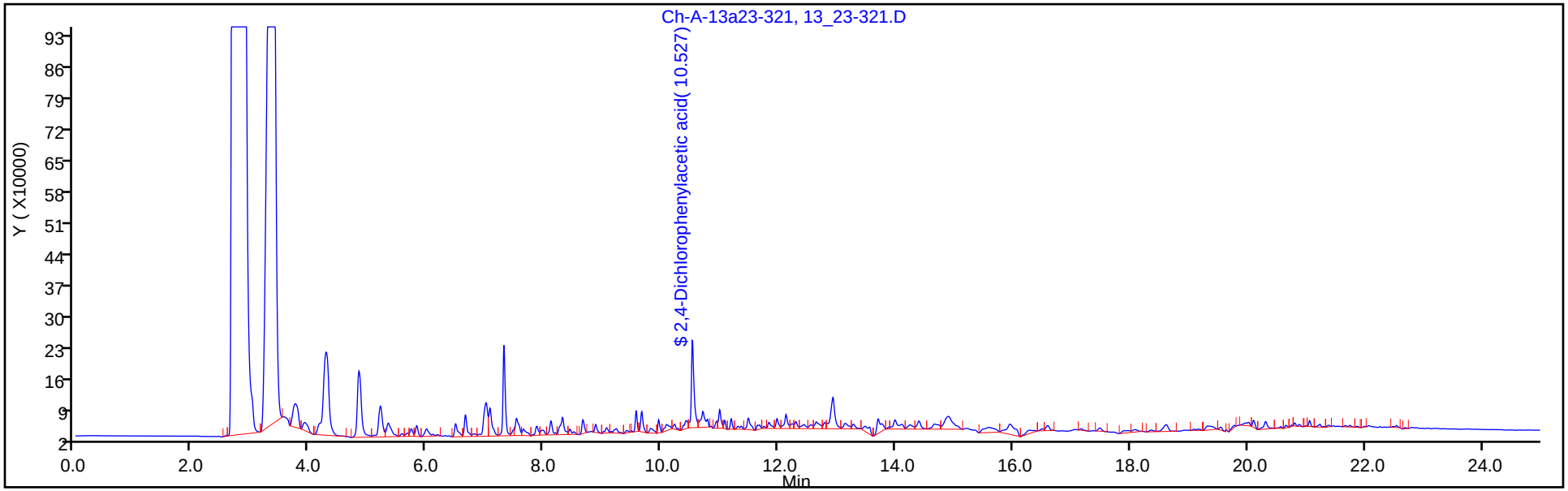
Report Date: 02-Oct-2019 06:50:50 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

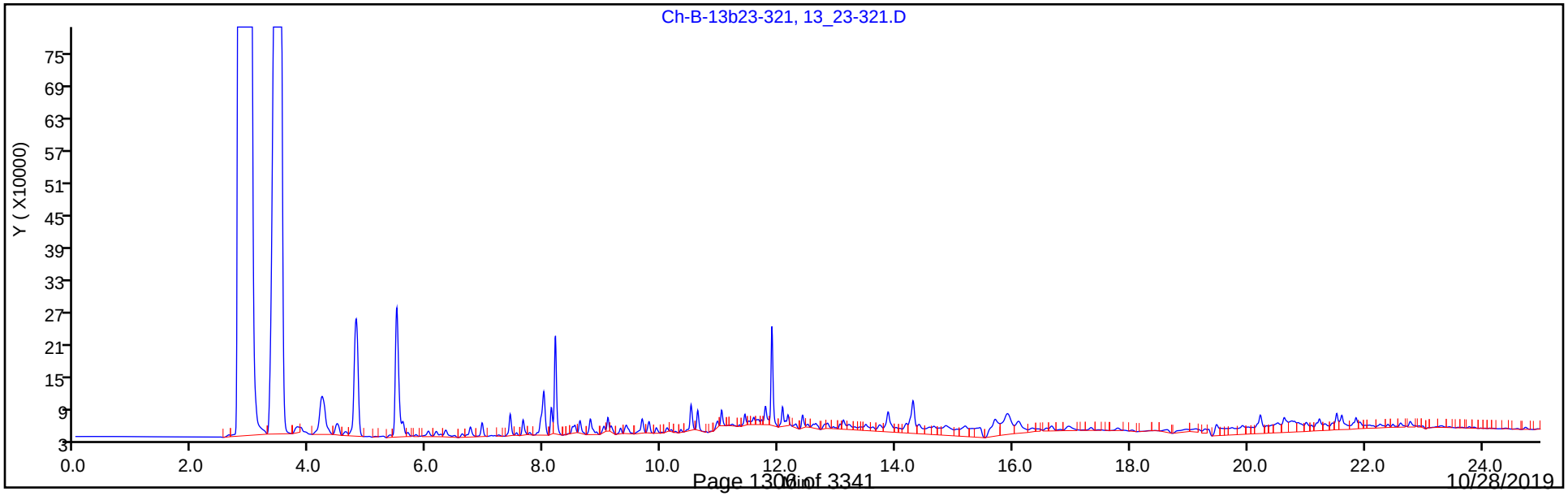
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-321.D

Injection Date:	01-Oct-2019 20:08:47	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-F-40-B	Lab Sample ID:	480-159547-40	Worklist Smp#:	20
Client ID:	GERNATT-TS-COMP 2				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPI ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37717

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Dichlorprop	+++++	11.573	11.573	11.573	11.573	11.573	+++++	+++++			11.543 - 11.603	11.573
2,4-D	+++++	11.827	11.827	11.820	11.820	11.820	11.820	+++++			11.790 - 11.850	11.822
Pentachlorophenol	12.120	12.120	12.120	12.120	12.120	12.120	+++++	+++++			12.090 - 12.150	12.120
Silvex (2,4,5-TP)	+++++	12.720	12.720	12.720	12.720	12.720	12.720	+++++			12.690 - 12.750	12.720
2,4,5-T	+++++	13.053	13.047	13.047	13.047	13.047	13.047	+++++			13.017 - 13.077	13.048
Picloram	+++++	15.253	15.247	15.247	15.247	15.240	15.240	+++++			15.190 - 15.290	15.246
Dinoseb	15.480	15.480	15.480	15.480	15.480	15.480	+++++	+++++			15.450 - 15.510	15.480
2,4-Dichlorophenylacetic acid	+++++	10.540	10.540	10.540	10.540	10.540	10.540	+++++			10.510 - 10.570	10.540

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPI ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37717

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Dichlorprop	+++++ 1628395	1946180 1507732	1865900 +++++	1707353 +++++	Ave		1731112.07				10.2		20.0			
2,4-D	+++++ 1868795	2147740 1747284	2061010 1530350	1922353 +++++	Ave		1879588.72				11.8		20.0			
Pentachlorophenol	16533850 13547915	15078740 12198032	14975060 +++++	14077900 +++++	Ave		14401916.2				10.3		20.0			
Silvex (2,4,5-TP)	+++++ 5986585	6517420 5581088	6550320 5031260	6174153 +++++	Ave		5973471.06				9.8		20.0			
2,4,5-T	+++++ 6106645	6412460 5710244	6517490 5206370	6257547 +++++	Ave		6035125.94				8.2		20.0			
Picloram	+++++ 5596230	5163380 5295976	5399170 4932456	5566047 +++++	Ave		5325543.11				4.7		20.0			
Dinoseb	6085600 4901785	5505740 4466304	5442270 +++++	5078120 +++++	Ave		5246636.50				10.7		20.0			
2,4-Dichlorophenylacetic acid	+++++ 1679985	2079940 1577352	1959140 1359082	1778580 +++++	Ave		1739013.17				15.0		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPI ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37717

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Dichlorprop	Ave	+++++ 376933	97309 +++++	186590 +++++	256103	325679	+++++ 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
2,4-D	Ave	+++++ 436821	107387 765175	206101 +++++	288353	373759	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
Pentachlorophenol	Ave	330677 3049508	753937 +++++	1497506 +++++	2111685	2709583	0.0200 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
Silvex (2,4,5-TP)	Ave	+++++ 1395272	325871 2515630	655032 +++++	926123	1197317	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
2,4,5-T	Ave	+++++ 1427561	320623 2603185	651749 +++++	938632	1221329	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
Picloram	Ave	+++++ 1323994	258169 2466228	539917 +++++	834907	1119246	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
Dinoseb	Ave	121712 1116576	275287 +++++	544227 +++++	761718	980357	0.0200 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
2,4-Dichlorophenylacetic acid	Ave	+++++ 394338	103997 679541	195914 +++++	266787	335997	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200

Curve Type Legend:
Ave = Average

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D
Lims ID: std1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 19-Sep-2019 13:58:48 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:49 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:18:38

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	879452	0.7500	0.5057	M
2	11.893	11.893	0.000	733174	0.7500	0.5009	M
						RPD = 0.96	
2 Dichlorprop							
1	11.567	11.573	-0.006	865336	0.7500	0.4999	
2	12.940	12.940	0.000	745159	0.7500	0.4909	
						RPD = 1.81	
3 2,4-D							
1	11.820	11.820	0.000	1021924	0.7500	0.5437	
2	13.367	13.367	0.000	913381	0.7500	0.5344	
						RPD = 1.72	
4 Pentachlorophenol							
1	12.140	12.120	0.020	4615538	0.7500	0.3205	
2	14.113	14.093	0.020	4661218	0.7500	0.3426	
						RPD = 6.66	
5 Silvex (2,4,5-TP)							
1	12.727	12.720	0.007	3200180	0.7500	0.5357	
2	14.633	14.633	0.000	3157598	0.7500	0.5580	
						RPD = 4.07	
6 2,4,5-T							
1	13.053	13.047	0.006	3320307	0.7500	0.5502	
2	15.360	15.360	0.000	3261129	0.7500	0.5659	
						RPD = 2.81	
7 Picloram							
1	15.240	15.240	0.000	3251608	0.7500	0.6106	
2	19.733	19.733	0.000	2801447	0.7500	0.6001	
						RPD = 1.73	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	2583407	0.7500	0.4924	
2	17.273	17.273	0.000	2355599	0.7500	0.4871	
						RPD = 1.07	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.75_00005 Amount Added: 1.00 Units: mL

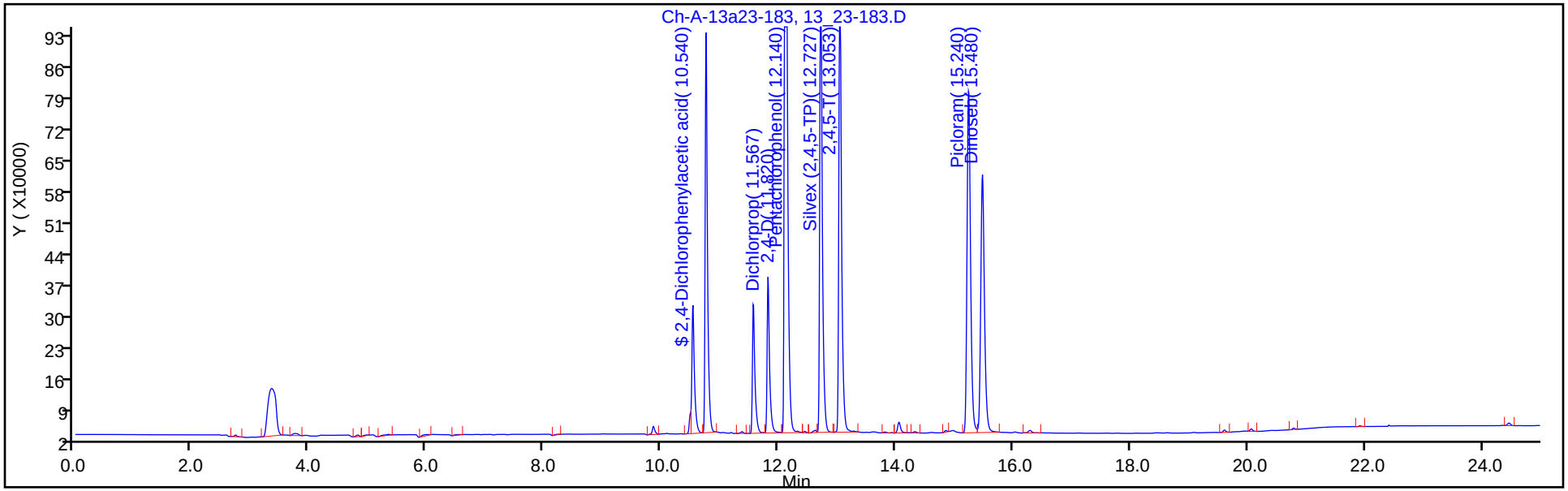
Report Date: 20-Sep-2019 08:50:50 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

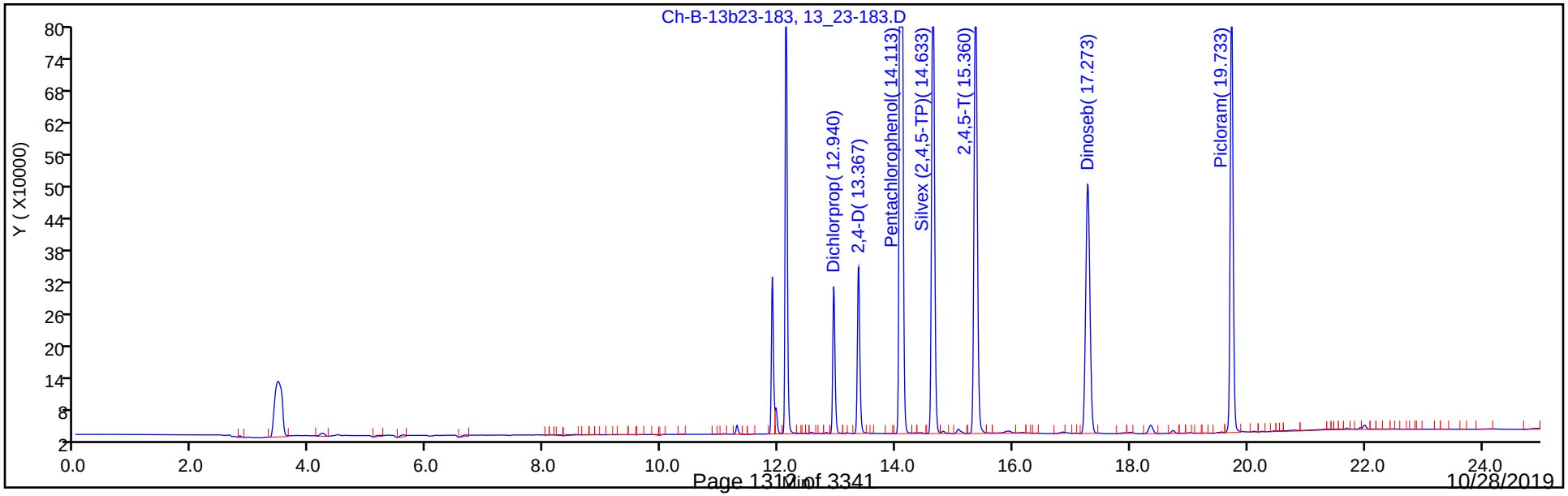
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D

Injection Date:	19-Sep-2019 13:58:48	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std1			Worklist Smp#:	12
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

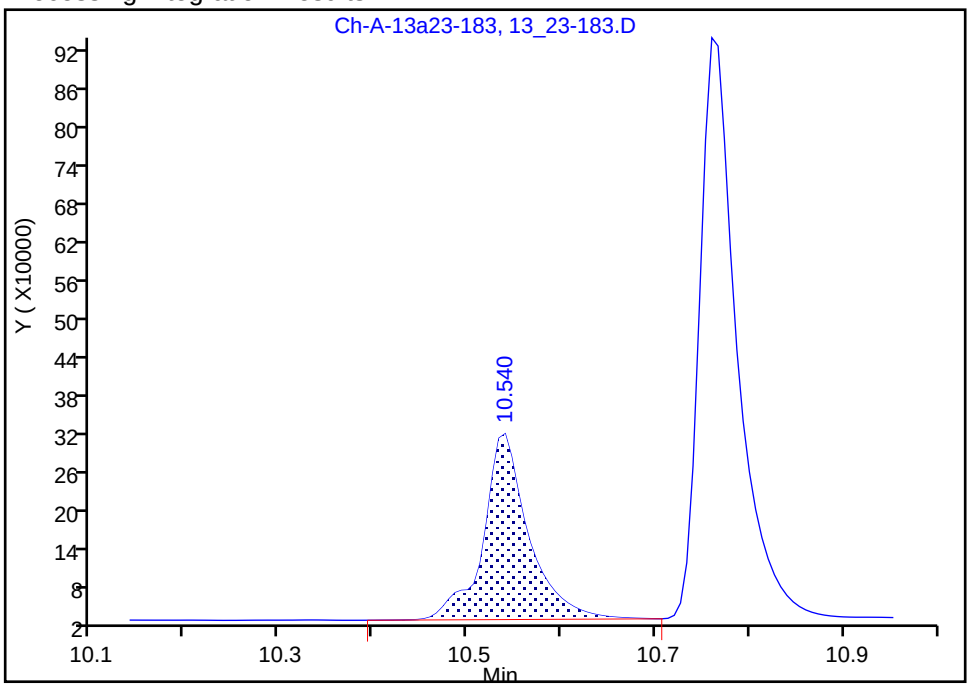
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D
Injection Date: 19-Sep-2019 13:58:48 Instrument ID: HP5890-13
Lims ID: std1
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

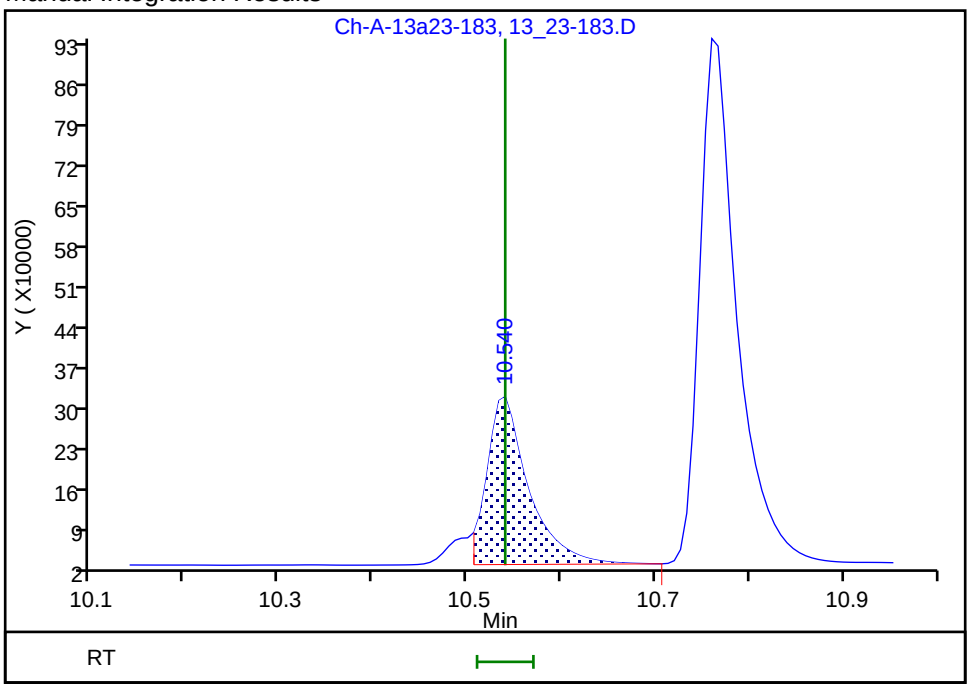
Processing Integration Results

RT: 10.54
Area: 972318
Amount: 0.517233
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 879452
Amount: 0.505719
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:18:26
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D
Lims ID: std2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 19-Sep-2019 14:28:29 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:52 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:19:16

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	679541	0.5000	0.3908	M
2	11.893	11.893	0.000	563876	0.5000	0.3852	M
						RPD = 1.43	
2 Dichlorprop							
1	11.567	11.573	-0.006	652487	0.5000	0.3769	
2	12.940	12.940	0.000	563715	0.5000	0.3714	
						RPD = 1.48	
3 2,4-D							
1	11.820	11.820	0.000	765175	0.5000	0.4071	
2	13.367	13.367	0.000	687585	0.5000	0.4023	
						RPD = 1.18	
4 Pentachlorophenol							
1	12.133	12.120	0.013	4079154	0.5000	0.2832	
2	14.107	14.093	0.014	4204707	0.5000	0.3090	
						RPD = 8.70	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	2515630	0.5000	0.4211	
2	14.633	14.633	0.000	2359575	0.5000	0.4170	
						RPD = 1.00	
6 2,4,5-T							
1	13.047	13.047	0.000	2603185	0.5000	0.4313	
2	15.360	15.360	0.000	2451238	0.5000	0.4253	
						RPD = 1.40	
7 Picloram							
1	15.240	15.240	0.000	2466228	0.5000	0.4631	
2	19.733	19.733	0.000	2119766	0.5000	0.4541	
						RPD = 1.96	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.473	15.480	-0.007	1971925	0.5000	0.3758	
2	17.280	17.273	0.007	1791823	0.5000	0.3706	
						RPD = 1.42	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.5_00005 Amount Added: 1.00 Units: mL

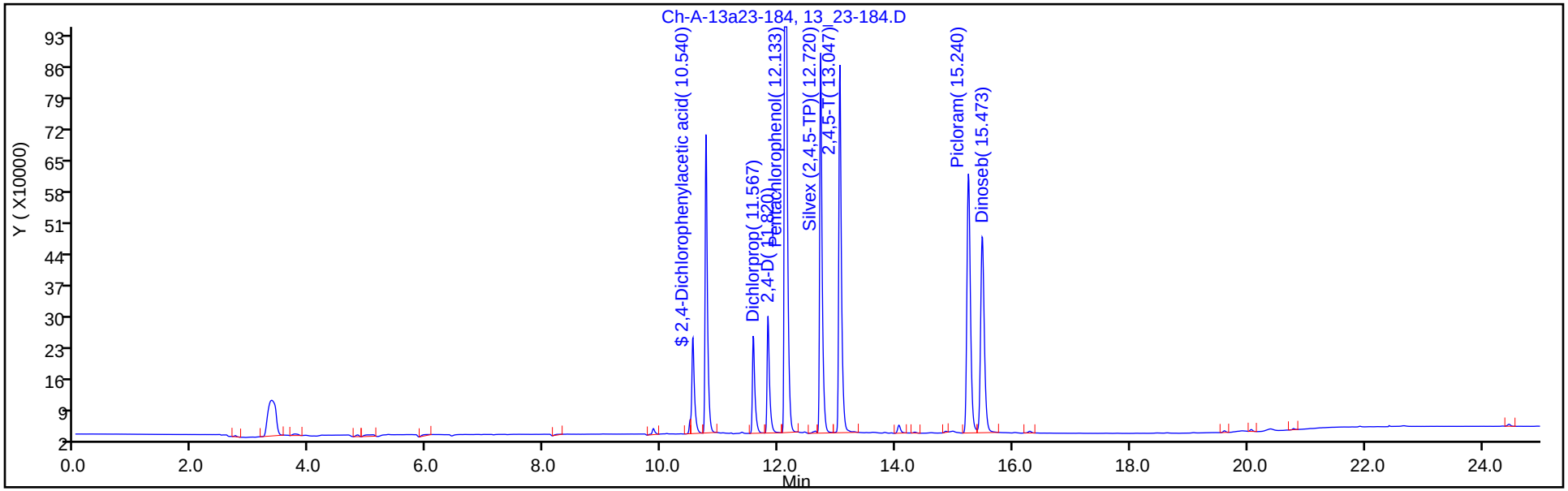
Report Date: 20-Sep-2019 08:50:52 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

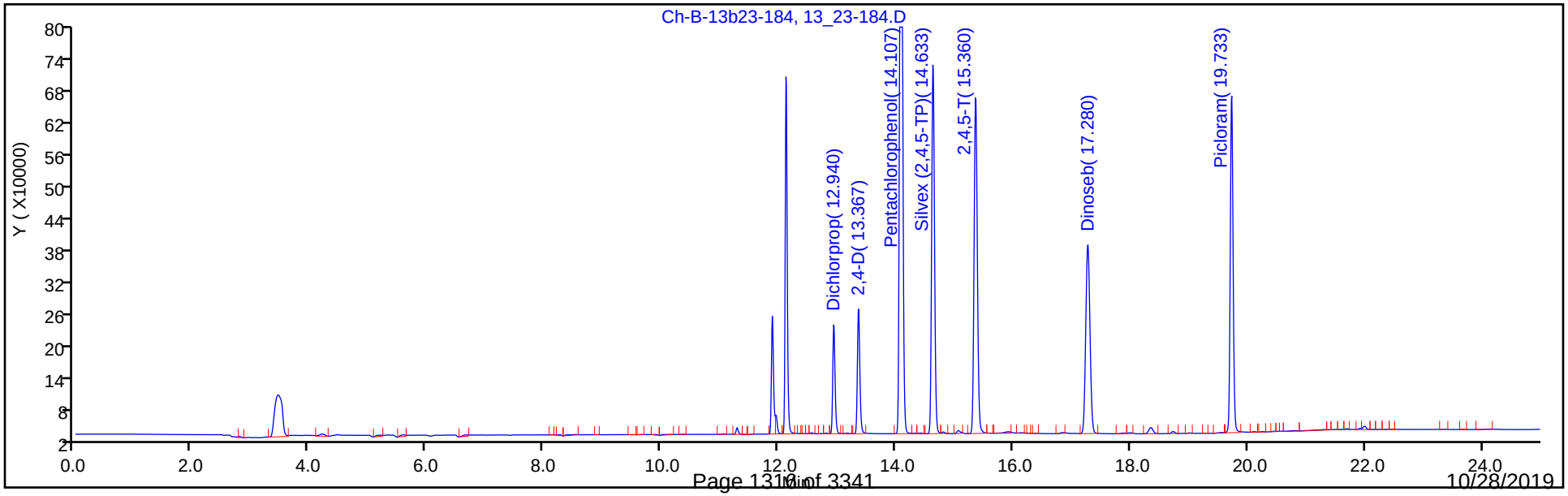
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D

Injection Date:	19-Sep-2019 14:28:29	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std2			Worklist Smp#:	13
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

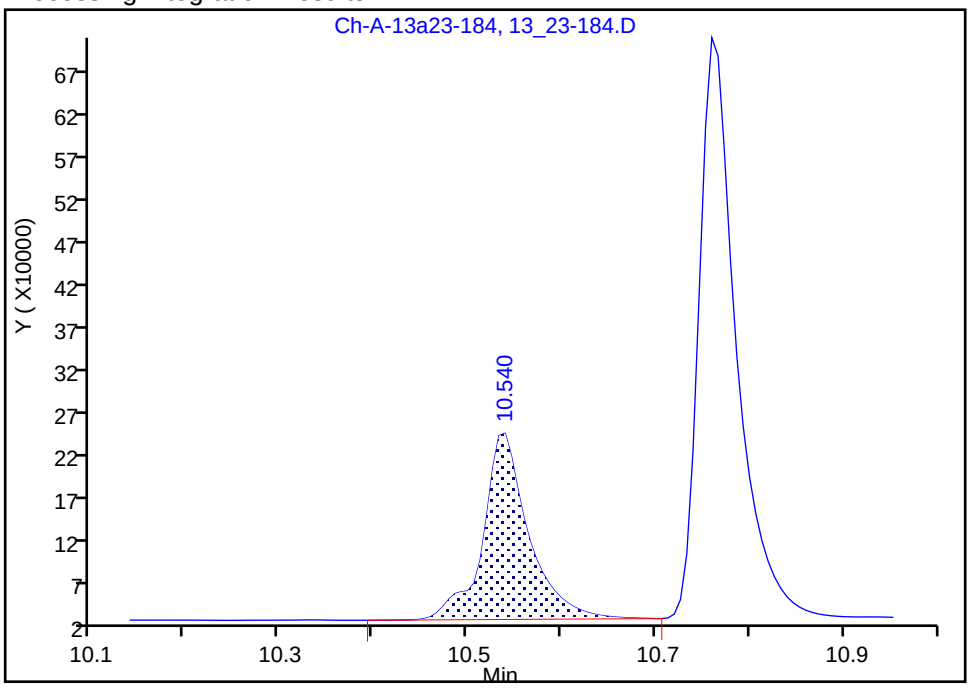
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D
Injection Date: 19-Sep-2019 14:28:29 Instrument ID: HP5890-13
Lims ID: std2
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

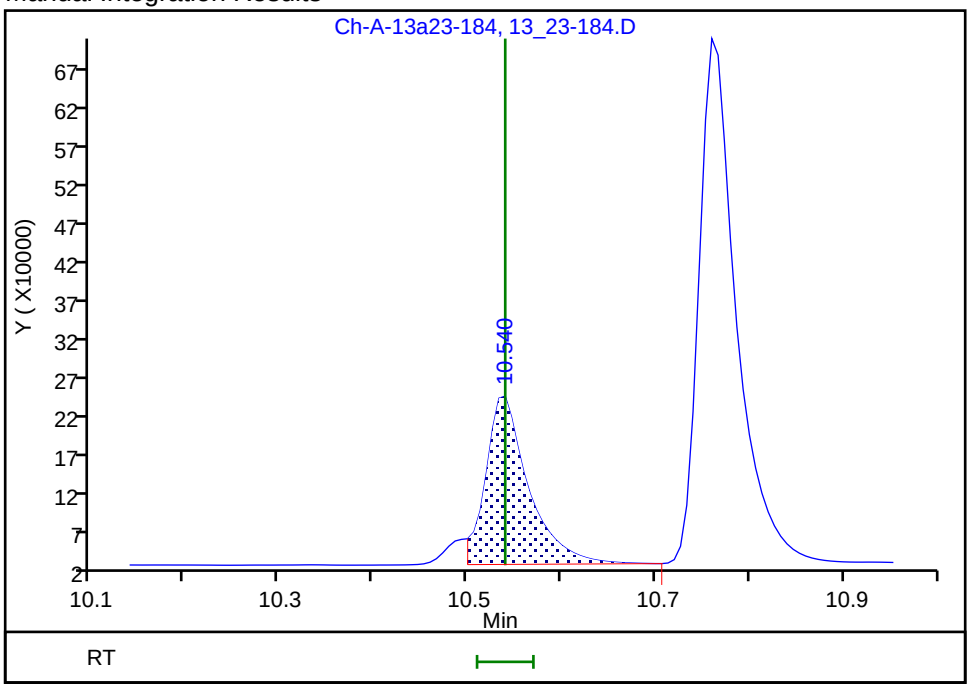
Processing Integration Results

RT: 10.54
Area: 732581
Amount: 0.392938
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 679541
Amount: 0.390762
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:19:06
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D
Lims ID: std3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 19-Sep-2019 14:58:14 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:53 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:19:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	394338	0.2500	0.2268	M
2	11.893	11.893	0.000	325815	0.2500	0.2226	M
						RPD = 1.85	
2 Dichlorprop							
1	11.573	11.573	0.000	376933	0.2500	0.2177	
2	12.940	12.940	0.000	325191	0.2500	0.2142	
						RPD = 1.62	
3 2,4-D							
1	11.820	11.820	0.000	436821	0.2500	0.2324	
2	13.367	13.367	0.000	390874	0.2500	0.2287	
						RPD = 1.60	
4 Pentachlorophenol							
1	12.120	12.120	0.000	3049508	0.2500	0.2117	
2	14.093	14.093	0.000	2959400	0.2500	0.2175	
						RPD = 2.68	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	1395272	0.2500	0.2336	
2	14.633	14.633	0.000	1321359	0.2500	0.2335	
						RPD = 0.03	
6 2,4,5-T							
1	13.047	13.047	0.000	1427561	0.2500	0.2365	
2	15.360	15.360	0.000	1360627	0.2500	0.2361	
						RPD = 0.19	
7 Picloram							
1	15.240	15.240	0.000	1323994	0.2500	0.2486	
2	19.733	19.733	0.000	1148694	0.2500	0.2461	
						RPD = 1.03	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	1116576	0.2500	0.2128	
2	17.273	17.273	0.000	1031974	0.2500	0.2134	
						RPD = 0.28	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.25_00004 Amount Added: 1.00 Units: mL

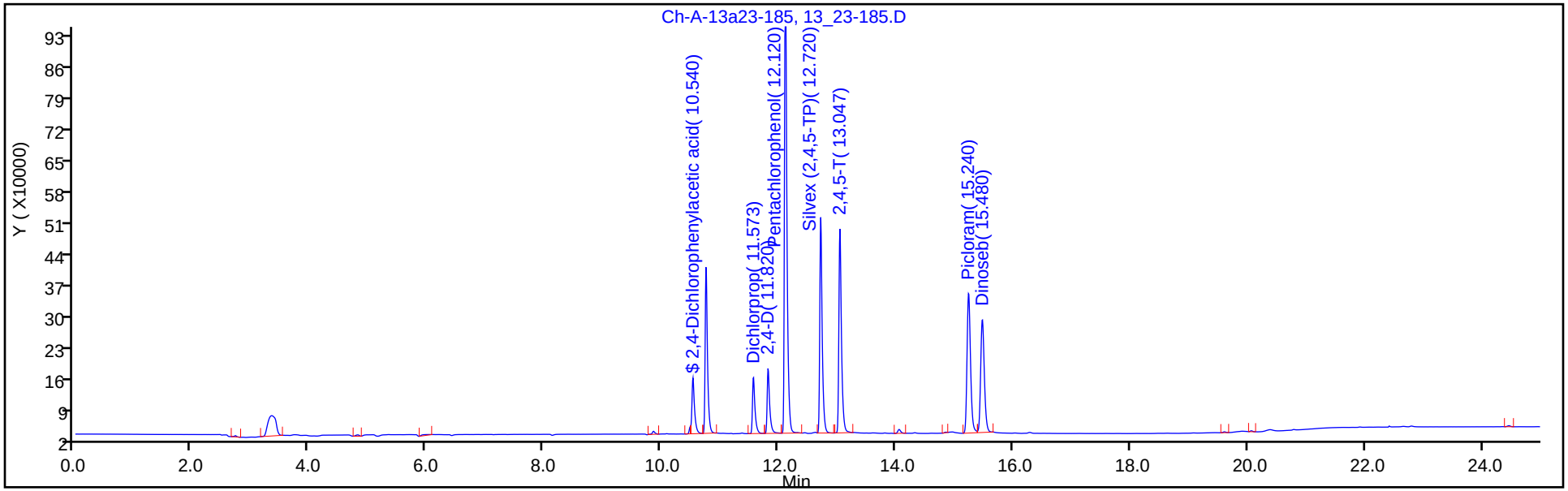
Report Date: 20-Sep-2019 08:50:53 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

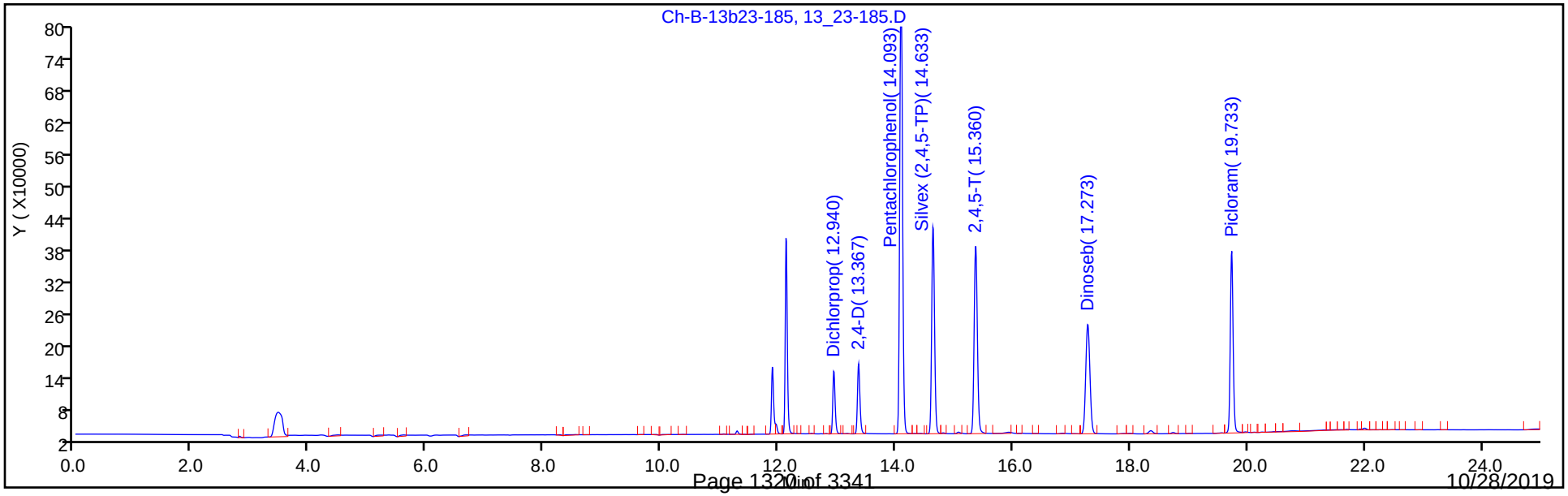
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D

Injection Date:	19-Sep-2019 14:58:14	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std3			Worklist Smp#:	14
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

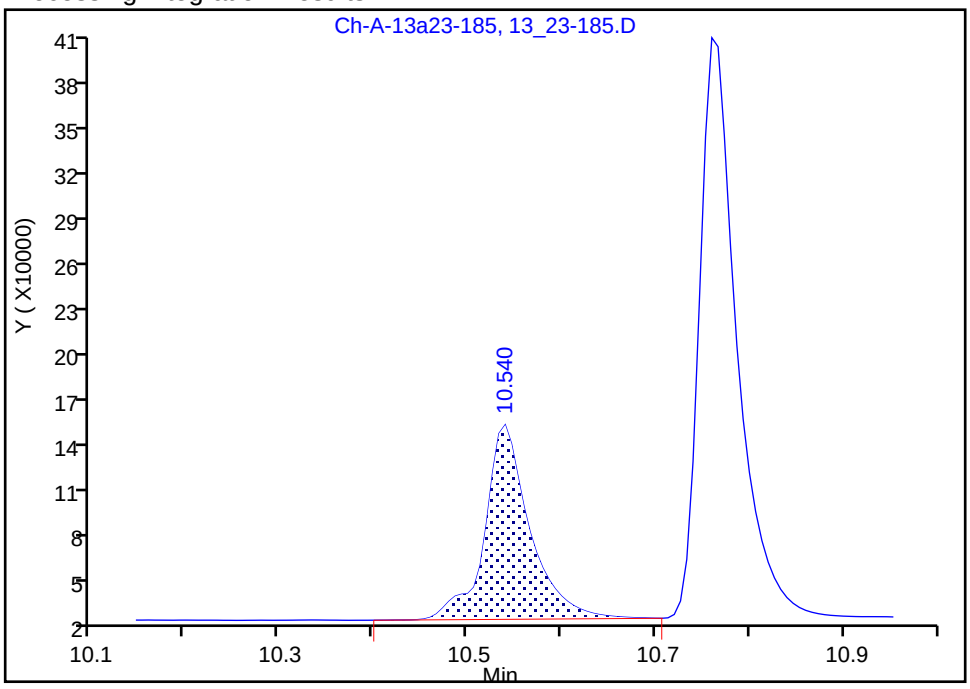
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D
Injection Date: 19-Sep-2019 14:58:14 Instrument ID: HP5890-13
Lims ID: std3
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

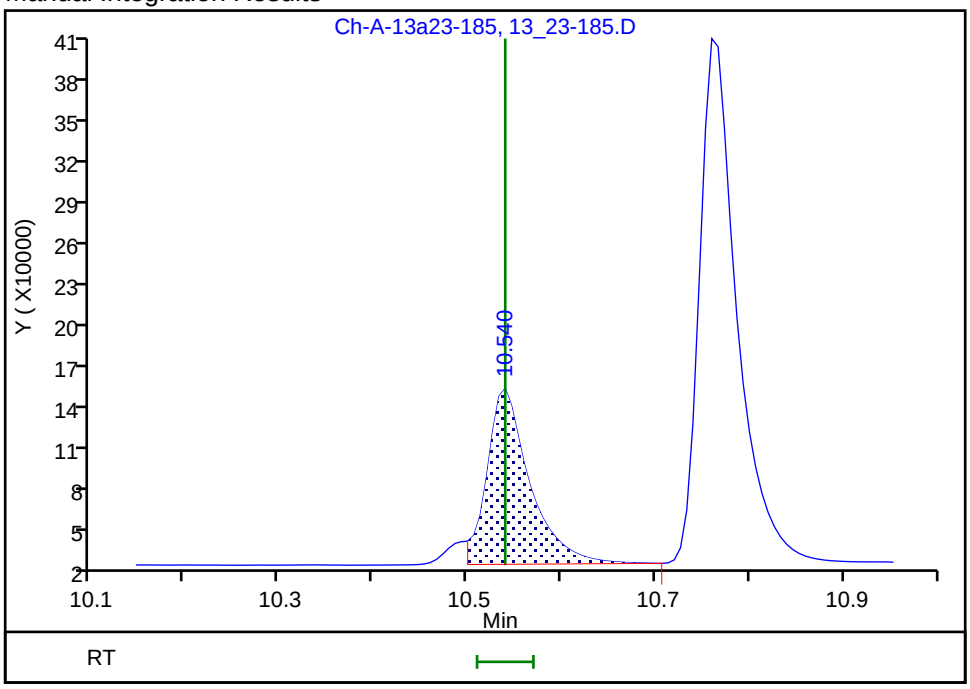
Processing Integration Results

RT: 10.54
Area: 420697
Amount: 0.227268
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 394338
Amount: 0.226760
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:19:38
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D
Lims ID: std4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 19-Sep-2019 15:27:55 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:54 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:20:50

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	335997	0.2000	0.1932	M
2	11.893	11.893	0.000	281104	0.2000	0.1920	M
						RPD = 0.60	
2 Dichlorprop							
1	11.573	11.573	0.000	325679	0.2000	0.1881	
2	12.947	12.940	0.007	283761	0.2000	0.1869	
						RPD = 0.64	
3 2,4-D							
1	11.820	11.820	0.000	373759	0.2000	0.1989	
2	13.367	13.367	0.000	337082	0.2000	0.1972	
						RPD = 0.82	
4 Pentachlorophenol							
1	12.120	12.120	0.000	2709583	0.2000	0.1881	
2	14.093	14.093	0.000	2534342	0.2000	0.1862	
						RPD = 1.01	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	1197317	0.2000	0.2004	
2	14.640	14.633	0.007	1131637	0.2000	0.2000	
						RPD = 0.23	
6 2,4,5-T							
1	13.047	13.047	0.000	1221329	0.2000	0.2024	
2	15.367	15.360	0.007	1161032	0.2000	0.2015	
						RPD = 0.45	
7 Picloram							
1	15.247	15.240	0.007	1119246	0.2000	0.2102	
2	19.733	19.733	0.000	967017	0.2000	0.2072	
						RPD = 1.44	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	980357	0.2000	0.1869	
2	17.280	17.273	0.007	889390	0.2000	0.1839	
						RPD = 1.58	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.20_00004 Amount Added: 1.00 Units: mL

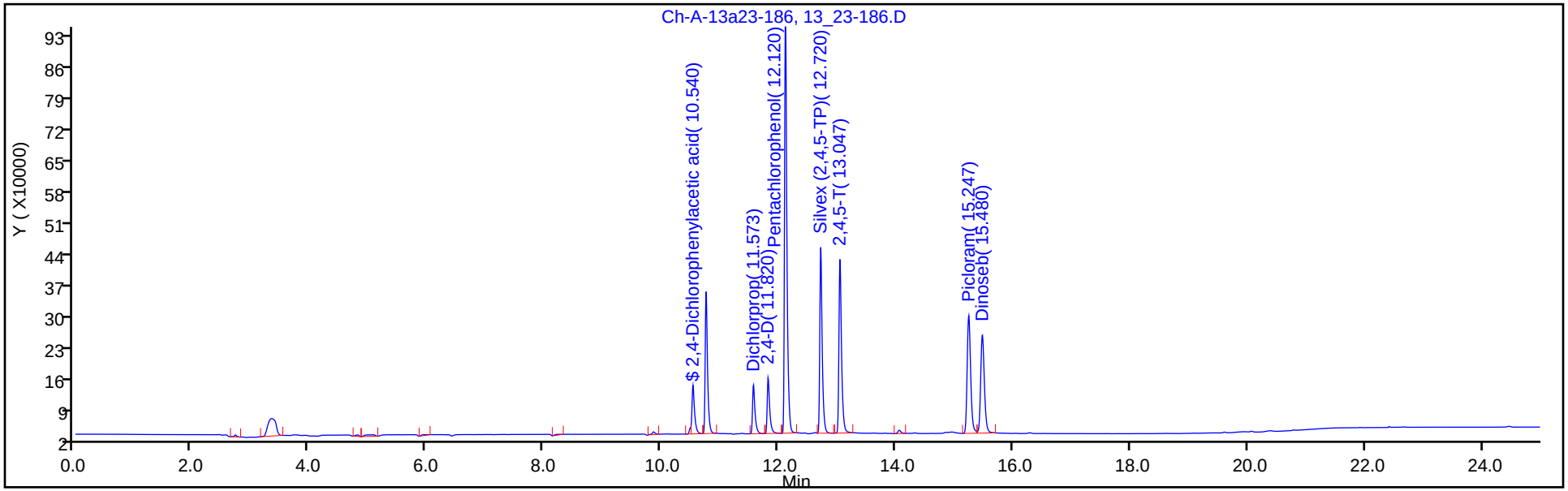
Report Date: 20-Sep-2019 08:50:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

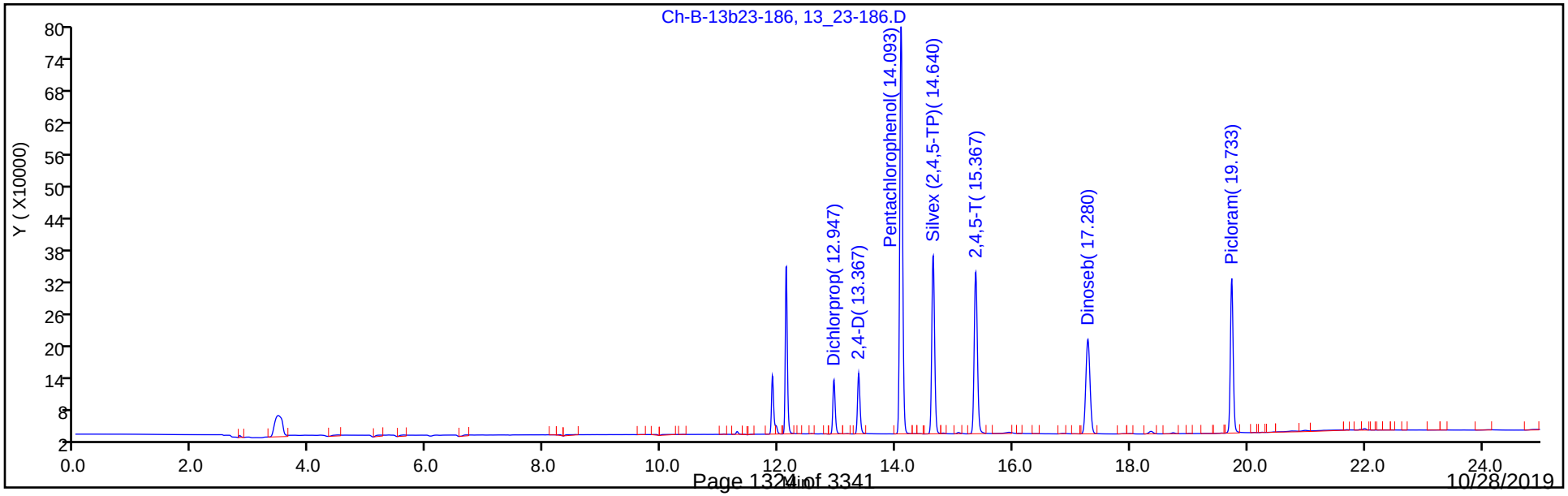
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D

Injection Date:	19-Sep-2019 15:27:55	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std4			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

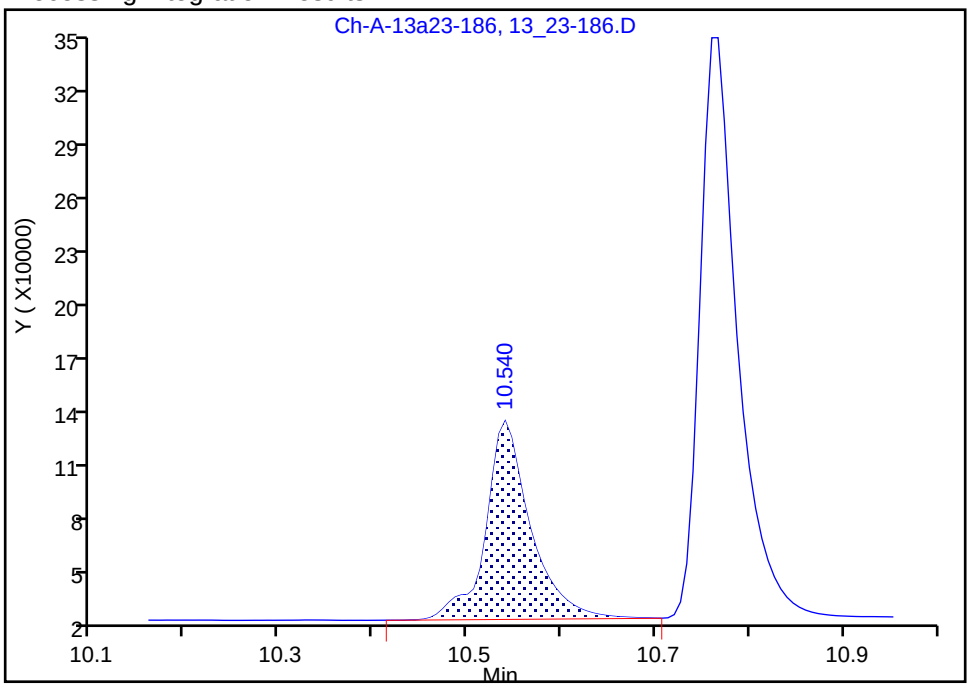
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D
Injection Date: 19-Sep-2019 15:27:55 Instrument ID: HP5890-13
Lims ID: std4
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

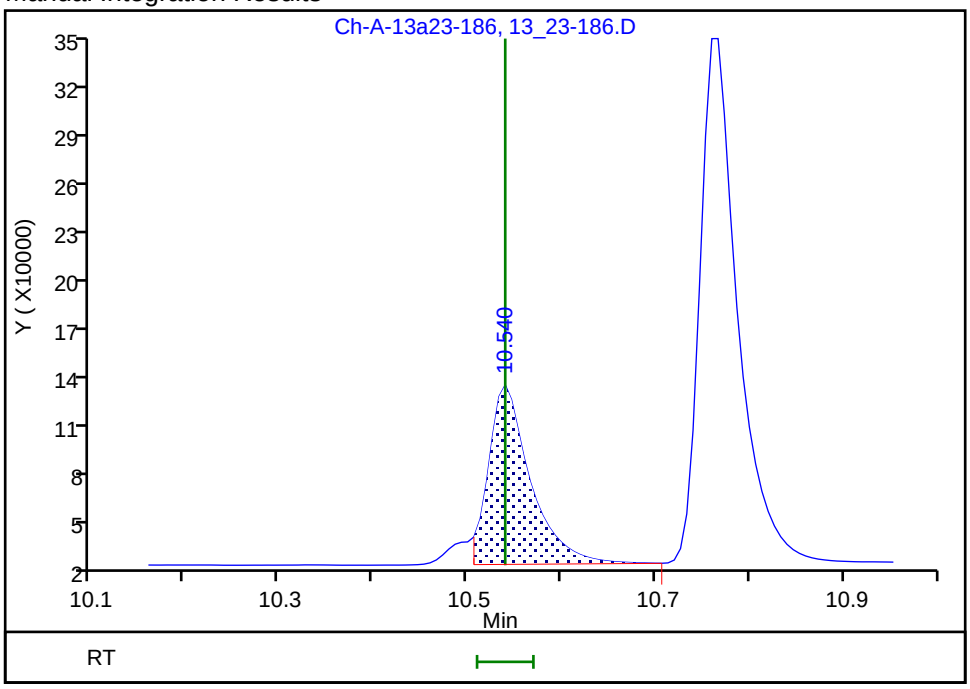
Processing Integration Results

RT: 10.54
Area: 363748
Amount: 0.197912
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 335997
Amount: 0.193211
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:20:31
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D
Lims ID: std5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 19-Sep-2019 15:57:42 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:55 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:21:15

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	266787	0.1500	0.1534	M
2	11.893	11.893	0.000	224717	0.1500	0.1535	M
						RPD = 0.07	
2 Dichlorprop							
1	11.573	11.573	0.000	256103	0.1500	0.1479	
2	12.947	12.940	0.007	224427	0.1500	0.1479	
						RPD = 0.06	
3 2,4-D							
1	11.820	11.820	0.000	288353	0.1500	0.1534	
2	13.367	13.367	0.000	263808	0.1500	0.1544	
						RPD = 0.61	
4 Pentachlorophenol							
1	12.120	12.120	0.000	2111685	0.1500	0.1466	
2	14.093	14.093	0.000	1970199	0.1500	0.1448	
						RPD = 1.26	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	926123	0.1500	0.1550	
2	14.640	14.633	0.007	875913	0.1500	0.1548	
						RPD = 0.17	
6 2,4,5-T							
1	13.047	13.047	0.000	938632	0.1500	0.1555	
2	15.367	15.360	0.007	892783	0.1500	0.1549	
						RPD = 0.40	
7 Picloram							
1	15.247	15.240	0.007	834907	0.1500	0.1568	
2	19.733	19.733	0.000	729065	0.1500	0.1562	
						RPD = 0.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	761718	0.1500	0.1452	
2	17.280	17.273	0.007	692761	0.1500	0.1433	
						RPD = 1.33	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.15_00005 Amount Added: 1.00 Units: mL

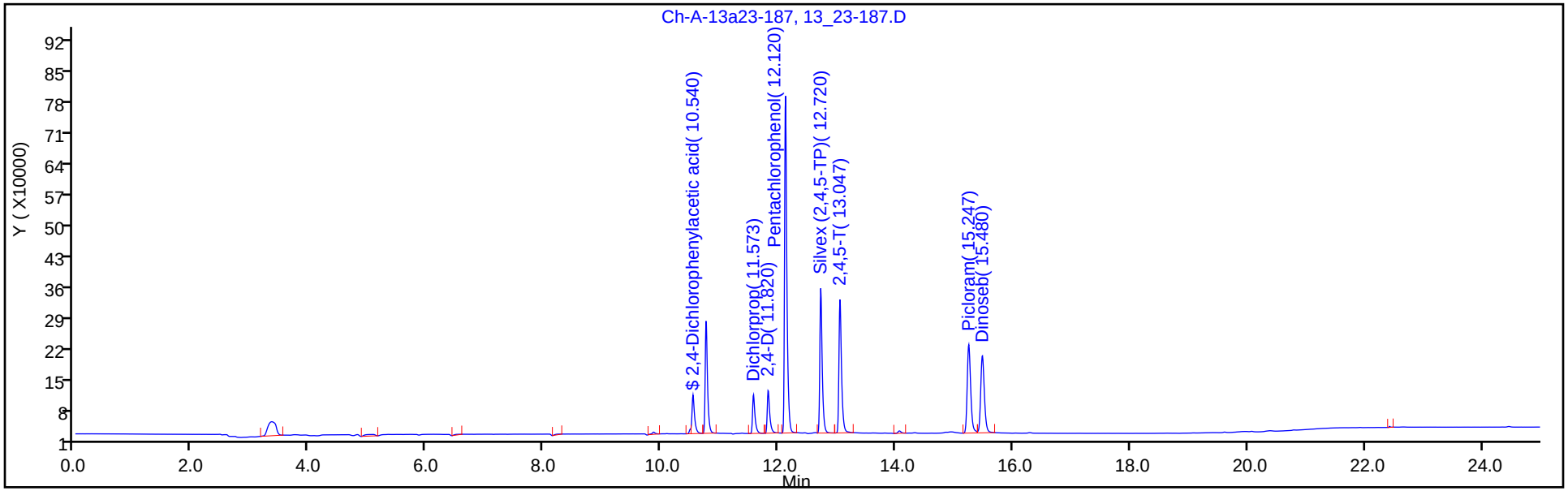
Report Date: 20-Sep-2019 08:50:55 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

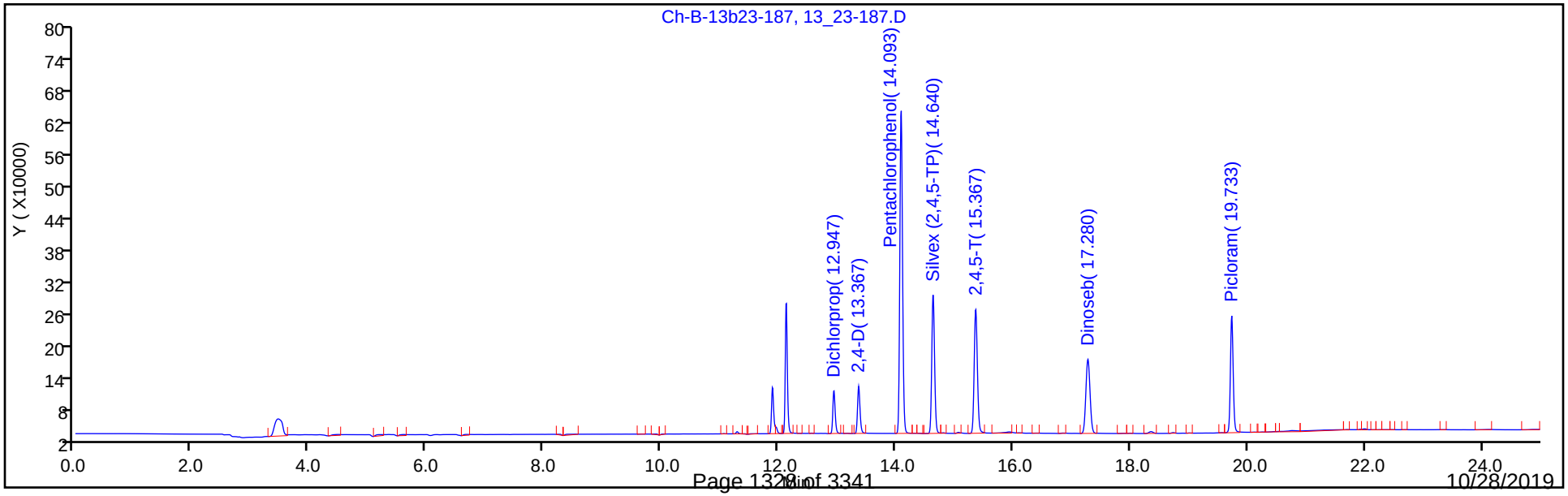
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D

Injection Date:	19-Sep-2019 15:57:42	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std5			Worklist Smp#:	16
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

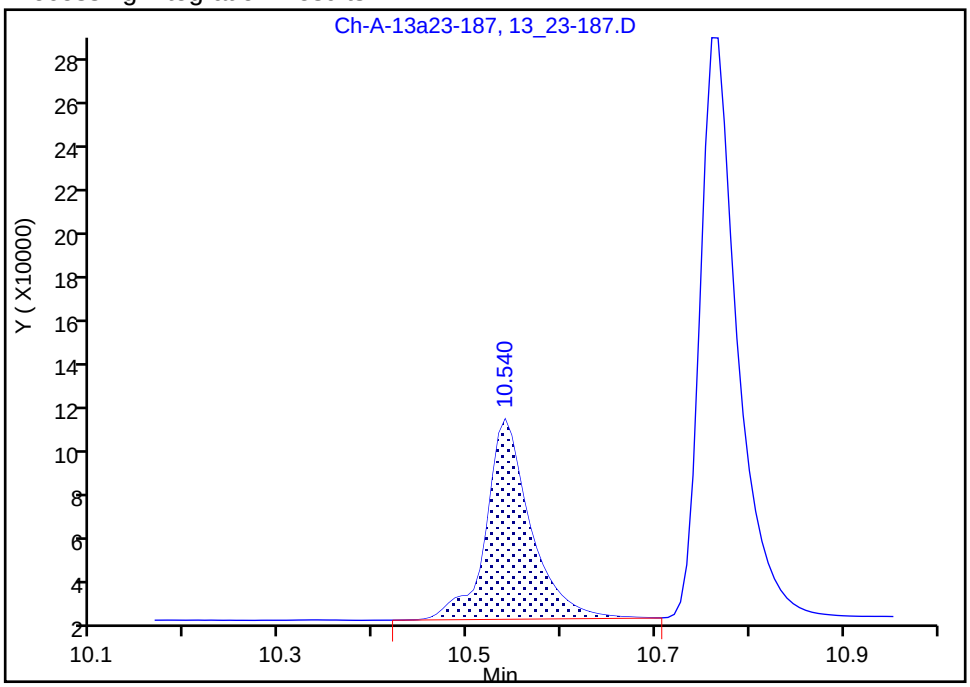
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D
Injection Date: 19-Sep-2019 15:57:42 Instrument ID: HP5890-13
Lims ID: std5
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

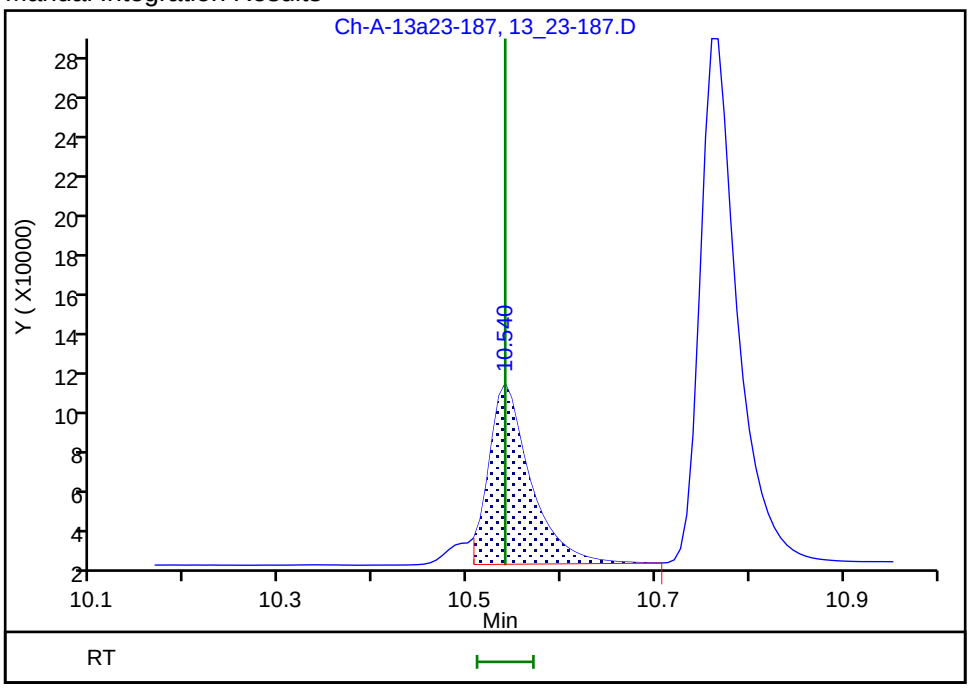
Processing Integration Results

RT: 10.54
Area: 287721
Amount: 0.158038
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 266787
Amount: 0.153413
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:21:02
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D
Lims ID: std6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 19-Sep-2019 16:27:25 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:56 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:21:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	195914	0.1000	0.1127	M
2	11.900	11.893	0.007	164620	0.1000	0.1125	M
						RPD = 0.17	
2 Dichlorprop							
1	11.573	11.573	0.000	186590	0.1000	0.1078	
2	12.947	12.940	0.007	163019	0.1000	0.1074	
						RPD = 0.36	
3 2,4-D							
1	11.827	11.820	0.007	206101	0.1000	0.1097	
2	13.367	13.367	0.000	188738	0.1000	0.1104	
						RPD = 0.71	
4 Pentachlorophenol							
1	12.120	12.120	0.000	1497506	0.1000	0.1040	
2	14.093	14.093	0.000	1401881	0.1000	0.1030	
						RPD = 0.92	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	655032	0.1000	0.1097	
2	14.640	14.633	0.007	621912	0.1000	0.1099	
						RPD = 0.22	
6 2,4,5-T							
1	13.047	13.047	0.000	651749	0.1000	0.1080	
2	15.367	15.360	0.007	621763	0.1000	0.1079	
						RPD = 0.10	
7 Picloram							
1	15.247	15.240	0.007	539917	0.1000	0.1014	
2	19.733	19.733	0.000	477401	0.1000	0.1023	
						RPD = 0.87	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	544227	0.1000	0.1037	
2	17.280	17.273	0.007	496649	0.1000	0.1027	
						RPD = 0.99	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00055 Amount Added: 1.00 Units: mL

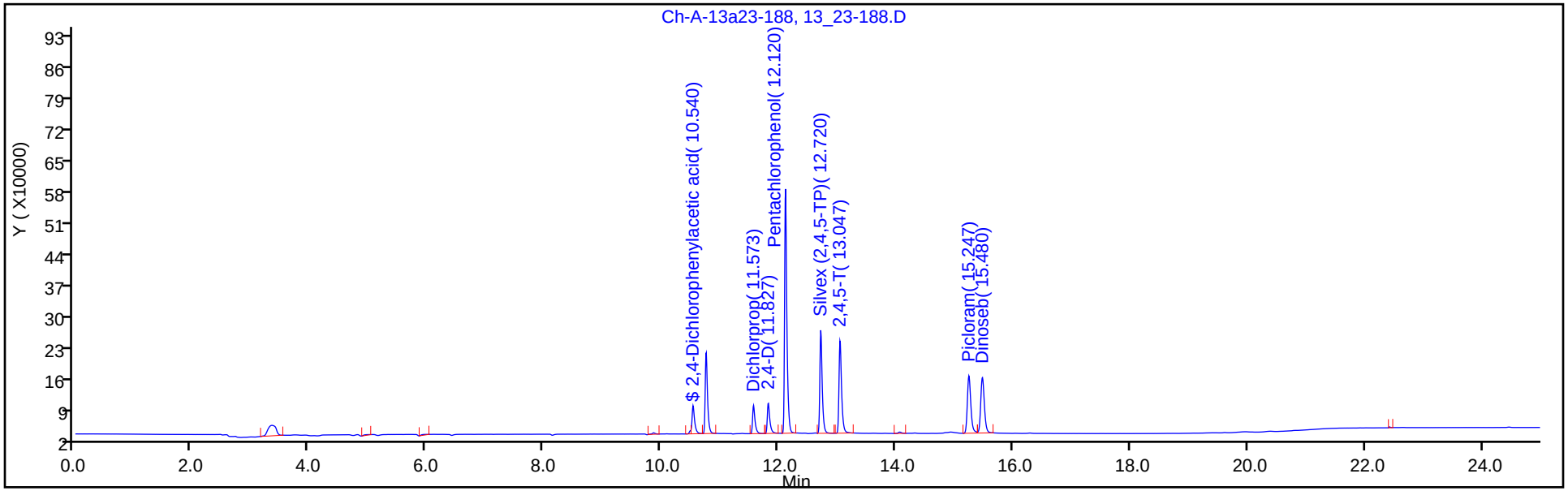
Report Date: 20-Sep-2019 08:50:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

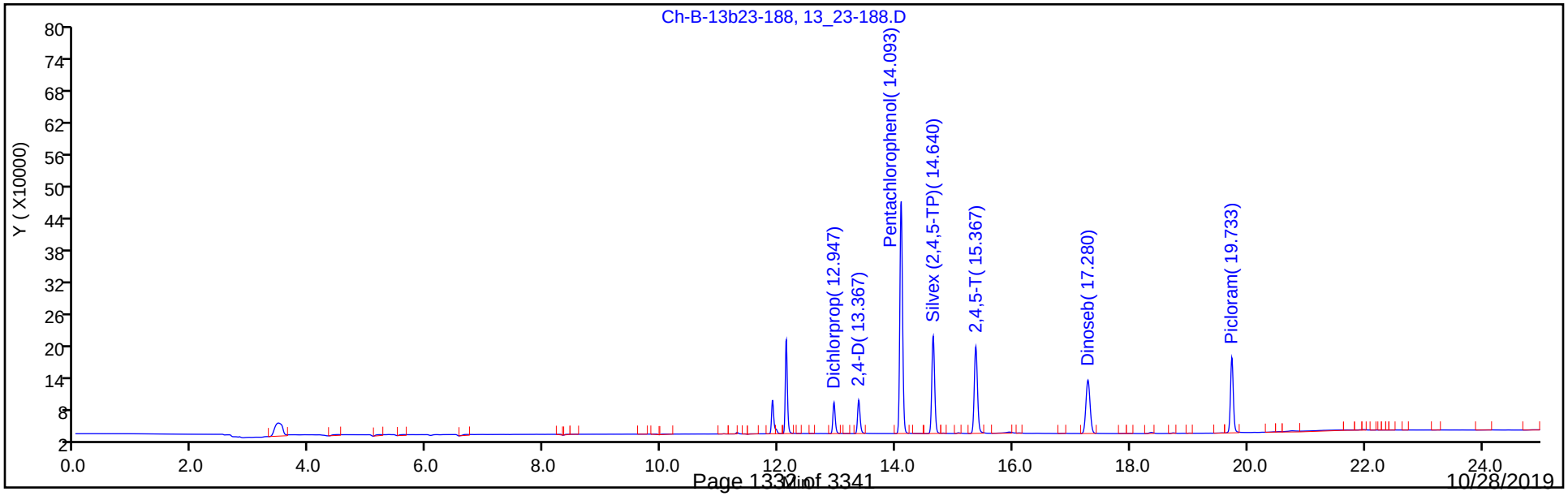
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D

Injection Date:	19-Sep-2019 16:27:25	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std6			Worklist Smp#:	17
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

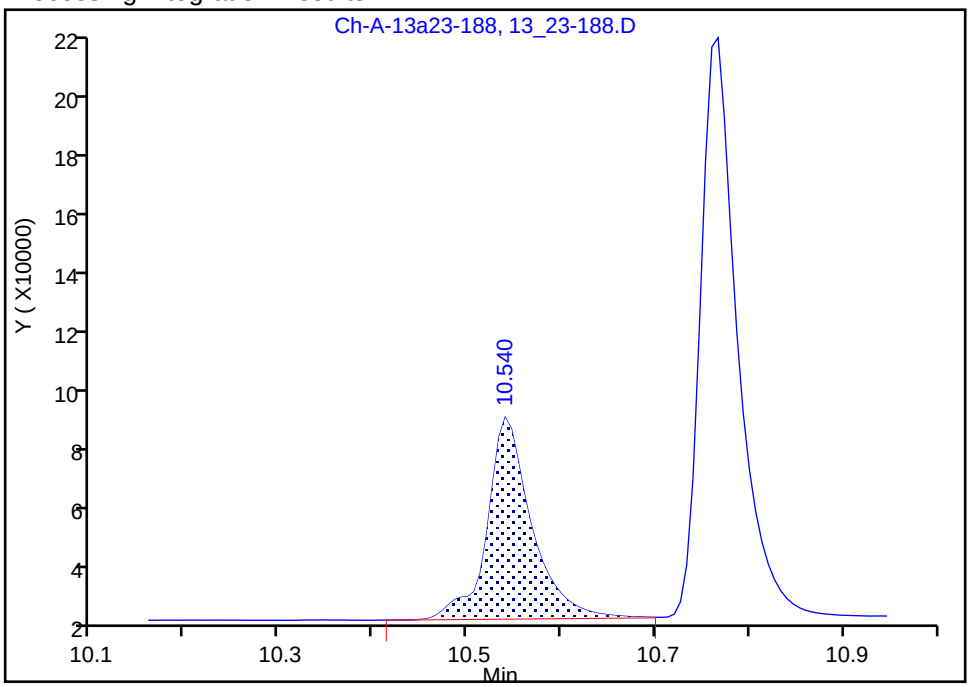
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D
Injection Date: 19-Sep-2019 16:27:25 Instrument ID: HP5890-13
Lims ID: std6
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

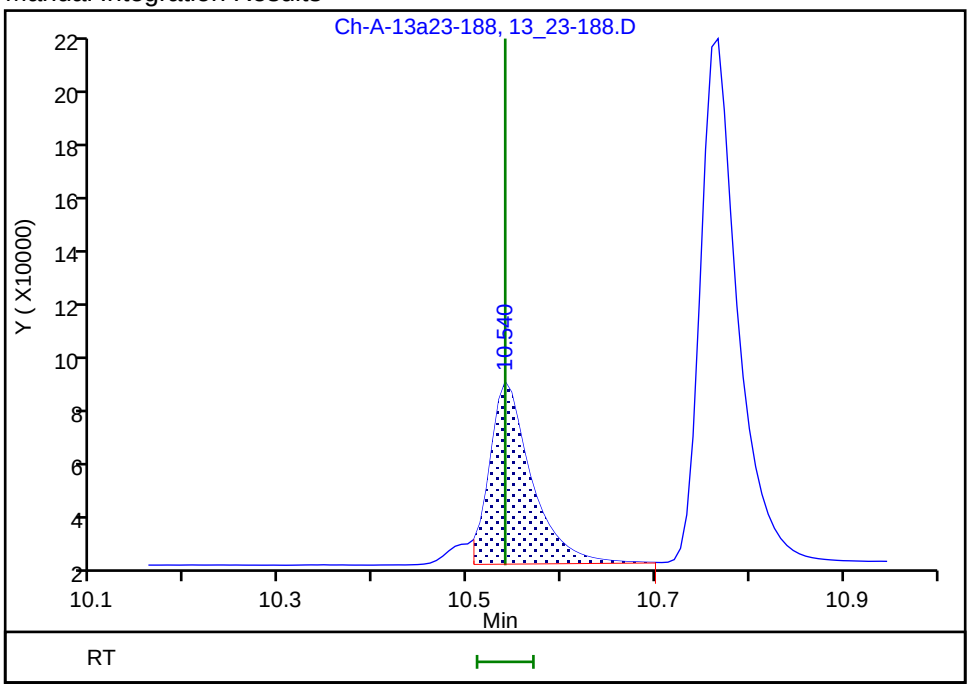
Processing Integration Results

RT: 10.54
Area: 210063
Amount: 0.116498
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 195914
Amount: 0.112658
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:21:31
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D
Lims ID: std7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 19-Sep-2019 16:57:10 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:57 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:22:03

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	103997	0.0500	0.0598	M
2	11.900	11.893	0.007	90076	0.0500	0.0615	M
						RPD = 2.86	
2 Dichlorprop							
1	11.573	11.573	0.000	97309	0.0500	0.0562	
2	12.947	12.940	0.007	87183	0.0500	0.0574	
						RPD = 2.15	
3 2,4-D							
1	11.827	11.820	0.007	107387	0.0500	0.0571	
2	13.367	13.367	0.000	99217	0.0500	0.0581	
						RPD = 1.60	
4 Pentachlorophenol							
1	12.120	12.120	0.000	753937	0.0500	0.0523	
2	14.093	14.093	0.000	708511	0.0500	0.0521	
						RPD = 0.54	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	325871	0.0500	0.0546	
2	14.640	14.633	0.007	311634	0.0500	0.0551	
						RPD = 0.94	
6 2,4,5-T							
1	13.053	13.047	0.006	320623	0.0500	0.0531	
2	15.367	15.360	0.007	312939	0.0500	0.0543	
						RPD = 2.19	
7 Picloram							
1	15.253	15.240	0.013	258169	0.0500	0.0485	
2	19.733	19.733	0.000	235257	0.0500	0.0504	
						RPD = 3.88	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	275287	0.0500	0.0525	
2	17.280	17.273	0.007	255021	0.0500	0.0527	
						RPD = 0.51	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.05_00004 Amount Added: 1.00 Units: mL

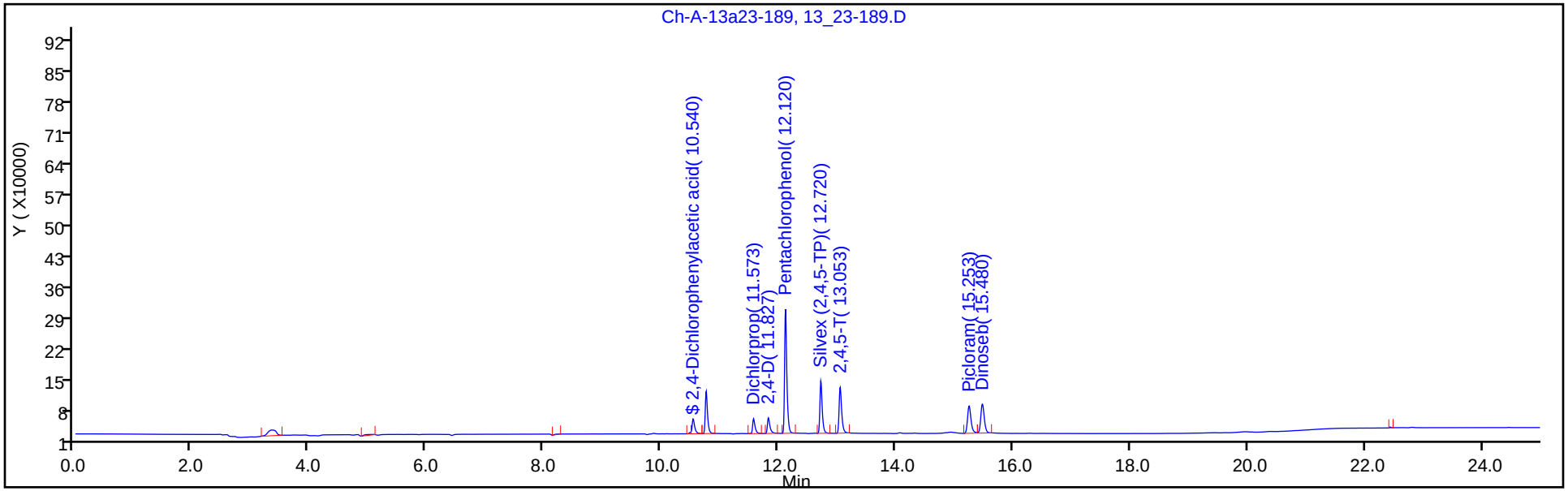
Report Date: 20-Sep-2019 08:50:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

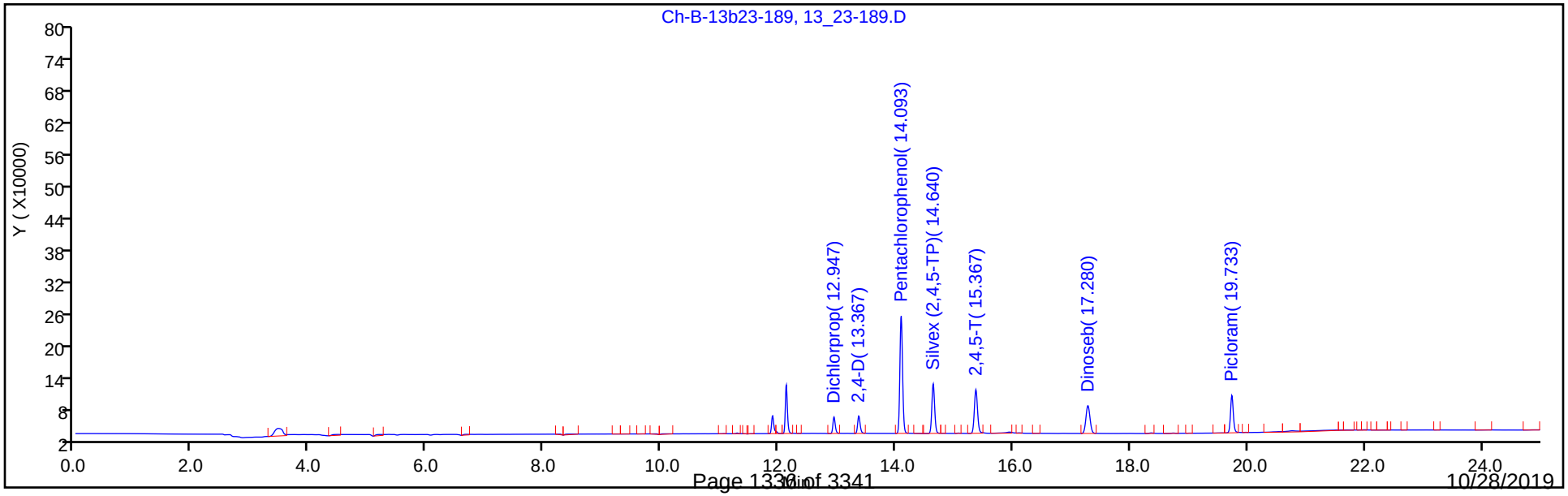
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D

Injection Date:	19-Sep-2019 16:57:10	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std7			Worklist Smp#:	18
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

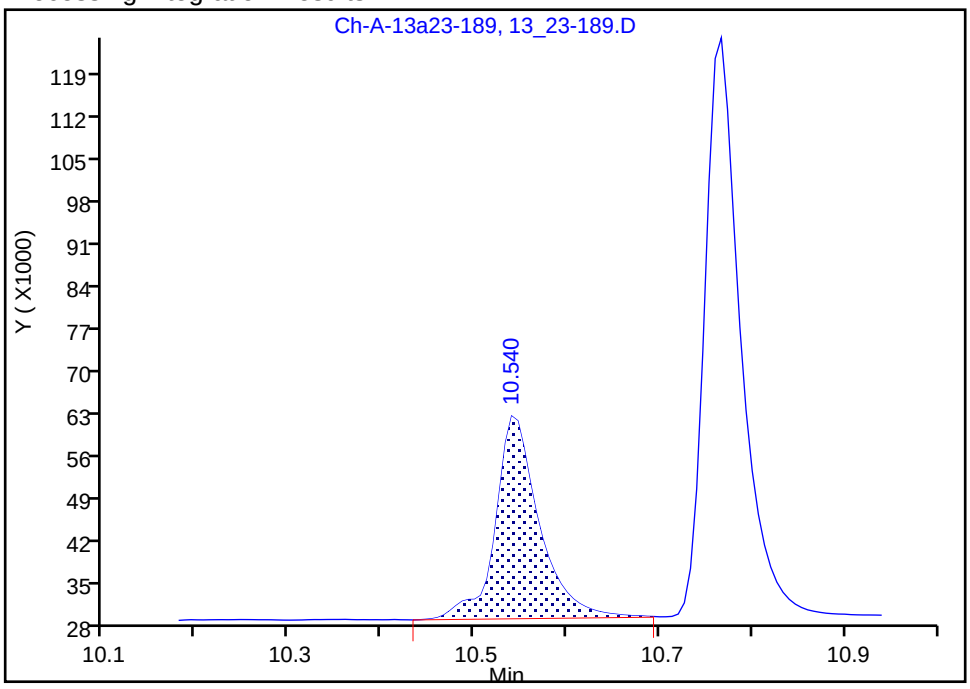
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D
Injection Date: 19-Sep-2019 16:57:10 Instrument ID: HP5890-13
Lims ID: std7
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

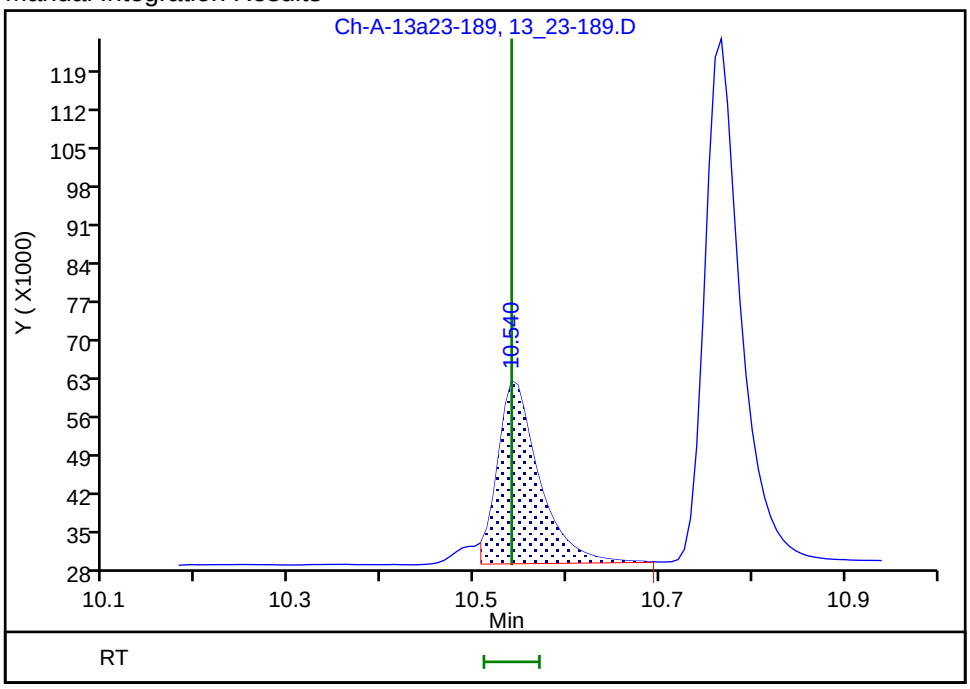
Processing Integration Results

RT: 10.54
Area: 110647
Amount: 0.061971
Amount Units: ng/ul



Manual Integration Results

RT: 10.54
Area: 103997
Amount: 0.059802
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:22:00
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D
Lims ID: std8
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 19-Sep-2019 17:26:54 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:22:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.547	10.540	0.007	48196	0.0200	0.0277	M
2	11.900	11.893	0.007	43072	0.0200	0.0294	M
						RPD = 5.99	
2 Dichlorprop							
1	11.573	11.573	0.000	44420	0.0200	0.0257	
2	12.947	12.940	0.007	44362	0.0200	0.0292	
						RPD = 12.99	
3 2,4-D							
1	11.827	11.820	0.007	47592	0.0200	0.0253	
2	13.373	13.367	0.006	45891	0.0200	0.0269	
						RPD = 5.87	
4 Pentachlorophenol							
1	12.120	12.120	0.000	330677	0.0200	0.0230	
2	14.093	14.093	0.000	316219	0.0200	0.0232	
						RPD = 1.20	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	142793	0.0200	0.0239	
2	14.640	14.633	0.007	141783	0.0200	0.0251	
						RPD = 4.70	
6 2,4,5-T							
1	13.053	13.047	0.006	138944	0.0200	0.0230	
2	15.367	15.360	0.007	138808	0.0200	0.0241	
						RPD = 4.51	
7 Picloram							
1	15.253	15.240	0.013	103447	0.0200	0.0194	
2	19.733	19.733	0.000	97630	0.0200	0.0209	
						RPD = 7.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	121712	0.0200	0.0232	
2	17.280	17.273	0.007	115055	0.0200	0.0238	
						RPD = 2.54	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.02_00004 Amount Added: 1.00 Units: mL

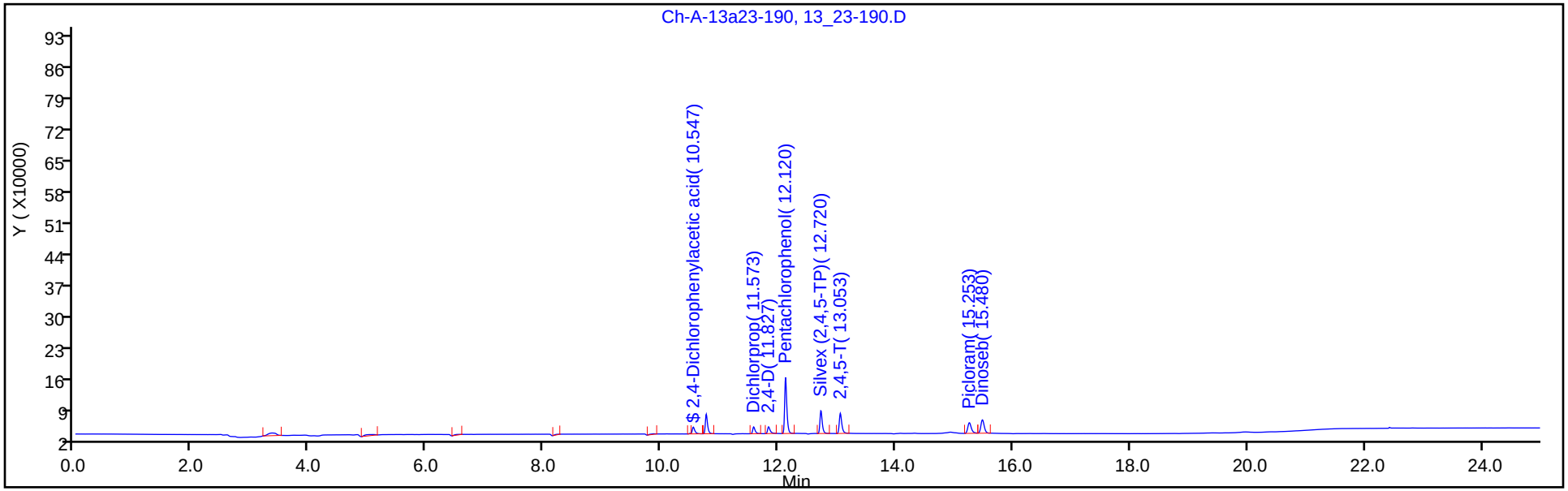
Report Date: 20-Sep-2019 08:50:58 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

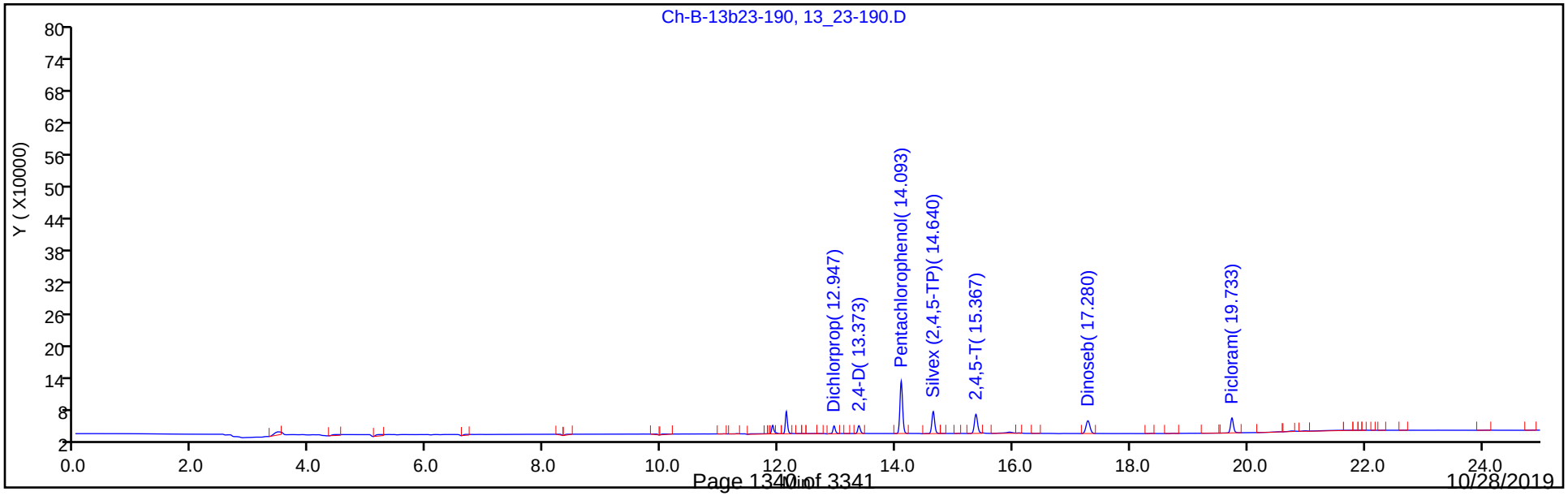
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Injection Date:	19-Sep-2019 17:26:54	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std8			Worklist Smp#:	19
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

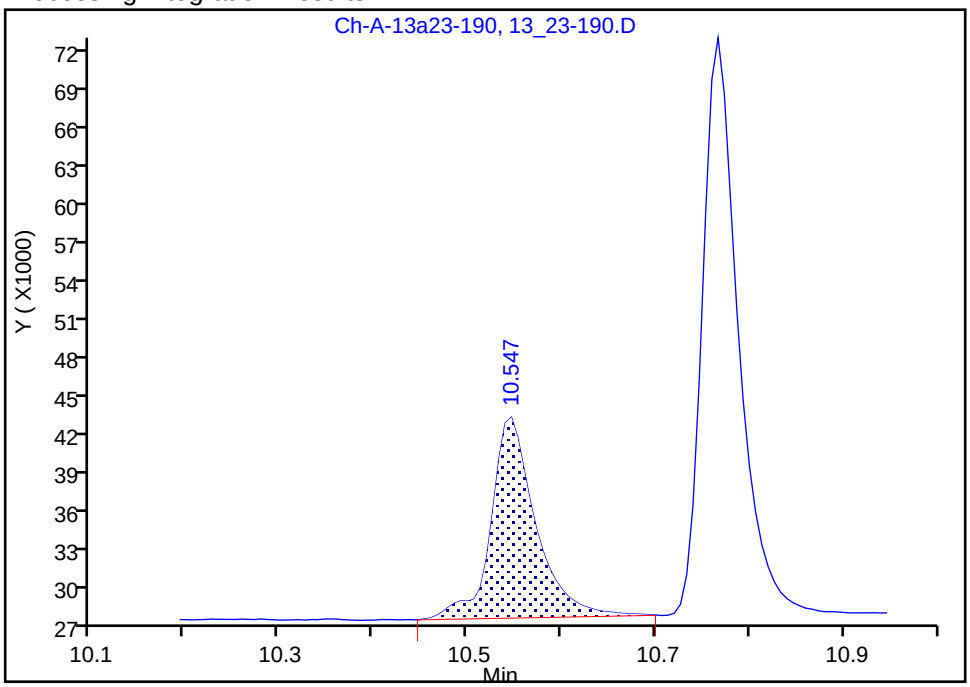
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D
Injection Date: 19-Sep-2019 17:26:54 Instrument ID: HP5890-13
Lims ID: std8
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

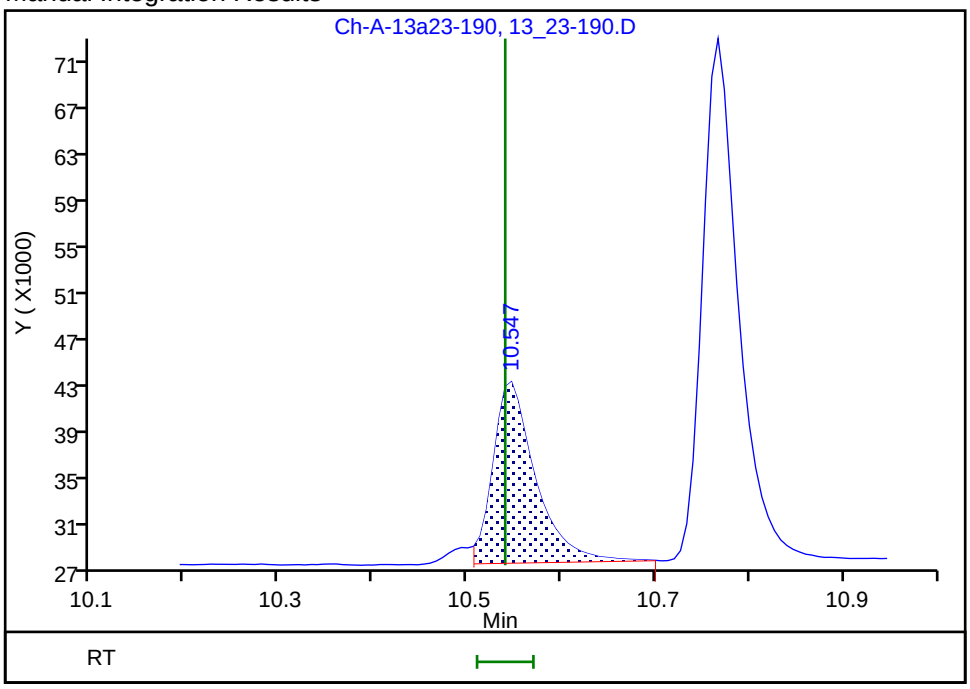
Processing Integration Results

RT: 10.55
Area: 50879
Amount: 0.028764
Amount Units: ng/ul



Manual Integration Results

RT: 10.55
Area: 48196
Amount: 0.027715
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:22:33
Audit Action: Split an Integrated Peak Audit Reason: Baseline Smoothing

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPII ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37718

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
Dichlorprop	+++++	12.947	12.947	12.947	12.947	12.940	+++++	+++++			12.910 - 12.970	12.946
2,4-D	+++++	13.367	13.367	13.367	13.367	13.367	13.367	+++++			13.337 - 13.397	13.367
Pentachlorophenol	14.093	14.093	14.093	14.093	14.093	14.093	+++++	+++++			14.063 - 14.123	14.093
Silvex (2,4,5-TP)	+++++	14.640	14.640	14.640	14.640	14.633	14.633	+++++			14.603 - 14.663	14.638
2,4,5-T	+++++	15.367	15.367	15.367	15.367	15.360	15.360	+++++			15.330 - 15.390	15.365
Dinoseb	17.280	17.280	17.280	17.280	17.280	17.273	+++++	+++++			17.243 - 17.303	17.279
Picloram	+++++	19.733	19.733	19.733	19.733	19.733	19.733	+++++			19.683 - 19.783	19.733
2,4-Dichlorophenylacetic acid	+++++	11.900	11.900	11.893	11.893	11.893	11.893	+++++			11.863 - 11.923	11.895

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPII ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37718

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
Dichlorprop	+++++ 1418805	1743660 1300764	1630190 +++++	1496180 +++++	Ave		1517919.80				11.5		20.0			
2,4-D	+++++ 1685410	1984340 1563496	1887380 1375170	1758720 +++++	Ave		1709086.00				12.9		20.0			
Pentachlorophenol	15810950 12671710	14170220 11837600	14018810 +++++	13134660 +++++	Ave		13607325.0				10.2		20.0			
Silvex (2,4,5-TP)	+++++ 5658185	6232680 5285436	6219120 4719150	5839420 +++++	Ave		5658998.50				10.3		20.0			
2,4,5-T	+++++ 5805160	6258780 5442508	6217630 4902476	5951887 +++++	Ave		5763073.44				9.0		20.0			
Dinoseb	5752750 4446950	5100420 4127896	4966490 +++++	4618407 +++++	Ave		4835485.44				11.8		20.0			
Picloram	+++++ 4835085	4705140 4594776	4774010 4239532	4860433 +++++	Ave		4668162.72				4.9		20.0			
2,4-Dichlorophenylacetic acid	+++++ 1405520	1801520 1303260	1646200 1127752	1498113 +++++	Ave		1463727.56				16.5		20.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HERBICIDES BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1 Analy Batch No.: 492876

SDG No.:

Instrument ID: HP5890-13 GC Column: RTX-CLPII ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/19/2019 13:58 Calibration End Date: 09/19/2019 17:26 Calibration ID: 37718

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD8 480-492876/19	13_23-190.D
Level 2	STD7 480-492876/18	13_23-189.D
Level 3	STD6 480-492876/17	13_23-188.D
Level 4	STD5 480-492876/16	13_23-187.D
Level 5	STD4 480-492876/15	13_23-186.D
Level 6	STD3 480-492876/14	13_23-185.D
Level 7	STD2 480-492876/13	13_23-184.D
Level 8	STD1 480-492876/12	13_23-183.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
Dichlorprop	Ave	+++++ 325191	87183 +++++	163019 +++++	224427	283761	+++++ 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
2,4-D	Ave	+++++ 390874	99217 687585	188738 +++++	263808	337082	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
Pentachlorophenol	Ave	316219 2959400	708511 +++++	1401881 +++++	1970199	2534342	0.0200 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
Silvex (2,4,5-TP)	Ave	+++++ 1321359	311634 2359575	621912 +++++	875913	1131637	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
2,4,5-T	Ave	+++++ 1360627	312939 2451238	621763 +++++	892783	1161032	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
Dinoseb	Ave	115055 1031974	255021 +++++	496649 +++++	692761	889390	0.0200 0.250	0.0500 +++++	0.100 +++++	0.150	0.200
Picloram	Ave	+++++ 1148694	235257 2119766	477401 +++++	729065	967017	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200
2,4-Dichlorophenylacetic acid	Ave	+++++ 325815	90076 563876	164620 +++++	224717	281104	+++++ 0.250	0.0500 0.500	0.100 +++++	0.150	0.200

Curve Type Legend:
Ave = Average

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D
Lims ID: std1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 19-Sep-2019 13:58:48 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:49 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:18:38

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	879452	0.7500	0.5057	M
2	11.893	11.893	0.000	733174	0.7500	0.5009	M
						RPD = 0.96	
2 Dichlorprop							
1	11.567	11.573	-0.006	865336	0.7500	0.4999	
2	12.940	12.940	0.000	745159	0.7500	0.4909	
						RPD = 1.81	
3 2,4-D							
1	11.820	11.820	0.000	1021924	0.7500	0.5437	
2	13.367	13.367	0.000	913381	0.7500	0.5344	
						RPD = 1.72	
4 Pentachlorophenol							
1	12.140	12.120	0.020	4615538	0.7500	0.3205	
2	14.113	14.093	0.020	4661218	0.7500	0.3426	
						RPD = 6.66	
5 Silvex (2,4,5-TP)							
1	12.727	12.720	0.007	3200180	0.7500	0.5357	
2	14.633	14.633	0.000	3157598	0.7500	0.5580	
						RPD = 4.07	
6 2,4,5-T							
1	13.053	13.047	0.006	3320307	0.7500	0.5502	
2	15.360	15.360	0.000	3261129	0.7500	0.5659	
						RPD = 2.81	
7 Picloram							
1	15.240	15.240	0.000	3251608	0.7500	0.6106	
2	19.733	19.733	0.000	2801447	0.7500	0.6001	
						RPD = 1.73	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	2583407	0.7500	0.4924	
2	17.273	17.273	0.000	2355599	0.7500	0.4871	
						RPD = 1.07	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.75_00005 Amount Added: 1.00 Units: mL

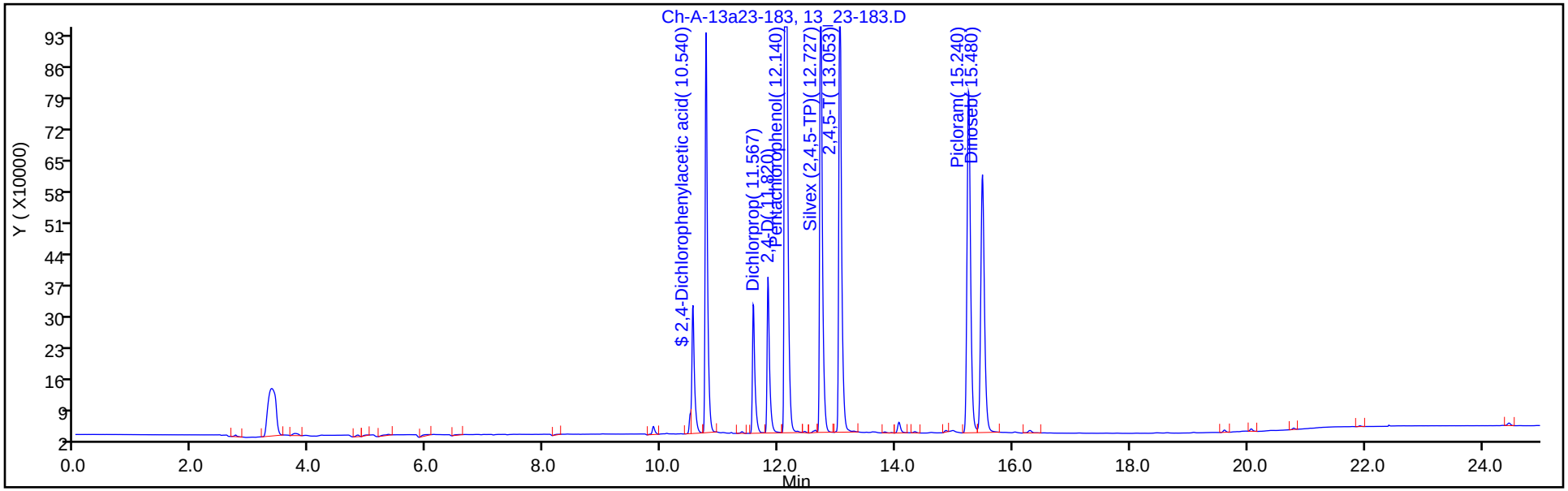
Report Date: 20-Sep-2019 08:50:50 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

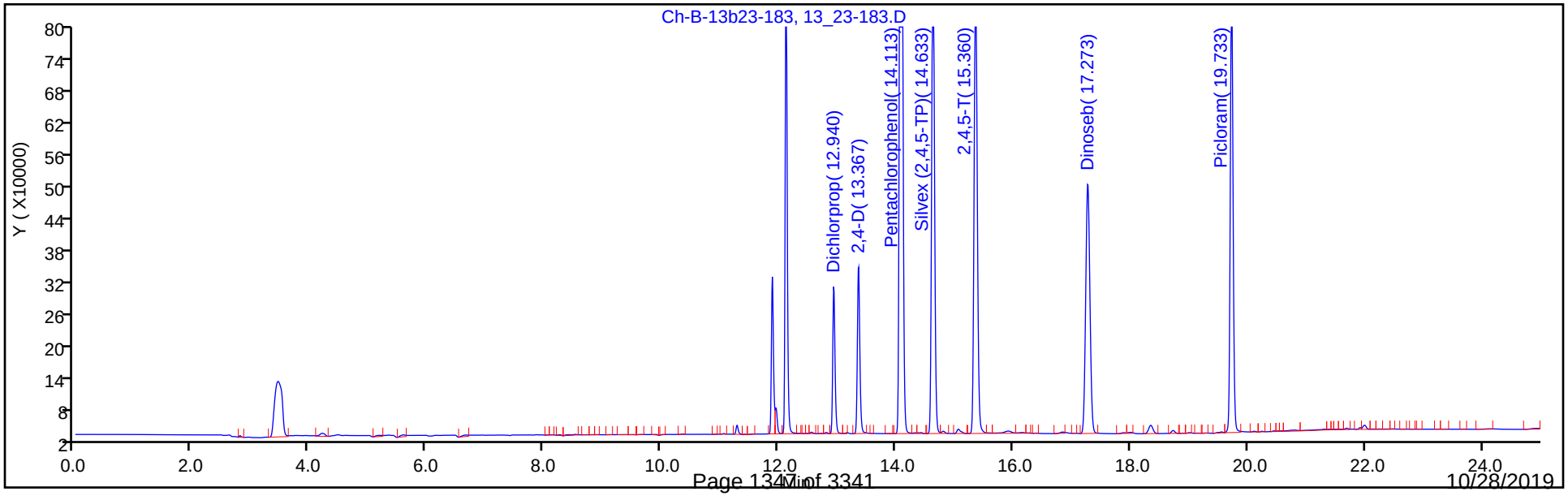
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D

Injection Date:	19-Sep-2019 13:58:48	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std1			Worklist Smp#:	12
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

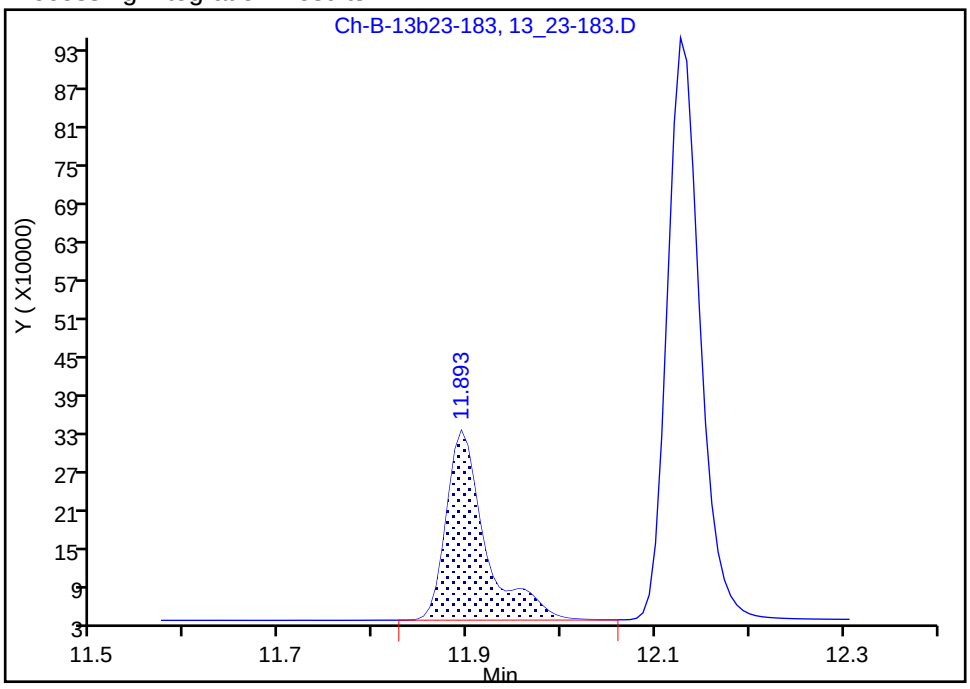
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-183.D
Injection Date: 19-Sep-2019 13:58:48 Instrument ID: HP5890-13
Lims ID: std1
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

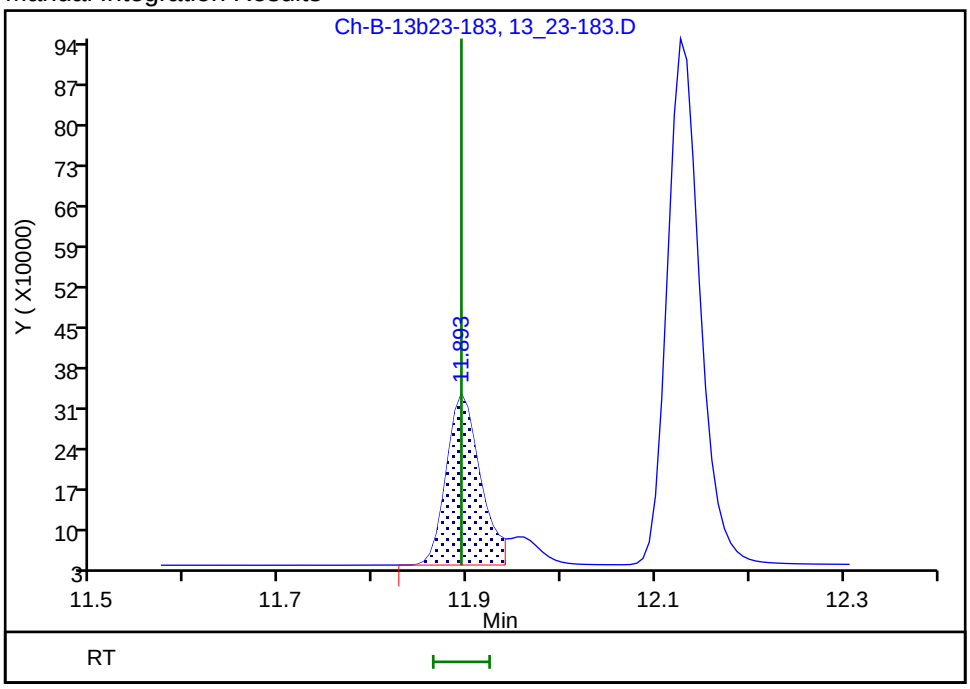
Processing Integration Results

RT: 11.89
Area: 852113
Amount: 0.509108
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 733174
Amount: 0.500895
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:18:23
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D
Lims ID: std2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 19-Sep-2019 14:28:29 ALS Bottle#: 0 Worklist Smp#: 13
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:52 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:19:16

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	679541	0.5000	0.3908	M
2	11.893	11.893	0.000	563876	0.5000	0.3852	M
						RPD = 1.43	
2 Dichlorprop							
1	11.567	11.573	-0.006	652487	0.5000	0.3769	
2	12.940	12.940	0.000	563715	0.5000	0.3714	
						RPD = 1.48	
3 2,4-D							
1	11.820	11.820	0.000	765175	0.5000	0.4071	
2	13.367	13.367	0.000	687585	0.5000	0.4023	
						RPD = 1.18	
4 Pentachlorophenol							
1	12.133	12.120	0.013	4079154	0.5000	0.2832	
2	14.107	14.093	0.014	4204707	0.5000	0.3090	
						RPD = 8.70	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	2515630	0.5000	0.4211	
2	14.633	14.633	0.000	2359575	0.5000	0.4170	
						RPD = 1.00	
6 2,4,5-T							
1	13.047	13.047	0.000	2603185	0.5000	0.4313	
2	15.360	15.360	0.000	2451238	0.5000	0.4253	
						RPD = 1.40	
7 Picloram							
1	15.240	15.240	0.000	2466228	0.5000	0.4631	
2	19.733	19.733	0.000	2119766	0.5000	0.4541	
						RPD = 1.96	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.473	15.480	-0.007	1971925	0.5000	0.3758	
2	17.280	17.273	0.007	1791823	0.5000	0.3706	
						RPD = 1.42	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.5_00005 Amount Added: 1.00 Units: mL

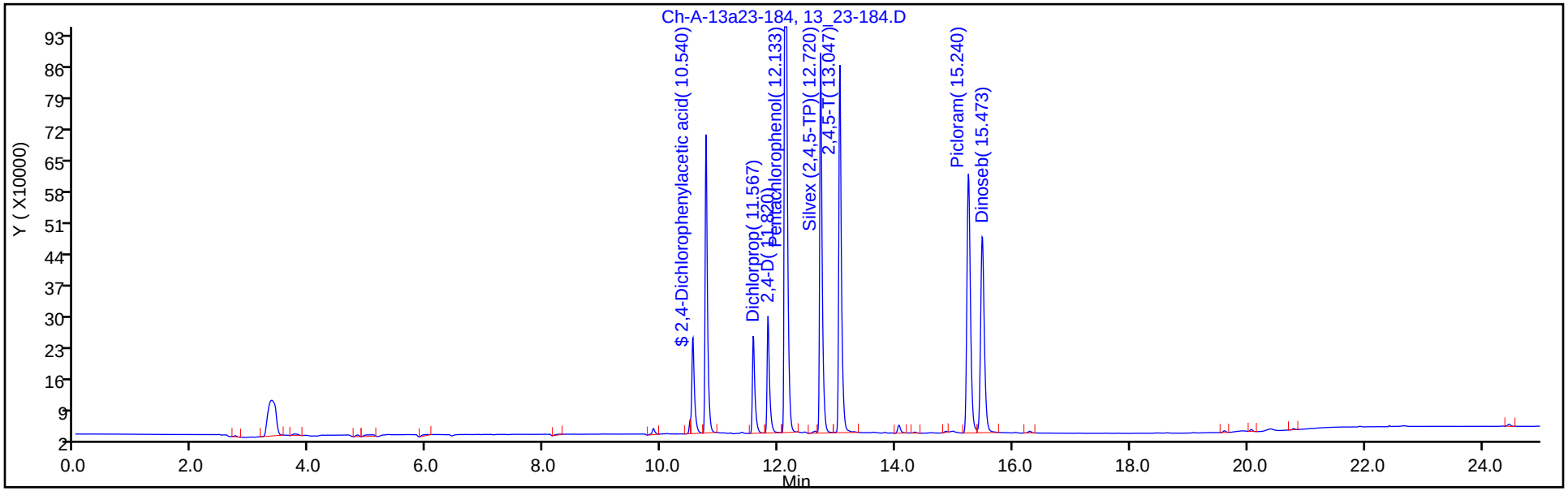
Report Date: 20-Sep-2019 08:50:52 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

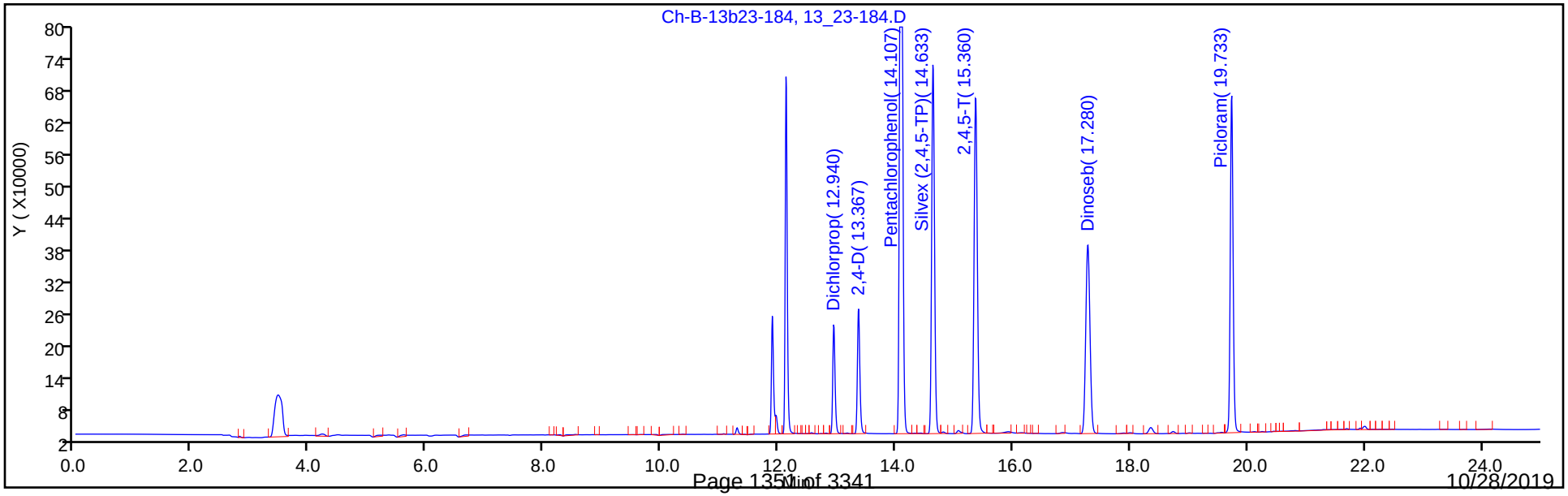
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D

Injection Date:	19-Sep-2019 14:28:29	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std2			Worklist Smp#:	13
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

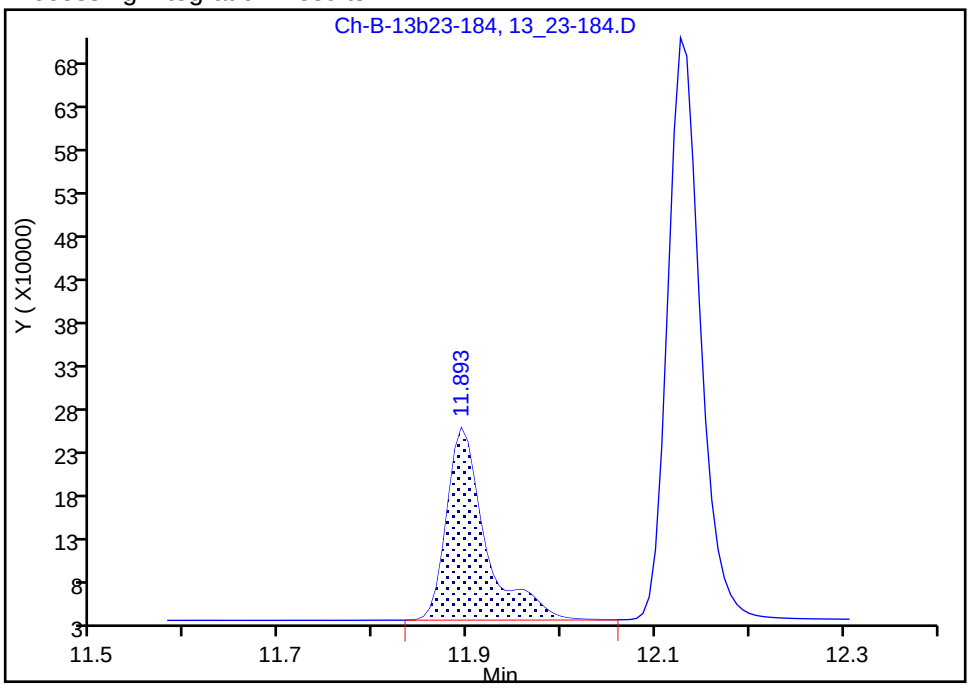
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-184.D				
Injection Date:	19-Sep-2019 14:28:29	Instrument ID:	HP5890-13		
Lims ID:	std2				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	13
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

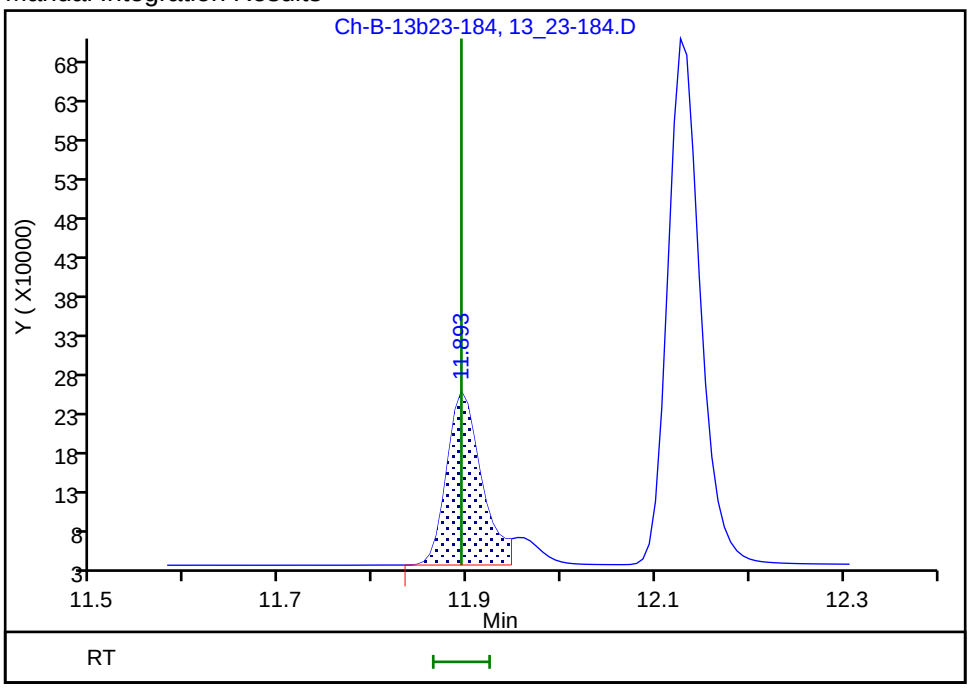
Processing Integration Results

RT: 11.89
Area: 637782
Amount: 0.385620
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 563876
Amount: 0.385233
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:19:03

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D
Lims ID: std3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 19-Sep-2019 14:58:14 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:53 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:19:48

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	394338	0.2500	0.2268	M
2	11.893	11.893	0.000	325815	0.2500	0.2226	M
						RPD = 1.85	
2 Dichlorprop							
1	11.573	11.573	0.000	376933	0.2500	0.2177	
2	12.940	12.940	0.000	325191	0.2500	0.2142	
						RPD = 1.62	
3 2,4-D							
1	11.820	11.820	0.000	436821	0.2500	0.2324	
2	13.367	13.367	0.000	390874	0.2500	0.2287	
						RPD = 1.60	
4 Pentachlorophenol							
1	12.120	12.120	0.000	3049508	0.2500	0.2117	
2	14.093	14.093	0.000	2959400	0.2500	0.2175	
						RPD = 2.68	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	1395272	0.2500	0.2336	
2	14.633	14.633	0.000	1321359	0.2500	0.2335	
						RPD = 0.03	
6 2,4,5-T							
1	13.047	13.047	0.000	1427561	0.2500	0.2365	
2	15.360	15.360	0.000	1360627	0.2500	0.2361	
						RPD = 0.19	
7 Picloram							
1	15.240	15.240	0.000	1323994	0.2500	0.2486	
2	19.733	19.733	0.000	1148694	0.2500	0.2461	
						RPD = 1.03	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	1116576	0.2500	0.2128	
2	17.273	17.273	0.000	1031974	0.2500	0.2134	
						RPD = 0.28	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.25_00004 Amount Added: 1.00 Units: mL

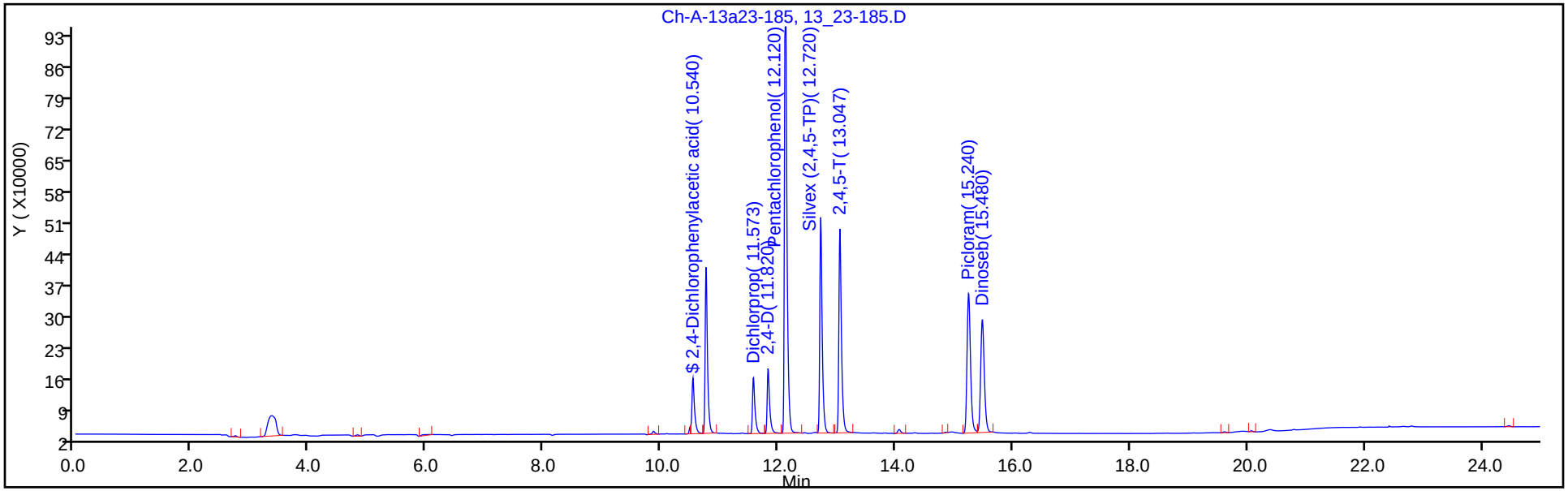
Report Date: 20-Sep-2019 08:50:53 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

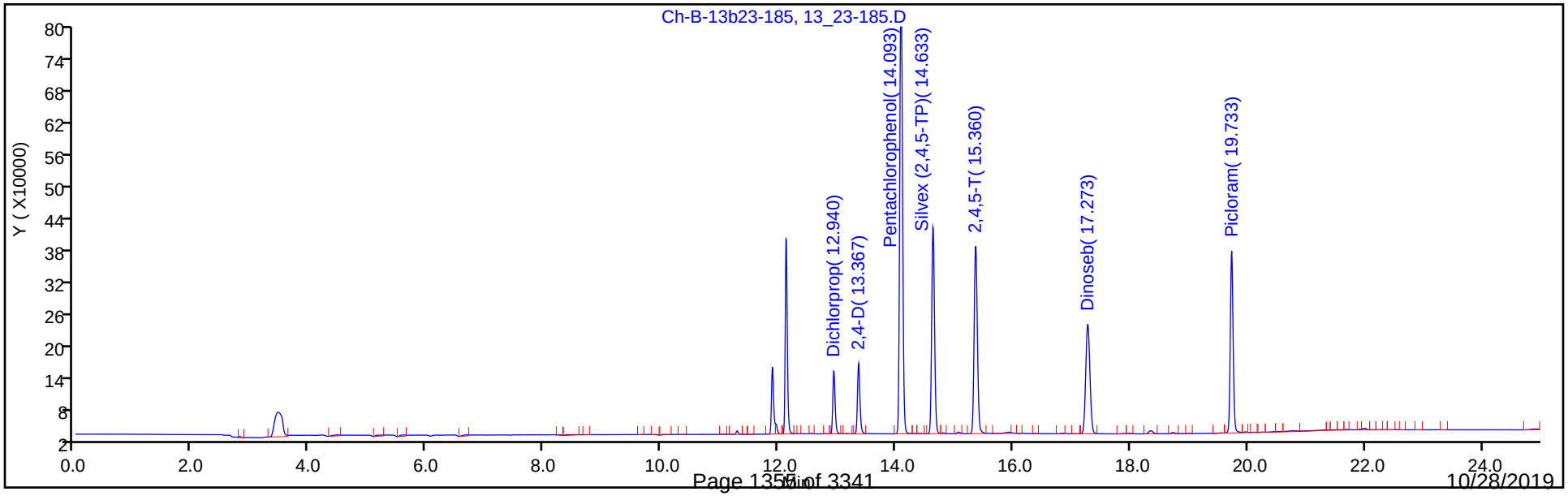
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D

Injection Date:	19-Sep-2019 14:58:14	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std3			Worklist Smp#:	14
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

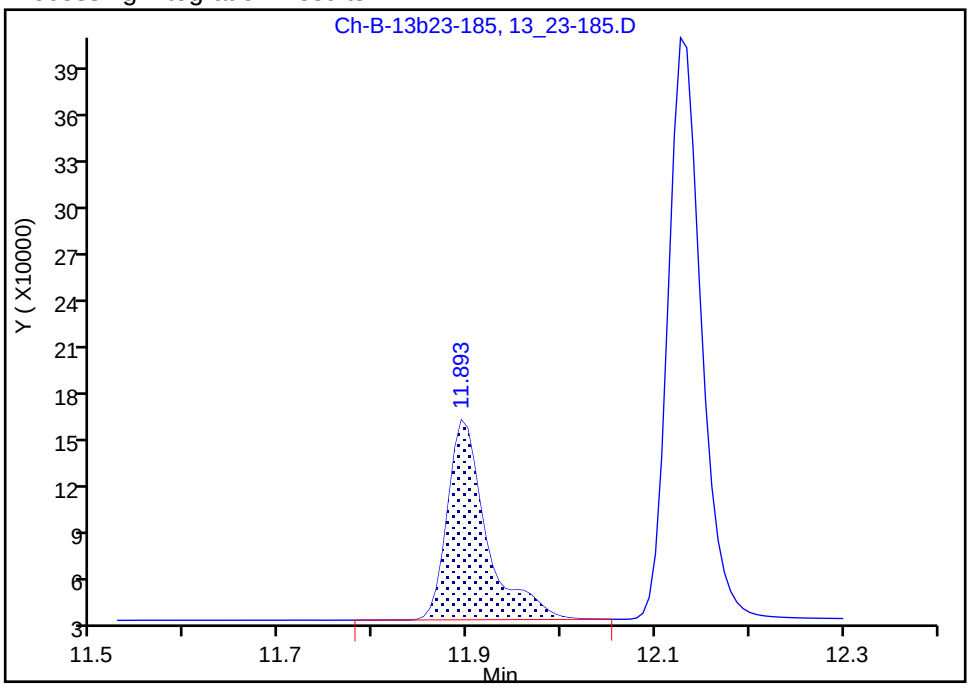
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-185.D
Injection Date: 19-Sep-2019 14:58:14 Instrument ID: HP5890-13
Lims ID: std3
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

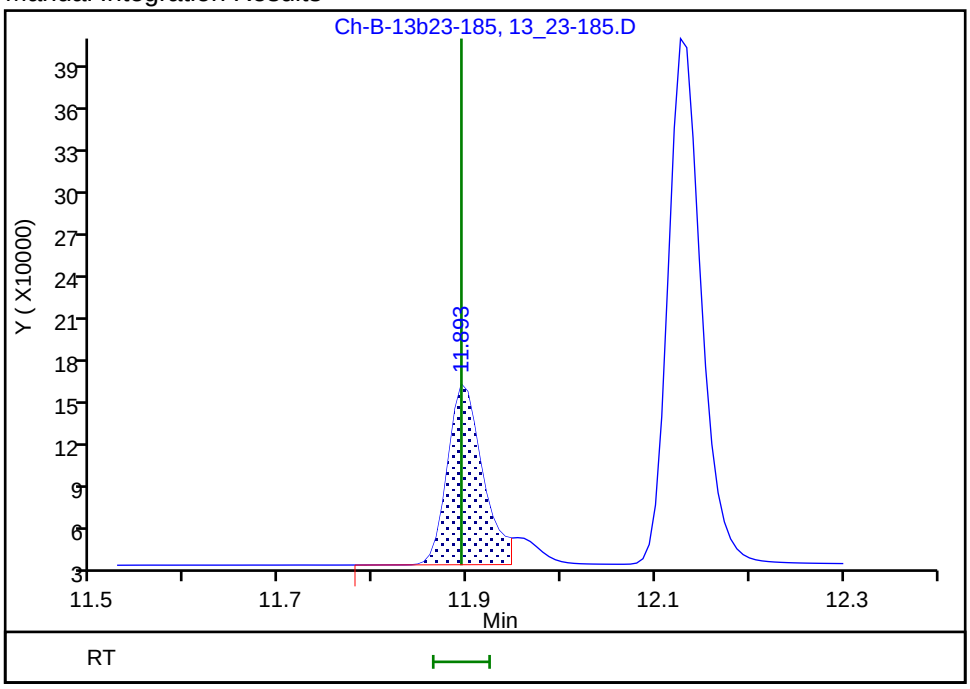
Processing Integration Results

RT: 11.89
Area: 364618
Amount: 0.222948
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 325815
Amount: 0.222593
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:19:34
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D
Lims ID: std4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 19-Sep-2019 15:27:55 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:54 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:20:50

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	335997	0.2000	0.1932	M
2	11.893	11.893	0.000	281104	0.2000	0.1920	M
						RPD = 0.60	
2 Dichlorprop							
1	11.573	11.573	0.000	325679	0.2000	0.1881	
2	12.947	12.940	0.007	283761	0.2000	0.1869	
						RPD = 0.64	
3 2,4-D							
1	11.820	11.820	0.000	373759	0.2000	0.1989	
2	13.367	13.367	0.000	337082	0.2000	0.1972	
						RPD = 0.82	
4 Pentachlorophenol							
1	12.120	12.120	0.000	2709583	0.2000	0.1881	
2	14.093	14.093	0.000	2534342	0.2000	0.1862	
						RPD = 1.01	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	1197317	0.2000	0.2004	
2	14.640	14.633	0.007	1131637	0.2000	0.2000	
						RPD = 0.23	
6 2,4,5-T							
1	13.047	13.047	0.000	1221329	0.2000	0.2024	
2	15.367	15.360	0.007	1161032	0.2000	0.2015	
						RPD = 0.45	
7 Picloram							
1	15.247	15.240	0.007	1119246	0.2000	0.2102	
2	19.733	19.733	0.000	967017	0.2000	0.2072	
						RPD = 1.44	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	980357	0.2000	0.1869	
2	17.280	17.273	0.007	889390	0.2000	0.1839	
						RPD = 1.58	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.20_00004 Amount Added: 1.00 Units: mL

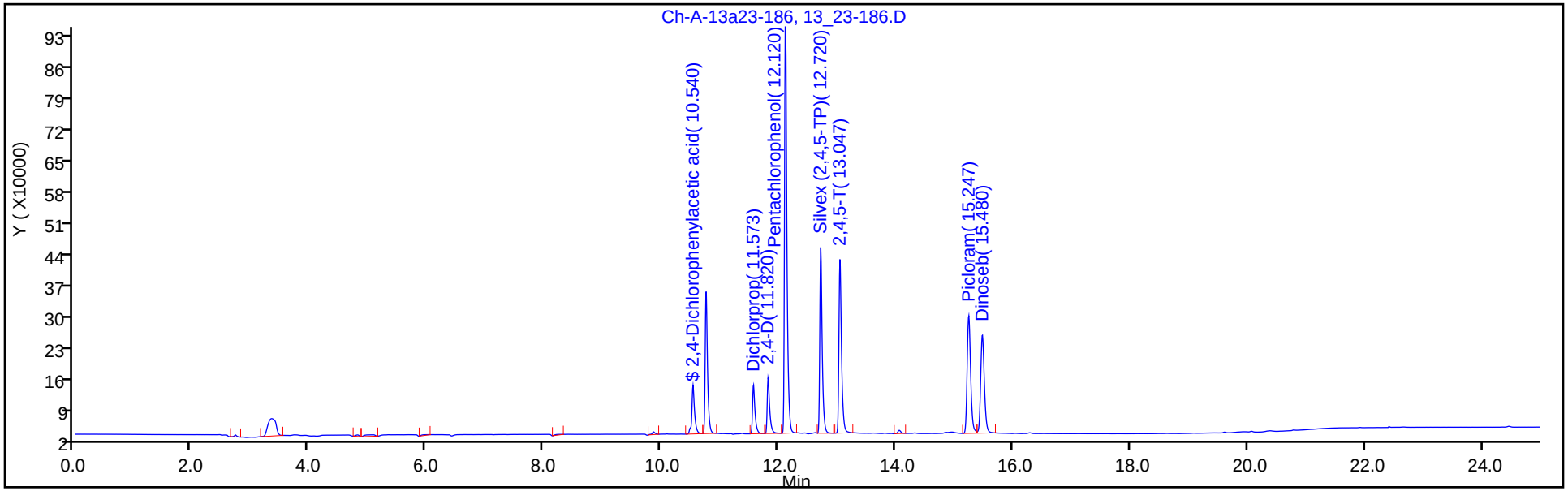
Report Date: 20-Sep-2019 08:50:54 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

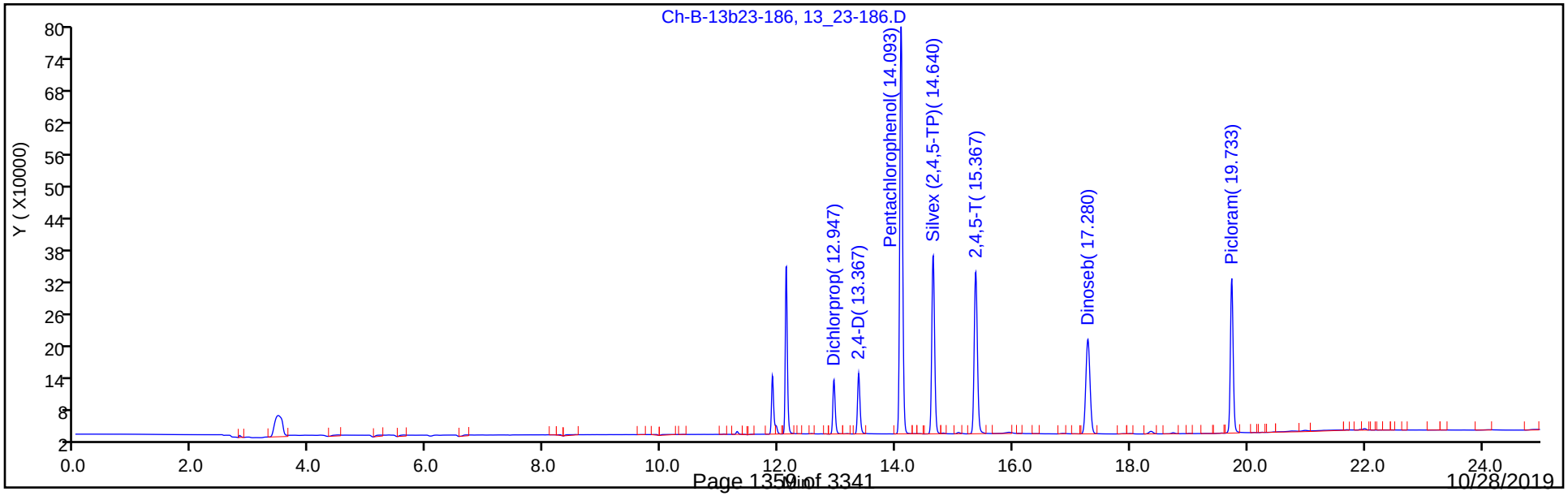
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D

Injection Date:	19-Sep-2019 15:27:55	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std4			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

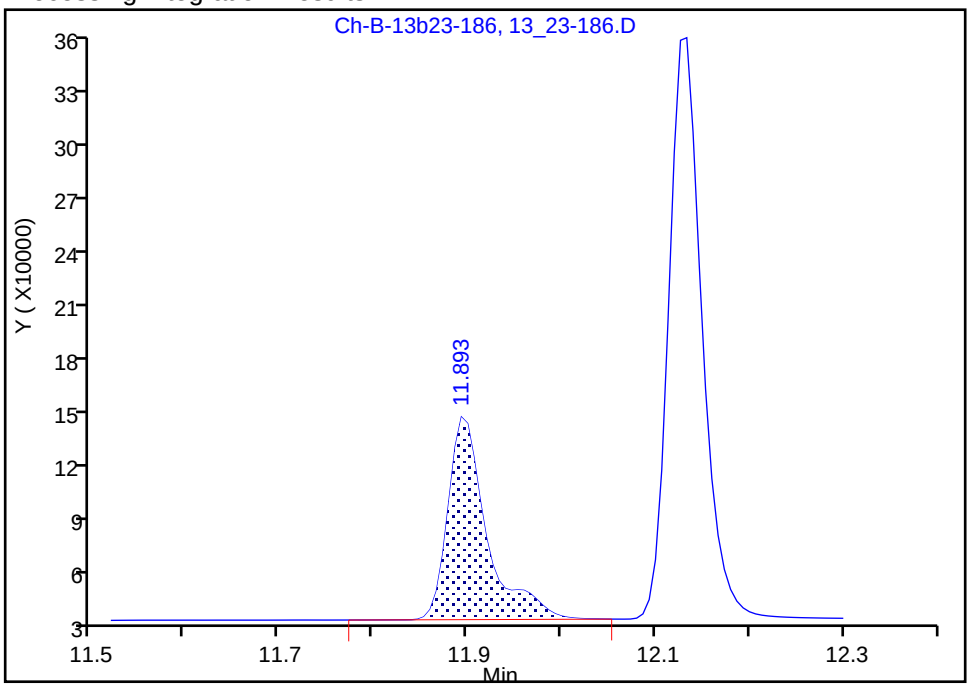
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-186.D
Injection Date: 19-Sep-2019 15:27:55 Instrument ID: HP5890-13
Lims ID: std4
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

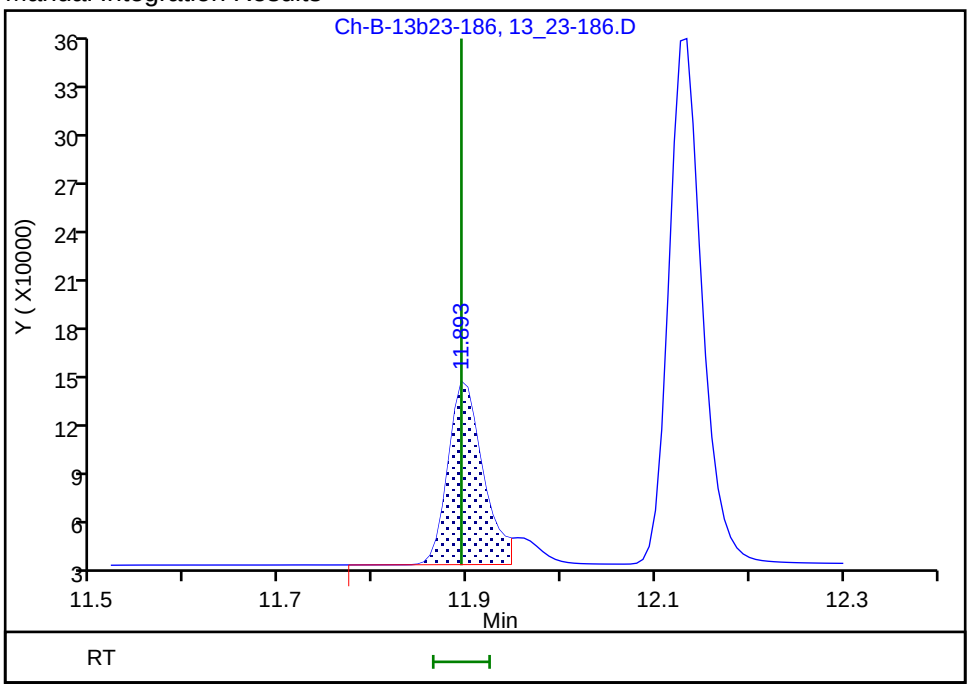
Processing Integration Results

RT: 11.89
Area: 314773
Amount: 0.194781
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 281104
Amount: 0.192047
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:20:38
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D
Lims ID: std5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 19-Sep-2019 15:57:42 ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:55 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:21:15

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	266787	0.1500	0.1534	M
2	11.893	11.893	0.000	224717	0.1500	0.1535	M
						RPD = 0.07	
2 Dichlorprop							
1	11.573	11.573	0.000	256103	0.1500	0.1479	
2	12.947	12.940	0.007	224427	0.1500	0.1479	
						RPD = 0.06	
3 2,4-D							
1	11.820	11.820	0.000	288353	0.1500	0.1534	
2	13.367	13.367	0.000	263808	0.1500	0.1544	
						RPD = 0.61	
4 Pentachlorophenol							
1	12.120	12.120	0.000	2111685	0.1500	0.1466	
2	14.093	14.093	0.000	1970199	0.1500	0.1448	
						RPD = 1.26	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	926123	0.1500	0.1550	
2	14.640	14.633	0.007	875913	0.1500	0.1548	
						RPD = 0.17	
6 2,4,5-T							
1	13.047	13.047	0.000	938632	0.1500	0.1555	
2	15.367	15.360	0.007	892783	0.1500	0.1549	
						RPD = 0.40	
7 Picloram							
1	15.247	15.240	0.007	834907	0.1500	0.1568	
2	19.733	19.733	0.000	729065	0.1500	0.1562	
						RPD = 0.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	761718	0.1500	0.1452	
2	17.280	17.273	0.007	692761	0.1500	0.1433	
						RPD = 1.33	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

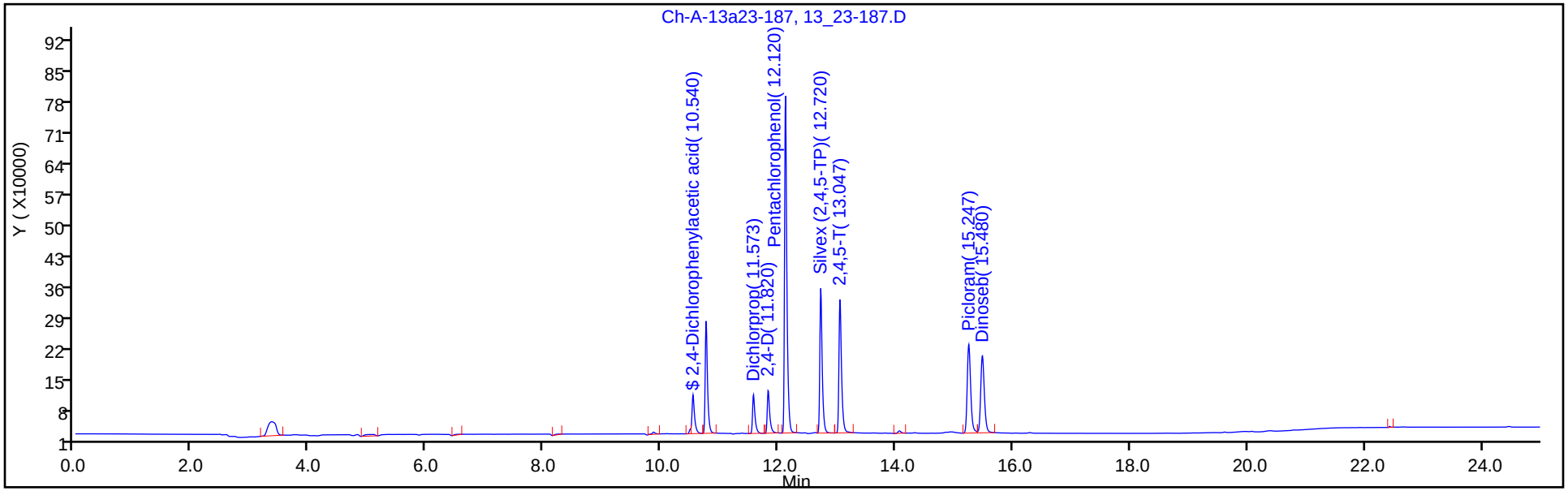
Herb_Cal 0.15_00005 Amount Added: 1.00 Units: mL

Report Date: 20-Sep-2019 08:50:55 Chrom Revision: 2.3 17-Sep-2019 16:19:08

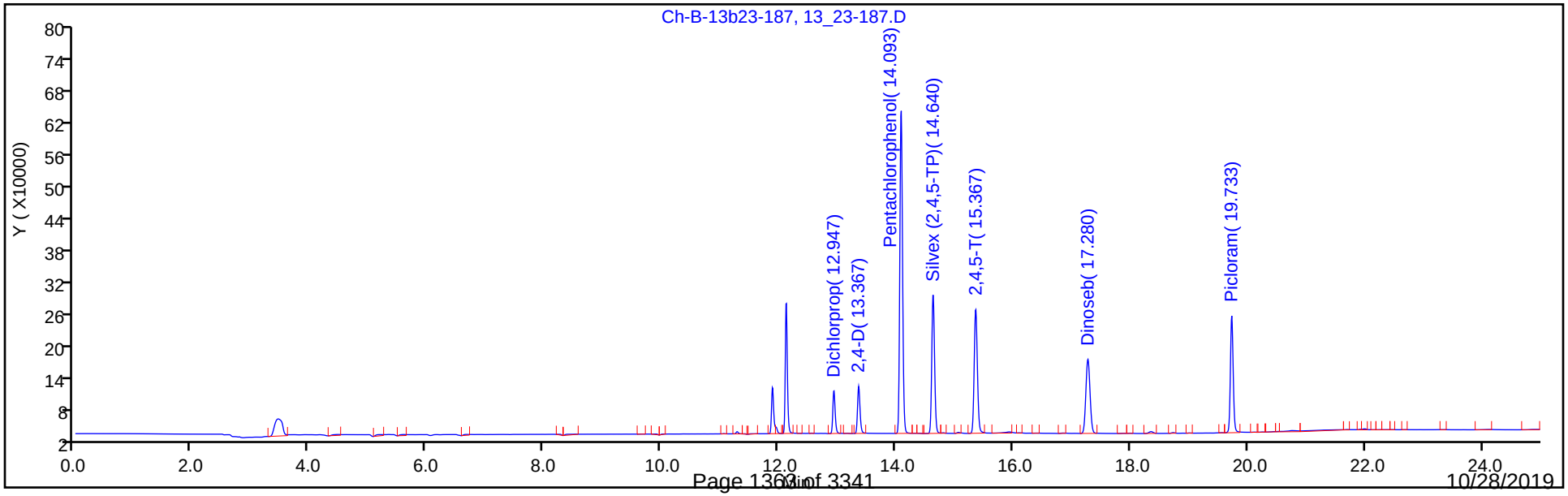
Eurofins TestAmerica, Buffalo

Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D				
Injection Date:	19-Sep-2019 15:57:42	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std5			Worklist Smp#:	16
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

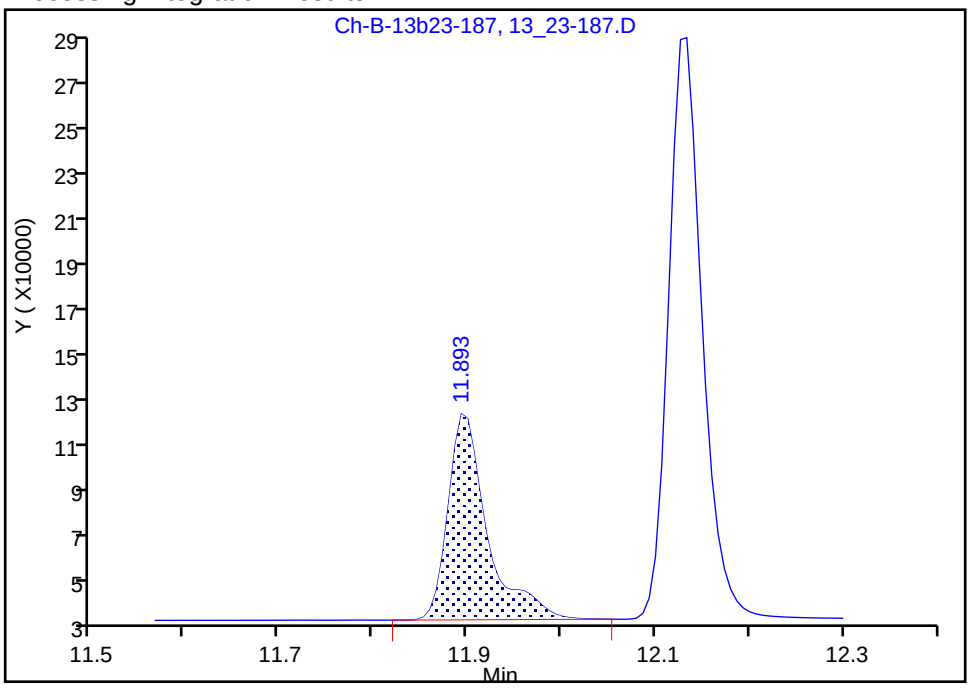
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-187.D
Injection Date: 19-Sep-2019 15:57:42 Instrument ID: HP5890-13
Lims ID: std5
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 16
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

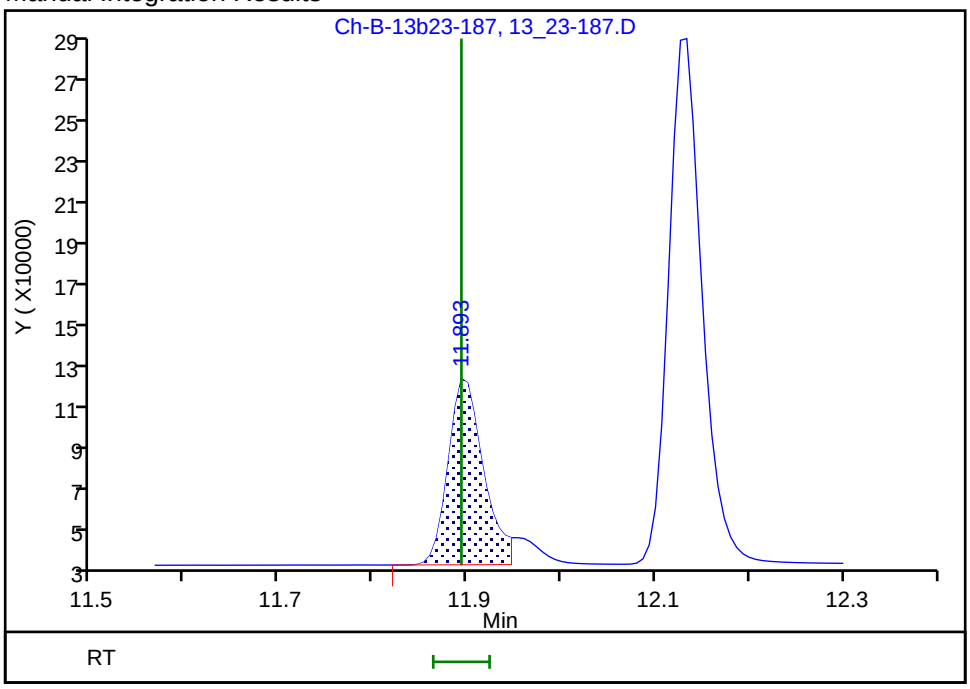
Processing Integration Results

RT: 11.89
Area: 250622
Amount: 0.157131
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 224717
Amount: 0.153524
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:21:07
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D
Lims ID: std6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 19-Sep-2019 16:27:25 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:56 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:21:33

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	195914	0.1000	0.1127	M
2	11.900	11.893	0.007	164620	0.1000	0.1125	M
						RPD = 0.17	
2 Dichlorprop							
1	11.573	11.573	0.000	186590	0.1000	0.1078	
2	12.947	12.940	0.007	163019	0.1000	0.1074	
						RPD = 0.36	
3 2,4-D							
1	11.827	11.820	0.007	206101	0.1000	0.1097	
2	13.367	13.367	0.000	188738	0.1000	0.1104	
						RPD = 0.71	
4 Pentachlorophenol							
1	12.120	12.120	0.000	1497506	0.1000	0.1040	
2	14.093	14.093	0.000	1401881	0.1000	0.1030	
						RPD = 0.92	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	655032	0.1000	0.1097	
2	14.640	14.633	0.007	621912	0.1000	0.1099	
						RPD = 0.22	
6 2,4,5-T							
1	13.047	13.047	0.000	651749	0.1000	0.1080	
2	15.367	15.360	0.007	621763	0.1000	0.1079	
						RPD = 0.10	
7 Picloram							
1	15.247	15.240	0.007	539917	0.1000	0.1014	
2	19.733	19.733	0.000	477401	0.1000	0.1023	
						RPD = 0.87	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	544227	0.1000	0.1037	
2	17.280	17.273	0.007	496649	0.1000	0.1027	
						RPD = 0.99	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00055 Amount Added: 1.00 Units: mL

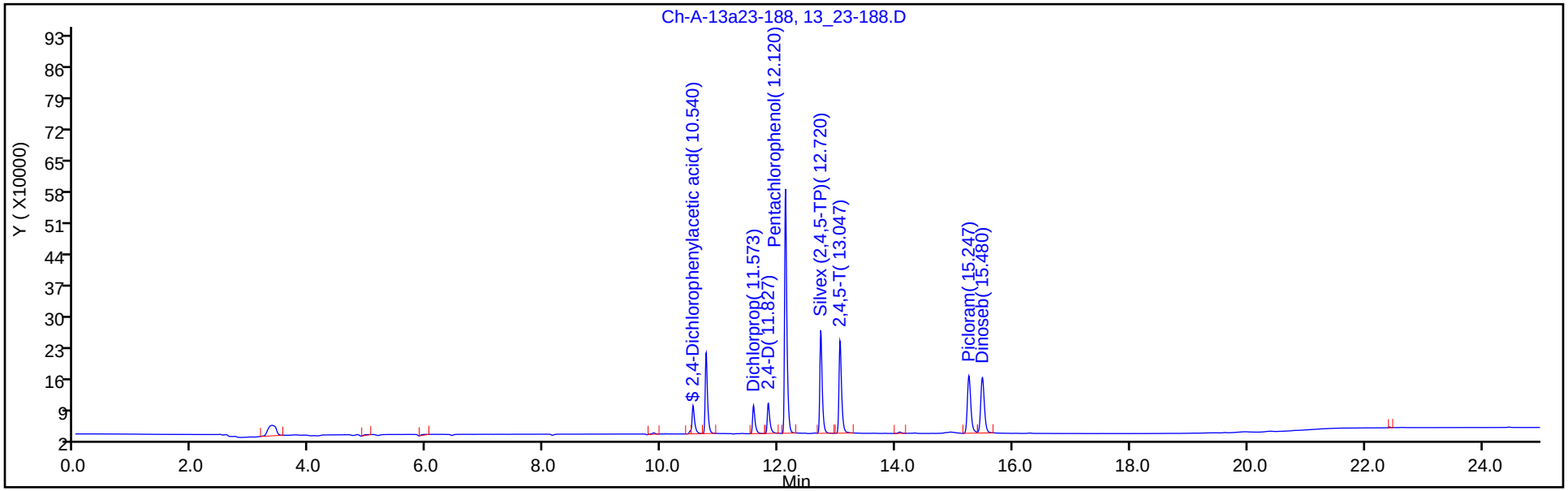
Report Date: 20-Sep-2019 08:50:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

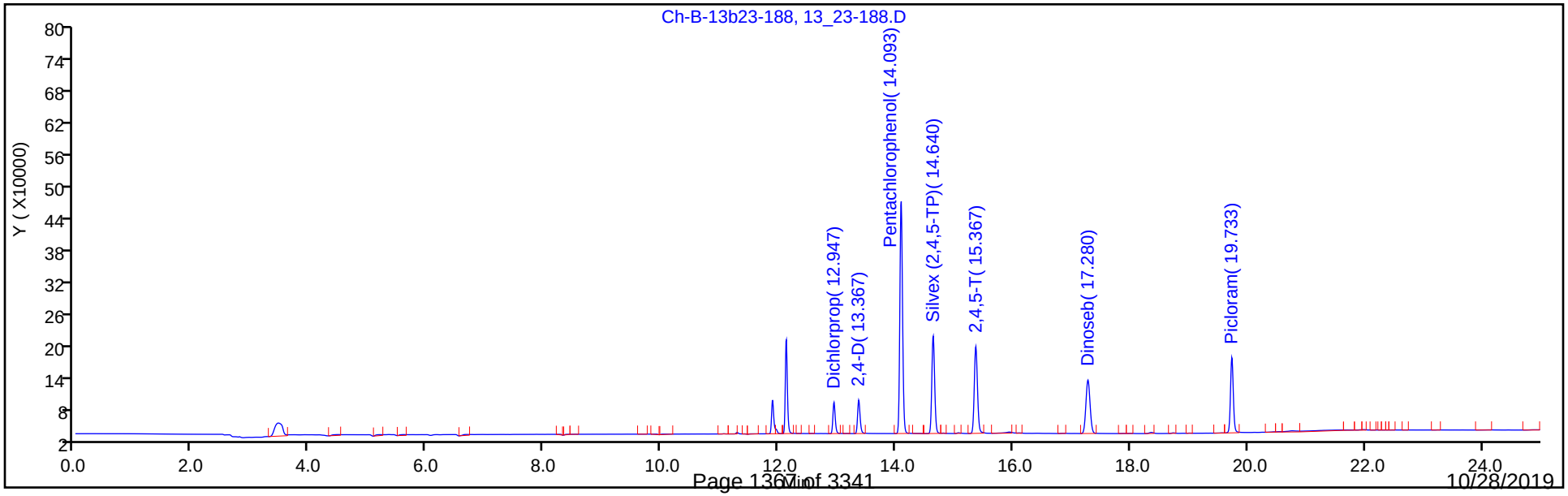
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D

Injection Date:	19-Sep-2019 16:27:25	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std6			Worklist Smp#:	17
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

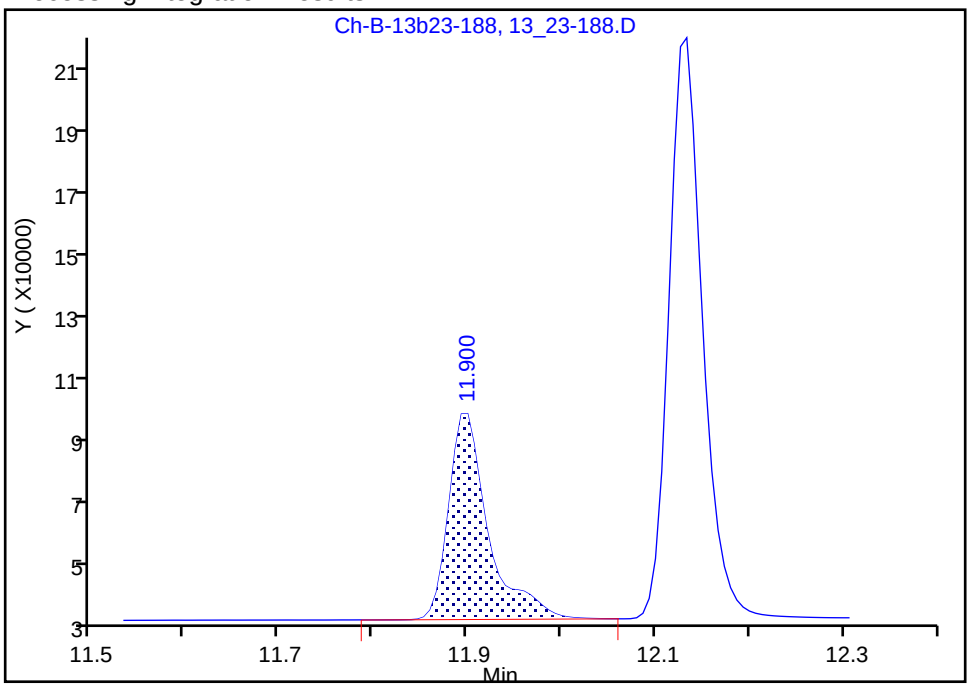
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-188.D
Injection Date: 19-Sep-2019 16:27:25 Instrument ID: HP5890-13
Lims ID: std6
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

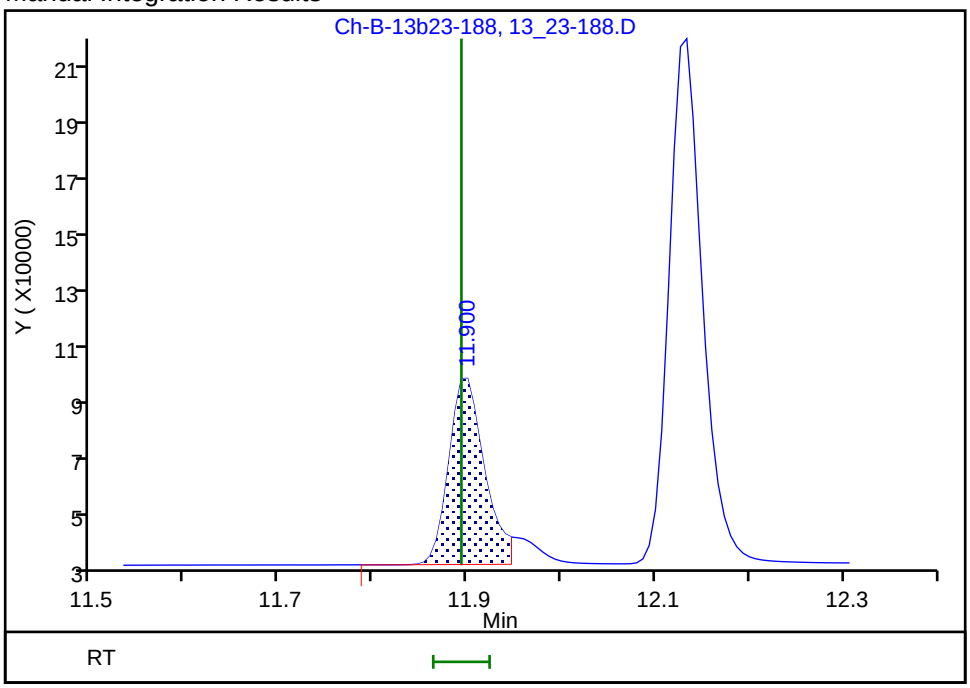
Processing Integration Results

RT: 11.90
Area: 183156
Amount: 0.116407
Amount Units: ng/ul



Manual Integration Results

RT: 11.90
Area: 164620
Amount: 0.112466
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:21:28
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D
Lims ID: std7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 19-Sep-2019 16:57:10 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:57 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:22:03

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.540	10.540	0.000	103997	0.0500	0.0598	M
2	11.900	11.893	0.007	90076	0.0500	0.0615	M
						RPD = 2.86	
2 Dichlorprop							
1	11.573	11.573	0.000	97309	0.0500	0.0562	
2	12.947	12.940	0.007	87183	0.0500	0.0574	
						RPD = 2.15	
3 2,4-D							
1	11.827	11.820	0.007	107387	0.0500	0.0571	
2	13.367	13.367	0.000	99217	0.0500	0.0581	
						RPD = 1.60	
4 Pentachlorophenol							
1	12.120	12.120	0.000	753937	0.0500	0.0523	
2	14.093	14.093	0.000	708511	0.0500	0.0521	
						RPD = 0.54	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	325871	0.0500	0.0546	
2	14.640	14.633	0.007	311634	0.0500	0.0551	
						RPD = 0.94	
6 2,4,5-T							
1	13.053	13.047	0.006	320623	0.0500	0.0531	
2	15.367	15.360	0.007	312939	0.0500	0.0543	
						RPD = 2.19	
7 Picloram							
1	15.253	15.240	0.013	258169	0.0500	0.0485	
2	19.733	19.733	0.000	235257	0.0500	0.0504	
						RPD = 3.88	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	275287	0.0500	0.0525	
2	17.280	17.273	0.007	255021	0.0500	0.0527	
						RPD = 0.51	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.05_00004 Amount Added: 1.00 Units: mL

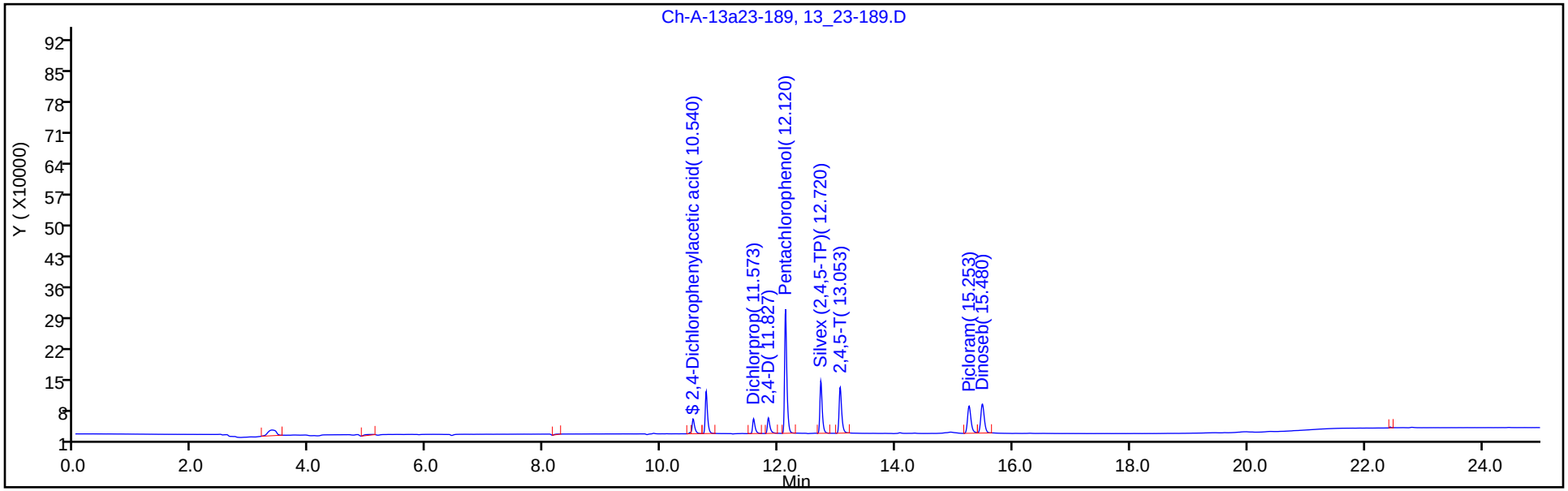
Report Date: 20-Sep-2019 08:50:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

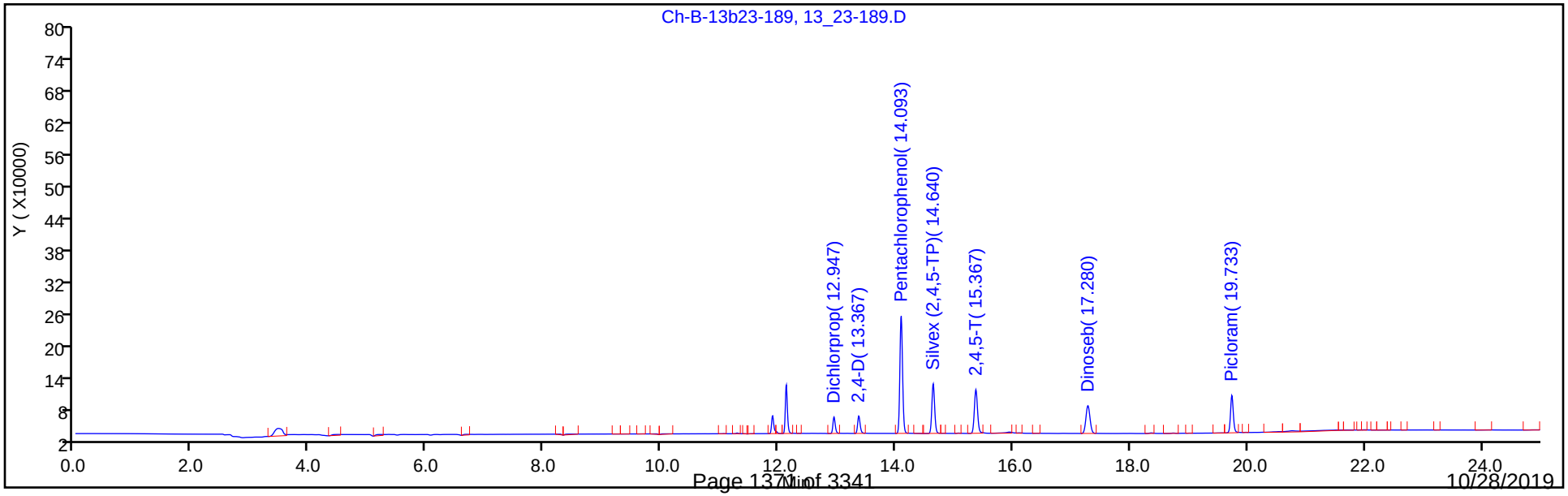
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D

Injection Date:	19-Sep-2019 16:57:10	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std7			Worklist Smp#:	18
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

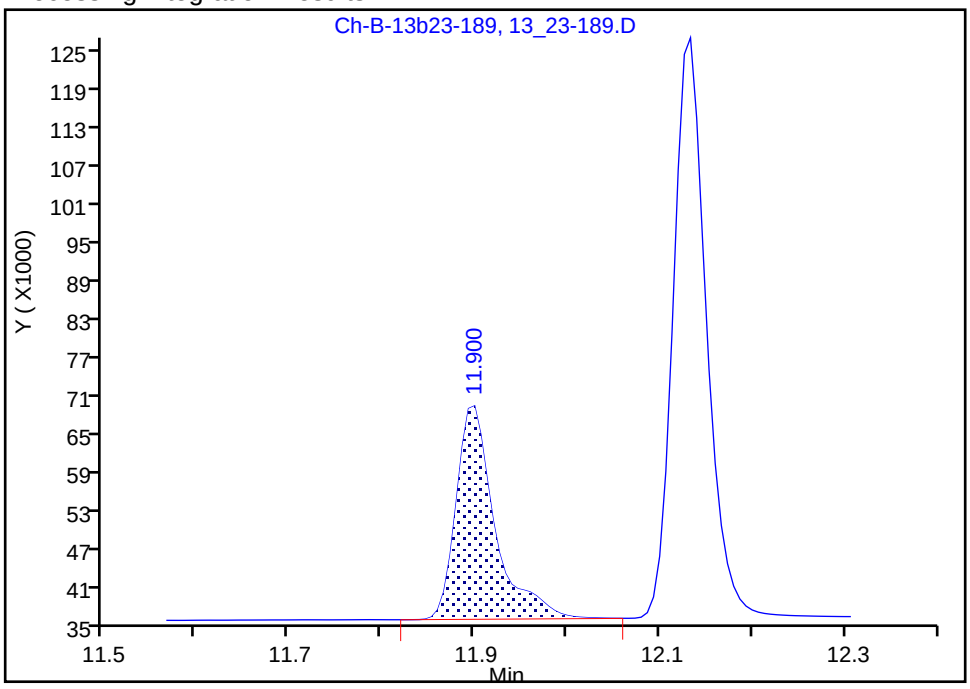
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-189.D
Injection Date: 19-Sep-2019 16:57:10 Instrument ID: HP5890-13
Lims ID: std7
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

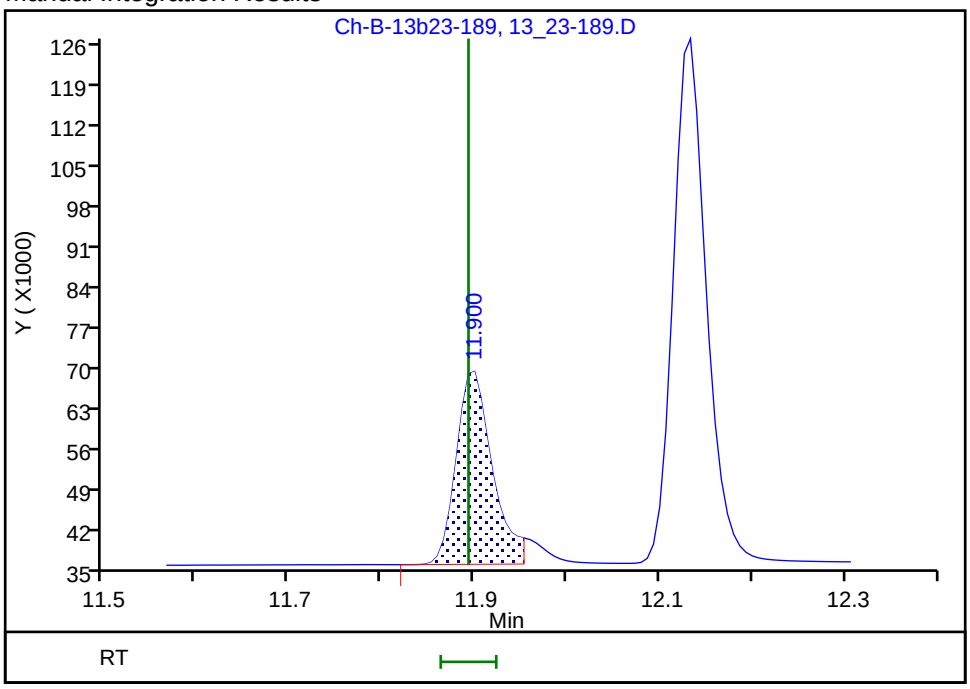
Processing Integration Results

RT: 11.90
Area: 97466
Amount: 0.062872
Amount Units: ng/ul



Manual Integration Results

RT: 11.90
Area: 90076
Amount: 0.061539
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:21:57
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D
Lims ID: std8
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 19-Sep-2019 17:26:54 ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 20-Sep-2019 08:50:58 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0320

First Level Reviewer: NearyM Date: 20-Sep-2019 06:22:42

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.547	10.540	0.007	48196	0.0200	0.0277	M
2	11.900	11.893	0.007	43072	0.0200	0.0294	M
						RPD = 5.99	
2 Dichlorprop							
1	11.573	11.573	0.000	44420	0.0200	0.0257	
2	12.947	12.940	0.007	44362	0.0200	0.0292	
						RPD = 12.99	
3 2,4-D							
1	11.827	11.820	0.007	47592	0.0200	0.0253	
2	13.373	13.367	0.006	45891	0.0200	0.0269	
						RPD = 5.87	
4 Pentachlorophenol							
1	12.120	12.120	0.000	330677	0.0200	0.0230	
2	14.093	14.093	0.000	316219	0.0200	0.0232	
						RPD = 1.20	
5 Silvex (2,4,5-TP)							
1	12.720	12.720	0.000	142793	0.0200	0.0239	
2	14.640	14.633	0.007	141783	0.0200	0.0251	
						RPD = 4.70	
6 2,4,5-T							
1	13.053	13.047	0.006	138944	0.0200	0.0230	
2	15.367	15.360	0.007	138808	0.0200	0.0241	
						RPD = 4.51	
7 Picloram							
1	15.253	15.240	0.013	103447	0.0200	0.0194	
2	19.733	19.733	0.000	97630	0.0200	0.0209	
						RPD = 7.38	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.480	15.480	0.000	121712	0.0200	0.0232	
2	17.280	17.273	0.007	115055	0.0200	0.0238	
						RPD = 2.54	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_Cal 0.02_00004 Amount Added: 1.00 Units: mL

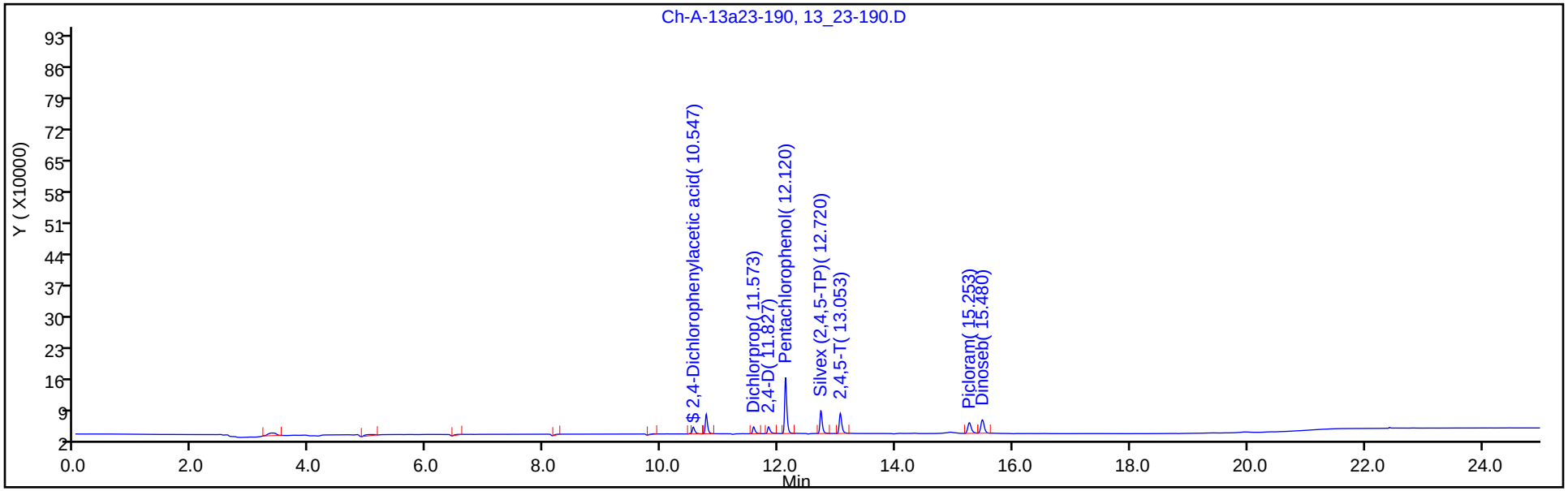
Report Date: 20-Sep-2019 08:50:58 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

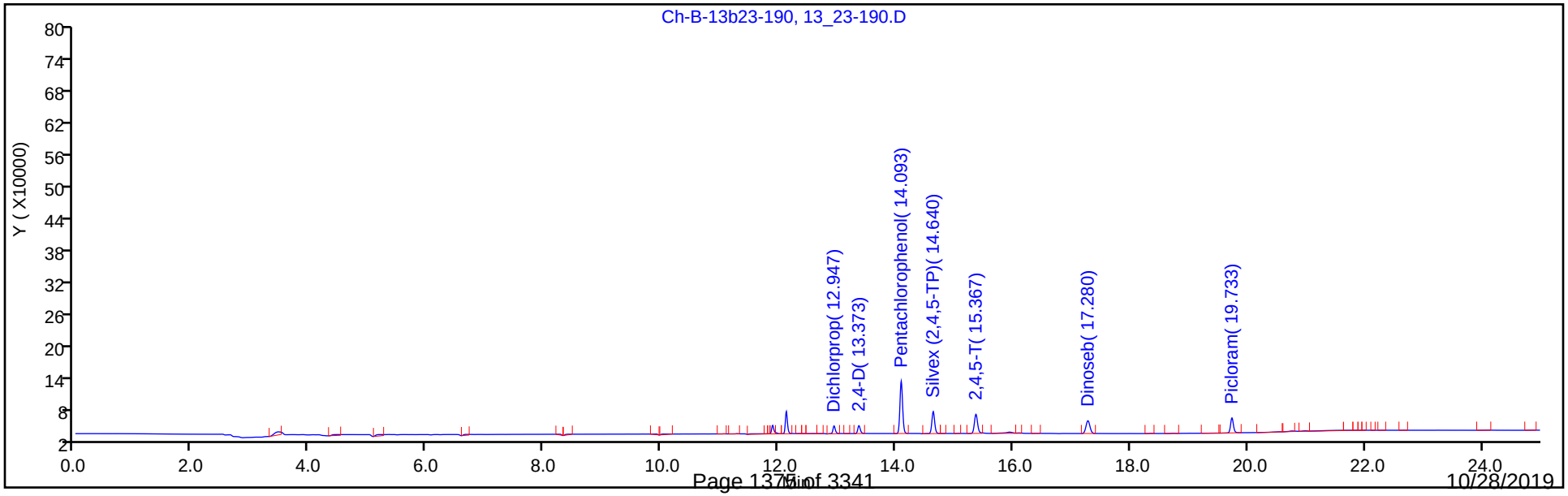
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Injection Date:	19-Sep-2019 17:26:54	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	std8			Worklist Smp#:	19
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

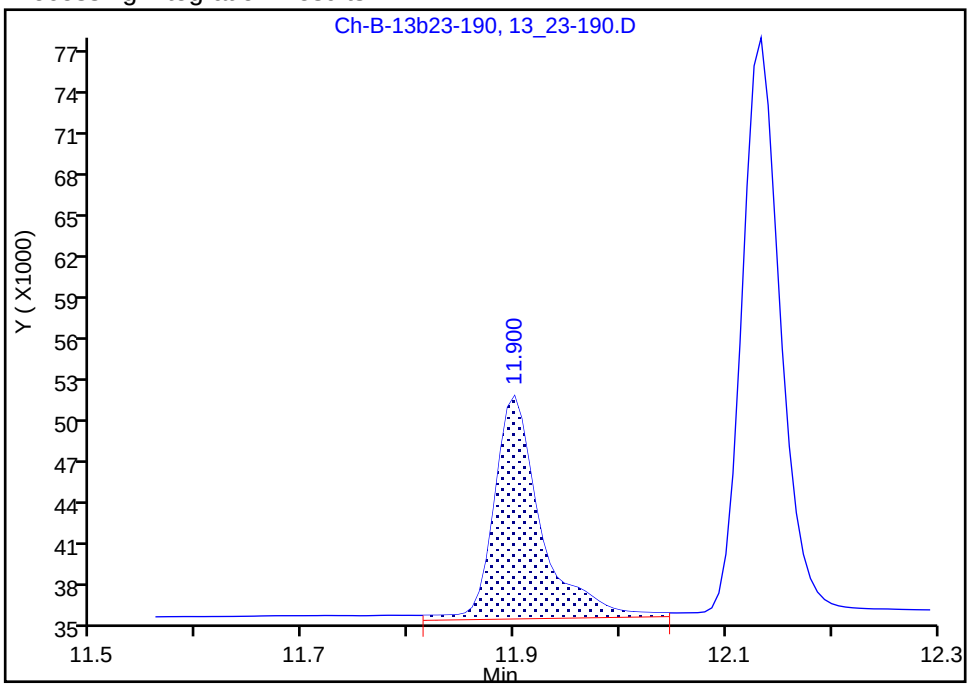
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D
Injection Date: 19-Sep-2019 17:26:54 Instrument ID: HP5890-13
Lims ID: std8
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 19
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

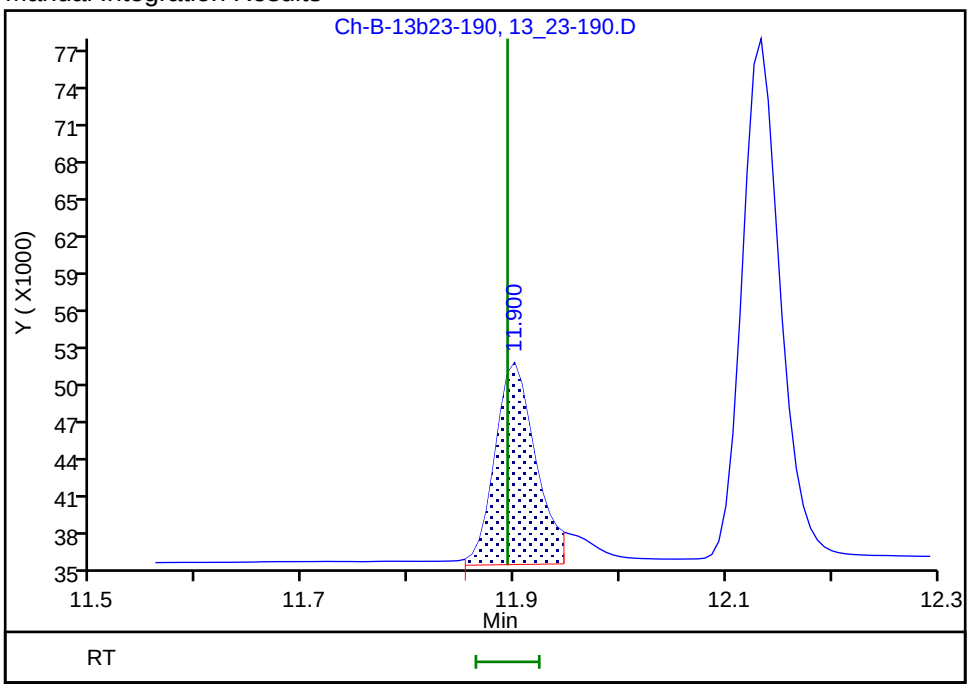
Processing Integration Results

RT: 11.90
Area: 49883
Amount: 0.032566
Amount Units: ng/ul



Manual Integration Results

RT: 11.90
Area: 43072
Amount: 0.029426
Amount Units: ng/ul



Reviewer: NearyM, 20-Sep-2019 06:22:38
Audit Action: Split an Integrated Peak Audit Reason: Baseline Smoothing

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/4 Calibration Date: 10/01/2019 08:12

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-304.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1731112	1869820		0.108	0.100	8.0	15.0
2,4-D	Ave	1879589	2017690		0.107	0.100	7.3	15.0
Pentachlorophenol	Ave	14401916	14593430		0.101	0.100	1.3	15.0
Silvex (2,4,5-TP)	Ave	5973471	6202090		0.104	0.100	3.8	15.0
2,4,5-T	Ave	6035126	6032550		0.100	0.100	-0.0	15.0
Picloram	Ave	5325543	4486770		0.0842	0.100	-15.8*	15.0
Dinoseb	Ave	5246637	4928460		0.0939	0.100	-6.1	15.0
2,4-Dichlorophenylacetic acid	Ave	1739013	1997400		0.115	0.100	14.9	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/4 Calibration Date: 10/01/2019 08:12

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-304.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	11.57	11.54	11.60
2,4-D	11.82	11.79	11.85
Pentachlorophenol	12.11	12.09	12.15
Silvex (2,4,5-TP)	12.71	12.69	12.75
2,4,5-T	13.05	13.02	13.08
Picloram	15.25	15.19	15.29
Dinoseb	15.47	15.45	15.51
2,4-Dichlorophenylacetic acid	10.53	10.51	10.57

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 08:12:01 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 08:40:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	199740	0.1000	0.1149	M
2	11.893	11.893	0.000	174101	0.1000	0.1189	M
						RPD = 3.49	
2 Dichlorprop							
1	11.567	11.573	-0.006	186982	0.1000	0.1080	
2	12.940	12.940	0.000	167410	0.1000	0.1103	
						RPD = 2.09	
3 2,4-D							
1	11.820	11.820	0.000	201769	0.1000	0.1073	
2	13.360	13.367	-0.007	187879	0.1000	0.1099	
						RPD = 2.38	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1459343	0.1000	0.1013	
2	14.087	14.093	-0.006	1376779	0.1000	0.1012	
						RPD = 0.15	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	620209	0.1000	0.1038	
2	14.633	14.633	0.000	592476	0.1000	0.1047	
						RPD = 0.83	
6 2,4,5-T							
1	13.047	13.047	0.000	603255	0.1000	0.1000	
2	15.360	15.360	0.000	581646	0.1000	0.1009	
						RPD = 0.96	
7 Picloram							
1	15.247	15.240	0.007	448677	0.1000	0.0842	
2	19.727	19.733	-0.006	408325	0.1000	0.0875	
						RPD = 3.75	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	492846	0.1000	0.0939	
2	17.273	17.273	0.000	453772	0.1000	0.0938	
						RPD = 0.10	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

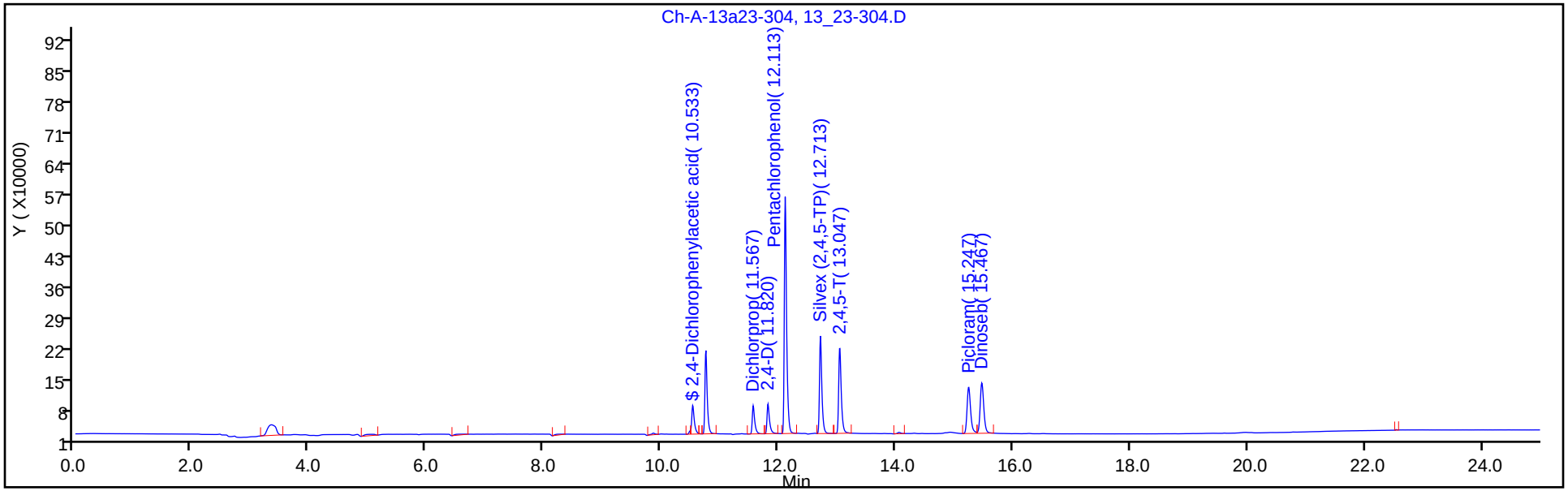
Report Date: 01-Oct-2019 14:18:12 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

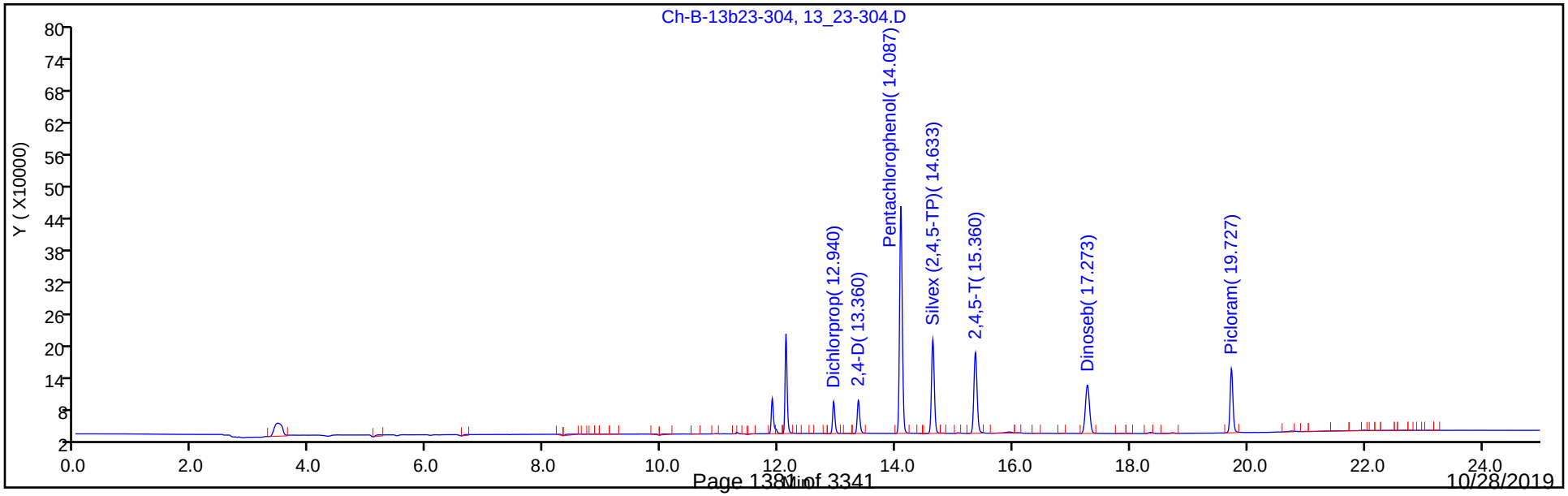
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D

Injection Date:	01-Oct-2019 08:12:01	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

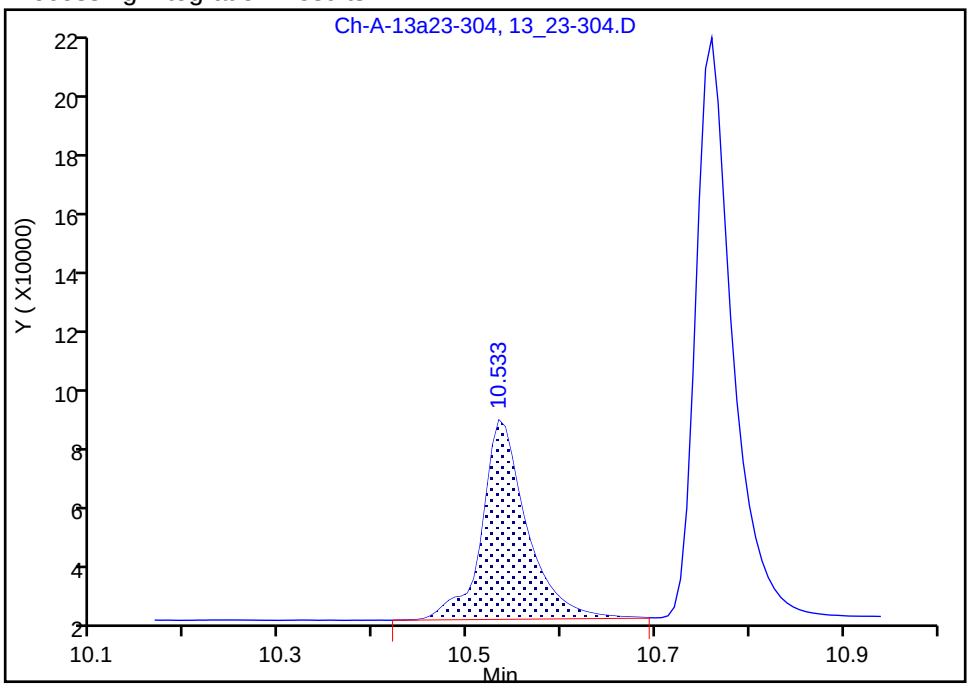
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D				
Injection Date:	01-Oct-2019 08:12:01	Instrument ID:	HP5890-13		
Lims ID:	ccv				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	4
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPI (0.53 mm)	Detector	Ch-A-13A01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

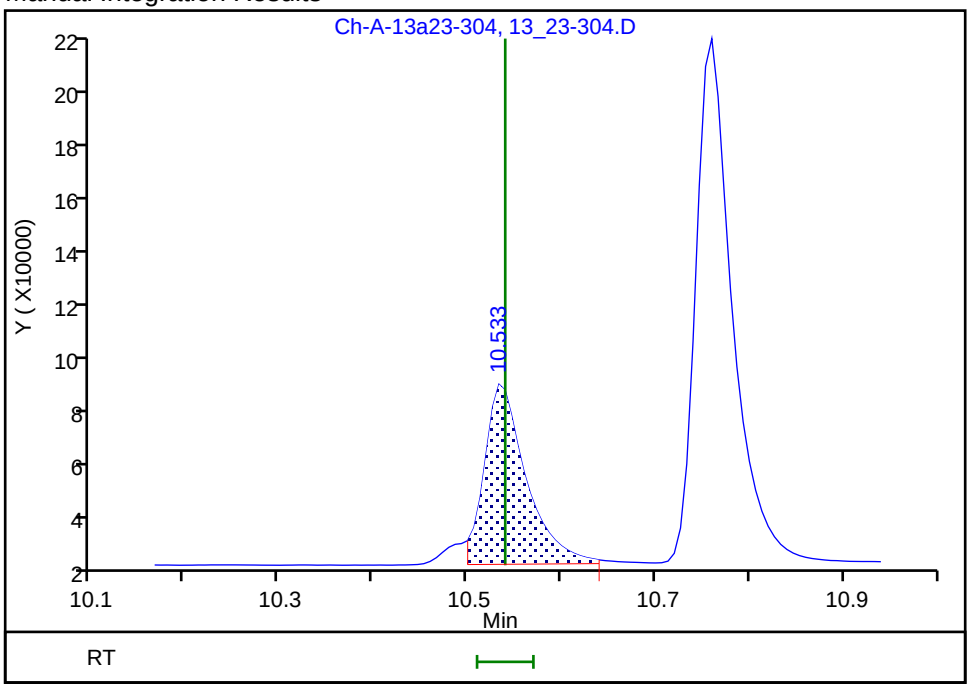
Processing Integration Results

RT: 10.53
Area: 215551
Amount: 0.123950
Amount Units: ng/ul



Manual Integration Results

RT: 10.53
Area: 199740
Amount: 0.114858
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 08:39:58

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/4 Calibration Date: 10/01/2019 08:12

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-304.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1517920	1674100		0.110	0.100	10.3	15.0
2,4-D	Ave	1709086	1878790		0.110	0.100	9.9	15.0
Pentachlorophenol	Ave	13607325	13767790		0.101	0.100	1.2	15.0
Silvex (2,4,5-TP)	Ave	5658999	5924760		0.105	0.100	4.7	15.0
2,4,5-T	Ave	5763073	5816460		0.101	0.100	0.9	15.0
Dinoseb	Ave	4835485	4537720		0.0938	0.100	-6.2	15.0
Picloram	Ave	4668163	4083250		0.0875	0.100	-12.5	15.0
2,4-Dichlorophenylacetic acid	Ave	1463728	1741010		0.119	0.100	18.9*	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/4 Calibration Date: 10/01/2019 08:12

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-304.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	12.94	12.91	12.97
2,4-D	13.36	13.34	13.40
Pentachlorophenol	14.09	14.06	14.12
Silvex (2,4,5-TP)	14.63	14.60	14.66
2,4,5-T	15.36	15.33	15.39
Dinoseb	17.27	17.24	17.30
Picloram	19.73	19.68	19.78
2,4-Dichlorophenylacetic acid	11.89	11.86	11.92

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 08:12:01 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 08:40:09

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	199740	0.1000	0.1149	M
2	11.893	11.893	0.000	174101	0.1000	0.1189	M
						RPD = 3.49	
2 Dichlorprop							
1	11.567	11.573	-0.006	186982	0.1000	0.1080	
2	12.940	12.940	0.000	167410	0.1000	0.1103	
						RPD = 2.09	
3 2,4-D							
1	11.820	11.820	0.000	201769	0.1000	0.1073	
2	13.360	13.367	-0.007	187879	0.1000	0.1099	
						RPD = 2.38	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1459343	0.1000	0.1013	
2	14.087	14.093	-0.006	1376779	0.1000	0.1012	
						RPD = 0.15	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	620209	0.1000	0.1038	
2	14.633	14.633	0.000	592476	0.1000	0.1047	
						RPD = 0.83	
6 2,4,5-T							
1	13.047	13.047	0.000	603255	0.1000	0.1000	
2	15.360	15.360	0.000	581646	0.1000	0.1009	
						RPD = 0.96	
7 Picloram							
1	15.247	15.240	0.007	448677	0.1000	0.0842	
2	19.727	19.733	-0.006	408325	0.1000	0.0875	
						RPD = 3.75	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	492846	0.1000	0.0939	
2	17.273	17.273	0.000	453772	0.1000	0.0938	
						RPD = 0.10	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

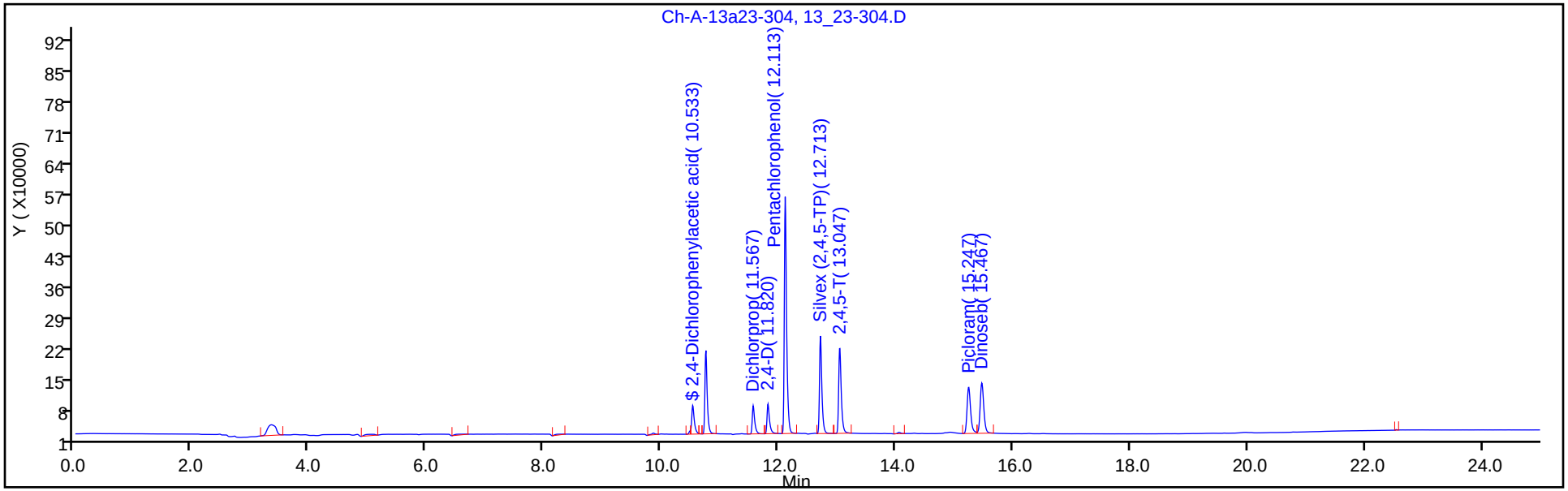
Report Date: 01-Oct-2019 14:18:12 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

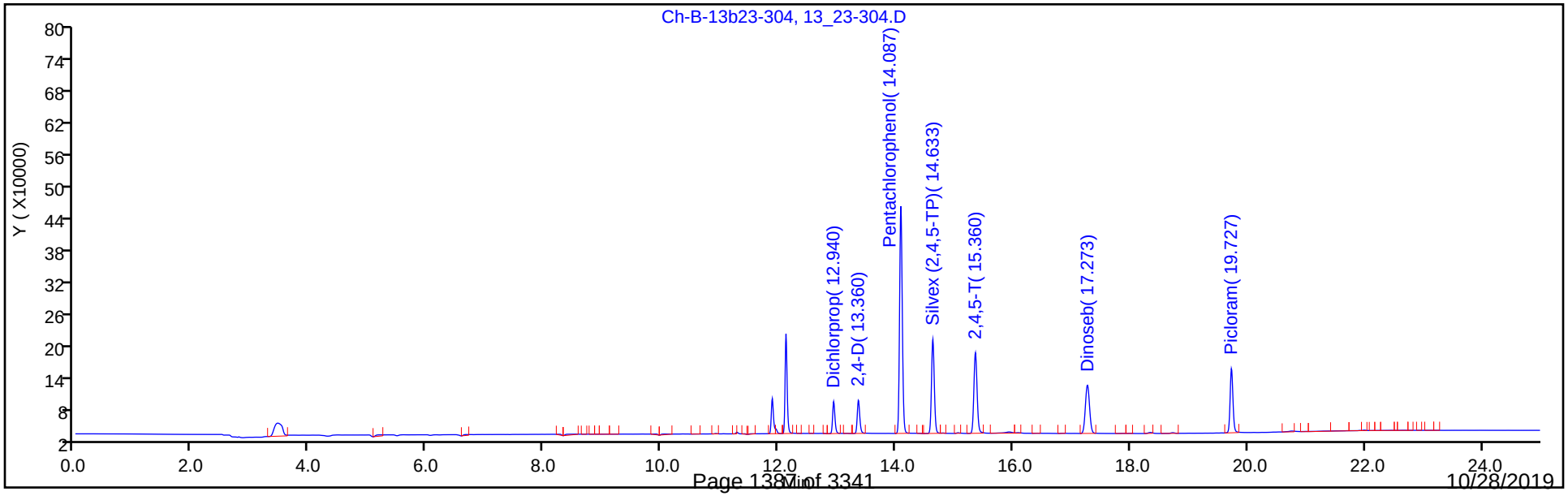
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D

Injection Date:	01-Oct-2019 08:12:01	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	4
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

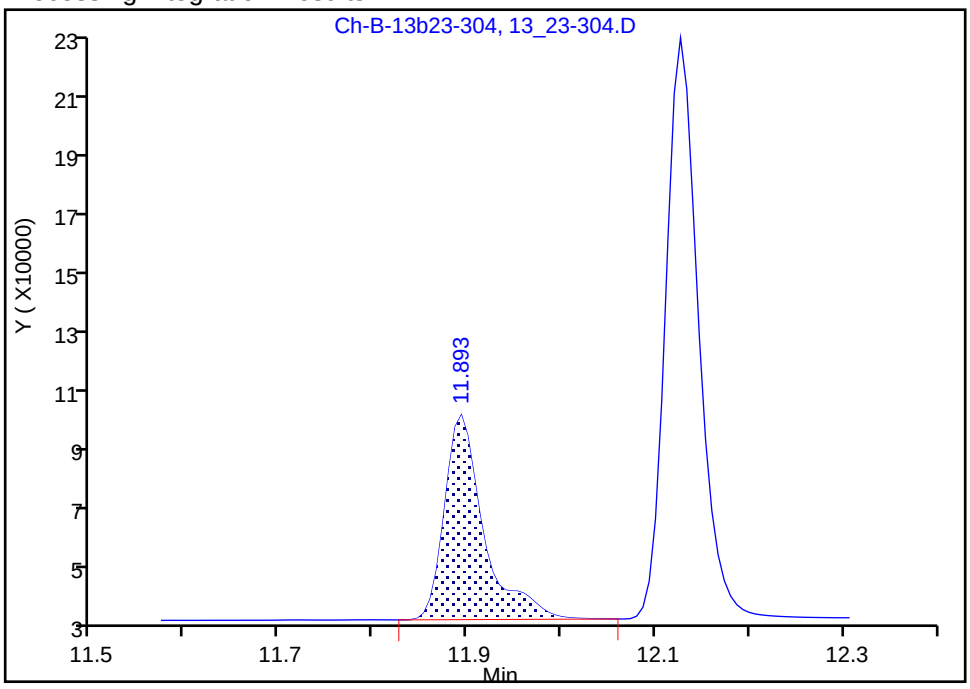
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-304.D
Injection Date: 01-Oct-2019 08:12:01 Instrument ID: HP5890-13
Lims ID: ccv
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

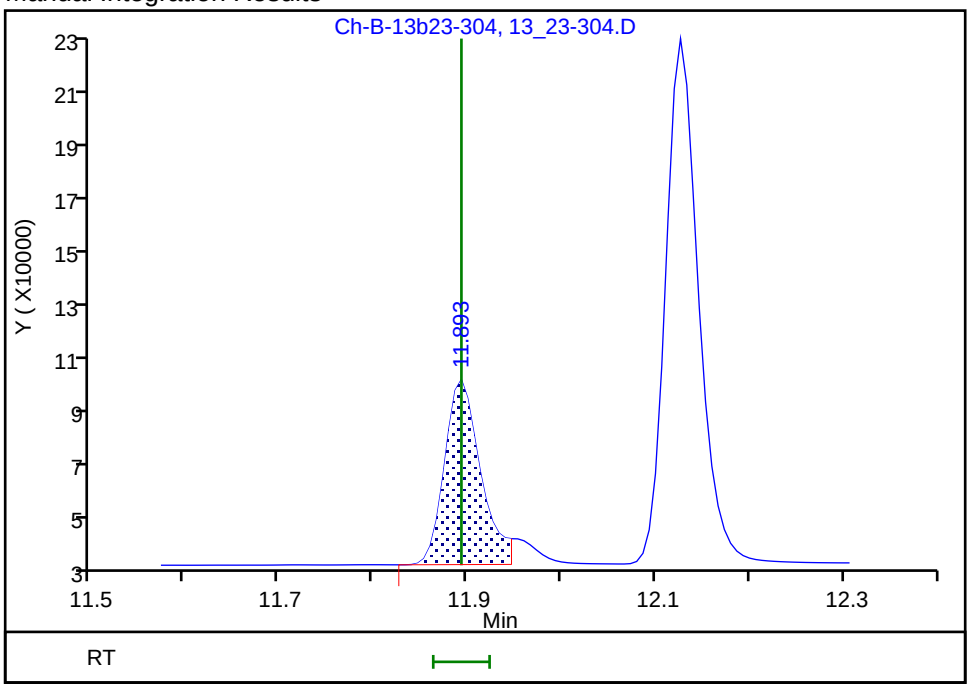
Processing Integration Results

RT: 11.89
Area: 191380
Amount: 0.130748
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 174101
Amount: 0.118944
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 08:40:01
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/15 Calibration Date: 10/01/2019 13:47

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-315.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1731112	1848700		0.107	0.100	6.8	15.0
2,4-D	Ave	1879589	1992680		0.106	0.100	6.0	15.0
Pentachlorophenol	Ave	14401916	13914300		0.0966	0.100	-3.4	15.0
Silvex (2,4,5-TP)	Ave	5973471	6059280		0.101	0.100	1.4	15.0
2,4,5-T	Ave	6035126	5760790		0.0955	0.100	-4.5	15.0
Picloram	Ave	5325543	4252300		0.0798	0.100	-20.2*	15.0
Dinoseb	Ave	5246637	4619640		0.0880	0.100	-12.0	15.0
2,4-Dichlorophenylacetic acid	Ave	1739013	1947660		0.112	0.100	12.0	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/15 Calibration Date: 10/01/2019 13:47

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-315.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	11.57	11.54	11.60
2,4-D	11.82	11.79	11.85
Pentachlorophenol	12.11	12.09	12.15
Silvex (2,4,5-TP)	12.71	12.69	12.75
2,4,5-T	13.04	13.02	13.08
Picloram	15.24	15.19	15.29
Dinoseb	15.47	15.45	15.51
2,4-Dichlorophenylacetic acid	10.53	10.51	10.57

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 13:47:37 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:57 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 14:17:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	194766	0.1000	0.1120	M
2	11.893	11.893	0.000	160461	0.1000	0.1096	M
						RPD = 2.14	
2 Dichlorprop							
1	11.567	11.573	-0.006	184870	0.1000	0.1068	
2	12.940	12.940	0.000	171441	0.1000	0.1129	
						RPD = 5.60	
3 2,4-D							
1	11.820	11.820	0.000	199268	0.1000	0.1060	
2	13.360	13.367	-0.007	178385	0.1000	0.1044	
						RPD = 1.56	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1391430	0.1000	0.0966	
2	14.087	14.093	-0.006	1286631	0.1000	0.0946	
						RPD = 2.16	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	605928	0.1000	0.1014	
2	14.633	14.633	0.000	568027	0.1000	0.1004	
						RPD = 1.05	
6 2,4,5-T							
1	13.040	13.047	-0.007	576079	0.1000	0.0955	
2	15.360	15.360	0.000	540567	0.1000	0.0938	
						RPD = 1.75	
7 Picloram							
1	15.240	15.240	0.000	425230	0.1000	0.0798	
2	19.727	19.733	-0.006	385516	0.1000	0.0826	
						RPD = 3.37	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	461964	0.1000	0.0880	
2	17.267	17.273	-0.006	417698	0.1000	0.0864	
						RPD = 1.91	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

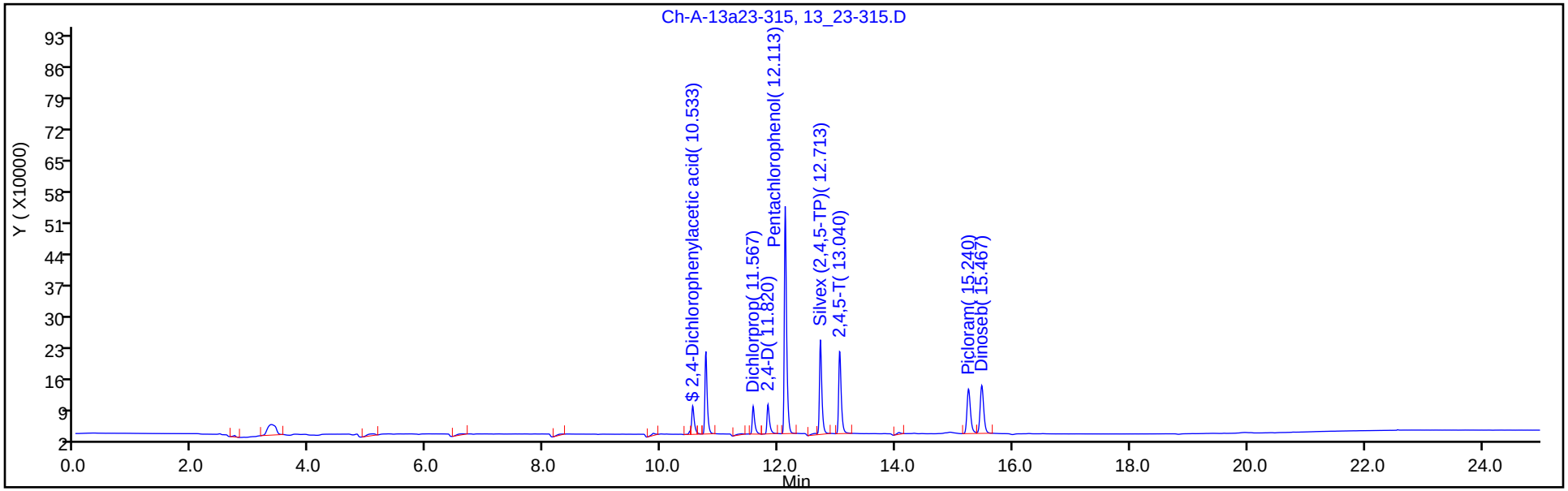
Report Date: 01-Oct-2019 14:18:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

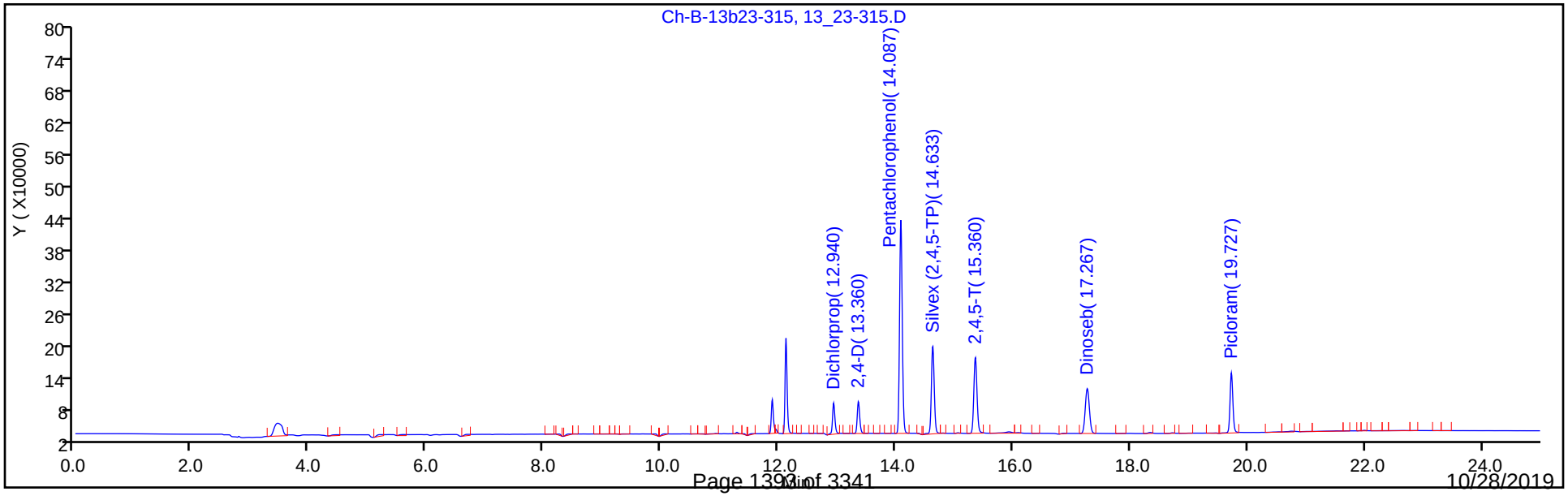
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D

Injection Date:	01-Oct-2019 13:47:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

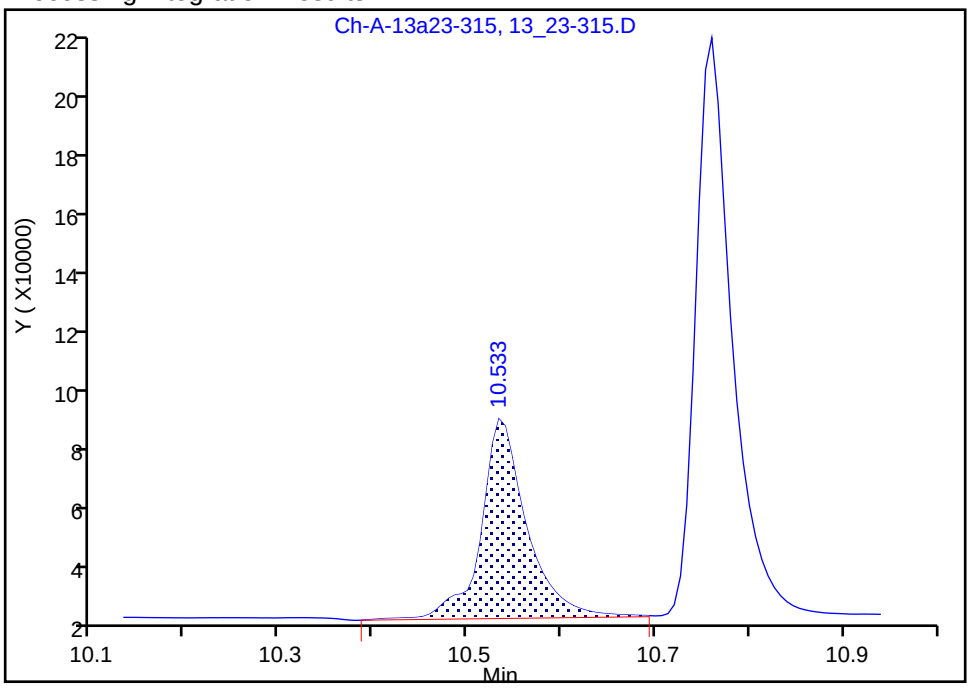
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D				
Injection Date:	01-Oct-2019 13:47:37	Instrument ID:	HP5890-13		
Lims ID:	ccv				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPI (0.53 mm)	Detector	Ch-A-13A01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

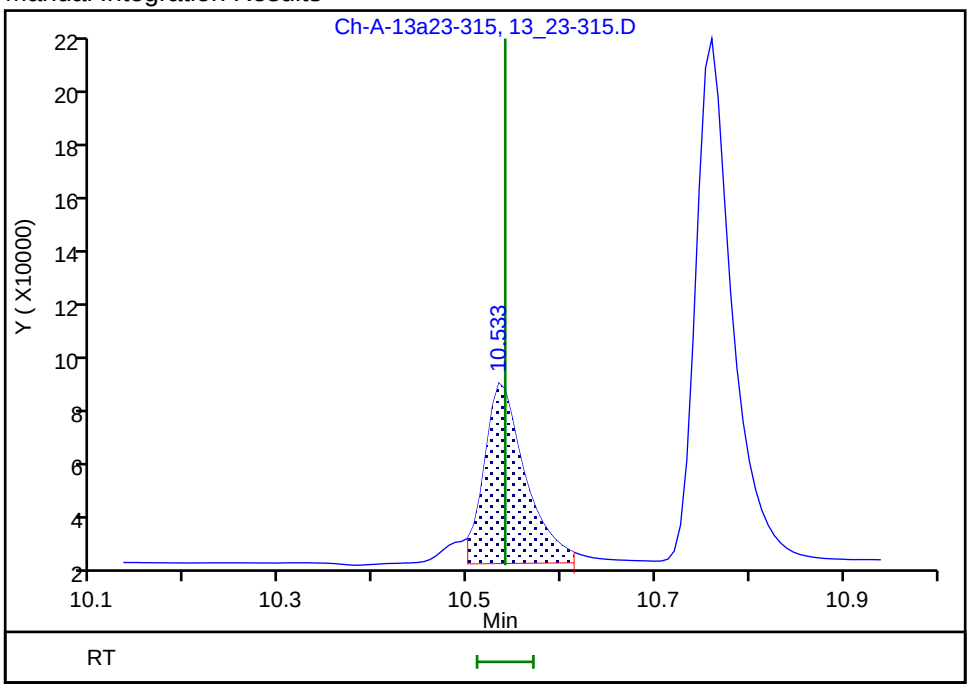
Processing Integration Results

RT: 10.53
Area: 217627
Amount: 0.125144
Amount Units: ng/ul



Manual Integration Results

RT: 10.53
Area: 194766
Amount: 0.111998
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 14:16:30

Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/15 Calibration Date: 10/01/2019 13:47

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-315.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1517920	1714410		0.113	0.100	12.9	15.0
2,4-D	Ave	1709086	1783850		0.104	0.100	4.4	15.0
Pentachlorophenol	Ave	13607325	12866310		0.0946	0.100	-5.4	15.0
Silvex (2,4,5-TP)	Ave	5658999	5680270		0.100	0.100	0.4	15.0
2,4,5-T	Ave	5763073	5405670		0.0938	0.100	-6.2	15.0
Dinoseb	Ave	4835485	4176980		0.0864	0.100	-13.6	15.0
Picloram	Ave	4668163	3855160		0.0826	0.100	-17.4*	15.0
2,4-Dichlorophenylacetic acid	Ave	1463728	1604610		0.110	0.100	9.6	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/15 Calibration Date: 10/01/2019 13:47

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-315.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	12.94	12.91	12.97
2,4-D	13.36	13.34	13.40
Pentachlorophenol	14.09	14.06	14.12
Silvex (2,4,5-TP)	14.63	14.60	14.66
2,4,5-T	15.36	15.33	15.39
Dinoseb	17.27	17.24	17.30
Picloram	19.73	19.68	19.78
2,4-Dichlorophenylacetic acid	11.89	11.86	11.92

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 13:47:37 ALS Bottle#: 0 Worklist Smp#: 15
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:57 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 14:17:35

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	194766	0.1000	0.1120	M
2	11.893	11.893	0.000	160461	0.1000	0.1096	M
						RPD = 2.14	
2 Dichlorprop							
1	11.567	11.573	-0.006	184870	0.1000	0.1068	
2	12.940	12.940	0.000	171441	0.1000	0.1129	
						RPD = 5.60	
3 2,4-D							
1	11.820	11.820	0.000	199268	0.1000	0.1060	
2	13.360	13.367	-0.007	178385	0.1000	0.1044	
						RPD = 1.56	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1391430	0.1000	0.0966	
2	14.087	14.093	-0.006	1286631	0.1000	0.0946	
						RPD = 2.16	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	605928	0.1000	0.1014	
2	14.633	14.633	0.000	568027	0.1000	0.1004	
						RPD = 1.05	
6 2,4,5-T							
1	13.040	13.047	-0.007	576079	0.1000	0.0955	
2	15.360	15.360	0.000	540567	0.1000	0.0938	
						RPD = 1.75	
7 Picloram							
1	15.240	15.240	0.000	425230	0.1000	0.0798	
2	19.727	19.733	-0.006	385516	0.1000	0.0826	
						RPD = 3.37	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	461964	0.1000	0.0880	
2	17.267	17.273	-0.006	417698	0.1000	0.0864	
						RPD = 1.91	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

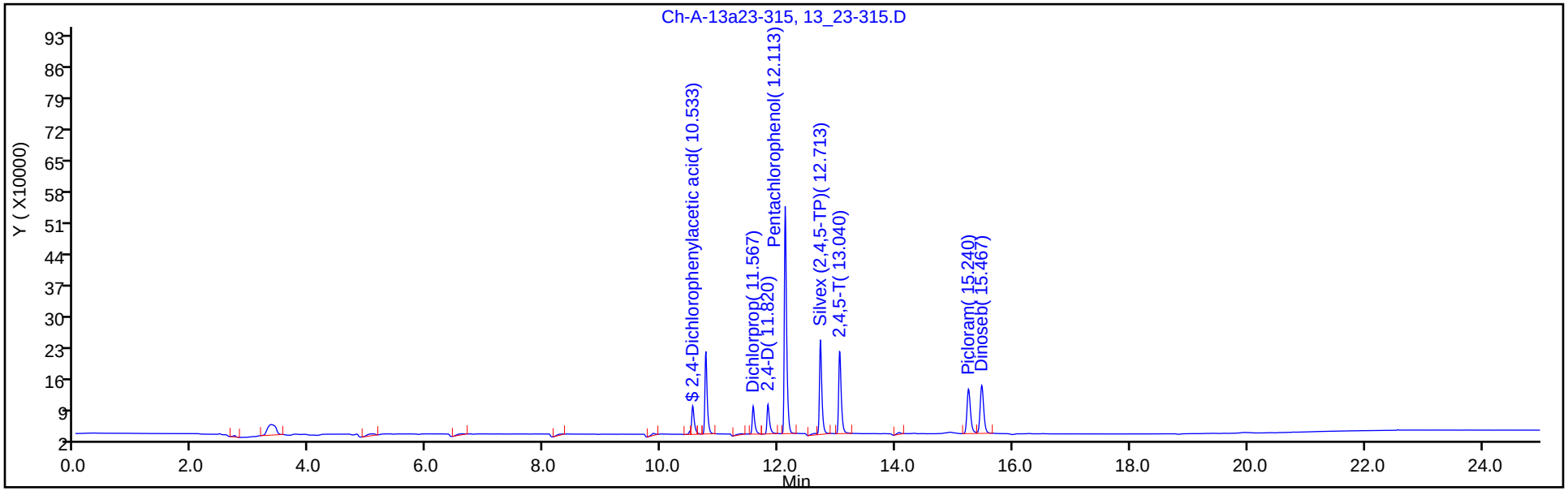
Report Date: 01-Oct-2019 14:18:57 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

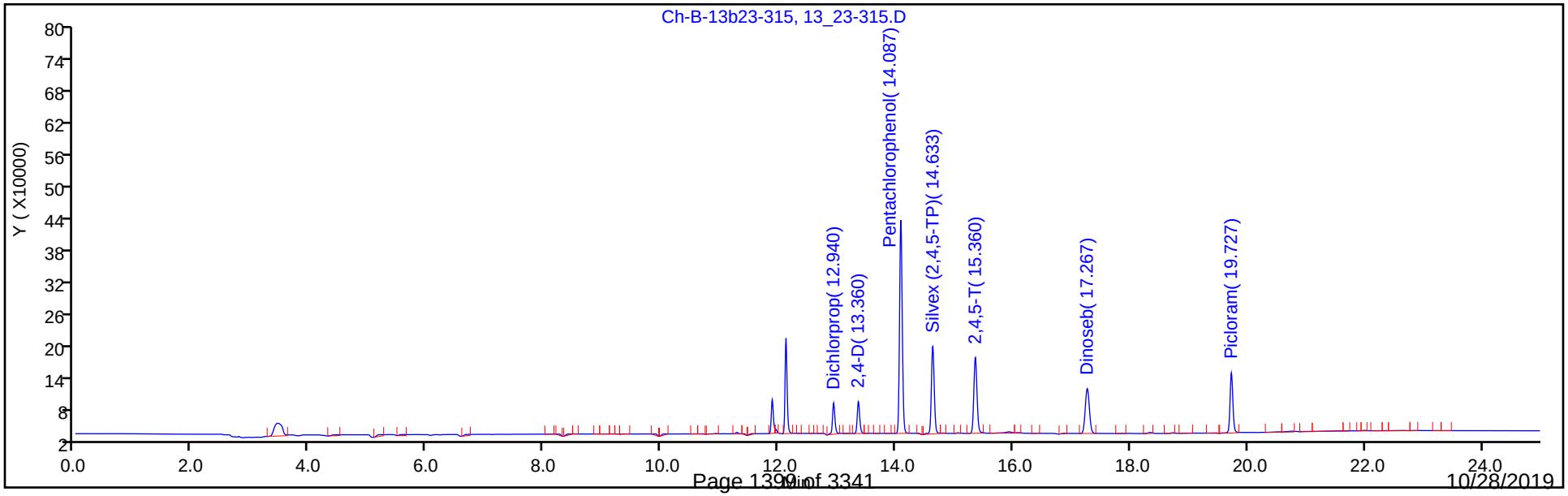
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D

Injection Date:	01-Oct-2019 13:47:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	15
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

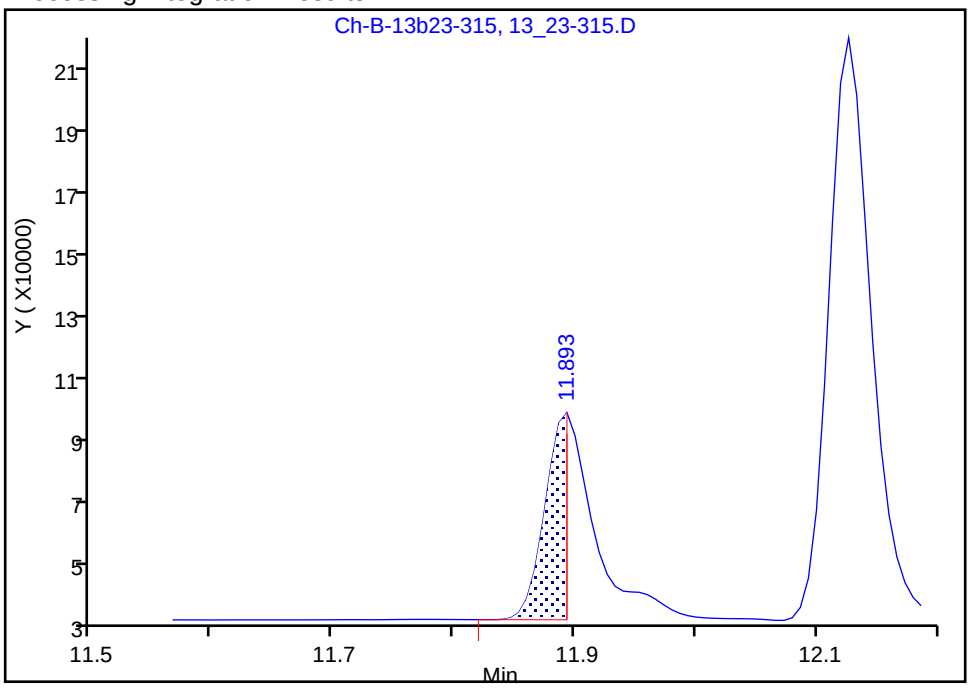
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-315.D				
Injection Date:	01-Oct-2019 13:47:37	Instrument ID:	HP5890-13		
Lims ID:	ccv				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	15
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

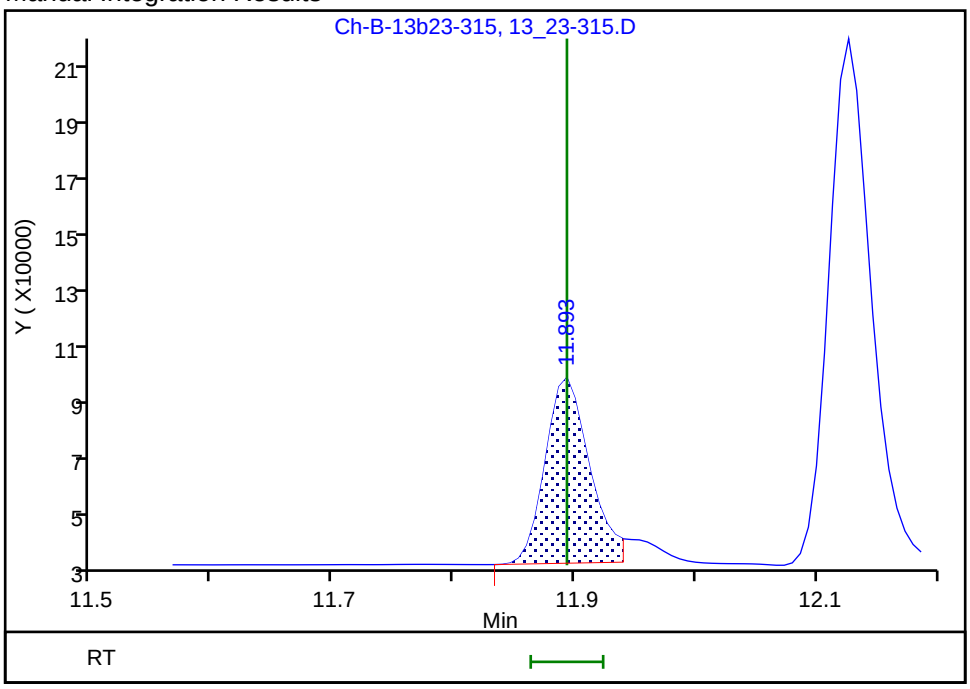
Processing Integration Results

RT: 11.89
Area: 78032
Amount: 0.053310
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 160461
Amount: 0.109625
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 14:17:30

Audit Action: Split an Integrated Peak Audit Reason: Baseline Smoothing

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/26 Calibration Date: 10/01/2019 23:07

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-327.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1731112	1814950		0.105	0.100	4.8	15.0
2,4-D	Ave	1879589	1991700		0.106	0.100	6.0	15.0
Pentachlorophenol	Ave	14401916	13955810		0.0969	0.100	-3.1	15.0
Silvex (2,4,5-TP)	Ave	5973471	5998940		0.100	0.100	0.4	15.0
2,4,5-T	Ave	6035126	5899030		0.0977	0.100	-2.3	15.0
Picloram	Ave	5325543	4348270		0.0816	0.100	-18.4*	15.0
Dinoseb	Ave	5246637	4705060		0.0897	0.100	-10.3	15.0
2,4-Dichlorophenylacetic acid	Ave	1739013	1971550		0.113	0.100	13.4	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/26 Calibration Date: 10/01/2019 23:07

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPI ID: 0.53(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-327.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	11.57	11.54	11.60
2,4-D	11.82	11.79	11.85
Pentachlorophenol	12.11	12.09	12.15
Silvex (2,4,5-TP)	12.71	12.69	12.75
2,4,5-T	13.04	13.02	13.08
Picloram	15.24	15.19	15.29
Dinoseb	15.47	15.45	15.51
2,4-Dichlorophenylacetic acid	10.53	10.51	10.57

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 23:07:13 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:50:55 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

First Level Reviewer: NearyM Date: 02-Oct-2019 06:07:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	197155	0.1000	0.1134	M
2	11.893	11.893	0.000	164644	0.1000	0.1125	M
						RPD = 0.79	
2 Dichlorprop							
1	11.567	11.573	-0.006	181495	0.1000	0.1048	
2	12.940	12.940	0.000	155351	0.1000	0.1023	
						RPD = 2.41	
3 2,4-D							
1	11.820	11.820	0.000	199170	0.1000	0.1060	
2	13.360	13.367	-0.007	175309	0.1000	0.1026	
						RPD = 3.25	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1395581	0.1000	0.0969	
2	14.087	14.093	-0.006	1263177	0.1000	0.0928	
						RPD = 4.29	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	599894	0.1000	0.1004	
2	14.633	14.633	0.000	552159	0.1000	0.0976	
						RPD = 2.88	
6 2,4,5-T							
1	13.040	13.047	-0.007	589903	0.1000	0.0977	
2	15.360	15.360	0.000	547709	0.1000	0.0950	
						RPD = 2.81	
7 Picloram							
1	15.240	15.240	0.000	434827	0.1000	0.0816	
2	19.727	19.733	-0.006	365150	0.1000	0.0782	
						RPD = 4.29	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	470506	0.1000	0.0897	
2	17.267	17.273	-0.006	413407	0.1000	0.0855	
						RPD = 4.78	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

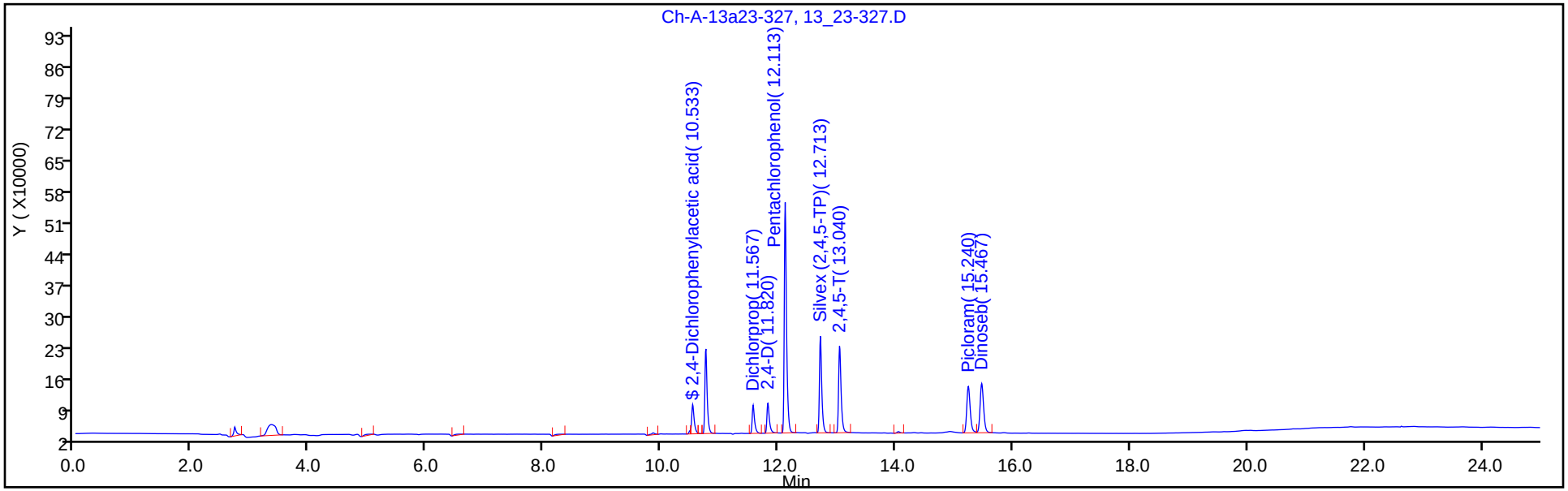
Report Date: 02-Oct-2019 06:50:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

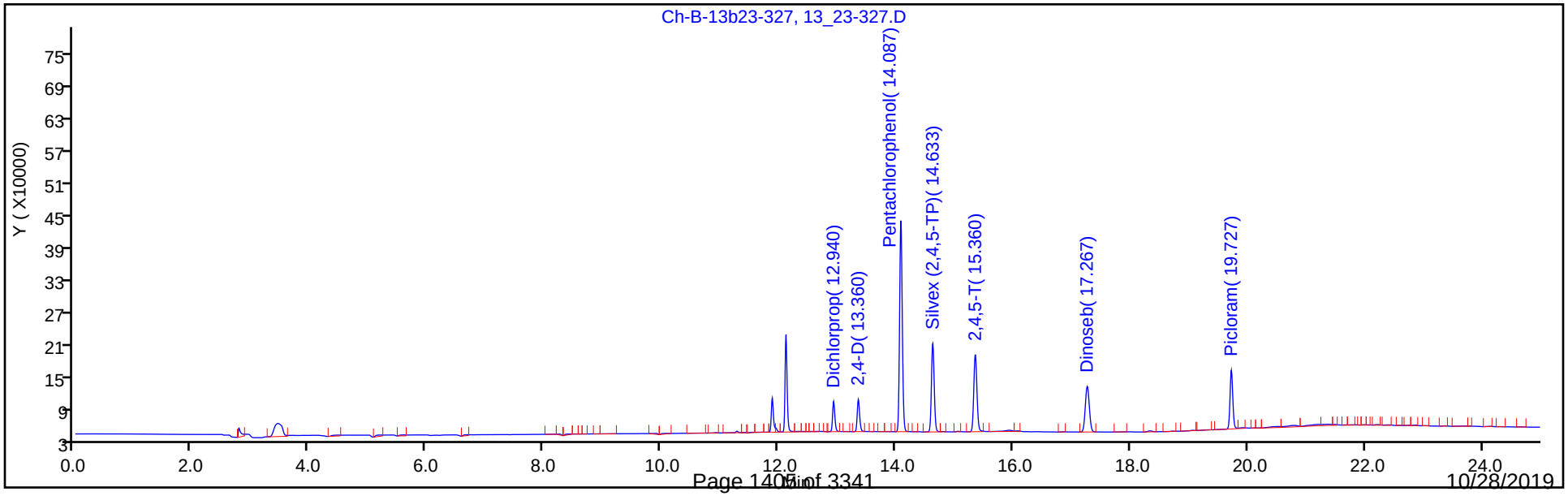
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D

Injection Date:	01-Oct-2019 23:07:13	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	26
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

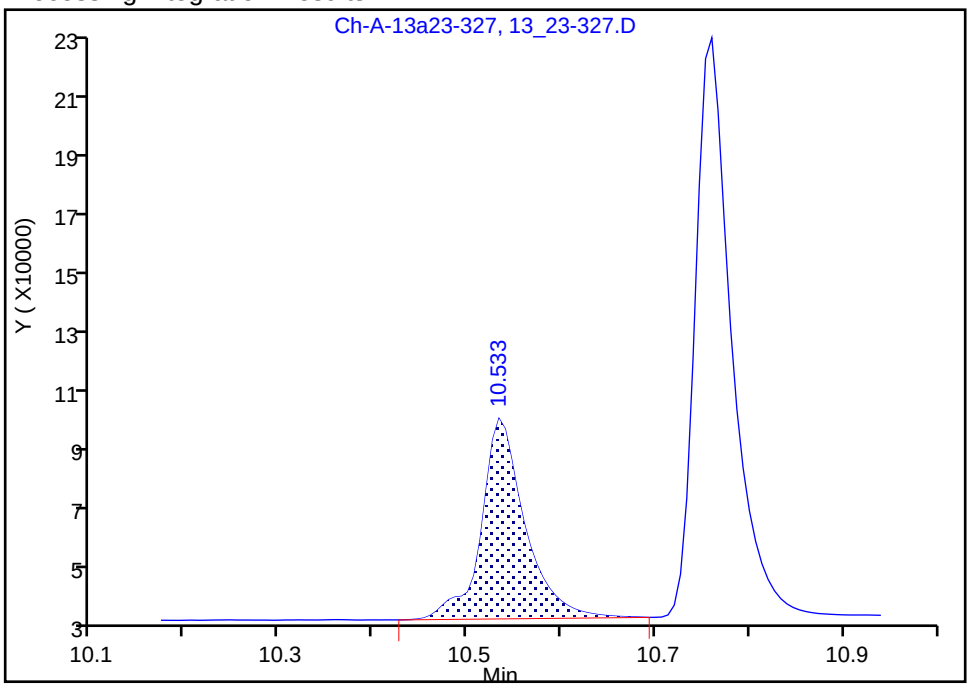
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D
Injection Date: 01-Oct-2019 23:07:13 Instrument ID: HP5890-13
Lims ID: ccv
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

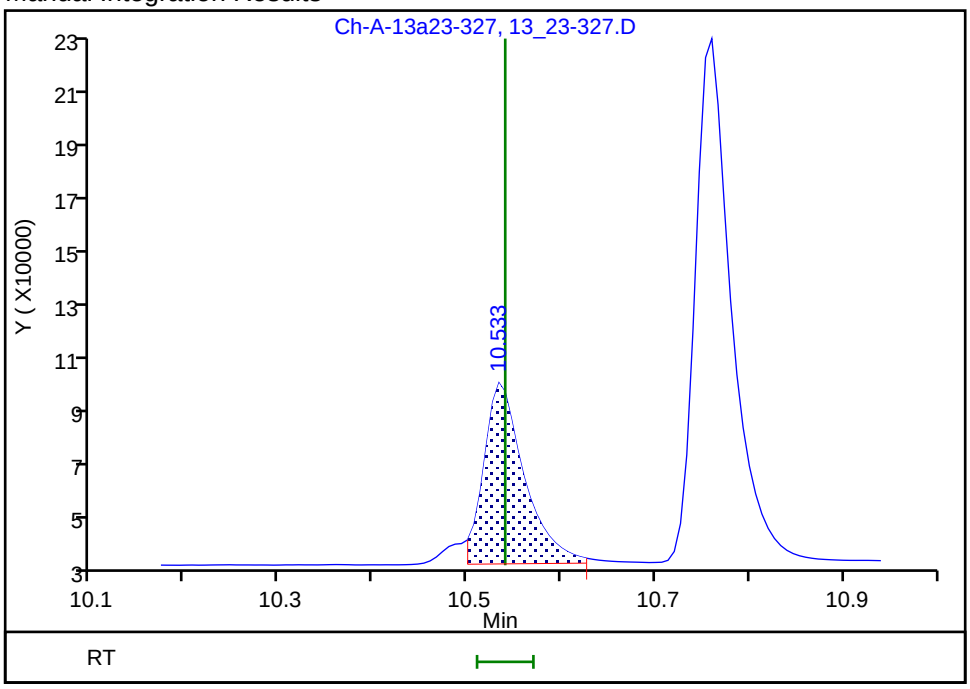
Processing Integration Results

RT: 10.53
Area: 213841
Amount: 0.122967
Amount Units: ng/ul



Manual Integration Results

RT: 10.53
Area: 197155
Amount: 0.113372
Amount Units: ng/ul



Reviewer: NearyM, 02-Oct-2019 06:07:17
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM VII
HERBICIDES CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/26 Calibration Date: 10/01/2019 23:07

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-327.D Conc. Units: ng/uL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorprop	Ave	1517920	1553510		0.102	0.100	2.3	15.0
2,4-D	Ave	1709086	1753090		0.103	0.100	2.6	15.0
Pentachlorophenol	Ave	13607325	12631770		0.0928	0.100	-7.2	15.0
Silvex (2,4,5-TP)	Ave	5658999	5521590		0.0976	0.100	-2.4	15.0
2,4,5-T	Ave	5763073	5477090		0.0950	0.100	-5.0	15.0
Dinoseb	Ave	4835485	4134070		0.0855	0.100	-14.5	15.0
Picloram	Ave	4668163	3651500		0.0782	0.100	-21.8*	15.0
2,4-Dichlorophenylacetic acid	Ave	1463728	1646440		0.112	0.100	12.5	15.0

FORM VII
HERBICIDES CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 480-495143/26 Calibration Date: 10/01/2019 23:07

Instrument ID: HP5890-13 Calib Start Date: 09/19/2019 13:58

GC Column: RTX-CLPII ID: 0.32(mm) Calib End Date: 09/19/2019 17:26

Lab File ID: 13_23-327.D

Analyte	RT	RT WINDOW	
		FROM	TO
Dichlorprop	12.94	12.91	12.97
2,4-D	13.36	13.34	13.40
Pentachlorophenol	14.09	14.06	14.12
Silvex (2,4,5-TP)	14.63	14.60	14.66
2,4,5-T	15.36	15.33	15.39
Dinoseb	17.27	17.24	17.30
Picloram	19.73	19.68	19.78
2,4-Dichlorophenylacetic acid	11.89	11.86	11.92

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 01-Oct-2019 23:07:13 ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13
Sublist: chrom-8151-13*sub10

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 02-Oct-2019 06:50:55 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0330

First Level Reviewer: NearyM Date: 02-Oct-2019 06:07:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	197155	0.1000	0.1134	M
2	11.893	11.893	0.000	164644	0.1000	0.1125	M
						RPD = 0.79	
2 Dichlorprop							
1	11.567	11.573	-0.006	181495	0.1000	0.1048	
2	12.940	12.940	0.000	155351	0.1000	0.1023	
						RPD = 2.41	
3 2,4-D							
1	11.820	11.820	0.000	199170	0.1000	0.1060	
2	13.360	13.367	-0.007	175309	0.1000	0.1026	
						RPD = 3.25	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	1395581	0.1000	0.0969	
2	14.087	14.093	-0.006	1263177	0.1000	0.0928	
						RPD = 4.29	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	599894	0.1000	0.1004	
2	14.633	14.633	0.000	552159	0.1000	0.0976	
						RPD = 2.88	
6 2,4,5-T							
1	13.040	13.047	-0.007	589903	0.1000	0.0977	
2	15.360	15.360	0.000	547709	0.1000	0.0950	
						RPD = 2.81	
7 Picloram							
1	15.240	15.240	0.000	434827	0.1000	0.0816	
2	19.727	19.733	-0.006	365150	0.1000	0.0782	
						RPD = 4.29	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	470506	0.1000	0.0897	
2	17.267	17.273	-0.006	413407	0.1000	0.0855	
						RPD = 4.78	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

Herb_CAL_0.10_00056 Amount Added: 1.00 Units: mL

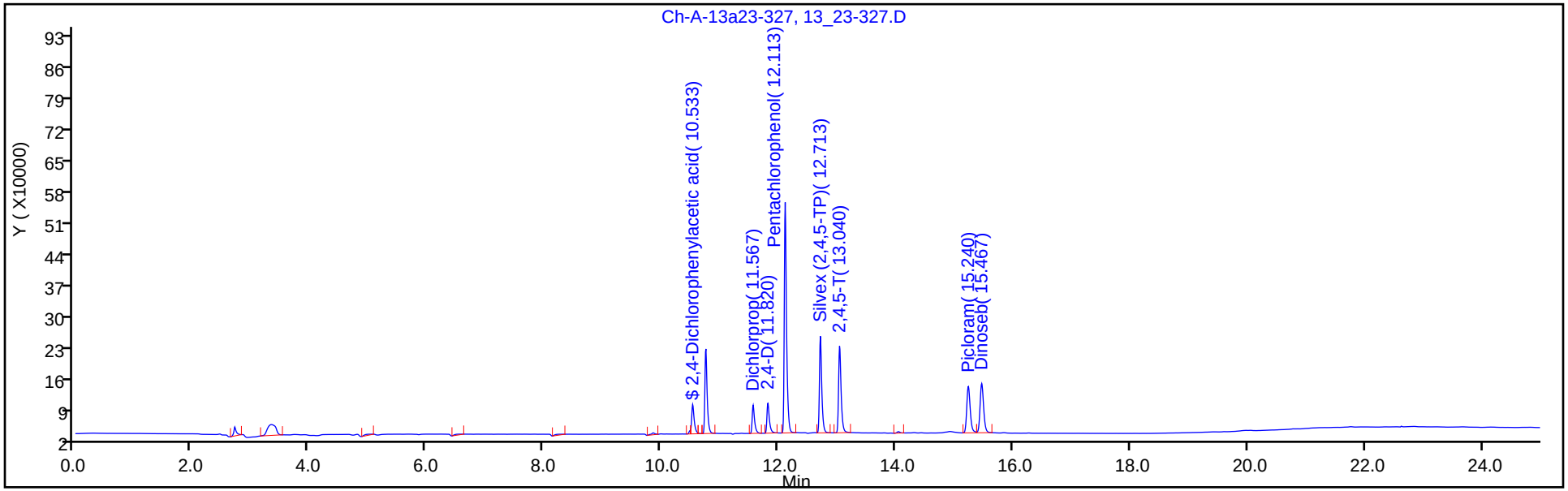
Report Date: 02-Oct-2019 06:50:56 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

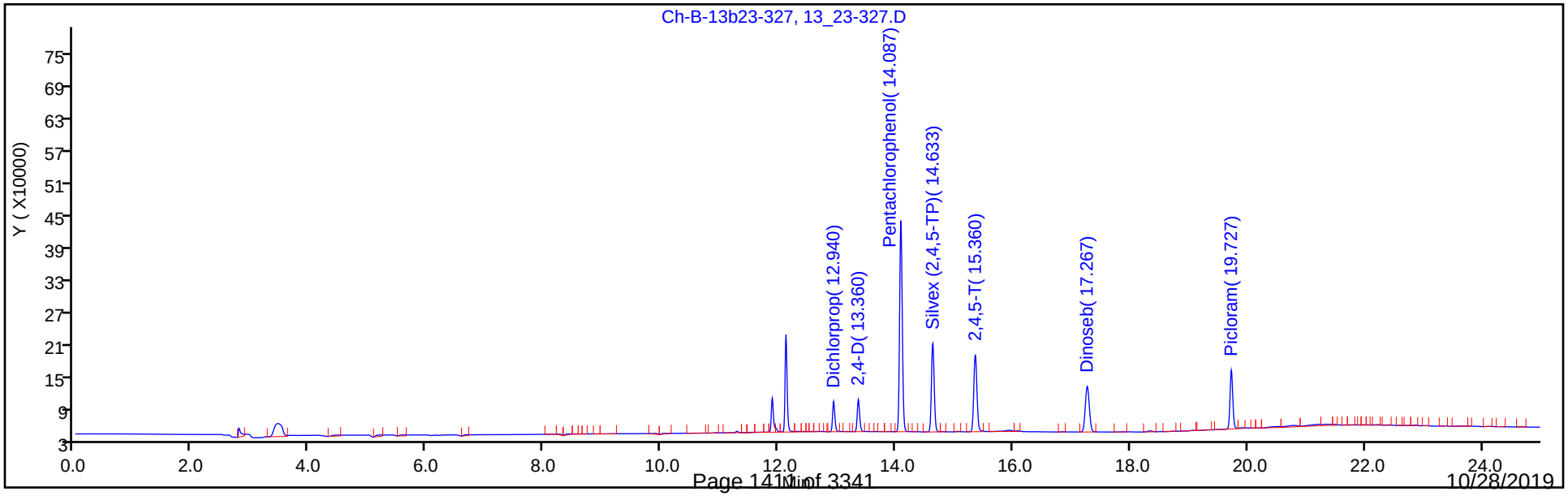
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D

Injection Date:	01-Oct-2019 23:07:13	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	ccv			Worklist Smp#:	26
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

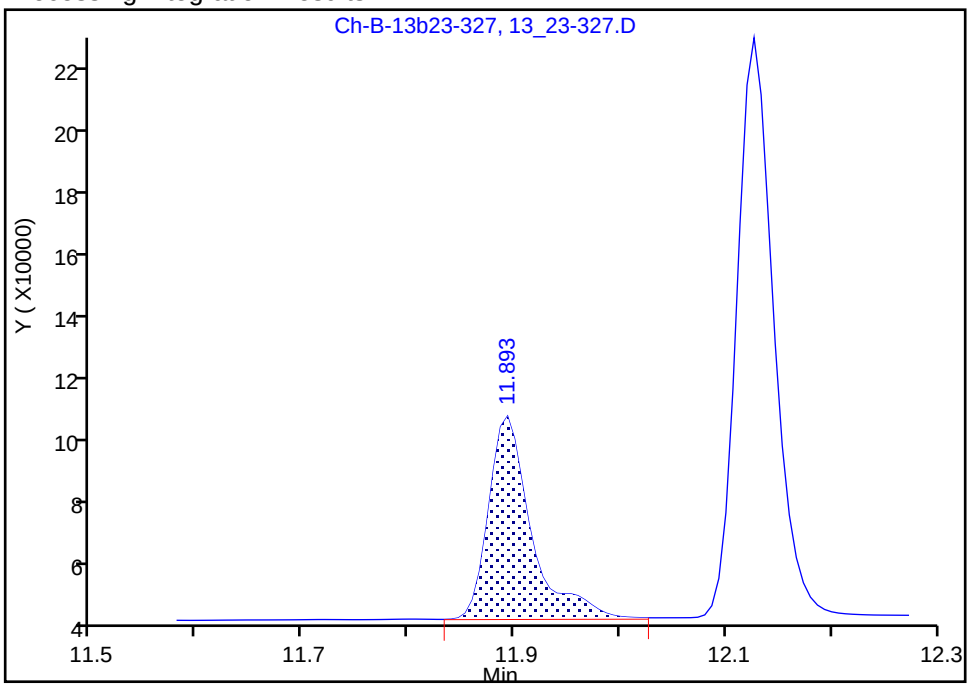
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-327.D
Injection Date: 01-Oct-2019 23:07:13 Instrument ID: HP5890-13
Lims ID: ccv
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 26
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

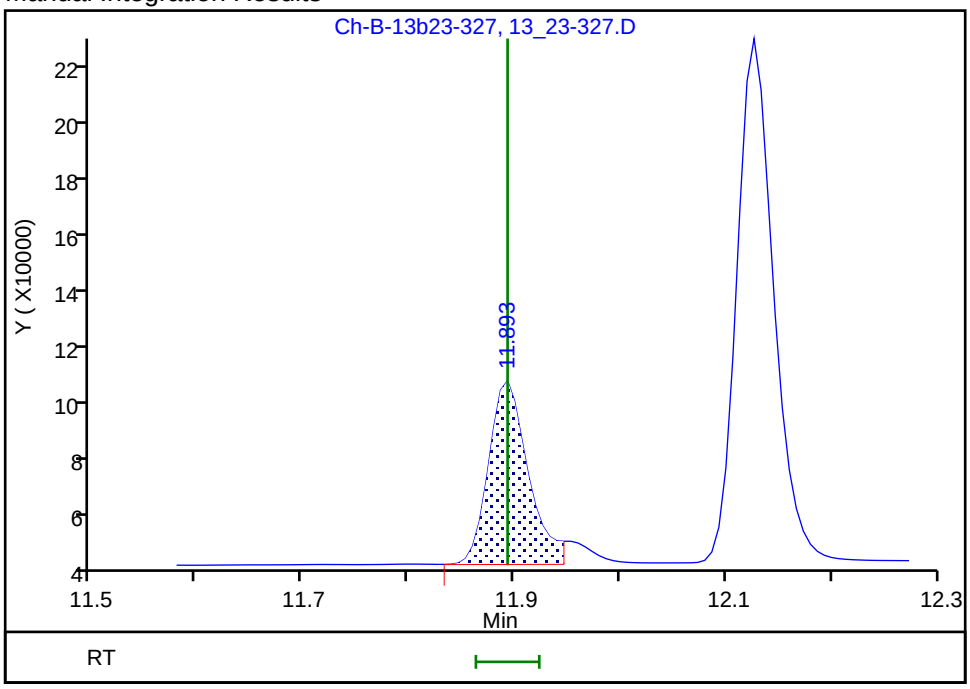
Processing Integration Results

RT: 11.89
Area: 180180
Amount: 0.123097
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 164644
Amount: 0.112483
Amount Units: ng/ul



Reviewer: NearyM, 02-Oct-2019 06:07:20
Audit Action: Split an Integrated Peak Audit Reason: Shouldering

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493889/1-A

Matrix: Solid Lab File ID: 13_23-306.D

Analysis Method: 8151A Date Collected:

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.28(g) Date Analyzed: 10/01/2019 09:19

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	ND		17	5.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	83		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-306.D
Lims ID: MB 480-493889/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Oct-2019 09:19:37 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:15:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	719033	0.5000	0.4135	
2	11.887	11.893	-0.006	495444	0.5000	0.3385	M
						RPD = 19.95	
4 Pentachlorophenol							M
1	12.127	12.120	0.007	125561		0.008718	
2	14.073	14.093	-0.020	5788		0.000425	M
						RPD = 181.39	

QC Flag Legend

Review Flags
M - Manually Integrated

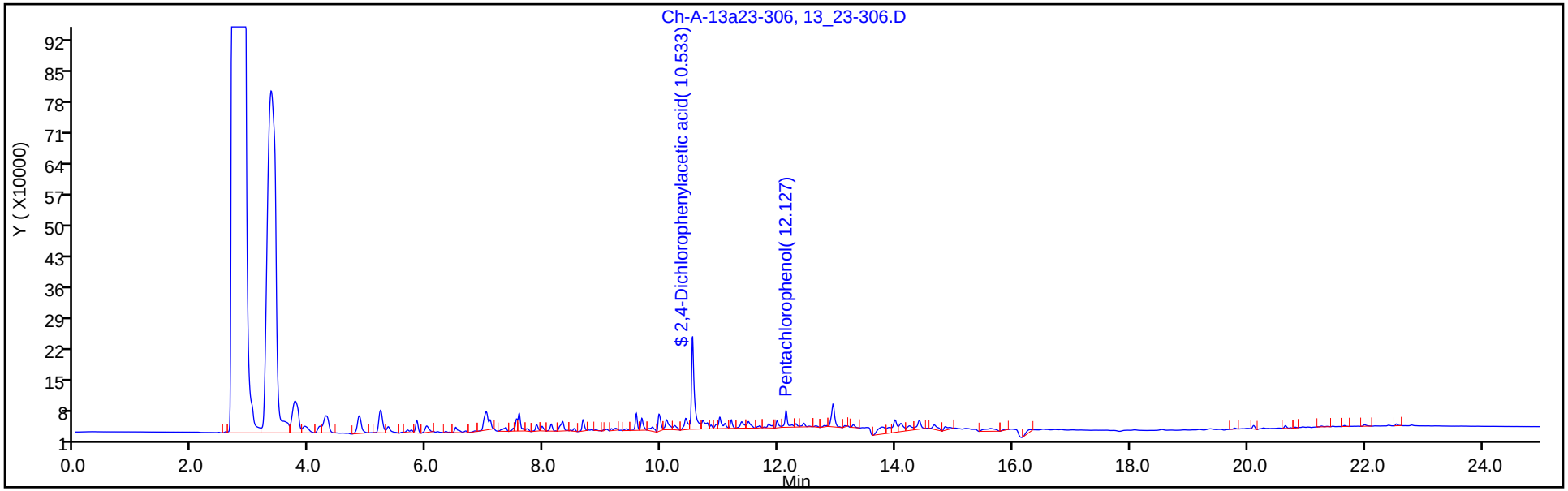
Report Date: 01-Oct-2019 14:18:22 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

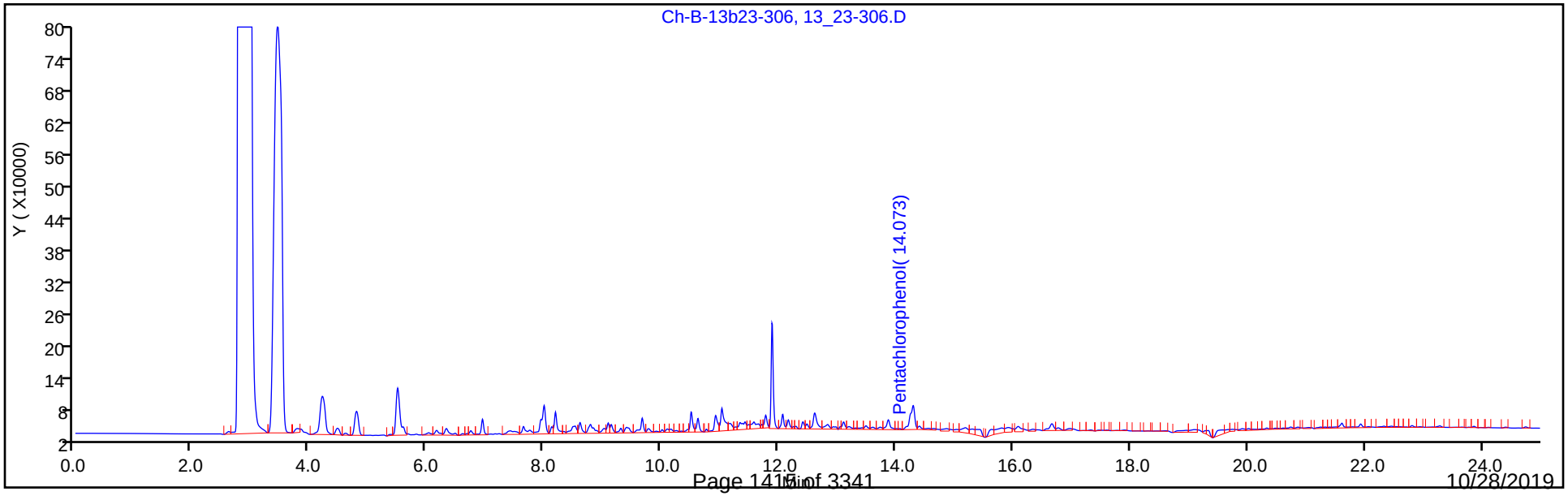
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-306.D

Injection Date:	01-Oct-2019 09:19:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	MB 480-493889/1-A			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 480-493889/1-A

Matrix: Solid Lab File ID: 13_23-306.D

Analysis Method: 8151A Date Collected:

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.28(g) Date Analyzed: 10/01/2019 09:19

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	68		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-306.D
Lims ID: MB 480-493889/1-A
Client ID:
Sample Type: MB
Inject. Date: 01-Oct-2019 09:19:37 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:15:12

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	719033	0.5000	0.4135	
2	11.887	11.893	-0.006	495444	0.5000	0.3385	M
						RPD = 19.95	
4 Pentachlorophenol							M
1	12.127	12.120	0.007	125561		0.008718	
2	14.073	14.093	-0.020	5788		0.000425	M
						RPD = 181.39	

QC Flag Legend

Review Flags
M - Manually Integrated

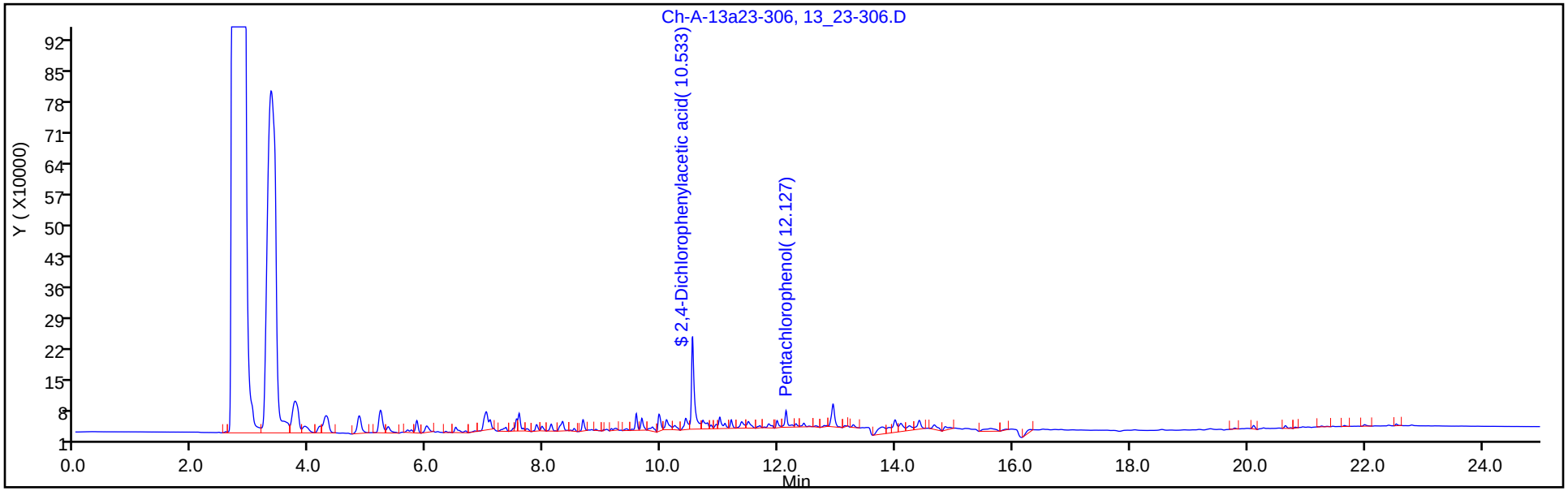
Report Date: 01-Oct-2019 14:18:22 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

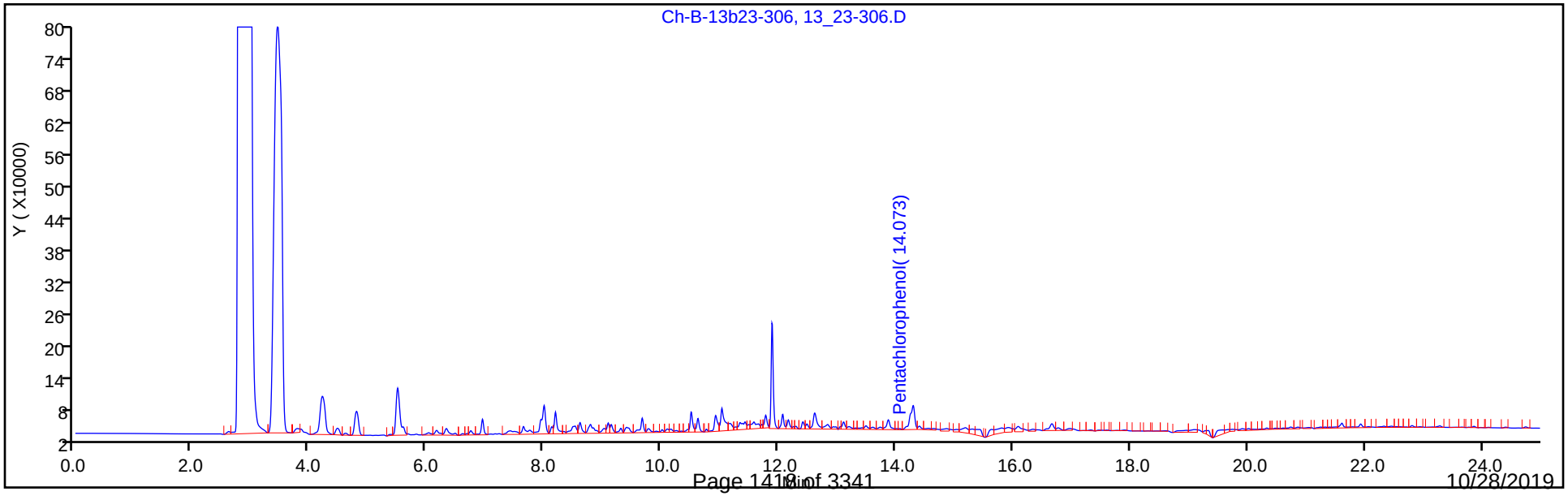
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-306.D

Injection Date:	01-Oct-2019 09:19:37	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	MB 480-493889/1-A			Worklist Smp#:	6
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

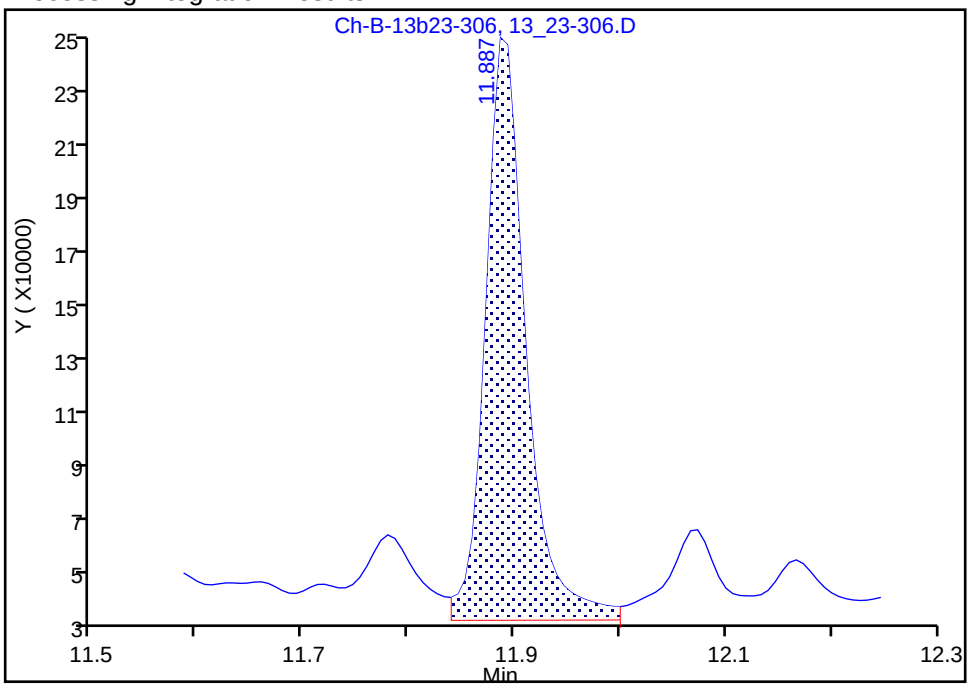
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-306.D				
Injection Date:	01-Oct-2019 09:19:37	Instrument ID:	HP5890-13		
Lims ID:	MB 480-493889/1-A				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

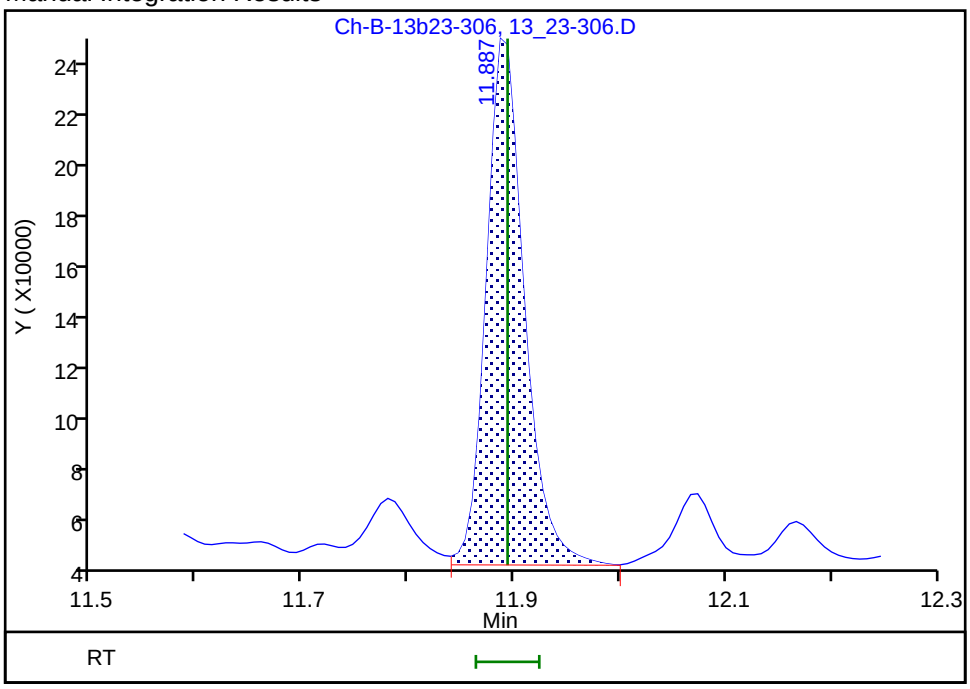
Processing Integration Results

RT: 11.89
Area: 539729
Amount: 0.368736
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 495444
Amount: 0.338481
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 10:15:09

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493889/2-A

Matrix: Solid Lab File ID: 13_23-307.D

Analysis Method: 8151A Date Collected:

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.54(g) Date Analyzed: 10/01/2019 09:49

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	54.8		16	5.9

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	80		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-307.D
Lims ID: LCS 480-493889/2-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Oct-2019 09:49:23 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:22:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							
1	10.533	10.540	-0.007	694627	0.5000	0.3994	
2	11.887	11.893	-0.006	527844	0.5000	0.3606	
						RPD = 10.22	
2 Dichlorprop							
1	11.567	11.573	-0.006	273930	0.2000	0.1582	
2	12.940	12.940	0.000	247809	0.2000	0.1633	
						RPD = 3.12	
3 2,4-D							M
1	11.813	11.820	-0.007	313529	0.2000	0.1668	M
2	13.360	13.367	-0.007	317039	0.2000	0.1855	
						RPD = 10.61	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	896127	0.2000	0.0622	
2	14.087	14.093	-0.006	713895	0.2000	0.0525	
						RPD = 17.02	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	999584	0.2000	0.1673	
2	14.627	14.633	-0.006	945569	0.2000	0.1671	
						RPD = 0.15	
6 2,4,5-T							
1	13.040	13.047	-0.007	1032367	0.2000	0.1711	
2	15.353	15.360	-0.007	938719	0.2000	0.1629	
						RPD = 4.90	
7 Picloram							
1	15.233	15.240	-0.007	882359	0.2000	0.1657	
2	19.727	19.733	-0.006	835499	0.2000	0.1790	
						RPD = 7.71	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	177837	0.2000	0.0339	
2	17.267	17.273	-0.006	171856	0.2000	0.0355	
						RPD = 4.74	

QC Flag Legend

Review Flags

M - Manually Integrated

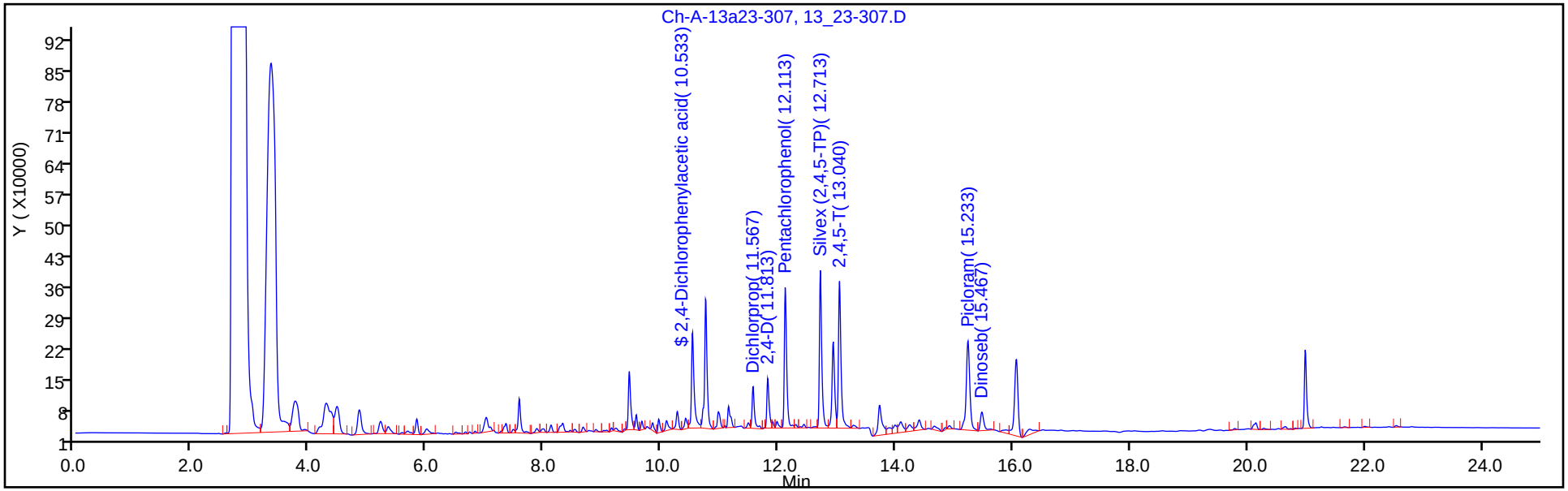
Report Date: 01-Oct-2019 14:18:27 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

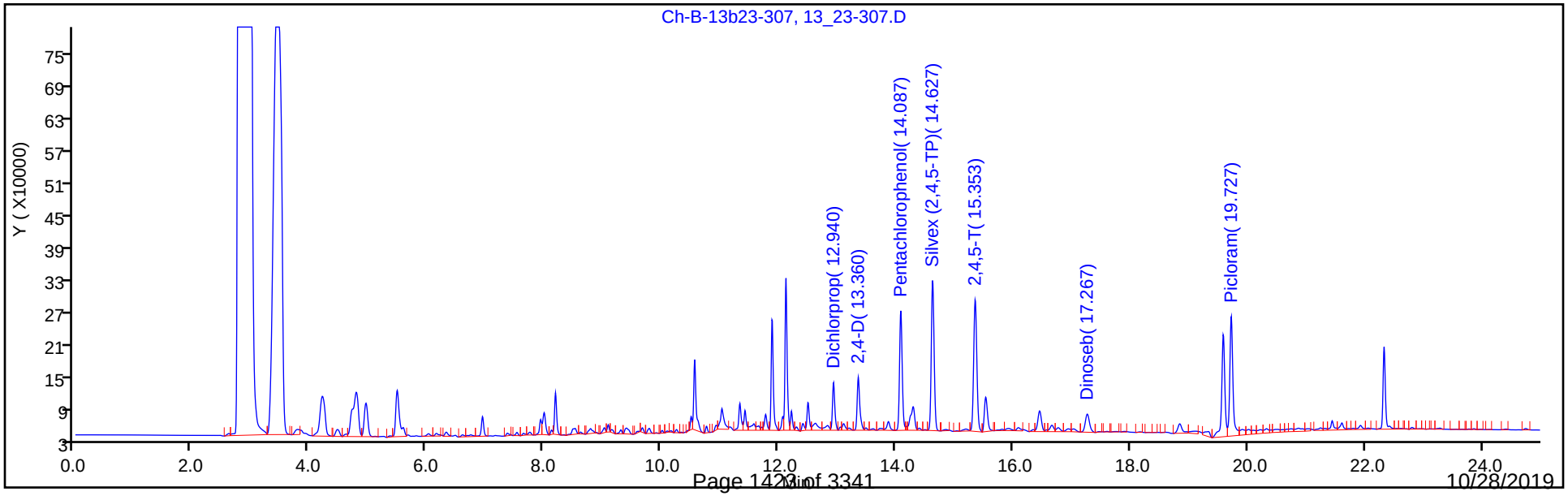
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-307.D

Injection Date:	01-Oct-2019 09:49:23	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	LCS 480-493889/2-A			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 480-493889/2-A

Matrix: Solid Lab File ID: 13_23-307.D

Analysis Method: 8151A Date Collected:

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.54(g) Date Analyzed: 10/01/2019 09:49

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	72		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-307.D
Lims ID: LCS 480-493889/2-A
Client ID:
Sample Type: LCS
Inject. Date: 01-Oct-2019 09:49:23 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:22:57

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							
1	10.533	10.540	-0.007	694627	0.5000	0.3994	
2	11.887	11.893	-0.006	527844	0.5000	0.3606	
						RPD = 10.22	
2 Dichlorprop							
1	11.567	11.573	-0.006	273930	0.2000	0.1582	
2	12.940	12.940	0.000	247809	0.2000	0.1633	
						RPD = 3.12	
3 2,4-D							M
1	11.813	11.820	-0.007	313529	0.2000	0.1668	M
2	13.360	13.367	-0.007	317039	0.2000	0.1855	
						RPD = 10.61	
4 Pentachlorophenol							
1	12.113	12.120	-0.007	896127	0.2000	0.0622	
2	14.087	14.093	-0.006	713895	0.2000	0.0525	
						RPD = 17.02	
5 Silvex (2,4,5-TP)							
1	12.713	12.720	-0.007	999584	0.2000	0.1673	
2	14.627	14.633	-0.006	945569	0.2000	0.1671	
						RPD = 0.15	
6 2,4,5-T							
1	13.040	13.047	-0.007	1032367	0.2000	0.1711	
2	15.353	15.360	-0.007	938719	0.2000	0.1629	
						RPD = 4.90	
7 Picloram							
1	15.233	15.240	-0.007	882359	0.2000	0.1657	
2	19.727	19.733	-0.006	835499	0.2000	0.1790	
						RPD = 7.71	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	177837	0.2000	0.0339	
2	17.267	17.273	-0.006	171856	0.2000	0.0355	
						RPD = 4.74	

QC Flag Legend

Review Flags

M - Manually Integrated

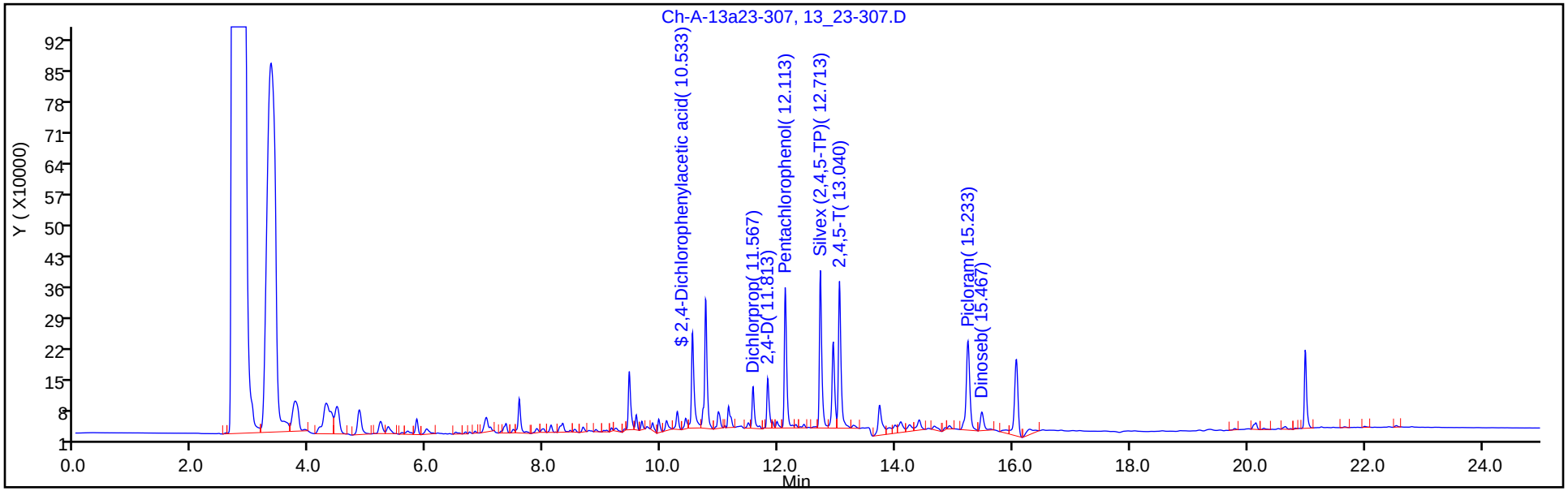
Report Date: 01-Oct-2019 14:18:28 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

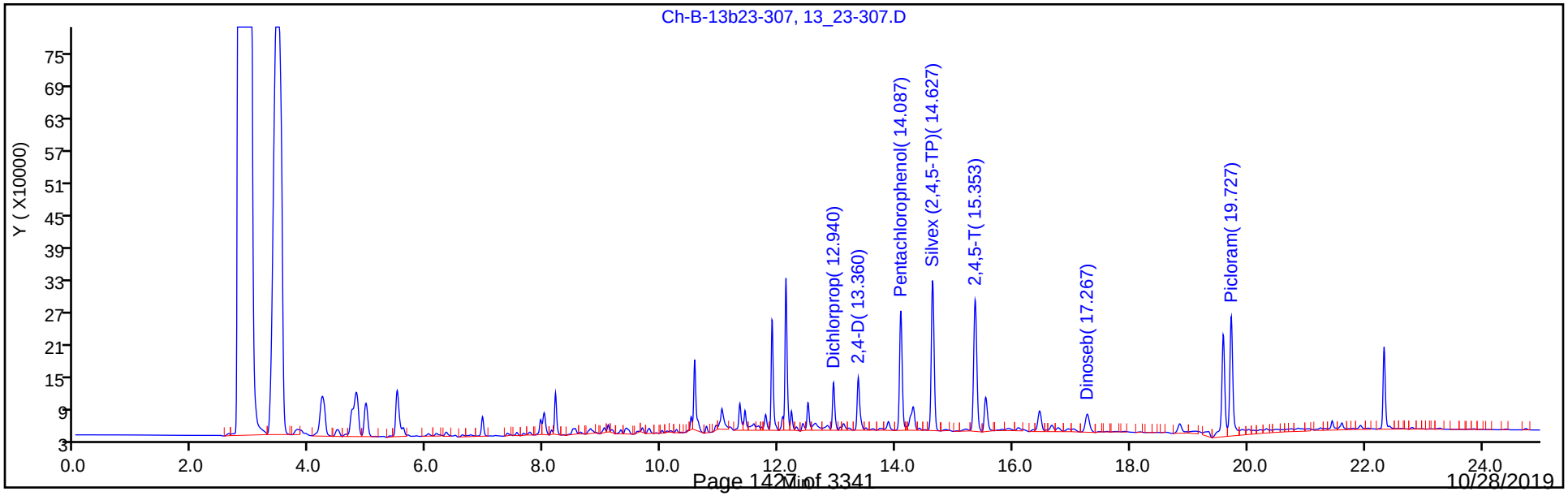
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-307.D

Injection Date:	01-Oct-2019 09:49:23	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	LCS 480-493889/2-A			Worklist Smp#:	7
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MS Lab Sample ID: 480-159547-7 MS

Matrix: Solid Lab File ID: 13_23-308.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.27(g) Date Analyzed: 10/01/2019 10:19

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	72.5		21	7.6

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	89		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D
Lims ID: 480-159547-E-7-D MS
Client ID:
Sample Type: MS
Inject. Date: 01-Oct-2019 10:19:04 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:48:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	777401	0.5000	0.4470	M
2	11.893	11.893	0.000	554807	0.5000	0.3790	M
						RPD = 16.46	
2 Dichlorprop							M
1	11.560	11.573	-0.013	275452	0.2000	0.1591	M
2	12.940	12.940	0.000	234268	0.2000	0.1543	M
						RPD = 3.05	
3 2,4-D							M
1	11.813	11.820	-0.007	398266	0.2000	0.2119	M
2	13.360	13.367	-0.007	315223	0.2000	0.1844	M
						RPD = 13.85	
4 Pentachlorophenol							M
1	12.113	12.120	-0.007	2028598	0.2000	0.1409	M
2	14.087	14.093	-0.006	1683443	0.2000	0.1237	M
						RPD = 12.96	
5 Silvex (2,4,5-TP)							M
1	12.713	12.720	-0.007	1029343	0.2000	0.1723	M
2	14.627	14.633	-0.006	929649	0.2000	0.1643	M
						RPD = 4.78	
6 2,4,5-T							M
1	13.040	13.047	-0.007	1124982	0.2000	0.1864	M
2	15.353	15.360	-0.007	887262	0.2000	0.1540	
						RPD = 19.07	
7 Picloram							
1	15.233	15.240	-0.007	875346	0.2000	0.1644	
2	19.727	19.733	-0.006	722843	0.2000	0.1548	
						RPD = 5.97	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.473	15.480	-0.007	119771	0.2000	0.0228	
2	17.273	17.273	0.000	171088	0.2000	0.0354	
						RPD = 43.13	

QC Flag Legend

Review Flags

M - Manually Integrated

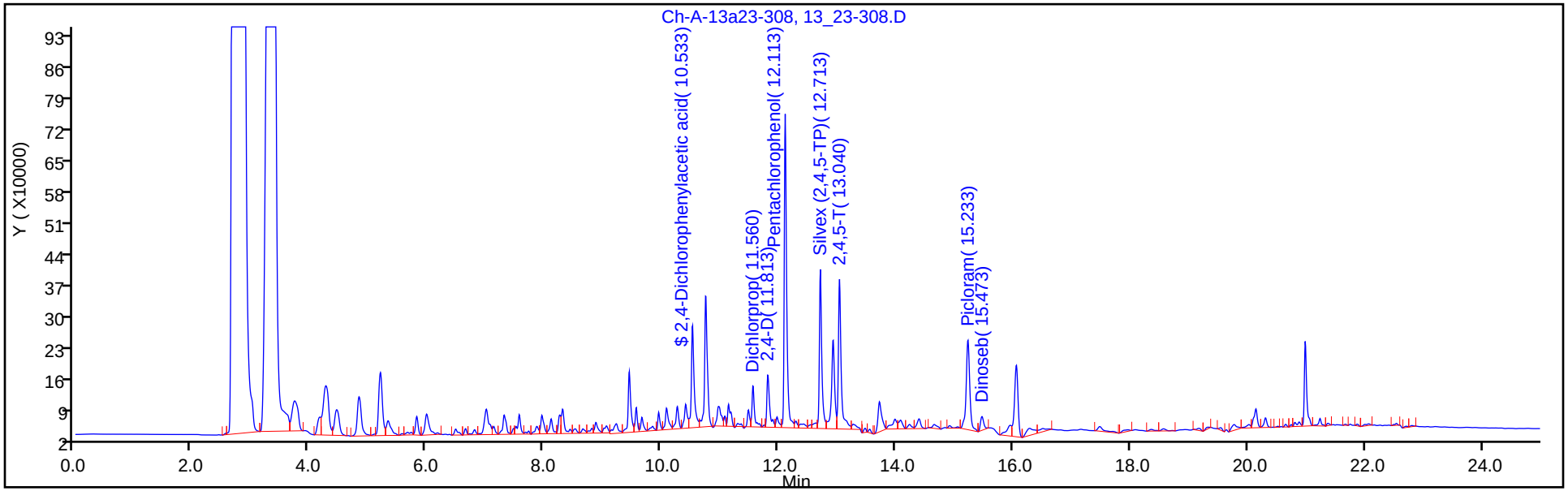
Report Date: 01-Oct-2019 14:18:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

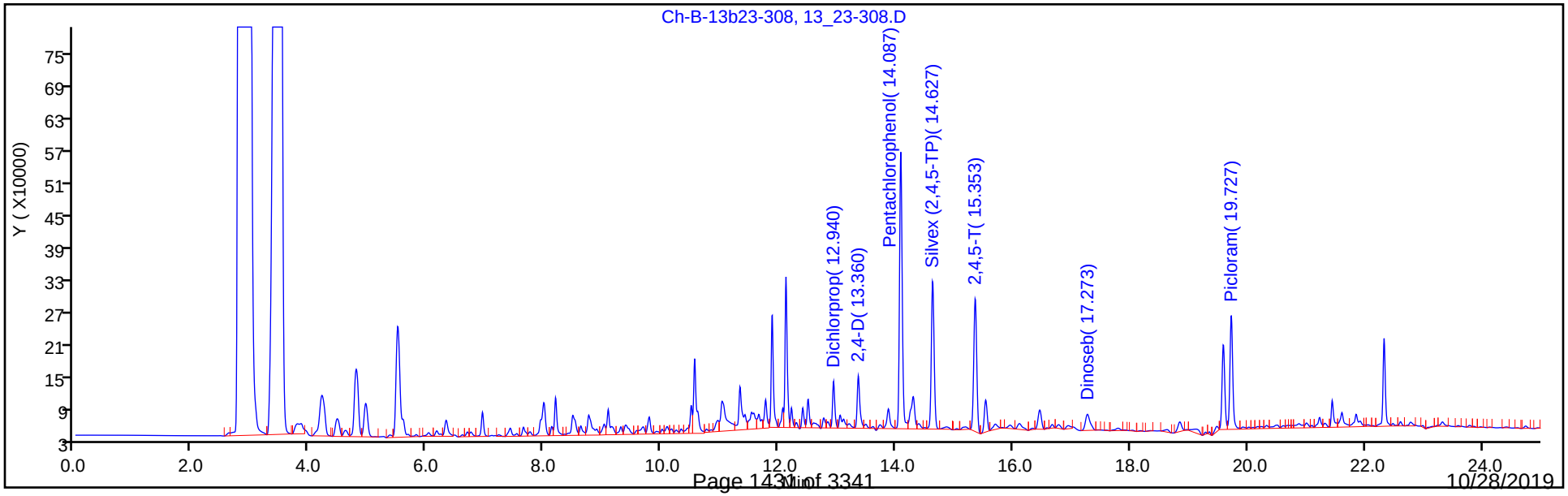
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D

Injection Date:	01-Oct-2019 10:19:04	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-D MS			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

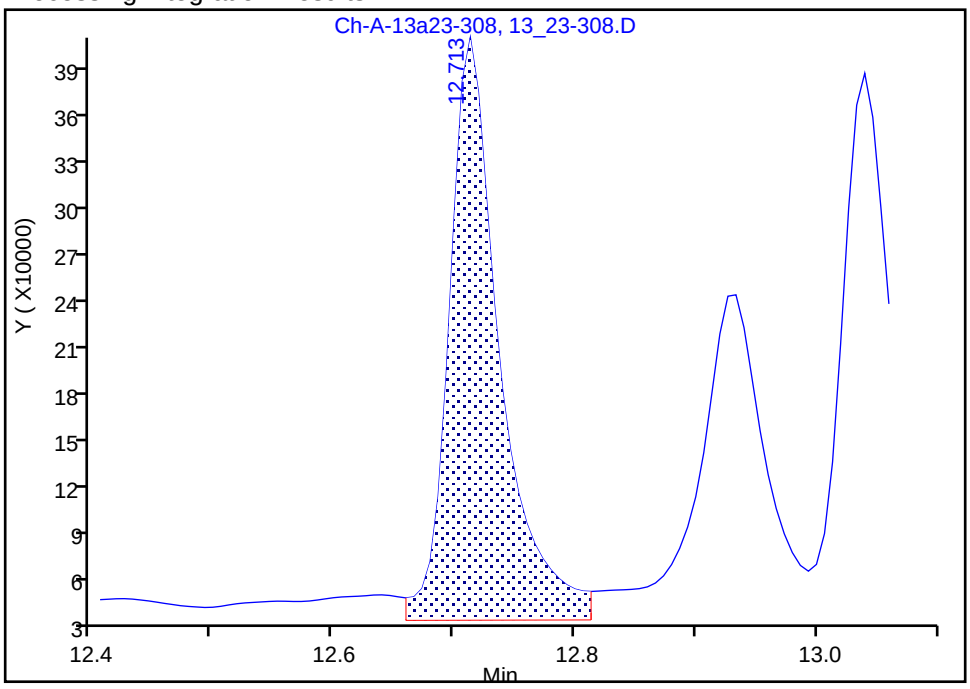
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D
Injection Date: 01-Oct-2019 10:19:04 Instrument ID: HP5890-13
Lims ID: 480-159547-E-7-D MS
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

5 Silvex (2,4,5-TP), CAS: 93-72-1

Signal: 1

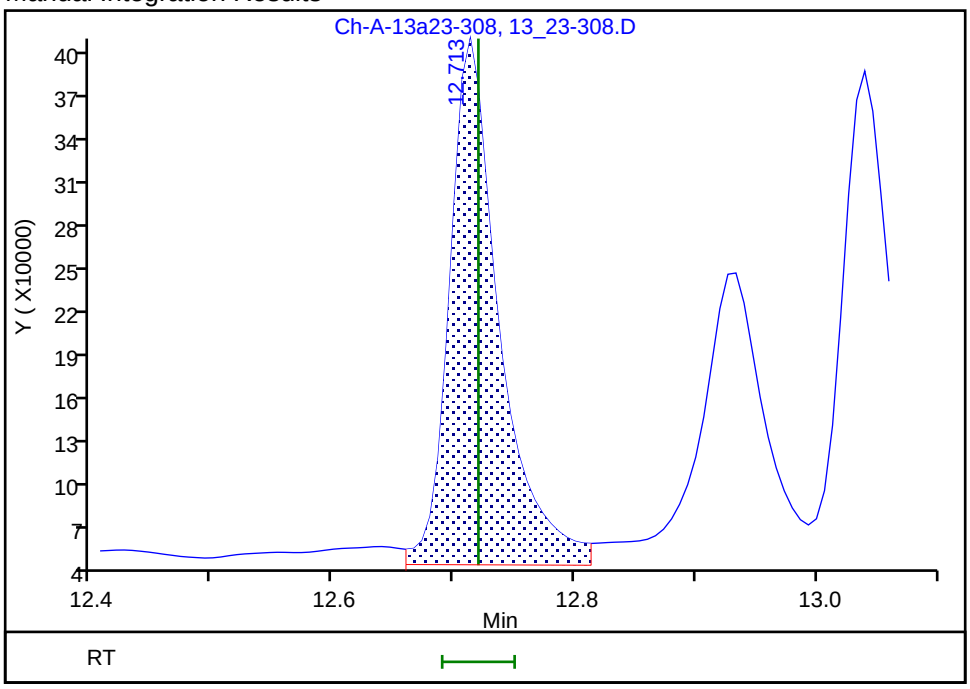
Processing Integration Results

RT: 12.71
Area: 1059027
Amount: 0.177288
Amount Units: ng/ul



Manual Integration Results

RT: 12.71
Area: 1029343
Amount: 0.172319
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 10:48:17
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

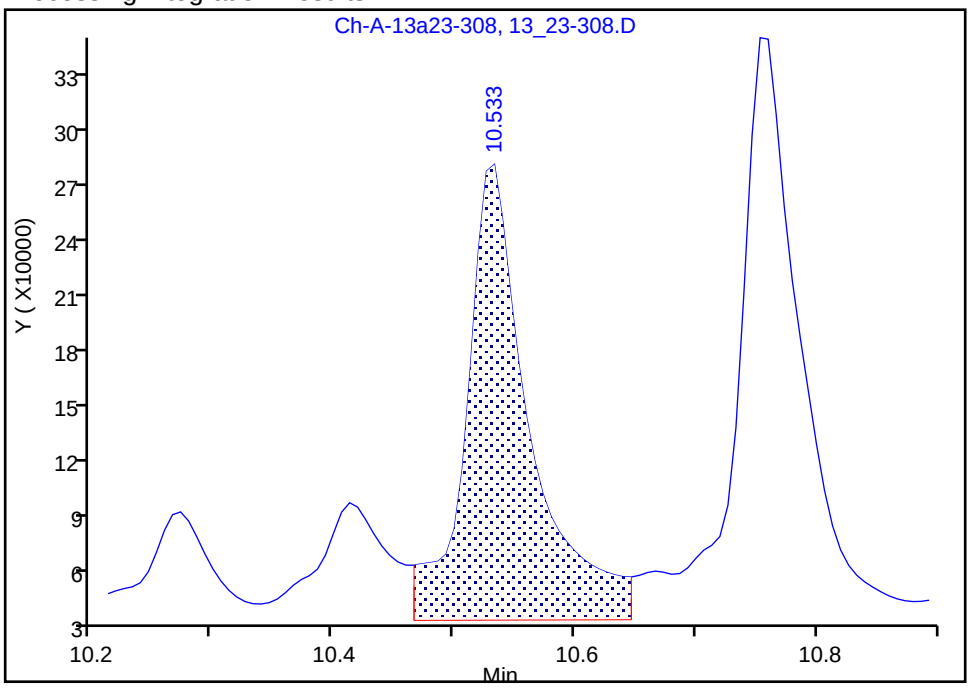
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D
Injection Date: 01-Oct-2019 10:19:04 Instrument ID: HP5890-13
Lims ID: 480-159547-E-7-D MS
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPI (0.53 mm) Detector Ch-A-13A01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 1

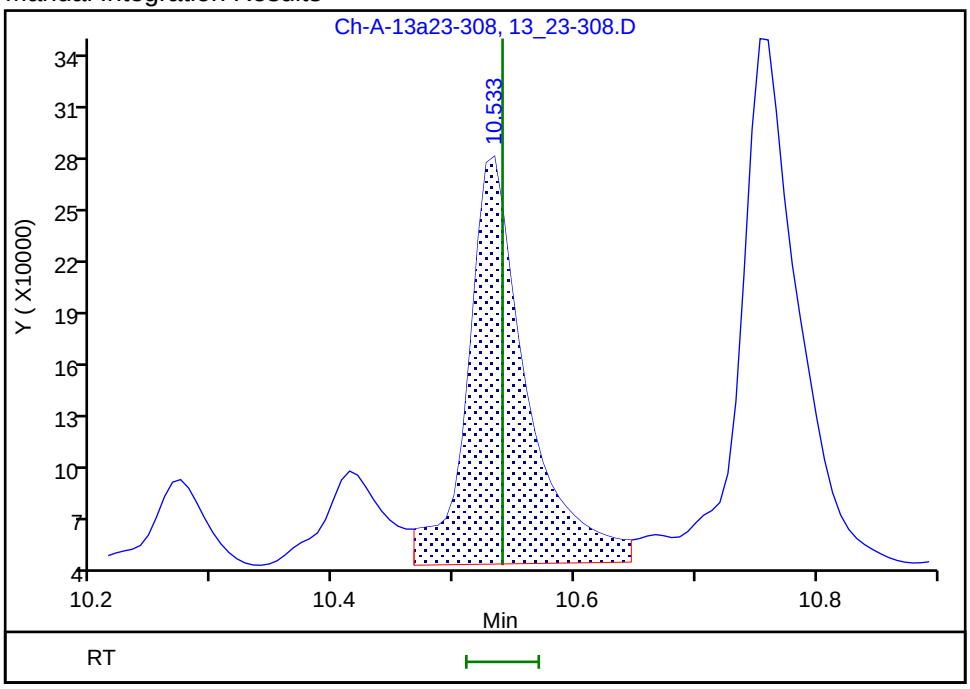
Processing Integration Results

RT: 10.53
Area: 878332
Amount: 0.505075
Amount Units: ng/ul



Manual Integration Results

RT: 10.53
Area: 777401
Amount: 0.447036
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 10:48:14
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MS Lab Sample ID: 480-159547-7 MS

Matrix: Solid Lab File ID: 13_23-308.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.27(g) Date Analyzed: 10/01/2019 10:19

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	76		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D
Lims ID: 480-159547-E-7-D MS
Client ID:
Sample Type: MS
Inject. Date: 01-Oct-2019 10:19:04 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 10:48:30

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	777401	0.5000	0.4470	M
2	11.893	11.893	0.000	554807	0.5000	0.3790	M
						RPD = 16.46	
2 Dichlorprop							M
1	11.560	11.573	-0.013	275452	0.2000	0.1591	M
2	12.940	12.940	0.000	234268	0.2000	0.1543	M
						RPD = 3.05	
3 2,4-D							M
1	11.813	11.820	-0.007	398266	0.2000	0.2119	M
2	13.360	13.367	-0.007	315223	0.2000	0.1844	M
						RPD = 13.85	
4 Pentachlorophenol							M
1	12.113	12.120	-0.007	2028598	0.2000	0.1409	M
2	14.087	14.093	-0.006	1683443	0.2000	0.1237	M
						RPD = 12.96	
5 Silvex (2,4,5-TP)							M
1	12.713	12.720	-0.007	1029343	0.2000	0.1723	M
2	14.627	14.633	-0.006	929649	0.2000	0.1643	M
						RPD = 4.78	
6 2,4,5-T							M
1	13.040	13.047	-0.007	1124982	0.2000	0.1864	M
2	15.353	15.360	-0.007	887262	0.2000	0.1540	
						RPD = 19.07	
7 Picloram							
1	15.233	15.240	-0.007	875346	0.2000	0.1644	
2	19.727	19.733	-0.006	722843	0.2000	0.1548	
						RPD = 5.97	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.473	15.480	-0.007	119771	0.2000	0.0228	
2	17.273	17.273	0.000	171088	0.2000	0.0354	
						RPD = 43.13	

QC Flag Legend

Review Flags

M - Manually Integrated

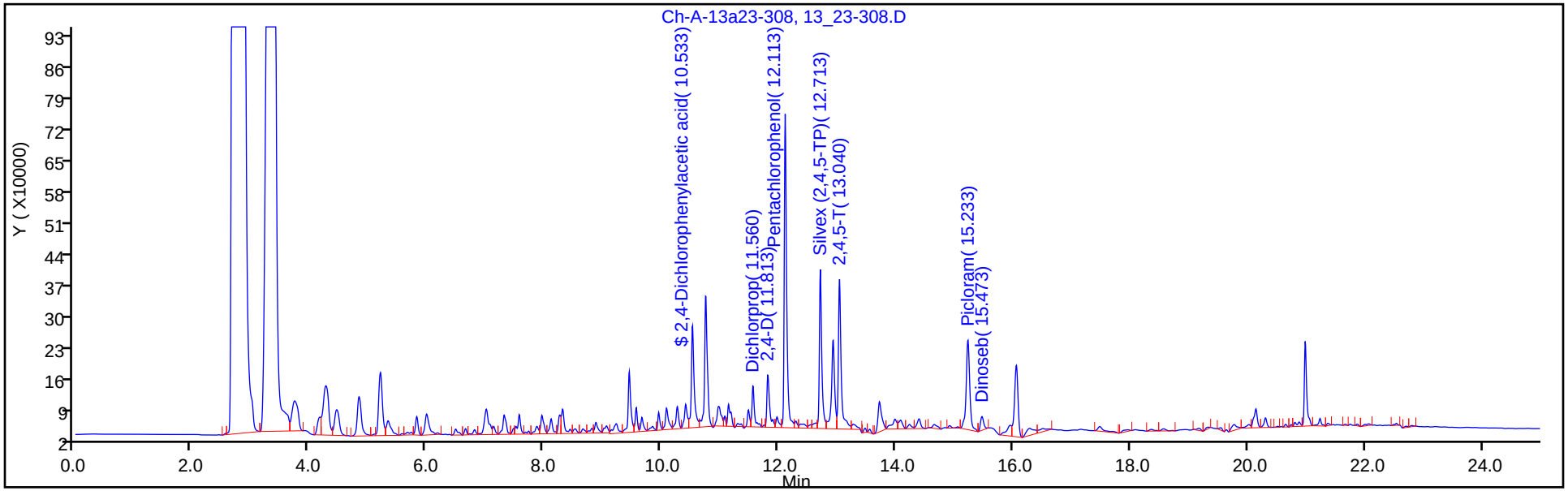
Report Date: 01-Oct-2019 14:18:32 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

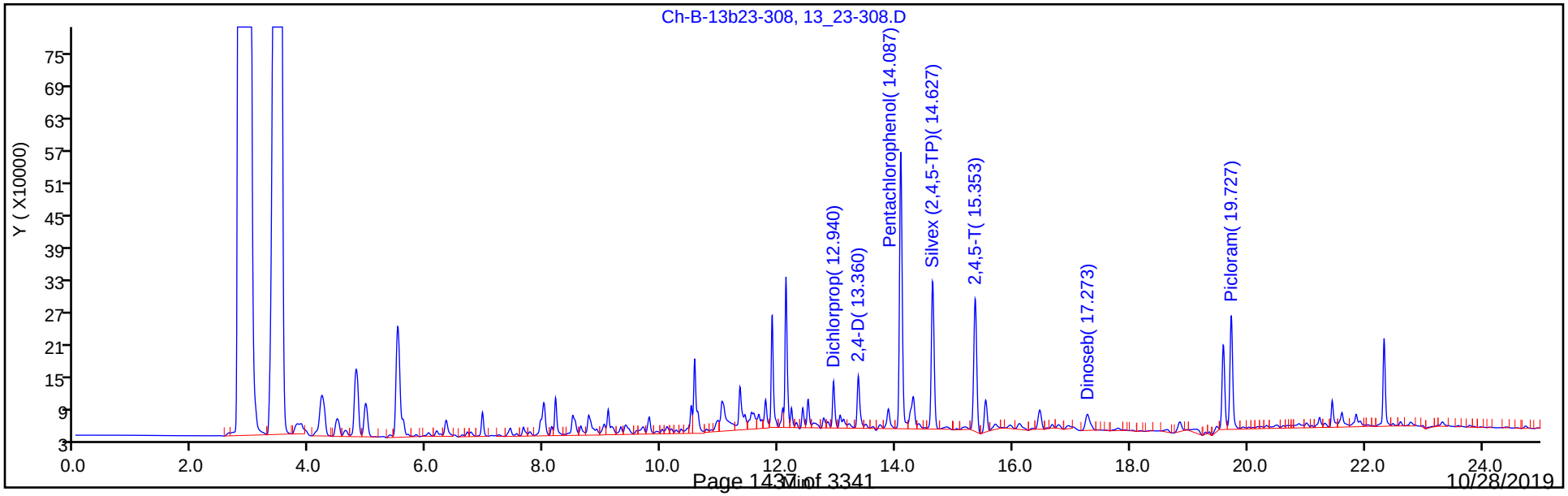
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D

Injection Date:	01-Oct-2019 10:19:04	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-D MS			Worklist Smp#:	8
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

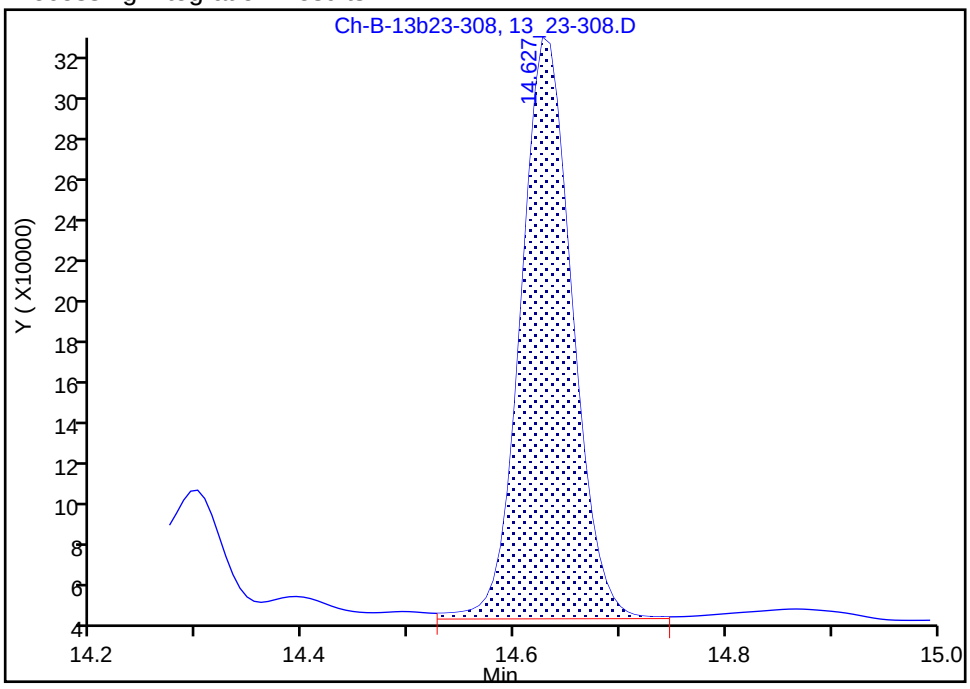
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D
Injection Date: 01-Oct-2019 10:19:04 Instrument ID: HP5890-13
Lims ID: 480-159547-E-7-D MS
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

5 Silvex (2,4,5-TP), CAS: 93-72-1

Signal: 2

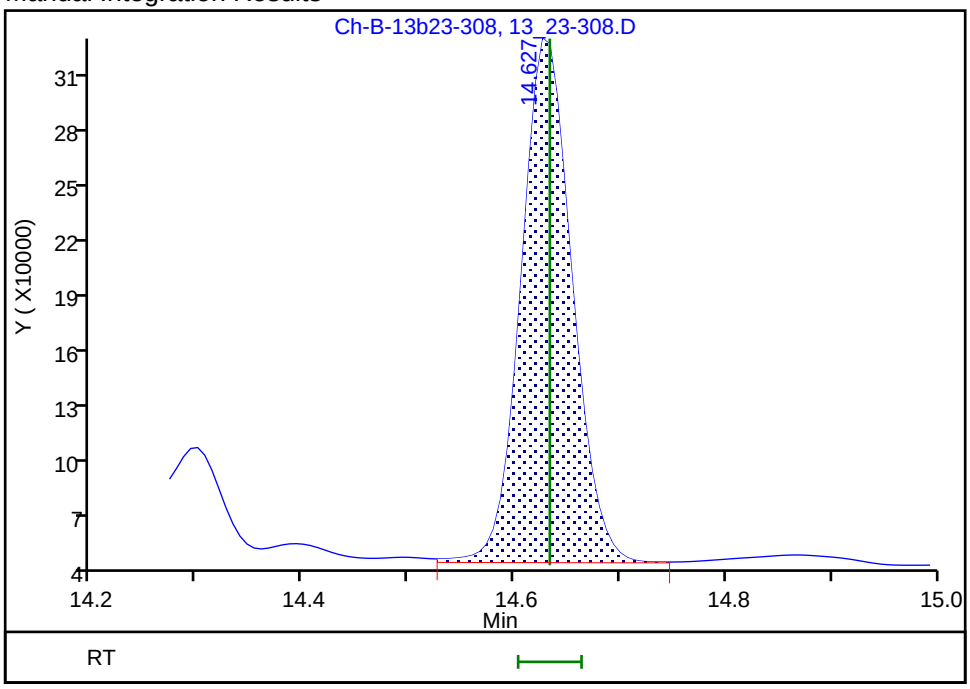
Processing Integration Results

RT: 14.63
Area: 937906
Amount: 0.165737
Amount Units: ng/ul



Manual Integration Results

RT: 14.63
Area: 929649
Amount: 0.164278
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 10:48:26
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

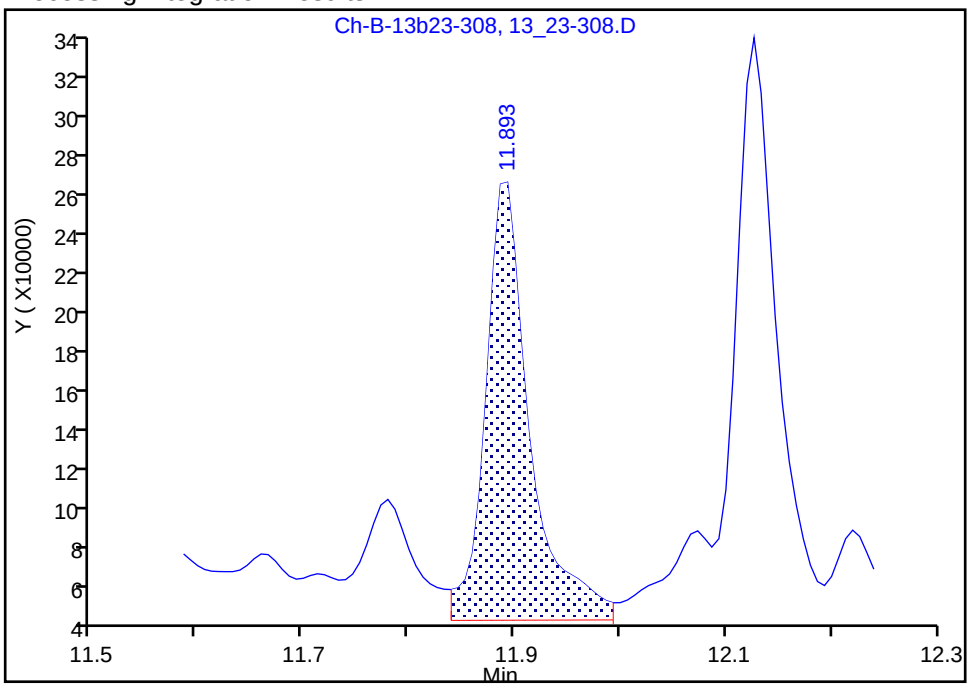
Data File:	\\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-308.D				
Injection Date:	01-Oct-2019 10:19:04	Instrument ID:	HP5890-13		
Lims ID:	480-159547-E-7-D MS				
Client ID:					
Operator ID:	BufTCHROM	ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		
Column:	RTX-CLPII (0.32 mm)	Detector	Ch-B-13b01239		

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

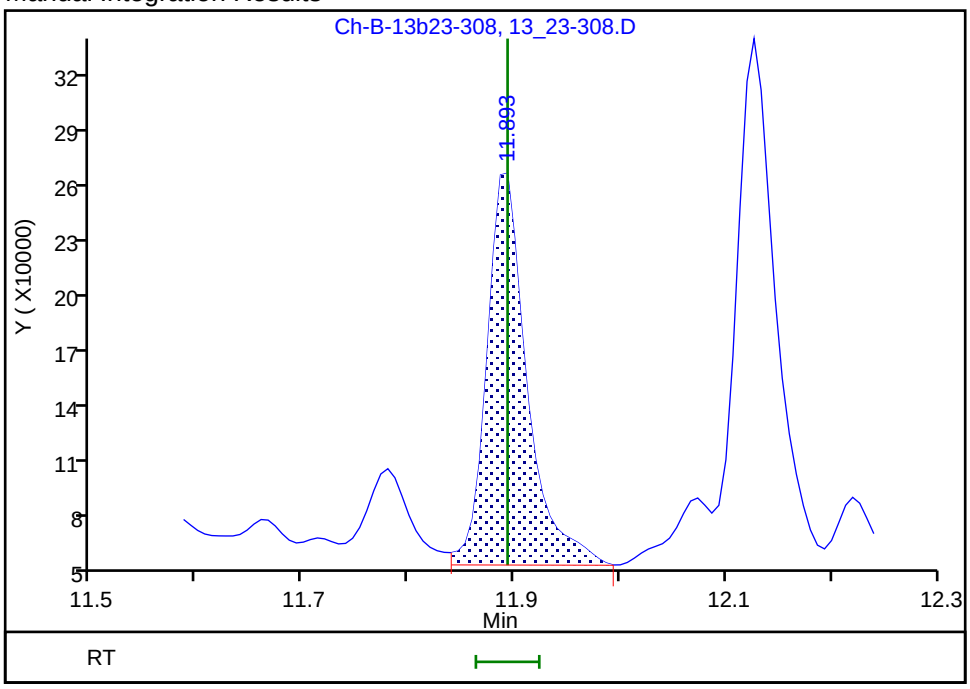
Processing Integration Results

RT: 11.89
Area: 633945
Amount: 0.433103
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 554807
Amount: 0.379037
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 10:48:26

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MSD Lab Sample ID: 480-159547-7 MSD

Matrix: Solid Lab File ID: 13_23-309.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.41(g) Date Analyzed: 10/01/2019 10:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPI ID: 0.53(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
93-72-1	Silvex (2,4,5-TP)	68.6		21	7.5

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	81		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D
Lims ID: 480-159547-E-7-E MSD
Client ID:
Sample Type: MSD
Inject. Date: 01-Oct-2019 10:48:53 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 11:19:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	701745	0.5000	0.4035	
2	11.887	11.893	-0.006	551313	0.5000	0.3767	M
						RPD = 6.89	
2 Dichlorprop							M
1	11.560	11.573	-0.013	232931	0.2000	0.1346	
2	12.940	12.940	0.000	241552	0.2000	0.1591	M
						RPD = 16.74	
3 2,4-D							M
1	11.813	11.820	-0.007	352389	0.2000	0.1875	
2	13.360	13.367	-0.007	325360	0.2000	0.1904	M
						RPD = 1.53	
4 Pentachlorophenol							M
1	12.113	12.120	-0.007	1876370	0.2000	0.1303	
2	14.087	14.093	-0.006	1570930	0.2000	0.1154	M
						RPD = 12.08	
5 Silvex (2,4,5-TP)							M
1	12.713	12.720	-0.007	977438	0.2000	0.1636	
2	14.633	14.633	0.000	944809	0.2000	0.1670	M
						RPD = 2.01	
6 2,4,5-T							
1	13.040	13.047	-0.007	1120121	0.2000	0.1856	
2	15.353	15.360	-0.007	881704	0.2000	0.1530	
						RPD = 19.26	
7 Picloram							
1	15.233	15.240	-0.007	679735	0.2000	0.1276	
2	19.727	19.733	-0.006	610234	0.2000	0.1307	
						RPD = 2.39	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	182454	0.2000	0.0348	
2	17.267	17.273	-0.006	187251	0.2000	0.0387	
						RPD = 10.75	

QC Flag Legend

Review Flags

M - Manually Integrated

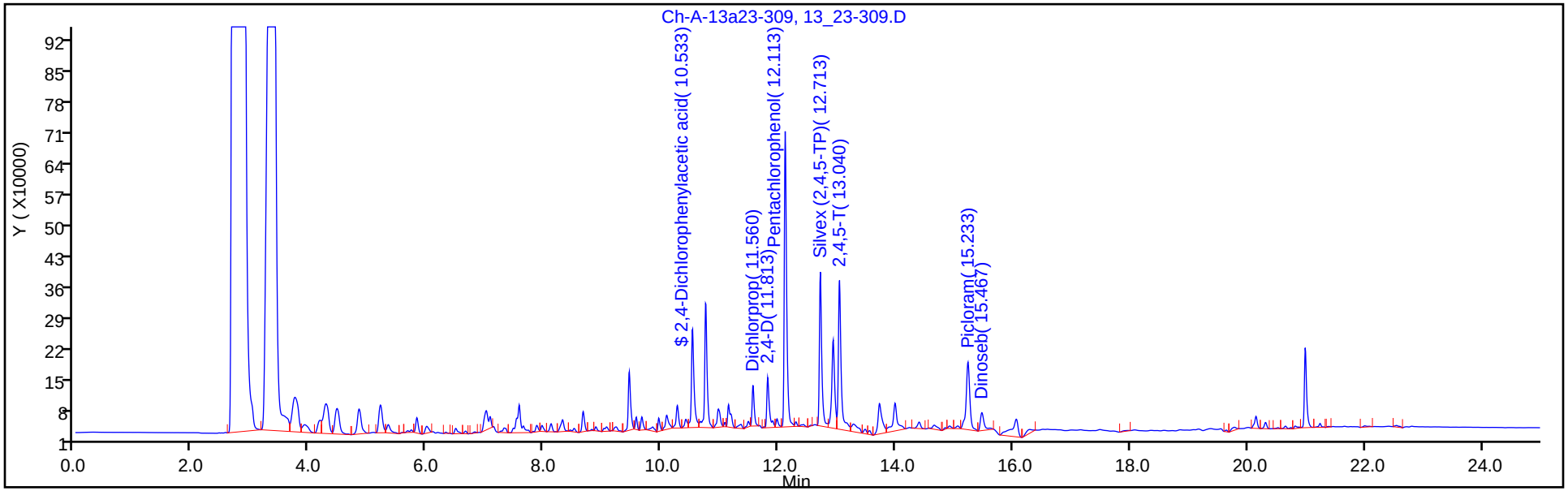
Report Date: 01-Oct-2019 14:18:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

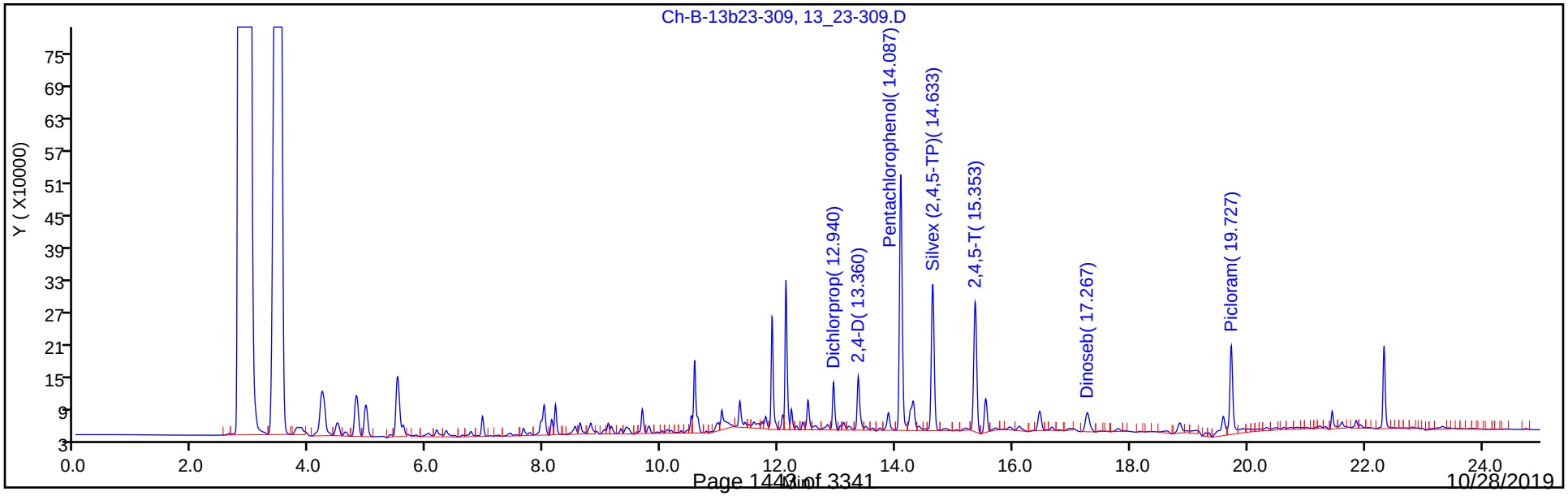
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D

Injection Date:	01-Oct-2019 10:48:53	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-E MSD			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



FORM I
HERBICIDES ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 MSD Lab Sample ID: 480-159547-7 MSD

Matrix: Solid Lab File ID: 13_23-309.D

Analysis Method: 8151A Date Collected: 09/16/2019 09:35

Extraction Method: 8151A Date Extracted: 09/25/2019 05:49

Sample wt/vol: 30.41(g) Date Analyzed: 10/01/2019 10:48

Con. Extract Vol.: 10(mL) Dilution Factor: 1

Injection Volume: 1(uL) GC Column: RTX-CLPII ID: 0.32(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 495143 Units: ug/Kg

CAS NO.	SURROGATE	%REC	Q	LIMITS
19719-28-9	2,4-Dichlorophenylacetic acid	75		28-129

Eurofins TestAmerica, Buffalo
Target Compound Quantitation Report

Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D
Lims ID: 480-159547-E-7-E MSD
Client ID:
Sample Type: MSD
Inject. Date: 01-Oct-2019 10:48:53 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info:
Operator ID: BufTCHROM Instrument ID: HP5890-13

Method: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\8151-13.m
Limit Group: GC - 8151A - ICAL
Last Update: 01-Oct-2019 14:18:11 Calib Date: 19-Sep-2019 17:26:54
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\chromna\Buffalo\ChromData\HP5890-13\20190919-84271.b\13_23-190.D

Column 1 : RTX-CLPI (0.53 mm) Det: Ch-A-13A01239
Column 2 : RTX-CLPII (0.32 mm) Det: Ch-B-13b01239
Process Host: CTX0326

First Level Reviewer: NearyM Date: 01-Oct-2019 11:19:44

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
$ 1 2,4-Dichlorophenylacetic acid							M
1	10.533	10.540	-0.007	701745	0.5000	0.4035	
2	11.887	11.893	-0.006	551313	0.5000	0.3767	M
						RPD = 6.89	
2 Dichlorprop							M
1	11.560	11.573	-0.013	232931	0.2000	0.1346	
2	12.940	12.940	0.000	241552	0.2000	0.1591	M
						RPD = 16.74	
3 2,4-D							M
1	11.813	11.820	-0.007	352389	0.2000	0.1875	
2	13.360	13.367	-0.007	325360	0.2000	0.1904	M
						RPD = 1.53	
4 Pentachlorophenol							M
1	12.113	12.120	-0.007	1876370	0.2000	0.1303	
2	14.087	14.093	-0.006	1570930	0.2000	0.1154	M
						RPD = 12.08	
5 Silvex (2,4,5-TP)							M
1	12.713	12.720	-0.007	977438	0.2000	0.1636	
2	14.633	14.633	0.000	944809	0.2000	0.1670	M
						RPD = 2.01	
6 2,4,5-T							
1	13.040	13.047	-0.007	1120121	0.2000	0.1856	
2	15.353	15.360	-0.007	881704	0.2000	0.1530	
						RPD = 19.26	
7 Picloram							
1	15.233	15.240	-0.007	679735	0.2000	0.1276	
2	19.727	19.733	-0.006	610234	0.2000	0.1307	
						RPD = 2.39	

Col	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
8 Dinoseb							
1	15.467	15.480	-0.013	182454	0.2000	0.0348	
2	17.267	17.273	-0.006	187251	0.2000	0.0387	
						RPD = 10.75	

QC Flag Legend

Review Flags

M - Manually Integrated

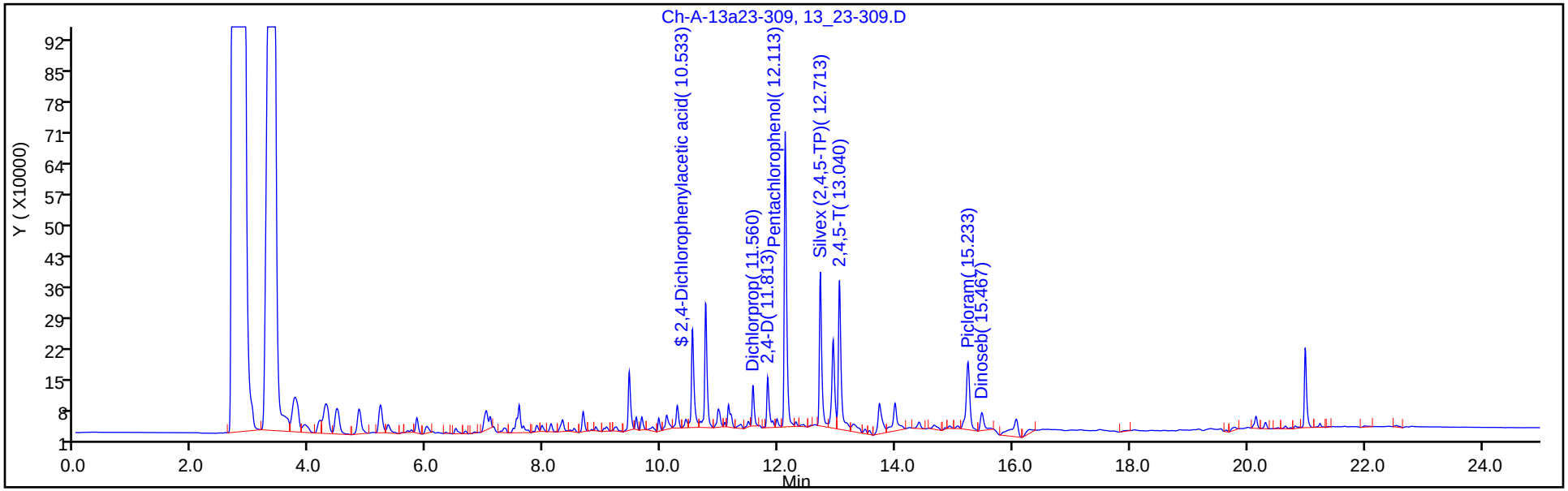
Report Date: 01-Oct-2019 14:18:36 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Buffalo

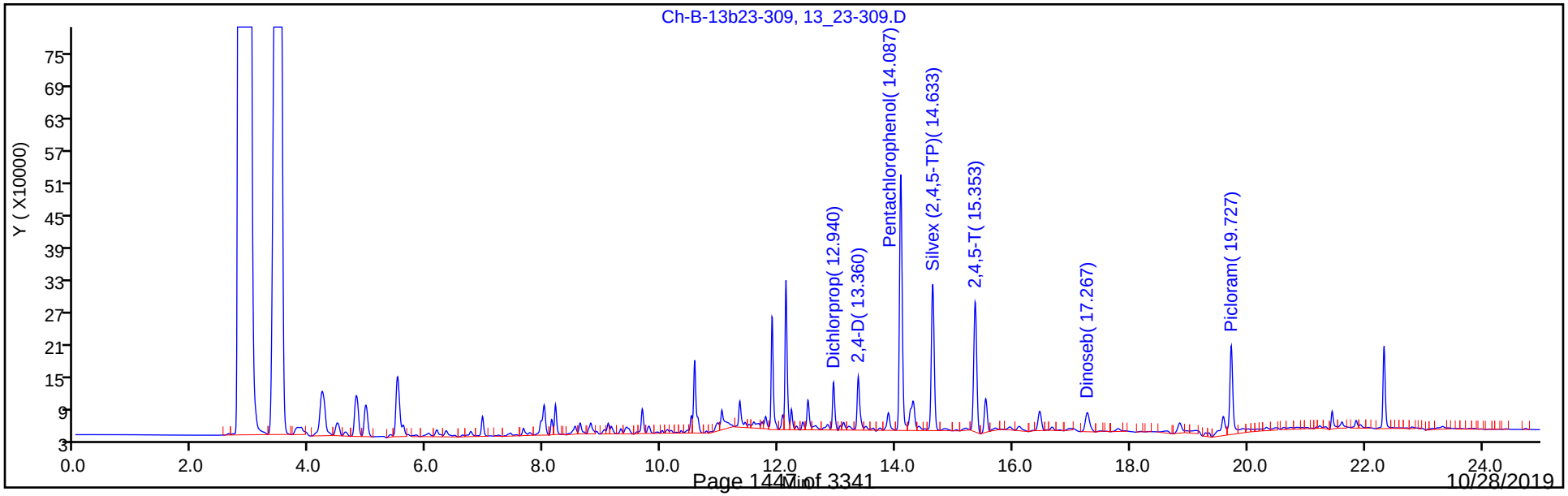
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D

Injection Date:	01-Oct-2019 10:48:53	Instrument ID:	HP5890-13	Operator ID:	BufTCHROM
Lims ID:	480-159547-E-7-E MSD			Worklist Smp#:	9
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8151-13	Limit Group:	GC - 8151A - ICAL		

Column: RTX-CLPI (0.53 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Column: RTX-CLPII (0.32 mm) Y Scaling: Method Defined: Set to Absolute Y Value



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

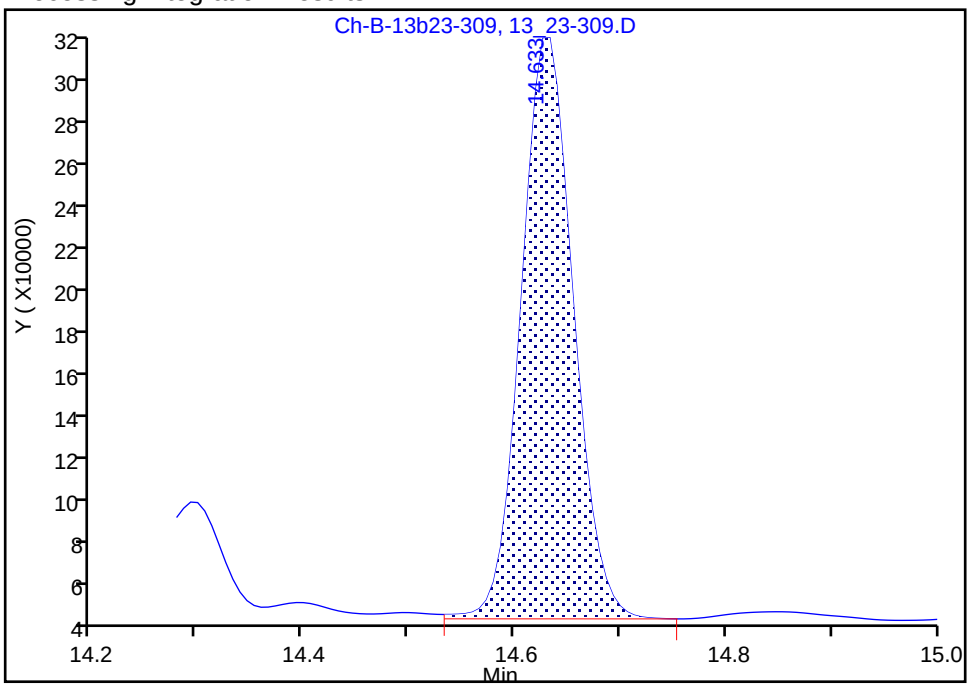
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D
Injection Date: 01-Oct-2019 10:48:53 Instrument ID: HP5890-13
Lims ID: 480-159547-E-7-E MSD
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

5 Silvex (2,4,5-TP), CAS: 93-72-1

Signal: 2

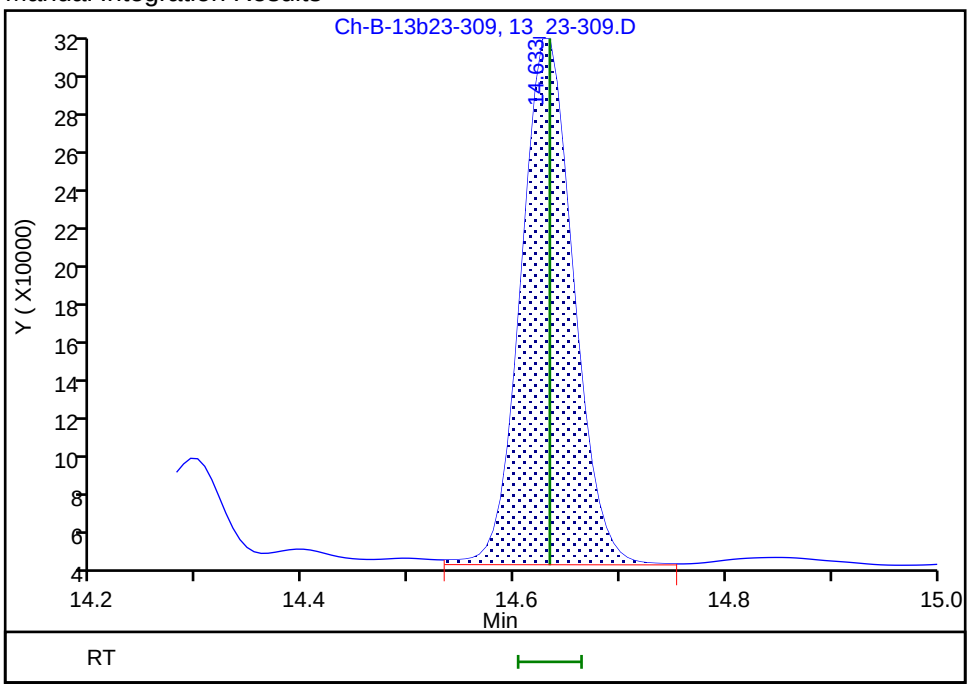
Processing Integration Results

RT: 14.63
Area: 938856
Amount: 0.165905
Amount Units: ng/ul



Manual Integration Results

RT: 14.63
Area: 944809
Amount: 0.166957
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 11:19:10
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Buffalo

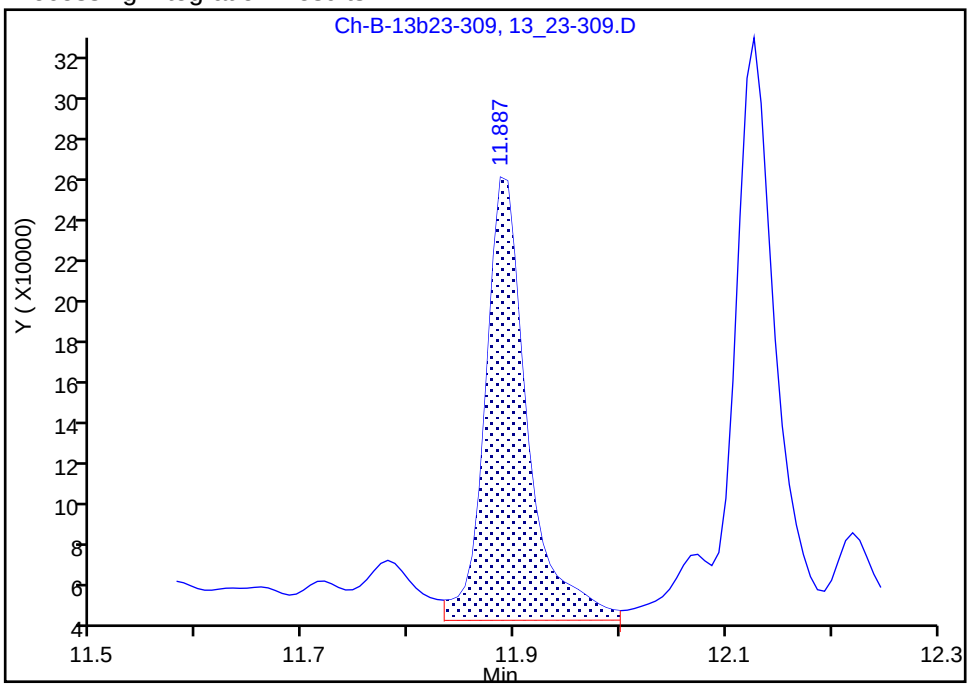
Data File: \\chromna\Buffalo\ChromData\HP5890-13\20191001-84626.b\13_23-309.D
Injection Date: 01-Oct-2019 10:48:53 Instrument ID: HP5890-13
Lims ID: 480-159547-E-7-E MSD
Client ID:
Operator ID: BufTCHROM ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 8151-13 Limit Group: GC - 8151A - ICAL
Column: RTX-CLPII (0.32 mm) Detector Ch-B-13b01239

$ 1 2,4-Dichlorophenylacetic acid, CAS: 19719-28-9

Signal: 2

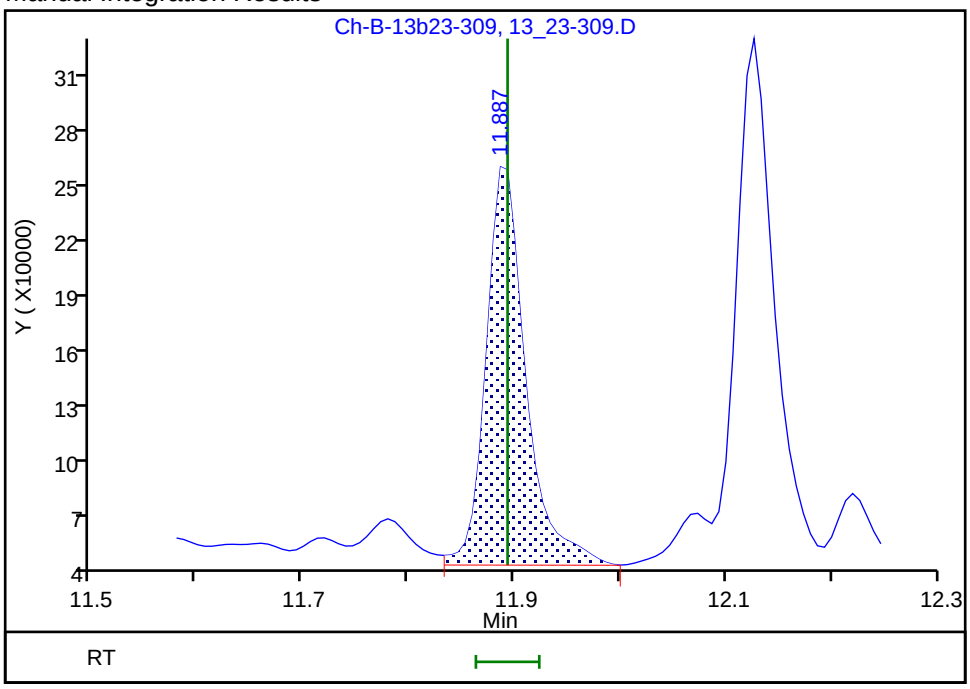
Processing Integration Results

RT: 11.89
Area: 597688
Amount: 0.408333
Amount Units: ng/ul



Manual Integration Results

RT: 11.89
Area: 551313
Amount: 0.376650
Amount Units: ng/ul



Reviewer: NearyM, 01-Oct-2019 11:19:10
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

HERBICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5890-13 Start Date: 09/19/2019 13:58

Analysis Batch Number: 492876 End Date: 09/19/2019 17:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
STD1 480-492876/12 IC		09/19/2019 13:58	1	13_23-183.D	RTX-CLPI 0.53(mm)
STD1 480-492876/12 IC		09/19/2019 13:58	1	13_23-183.D	RTX-CLPII 0.32(mm)
STD2 480-492876/13 IC		09/19/2019 14:28	1	13_23-184.D	RTX-CLPI 0.53(mm)
STD2 480-492876/13 IC		09/19/2019 14:28	1	13_23-184.D	RTX-CLPII 0.32(mm)
STD3 480-492876/14 IC		09/19/2019 14:58	1	13_23-185.D	RTX-CLPI 0.53(mm)
STD3 480-492876/14 IC		09/19/2019 14:58	1	13_23-185.D	RTX-CLPII 0.32(mm)
STD4 480-492876/15 IC		09/19/2019 15:27	1	13_23-186.D	RTX-CLPI 0.53(mm)
STD4 480-492876/15 IC		09/19/2019 15:27	1	13_23-186.D	RTX-CLPII 0.32(mm)
STD5 480-492876/16 IC		09/19/2019 15:57	1	13_23-187.D	RTX-CLPI 0.53(mm)
STD5 480-492876/16 IC		09/19/2019 15:57	1	13_23-187.D	RTX-CLPII 0.32(mm)
STD6 480-492876/17 IC		09/19/2019 16:27	1	13_23-188.D	RTX-CLPI 0.53(mm)
STD6 480-492876/17 IC		09/19/2019 16:27	1	13_23-188.D	RTX-CLPII 0.32(mm)
STD7 480-492876/18 IC		09/19/2019 16:57	1	13_23-189.D	RTX-CLPI 0.53(mm)
STD7 480-492876/18 IC		09/19/2019 16:57	1	13_23-189.D	RTX-CLPII 0.32(mm)
STD8 480-492876/19 IC		09/19/2019 17:26	1	13_23-190.D	RTX-CLPI 0.53(mm)
STD8 480-492876/19 IC		09/19/2019 17:26	1	13_23-190.D	RTX-CLPII 0.32(mm)
ICV 480-492876/20		09/19/2019 17:56	1		RTX-CLPI 0.53(mm)
ICV 480-492876/20		09/19/2019 17:56	1		RTX-CLPII 0.32(mm)

HERBICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5890-13 Start Date: 10/01/2019 08:12

Analysis Batch Number: 495143 End Date: 10/02/2019 04:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 480-495143/4		10/01/2019 08:12	1	13_23-304.D	RTX-CLPI 0.53(mm)
CCV 480-495143/4		10/01/2019 08:12	1	13_23-304.D	RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 08:49	20		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 08:49	20		RTX-CLPII 0.32(mm)
MB 480-493889/1-A		10/01/2019 09:19	1	13_23-306.D	RTX-CLPI 0.53(mm)
MB 480-493889/1-A		10/01/2019 09:19	1	13_23-306.D	RTX-CLPII 0.32(mm)
LCS 480-493889/2-A		10/01/2019 09:49	1	13_23-307.D	RTX-CLPI 0.53(mm)
LCS 480-493889/2-A		10/01/2019 09:49	1	13_23-307.D	RTX-CLPII 0.32(mm)
480-159547-7 MS		10/01/2019 10:19	1	13_23-308.D	RTX-CLPI 0.53(mm)
480-159547-7 MS		10/01/2019 10:19	1	13_23-308.D	RTX-CLPII 0.32(mm)
480-159547-7 MSD		10/01/2019 10:48	1	13_23-309.D	RTX-CLPI 0.53(mm)
480-159547-7 MSD		10/01/2019 10:48	1	13_23-309.D	RTX-CLPII 0.32(mm)
480-159547-7		10/01/2019 11:18	1	13_23-310.D	RTX-CLPI 0.53(mm)
480-159547-7		10/01/2019 11:18	1	13_23-310.D	RTX-CLPII 0.32(mm)
480-159547-8		10/01/2019 11:48	1	13_23-311.D	RTX-CLPI 0.53(mm)
480-159547-8		10/01/2019 11:48	1	13_23-311.D	RTX-CLPII 0.32(mm)
480-159547-18		10/01/2019 12:18	1	13_23-312.D	RTX-CLPI 0.53(mm)
480-159547-18		10/01/2019 12:18	1	13_23-312.D	RTX-CLPII 0.32(mm)
480-159547-19		10/01/2019 12:47	1	13_23-313.D	RTX-CLPI 0.53(mm)
480-159547-19		10/01/2019 12:47	1	13_23-313.D	RTX-CLPII 0.32(mm)
480-159547-20		10/01/2019 13:17	1	13_23-314.D	RTX-CLPI 0.53(mm)
480-159547-20		10/01/2019 13:17	1	13_23-314.D	RTX-CLPII 0.32(mm)
CCV 480-495143/15		10/01/2019 13:47	1	13_23-315.D	RTX-CLPI 0.53(mm)
CCV 480-495143/15		10/01/2019 13:47	1	13_23-315.D	RTX-CLPII 0.32(mm)
480-159547-30		10/01/2019 14:47	1	13_23-317.D	RTX-CLPI 0.53(mm)
480-159547-30		10/01/2019 14:47	1	13_23-317.D	RTX-CLPII 0.32(mm)
480-159547-31		10/01/2019 15:16	1	13_23-318.D	RTX-CLPI 0.53(mm)
480-159547-31		10/01/2019 15:16	1	13_23-318.D	RTX-CLPII 0.32(mm)
480-159547-32		10/01/2019 15:46	1	13_23-319.D	RTX-CLPI 0.53(mm)
480-159547-32		10/01/2019 15:46	1	13_23-319.D	RTX-CLPII 0.32(mm)
480-159547-39		10/01/2019 16:16	1	13_23-320.D	RTX-CLPI 0.53(mm)
480-159547-39		10/01/2019 16:16	1	13_23-320.D	RTX-CLPII 0.32(mm)
480-159547-40		10/01/2019 20:08	1	13_23-321.D	RTX-CLPI 0.53(mm)
480-159547-40		10/01/2019 20:08	1	13_23-321.D	RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 20:38	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 20:38	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 21:08	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 21:08	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 21:37	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 21:37	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 22:07	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 22:07	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 22:37	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 22:37	1		RTX-CLPII 0.32(mm)
CCV 480-495143/26		10/01/2019 23:07	1	13_23-327.D	RTX-CLPI 0.53(mm)

8151A

HERBICIDES ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: HP5890-13 Start Date: 10/01/2019 08:12

Analysis Batch Number: 495143 End Date: 10/02/2019 04:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 480-495143/26		10/01/2019 23:07	1	13_23-327.D	RTX-CLPII 0.32(mm)
ZZZZZ		10/01/2019 23:36	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/01/2019 23:36	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 00:06	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 00:06	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 00:36	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 00:36	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 01:06	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 01:06	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 01:35	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 01:35	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 02:05	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 02:05	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 02:35	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 02:35	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 03:05	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 03:05	1		RTX-CLPII 0.32(mm)
ZZZZZ		10/02/2019 03:34	1		RTX-CLPI 0.53(mm)
ZZZZZ		10/02/2019 03:34	1		RTX-CLPII 0.32(mm)
CCV 480-495143/36		10/02/2019 04:04	1		RTX-CLPI 0.53(mm)
CCV 480-495143/36		10/02/2019 04:04	1		RTX-CLPII 0.32(mm)

8151A

HERBICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493889 Batch Start Date: 09/25/19 05:49 Batch Analyst: Palermo, Stephan M

Batch Method: 8151A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	O_8151spike 00058	O_8151surroga 00026	AnalysisComment	
MB 480-493889/1		8151A, 8151A		30.28 g	10 mL		1 mL	Was added 100 uL of Diazomethane	
LCS 480-493889/2		8151A, 8151A		30.54 g	10 mL	1 mL	1 mL	Was added 100 uL of Diazomethane	
480-159547-E-7 MS	RUSSO-TS-COMP 1	8151A, 8151A	T	30.27 g	10 mL	1 mL	1 mL	Was added 300 uL of Diazomethane	
480-159547-E-7 MSD	RUSSO-TS-COMP 1	8151A, 8151A	T	30.41 g	10 mL	1 mL	1 mL	Was added 200 uL of Diazomethane	
480-159547-E-7	RUSSO-TS-COMP 1	8151A, 8151A	T	30.24 g	10 mL		1 mL	Was added 200 uL of Diazomethane	
480-159547-F-8	RUSSO-TS-COMP 2	8151A, 8151A	T	30.38 g	10 mL		1 mL	Was added 200 uL of Diazomethane	
480-159547-F-18	RUSSO-CF-COMP 1	8151A, 8151A	T	30.95 g	10 mL		1 mL	rocky, Was added 200 uL of Diazomethane	
480-159547-F-19	RUSSO-CF-COMP 2	8151A, 8151A	T	30.31 g	10 mL		1 mL	rocky,Was added 200 uL of Diazomethane	
480-159547-D-20	RUSSO-CF-COMP 3	8151A, 8151A	T	30.52 g	10 mL		1 mL	rocky,Was added 100 uL of Diazomethane	
480-159547-D-30	GERNATT-CF-COMP 1	8151A, 8151A	T	30.37 g	10 mL		1 mL	rocky. Was added 200 uL of Diazomethane	
480-159547-E-31	GERNATT-CF-COMP 2	8151A, 8151A	T	30.63 g	10 mL		1 mL	rocky. Was added 200 uL of Diazomethane	
480-159547-E-32	GERNATT-CF-COMP 3	8151A, 8151A	T	30.38 g	10 mL		1 mL	rocky. Was added 200 uL of Diazomethane	
480-159547-F-39	GERNATT-TS-COMP 1	8151A, 8151A	T	30.28 g	10 mL		1 mL	Was added 200 uL of Diazomethane	
480-159547-F-40	GERNATT-TS-COMP 2	8151A, 8151A	T	30.33 g	10 mL		1 mL	Was added 200 uL of Diazomethane	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

HERBICIDES BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493889 Batch Start Date: 09/25/19 05:49 Batch Analyst: Palermo, Stephan M

Batch Method: 8151A Batch End Date:

Batch Notes	
Acidic Sodium Sulfate ID	5420031
Balance ID	Balance 5
Batch Comment	Samples filtered by: SD
Blank Soil Lot Number	5420030
Diethyl Ether ID	5176968
Filter Paper ID	Acidified glass wool; 91907
Sulfuric Acid Lot Number	5462086
Hexane ID	5453121
Potassium Hydroxide ID	5063021
MeCL2 ID	5516557
MeCl2 / Acetone ID	5516557/5519579
Acidified Methanol ID	Not acidified; 5359750
Na2SO4 ID	5393119
Nominal Amount Used	30 g
pH Paper ID	HC431579
Prep Solvent Volume Used	300
Analyst ID - Reagent Drop	SP
Silicic Acid ID	5337510
Sufficient volume for MS/MSD?	Yes
TMSDM ID	5089296
Vial Lot Number	17115406

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFC_IDA

Fluorinated Alkyl Substances

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #	PFOS #
RUSSO-TS-COMP 1	480-159547-7	90	88	85	87	98	101	93	93
RUSSO-TS-COMP 2	480-159547-8	86	83	86	93	95	91	93	92
RUSSO-CF-COMP 1	480-159547-18	98	97	100	94	97	76	103	90
RUSSO-CF-COMP 2	480-159547-19	102	101	102	111	103	109	105	93
RUSSO-CF-COMP 3	480-159547-20	96	97	96	95	100	102	101	91
GERNATT-CF-COMP 1	480-159547-30	94	96	89	104	101	103	99	89
GERNATT-CF-COMP 2	480-159547-31	95	96	89	100	107	108	101	95
GERNATT-CF-COMP 3	480-159547-32	95	97	92	102	105	103	98	93
GERNATT-TS-COMP 1	480-159547-39	92	91	85	91	100	115	93	93
GERNATT-TS-COMP 2	480-159547-40	98	103	96	97	107	103	101	99
	MB 320-326624/1-A	79	80	79	84	94	78	82	80
	LCS 320-326624/2-A	84	84	84	88	92	64	88	80

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFHxA = 13C2 PFHxA	25-150
PFHxS = 18O2 PFHxS	25-150
PFHpA = 13C4 PFHpA	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #	PFDoA #
RUSSO-TS-COMP 1	480-159547-7	96	99	118	94	84	85	96	95
RUSSO-TS-COMP 2	480-159547-8	94	100	96	96	74	80	98	98
RUSSO-CF-COMP 1	480-159547-18	95	100	80	100	95	92	103	96
RUSSO-CF-COMP 2	480-159547-19	101	101	129	96	88	89	113	112
RUSSO-CF-COMP 3	480-159547-20	101	98	114	94	85	84	103	95
GERNATT-CF-COMP 1	480-159547-30	100	93	122	95	91	97	97	100
GERNATT-CF-COMP 2	480-159547-31	98	96	124	94	95	101	96	86
GERNATT-CF-COMP 3	480-159547-32	102	98	131	91	102	102	94	94
GERNATT-TS-COMP 1	480-159547-39	87	93	114	90	75	88	92	85
GERNATT-TS-COMP 2	480-159547-40	93	99	101	98	76	84	93	97
	MB 320-326624/1-A	81	71	74	77	73	75	75	69
	LCS 320-326624/2-A	91	80	62	84	81	88	87	90

	QC LIMITS
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2 FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
d5NEFOS = d5-NEtFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFTDA #
RUSSO-TS-COMP 1	480-159547-7	103
RUSSO-TS-COMP 2	480-159547-8	104
RUSSO-CF-COMP 1	480-159547-18	104
RUSSO-CF-COMP 2	480-159547-19	92
RUSSO-CF-COMP 3	480-159547-20	89
GERNATT-CF-COMP 1	480-159547-30	95
GERNATT-CF-COMP 2	480-159547-31	79
GERNATT-CF-COMP 3	480-159547-32	89
GERNATT-TS-COMP 1	480-159547-39	99
GERNATT-TS-COMP 2	480-159547-40	102
	MB 320-326624/1-A	71
	LCS 320-326624/2-A	85

	QC LIMITS
PFTDA = 13C2 PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #	PFNA #
RUSSO-TS-COMP 1	480-159547-7	105	107	107	105	110	106	98	101
RUSSO-TS-COMP 2	480-159547-8	109	108	106	110	115	107	97	106
RUSSO-CF-COMP 1	480-159547-18	109	108	109	110	116	109	105	112
RUSSO-CF-COMP 2	480-159547-19	105	102	100	105	110	106	99	101
RUSSO-CF-COMP 3	480-159547-20	108	109	108	109	112	110	104	106
GERNATT-CF-COMP 1	480-159547-30	109	112	108	112	113	108	108	104
GERNATT-CF-COMP 2	480-159547-31	110	108	106	110	110	106	100	107
GERNATT-CF-COMP 3	480-159547-32	109	106	103	111	111	109	100	105
GERNATT-TS-COMP 1	480-159547-39	103	103	104	106	105	103	101	101
GERNATT-TS-COMP 2	480-159547-40	105	104	105	108	108	104	99	102
	MB 320-328853/1-A	111	110	109	112	111	106	104	107
	LB 320-326292/1-B	107	107	105	108	110	105	100	105
	LB 320-327145/1-B	113	111	107	112	113	108	101	107
	LCS 320-328853/2-A	107	107	104	108	110	105	99	104
	LCSD 320-328853/3-A	110	109	108	111	111	108	101	109

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
PFHxA = 13C2 PFHxA	25-150
PFHpA = 13C4 PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid (SPLP East) Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFDA #	PFUnA #	PFDoA #	PFTDA #
RUSSO-TS-COMP 1	480-159547-7	105	102	101	96
RUSSO-TS-COMP 2	480-159547-8	107	108	106	100
RUSSO-CF-COMP 1	480-159547-18	110	107	110	108
RUSSO-CF-COMP 2	480-159547-19	103	103	107	105
RUSSO-CF-COMP 3	480-159547-20	102	107	103	107
GERNATT-CF-COMP 1	480-159547-30	105	109	102	108
GERNATT-CF-COMP 2	480-159547-31	107	104	108	104
GERNATT-CF-COMP 3	480-159547-32	105	108	105	105
GERNATT-TS-COMP 1	480-159547-39	104	101	101	90
GERNATT-TS-COMP 2	480-159547-40	109	104	105	90
	MB 320-328853/1-A	109	109	108	111
	LB 320-326292/1-B	104	104	103	104
	LB 320-327145/1-B	106	109	108	109
	LCS 320-328853/2-A	104	103	106	106
	LCSD 320-328853/3-A	108	105	107	110

	QC LIMITS
PFDA = 13C2 PFDA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2 PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2019.10.10_LLA_008.d

Lab ID: LCS 320-326624/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	2.00	2.150	108	81-133	
Perfluoropentanoic acid (PFPeA)	2.00	2.112	106	79-120	
Perfluorohexanoic acid (PFHxA)	2.00	2.029	101	75-125	
Perfluoroheptanoic acid (PFHpA)	2.00	2.091	105	76-124	
Perfluorooctanoic acid (PFOA)	2.00	1.873	94	76-121	
Perfluorononanoic acid (PFNA)	2.00	2.022	101	74-126	
Perfluorodecanoic acid (PFDA)	2.00	2.187	109	74-124	
Perfluoroundecanoic acid (PFUnA)	2.00	1.997	100	74-114	
Perfluorododecanoic acid (PFDoA)	2.00	2.054	103	75-123	
Perfluorotridecanoic acid (PFTriA)	2.00	2.059	103	43-116	
Perfluorotetradecanoic acid (PFTeA)	2.00	2.058	103	22-129	
Perfluorobutanesulfonic acid (PFBS)	1.77	1.718	97	73-142	
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.576	87	75-121	
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.911	100	78-146	
Perfluorooctanesulfonic acid (PFOS)	1.86	2.008	108	69-131	
Perfluorodecanesulfonic acid (PFDS)	1.93	2.085	108	54-113	
Perfluorooctanesulfonamide (FOSA)	2.00	2.201	110	62-135	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.142	107	65-135	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.973 J	99	65-135	
6:2 FTS	1.90	2.291	121	65-135	
8:2 FTS	1.92	2.061	108	65-135	
13C4 PFBA	5.00	4.188	84	25-150	
13C2 PFHxA	5.00	4.177	84	25-150	
13C4 PFOA	5.00	4.413	88	25-150	
13C5 PFNA	5.00	4.534	91	25-150	
13C2 PFDA	5.00	4.205	84	25-150	
13C4 PFHpA	5.00	4.413	88	25-150	
13C2 PFUnA	5.00	4.333	87	25-150	
13C5 PFPeA	5.00	4.198	84	25-150	
13C2 PFDoA	5.00	4.519	90	25-150	
13C2 PFTeDA	5.00	4.236	85	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 2019.10.10_LLA_008.d

Lab ID: LCS 320-326624/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
18O2 PFHxS	4.73	4.373	92	25-150	
13C4 PFOS	4.78	3.834	80	25-150	
13C8 FOSA	5.00	3.995	80	25-150	
d3-NMeFOSAA	5.00	4.072	81	25-150	
d5-NEtFOSAA	5.00	4.422	88	25-150	
M2-6:2 FTS	4.75	3.029	64	25-150	
M2-8:2 FTS	4.79	2.977	62	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2019.10.08LLBB._019.d

Lab ID: LCS 320-328853/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.91	105	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	39.84	100	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	42.76	107	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.15	103	66-126	
Perfluorooctanoic acid (PFOA)	40.0	39.77	99	64-124	
Perfluorononanoic acid (PFNA)	40.0	41.61	104	68-128	
Perfluorodecanoic acid (PFDA)	40.0	42.78	107	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	41.96	105	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	40.74	102	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	39.87	100	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	42.45	106	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	34.51	98	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	31.69	87	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.59	101	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	36.44	98	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.37	102	68-128	
13C4 PFBA	100	106.7	107	25-150	
13C2 PFHxA	100	103.8	104	25-150	
13C4 PFOA	100	104.8	105	25-150	
13C5 PFNA	100	103.8	104	25-150	
13C2 PFDA	100	104.0	104	25-150	
13C4 PFHpA	100	108.5	108	25-150	
13C2 PFUnA	100	102.8	103	25-150	
13C5 PFPeA	100	107.0	107	25-150	
13C2 PFDoA	100	105.7	106	25-150	
13C2 PFTeDA	100	105.9	106	25-150	
18O2 PFHxS	94.6	103.9	110	25-150	
13C4 PFOS	95.6	94.60	99	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2019.10.08LLBB._020.d

Lab ID: LCSD 320-328853/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.76	104	0	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	40.18	100	1	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	42.25	106	1	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.70	104	1	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	41.57	104	4	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	41.44	104	0	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	43.34	108	1	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	41.35	103	1	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	40.73	102	0	30	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	40.74	102	2	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	41.63	104	2	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	34.96	99	1	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.14	88	1	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	37.40	98	3	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.01	102	4	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	42.35	110	7	30	68-128	
13C4 PFBA	100	109.6	110			25-150	
13C2 PFHxA	100	108.0	108			25-150	
13C4 PFOA	100	108.0	108			25-150	
13C5 PFNA	100	109.4	109			25-150	
13C2 PFDA	100	108.2	108			25-150	
13C4 PFHpA	100	110.7	111			25-150	
13C2 PFUnA	100	104.7	105			25-150	
13C5 PFPeA	100	108.7	109			25-150	
13C2 PFDoA	100	106.7	107			25-150	
13C2 PFTeDA	100	110.3	110			25-150	
18O2 PFHxS	94.6	105.3	111			25-150	
13C4 PFOS	95.6	96.35	101			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab File ID: 2019.10.03.LLA_007.d Lab Sample ID: MB 320-326624/1-A

Matrix: Solid Date Extracted: 09/27/2019 10:45

Instrument ID: A13 Date Analyzed: 10/03/2019 12:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
RUSSO-CF-COMP 2	480-159547-19	2019.10.03.LLA_016.d	10/03/2019 13:35
RUSSO-CF-COMP 3	480-159547-20	2019.10.03.LLA_019.d	10/03/2019 14:03
GERNATT-CF-COMP 1	480-159547-30	2019.10.03.LLA_020.d	10/03/2019 14:13
GERNATT-CF-COMP 2	480-159547-31	2019.10.03.LLA_021.d	10/03/2019 14:22
GERNATT-CF-COMP 3	480-159547-32	2019.10.03.LLA_022.d	10/03/2019 14:32
	LCS 320-326624/2-A	2019.10.10_LLA_008.d	10/10/2019 05:37
RUSSO-TS-COMP 1	480-159547-7	2019.10.10_LLA_009.d	10/10/2019 05:46
RUSSO-TS-COMP 2	480-159547-8	2019.10.10_LLA_010.d	10/10/2019 05:56
RUSSO-CF-COMP 1	480-159547-18	2019.10.10_LLA_011.d	10/10/2019 06:06
GERNATT-TS-COMP 1	480-159547-39	2019.10.10_LLA_012.d	10/10/2019 06:15
GERNATT-TS-COMP 2	480-159547-40	2019.10.10_LLA_013.d	10/10/2019 06:25

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab File ID: 2019.10.08LLBB._018.d Lab Sample ID: MB 320-328853/1-A

Matrix: Water Date Extracted: 10/07/2019 06:04

Instrument ID: A9 Date Analyzed: 10/09/2019 00:33

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-328853/2-A	2019.10.08LLBB._019.d	10/09/2019 00:43
	LCSD 320-328853/3-A	2019.10.08LLBB._020.d	10/09/2019 00:52
	LB 320-326292/1-B	2019.10.08LLBB._021.d	10/09/2019 01:02
	LB 320-327145/1-B	2019.10.08LLBB._022.d	10/09/2019 01:11
RUSSO-TS-COMP 1	480-159547-7	2019.10.08LLBB._023.d	10/09/2019 01:21
RUSSO-TS-COMP 2	480-159547-8	2019.10.08LLBB._024.d	10/09/2019 01:30
RUSSO-CF-COMP 1	480-159547-18	2019.10.08LLBB._025.d	10/09/2019 01:40
RUSSO-CF-COMP 2	480-159547-19	2019.10.08LLBB._029.d	10/09/2019 02:18
RUSSO-CF-COMP 3	480-159547-20	2019.10.08LLBB._030.d	10/09/2019 02:28
GERNATT-CF-COMP 1	480-159547-30	2019.10.08LLBB._031.d	10/09/2019 02:37
GERNATT-CF-COMP 2	480-159547-31	2019.10.08LLBB._032.d	10/09/2019 02:47
GERNATT-CF-COMP 3	480-159547-32	2019.10.08LLBB._033.d	10/09/2019 02:57
GERNATT-TS-COMP 1	480-159547-39	2019.10.08LLBB._034.d	10/09/2019 03:06
GERNATT-TS-COMP 2	480-159547-40	2019.10.08LLBB._035.d	10/09/2019 03:16

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Sample No.: IC 320-326599/5 Date Analyzed: 09/26/2019 21:49

Instrument ID: A13 GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2019.09.26.ICAL_007 Heated Purge: (Y/N) N

Calibration ID: 47660

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		7050901	3.80				
UPPER LIMIT		10576352	4.00				
LOWER LIMIT		3525451	3.60				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-326599/10		7813429	3.80				
ICV 320-326599/11		7571837	3.79				
CCV 320-328148/3 CCVIS		6858114	3.72				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Sample No.: CCV 320-328148/3 Date Analyzed: 10/03/2019 11:59

Instrument ID: A13 GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2019.10.03.LLA_006. Heated Purge: (Y/N) N

Calibration ID: 47660

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		6858114	3.72				
UPPER LIMIT		10287171	3.92				
LOWER LIMIT		3429057	3.52				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-328148/1		7513992	3.72				
CCVL 320-328148/2		7164488	3.71				
MB 320-326624/1-A		7142352	3.71				
480-159547-19	RUSSO-CF-COMP 2	7109977	3.71				
CCV 320-328148/15		7250663	3.71				
480-159547-20	RUSSO-CF-COMP 3	6972831	3.71				
480-159547-30	GERNATT-CF-COMP 1	7282020	3.71				
480-159547-31	GERNATT-CF-COMP 2	7419824	3.71				
480-159547-32	GERNATT-CF-COMP 3	7171060	3.71				
CCV 320-328148/23		7527424	3.71				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Sample No.: IC 320-328725/5 Date Analyzed: 10/05/2019 18:32

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 2019.10.05.ICALAAA Heated Purge: (Y/N) N

Calibration ID: 47751

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		8309710	3.34				
UPPER LIMIT		12464565	3.54				
LOWER LIMIT		4154855	3.14				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-328725/10		8285700	3.33				
ICV 320-328725/11		9365549	3.35				
CCV 320-329447/3 CCVIS		8478864	3.35				
CCV 320-329754/3 CCVIS		8581269	3.35				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Sample No.: CCV 320-329447/3 Date Analyzed: 10/09/2019 00:23

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 2019.10.08LLBB._017 Heated Purge: (Y/N) N

Calibration ID: 47751

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		8478864	3.35				
UPPER LIMIT		12718296	3.55				
LOWER LIMIT		4239432	3.15				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-329447/1		7969454	3.35				
CCVL 320-329447/2		8386000	3.34				
MB 320-328853/1-A		7978346	3.34				
LCS 320-328853/2-A		7822704	3.34				
LCSD 320-328853/3-A		7568849	3.34				
LB 320-326292/1-B		7898400	3.34				
LB 320-327145/1-B		7704025	3.34				
480-159547-7	RUSSO-TS-COMP 1	7842928	3.34				
480-159547-8	RUSSO-TS-COMP 2	7712365	3.34				
480-159547-18	RUSSO-CF-COMP 1	7867899	3.34				
CCV 320-329447/14		8488833	3.35				
480-159547-19	RUSSO-CF-COMP 2	8049759	3.34				
480-159547-20	RUSSO-CF-COMP 3	7864362	3.35				
480-159547-30	GERNATT-CF-COMP 1	7707617	3.34				
480-159547-31	GERNATT-CF-COMP 2	7657303	3.33				
480-159547-32	GERNATT-CF-COMP 3	7779979	3.33				
480-159547-39	GERNATT-TS-COMP 1	7863246	3.33				
480-159547-40	GERNATT-TS-COMP 2	7642830	3.33				
CCV 320-329447/23		8052691	3.34				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Sample No.: CCV 320-329754/3 Date Analyzed: 10/10/2019 05:18

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 2019.10.10_LLA_006. Heated Purge: (Y/N) N

Calibration ID: 47751

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		8581269	3.35				
UPPER LIMIT		12871904	3.55				
LOWER LIMIT		4290635	3.15				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-329754/1		8351083	3.35				
CCVL 320-329754/2		8587439	3.35				
LCS 320-326624/2-A		7932860	3.35				
480-159547-7	RUSSO-TS-COMP 1	6580377	3.35				
480-159547-8	RUSSO-TS-COMP 2	7166192	3.35				
480-159547-18	RUSSO-CF-COMP 1	7609007	3.35				
480-159547-39	GERNATT-TS-COMP 1	7293726	3.34				
480-159547-40	GERNATT-TS-COMP 2	7190071	3.34				
CCV 320-329754/14		8328057	3.35				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537 (MODIFIED)

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 2019.10.10_LLA_009.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:35

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.22(g) Date Analyzed: 10/10/2019 05:46

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.24		0.24	0.034
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.24		0.24	0.094
307-24-4	Perfluorohexanoic acid (PFHxA)	0.24		0.24	0.051
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.24		0.24	0.035
335-67-1	Perfluorooctanoic acid (PFOA)	0.18	J	0.24	0.10
375-95-1	Perfluorononanoic acid (PFNA)	0.066	J	0.24	0.044
335-76-2	Perfluorodecanoic acid (PFDA)	0.24		0.24	0.027
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.047	J	0.24	0.044
307-55-1	Perfluorododecanoic acid (PFDoA)	0.24		0.24	0.082
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.24		0.24	0.062
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.24		0.24	0.066
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.24		0.24	0.031
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.24		0.24	0.038
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.24		0.24	0.043
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.38	J	0.61	0.24
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.24		0.24	0.048
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.24		0.24	0.10
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.44		2.44	0.48
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.44		2.44	0.45
27619-97-2	6:2 FTS	2.44		2.44	0.18
39108-34-4	8:2 FTS	2.44		2.44	0.31

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid Lab File ID: 2019.10.10_LLA_009.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:35

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.22(g) Date Analyzed: 10/10/2019 05:46

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 21.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	90		25-150
STL01893	13C5 PFPeA	88		25-150
STL00993	13C2 PFHxA	85		25-150
STL01892	13C4 PFHpA	87		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2 PFTeDA	103		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	99		25-150
STL02118	d3-NMeFOSAA	84		25-150
STL02117	d5-NEtFOSAA	85		25-150
STL02279	M2-6:2 FTS	101		25-150
STL02280	M2-8:2 FTS	118		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_009.d
Lims ID: 480-159547-A-7-B
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 10-Oct-2019 05:46:59 ALS Bottle#: 3 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-7-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:25:45 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:25:45
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.899	1.903	-0.004	0.568	4355646	2.24		89.8	3806	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.208	-0.003	0.659	3572061	2.20		88.0	2419	
D 9 13C2 PFHxA										
315.00 > 270.00	2.567	2.570	-0.003	0.767	3965636	2.12		84.8	2443	
D 14 13C4 PFHpA										
367.00 > 322.00	2.952	2.952	0.0	0.882	4657353	2.18		87.1	2464	
D 16 18O2 PFHxS										
403.00 > 84.00	2.952	2.957	-0.005	0.882	3176536	2.31		97.7	3868	
19 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	3.318	3.331	-0.013	0.996	5043	0.007175			7.9	M
D 20 M2-6:2 FTS										
429.00 > 81.00	3.332	3.331	0.001	0.996	716724	2.40		101	453	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.353	-0.007		6580377	2.50			3413	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.354	3.353	0.001	1.002	192694	0.0739	Target=3.01		12.5	M
413.00 > 169.00	3.346	3.353	-0.007	1.000	67700		2.85(1.51-4.52)		67.8	M
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.353	-0.007	1.000	5765116	2.34		93.5	3465	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.722	3.727	-0.005	1.000	248719	0.1565	Target=3.98		108	
499.00 > 99.00	3.722	3.727	-0.005	1.000	63817		3.90(1.99-5.97)		102	
D 27 13C4 PFOS										
503.00 > 80.00	3.722	3.727	-0.005	1.112	3538712	2.22		92.8	1925	
D 30 13C5 PFNA										
468.00 > 423.00	3.737	3.744	-0.007	1.117	5266607	2.40		95.9	3082	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
29 Perfluorononanoic acid										
463.00 > 419.00	3.737	3.744	-0.007	1.000	59050	0.0272	Target=5.53		8.5	
463.00 > 169.00	3.737	3.744	-0.007	1.000	12092		4.88(2.77-8.30)		16.8	
D 36 13C2 PFDA										
515.00 > 470.00	4.095	4.100	-0.005	1.224	5852140	2.36		94.4	2937	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.095	4.100	-0.005	1.224	792425	2.82		118	762	
D 32 13C8 FOSA										
506.00 > 78.00	4.113	4.118	-0.005	1.229	2034031	2.47		98.9	2654	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.121	4.118	0.003	1.002	6672	0.002985			19.4	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.256	4.252	0.004	1.272	2457871	2.10		84.1	1991	
D 42 13C2 PFUnA										
565.00 > 520.00	4.412	4.409	0.004	1.319	5098964	2.41		96.4	5125	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.421	4.417	0.004	1.002	30776	0.0192	Target=9.81		11.7	
563.00 > 169.00	4.421	4.417	0.004	1.002	2895		10.63(4.91-14.72)		7.0	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.412	4.417	-0.005	1.319	2137141	2.13		85.1	1271	
D 55 13C2 PFDoA										
615.00 > 570.00	4.697	4.702	-0.005	1.404	5538642	2.38		95.2	3480	
56 Perfluorododecanoic acid										R
613.00 > 569.00	4.697	4.702	-0.005	1.000	11159	0.004887	Target=9.39		3.6	R
613.00 > 169.00	4.688	4.702	-0.014	0.998	3432		3.25(4.70-14.09)		8.0	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.938	4.960	-0.022	1.051	8898	0.006231	Target=6.04		8.4	
663.00 > 169.00	4.946	4.960	-0.014	1.053	1274		6.98(3.02-9.06)		6.1	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.189	5.194	-0.005	1.551	4262336	2.58		103	6488	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 10-Oct-2019 14:25:46 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_009.d

Injection Date: 10-Oct-2019 05:46:59 Instrument ID: A9

Lims ID: 480-159547-A-7-B Lab Sample ID: 320-159547-7

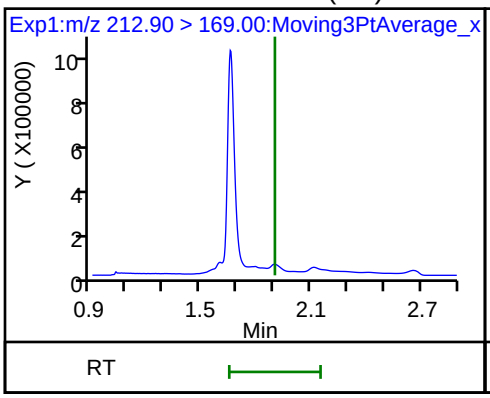
Client ID: RUSSO-TS-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 3 Worklist Smp#: 6

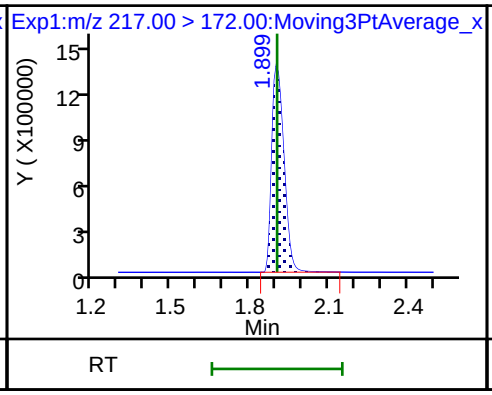
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

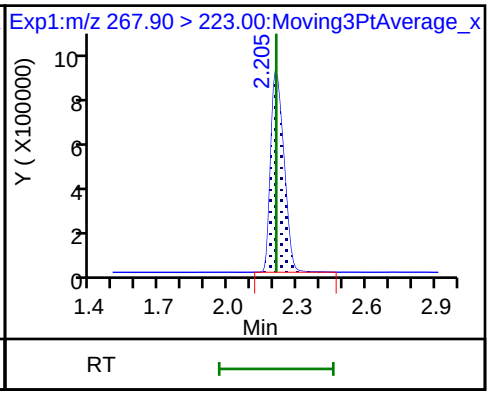
2 Perfluorobutanoic acid (ND)



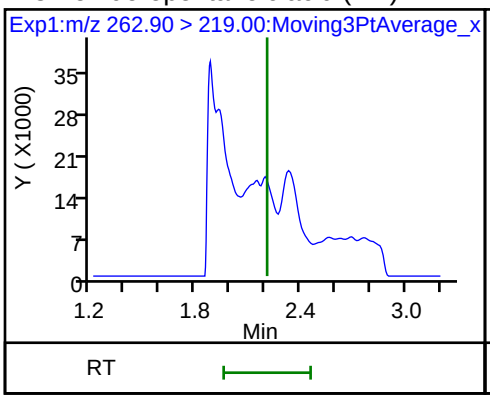
D 1 13C4 PFBA



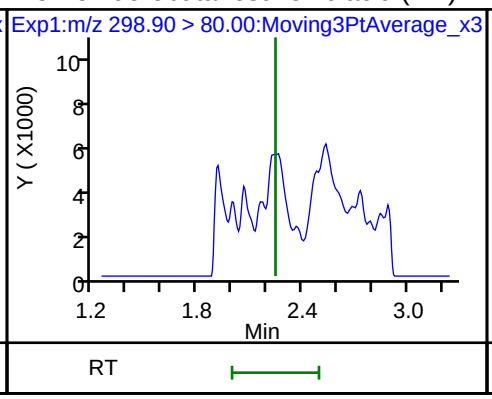
D 4 13C5 PFPeA



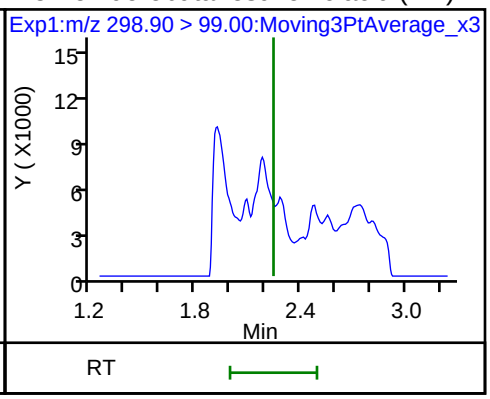
3 Perfluoropentanoic acid (ND)



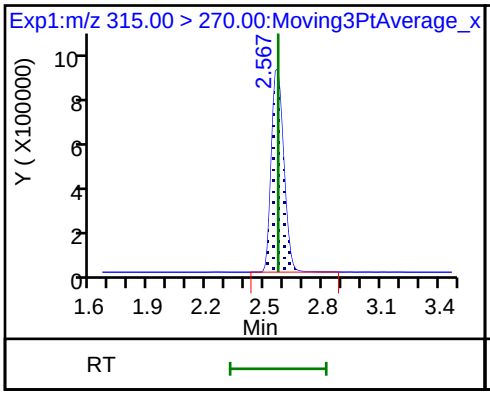
5 Perfluorobutanesulfonic acid (ND)



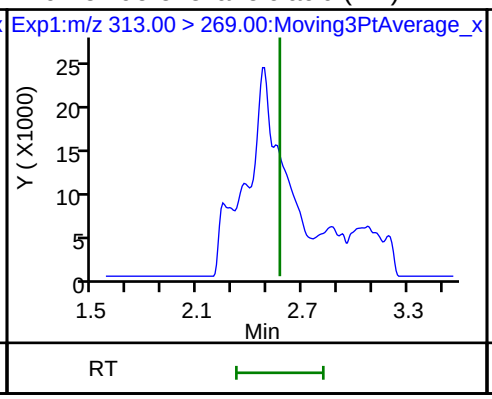
5 Perfluorobutanesulfonic acid (ND)



D 9 13C2 PFHxA



10 Perfluorohexanoic acid (ND)



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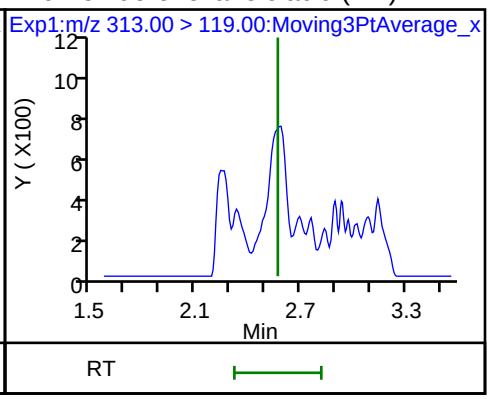
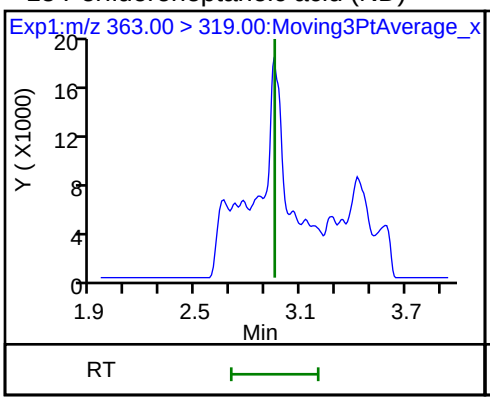


15 Perfluoroheptanoic acid (ND)



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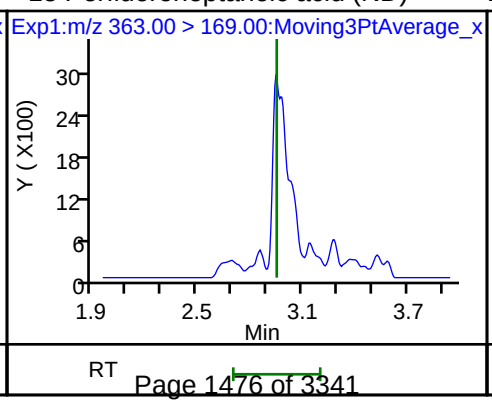
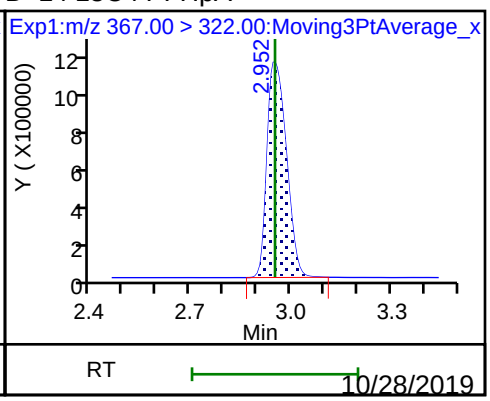
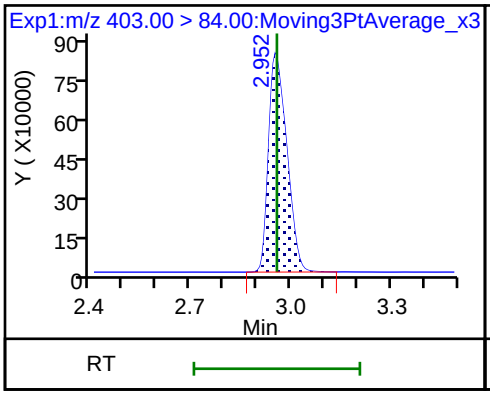


D 14 13C4 PFHpA



D 16 18O2 PFHxS



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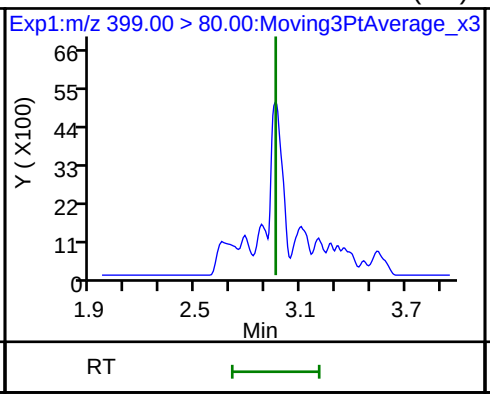

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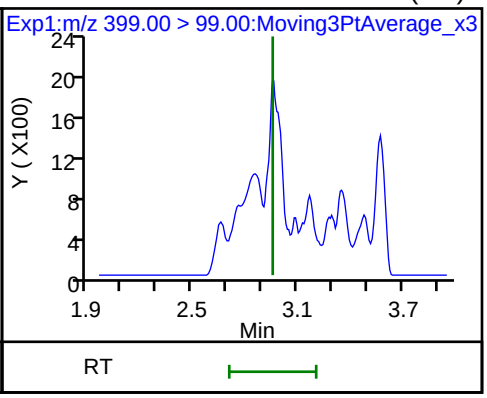
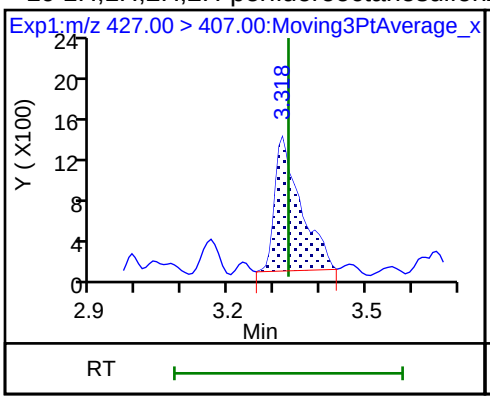
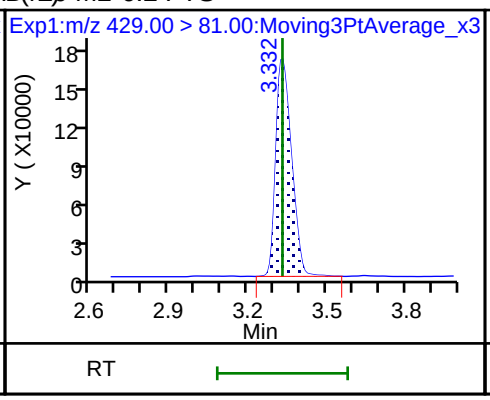


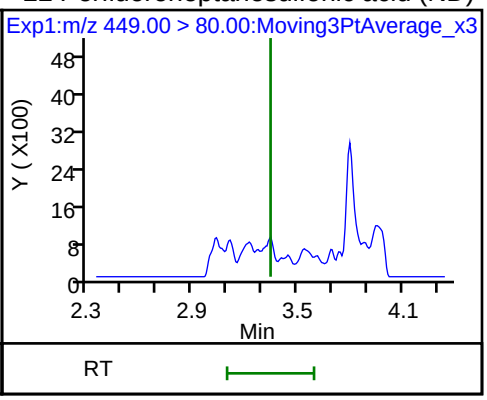
19 1H,1H,2H,2H-perfluorooctanesulfonic (M)



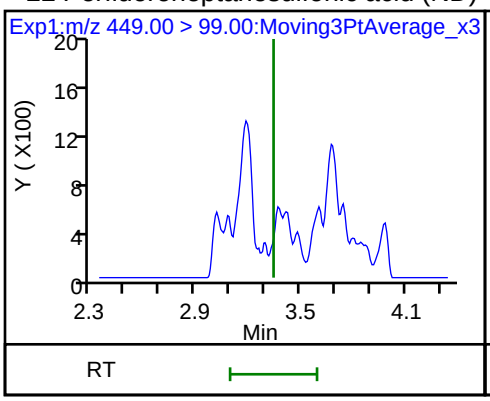
D 20 M2-6:2 FTS



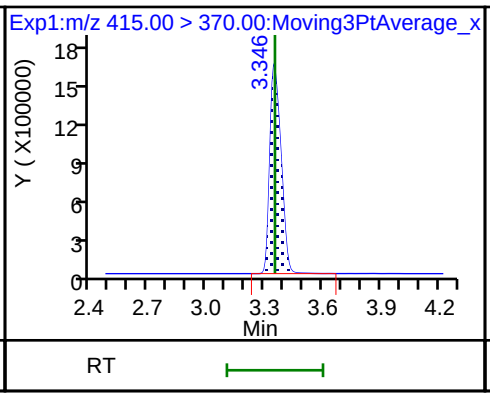
22 Perfluoroheptanesulfonic acid (ND)



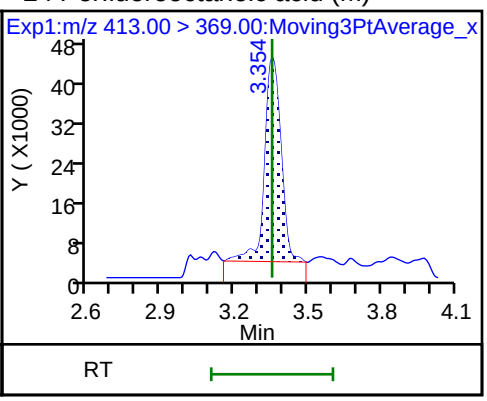
22 Perfluoroheptanesulfonic acid (ND) *



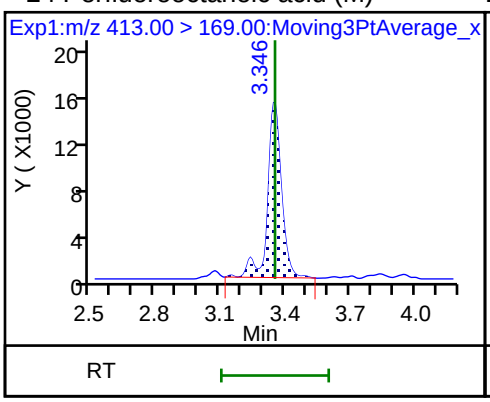
25 13C2 PFOA



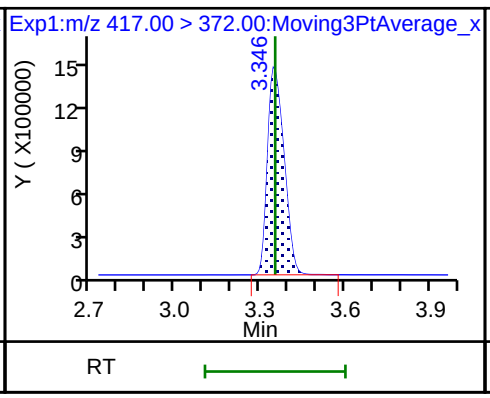
24 Perfluorooctanoic acid (M)



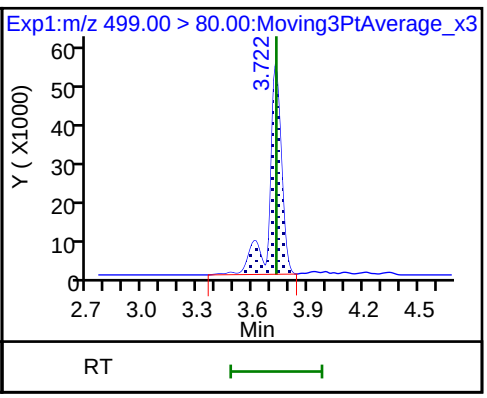
24 Perfluorooctanoic acid (M)



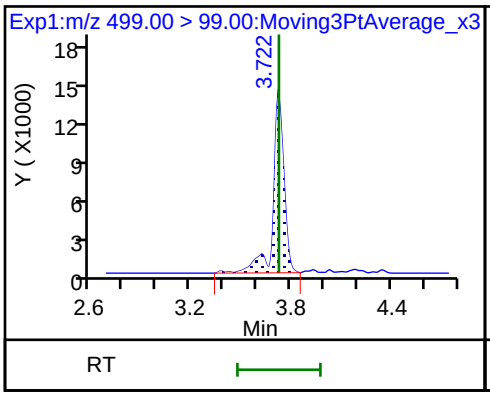
D 23 13C4 PFOA



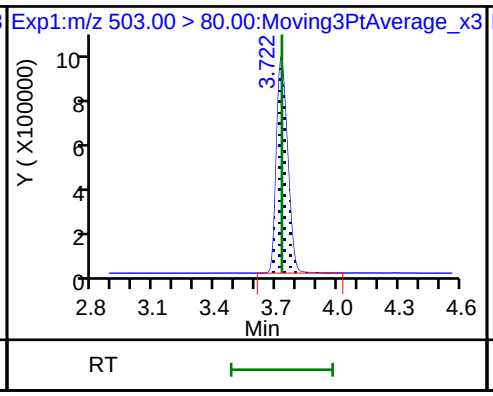
28 Perfluorooctanesulfonic acid



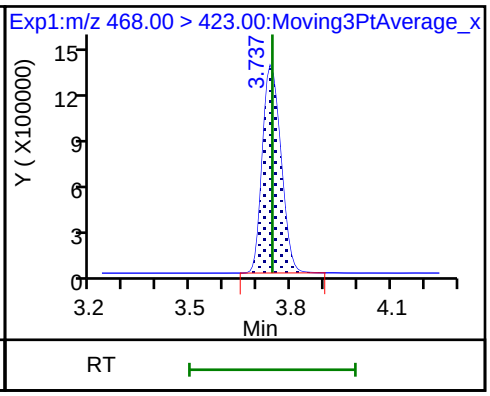
28 Perfluorooctanesulfonic acid



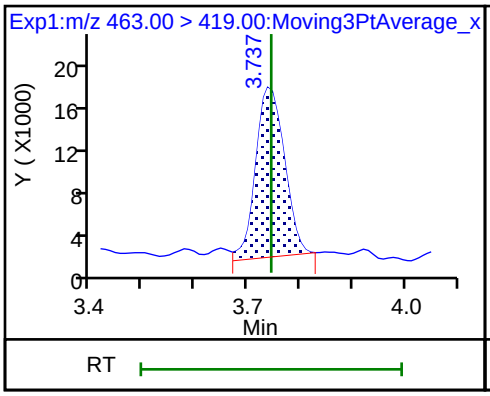
D 27 13C4 PFOS



D 30 13C5 PFNA



29 Perfluorononanoic acid



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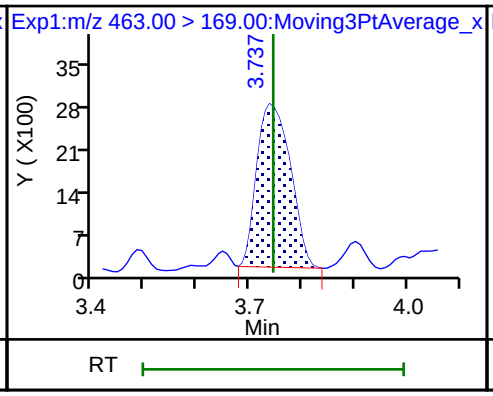
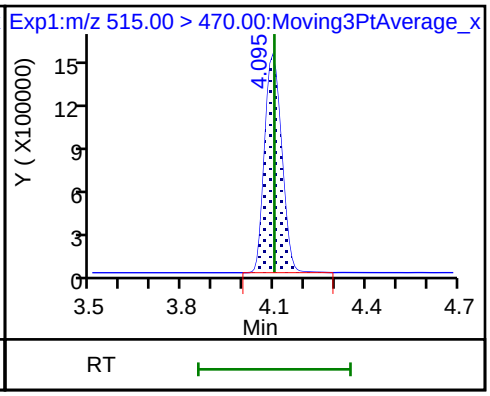
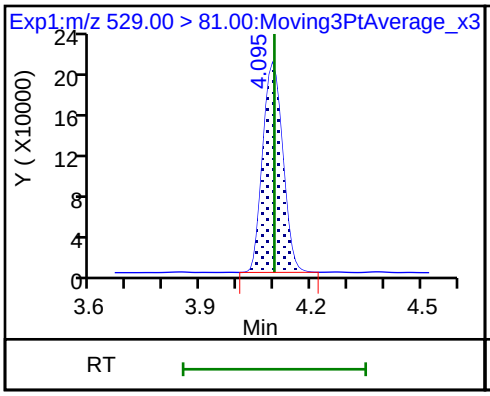


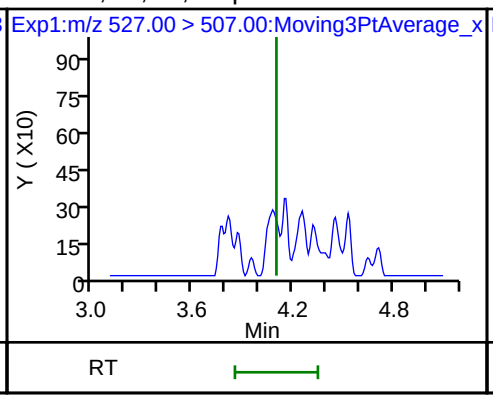
D 36 13C2 PFDA



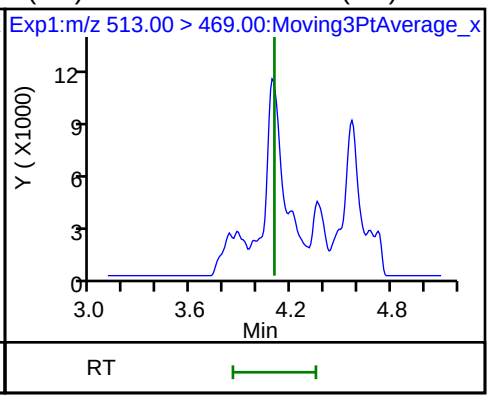
D 35 M2-8:2 FTS



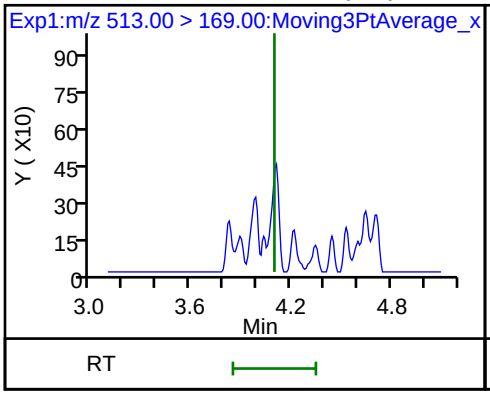
38 1H,1H,2H,2H-perfluorodecanesulfoni



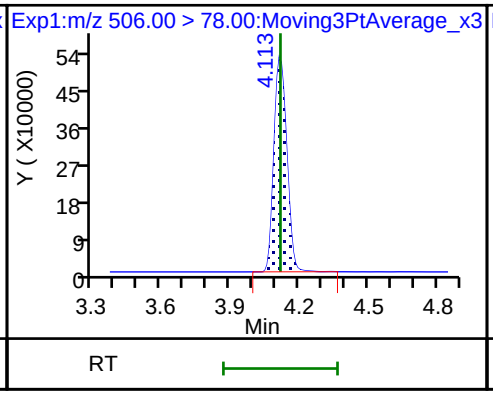
perfluorodecanoic acid (ND)



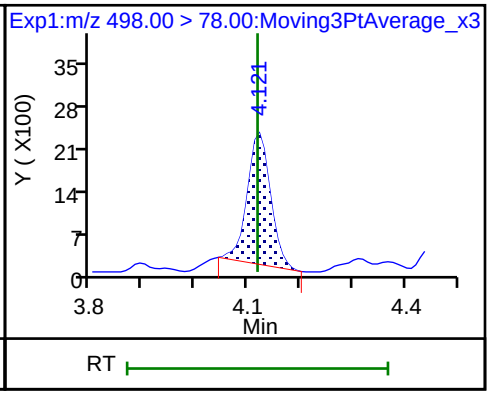
37 Perfluorodecanoic acid (ND)



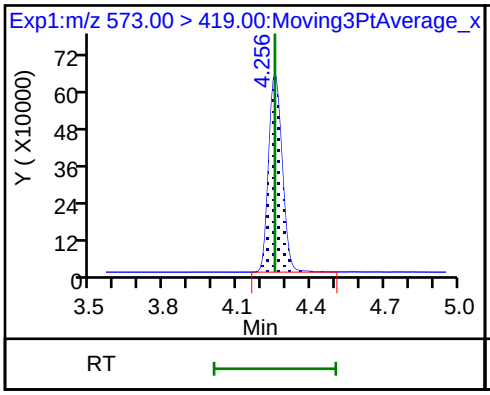
D 32 13C8 FOSA



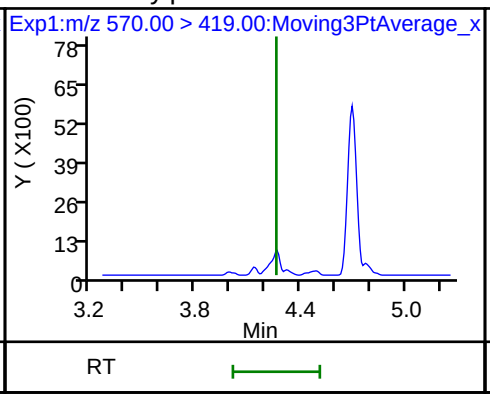
33 Perfluorooctanesulfonamide



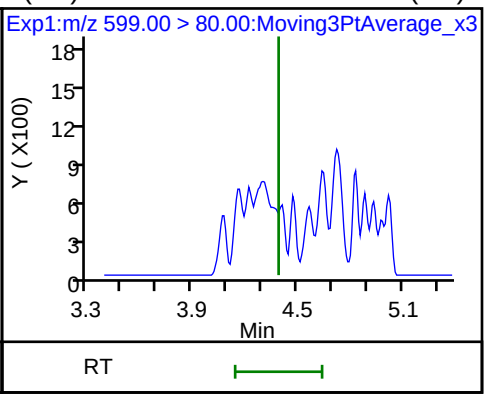
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido (ND)



41 Perfluorodecanesulfonic acid (ND)



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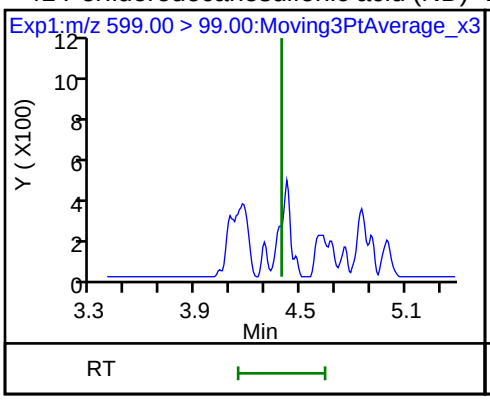
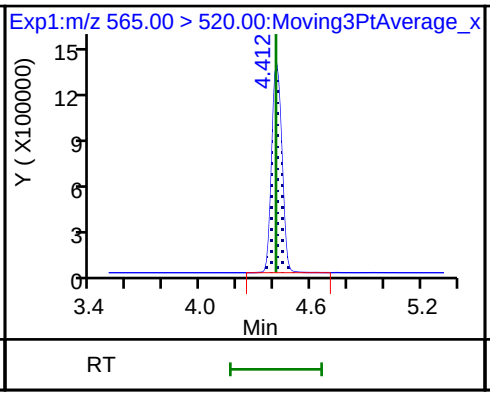
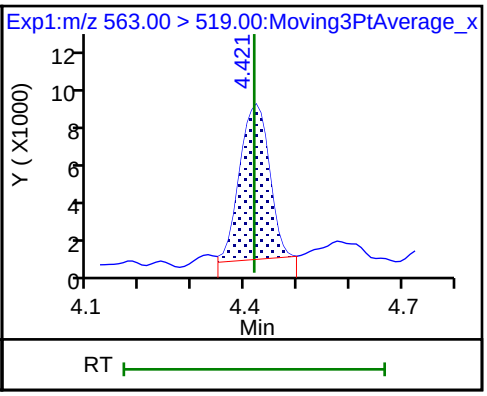


D 42 13C2 PFUnA



43 Perfluoroundecanoic acid



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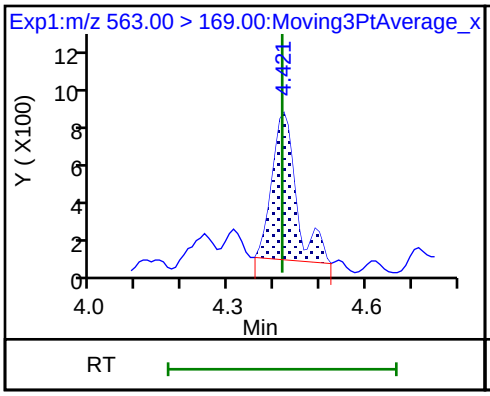
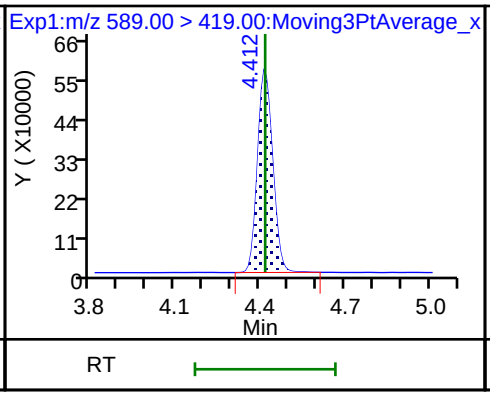
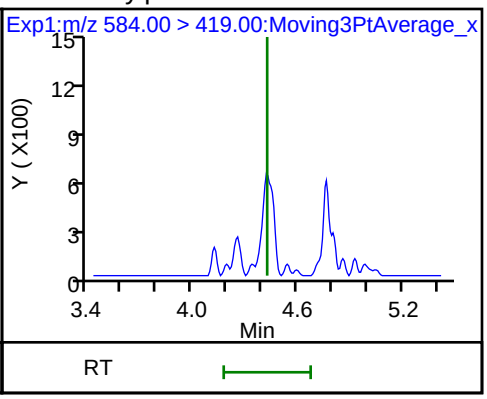


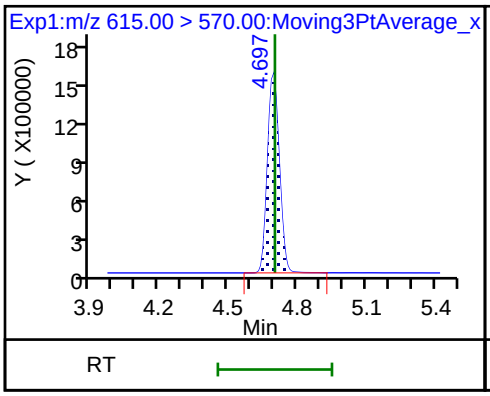
D 44 d5-NEtFOSAA



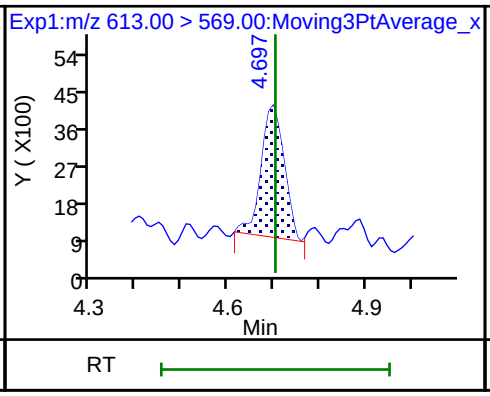
45 N-ethylperfluorooctanesulfonamidoa (ND)



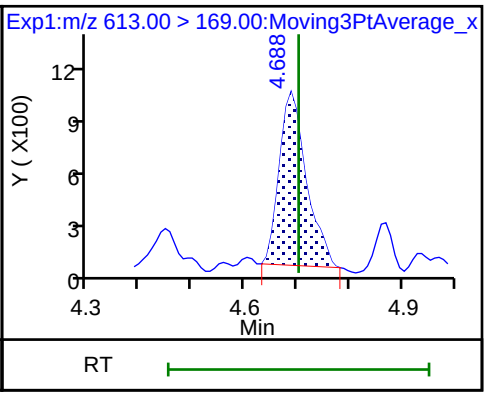
D 55 13C2 PFDoA



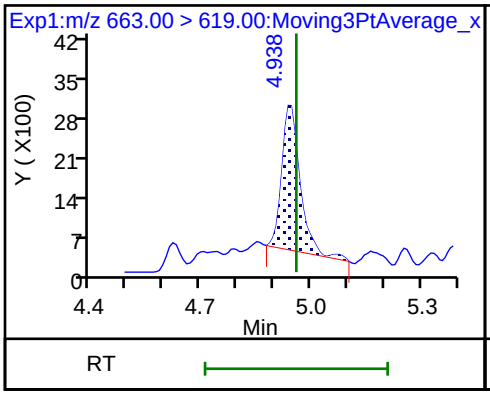
56 Perfluorododecanoic acid



56 Perfluorododecanoic acid



59 Perfluorotridecanoic acid



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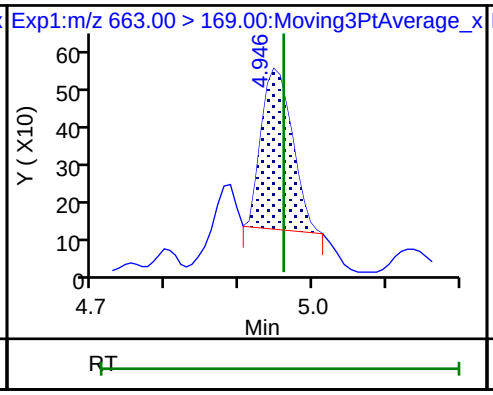
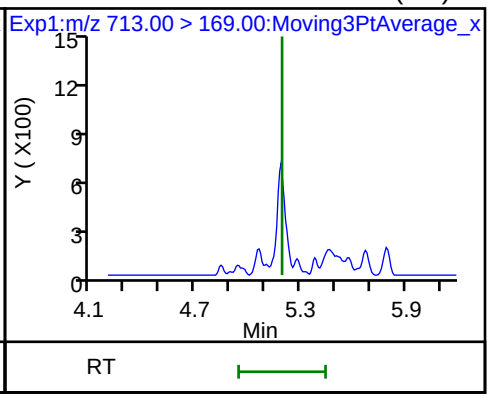


61 Perfluorotetradecanoic acid (ND)



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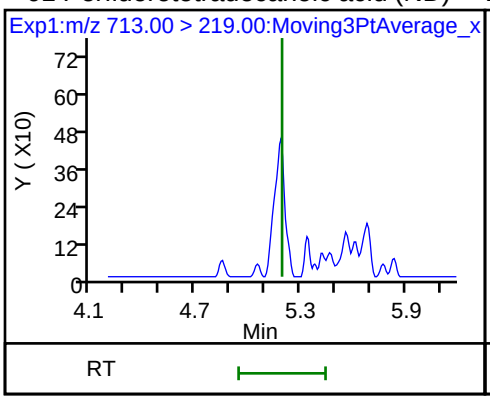
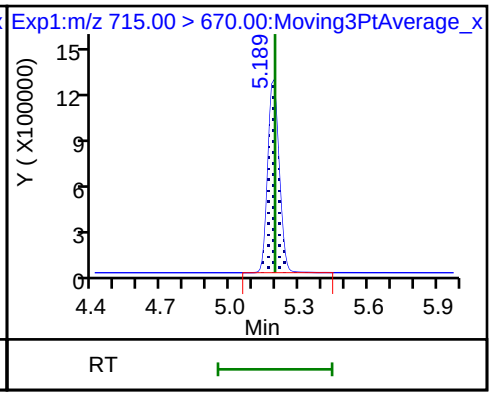


D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

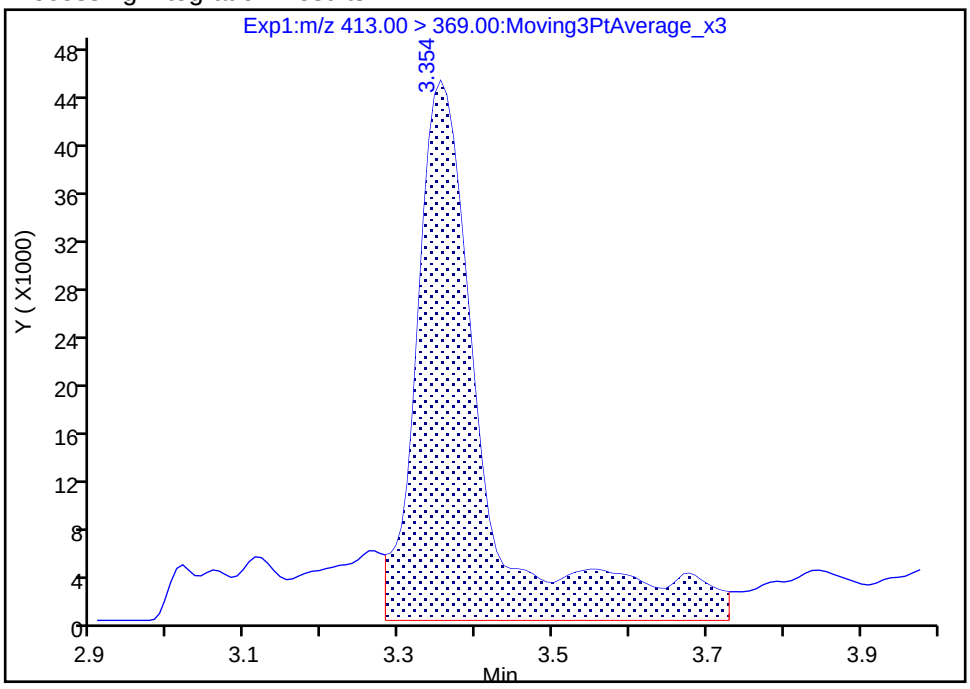
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_009.d				
Injection Date:	10-Oct-2019 05:46:59	Instrument ID:	A9		
Lims ID:	480-159547-A-7-B	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

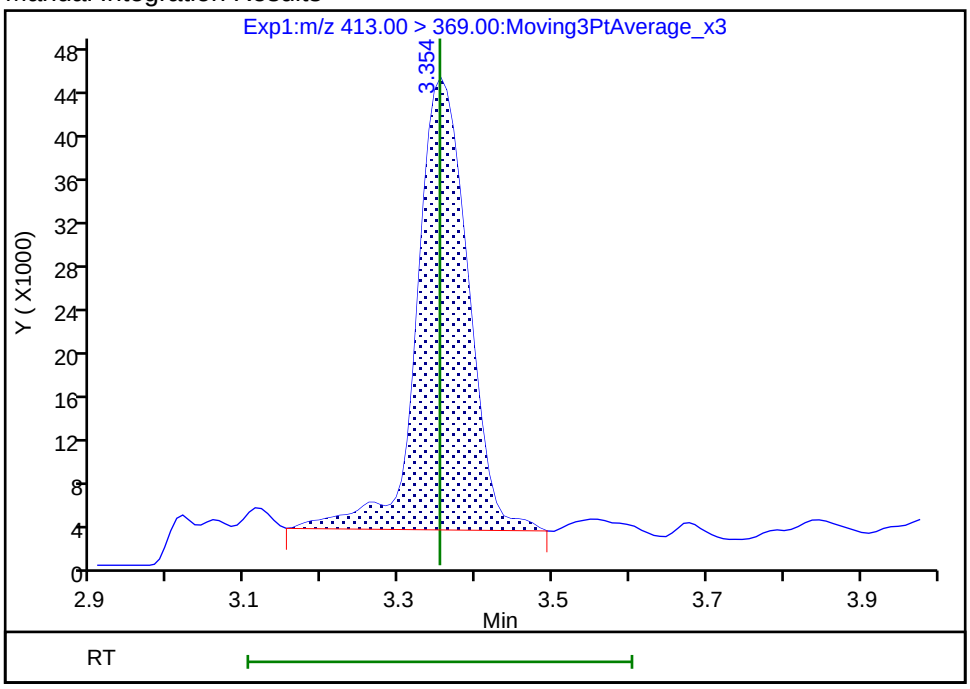
Processing Integration Results

RT: 3.35
Area: 273028
Amount: 0.104722
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 192694
Amount: 0.073909
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:25:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

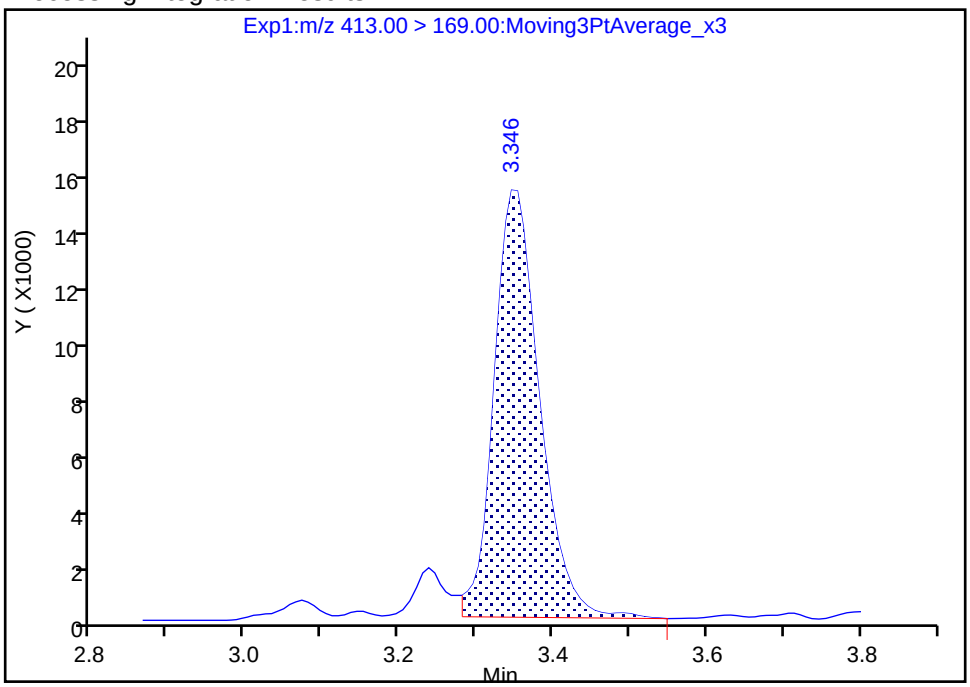
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_009.d				
Injection Date:	10-Oct-2019 05:46:59	Instrument ID:	A9		
Lims ID:	480-159547-A-7-B	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

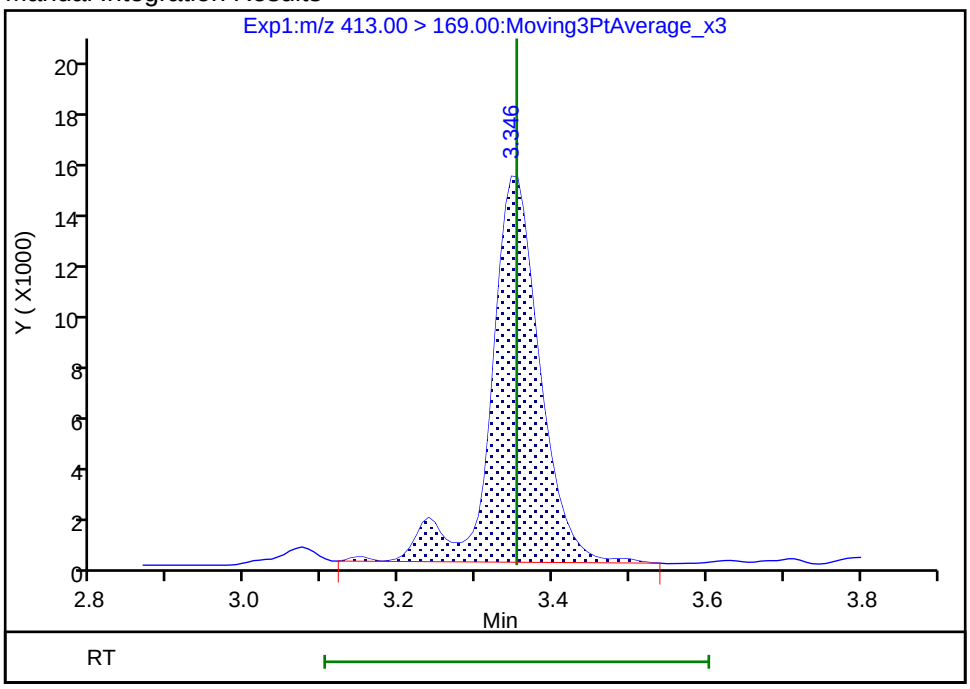
Processing Integration Results

RT: 3.35
Area: 62626
Amount: 0.104722
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 67700
Amount: 0.073909
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:25:20

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

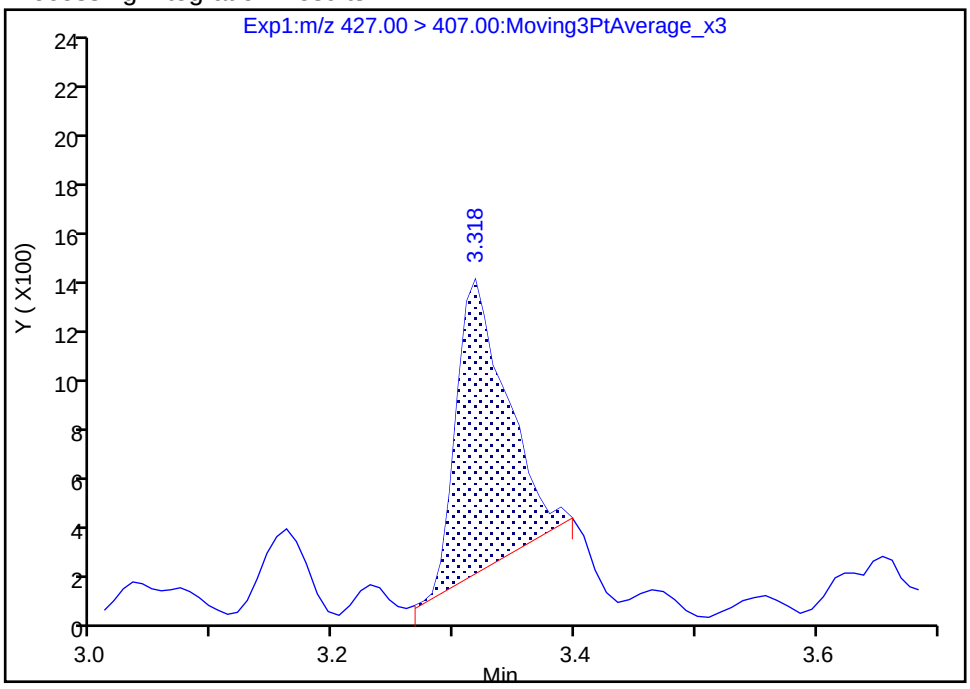
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_009.d				
Injection Date:	10-Oct-2019 05:46:59	Instrument ID:	A9		
Lims ID:	480-159547-A-7-B	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	3	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

19 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

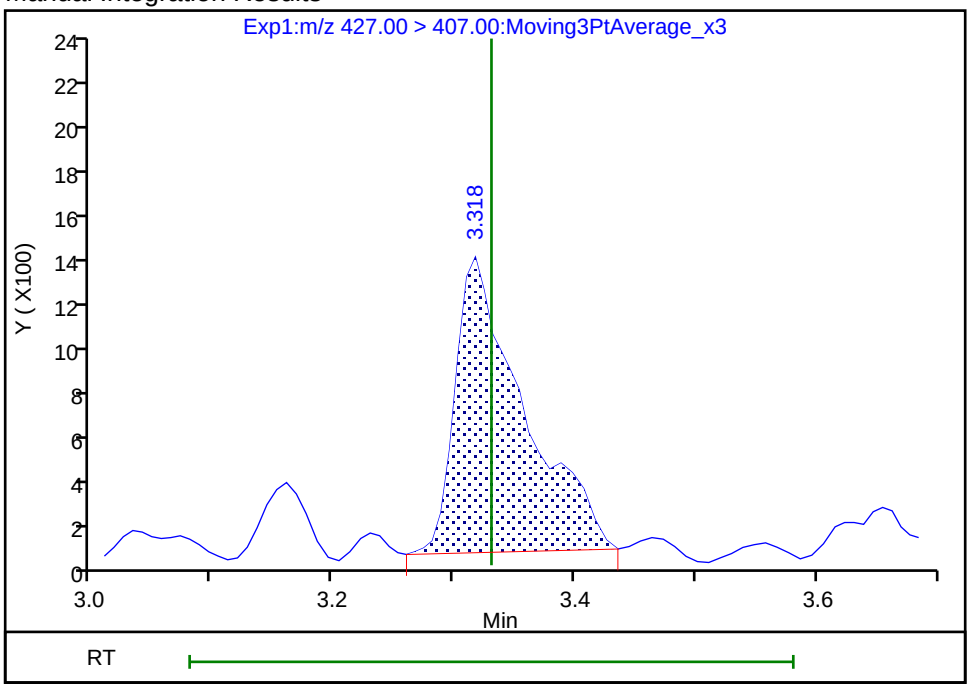
Processing Integration Results

RT: 3.32
Area: 3375
Amount: 0.004802
Amount Units: ng/ml



Manual Integration Results

RT: 3.32
Area: 5043
Amount: 0.007175
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:25:03

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._023.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:35

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 277.2(mL) Date Analyzed: 10/09/2019 01:21

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.86	J	1.80	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.80		1.80	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.80		1.80	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.49	J	1.80	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.73	J	1.80	0.77
375-95-1	Perfluorononanoic acid (PFNA)	0.31	J	1.80	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.80		1.80	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.80		1.80	0.99
307-55-1	Perfluorododecanoic acid (PFDoA)	1.80		1.80	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.80		1.80	1.17
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.80		1.80	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.80		1.80	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.41	J B	1.80	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.80		1.80	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.04	J B	1.80	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.80		1.80	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	105		25-150
STL00993	13C2 PFHxA	107		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	105		25-150
STL00997	13C2 PFUnA	102		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	96		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	98		25-150
STL01892	13C4 PFHpA	105		25-150
STL01893	13C5 PFPeA	107		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d
Lims ID: 480-159547-A-7-C
Client ID: RUSSO-TS-COMP 1
Sample Type: Client
Inject. Date: 09-Oct-2019 01:21:22 ALS Bottle#: 13 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-7-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:37:22 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:37:22
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.893	1.896	-0.003	1.000	48873	0.0237			7.0	a
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.896	-0.003	0.567	6061178	2.62		105	5622	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.201	-0.002	0.659	5158228	2.67		107	4288	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.201	-0.002	1.000	14180	0.006709			0.8	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.560	-0.003	0.766	5985690	2.69		107	3050	
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.941	-0.001	0.881	6710759	2.63		105	2932	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.940	2.941	-0.001	1.000	40876	0.0136	Target=4.38		5.2	M
363.00 > 169.00	2.940	2.941	-0.001	1.000	8490		4.81(2.19-6.57)		14.0	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.946	2.947	-0.001	1.000	24877	0.0113	Target=3.29		35.6	M
399.00 > 99.00	2.951	2.947	0.004	1.002	7749		3.21(1.64-4.93)		7.7	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.946	2.947	-0.001	0.883	4264508	2.60		110	4029	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.323	3.325	-0.002	1.000	9651	0.0158			34.4	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.323	3.325	-0.002	0.996	621592	1.75		73.6	1308	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.346	-0.008	1.000	7778089	2.65		106	4404	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.346	-0.008		7842928	2.50			3544	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.345	3.346	-0.001	1.002	168244	0.0478	Target=2.91		15.6	M
413.00 > 169.00	3.345	3.346	-0.001	1.002	59382		2.83(1.45-4.36)		83.7	M
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.711	3.714	-0.003	0.998	57607	0.0288	Target=3.91		26.7	M
499.00 > 99.00	3.719	3.714	0.005	1.000	11700		4.92(1.95-5.86)		43.5	M
D 27 13C4 PFOS										
503.00 > 80.00	3.719	3.714	0.005	1.114	4454062	2.34		98.0	3689	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.730	-0.003	1.117	6624162	2.53		101	4149	
29 Perfluorononanoic acid										
463.00 > 419.00	3.734	3.730	0.004	1.002	23178	0.008492	Target=5.56		6.3	
463.00 > 169.00	3.744	3.730	0.014	1.005	4915		4.72(2.78-8.34)		9.6	
D 36 13C2 PFDA										
515.00 > 470.00	4.091	4.086	0.005	1.226	7735713	2.62		105	5617	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.091	4.086	0.005	1.226	707732	2.12		88.3	1887	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.104	0.005	1.231	2459494	2.51		100	2107	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.100	4.104	-0.004	0.998	8689	0.003215			30.7	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.247	-0.004	1.271	3530059	2.53		101	2683	
D 42 13C2 PFUnA										
565.00 > 520.00	4.408	4.404	0.004	1.321	6436494	2.55		102	4235	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.408	4.413	-0.005	1.321	3140406	2.62		105	1982	
D 55 13C2 PFDoA										
615.00 > 570.00	4.693	4.688	0.005	1.406	7037192	2.54		101	3121	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.185	5.189	-0.004	1.554	4737226	2.41		96.3	4824	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 18-Oct-2019 15:37:23 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d

Injection Date: 09-Oct-2019 01:21:22 Instrument ID: A9

Lims ID: 480-159547-A-7-C Lab Sample ID: 320-159547-7

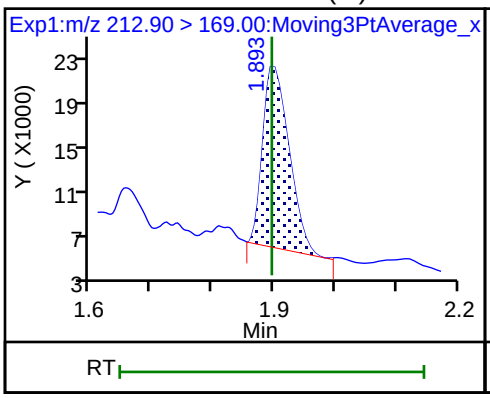
Client ID: RUSSO-TS-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 9

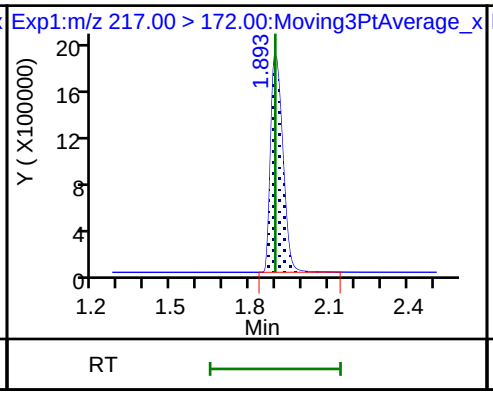
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

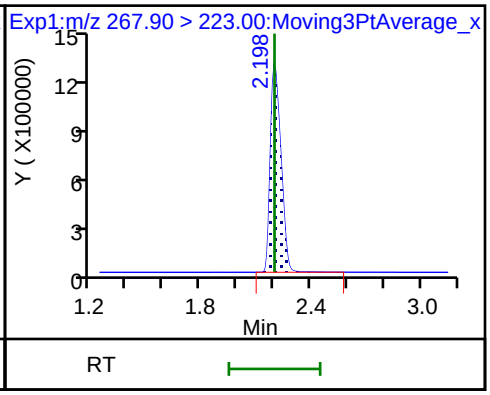
2 Perfluorobutanoic acid (M)



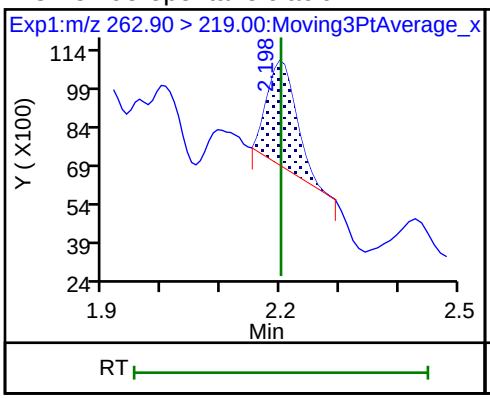
D 1 13C4 PFBA



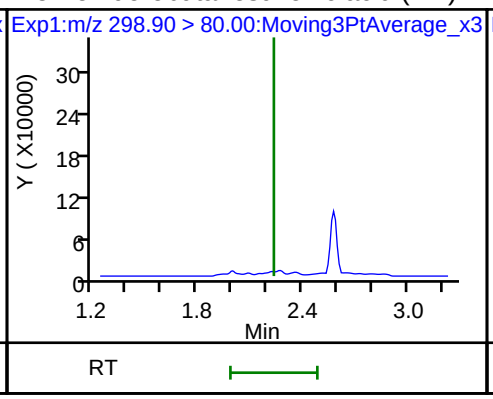
D 4 13C5 PFPeA



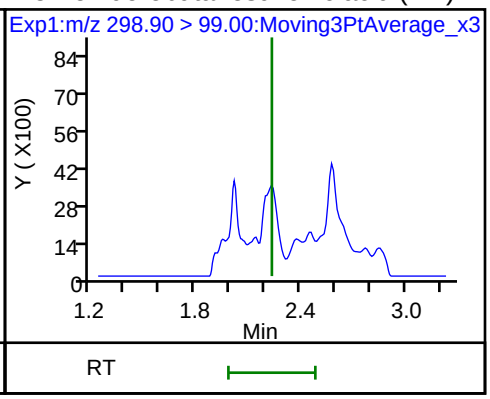
3 Perfluoropentanoic acid



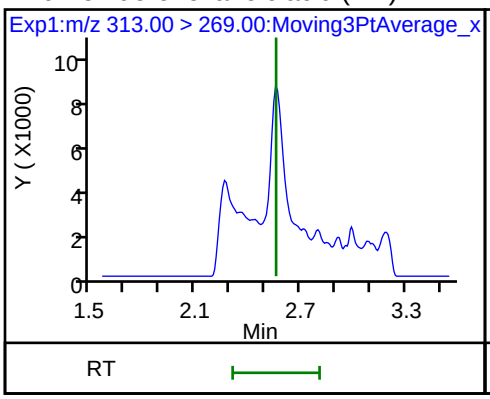
5 Perfluorobutanesulfonic acid (ND)



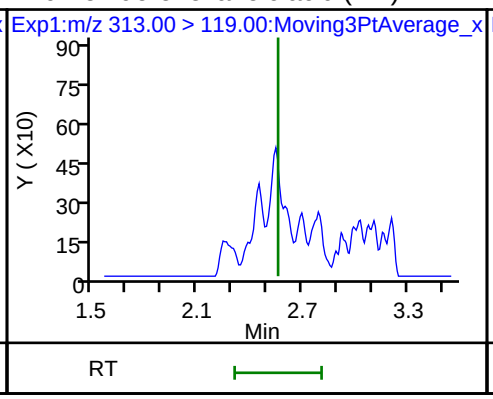
5 Perfluorobutanesulfonic acid (ND)



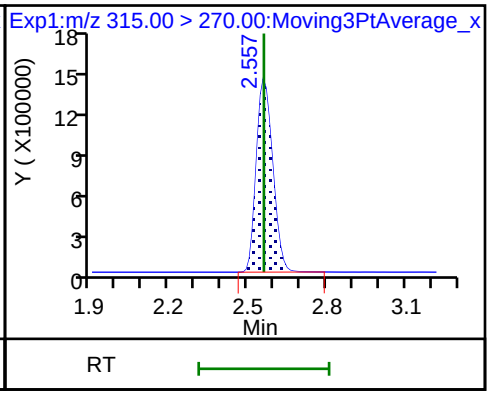
10 Perfluorohexanoic acid (ND)



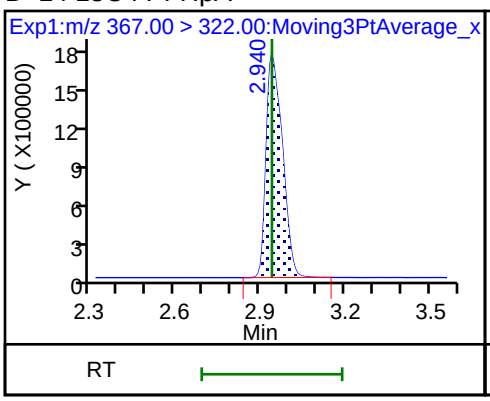
10 Perfluorohexanoic acid (ND)



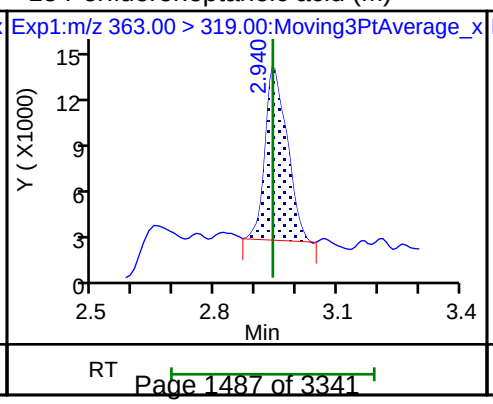
D 9 13C2 PFHxA



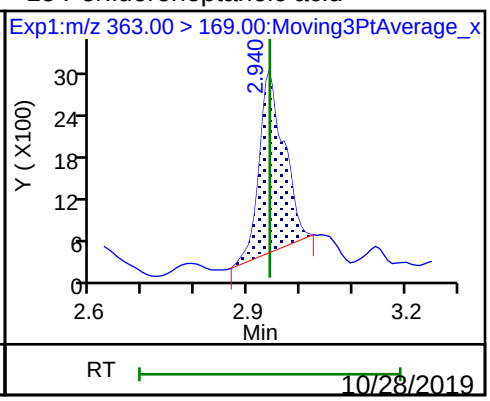
D 14 13C4 PFHpA



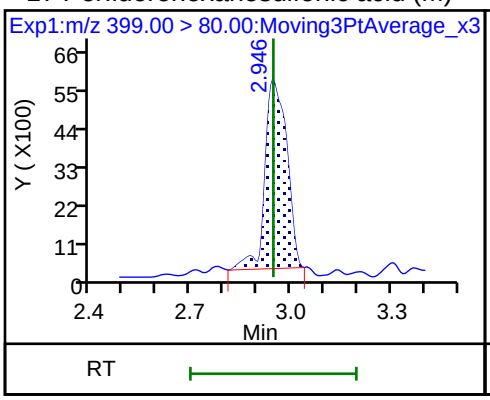
15 Perfluoroheptanoic acid (M)



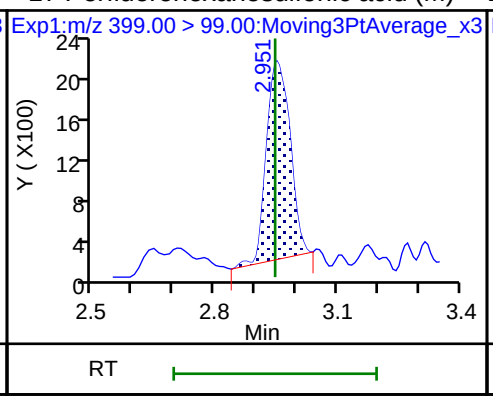
15 Perfluoroheptanoic acid



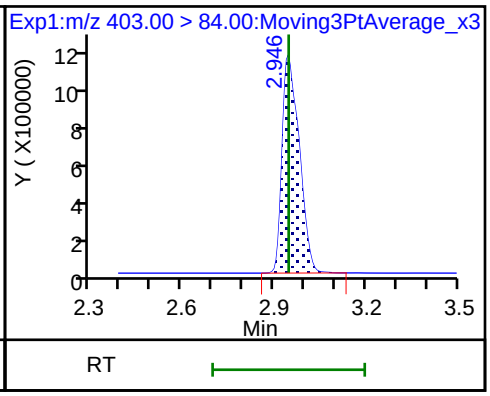
17 Perfluorohexanesulfonic acid (M)



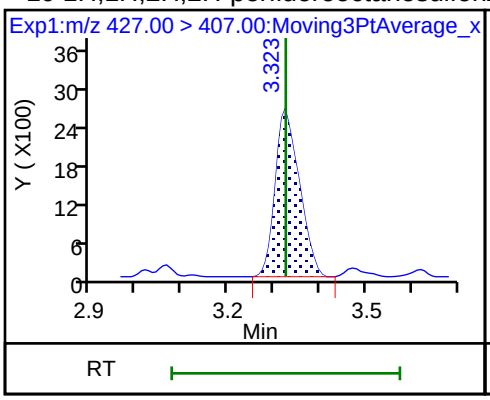
17 Perfluorohexanesulfonic acid (M)



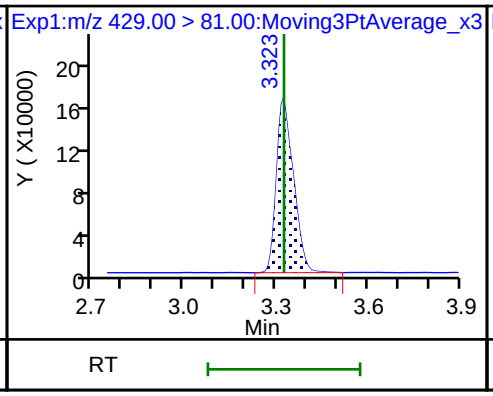
D 16 18O2 PFHxS



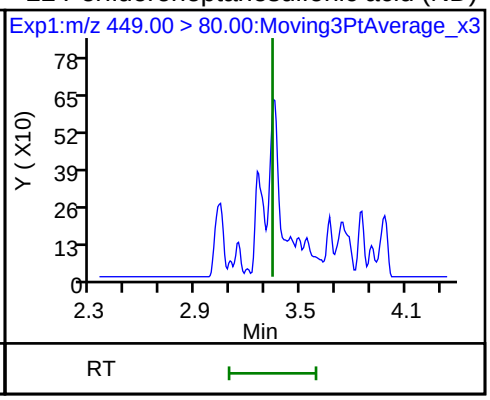
19 1H,1H,2H,2H-perfluorooctanesulfon



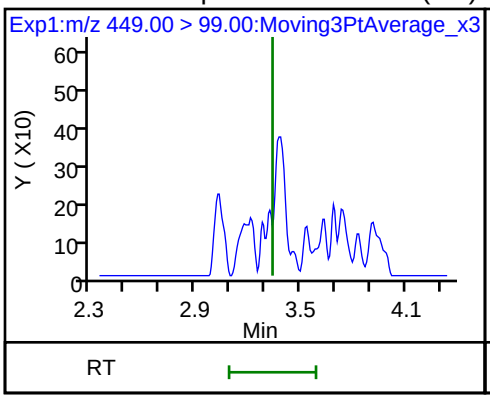
D 20 M2-6:2 FTS



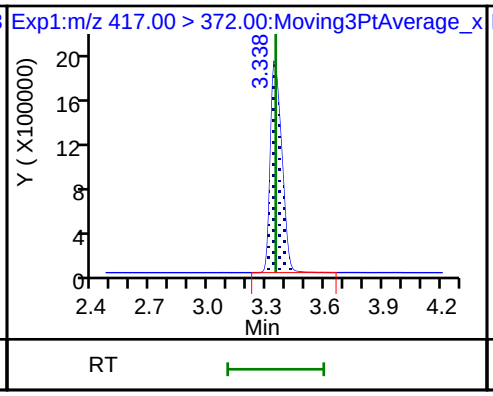
22 Perfluoroheptanesulfonic acid (ND)



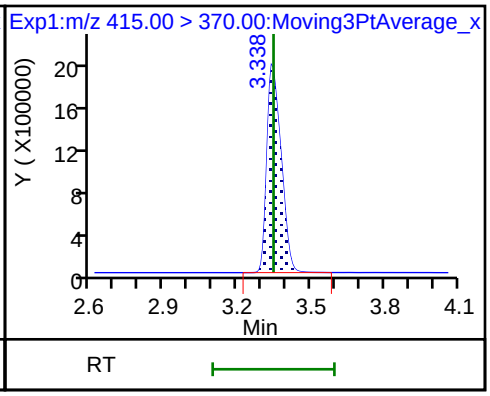
22 Perfluoroheptanesulfonic acid (ND)



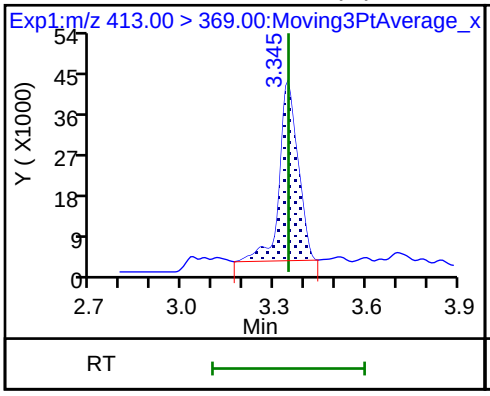
D 23 13C4 PFOA



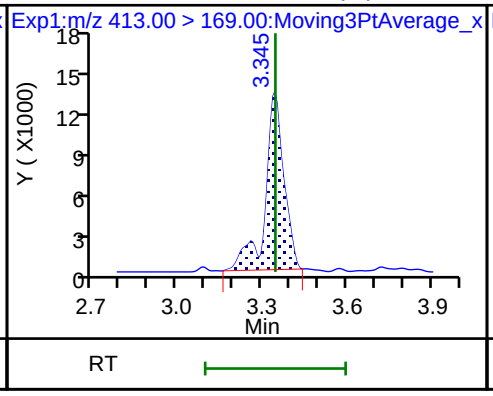
* 25 13C2 PFOA



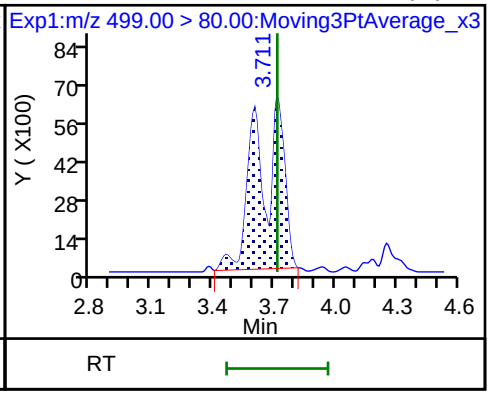
24 Perfluorooctanoic acid (M)



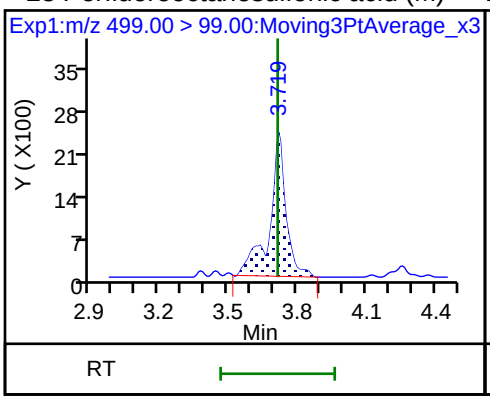
24 Perfluorooctanoic acid (M)



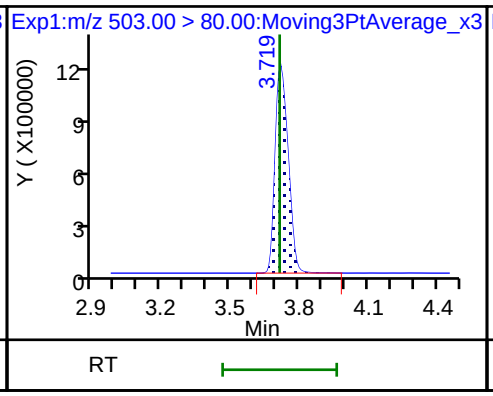
28 Perfluorooctanesulfonic acid (M)



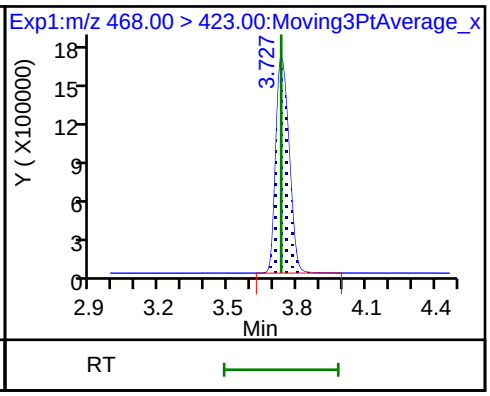
28 Perfluorooctanesulfonic acid (M)



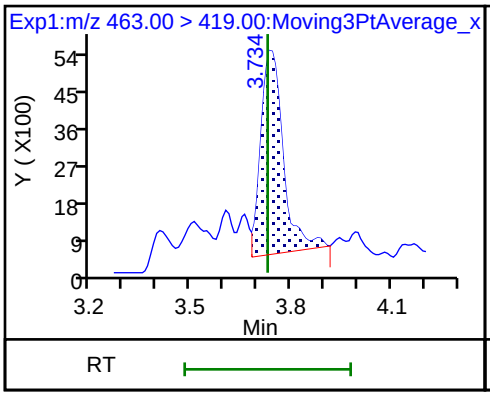
D 27 13C4 PFOS



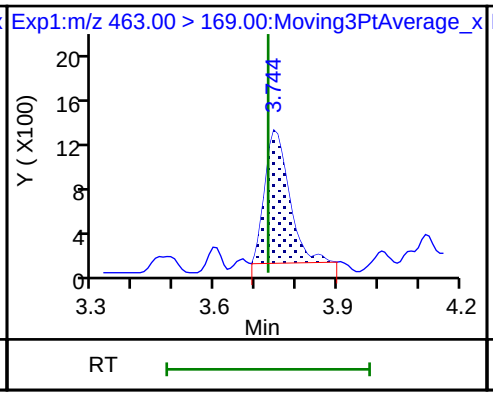
D 30 13C5 PFNA



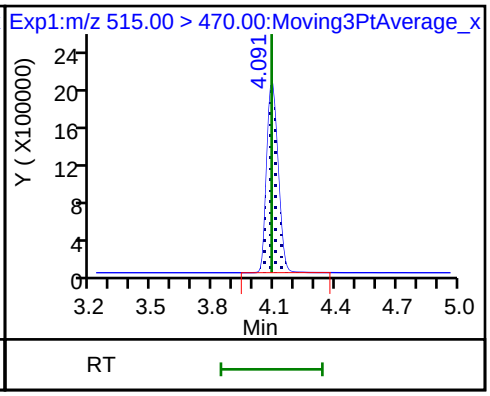
29 Perfluorononanoic acid



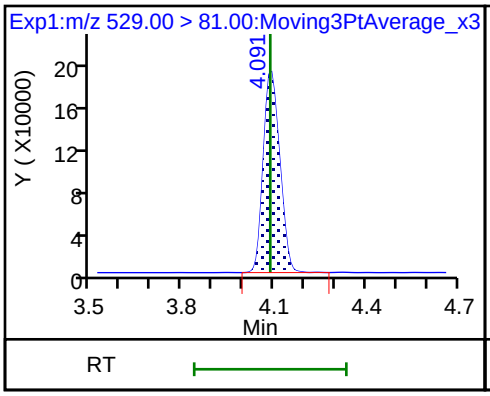
29 Perfluorononanoic acid



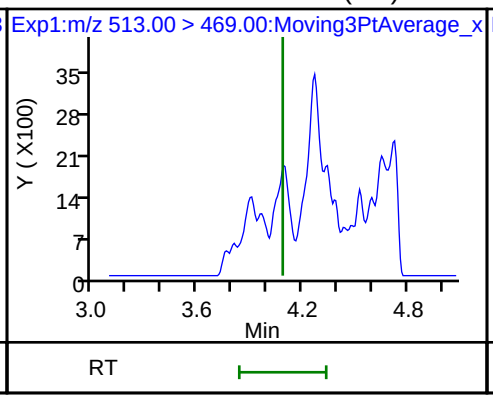
D 36 13C2 PFDA



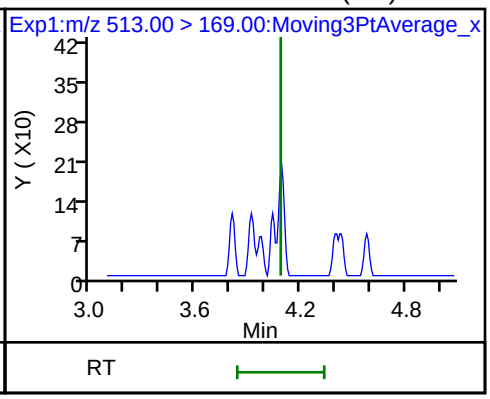
D 35 M2-8:2 FTS



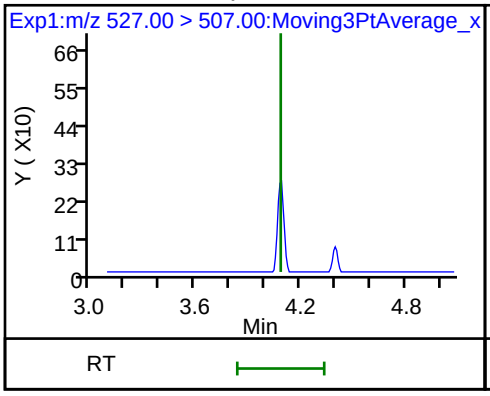
37 Perfluorodecanoic acid (ND)



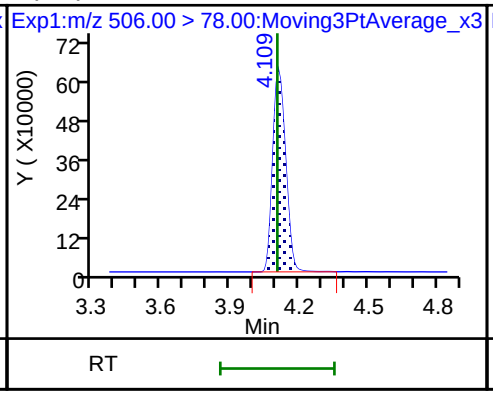
37 Perfluorodecanoic acid (ND)



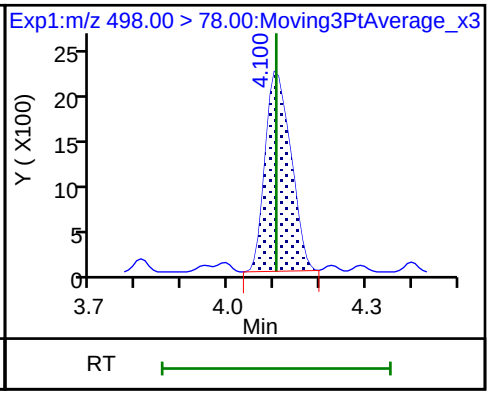
38 1H,1H,2H,2H-perfluorodecanesulfonic acid (M2)



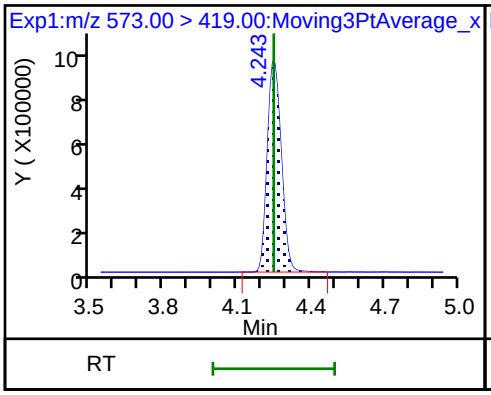
D 32 13C8 FOSA



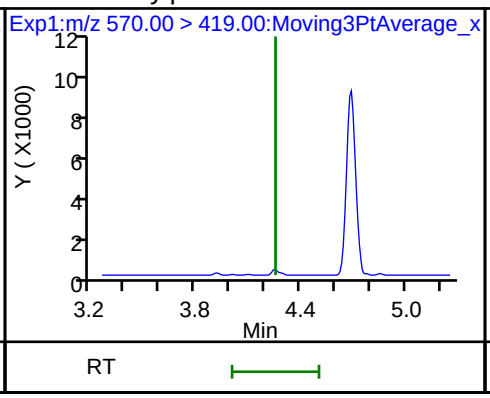
33 Perfluorooctanesulfonamide



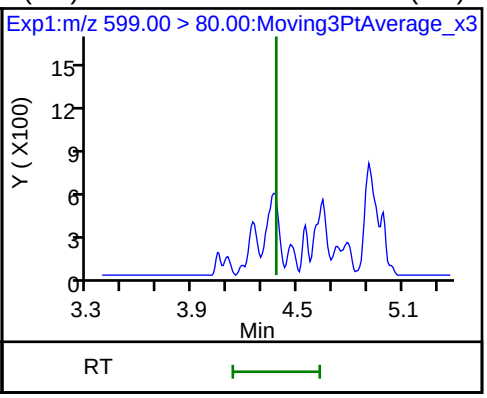
D 39 d3-NMeFOSAA



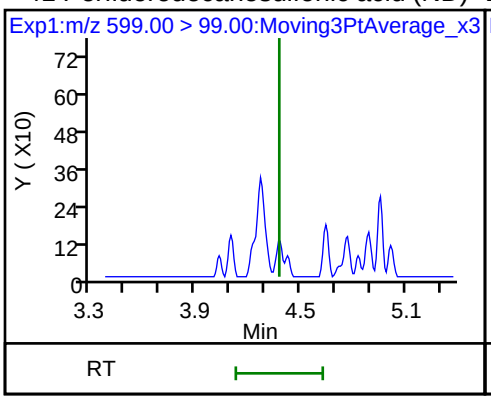
40 N-methylperfluorooctanesulfonamido (ND)



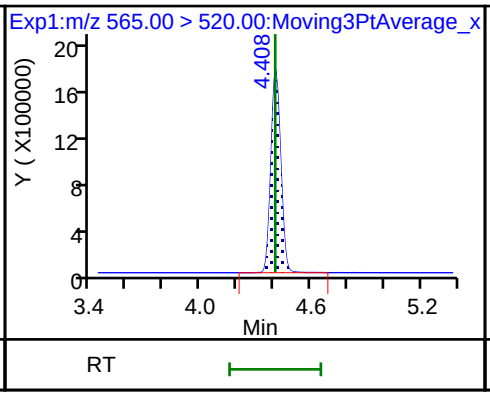
41 Perfluorodecanesulfonic acid (ND)



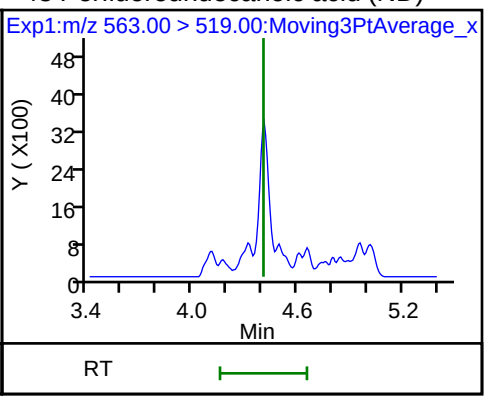
41 Perfluorodecanesulfonic acid (ND)



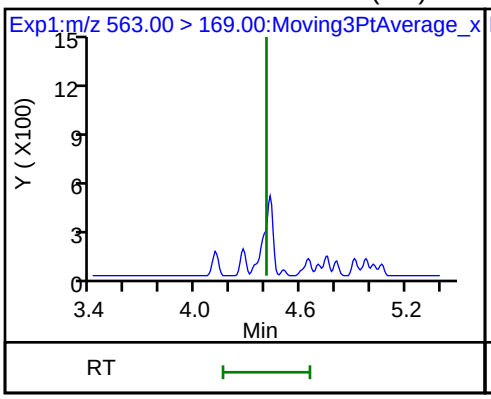
D 42 13C2 PFUnA



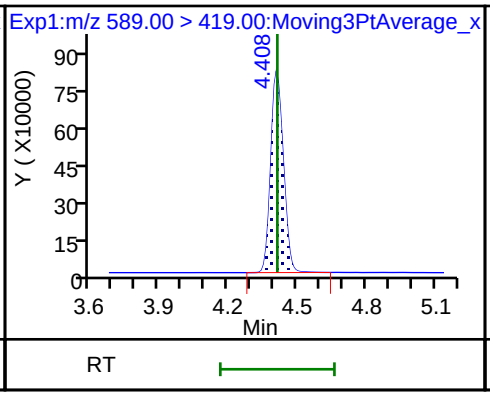
43 Perfluoroundecanoic acid (ND)



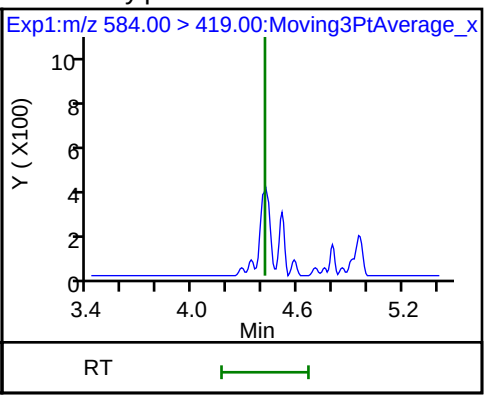
43 Perfluoroundecanoic acid (ND)



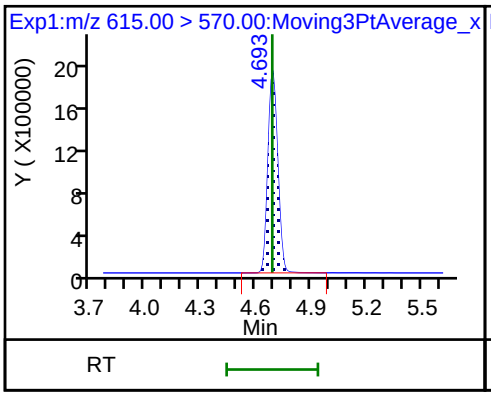
D 44 d5-NEtFOSAA



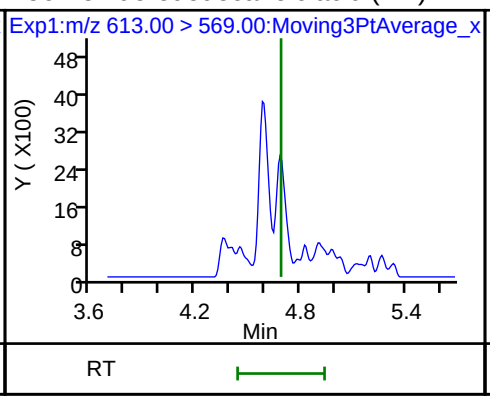
45 N-ethylperfluorooctanesulfonamidoa (ND)



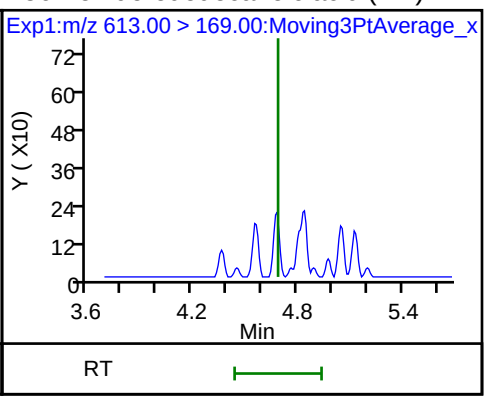
D 55 13C2 PFDoA



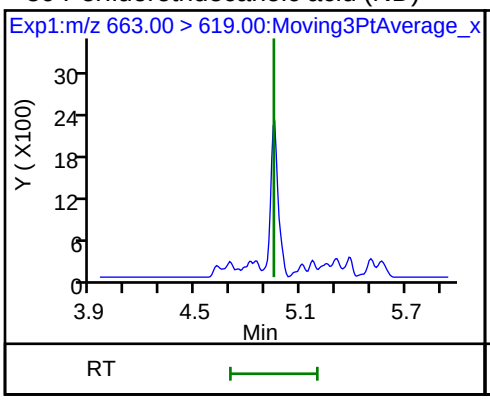
56 Perfluorododecanoic acid (ND)



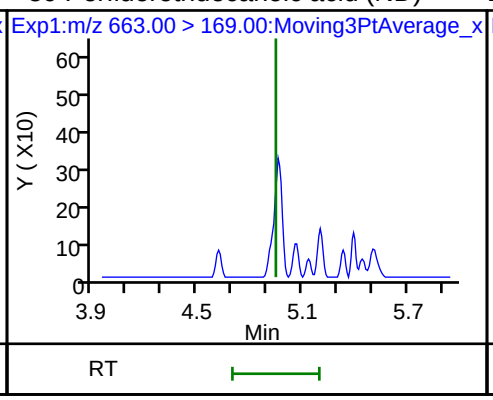
56 Perfluorododecanoic acid (ND)



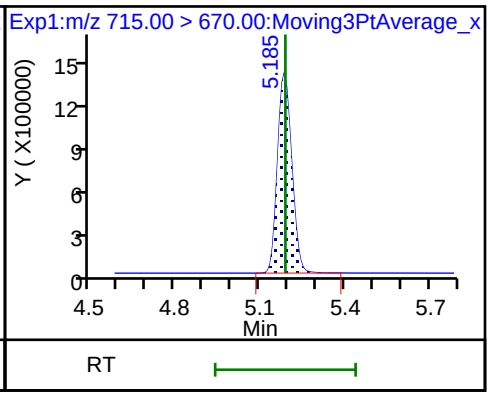
59 Perfluorotridecanoic acid (ND)



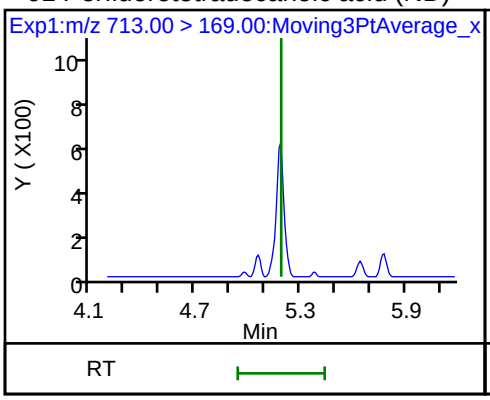
59 Perfluorotridecanoic acid (ND)



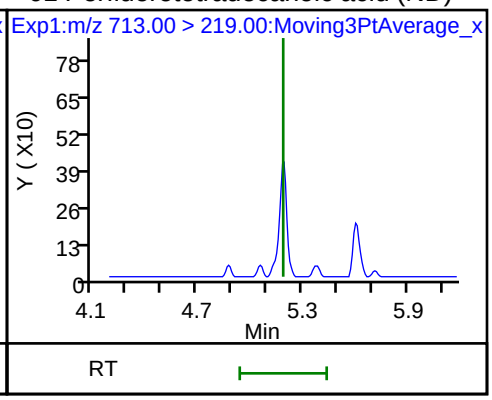
D 60 13C2 PFTeDA



61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

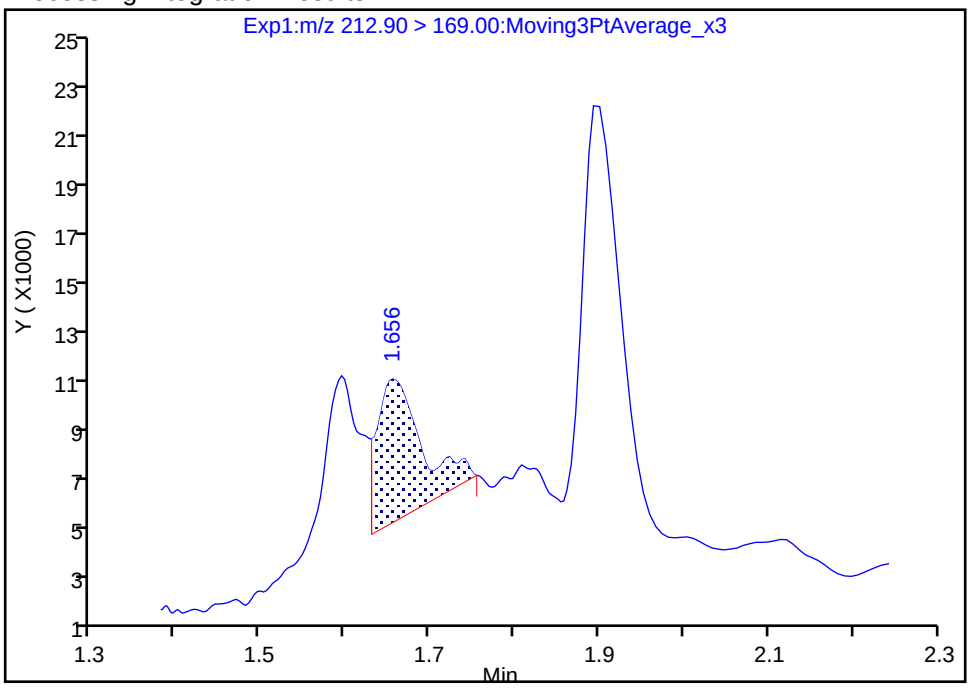
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

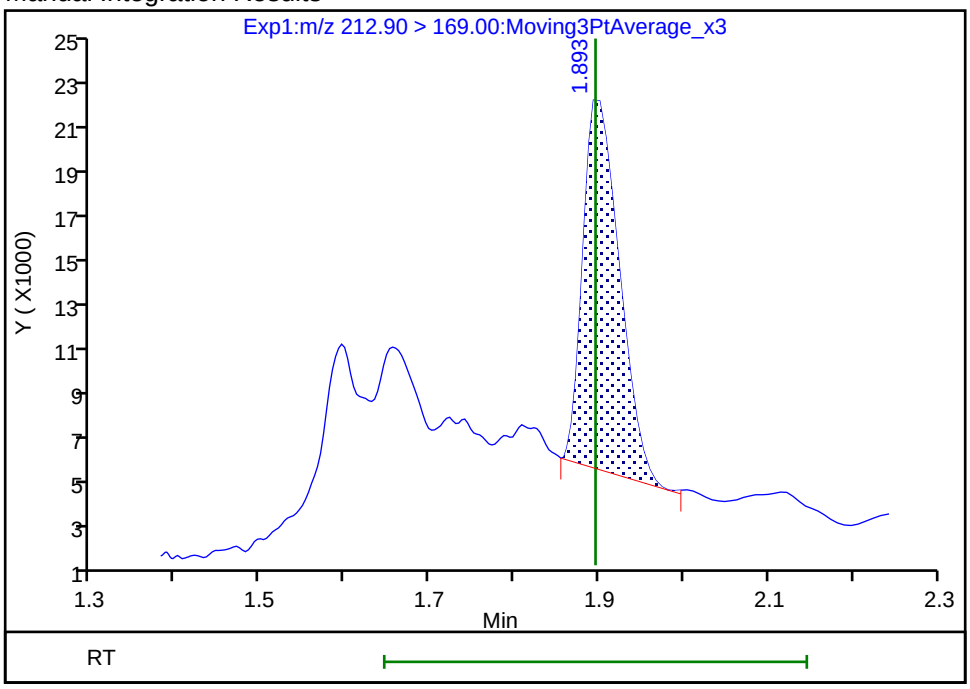
Processing Integration Results

RT: 1.66
Area: 20136
Amount: 0.009776
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 48873
Amount: 0.023728
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:11

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

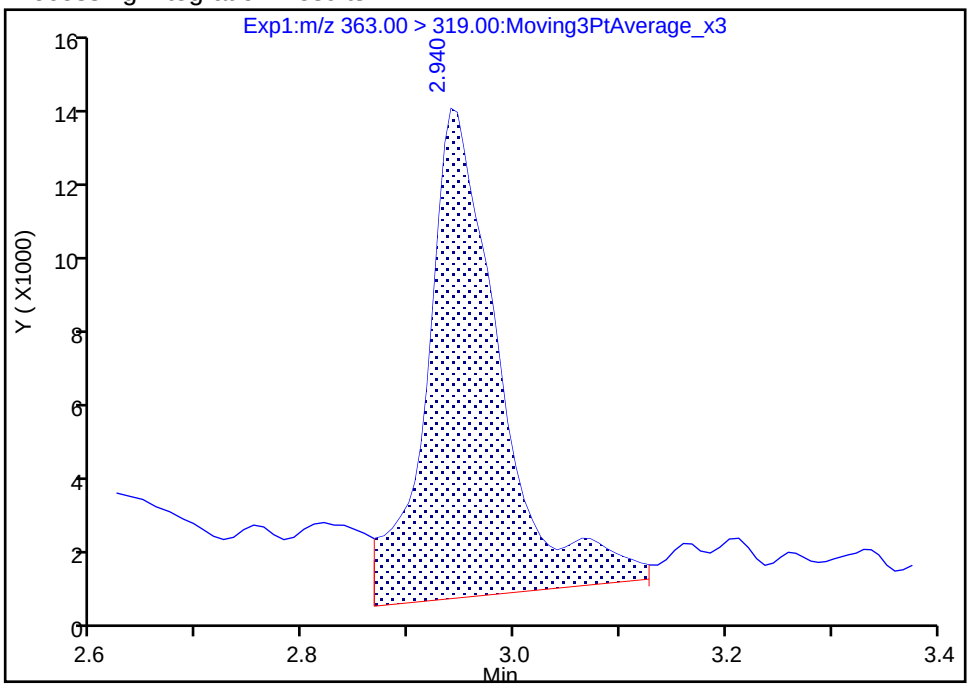
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

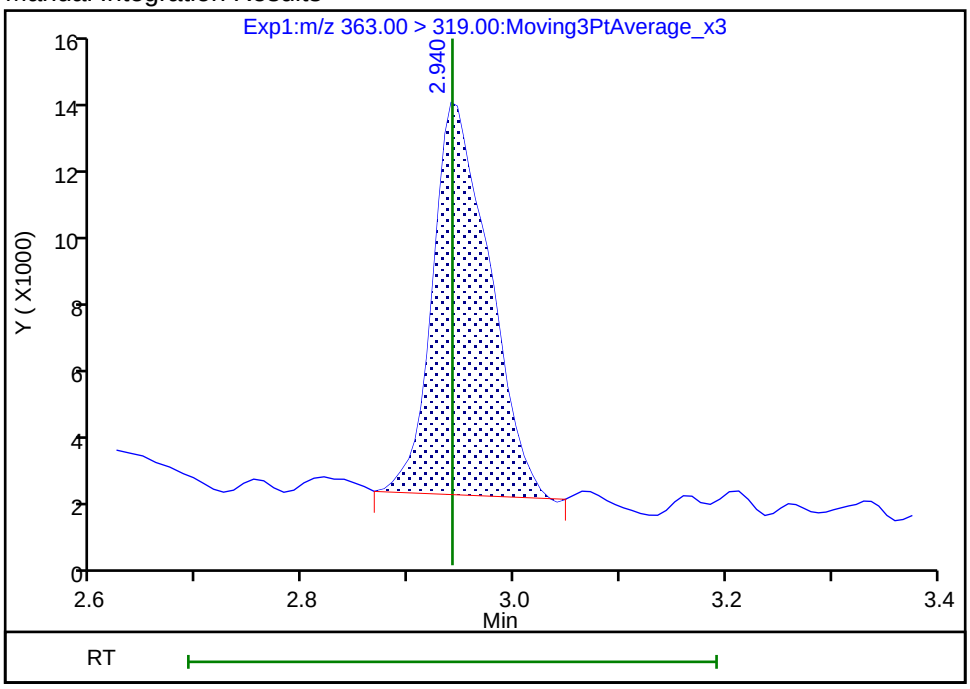
Processing Integration Results

RT: 2.94
Area: 59612
Amount: 0.019773
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 40876
Amount: 0.013559
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

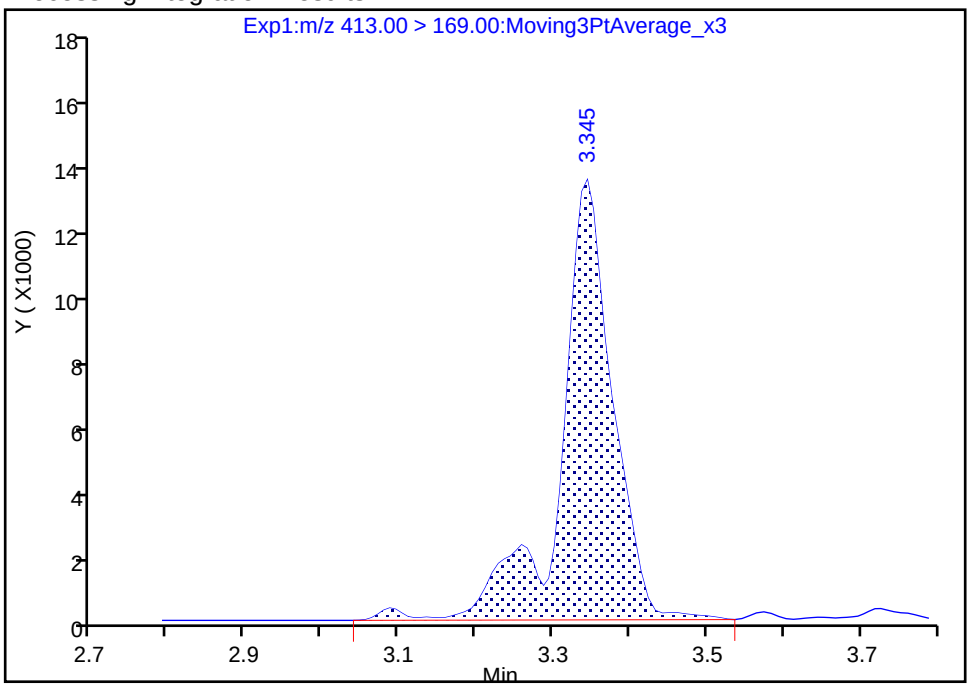
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

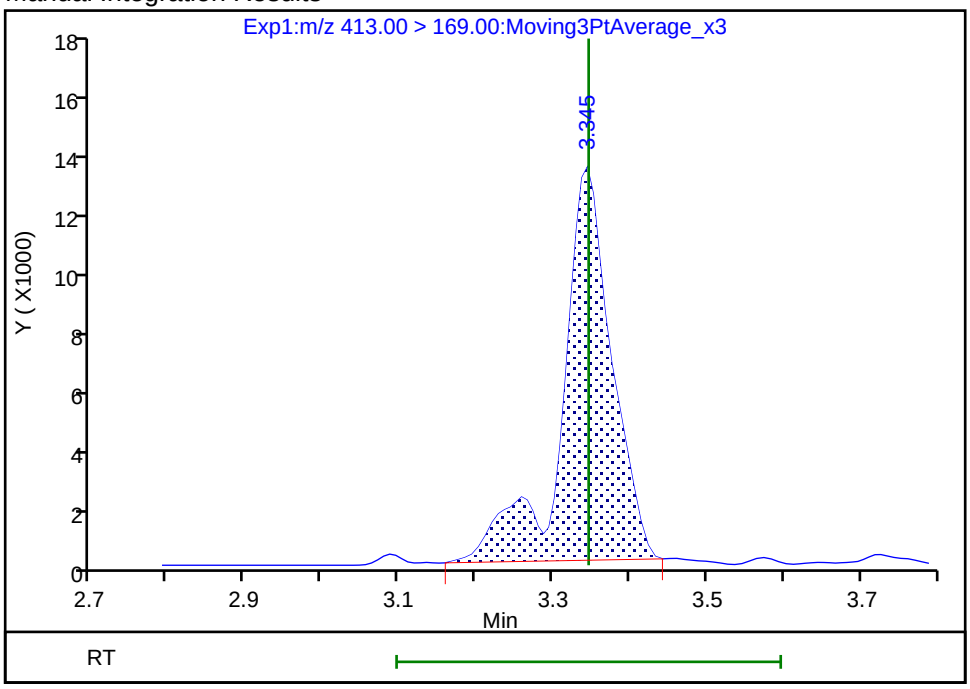
Processing Integration Results

RT: 3.34
Area: 63313
Amount: 0.053086
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 59382
Amount: 0.047831
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:51

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

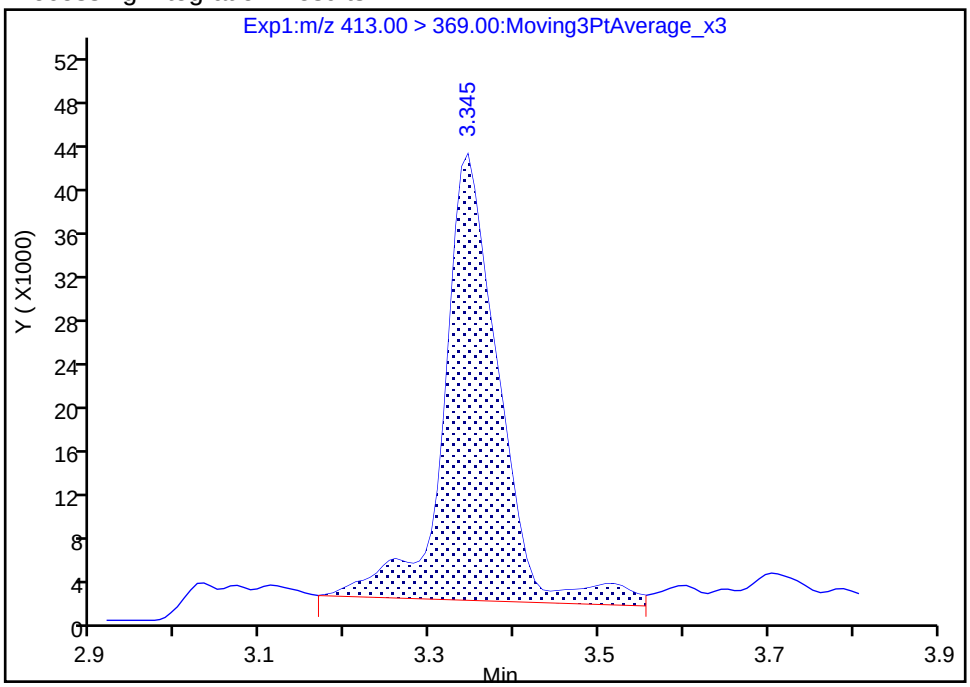
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

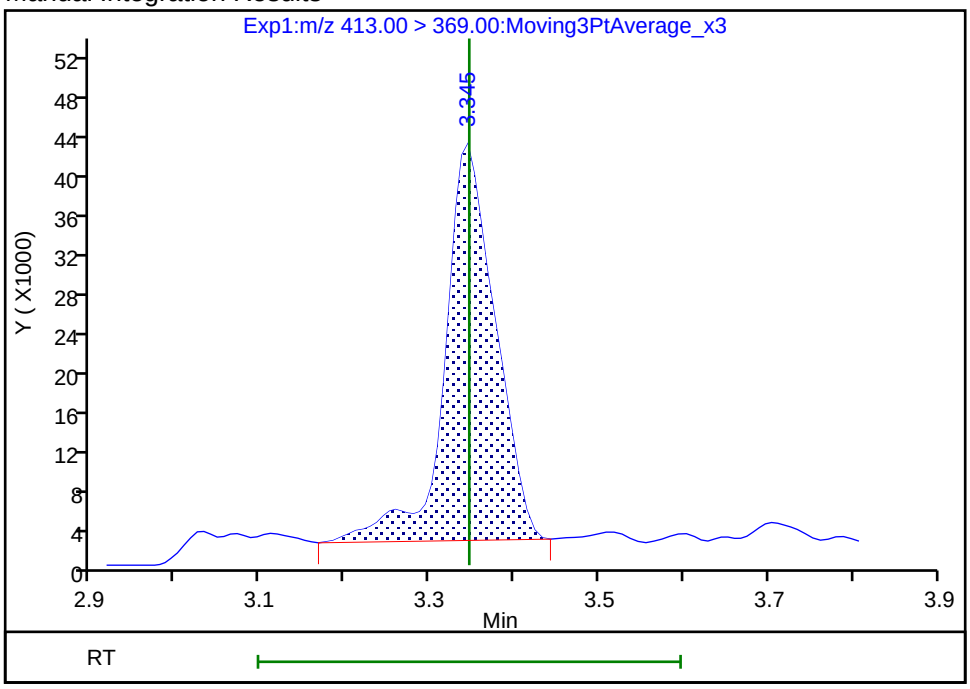
Processing Integration Results

RT: 3.34
Area: 186729
Amount: 0.053086
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 168244
Amount: 0.047831
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

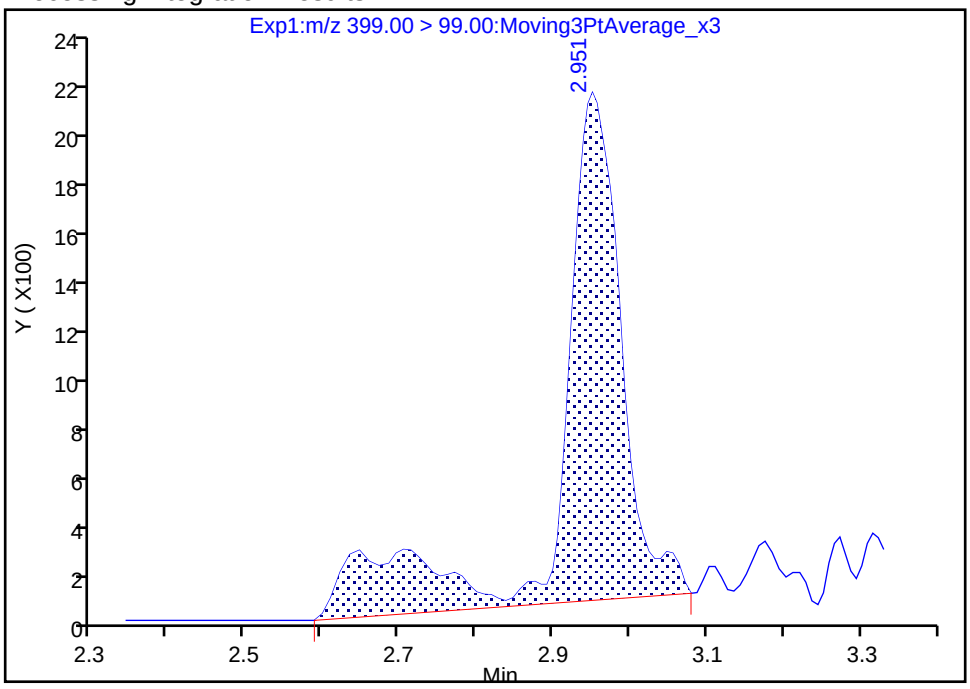
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

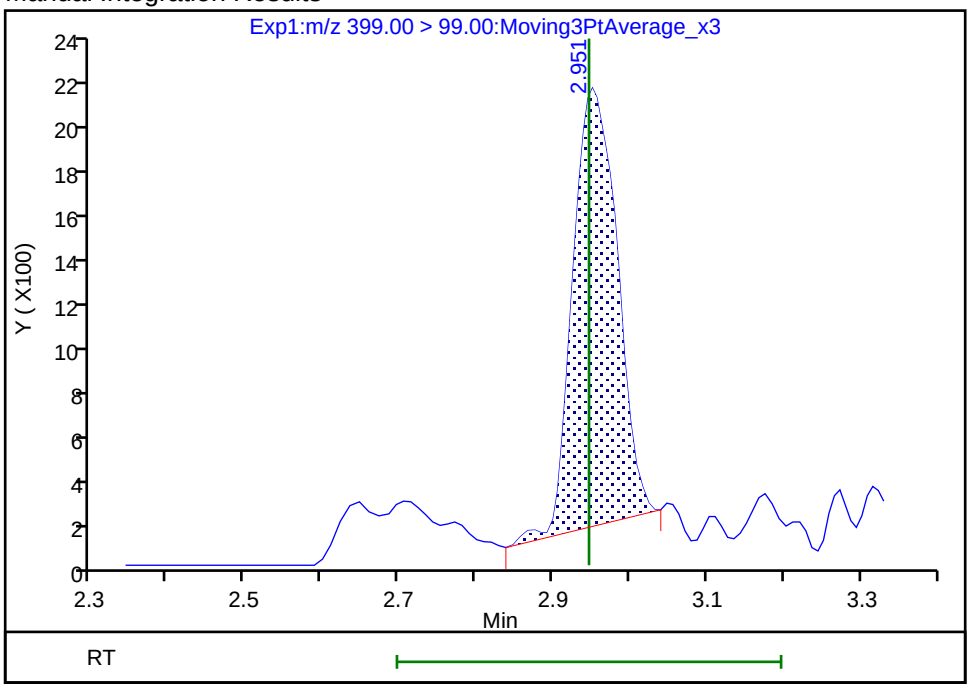
Processing Integration Results

RT: 2.95
Area: 11368
Amount: 0.013613
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 7749
Amount: 0.011278
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

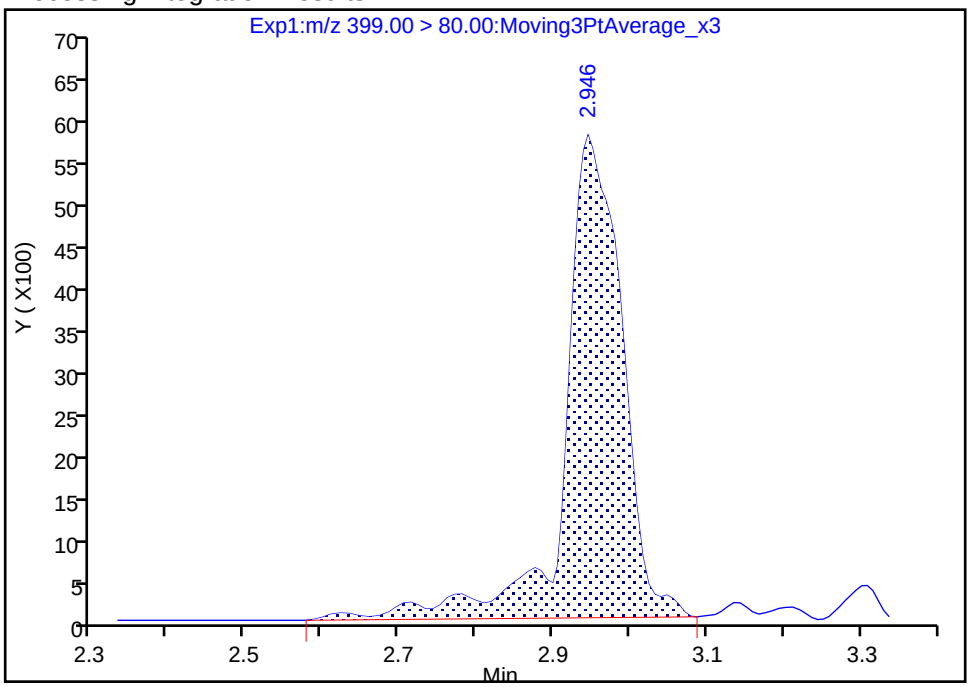
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

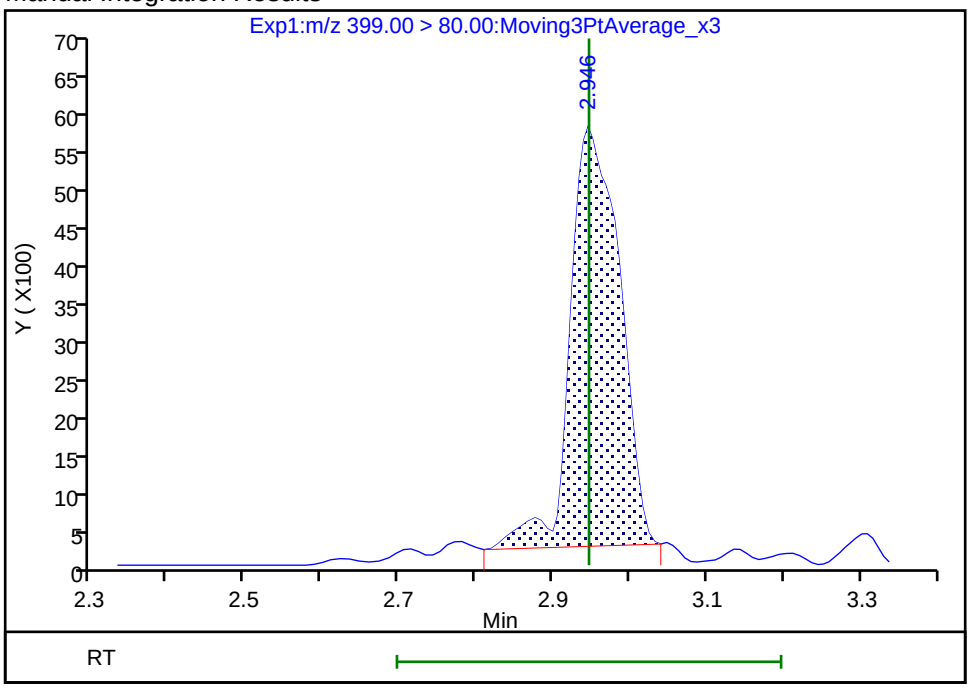
Processing Integration Results

RT: 2.95
Area: 30028
Amount: 0.013613
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 24877
Amount: 0.011278
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:36:42
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

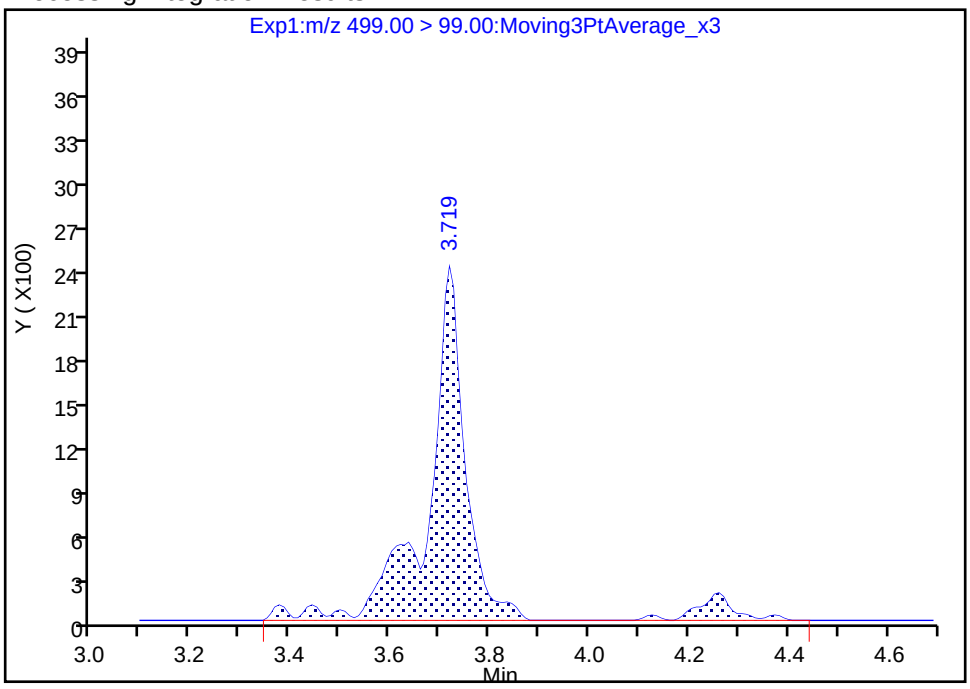
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

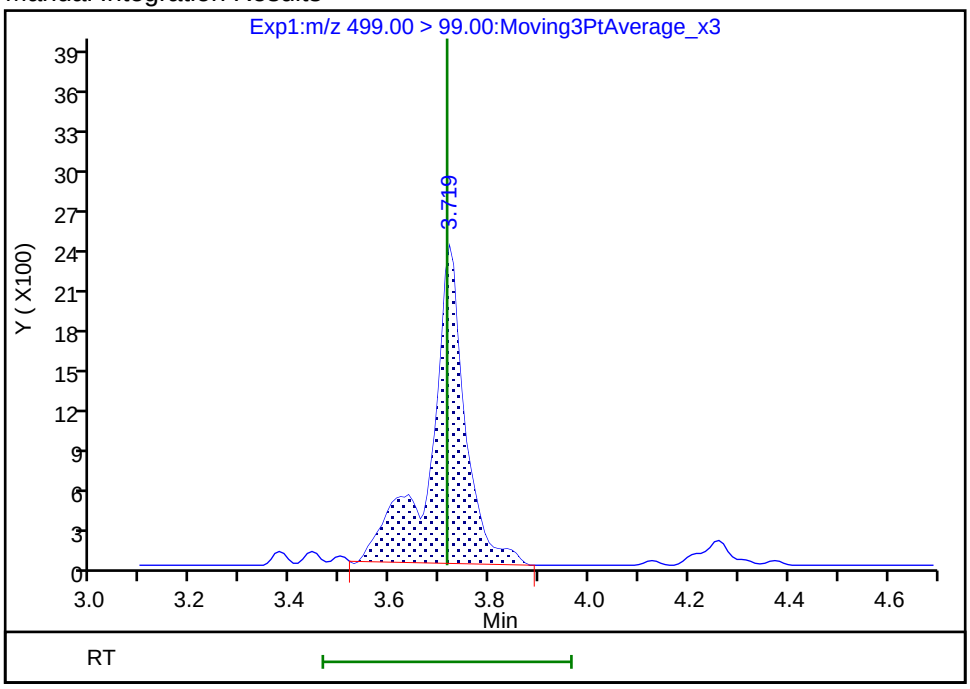
Processing Integration Results

RT: 3.72
Area: 13560
Amount: 0.034542
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 11700
Amount: 0.028795
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:37:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

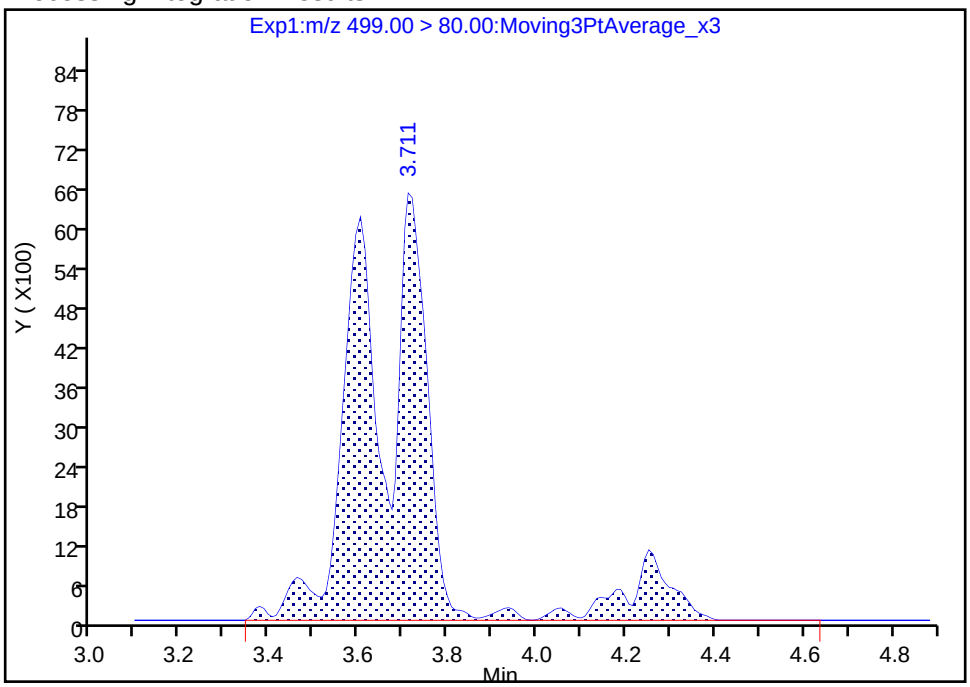
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._023.d				
Injection Date:	09-Oct-2019 01:21:22	Instrument ID:	A9		
Lims ID:	480-159547-A-7-C	Lab Sample ID:	320-159547-7		
Client ID:	RUSSO-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	13	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

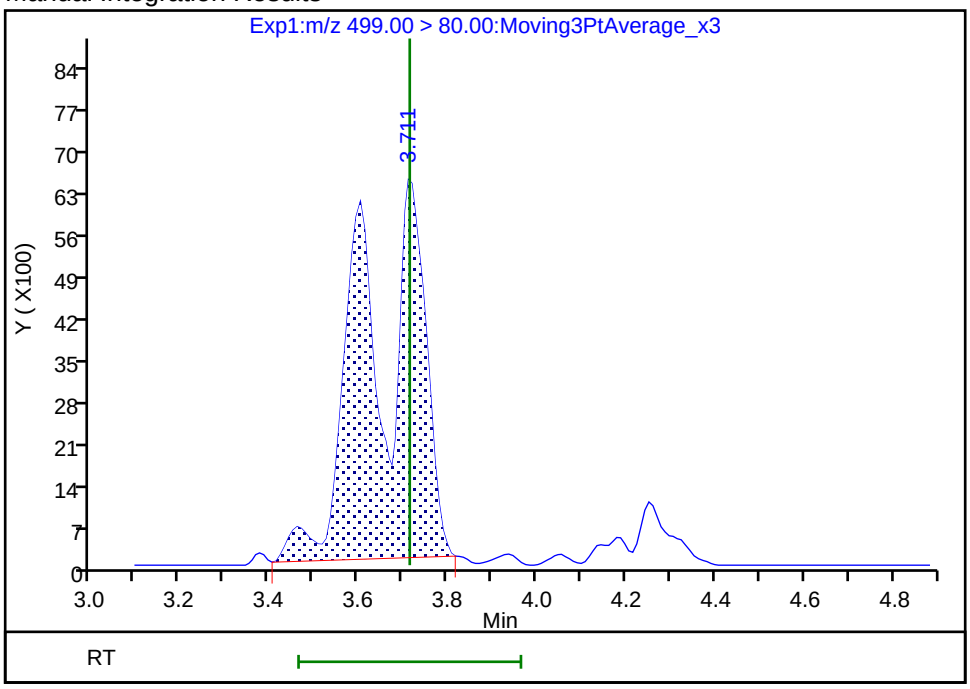
Processing Integration Results

RT: 3.71
Area: 69104
Amount: 0.034542
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 57607
Amount: 0.028795
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:37:07
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 2019.10.10_LLA_010.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:40

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.10(g) Date Analyzed: 10/10/2019 05:56

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.27		0.27	0.038
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.27		0.27	0.10
307-24-4	Perfluorohexanoic acid (PFHxA)	0.27		0.27	0.057
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.051	J	0.27	0.039
335-67-1	Perfluorooctanoic acid (PFOA)	0.18	J	0.27	0.12
375-95-1	Perfluorononanoic acid (PFNA)	0.060	J	0.27	0.049
335-76-2	Perfluorodecanoic acid (PFDA)	0.27		0.27	0.030
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.052	J I	0.27	0.049
307-55-1	Perfluorododecanoic acid (PFDoA)	0.27		0.27	0.091
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.27		0.27	0.069
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.27		0.27	0.073
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.27		0.27	0.034
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.27		0.27	0.042
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.27		0.27	0.047
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.58	J	0.68	0.27
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.27		0.27	0.053
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.27		0.27	0.11
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.71		2.71	0.53
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.71		2.71	0.50
27619-97-2	6:2 FTS	2.71		2.71	0.20
39108-34-4	8:2 FTS	2.71		2.71	0.34

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid Lab File ID: 2019.10.10_LLA_010.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:40

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.10(g) Date Analyzed: 10/10/2019 05:56

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 27.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	86		25-150
STL01893	13C5 PFPeA	83		25-150
STL00993	13C2 PFHxA	86		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	104		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	100		25-150
STL02118	d3-NMeFOSAA	74		25-150
STL02117	d5-NEtFOSAA	80		25-150
STL02279	M2-6:2 FTS	91		25-150
STL02280	M2-8:2 FTS	96		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d
Lims ID: 480-159547-A-8-B
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 10-Oct-2019 05:56:36 ALS Bottle#: 4 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-8-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:28:35 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:28:35
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.903	-0.010	0.566	4555006	2.16		86.2	3736	
D 4 13C5 PFPeA										
267.90 > 223.00	2.197	2.208	-0.011	0.657	3690527	2.09		83.5	2096	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.570	-0.013	0.764	4401609	2.16		86.5	2523	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.941	2.952	-0.011	1.000	45584	0.0188	Target=4.37		3.1	M
363.00 > 169.00	2.958	2.952	0.006	1.006	12675		3.60(2.18-6.55)		12.3	M
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.952	-0.011	0.879	5392834	2.31		92.6	3540	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.957	-0.010	0.881	3347427	2.24		94.5	4528	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.331	-0.006	0.994	703546	2.16		91.1	633	
* 25 13C2 PFOA										
415.00 > 370.00	3.347	3.353	-0.006		7166192	2.50			4741	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.347	3.353	-0.006	1.000	190794	0.0677	Target=3.01		15.3	M
413.00 > 169.00	3.347	3.353	-0.006	1.000	76759		2.49(1.51-4.52)		91.7	M
D 23 13C4 PFOA										
417.00 > 372.00	3.347	3.353	-0.006	1.000	6231601	2.32		92.8	4150	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.715	3.727	-0.012	1.000	365977	0.2124	Target=3.98		251	M
499.00 > 99.00	3.723	3.727	-0.004	1.002	90121		4.06(1.99-5.97)		143	M
D 27 13C4 PFOS										
503.00 > 80.00	3.715	3.727	-0.012	1.110	3835624	2.21		92.4	2508	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C5 PFNA										
468.00 > 423.00	3.730	3.744	-0.014	1.115	5628483	2.35		94.1	3766	
29 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.744	-0.014	1.000	51273	0.0221	Target=5.53		7.2	
463.00 > 169.00	3.738	3.744	-0.006	1.002	9298		5.51(2.77-8.30)		17.8	
D 36 13C2 PFDA										
515.00 > 470.00	4.087	4.100	-0.013	1.221	6463826	2.39		95.8	3183	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.087	4.100	-0.013	1.221	706214	2.31		96.5	714	
D 32 13C8 FOSA										
506.00 > 78.00	4.105	4.118	-0.013	1.227	2237196	2.50		99.8	1939	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.114	4.118	-0.004	1.002	8975	0.003651			19.2	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.248	4.252	-0.004	1.269	2370728	1.86		74.5	1539	
D 42 13C2 PFUnA										
565.00 > 520.00	4.405	4.409	-0.003	1.316	5624372	2.44		97.7	5304	
43 Perfluoroundecanoic acid										R
563.00 > 519.00	4.405	4.417	-0.012	1.000	33979	0.0192	Target=9.81		11.7	R
563.00 > 169.00	4.423	4.417	0.006	1.004	2153		15.78(4.91-14.72)		7.1	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.405	4.417	-0.012	1.316	2195106	2.01		80.2	1569	
D 55 13C2 PFDoA										
615.00 > 570.00	4.690	4.702	-0.012	1.401	6196655	2.44		97.8	2900	
59 Perfluorotridecanoic acid										R
663.00 > 619.00	4.940	4.960	-0.020	1.053	11193	0.007006	Target=6.04		10.0	R
663.00 > 169.00	4.940	4.960	-0.020	1.053	846		13.23(3.02-9.06)		5.0	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.182	5.194	-0.012	1.549	4686656	2.61		104	4701	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 10-Oct-2019 14:28:36 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d

Injection Date: 10-Oct-2019 05:56:36 Instrument ID: A9

Lims ID: 480-159547-A-8-B Lab Sample ID: 320-159547-8

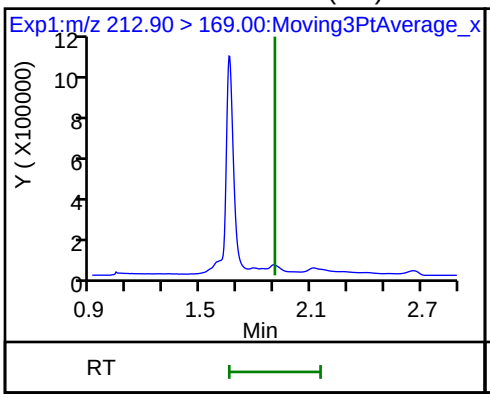
Client ID: RUSSO-TS-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 4 Worklist Smp#: 7

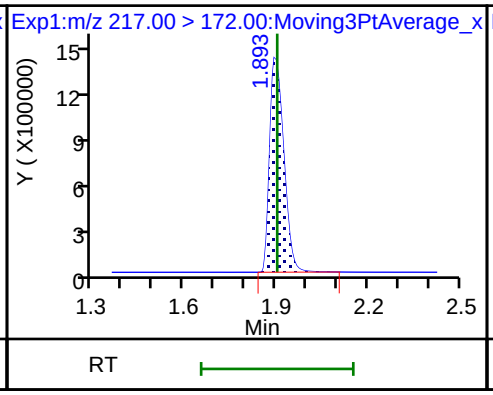
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

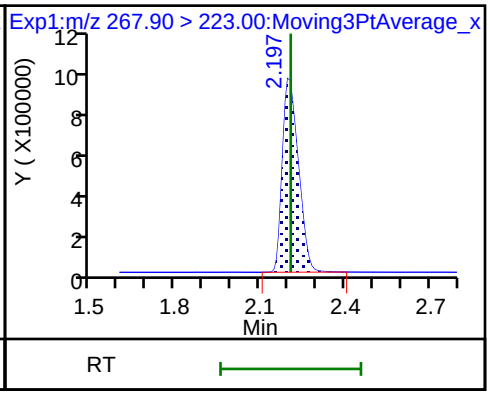
2 Perfluorobutanoic acid (ND)



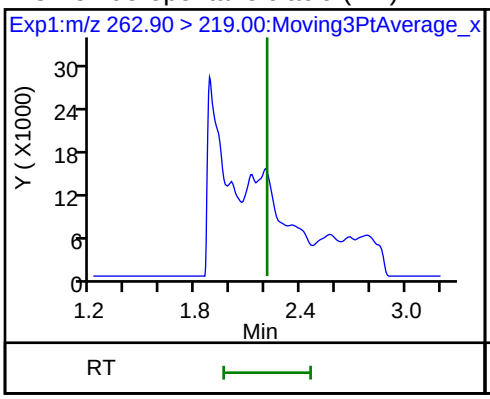
D 1 13C4 PFBA



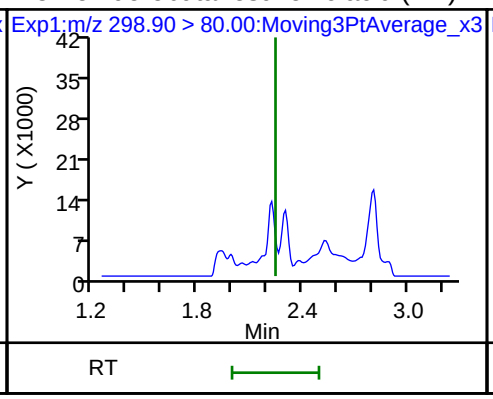
D 4 13C5 PFPeA



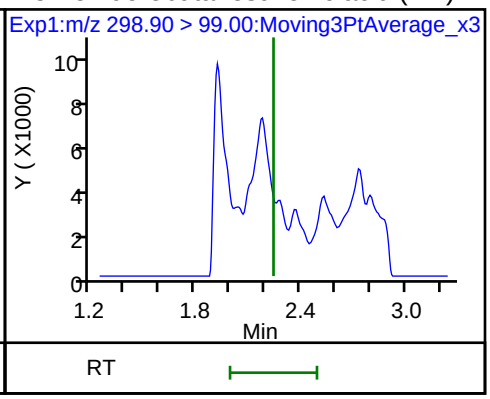
3 Perfluoropentanoic acid (ND)



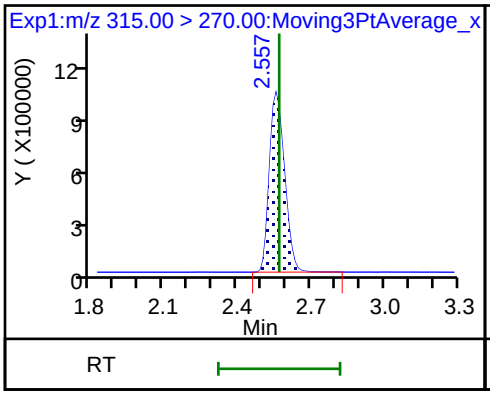
5 Perfluorobutanesulfonic acid (ND)



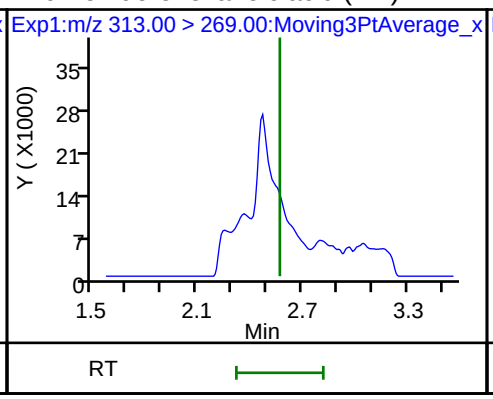
5 Perfluorobutanesulfonic acid (ND)



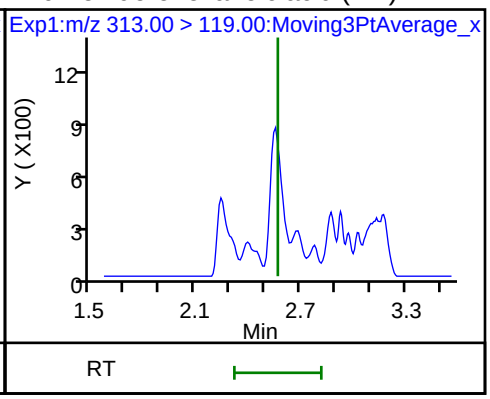
D 9 13C2 PFHxA



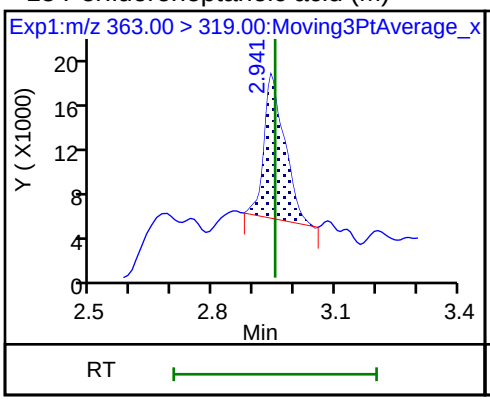
10 Perfluorohexanoic acid (ND)



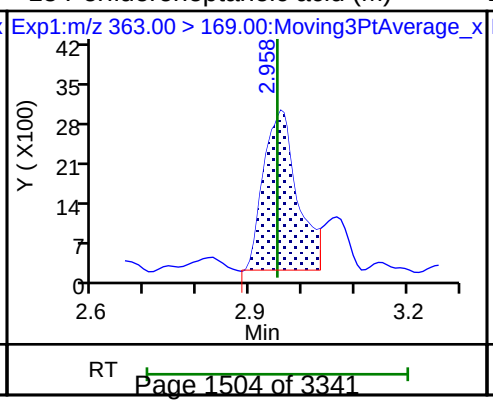
10 Perfluorohexanoic acid (ND)



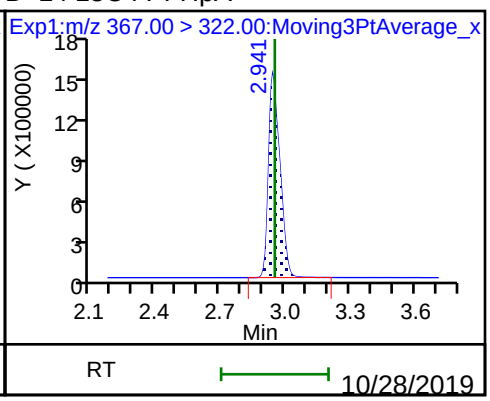
15 Perfluoroheptanoic acid (M)



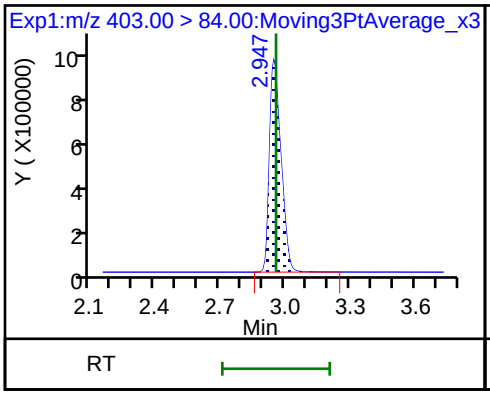
15 Perfluoroheptanoic acid (M)



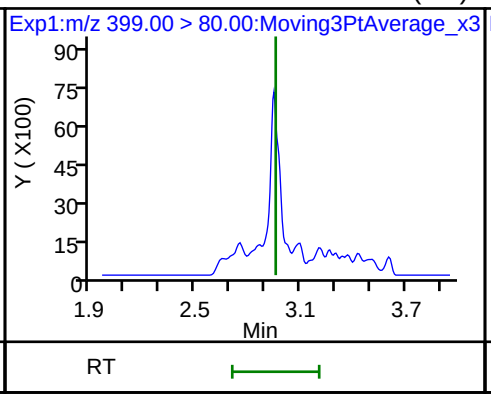
D 14 13C4 PFHpA



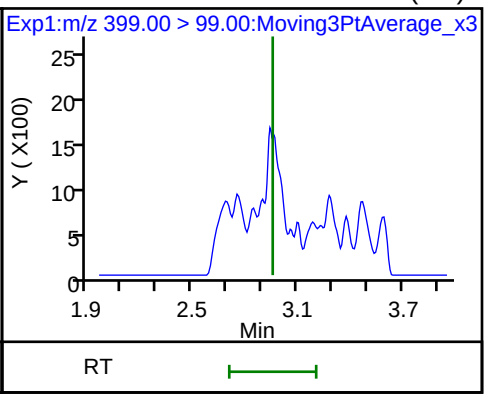
D 16 18O2 PFHxS



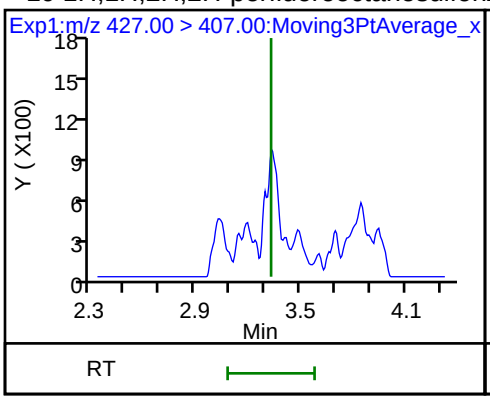
17 Perfluorohexanesulfonic acid (ND)



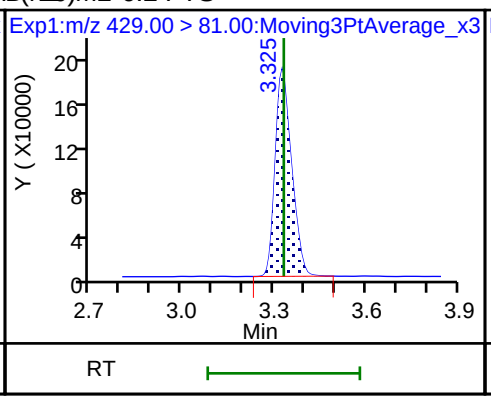
17 Perfluorohexanesulfonic acid (ND)



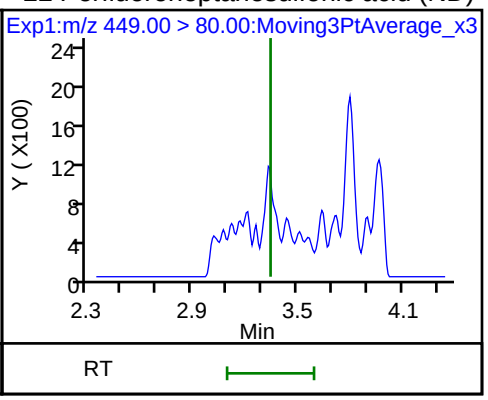
19 1H,1H,2H,2H-perfluorooctanesulfonic (M2)



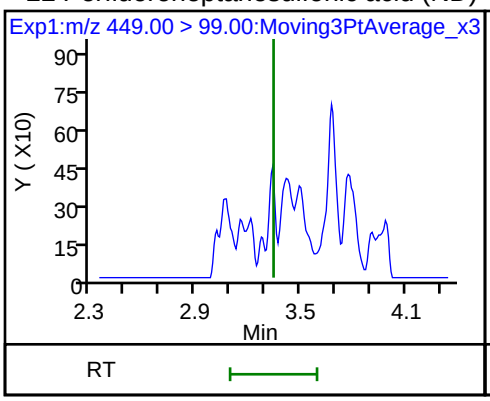
D 20 M2-6:2 FTS



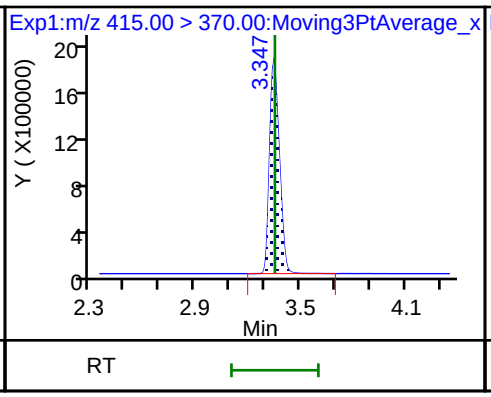
22 Perfluoroheptanesulfonic acid (ND)



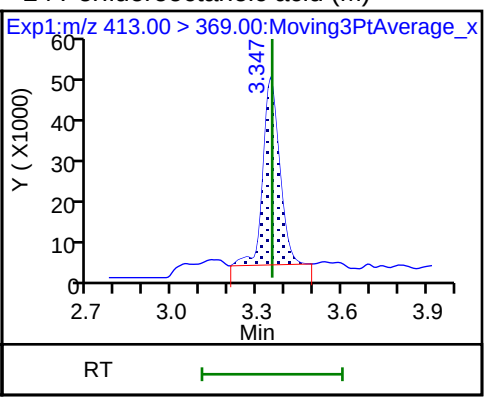
22 Perfluoroheptanesulfonic acid (ND) *



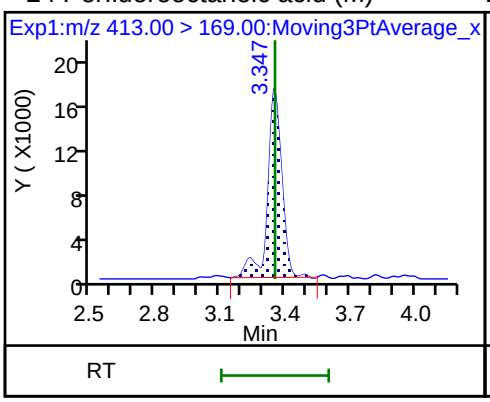
25 13C2 PFOA



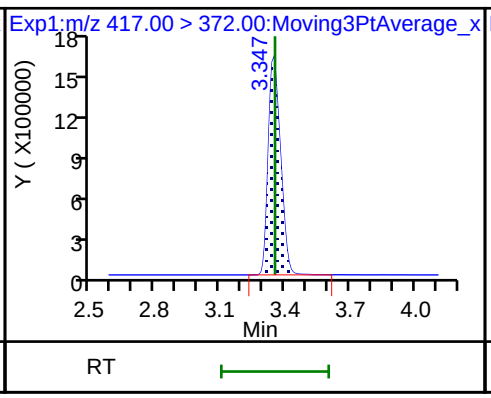
24 Perfluorooctanoic acid (M)



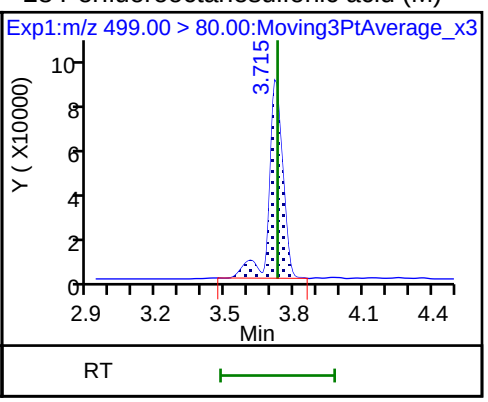
24 Perfluorooctanoic acid (M)



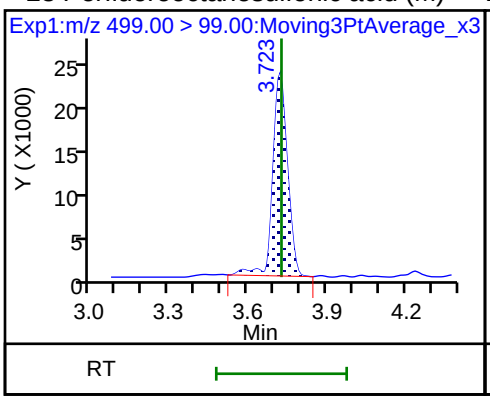
D 23 13C4 PFOA



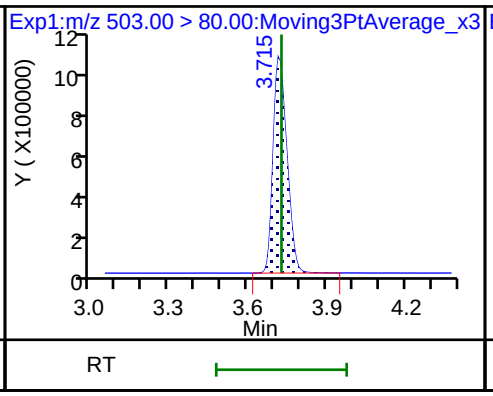
28 Perfluorooctanesulfonic acid (M)



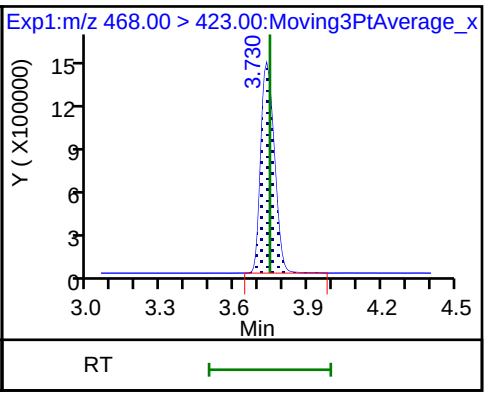
28 Perfluorooctanesulfonic acid (M)



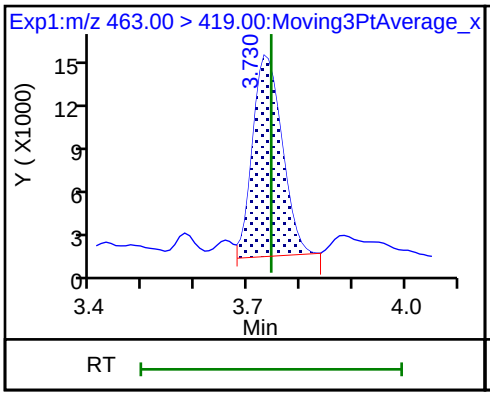
D 27 13C4 PFOS



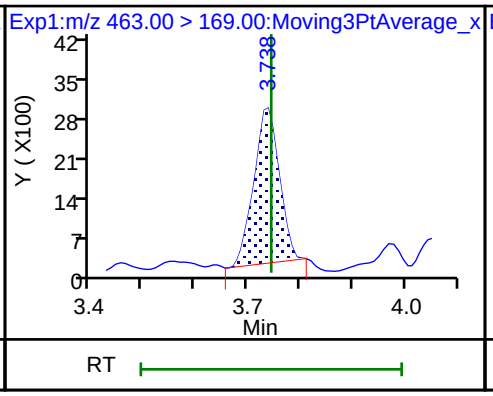
D 30 13C5 PFNA



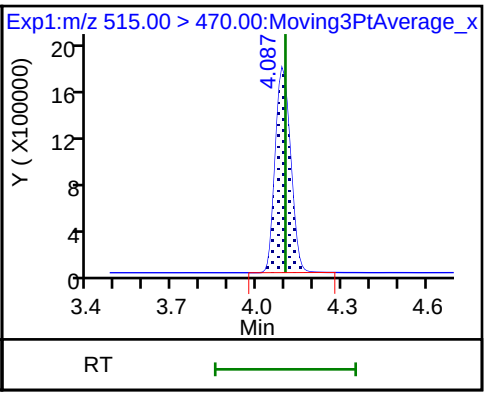
29 Perfluorononanoic acid



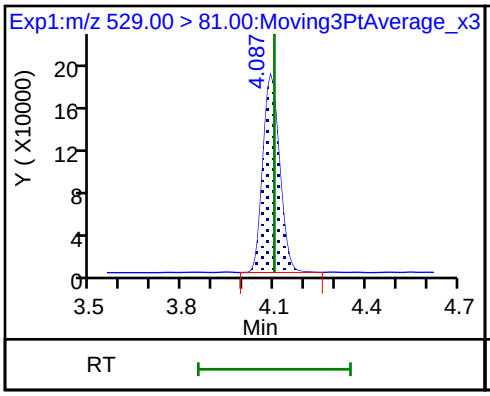
29 Perfluorononanoic acid



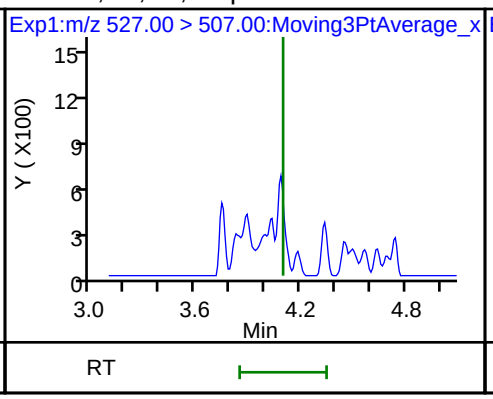
D 36 13C2 PFDA



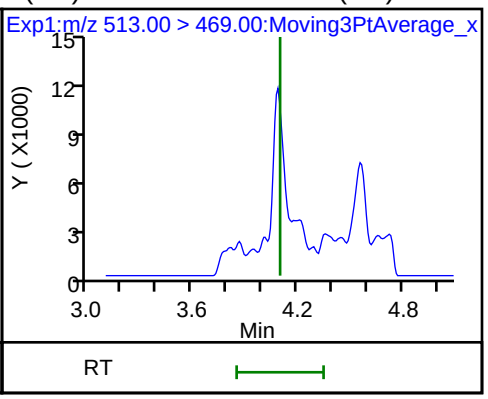
D 35 M2-8:2 FTS



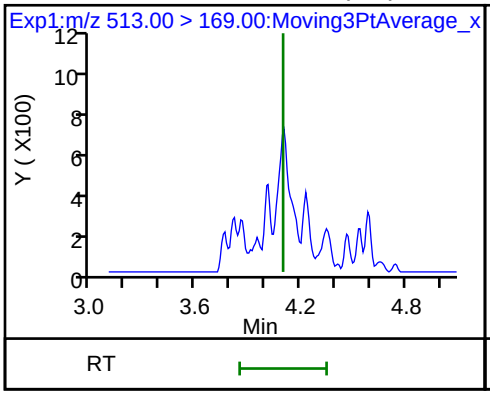
38 1H,1H,2H,2H-perfluorodecanesulfoni



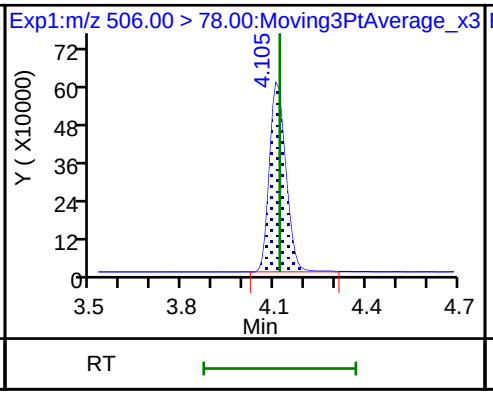
perfluorodecanoic acid (ND)



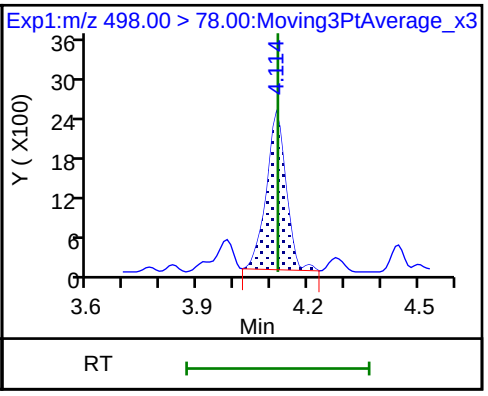
37 Perfluorodecanoic acid (ND)



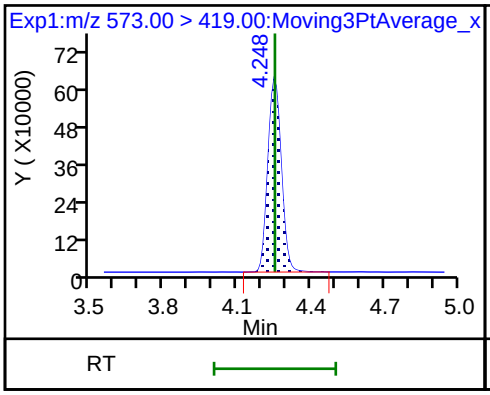
D 32 13C8 FOSA



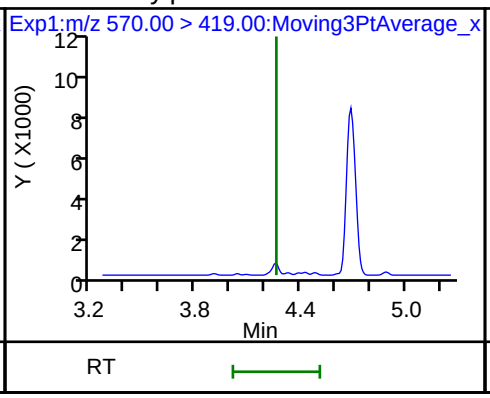
33 Perfluorooctanesulfonamide



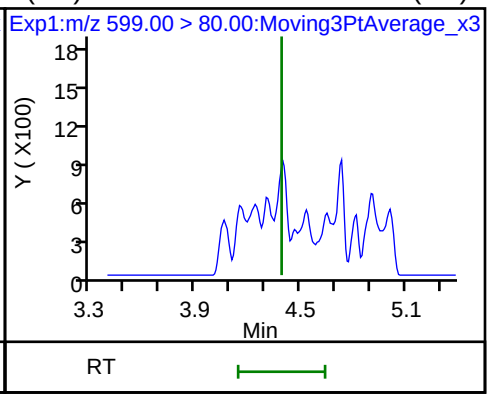
D 39 d3-NMeFOSAA



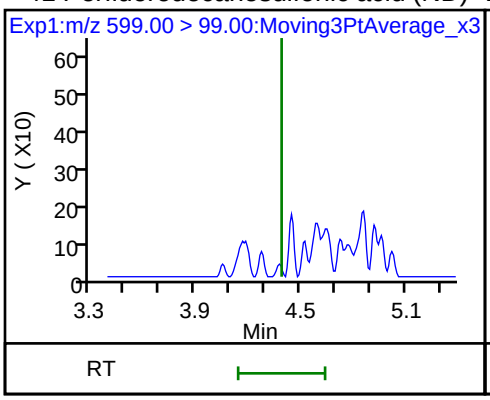
40 N-methylperfluorooctanesulfonamido (ND)



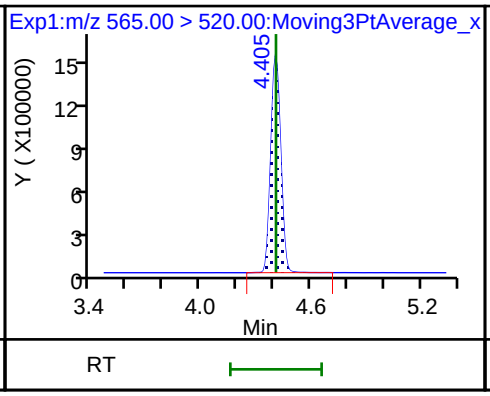
41 Perfluorodecanesulfonic acid (ND)



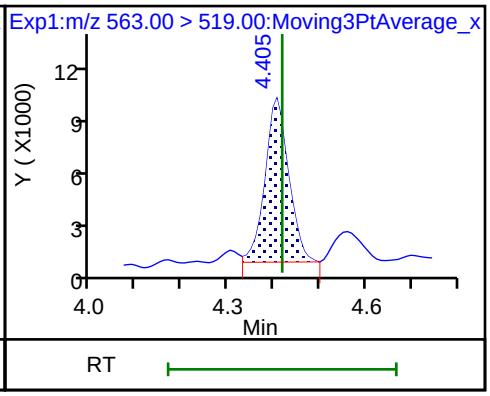
41 Perfluorodecanesulfonic acid (ND)



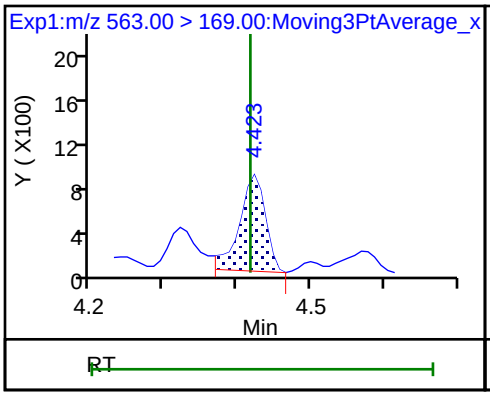
D 42 13C2 PFUnA



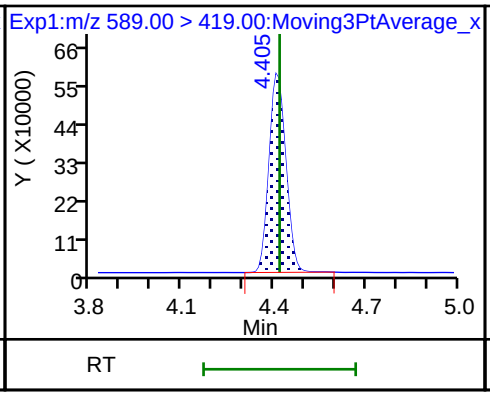
43 Perfluoroundecanoic acid



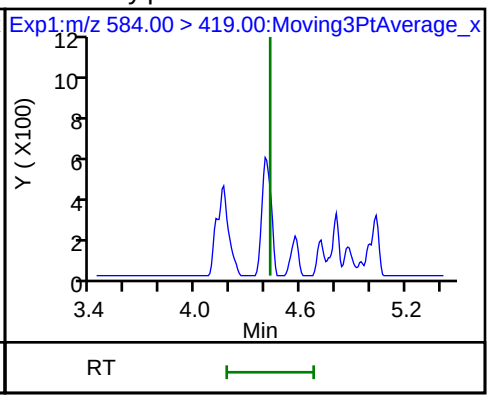
43 Perfluoroundecanoic acid



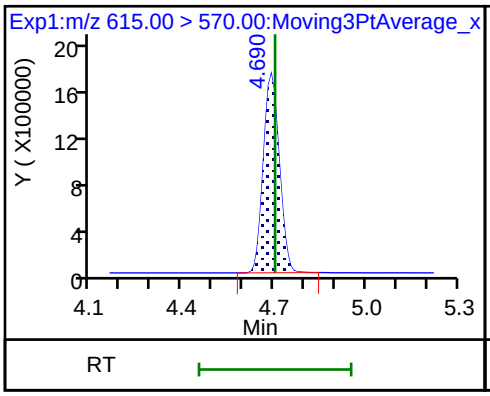
D 44 d5-NEtFOSAA



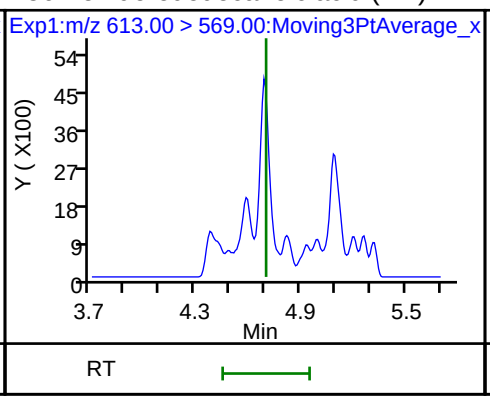
45 N-ethylperfluorooctanesulfonamidoa (ND)



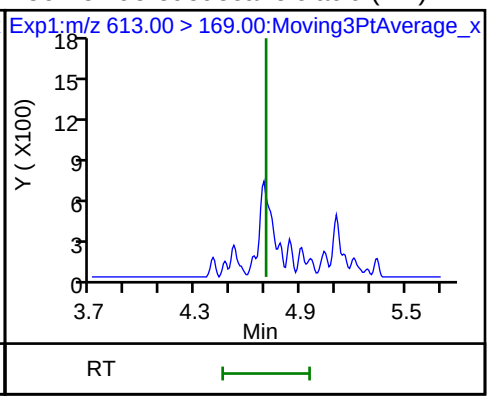
D 55 13C2 PFDoA



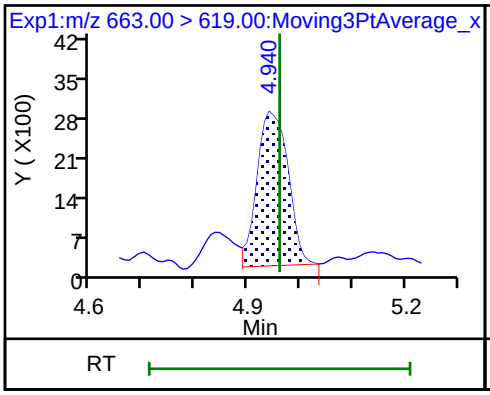
56 Perfluorododecanoic acid (ND)



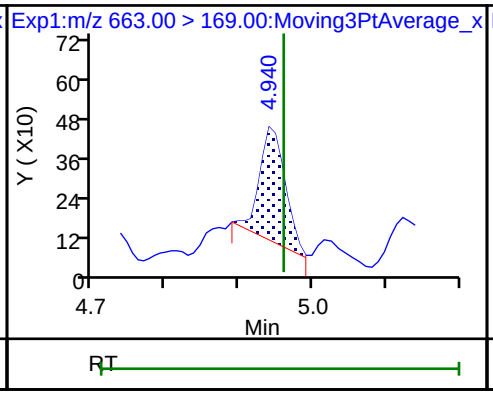
56 Perfluorododecanoic acid (ND)



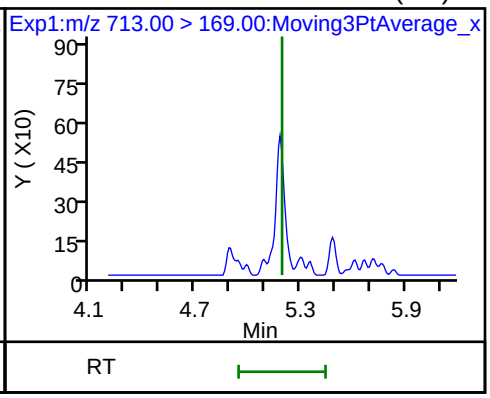
59 Perfluorotridecanoic acid



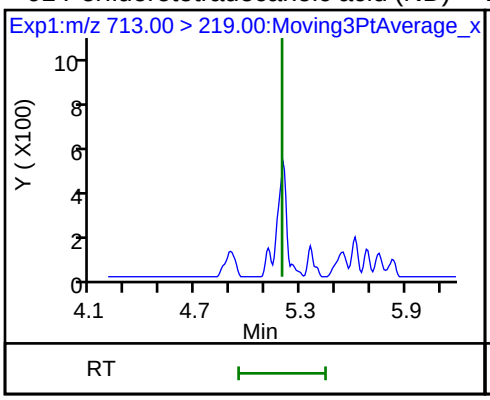
59 Perfluorotridecanoic acid



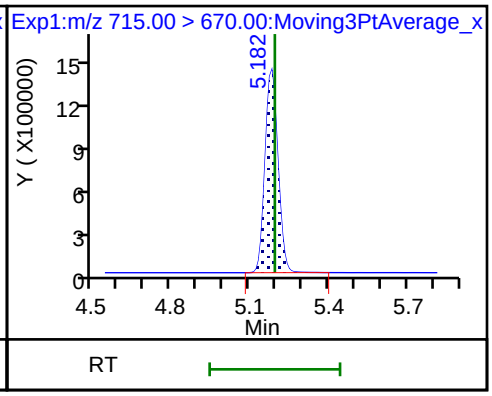
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Eurofins TestAmerica, Sacramento

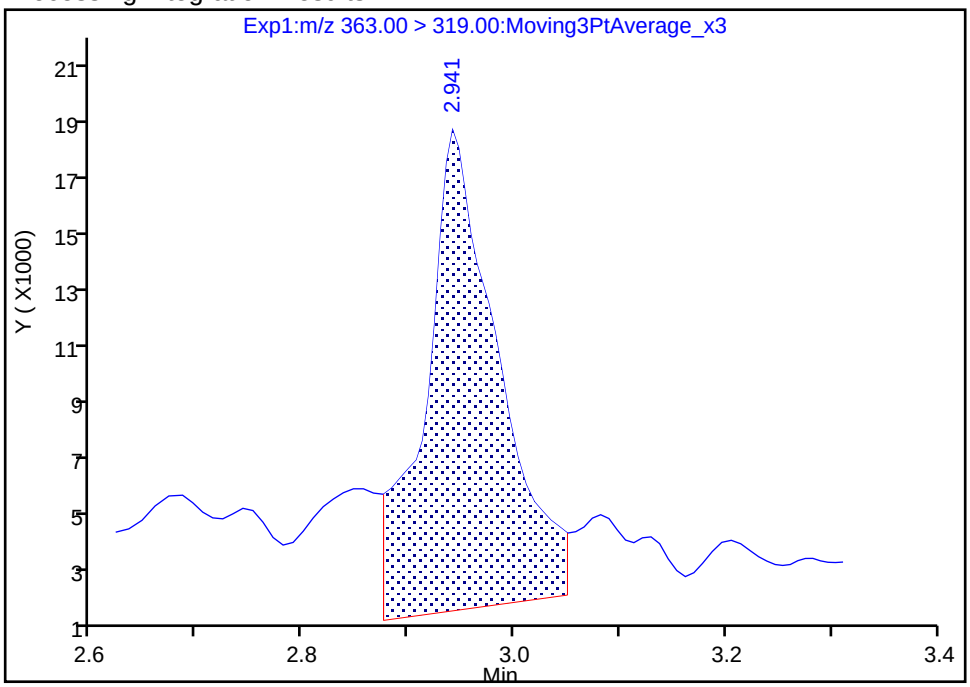
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

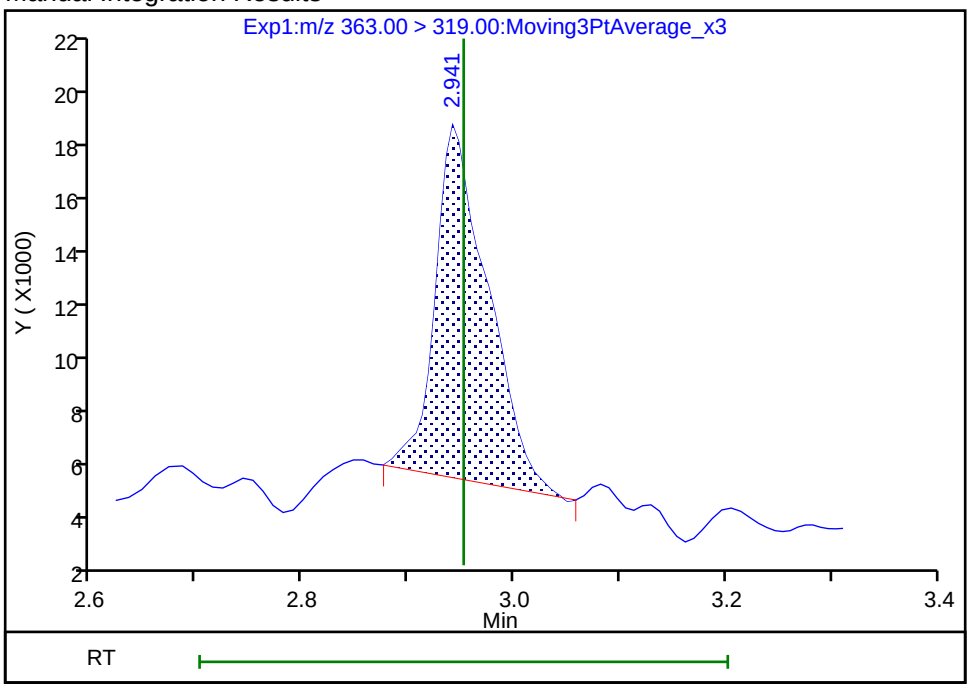
Processing Integration Results

RT: 2.94
Area: 80491
Amount: 0.033224
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 45584
Amount: 0.018815
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:26:20
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

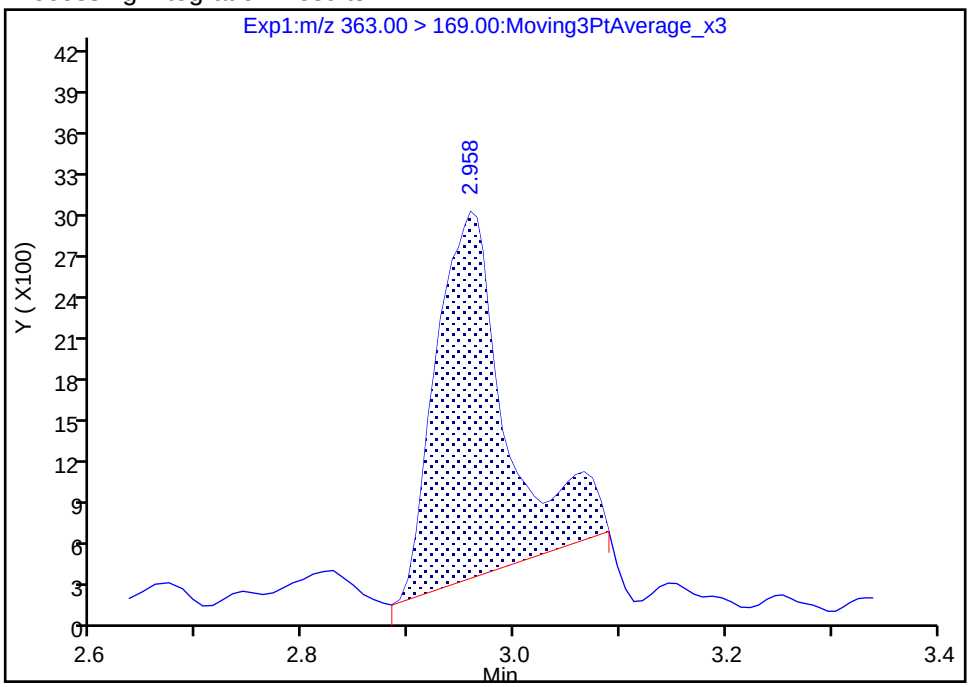
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

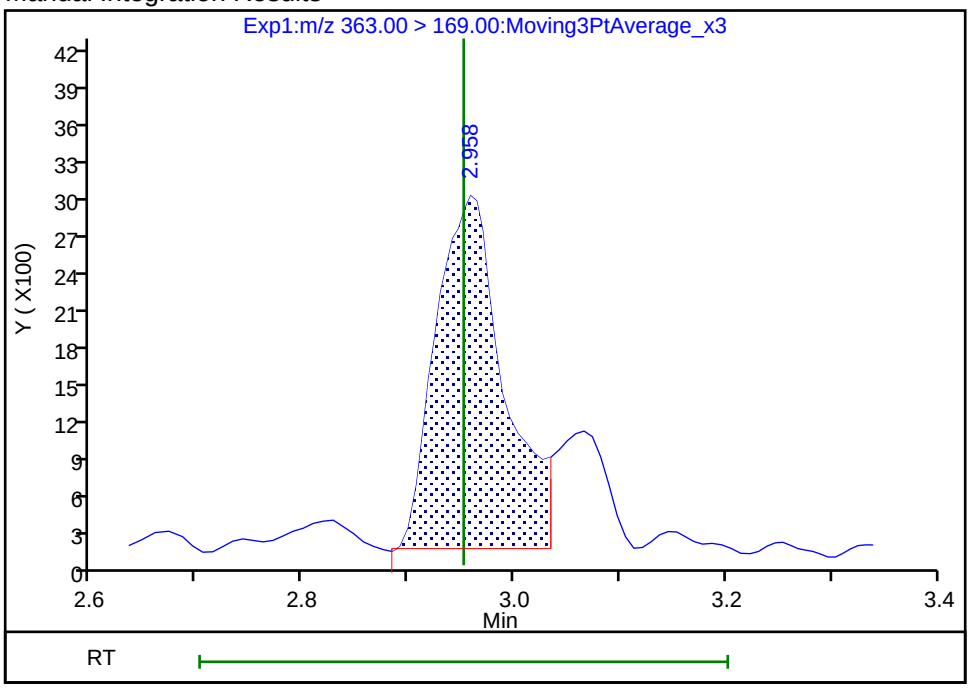
Processing Integration Results

RT: 2.96
Area: 12386
Amount: 0.033224
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 12675
Amount: 0.018815
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:26:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

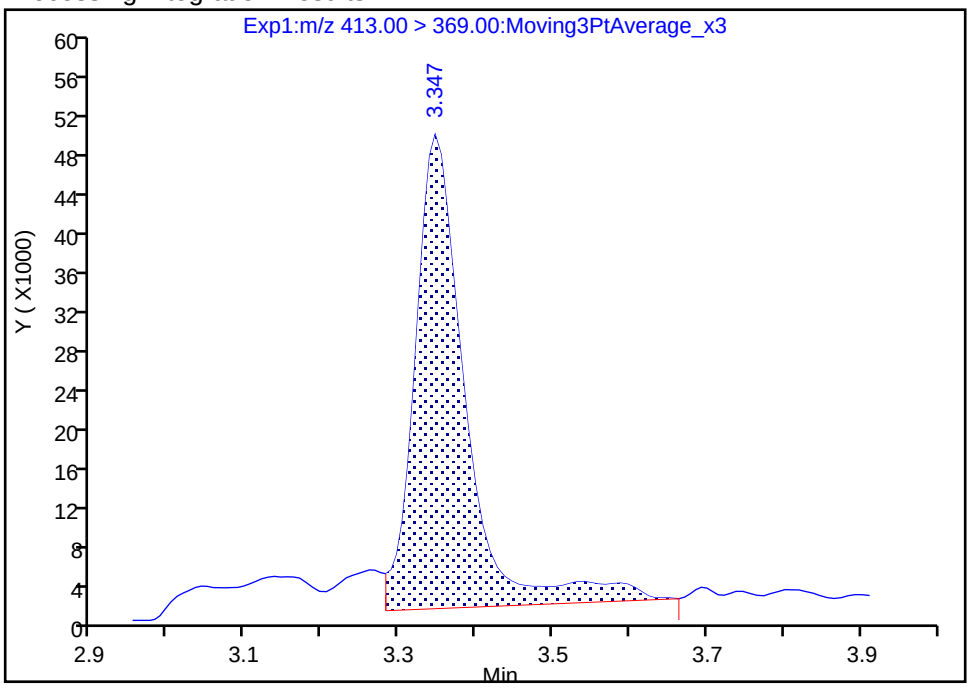
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

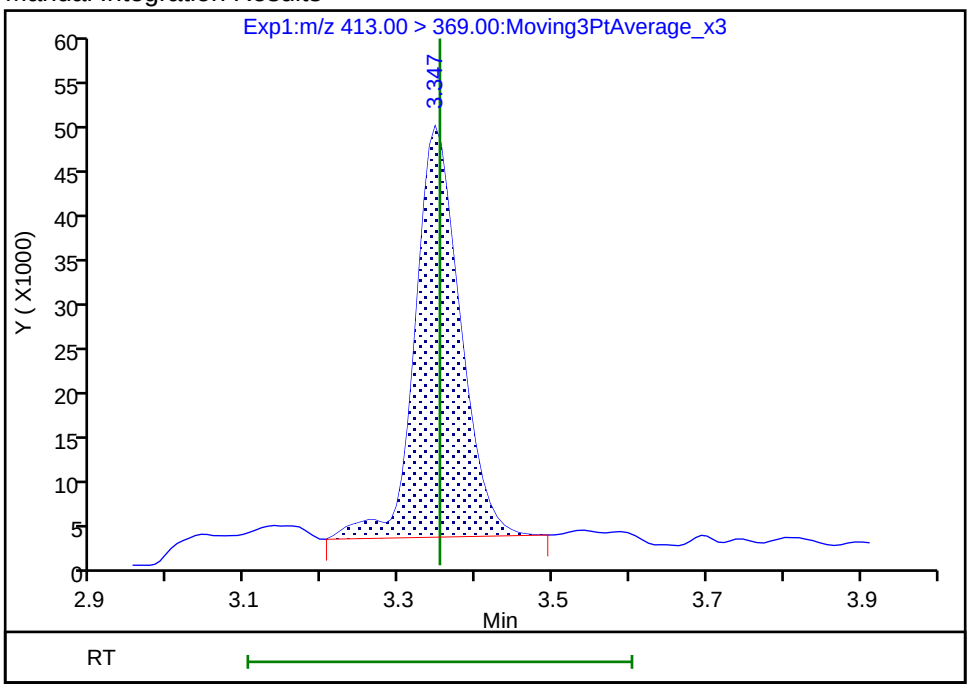
Processing Integration Results

RT: 3.35
Area: 222511
Amount: 0.078957
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 190794
Amount: 0.067702
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:27:24

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

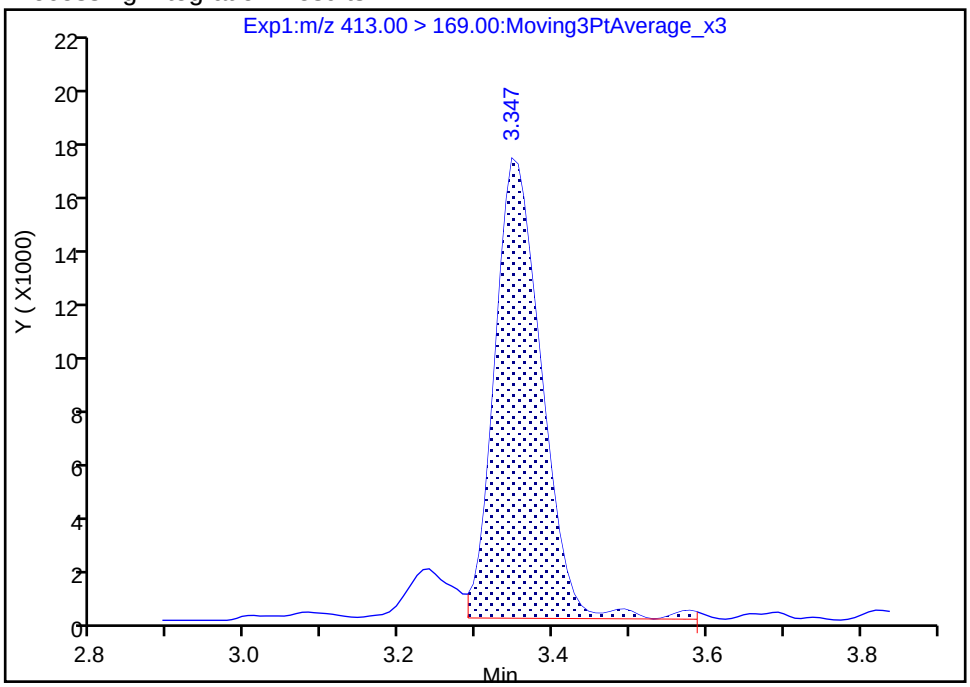
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

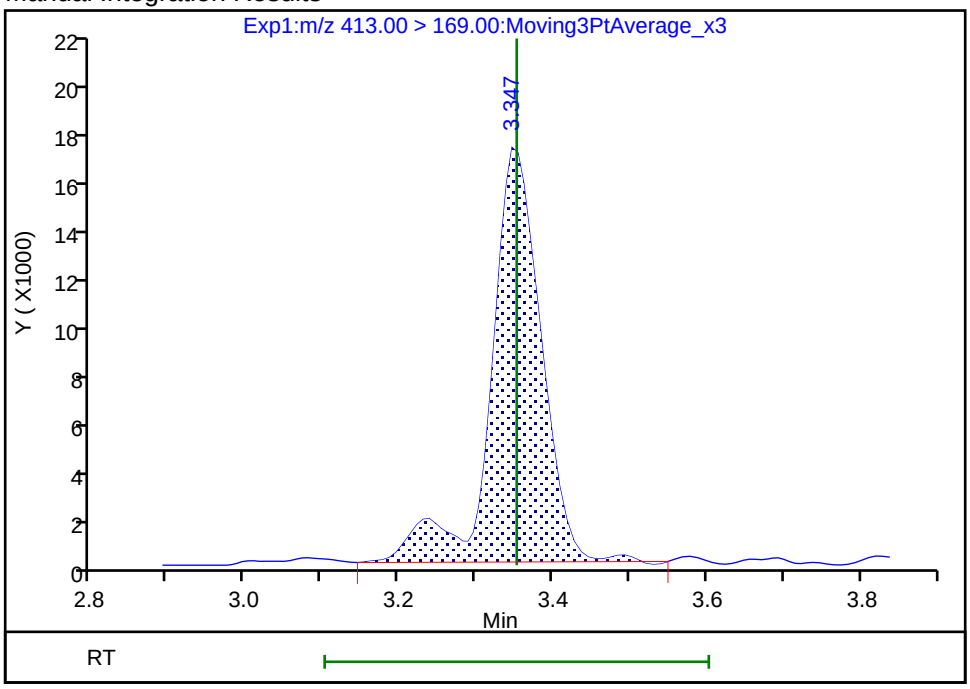
Processing Integration Results

RT: 3.35
Area: 71241
Amount: 0.078957
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 76759
Amount: 0.067702
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:27:30
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

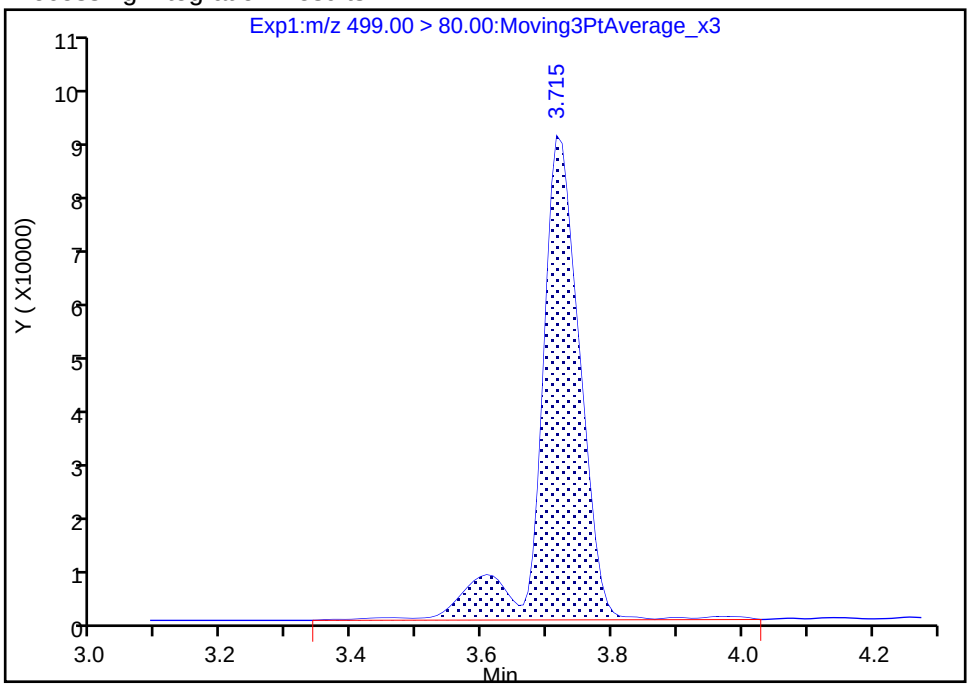
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

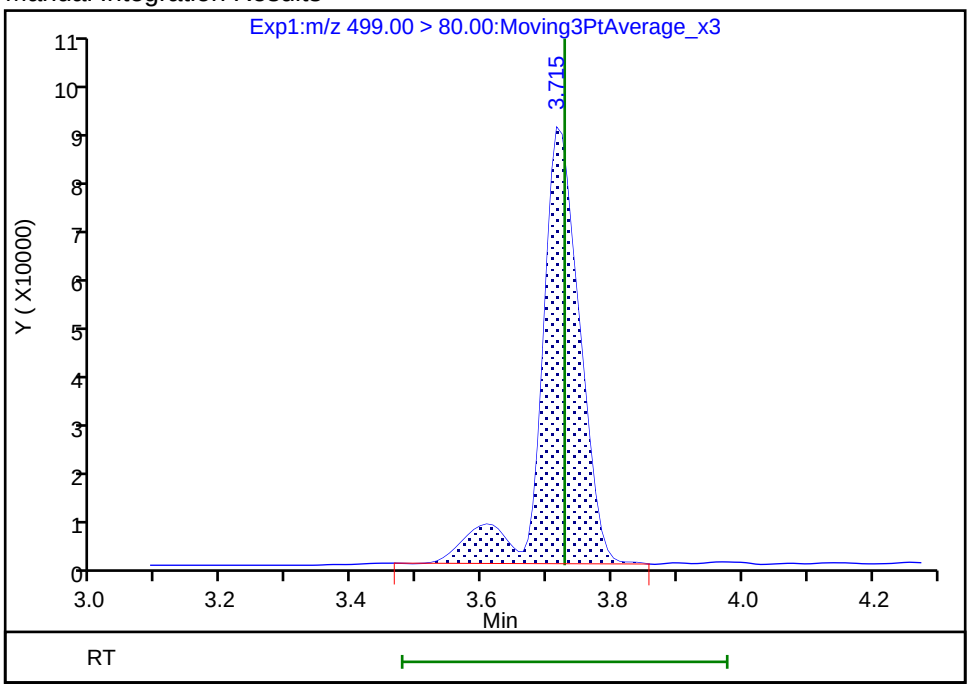
Processing Integration Results

RT: 3.71
Area: 377043
Amount: 0.218851
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 365977
Amount: 0.212428
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:27:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

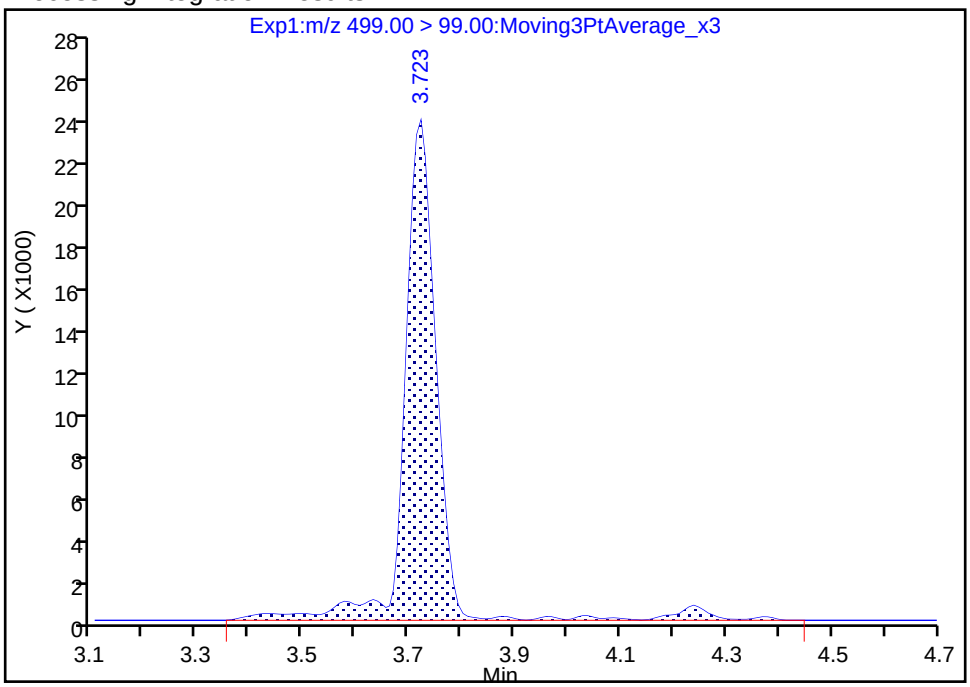
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_010.d				
Injection Date:	10-Oct-2019 05:56:36	Instrument ID:	A9		
Lims ID:	480-159547-A-8-B	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

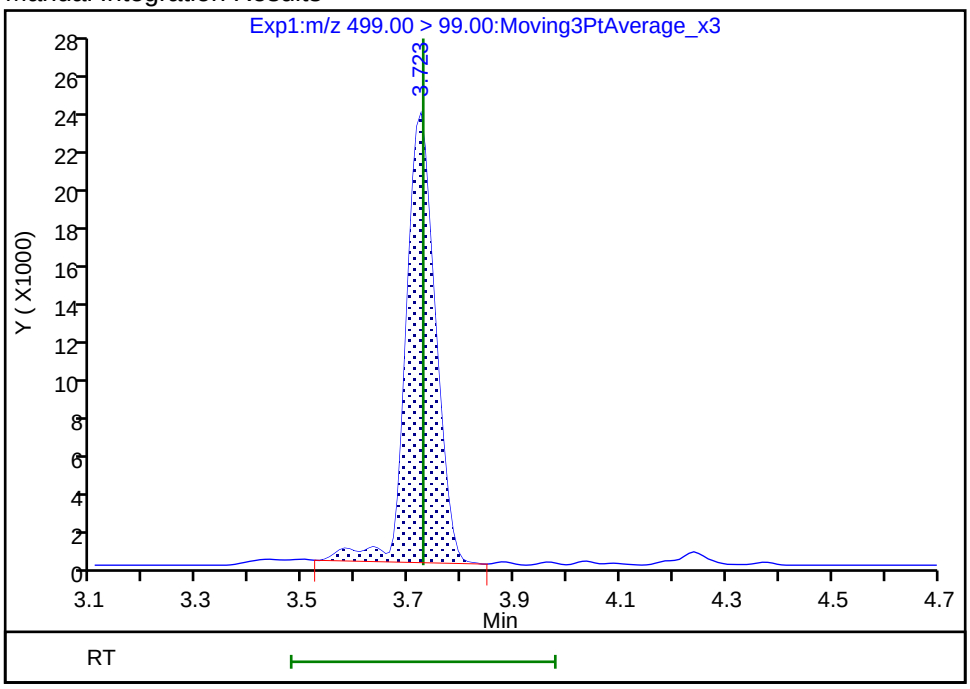
Processing Integration Results

RT: 3.72
Area: 100265
Amount: 0.218851
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 90121
Amount: 0.212428
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:27:44

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._024.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 09:40

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 258.6(mL) Date Analyzed: 10/09/2019 01:30

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.63	J	1.93	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.93		1.93	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.93		1.93	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.33	J	1.93	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.56	J	1.93	0.82
375-95-1	Perfluorononanoic acid (PFNA)	1.93		1.93	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.93		1.93	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.93		1.93	1.06
307-55-1	Perfluorododecanoic acid (PFDoA)	1.93		1.93	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.93		1.93	1.26
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.93		1.93	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.93		1.93	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.36	J B	1.93	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.93		1.93	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.91	J B	1.93	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.93		1.93	0.31

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	109		25-150
STL00993	13C2 PFHxA	106		25-150
STL00990	13C4 PFOA	107		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	108		25-150
STL00998	13C2 PFDoA	106		25-150
STL02116	13C2 PFTeDA	100		25-150
STL00994	18O2 PFHxS	115		25-150
STL00991	13C4 PFOS	97		25-150
STL01892	13C4 PFHpA	110		25-150
STL01893	13C5 PFPeA	108		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d
Lims ID: 480-159547-A-8-C
Client ID: RUSSO-TS-COMP 2
Sample Type: Client
Inject. Date: 09-Oct-2019 01:30:56 ALS Bottle#: 14 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-8-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:39:12 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:39:12
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.887	1.896	-0.009	1.000	34458	0.0164			5.3	a
D 1 13C4 PFBA										
217.00 > 172.00	1.887	1.896	-0.009	0.565	6176878	2.72		109	5878	
D 4 13C5 PFPeA										
267.90 > 223.00	2.189	2.201	-0.011	0.656	5127360	2.69		108	3663	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.189	2.201	-0.011	1.000	18192	0.008659			0.9	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.546	2.560	-0.014	1.000	18938	0.008785	Target=15.16		2.7	
313.00 > 119.00	2.546	2.560	-0.014	1.000	1968		9.62(7.58-22.74)		4.0	
D 9 13C2 PFHxA										
315.00 > 270.00	2.546	2.560	-0.014	0.762	5802419	2.65		106	2723	
D 14 13C4 PFHpA										
367.00 > 322.00	2.935	2.941	-0.006	0.879	6897942	2.75		110	2697	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.930	2.941	-0.011	0.998	26688	0.008612	Target=4.38		3.4	M
363.00 > 169.00	2.947	2.941	0.006	1.004	4280		6.24(2.19-6.57)		7.0	M
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.935	2.947	-0.012	0.998	21100	0.009337	Target=3.29		32.2	M
399.00 > 99.00	2.947	2.947	0.0	1.002	6801		3.10(1.64-4.93)		10.8	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.941	2.947	-0.006	0.881	4368984	2.71		115	4344	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.325	-0.007	1.000	6527	0.0102			27.0	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.325	-0.007	0.994	655364	1.87		78.9	1540	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C4 PFOA										
417.00 > 372.00	3.339	3.346	-0.007	1.000	7754275	2.68		107	3752	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.346	-0.007		7712365	2.50			4053	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.339	3.346	-0.007	1.000	141833	0.0404	Target=2.91		12.9	M
413.00 > 169.00	3.332	3.346	-0.014	0.998	48847		2.90(1.45-4.36)		66.1	M
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.587	3.714	-0.127	0.968	45884	0.0235	Target=3.91		23.7	M
499.00 > 99.00	3.722	3.714	0.008	1.004	10035		4.57(1.95-5.86)		12.7	
D 27 13C4 PFOS										
503.00 > 80.00	3.707	3.714	-0.007	1.110	4354311	2.33		97.4	3982	
D 30 13C5 PFNA										
468.00 > 423.00	3.722	3.730	-0.008	1.115	6804162	2.64		106	4414	
D 36 13C2 PFDA										
515.00 > 470.00	4.077	4.086	-0.009	1.221	7772376	2.68		107	4297	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.077	4.086	-0.009	1.221	654533	1.99		83.1	1695	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.086	4.086	0.0	1.002	900	0.001487			8.8	
D 32 13C8 FOSA										
506.00 > 78.00	4.104	4.104	0.0	1.229	2483003	2.57		103	2713	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.104	0.0	1.000	9349	0.003427			28.2	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.238	4.247	-0.009	1.269	3582450	2.61		105	2714	
D 42 13C2 PFUnA										
565.00 > 520.00	4.396	4.404	-0.008	1.316	6675449	2.69		108	4865	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.396	4.404	-0.008	1.000	14612	0.006957	Target=10.16		11.8	
563.00 > 169.00	4.396	4.404	-0.008	1.000	1026		14.24(5.08-15.24)		6.3	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.404	4.413	-0.009	1.319	3205760	2.72		109	2749	
D 55 13C2 PFDoA										
615.00 > 570.00	4.679	4.688	-0.009	1.401	7239248	2.65		106	5250	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.172	5.189	-0.017	1.549	4861265	2.51		100	5328	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 18-Oct-2019 15:39:13 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d

Injection Date: 09-Oct-2019 01:30:56 Instrument ID: A9

Lims ID: 480-159547-A-8-C Lab Sample ID: 320-159547-8

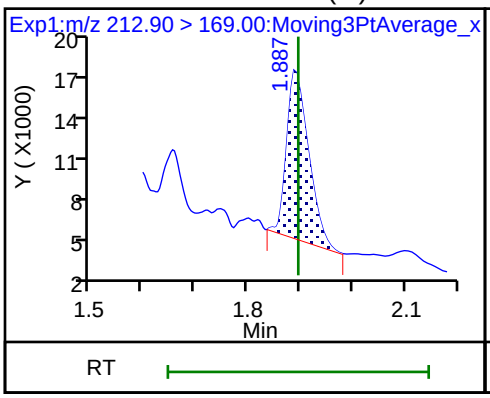
Client ID: RUSSO-TS-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 10

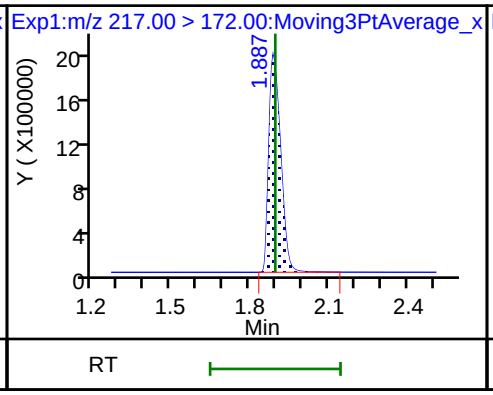
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

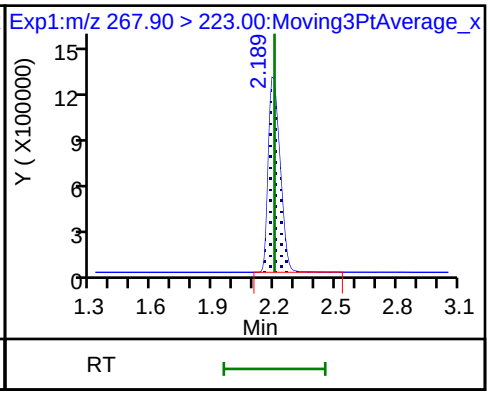
2 Perfluorobutanoic acid (M)



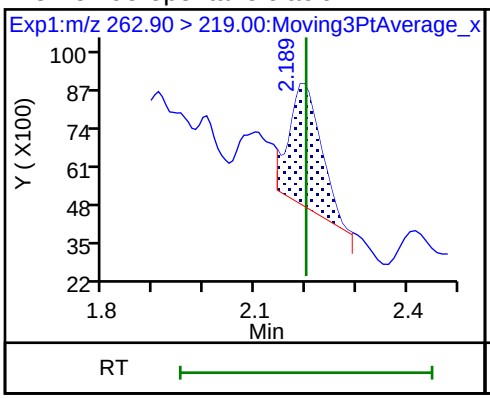
D 1 13C4 PFBA



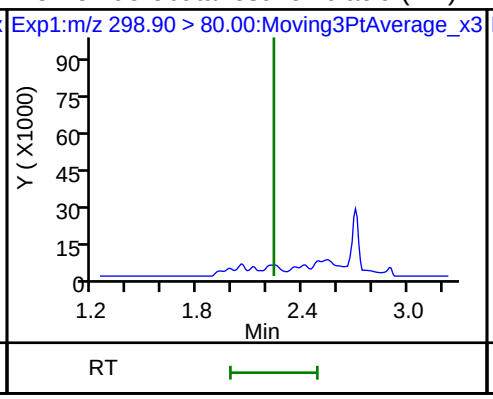
D 4 13C5 PFPeA



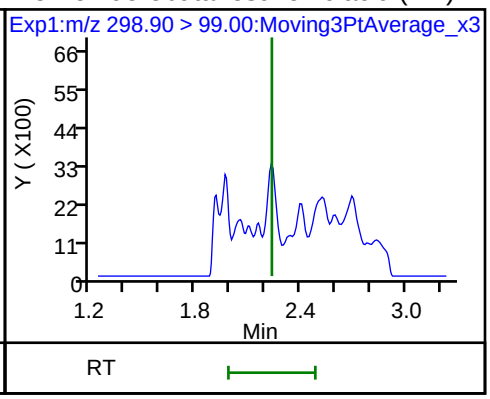
3 Perfluoropentanoic acid



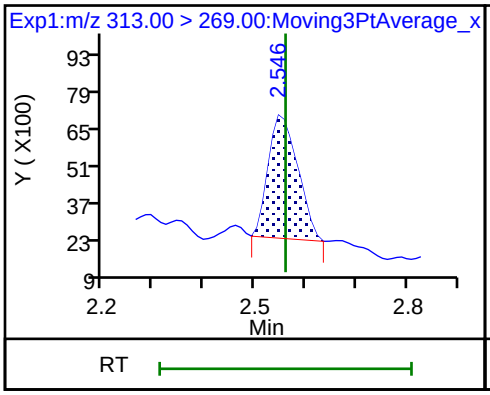
5 Perfluorobutanesulfonic acid (ND)



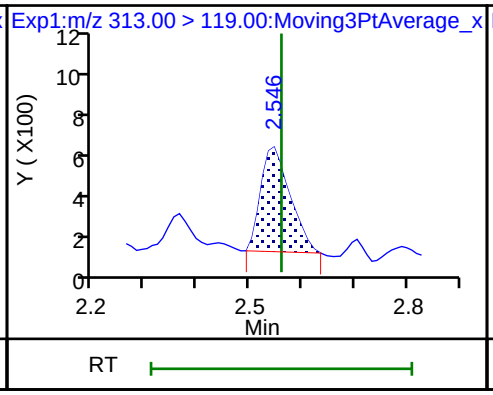
5 Perfluorobutanesulfonic acid (ND)



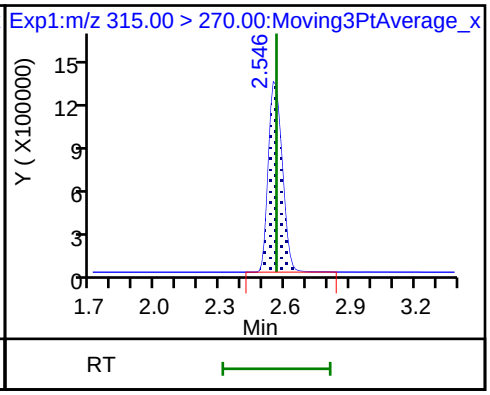
10 Perfluorohexanoic acid



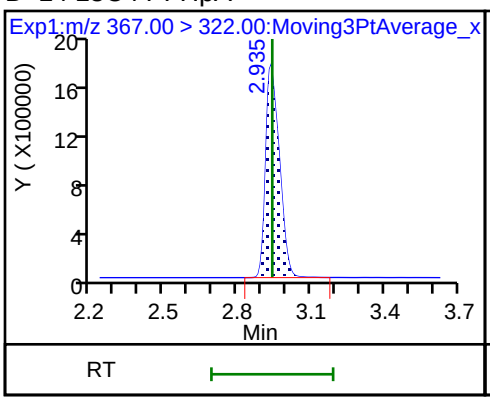
10 Perfluorohexanoic acid



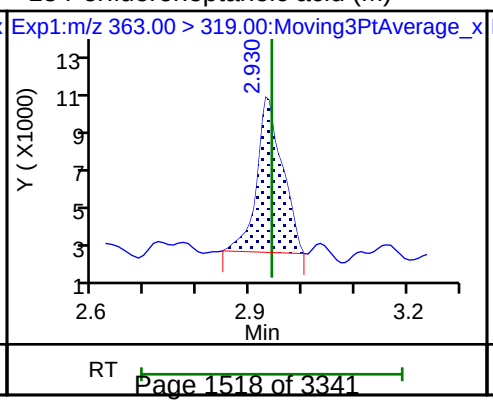
D 9 13C2 PFHxA



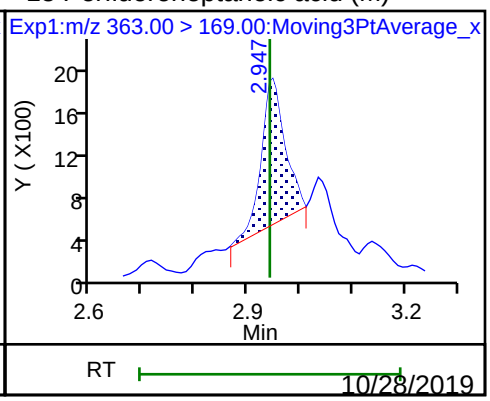
D 14 13C4 PFHpA



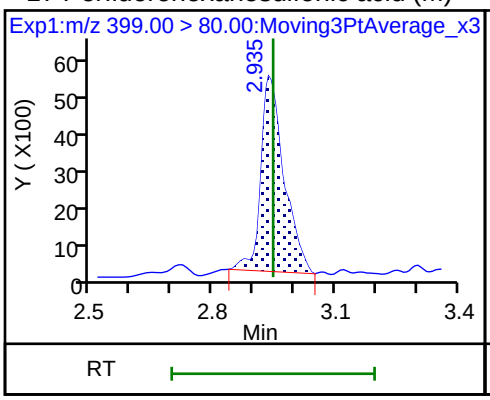
15 Perfluoroheptanoic acid (M)



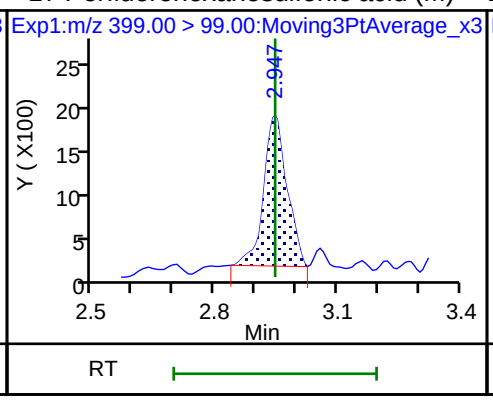
15 Perfluoroheptanoic acid (M)



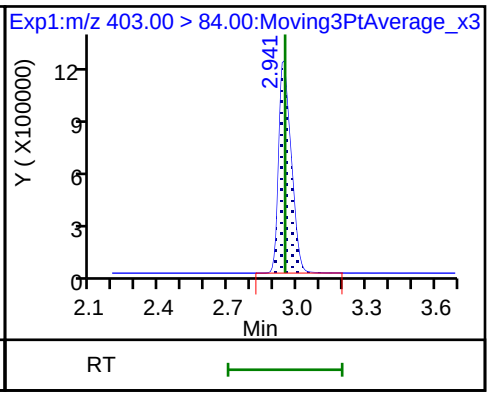
17 Perfluorohexanesulfonic acid (M)



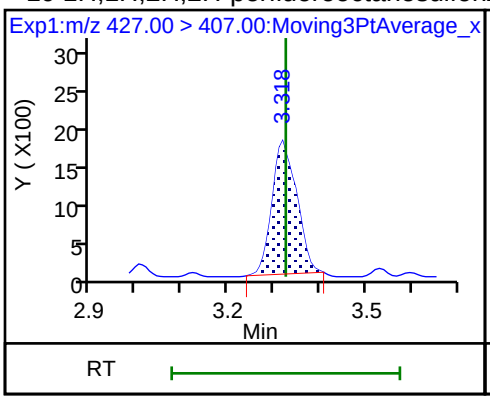
17 Perfluorohexanesulfonic acid (M)



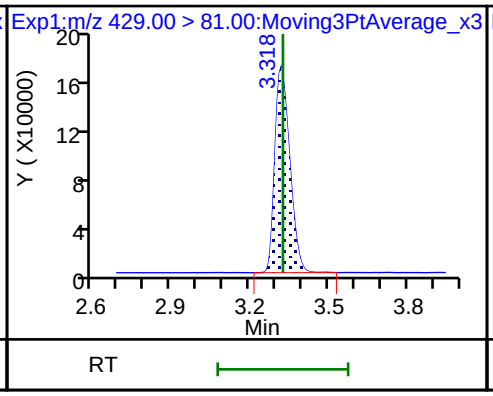
D 16 18O2 PFHxS



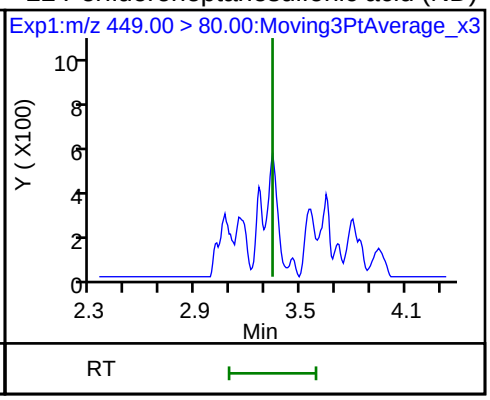
19 1H,1H,2H,2H-perfluorooctanesulfon



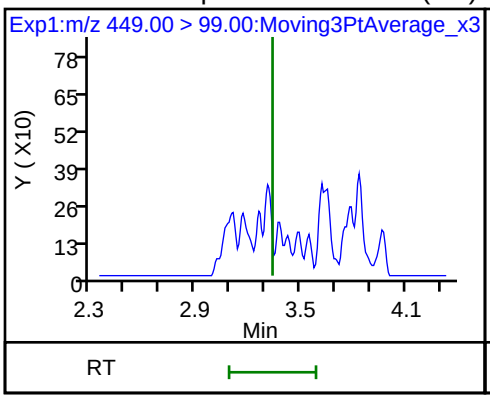
D 20 M2-6:2 FTS



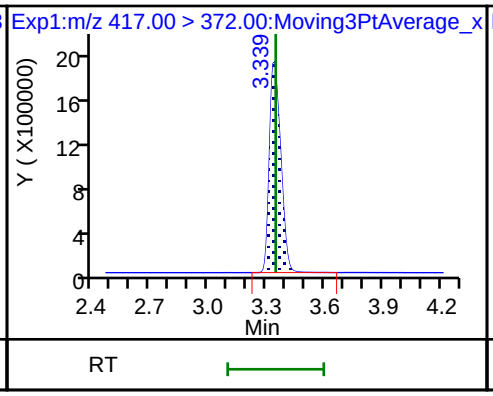
22 Perfluoroheptanesulfonic acid (ND)



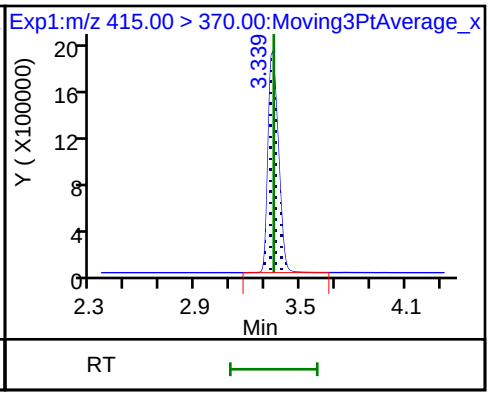
22 Perfluoroheptanesulfonic acid (ND)



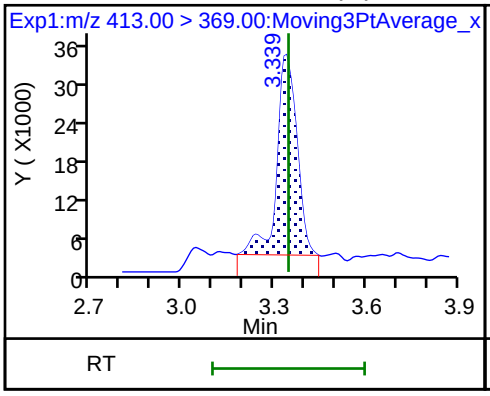
D 23 13C4 PFOA



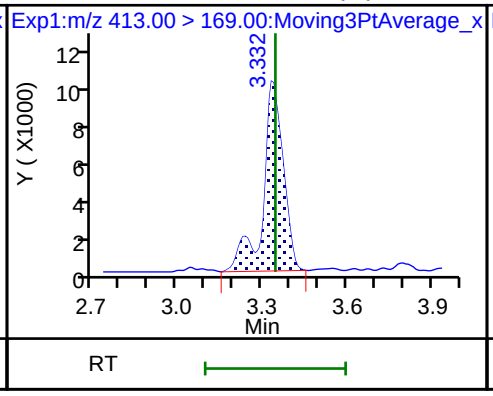
* 25 13C2 PFOA



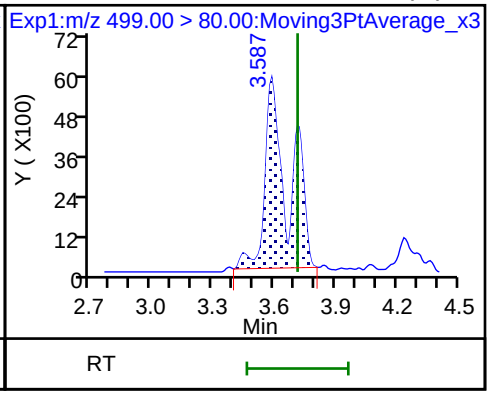
24 Perfluorooctanoic acid (M)



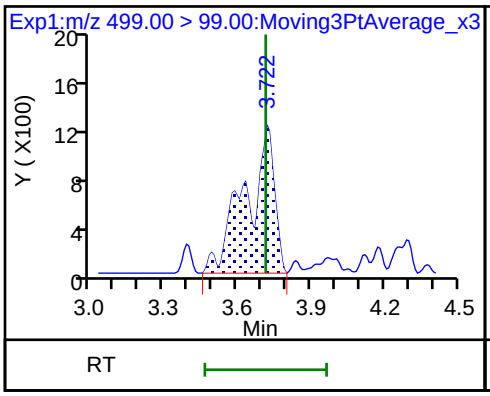
24 Perfluorooctanoic acid (M)



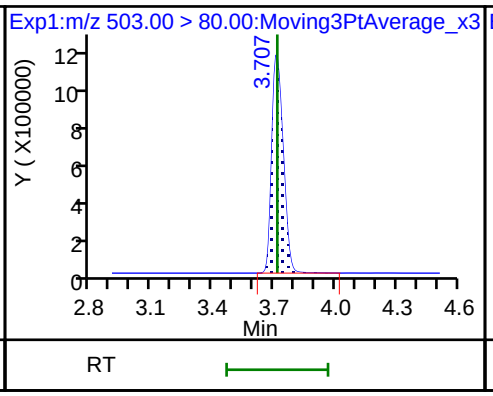
28 Perfluorooctanesulfonic acid (M)



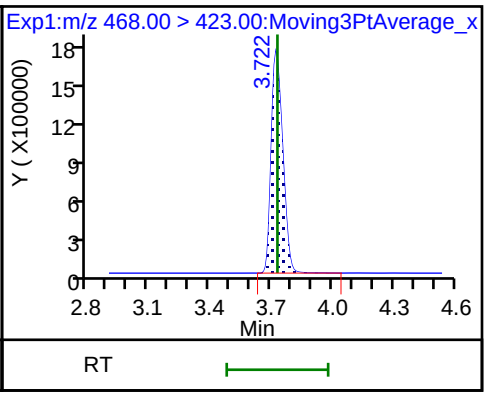
28 Perfluorooctanesulfonic acid



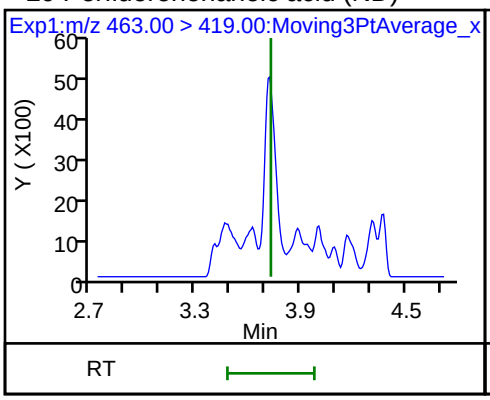
D 27 13C4 PFOS



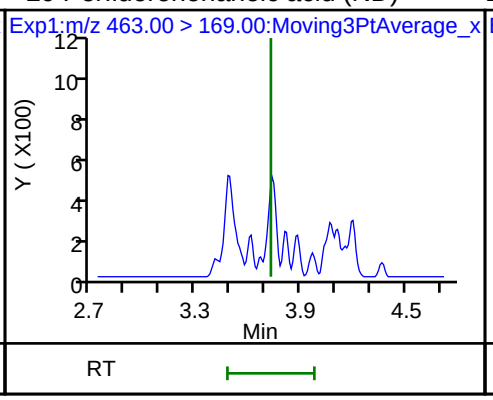
D 30 13C5 PFNA



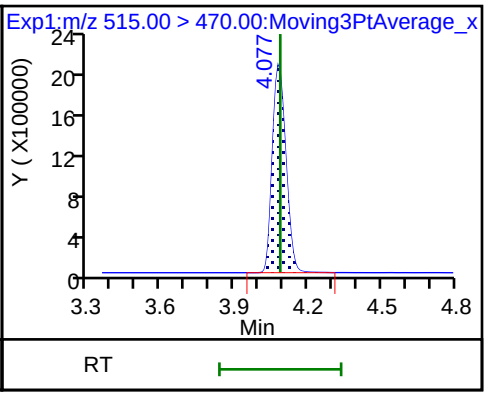
29 Perfluorononanoic acid (ND)



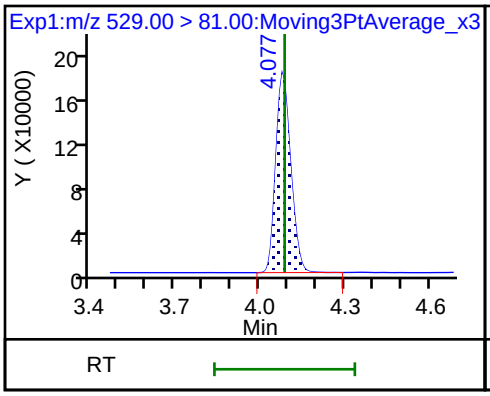
29 Perfluorononanoic acid (ND)



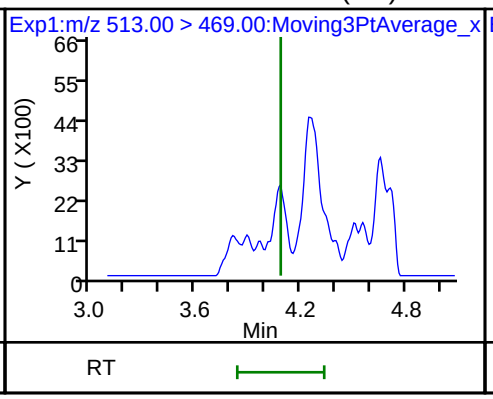
D 36 13C2 PFDA



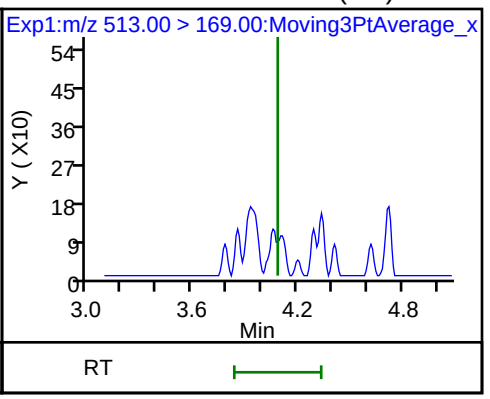
D 35 M2-8:2 FTS



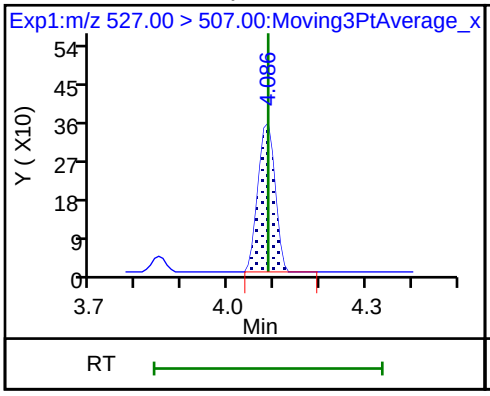
37 Perfluorodecanoic acid (ND)



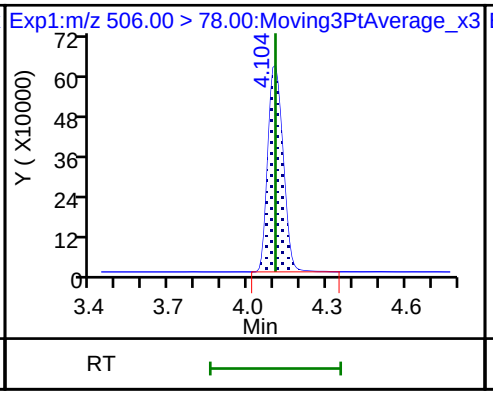
37 Perfluorodecanoic acid (ND)



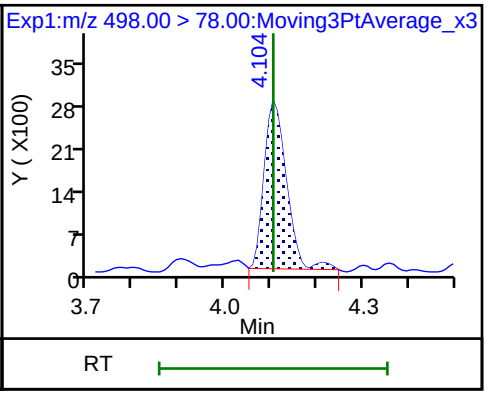
38 1H,1H,2H,2H-perfluorodecanesulfon



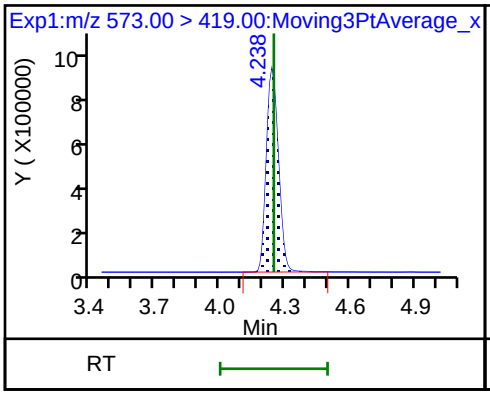
D 32 13C8 FOSA



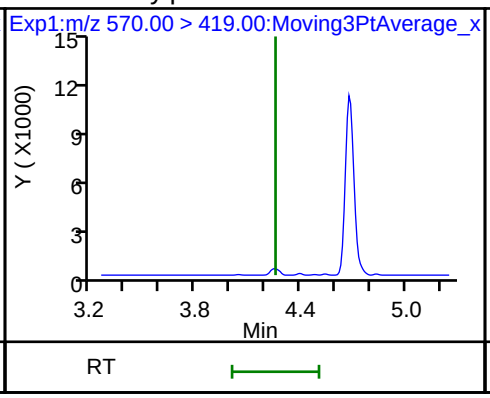
33 Perfluorooctanesulfonamide



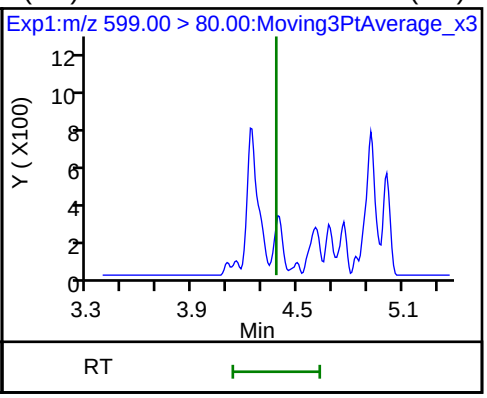
D 39 d3-NMeFOSAA



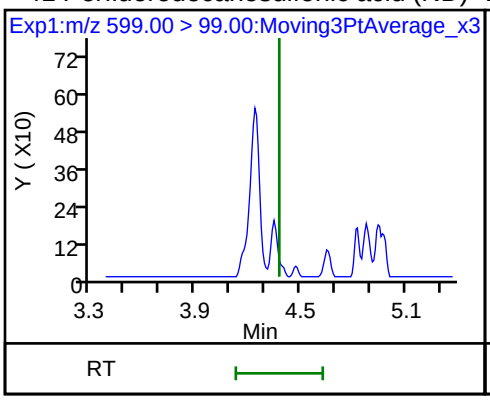
40 N-methylperfluorooctanesulfonamido (ND)



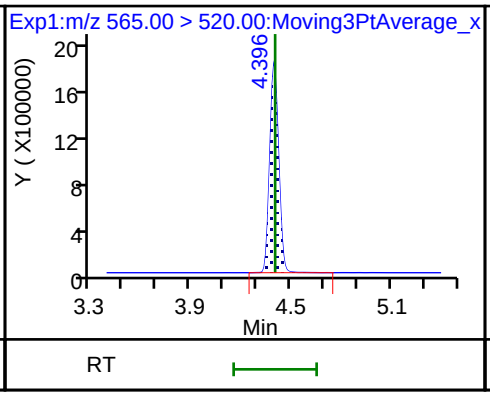
41 Perfluorodecanesulfonic acid (ND)



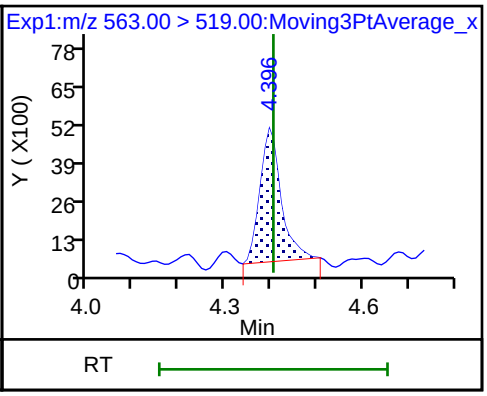
41 Perfluorodecanesulfonic acid (ND)



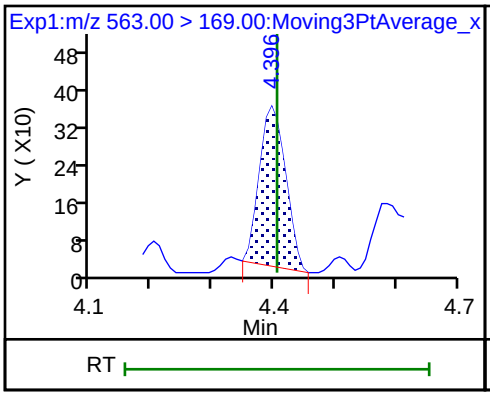
D 42 13C2 PFUnA



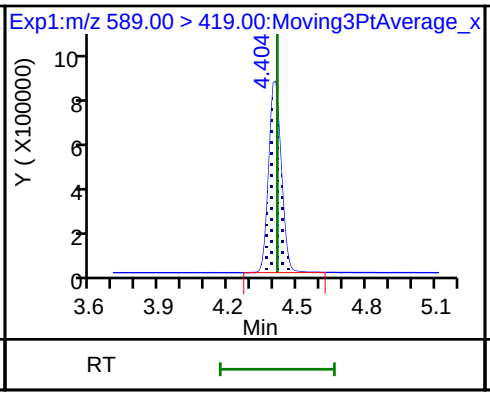
43 Perfluoroundecanoic acid



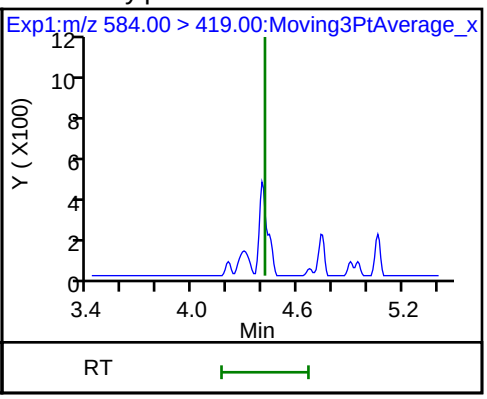
43 Perfluoroundecanoic acid



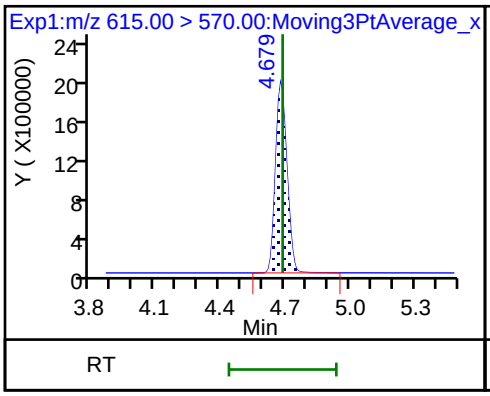
D 44 d5-NEtFOSAA



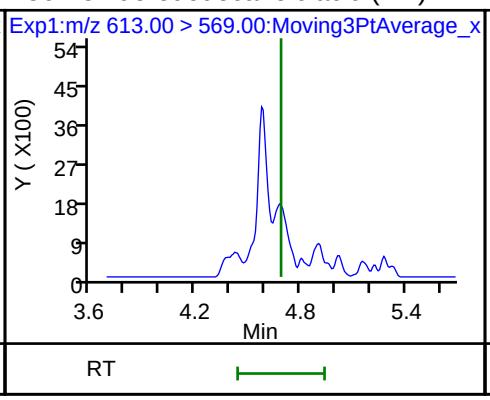
45 N-ethylperfluorooctanesulfonamidoa (ND)



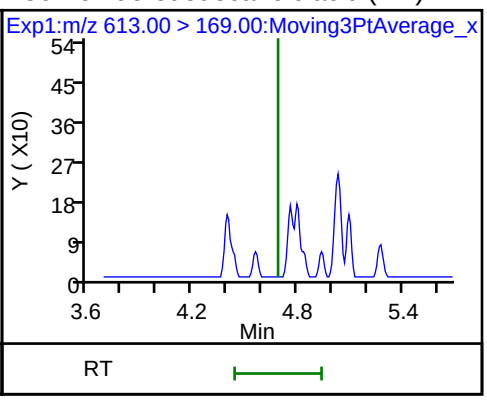
D 55 13C2 PFDoA



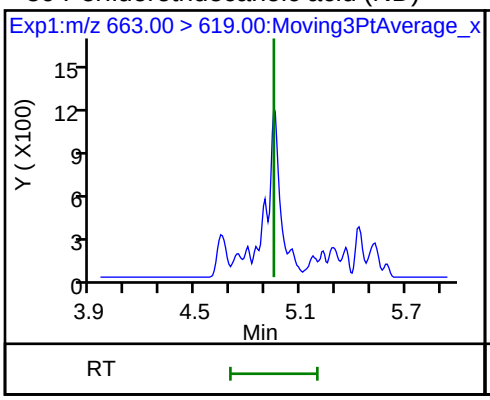
56 Perfluorododecanoic acid (ND)



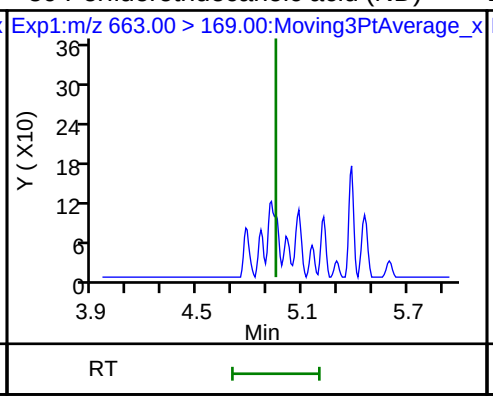
56 Perfluorododecanoic acid (ND)



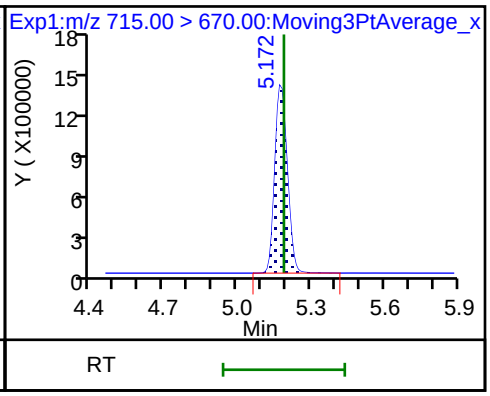
59 Perfluorotridecanoic acid (ND)



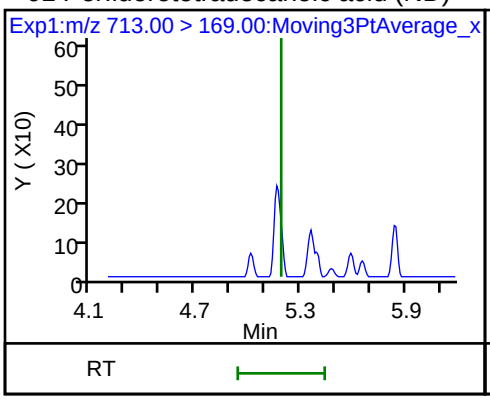
59 Perfluorotridecanoic acid (ND)



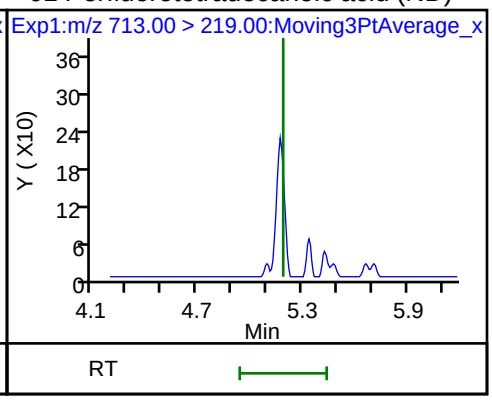
D 60 13C2 PFTeDA



61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

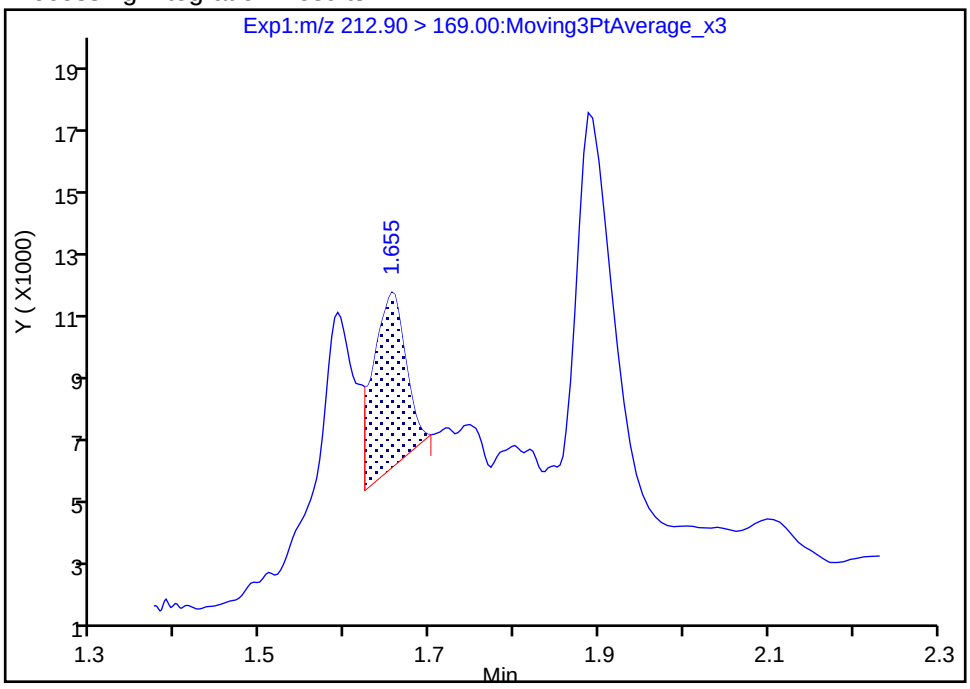
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

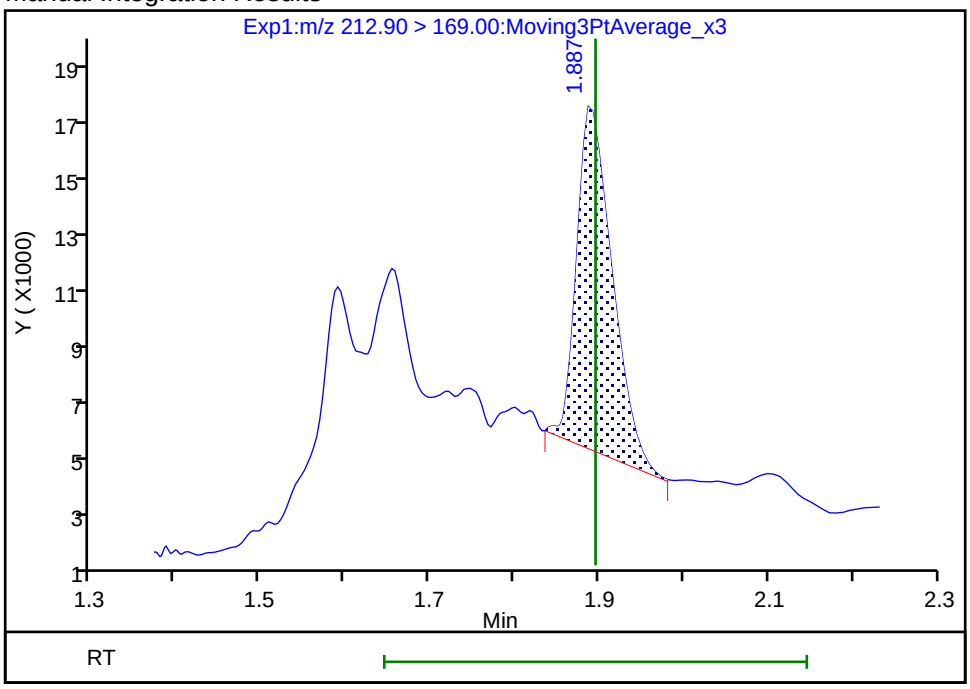
Processing Integration Results

RT: 1.65
Area: 14419
Amount: 0.006869
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 34458
Amount: 0.016416
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:37:43

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Eurofins TestAmerica, Sacramento

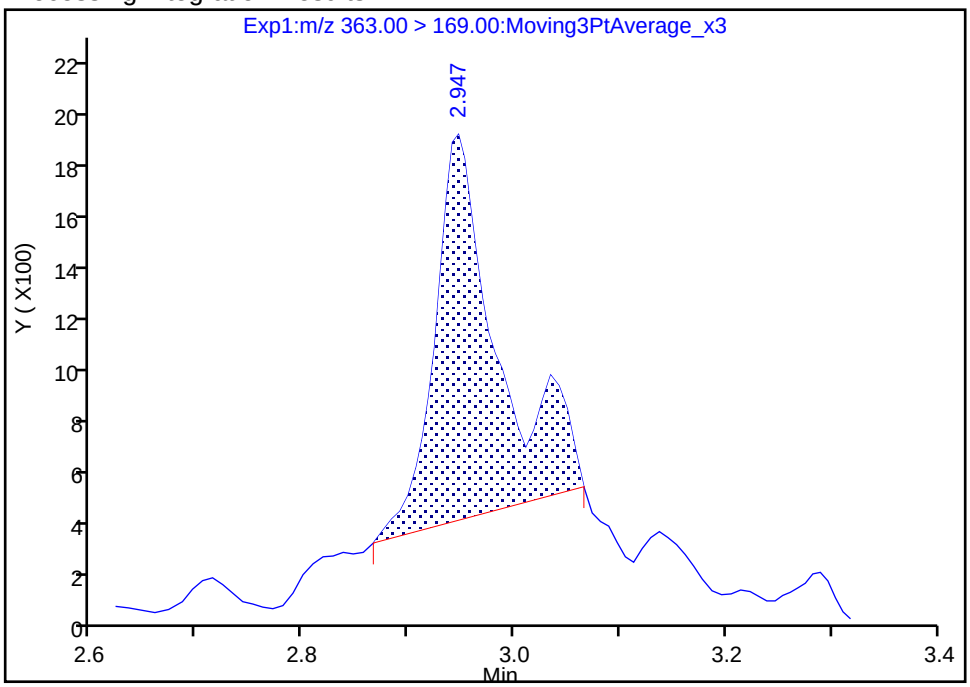
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

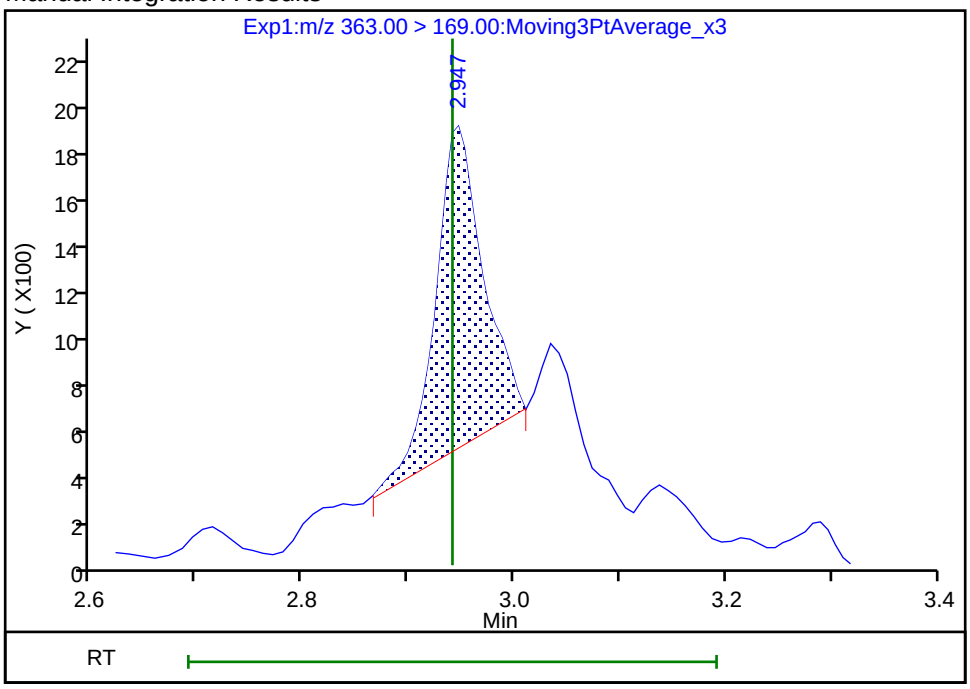
Processing Integration Results

RT: 2.95
Area: 6137
Amount: 0.013663
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 4280
Amount: 0.008612
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:07
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

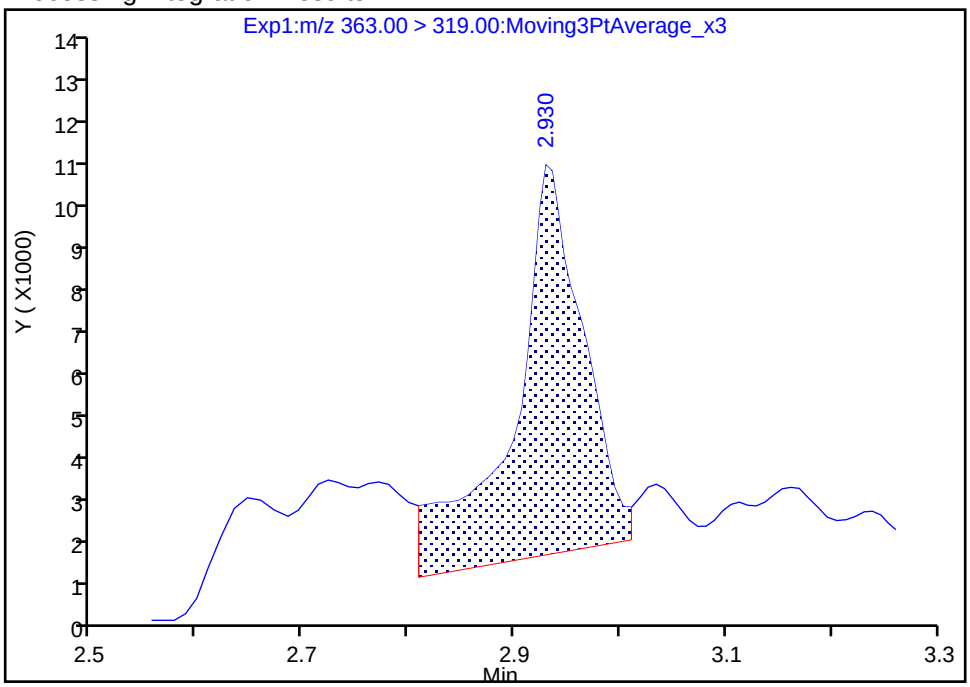
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

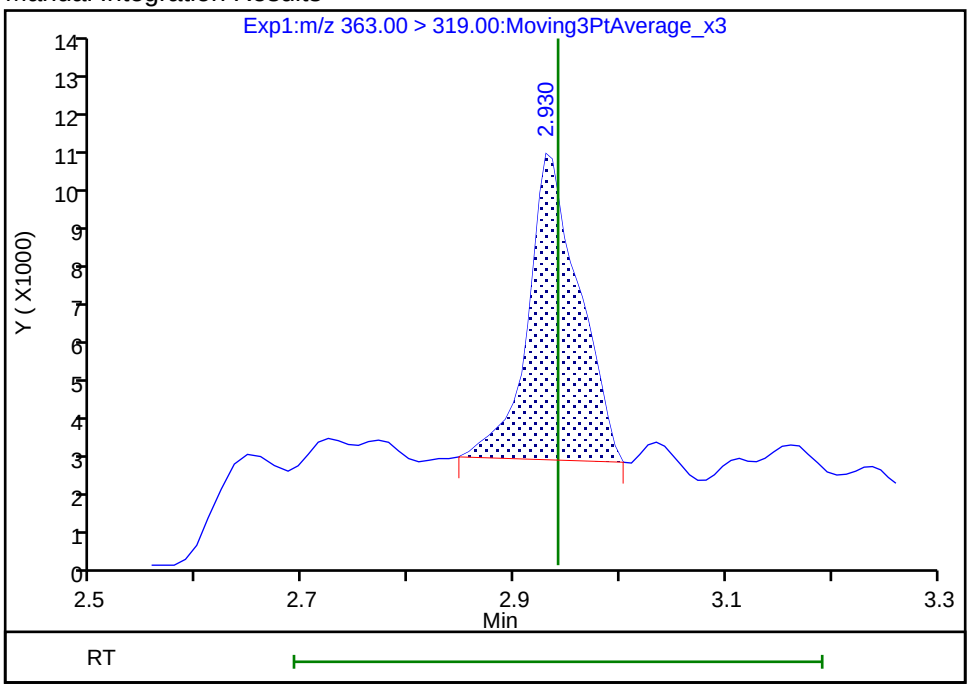
Processing Integration Results

RT: 2.93
Area: 42341
Amount: 0.013663
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 26688
Amount: 0.008612
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:12
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

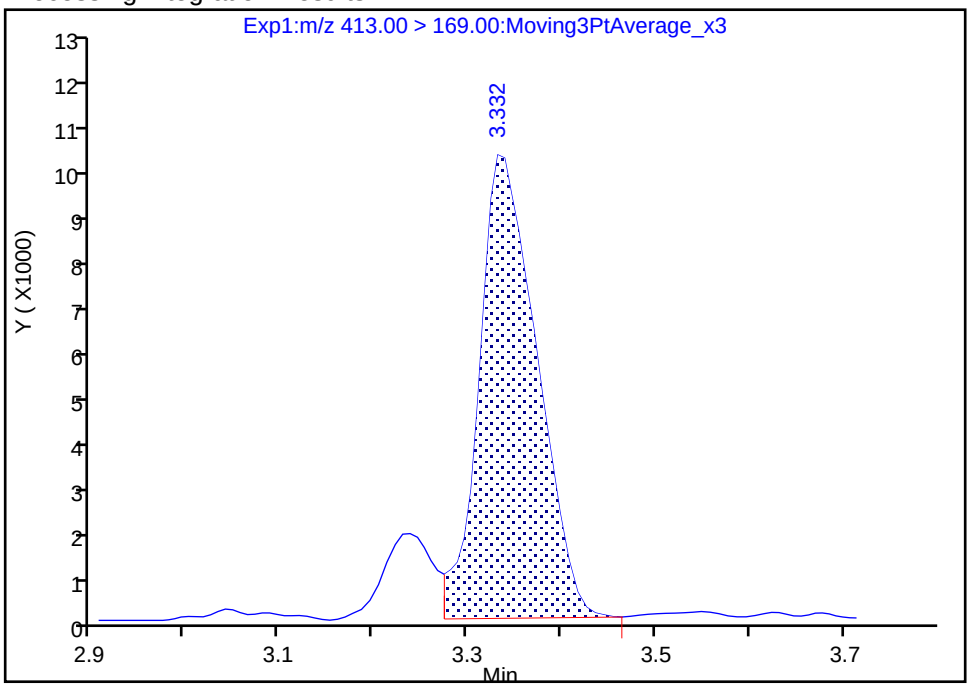
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

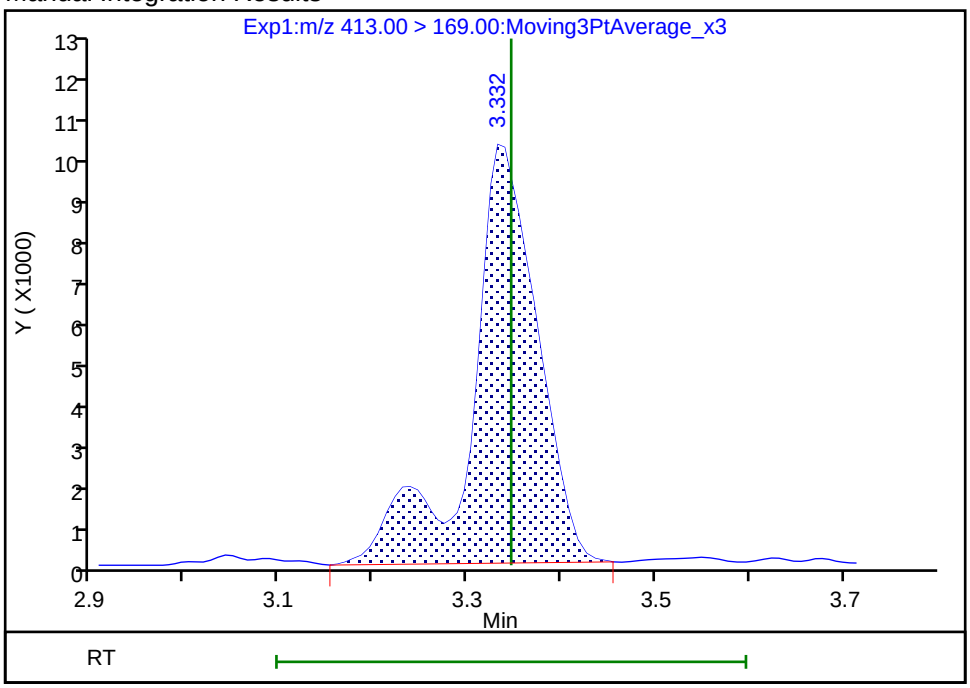
Processing Integration Results

RT: 3.33
Area: 42235
Amount: 0.043076
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 48847
Amount: 0.040446
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:40

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

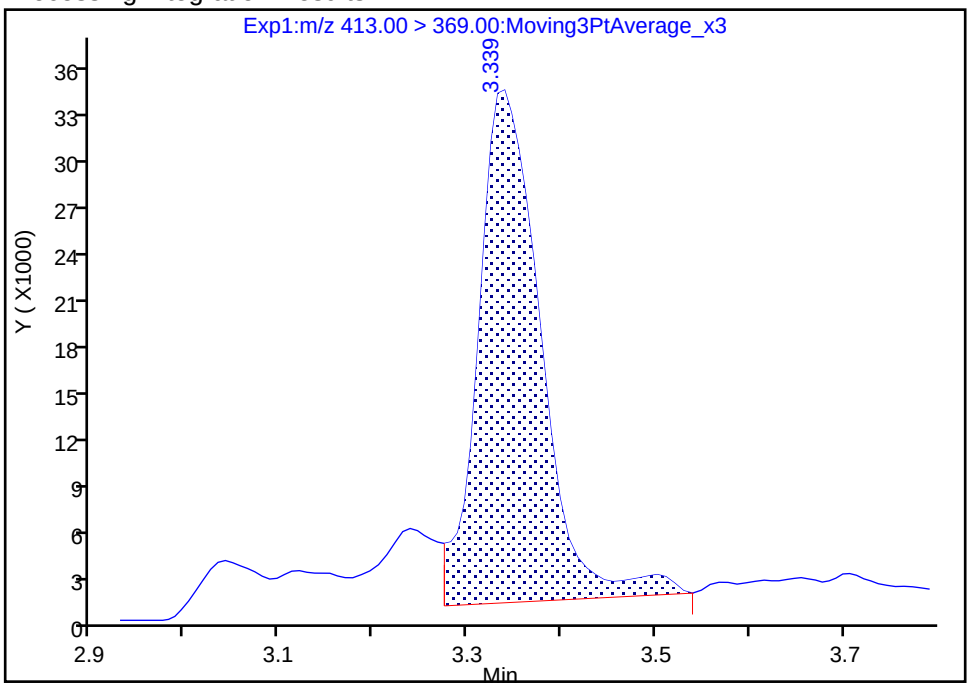
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

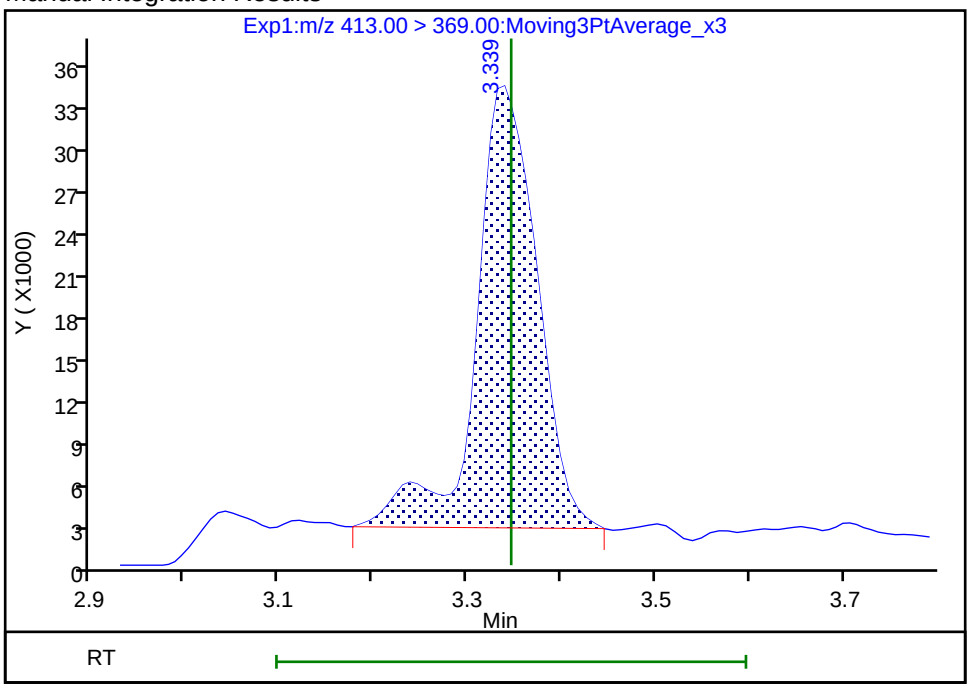
Processing Integration Results

RT: 3.34
Area: 151055
Amount: 0.043076
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 141833
Amount: 0.040446
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:44

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

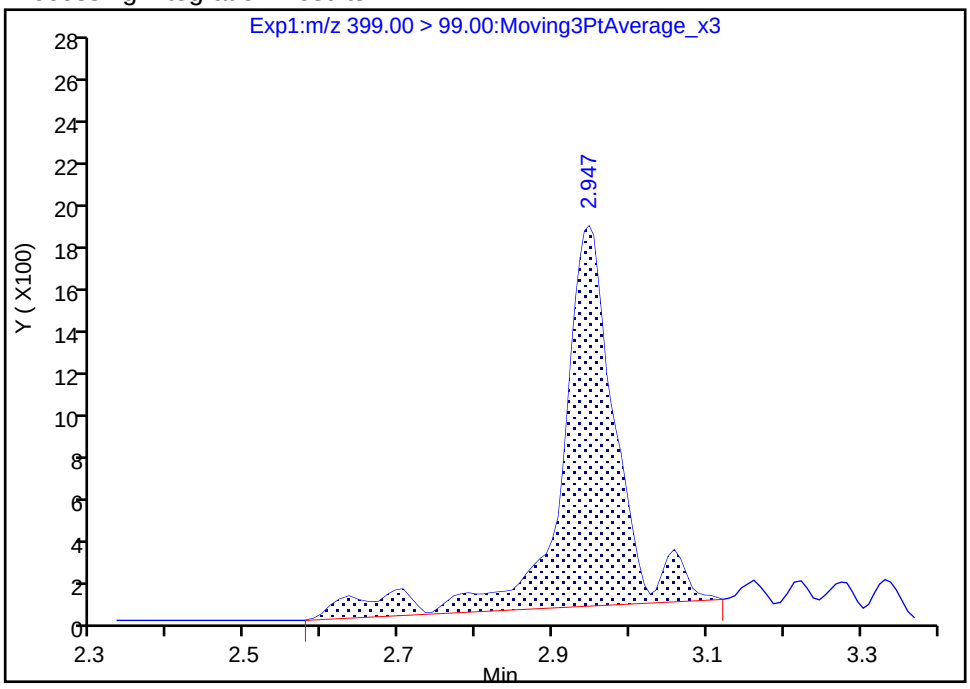
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

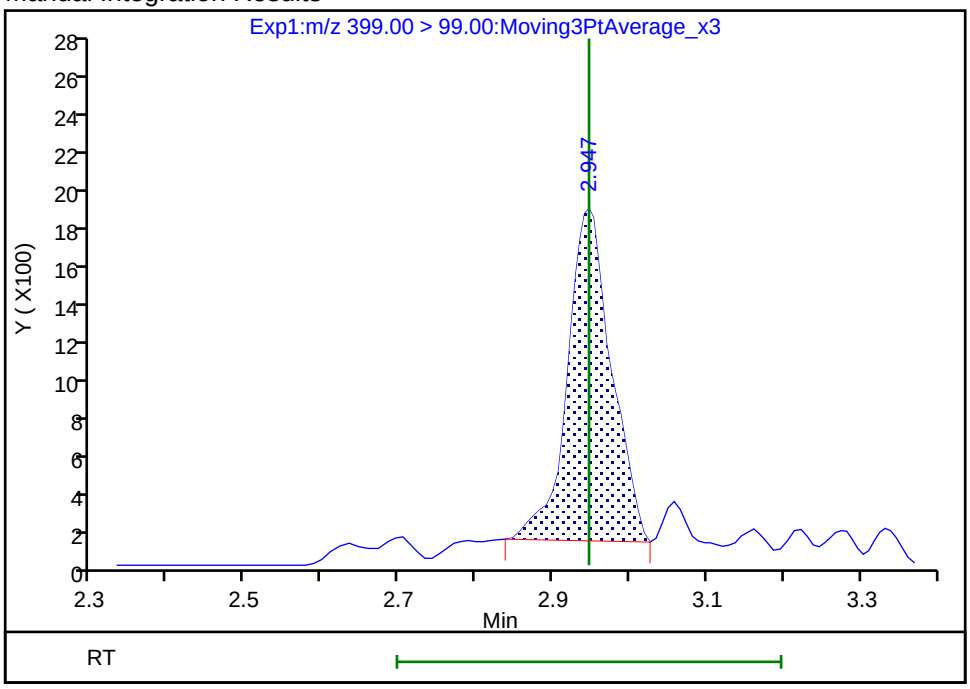
Processing Integration Results

RT: 2.95
Area: 9139
Amount: 0.010162
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 6801
Amount: 0.009337
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:22

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

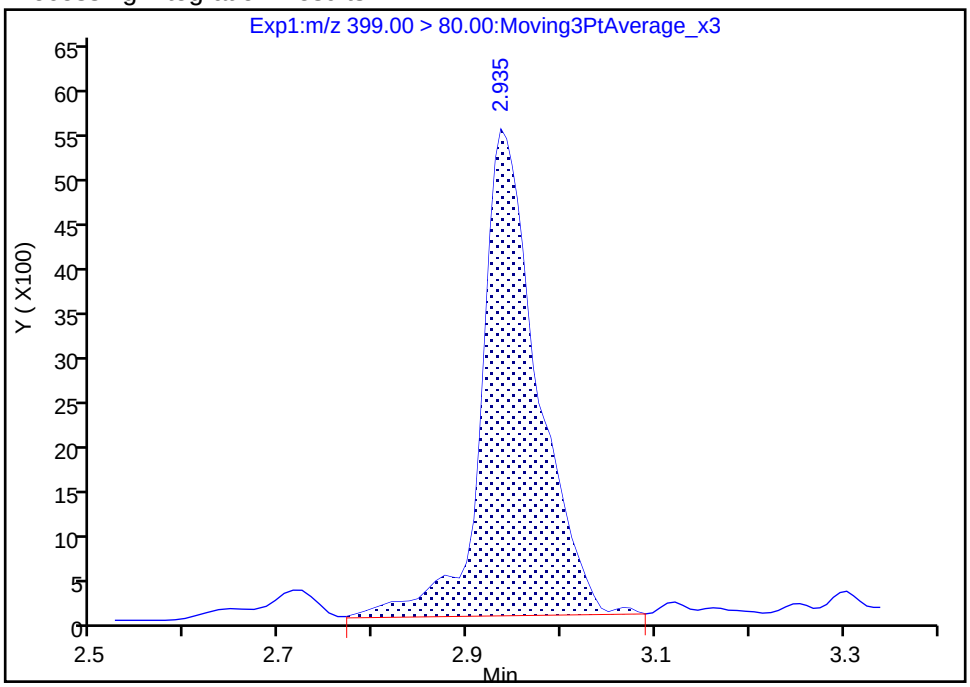
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

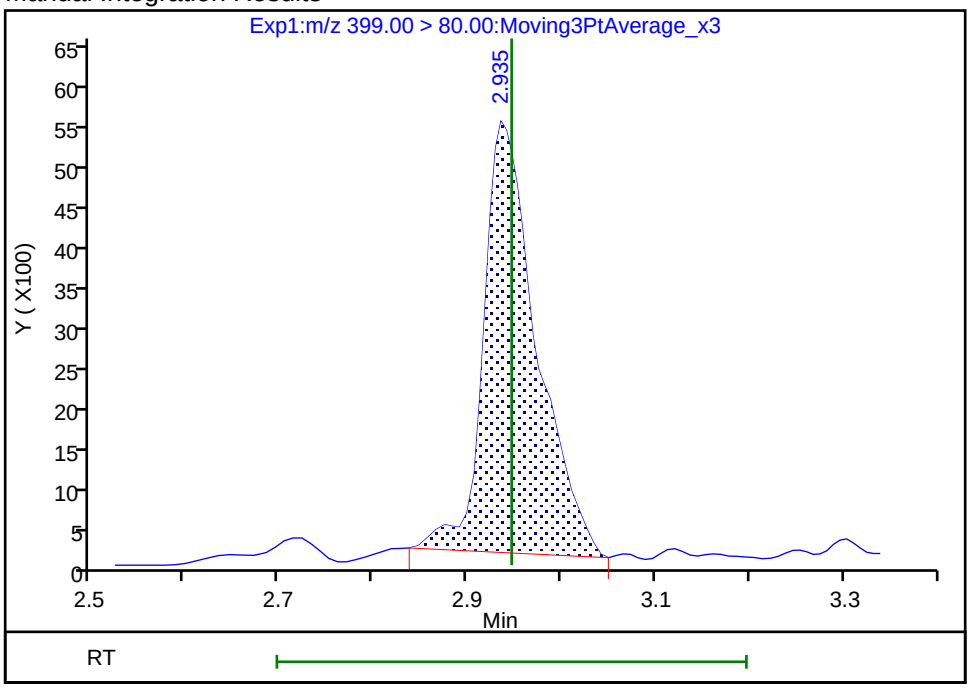
Processing Integration Results

RT: 2.94
Area: 22965
Amount: 0.010162
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 21100
Amount: 0.009337
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:28
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

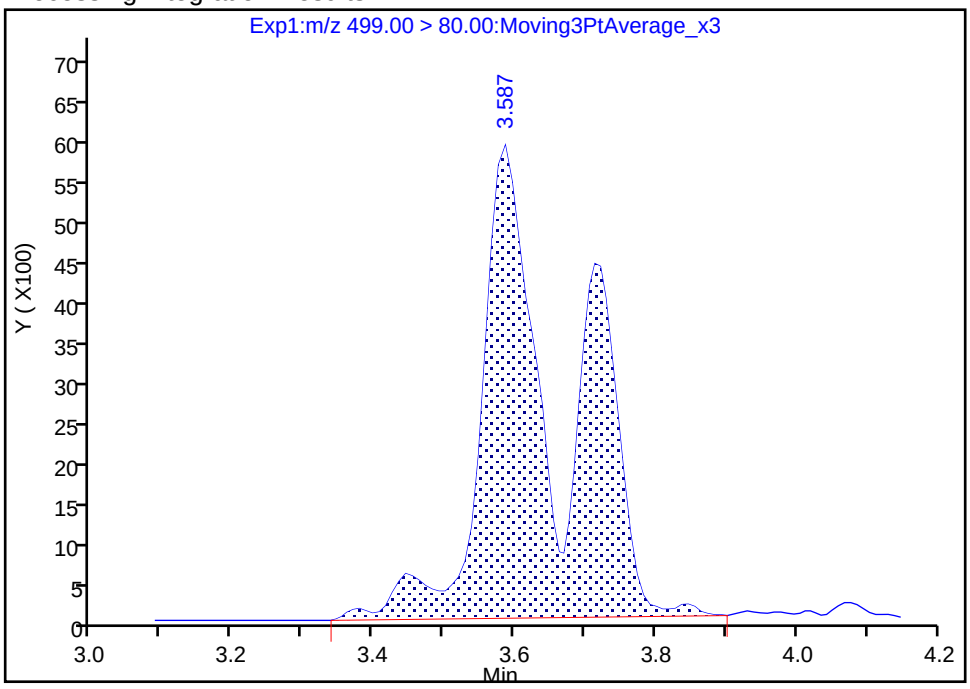
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._024.d				
Injection Date:	09-Oct-2019 01:30:56	Instrument ID:	A9		
Lims ID:	480-159547-A-8-C	Lab Sample ID:	320-159547-8		
Client ID:	RUSSO-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

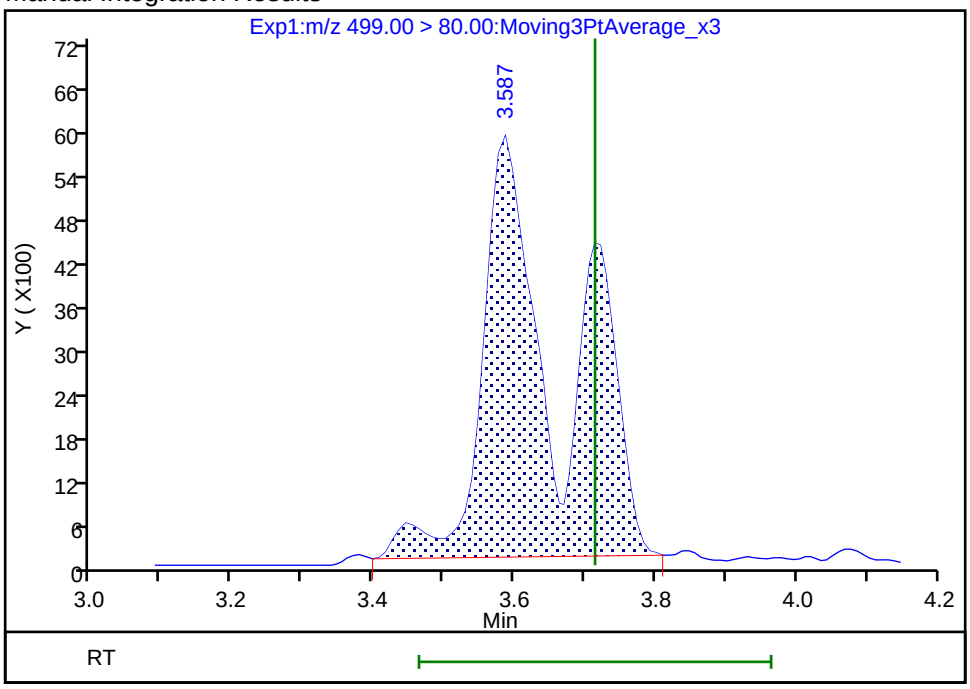
Processing Integration Results

RT: 3.59
Area: 48718
Amount: 0.024909
Amount Units: ng/ml



Manual Integration Results

RT: 3.59
Area: 45884
Amount: 0.023460
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:38:55
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 2019.10.10_LLA_011.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:50

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.45(g) Date Analyzed: 10/10/2019 06:06

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.21		0.21	0.029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.080
307-24-4	Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030
335-67-1	Perfluorooctanoic acid (PFOA)	0.21		0.21	0.089
375-95-1	Perfluorononanoic acid (PFNA)	0.21		0.21	0.037
335-76-2	Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.053
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.056
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20	J	0.21	0.026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.21	J	0.52	0.21
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.085
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.07		2.07	0.40
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.07		2.07	0.38
27619-97-2	6:2 FTS	2.07		2.07	0.16
39108-34-4	8:2 FTS	2.07		2.07	0.26

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid Lab File ID: 2019.10.10_LLA_011.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:50

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.45(g) Date Analyzed: 10/10/2019 06:06

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4 PFHpA	94		25-150
STL00990	13C4 PFOA	103		25-150
STL00995	13C5 PFNA	95		25-150
STL00996	13C2 PFDA	100		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	96		25-150
STL02116	13C2 PFTeDA	104		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	90		25-150
STL01056	13C8 FOSA	100		25-150
STL02118	d3-NMeFOSAA	95		25-150
STL02117	d5-NEtFOSAA	92		25-150
STL02279	M2-6:2 FTS	76		25-150
STL02280	M2-8:2 FTS	80		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_011.d
Lims ID: 480-159547-B-18-B
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 10-Oct-2019 06:06:12 ALS Bottle#: 5 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-18-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:30:26 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:30:26
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.900	1.903	-0.003	0.568	5508401	2.46		98.2	4082	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.208	-0.003	0.659	4562444	2.43		97.2	3000	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.232	2.245	-0.013	0.756	251071	0.0957	Target=2.71		26.5	M
298.90 > 99.00	2.232	2.245	-0.013	0.756	106480		2.36(1.36-4.07)		9.9	
D 9 13C2 PFHxA										
315.00 > 270.00	2.567	2.570	-0.003	0.767	5410707	2.50		100	2723	
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.952	-0.011	0.879	5822894	2.35		94.1	2668	
D 16 18O2 PFHxS										
403.00 > 84.00	2.952	2.957	-0.005	0.882	3660441	2.30		97.4	3790	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.958	2.957	0.001	1.002	15203	0.008030	Target=3.46		17.9	
399.00 > 99.00	2.958	2.957	0.001	1.002	8020		1.90(1.73-5.19)		5.4	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.331	-0.006	1.000	10014	0.0164			10.7	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.331	-0.006	0.994	622884	1.80		76.0	1176	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.353	-0.007		7609007	2.50			5616	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.354	3.353	0.001	1.002	54341	0.0163	Target=3.01		4.5	M
413.00 > 169.00	3.354	3.353	0.001	1.002	20026		2.71(1.51-4.52)		30.5	M
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.353	-0.007	1.000	7380455	2.59		103	4974	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.722	3.727	-0.005	1.000	178609	0.0996	Target=3.98		218	
499.00 > 99.00	3.722	3.727	-0.005	1.000	48467		3.69(1.99-5.97)		103	
D 27 13C4 PFOS										
503.00 > 80.00	3.722	3.727	-0.005	1.112	3990523	2.16		90.5	4637	
D 30 13C5 PFNA										
468.00 > 423.00	3.737	3.744	-0.007	1.117	6036535	2.38		95.1	3357	
D 36 13C2 PFDA										
515.00 > 470.00	4.095	4.100	-0.005	1.224	7156517	2.50		99.9	3521	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.095	4.100	-0.005	1.224	623814	1.92		80.2	1183	
D 32 13C8 FOSA										
506.00 > 78.00	4.113	4.118	-0.005	1.229	2368840	2.49		99.6	3424	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.118	-0.014	0.998	19909	0.007649			48.7	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.256	4.252	0.004	1.272	3199309	2.37		94.7	2077	
D 42 13C2 PFUnA										
565.00 > 520.00	4.413	4.409	0.005	1.319	6281201	2.57		103	5297	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.413	4.417	-0.004	1.000	17015	0.008609	Target=9.81		8.1	
563.00 > 169.00	4.430	4.417	0.013	1.004	1569		10.84(4.91-14.72)		6.9	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.417	-0.004	1.319	2669559	2.30		91.9	1443	
D 55 13C2 PFDoA										
615.00 > 570.00	4.697	4.702	-0.005	1.404	6493791	2.41		96.5	3669	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.189	5.194	-0.005	1.551	4965056	2.60		104	5857	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-Oct-2019 14:30:27 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_011.d

Injection Date: 10-Oct-2019 06:06:12 Instrument ID: A9

Lims ID: 480-159547-B-18-B Lab Sample ID: 320-159547-18

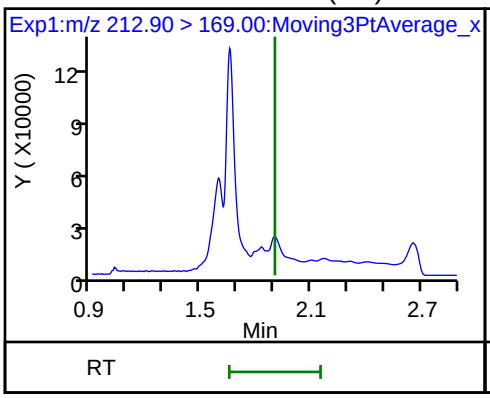
Client ID: RUSSO-CF-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 5 Worklist Smp#: 8

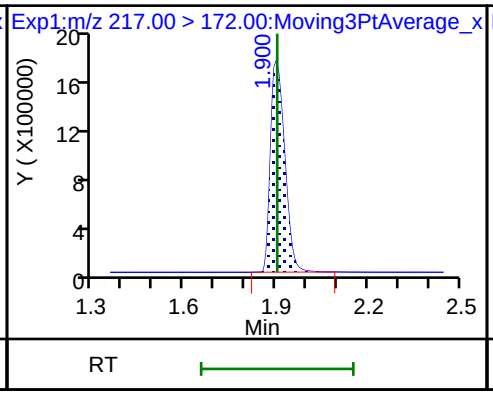
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

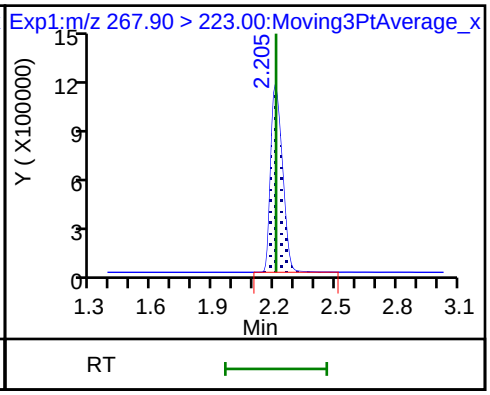
2 Perfluorobutanoic acid (ND)



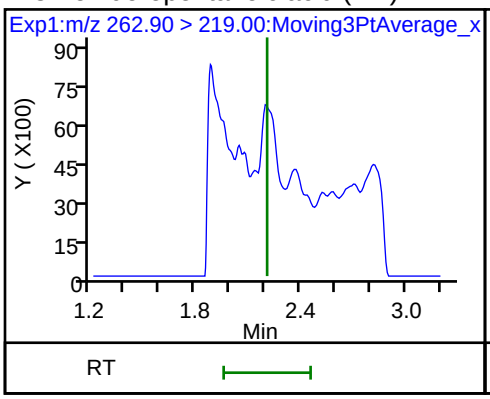
D 1 13C4 PFBA



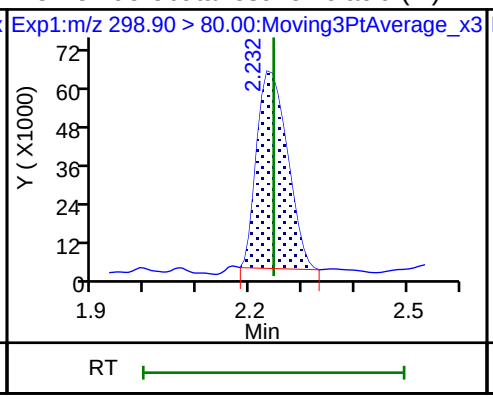
D 4 13C5 PFPeA



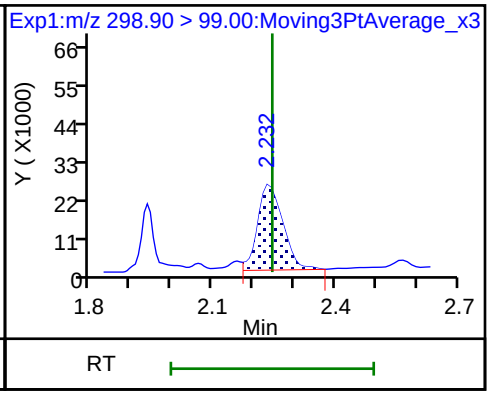
3 Perfluoropentanoic acid (ND)



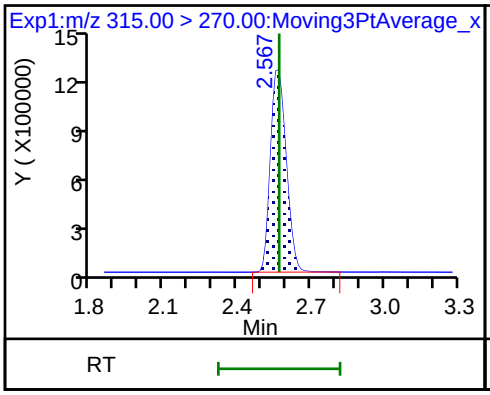
5 Perfluorobutanesulfonic acid (M)



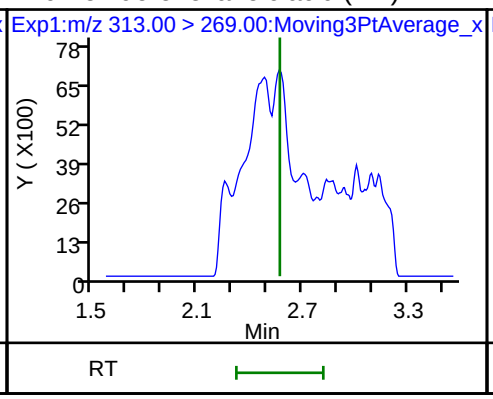
5 Perfluorobutanesulfonic acid



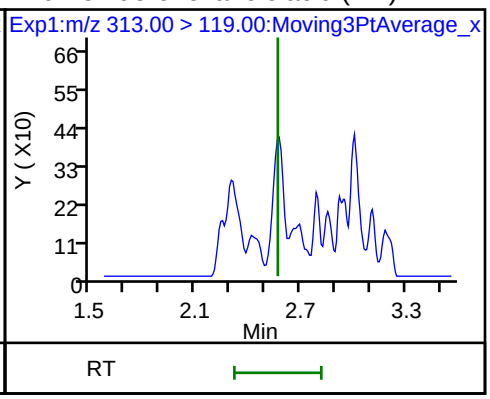
D 9 13C2 PFHxA



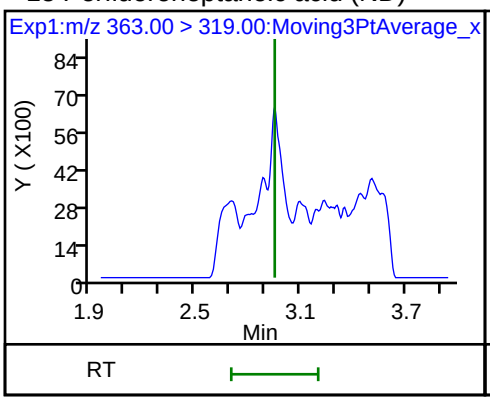
10 Perfluorohexanoic acid (ND)



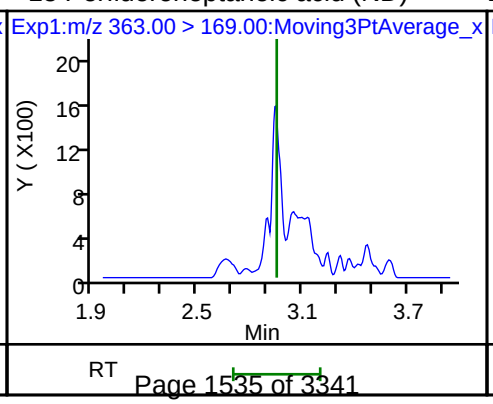
10 Perfluorohexanoic acid (ND)



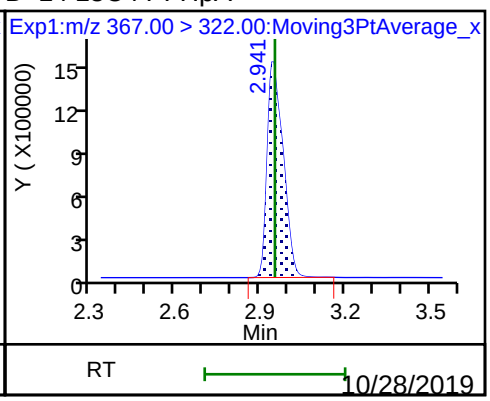
15 Perfluoroheptanoic acid (ND)



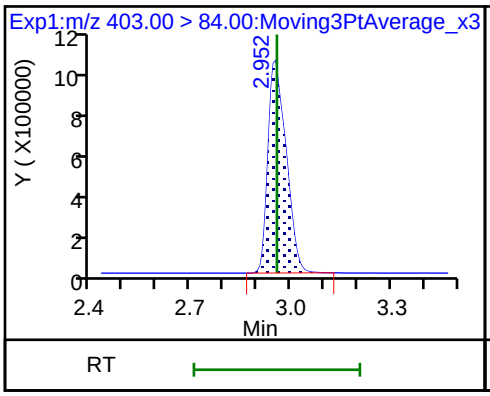
15 Perfluoroheptanoic acid (ND)



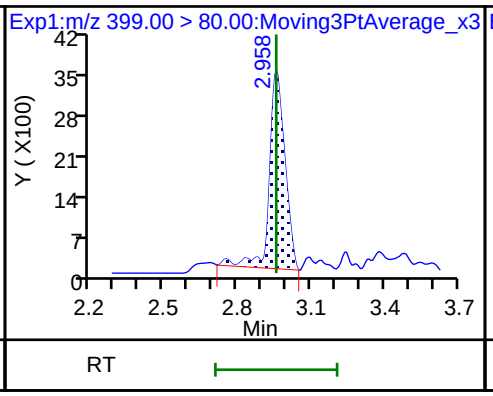
D 14 13C4 PFHpA



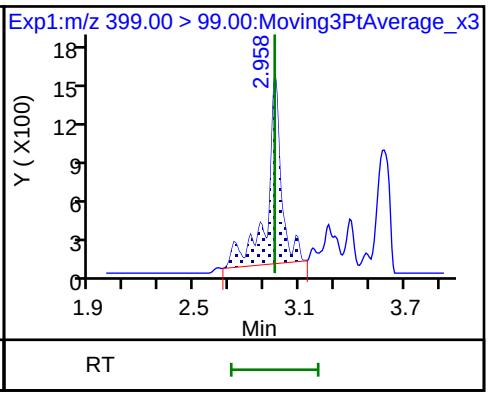
D 16 18O2 PFHxS



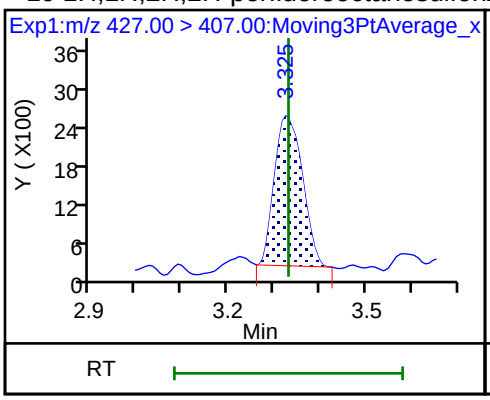
17 Perfluorohexanesulfonic acid



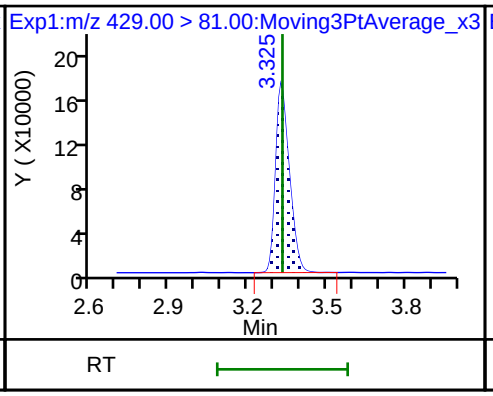
17 Perfluorohexanesulfonic acid



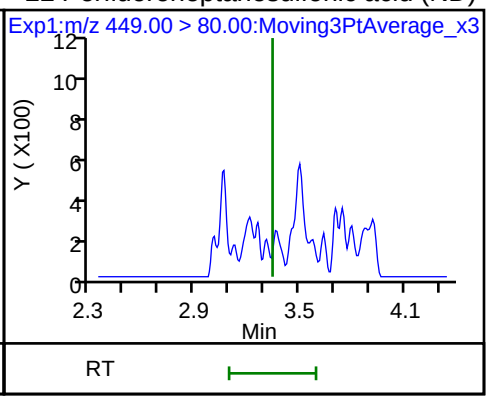
19 1H,1H,2H,2H-perfluorooctanesulfon



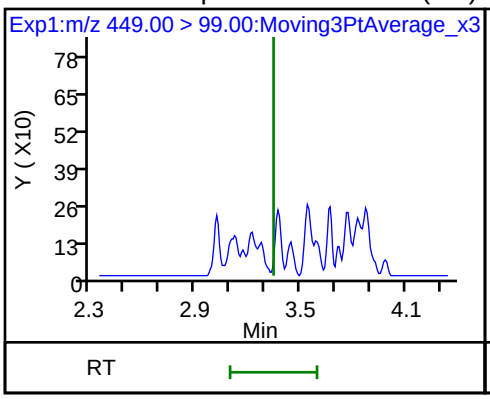
D 20 M2-6:2 FTS



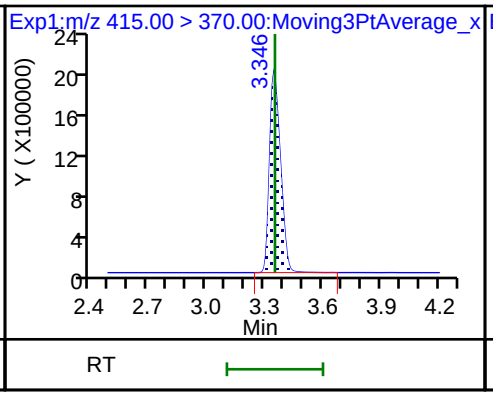
22 Perfluoroheptanesulfonic acid (ND)



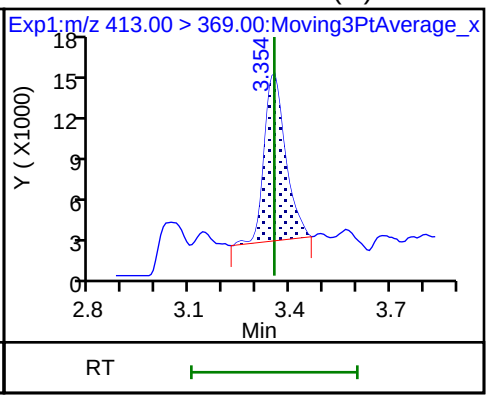
22 Perfluoroheptanesulfonic acid (ND) *



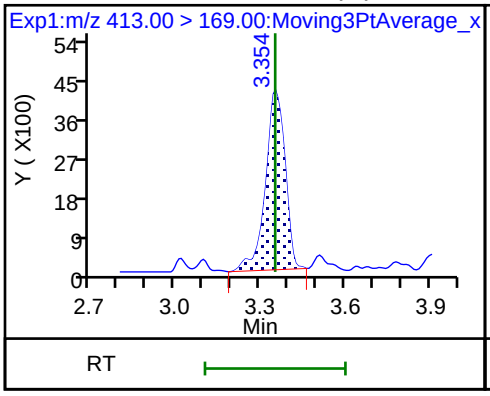
25 13C2 PFOA



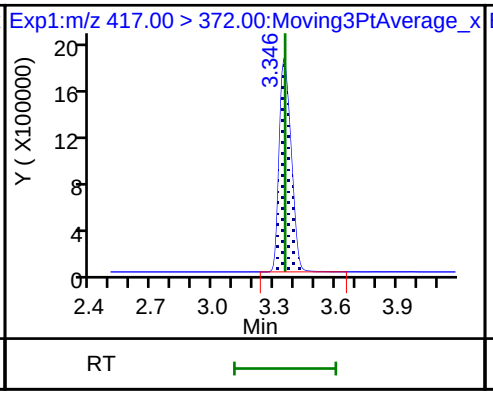
24 Perfluorooctanoic acid (M)



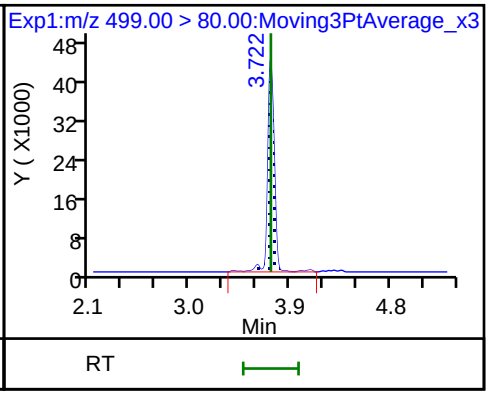
24 Perfluorooctanoic acid (M)



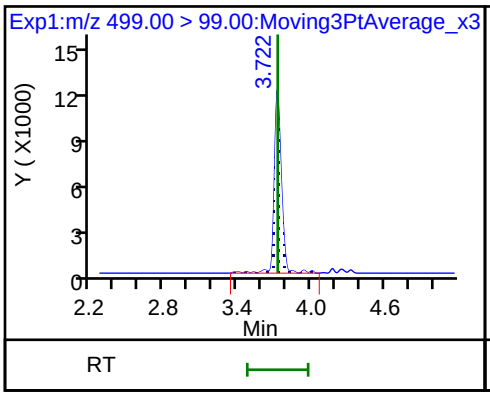
D 23 13C4 PFOA



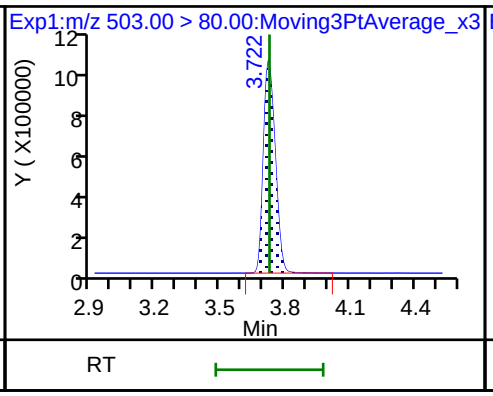
28 Perfluorooctanesulfonic acid



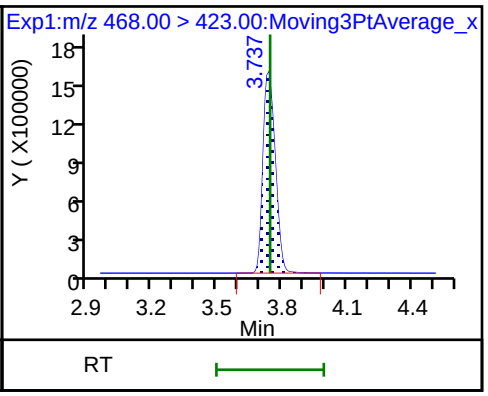
28 Perfluorooctanesulfonic acid



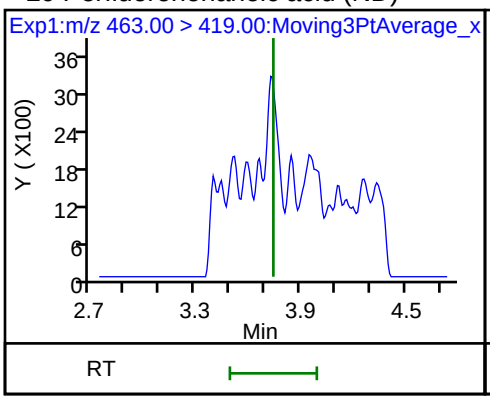
D 27 13C4 PFOS



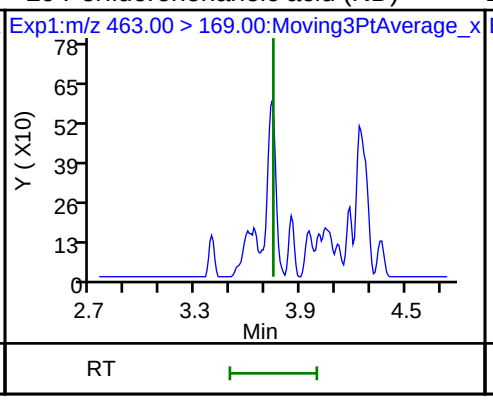
D 30 13C5 PFNA



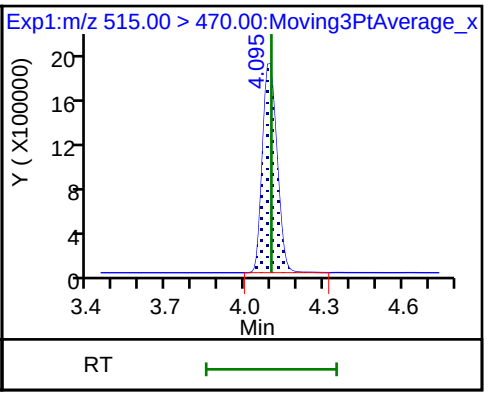
29 Perfluorononanoic acid (ND)



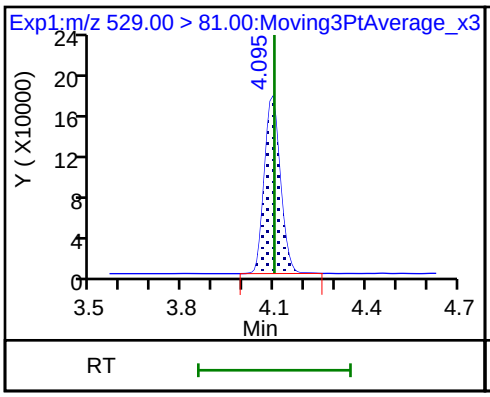
29 Perfluorononanoic acid (ND)



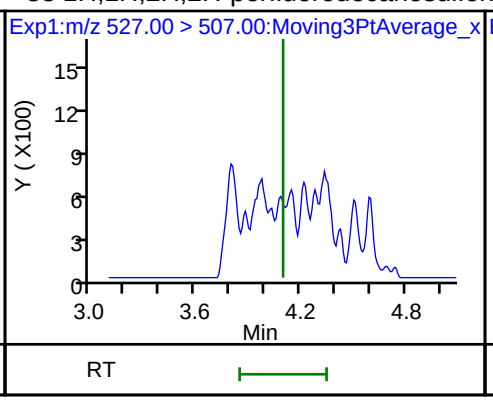
D 36 13C2 PFDA



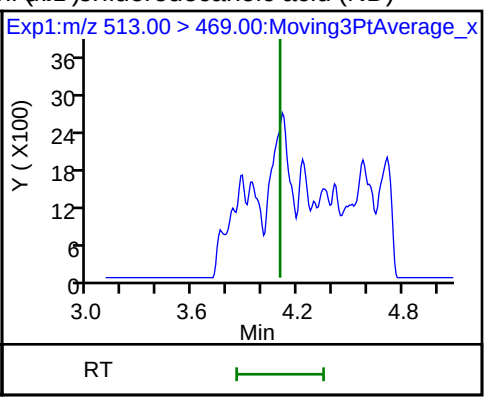
D 35 M2-8:2 FTS



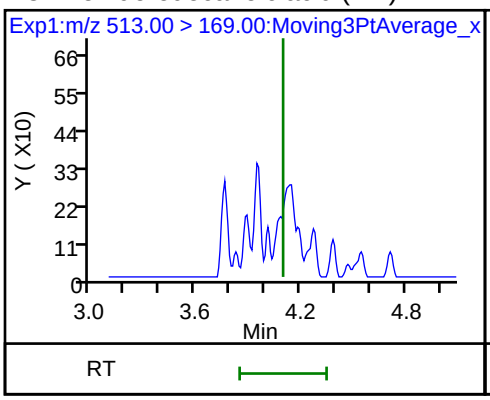
38 1H,1H,2H,2H-perfluorodecanesulfoni



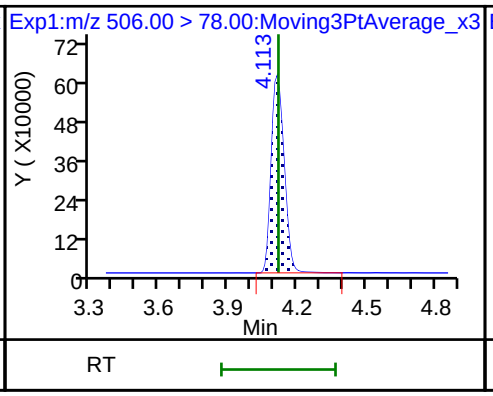
(ND)erfluorodecanoic acid (ND)



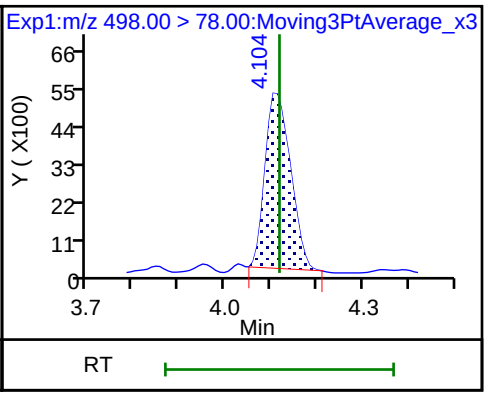
37 Perfluorodecanoic acid (ND)



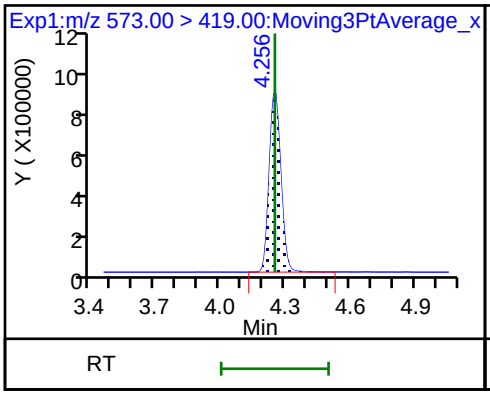
D 32 13C8 FOSA



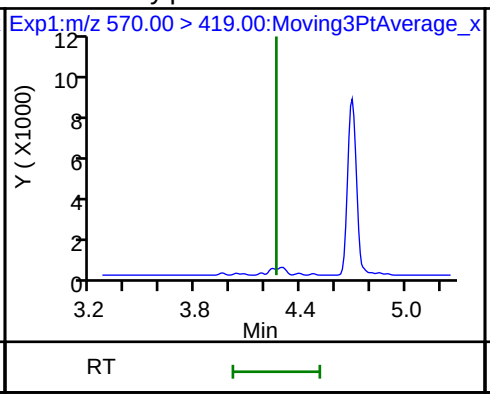
33 Perfluorooctanesulfonamide



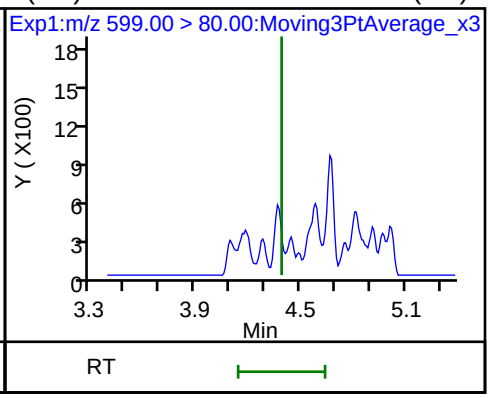
D 39 d3-NMeFOSAA



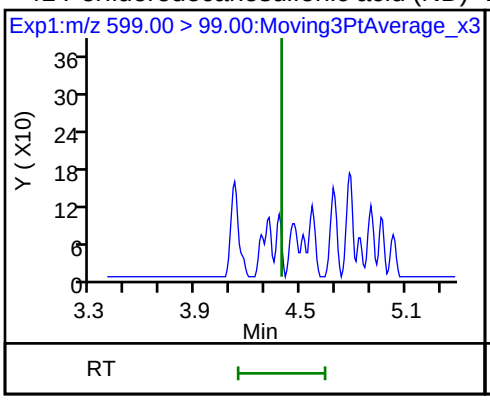
40 N-methylperfluorooctanesulfonamido (ND)



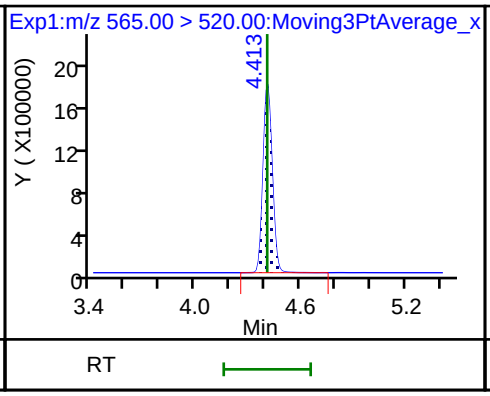
41 Perfluorodecanesulfonic acid (ND)



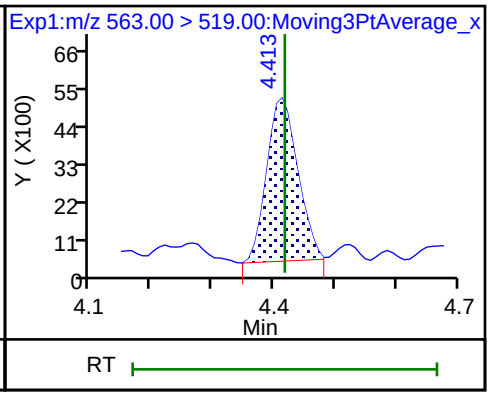
41 Perfluorodecanesulfonic acid (ND)



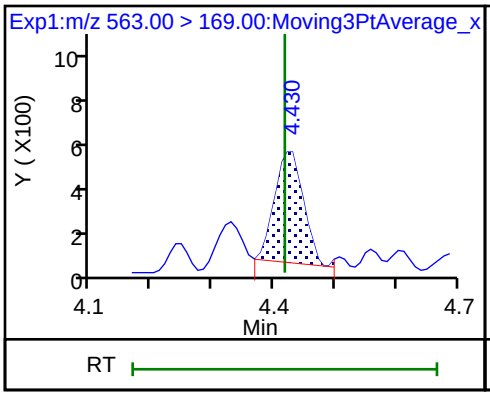
D 42 13C2 PFUnA



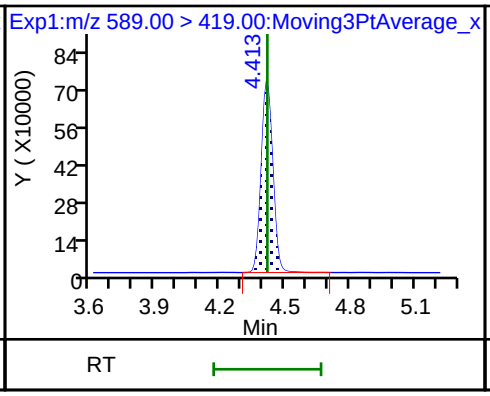
43 Perfluoroundecanoic acid



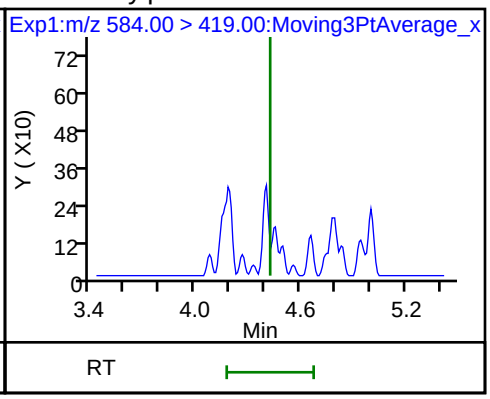
43 Perfluoroundecanoic acid



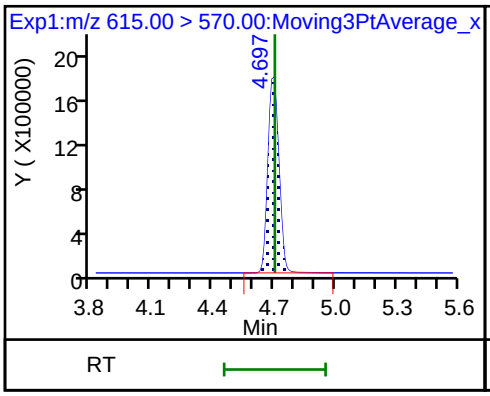
D 44 d5-NEtFOSAA



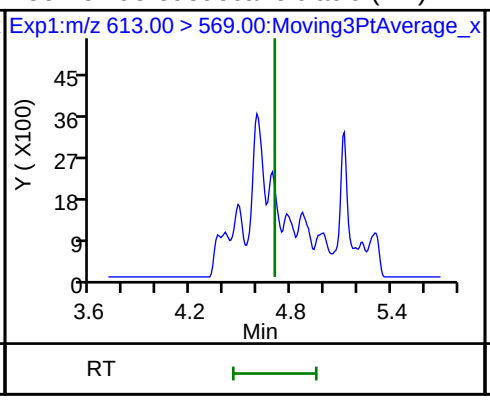
45 N-ethylperfluorooctanesulfonamidoa (ND)



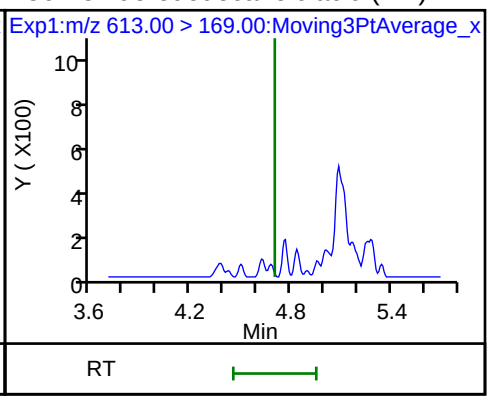
D 55 13C2 PFDoA



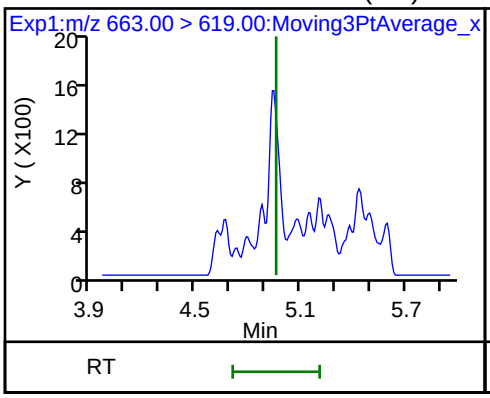
56 Perfluorododecanoic acid (ND)



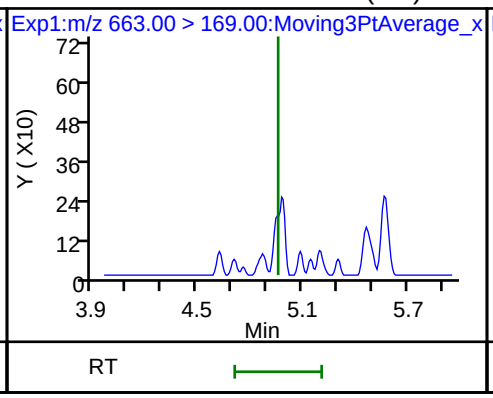
56 Perfluorododecanoic acid (ND)



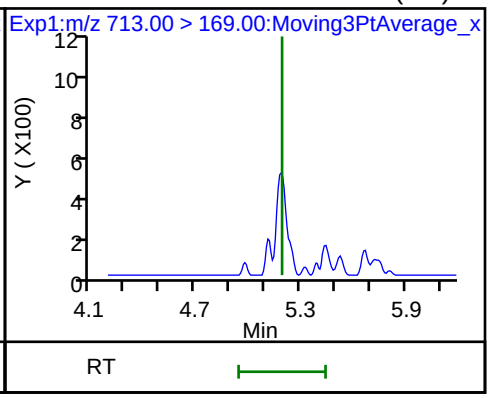
59 Perfluorotridecanoic acid (ND)



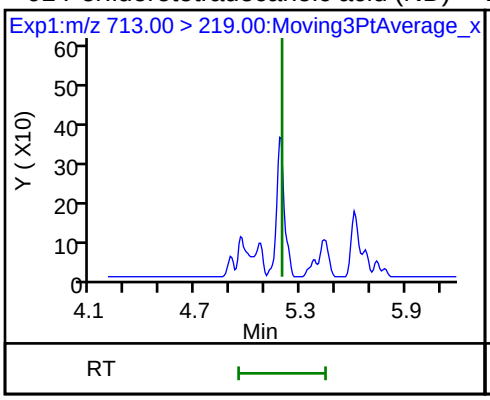
59 Perfluorotridecanoic acid (ND)



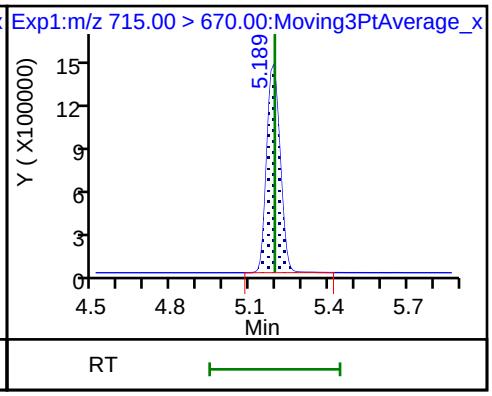
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

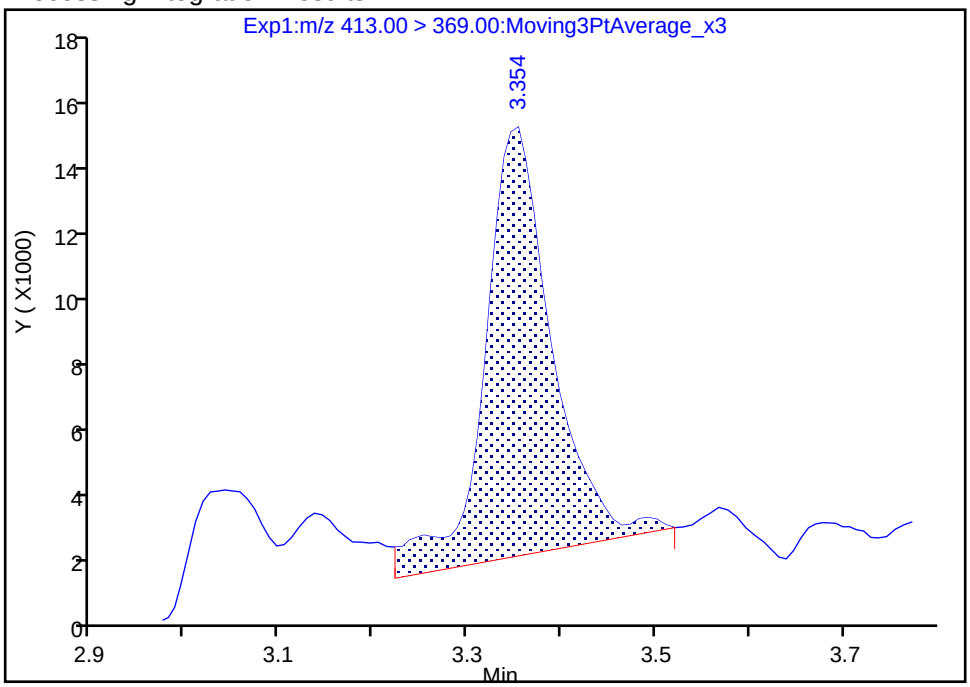
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_011.d				
Injection Date:	10-Oct-2019 06:06:12	Instrument ID:	A9		
Lims ID:	480-159547-B-18-B	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

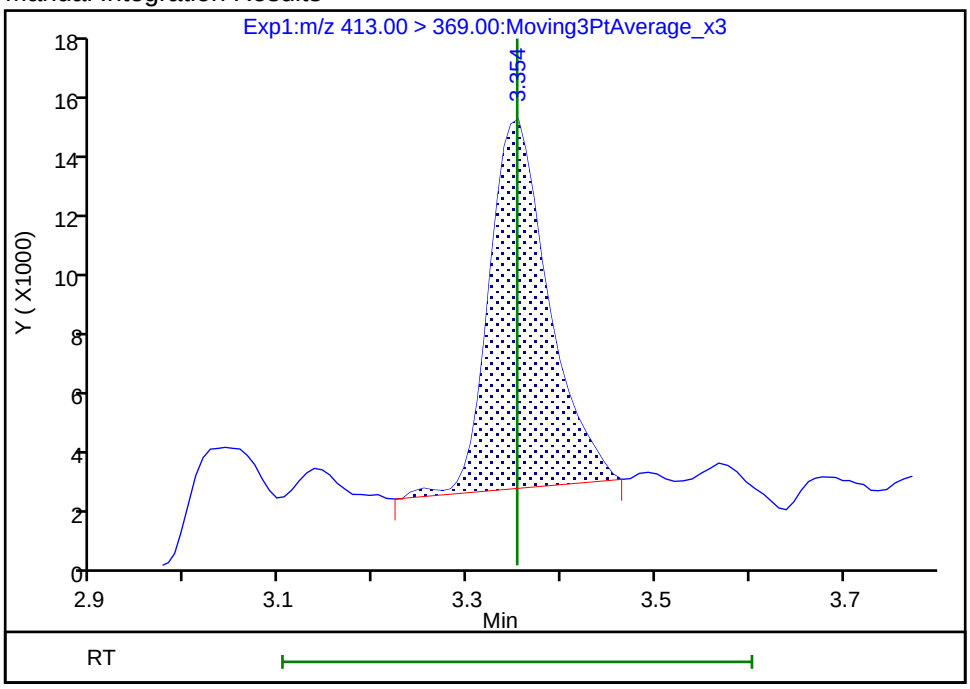
Processing Integration Results

RT: 3.35
Area: 64836
Amount: 0.019426
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 54341
Amount: 0.016281
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:29:32

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

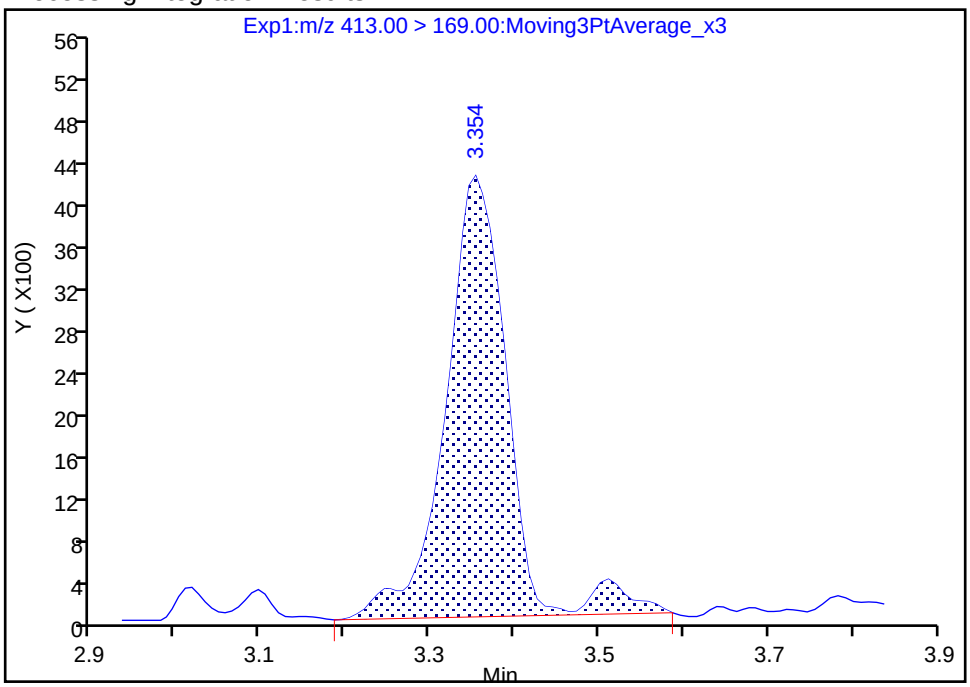
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_011.d				
Injection Date:	10-Oct-2019 06:06:12	Instrument ID:	A9		
Lims ID:	480-159547-B-18-B	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

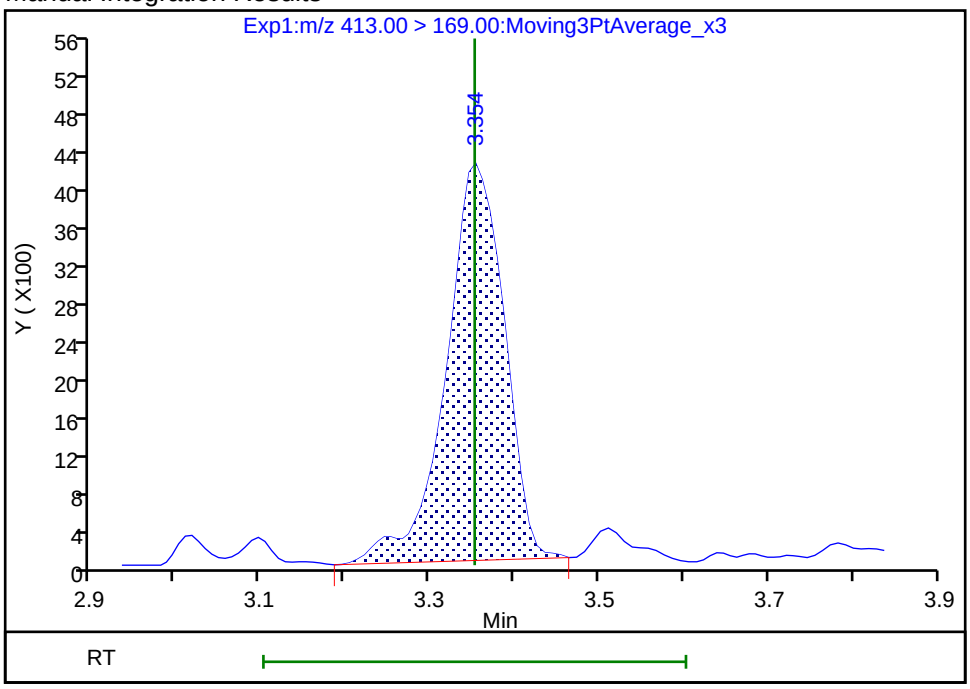
Processing Integration Results

RT: 3.35
Area: 21345
Amount: 0.019426
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 20026
Amount: 0.016281
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:29:38
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

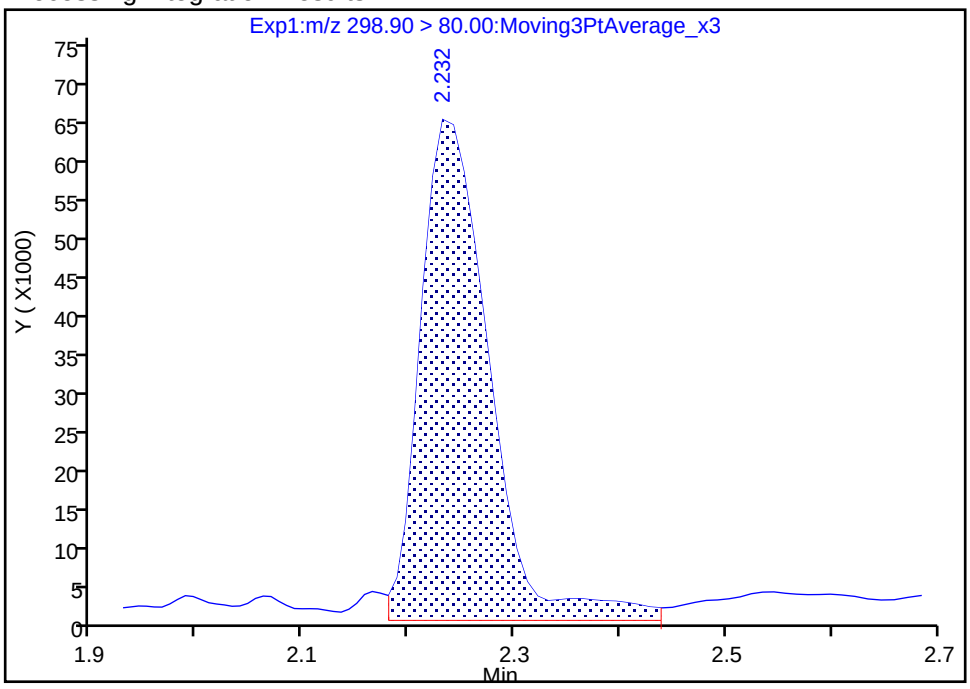
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_011.d				
Injection Date:	10-Oct-2019 06:06:12	Instrument ID:	A9		
Lims ID:	480-159547-B-18-B	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	5	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

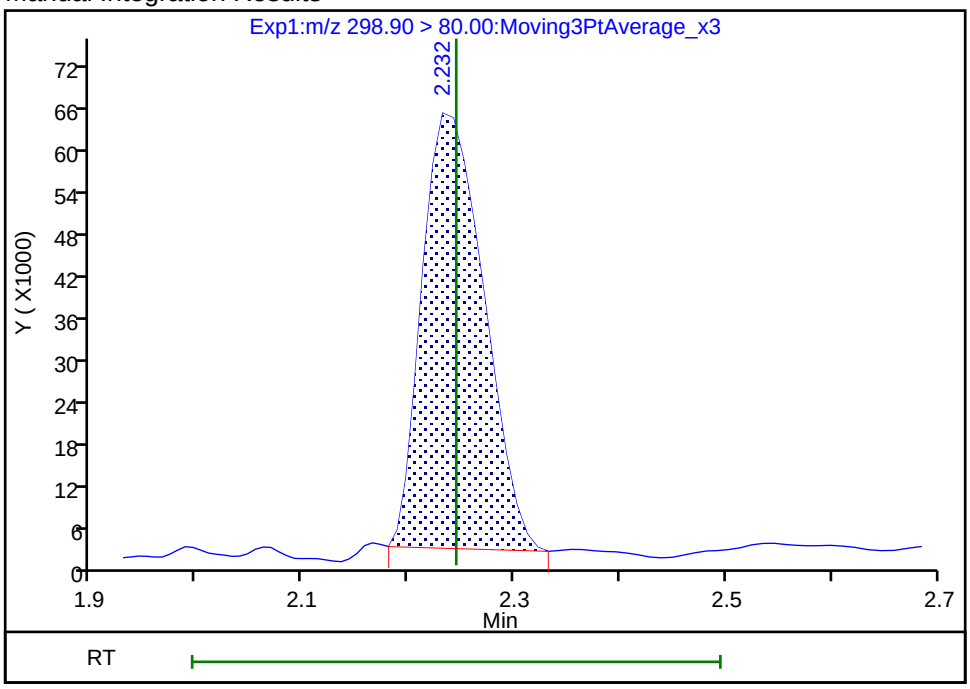
Processing Integration Results

RT: 2.23
Area: 292412
Amount: 0.111455
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 251071
Amount: 0.095698
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:29:07

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._025.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:50

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 282.8(mL) Date Analyzed: 10/09/2019 01:40

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.56	J	1.77	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.77		1.77	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	1.77		1.77	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.27	J	1.77	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	1.77		1.77	0.75
375-95-1	Perfluorononanoic acid (PFNA)	1.77		1.77	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.77		1.77	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.77		1.77	0.97
307-55-1	Perfluorododecanoic acid (PFDoA)	1.77		1.77	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.77		1.77	1.15
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.77		1.77	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.77		1.77	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.77	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.77		1.77	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.73	J B	1.77	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.77		1.77	0.28

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	109		25-150
STL00993	13C2 PFHxA	109		25-150
STL00990	13C4 PFOA	109		25-150
STL00995	13C5 PFNA	112		25-150
STL00996	13C2 PFDA	110		25-150
STL00997	13C2 PFUnA	107		25-150
STL00998	13C2 PFDoA	110		25-150
STL02116	13C2 PFTeDA	108		25-150
STL00994	18O2 PFHxS	116		25-150
STL00991	13C4 PFOS	105		25-150
STL01892	13C4 PFHpA	110		25-150
STL01893	13C5 PFPeA	108		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d
Lims ID: 480-159547-B-18-C
Client ID: RUSSO-CF-COMP 1
Sample Type: Client
Inject. Date: 09-Oct-2019 01:40:30 ALS Bottle#: 15 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-18-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 21-Oct-2019 11:41:43 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0331

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:40:42
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										Ma
212.90 > 169.00	1.888	1.719	0.169	1.000	33880	0.0158			5.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.888	1.901	-0.013	0.566	6315669	2.72		109	5639	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.206	-0.016	0.656	5261363	2.71		108	2278	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.190	2.206	-0.016	1.000	17269	0.008010			1.3	
D 9 13C2 PFHxA										
315.00 > 270.00	2.547	2.557	-0.010	0.763	6098901	2.73		109	2640	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.934	2.941	-0.007	1.000	23749	0.007524	Target=4.38		2.9	M
363.00 > 169.00	2.929	2.941	-0.012	0.998	5478		4.34(2.19-6.57)		7.9	
D 14 13C4 PFHpA										
367.00 > 322.00	2.934	2.942	-0.008	0.879	7025909	2.75		110	3149	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.946	2.947	-0.001	1.002	18888	0.008089	Target=3.29		22.6	M
399.00 > 99.00	2.946	2.947	-0.001	1.002	6258		3.02(1.64-4.93)		9.7	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.940	2.947	-0.007	0.881	4514355	2.75		116	4640	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.309	3.318	-0.009	0.998	12233	0.0187			42.0	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.318	-0.002	0.994	668082	1.87		78.8	1708	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.347	-0.009	1.000	8002936	2.71		109	4576	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.347	-0.009		7867899	2.50			5156	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.345	3.347	-0.002	1.002	76181	0.0210	Target=2.91		8.3	M
413.00 > 169.00	3.338	3.347	-0.009	1.000	27679		2.75(1.45-4.36)		40.9	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.704	3.715	-0.011	0.998	44229	0.0206	Target=3.91		25.8	M
499.00 > 99.00	3.711	3.715	-0.004	1.000	11766		3.76(1.95-5.86)		31.7	
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.715	-0.004	1.112	4789570	2.51		105	4093	
D 30 13C5 PFNA										
468.00 > 423.00	3.719	3.731	-0.012	1.114	7324218	2.79		112	4966	
29 Perfluorononanoic acid										M
463.00 > 419.00	3.744	3.731	0.013	1.007	8847	0.002932	Target=5.56		2.1	M
463.00 > 169.00	3.727	3.731	-0.004	1.002	2906		3.04(2.78-8.34)		7.4	M
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.086	-0.004	1.000	4486	0.007151			27.8	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.088	-0.006	1.223	8164378	2.75		110	3911	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.088	-0.006	1.223	678444	2.02		84.4	1434	
D 32 13C8 FOSA										
506.00 > 78.00	4.100	4.114	-0.014	1.228	2647408	2.69		108	2144	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.100	4.123	-0.023	1.000	20285	0.006973			62.6	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.249	-0.006	1.271	3800046	2.72		109	2431	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.406	-0.006	1.318	6776043	2.68		107	4327	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.414	-0.014	1.000	15181	0.007120	Target=10.16		12.7	
563.00 > 169.00	4.408	4.414	-0.006	1.002	2060		7.37(5.08-15.24)		11.4	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.414	-0.014	1.318	3293298	2.74		110	2209	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.690	-0.007	1.403	7630058	2.74		110	4808	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.177	5.191	-0.014	1.551	5333878	2.70		108	4553	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 21-Oct-2019 11:42:04 Chrom Revision: 2.3 17-Oct-2019 22:00:42

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d

Injection Date: 09-Oct-2019 01:40:30 Instrument ID: A9

Lims ID: 480-159547-B-18-C Lab Sample ID: 320-159547-18

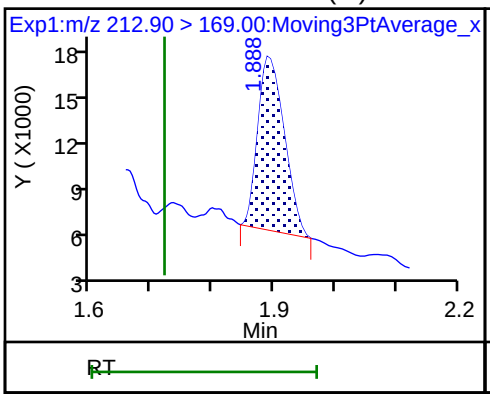
Client ID: RUSSO-CF-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 15 Worklist Smp#: 11

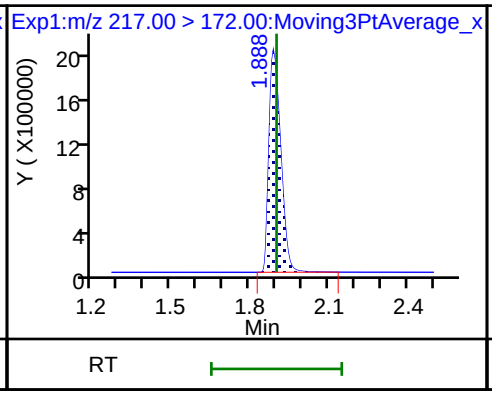
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

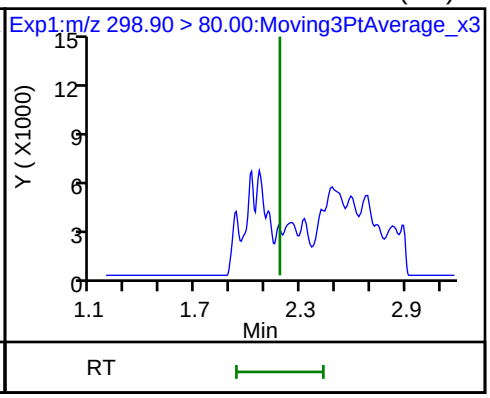
2 Perfluorobutanoic acid (M)



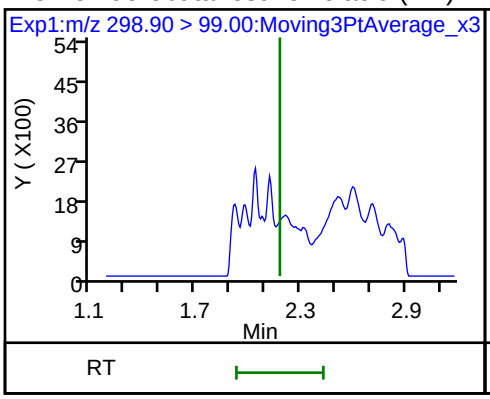
D 1 13C4 PFBA



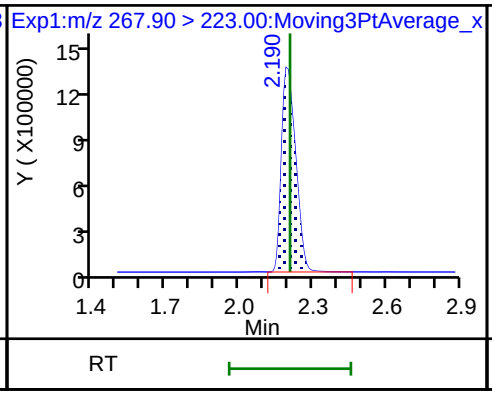
5 Perfluorobutanesulfonic acid (ND)



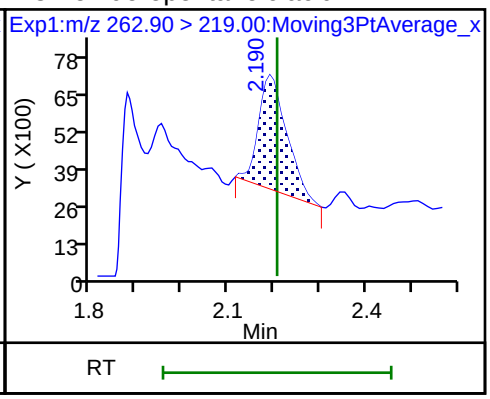
5 Perfluorobutanesulfonic acid (ND)



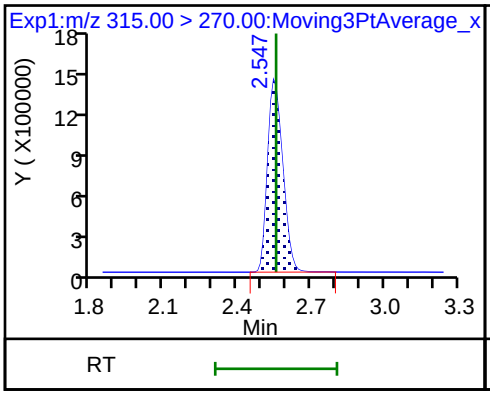
D 4 13C5 PFPeA



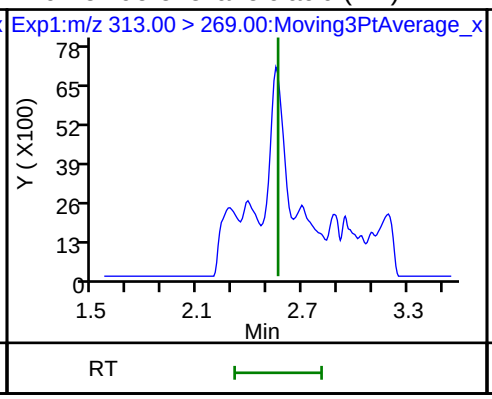
3 Perfluoropentanoic acid



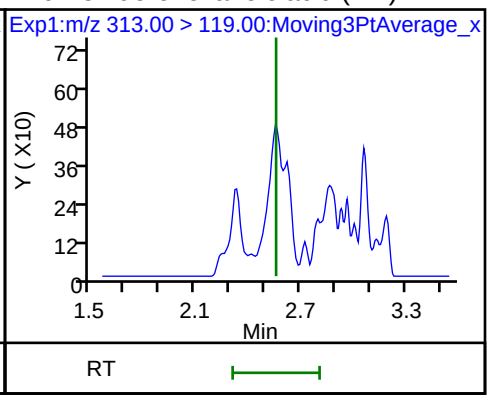
D 9 13C2 PFHxA



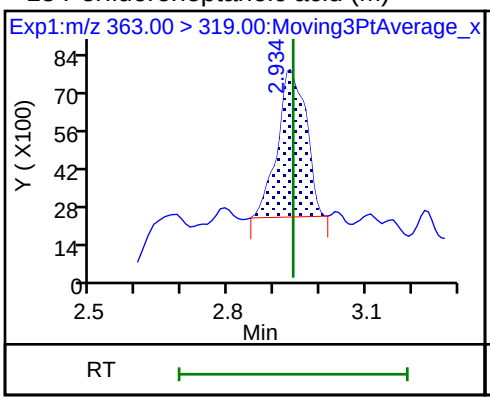
10 Perfluorohexanoic acid (ND)



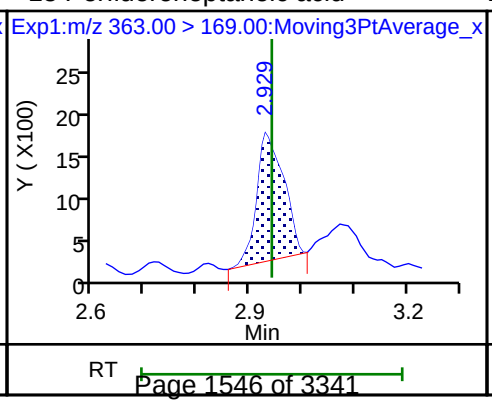
10 Perfluorohexanoic acid (ND)



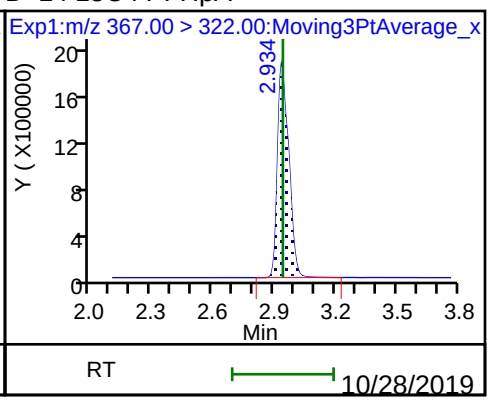
15 Perfluoroheptanoic acid (M)



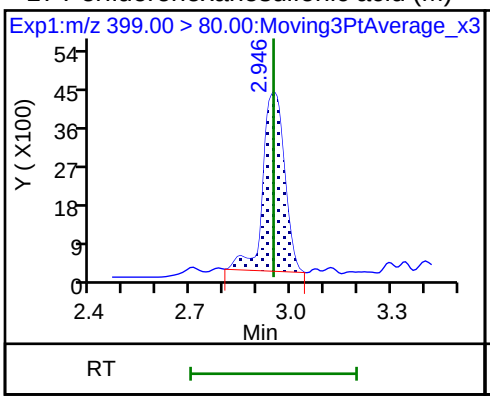
15 Perfluoroheptanoic acid



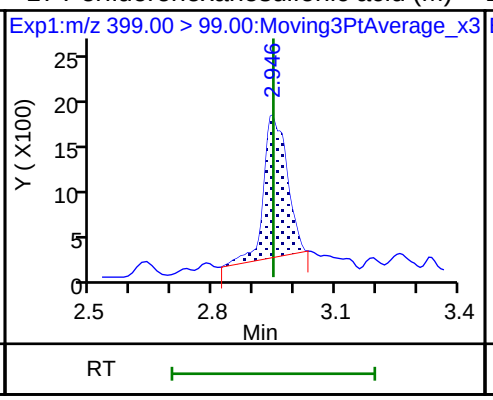
D 14 13C4 PFHpA



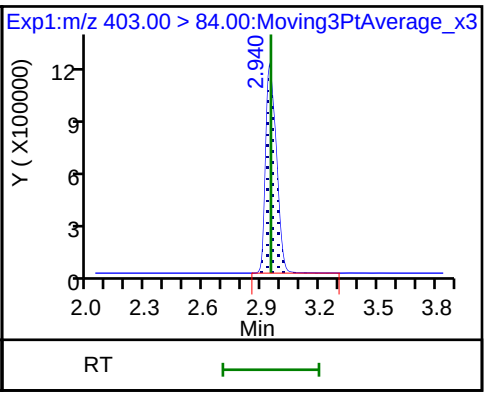
17 Perfluorohexanesulfonic acid (M)



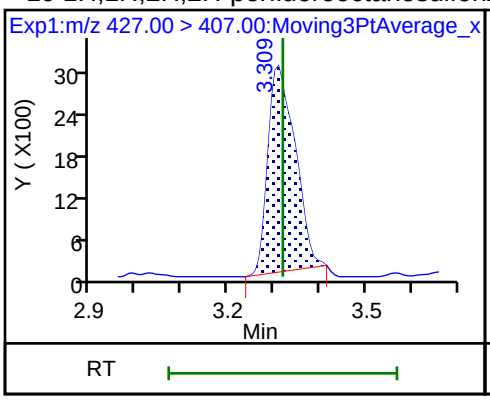
17 Perfluorohexanesulfonic acid (M)



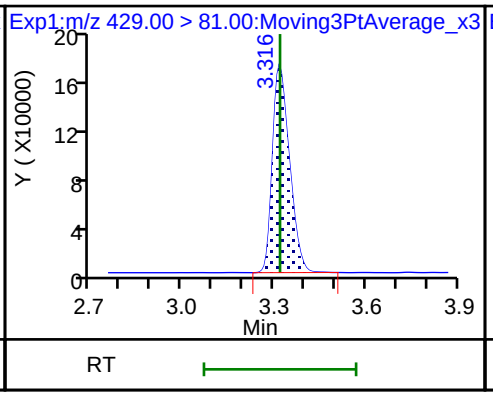
D 16 18O2 PFHxS



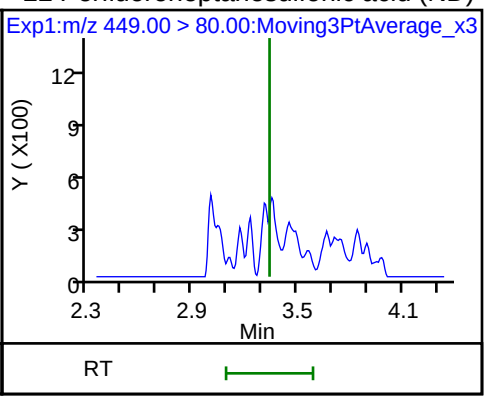
19 1H,1H,2H,2H-perfluorooctanesulfon



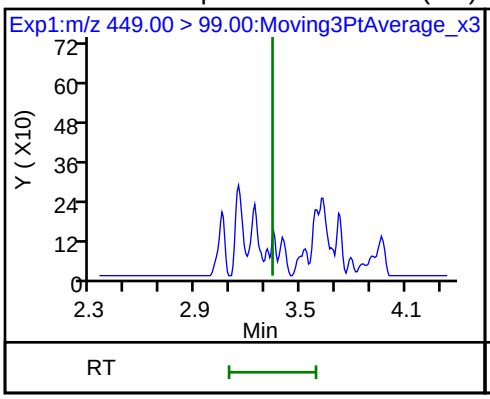
D 20 M2-6:2 FTS



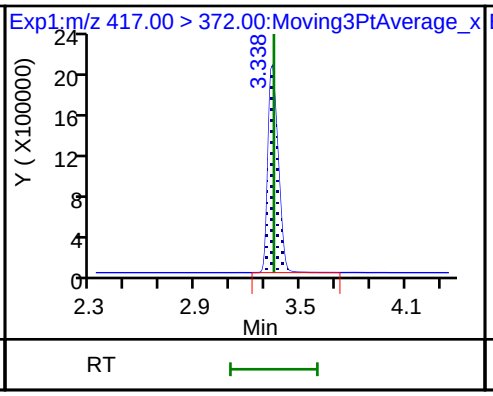
22 Perfluoroheptanesulfonic acid (ND)



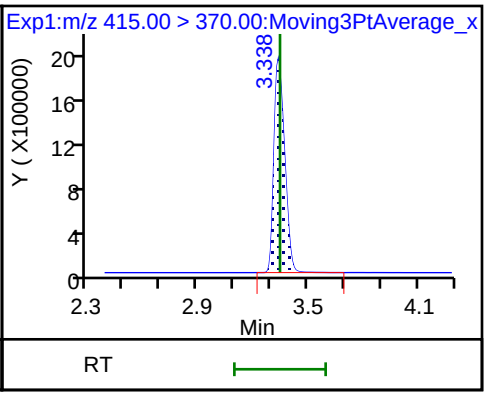
22 Perfluoroheptanesulfonic acid (ND)



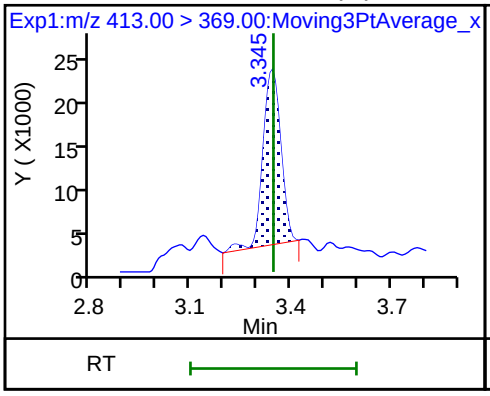
D 23 13C4 PFOA



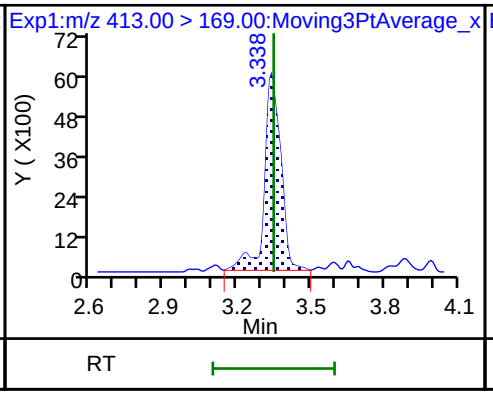
* 25 13C2 PFOA



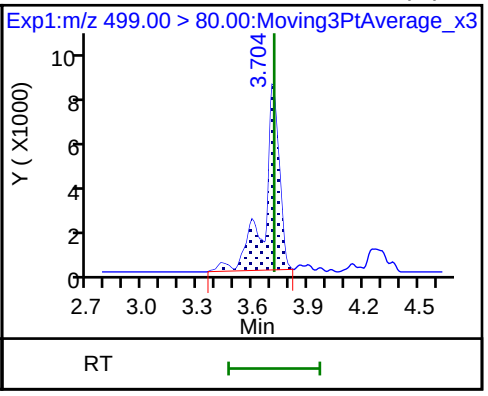
24 Perfluorooctanoic acid (M)



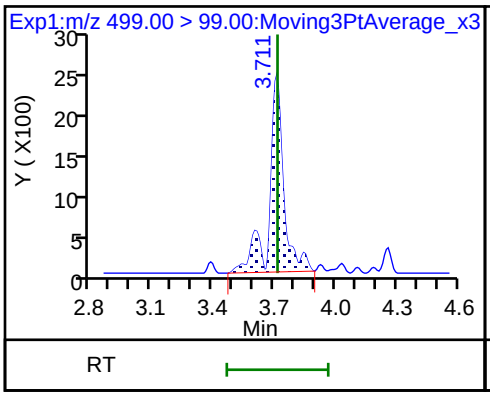
24 Perfluorooctanoic acid



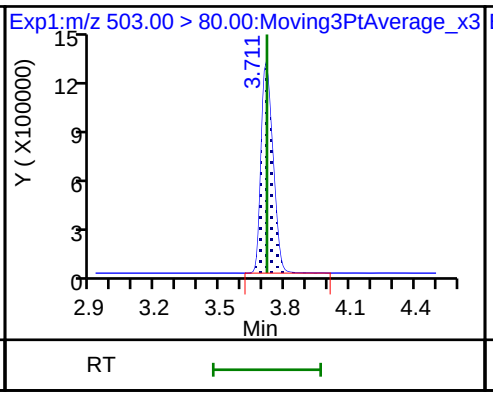
28 Perfluorooctanesulfonic acid (M)



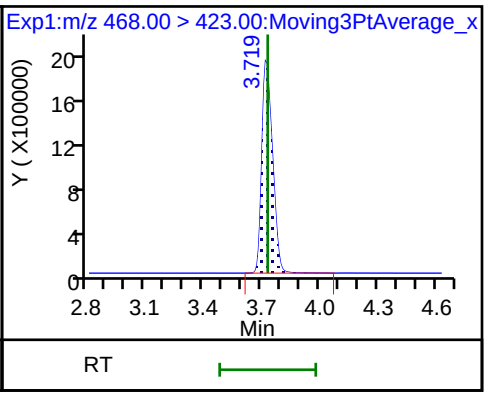
28 Perfluorooctanesulfonic acid



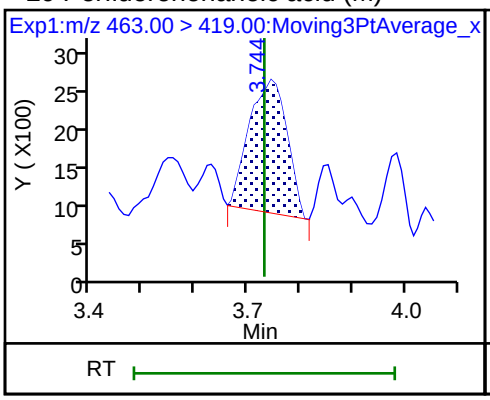
D 27 13C4 PFOS



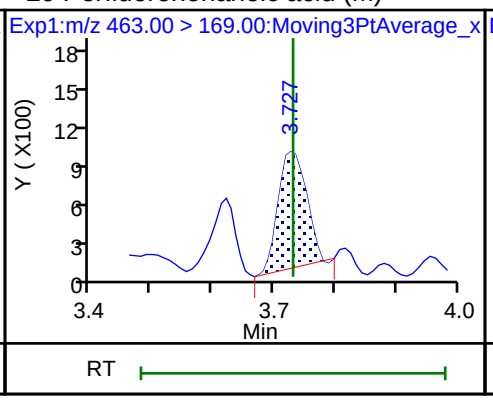
D 30 13C5 PFNA



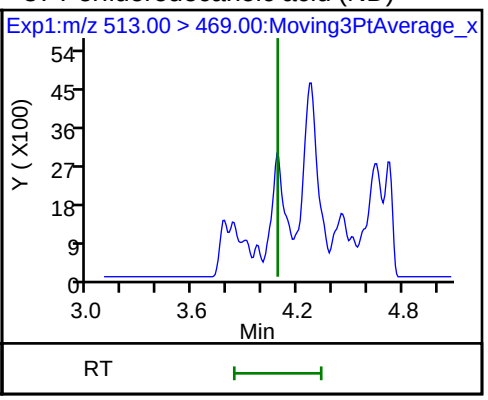
29 Perfluorononanoic acid (M)



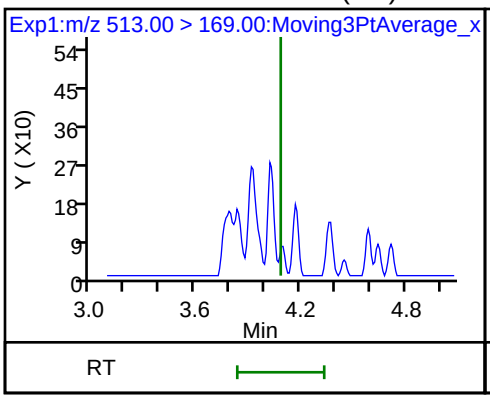
29 Perfluorononanoic acid (M)



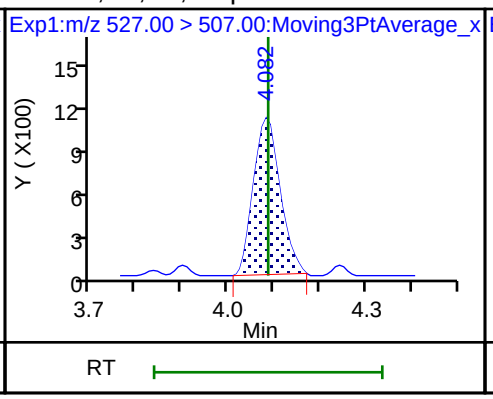
37 Perfluorodecanoic acid (ND)



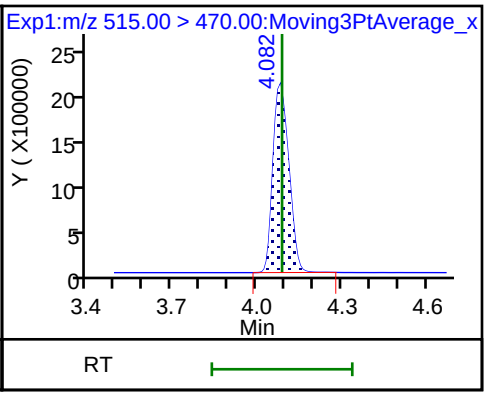
37 Perfluorodecanoic acid (ND)



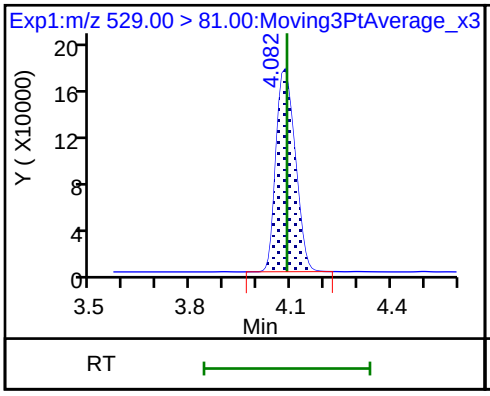
38 1H,1H,2H,2H-perfluorodecanesulfon



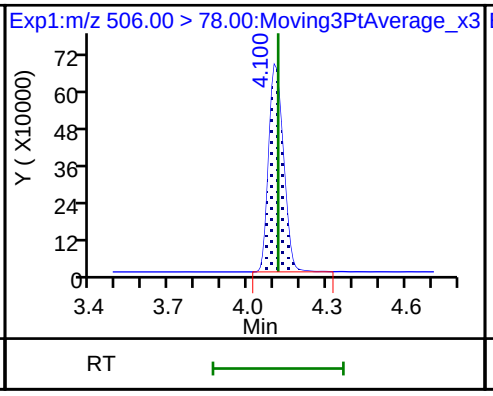
D 36 13C2 PFDA



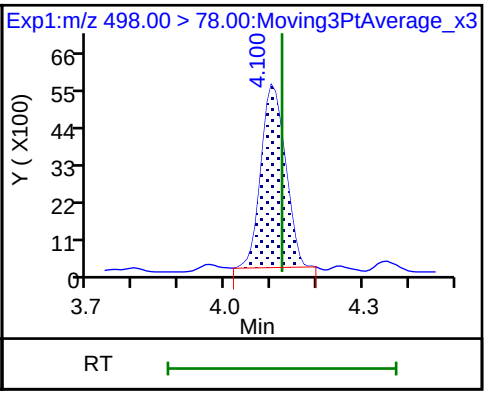
D 35 M2-8:2 FTS



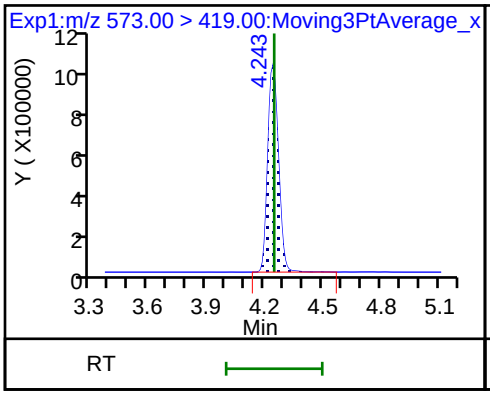
D 32 13C8 FOSA



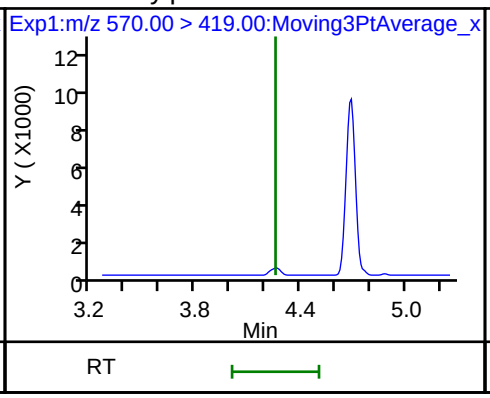
33 Perfluorooctanesulfonamide



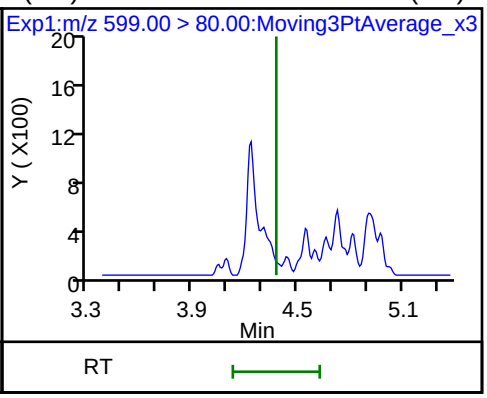
D 39 d3-NMeFOSAA



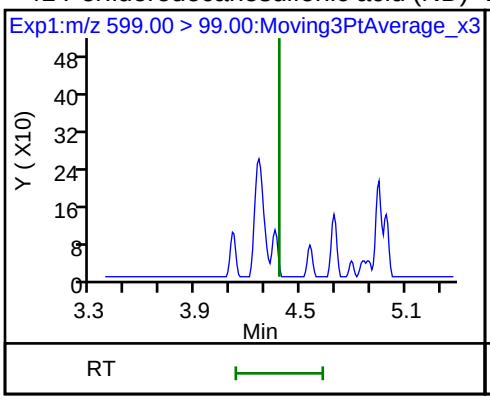
40 N-methylperfluorooctanesulfonamido (ND)



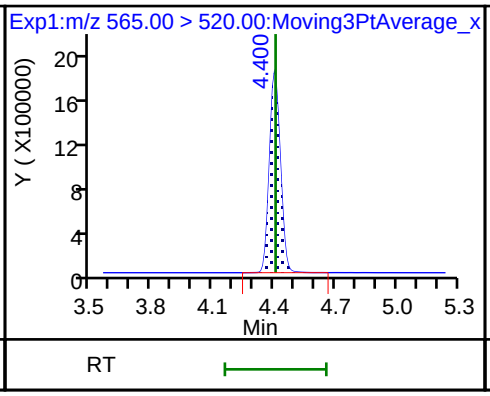
41 Perfluorodecanesulfonic acid (ND)



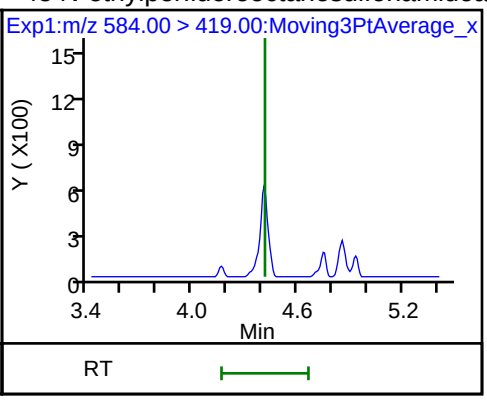
41 Perfluorodecanesulfonic acid (ND)



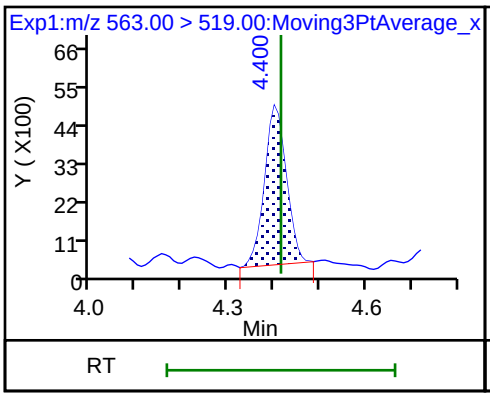
D 42 13C2 PFUnA



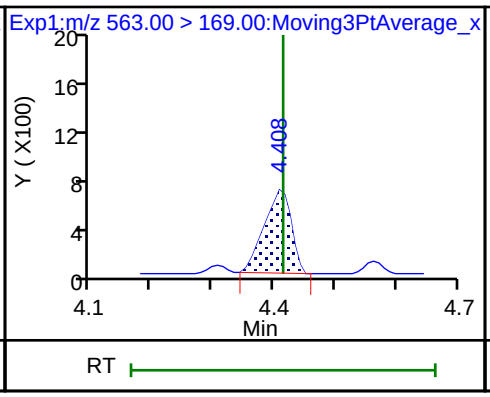
45 N-ethylperfluorooctanesulfonamidoa (ND)



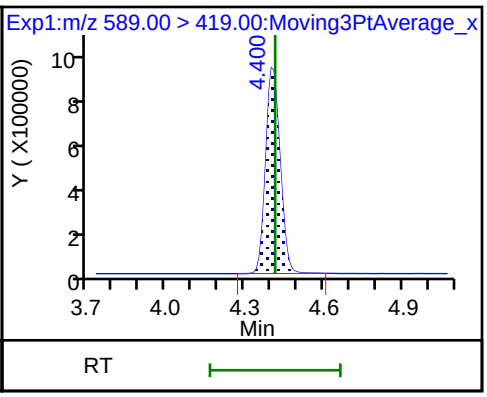
43 Perfluoroundecanoic acid



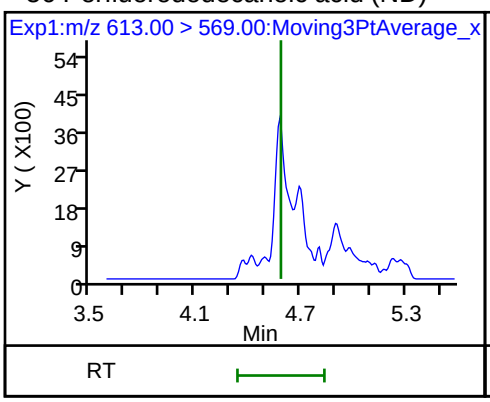
43 Perfluoroundecanoic acid



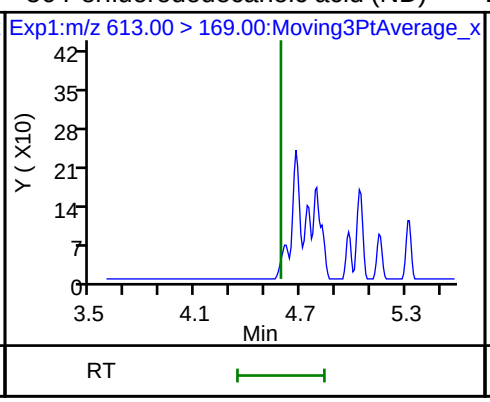
D 44 d5-NEtFOSAA



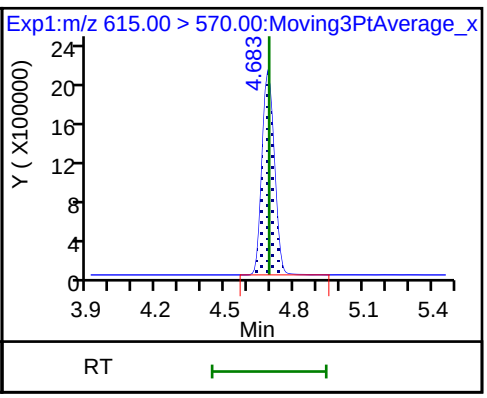
56 Perfluorododecanoic acid (ND)



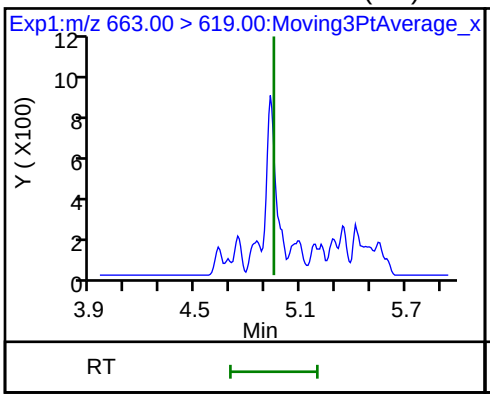
56 Perfluorododecanoic acid (ND)



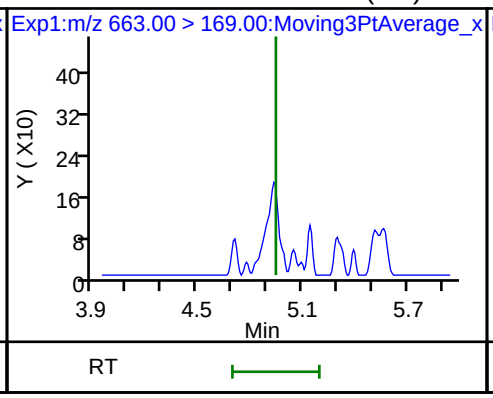
D 55 13C2 PFDoA



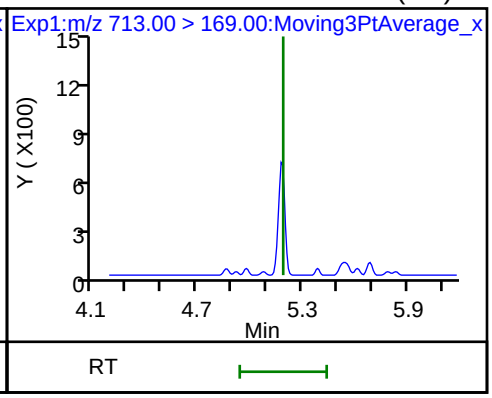
59 Perfluorotridecanoic acid (ND)



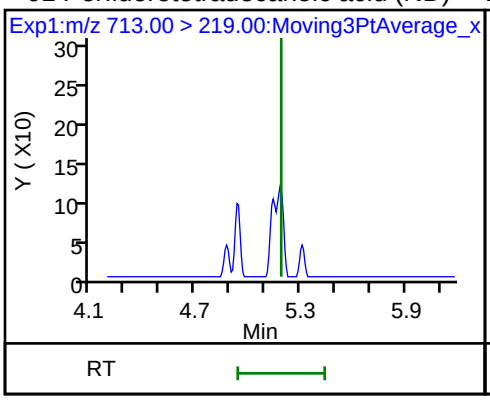
59 Perfluorotridecanoic acid (ND)



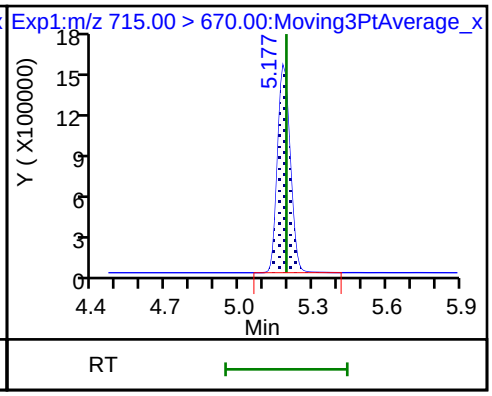
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

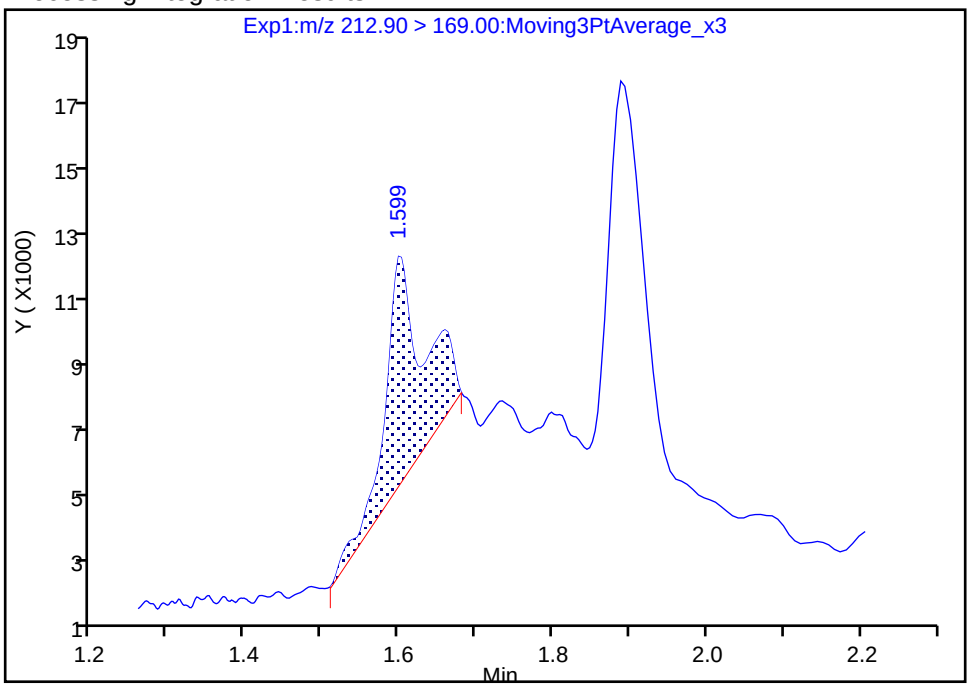
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

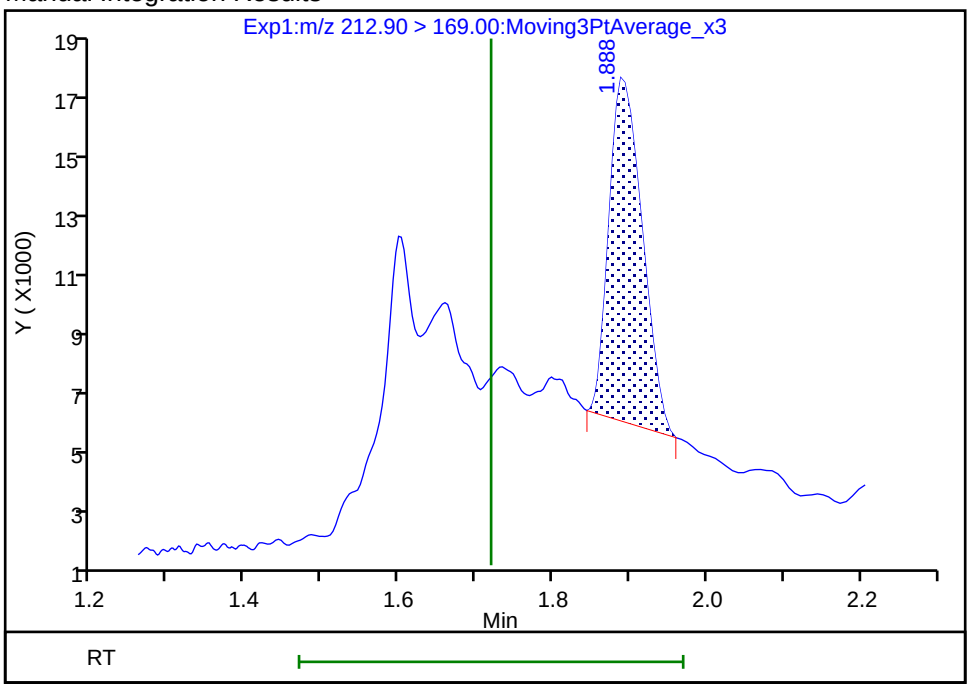
Processing Integration Results

RT: 1.60
Area: 23005
Amount: 0.010719
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 33880
Amount: 0.015786
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:39:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

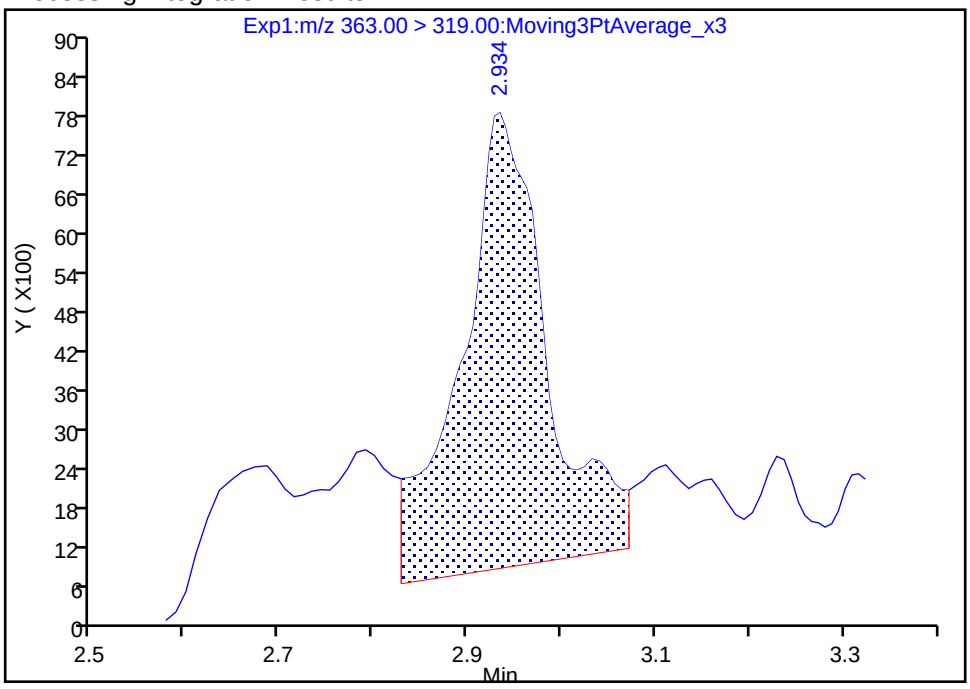
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

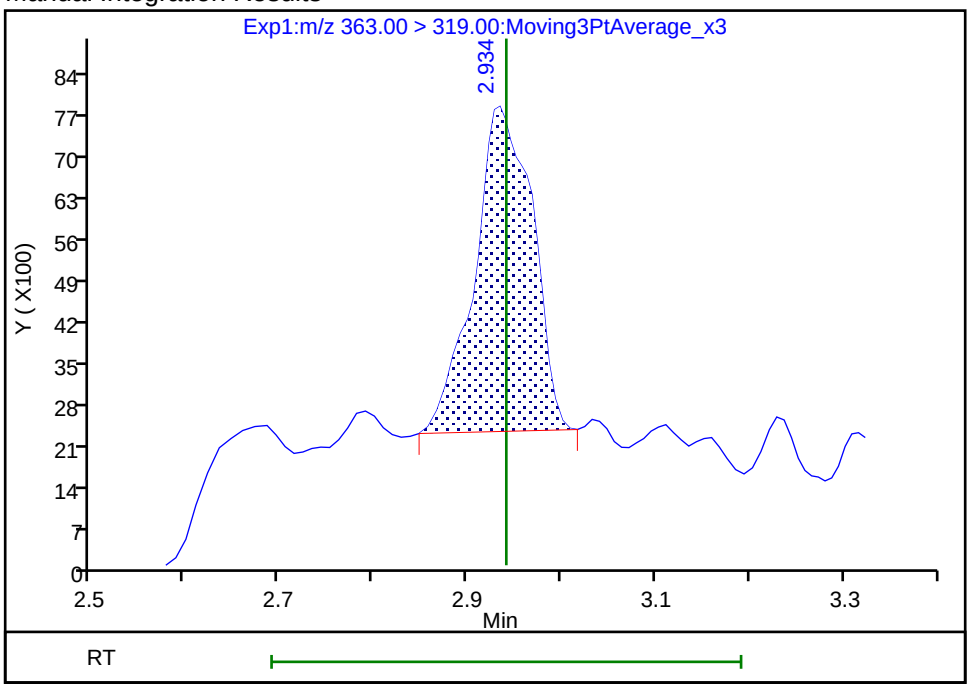
Processing Integration Results

RT: 2.93
Area: 44633
Amount: 0.014141
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 23749
Amount: 0.007524
Amount Units: ng/ml



Reviewer: melnikv, 21-Oct-2019 11:39:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

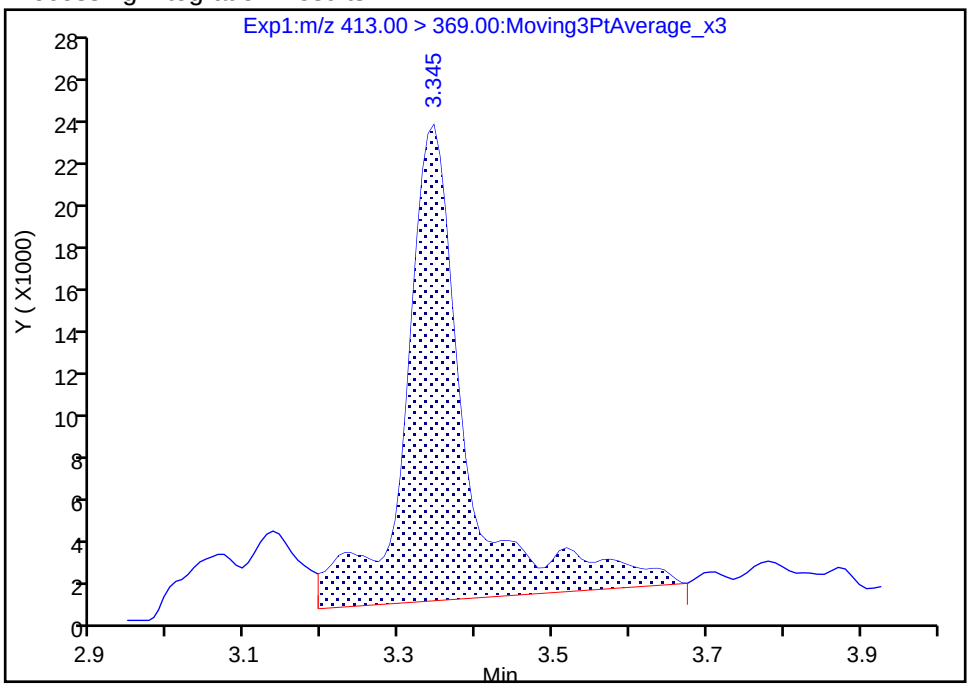
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

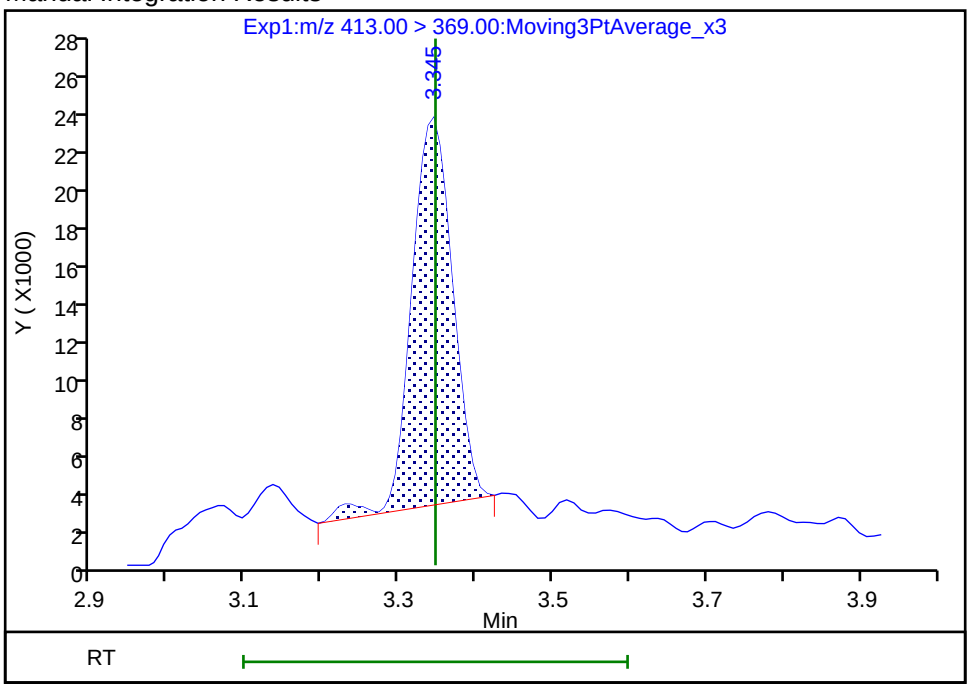
Processing Integration Results

RT: 3.34
Area: 126382
Amount: 0.034920
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 76181
Amount: 0.021049
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:40:06

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

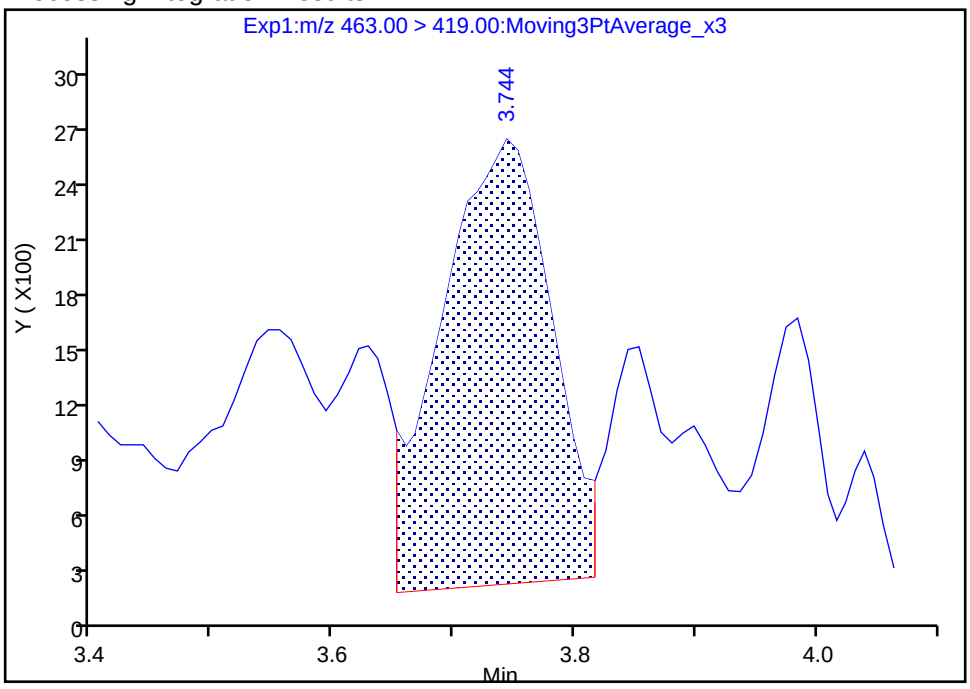
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

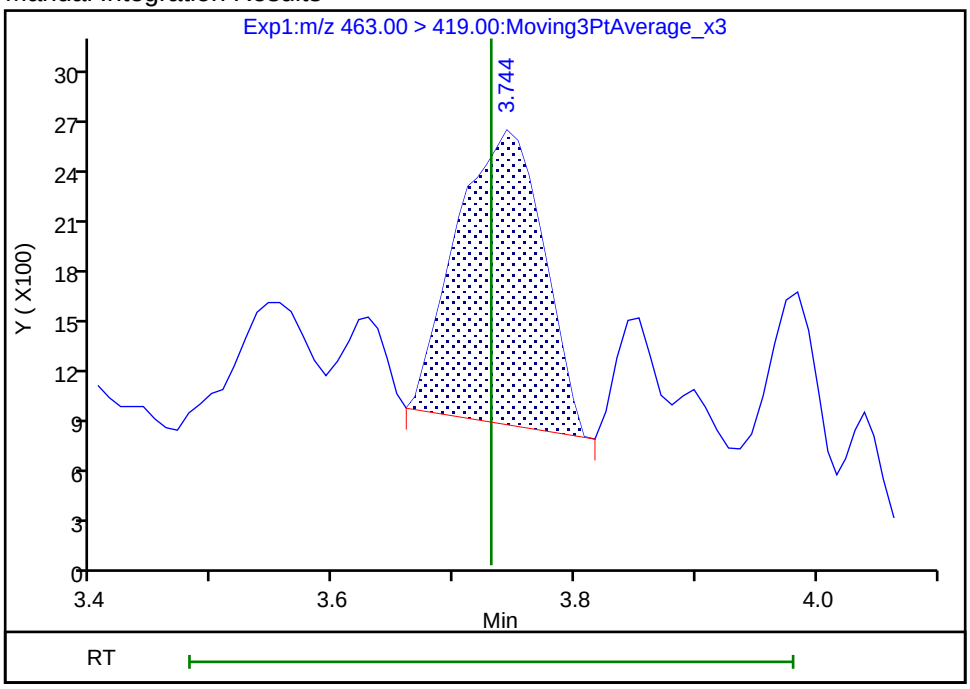
Processing Integration Results

RT: 3.74
Area: 15438
Amount: 0.005116
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 8847
Amount: 0.002932
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:40:25

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
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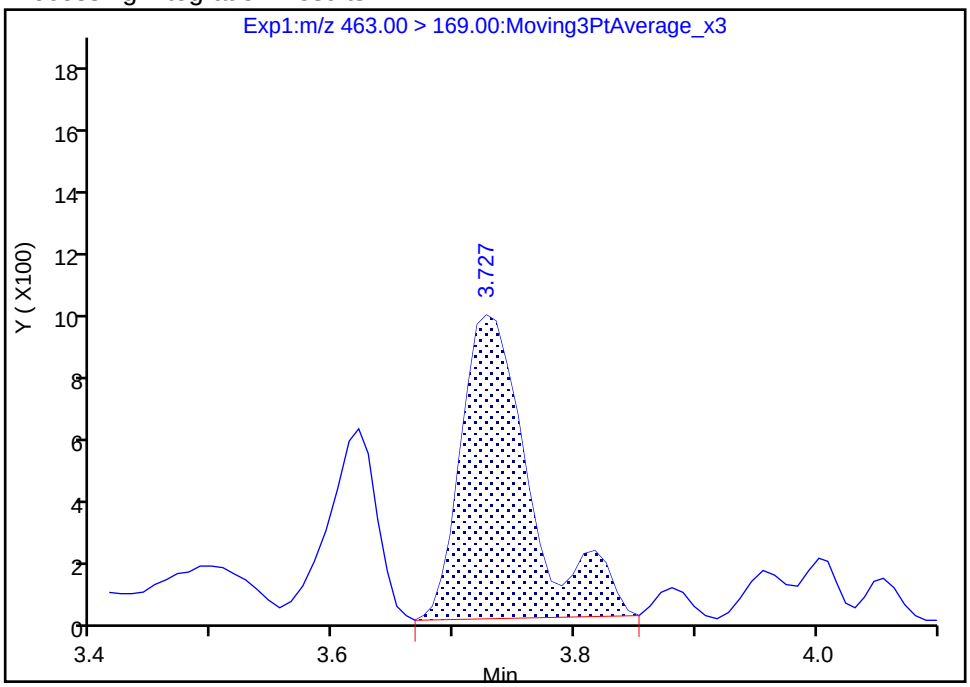
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

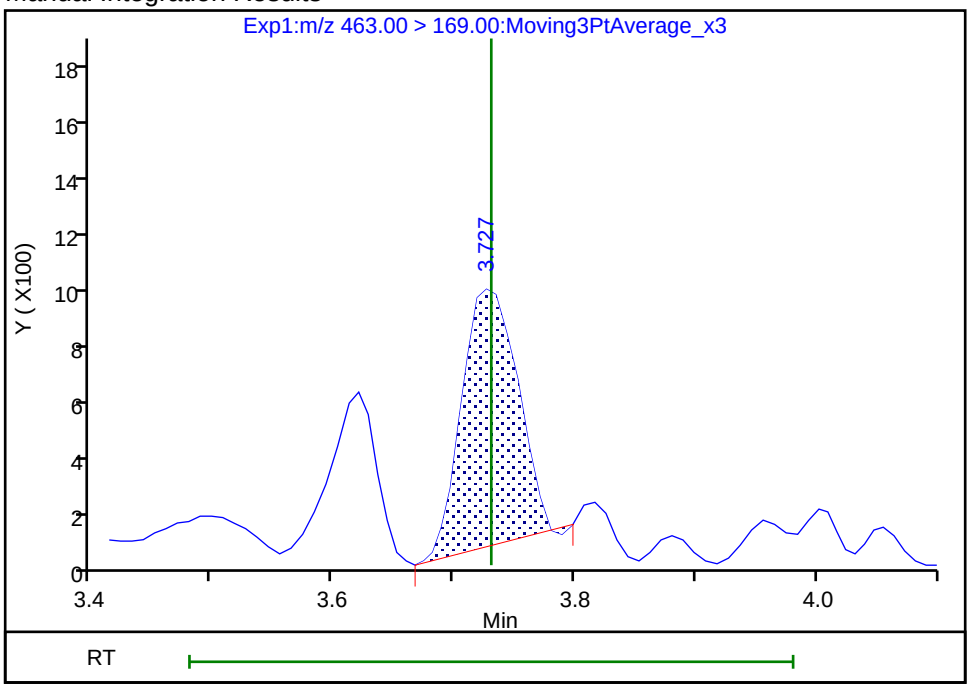
Processing Integration Results

RT: 3.73
Area: 3833
Amount: 0.005116
Amount Units: ng/ml



Manual Integration Results

RT: 3.73
Area: 2906
Amount: 0.002932
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:40:29
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

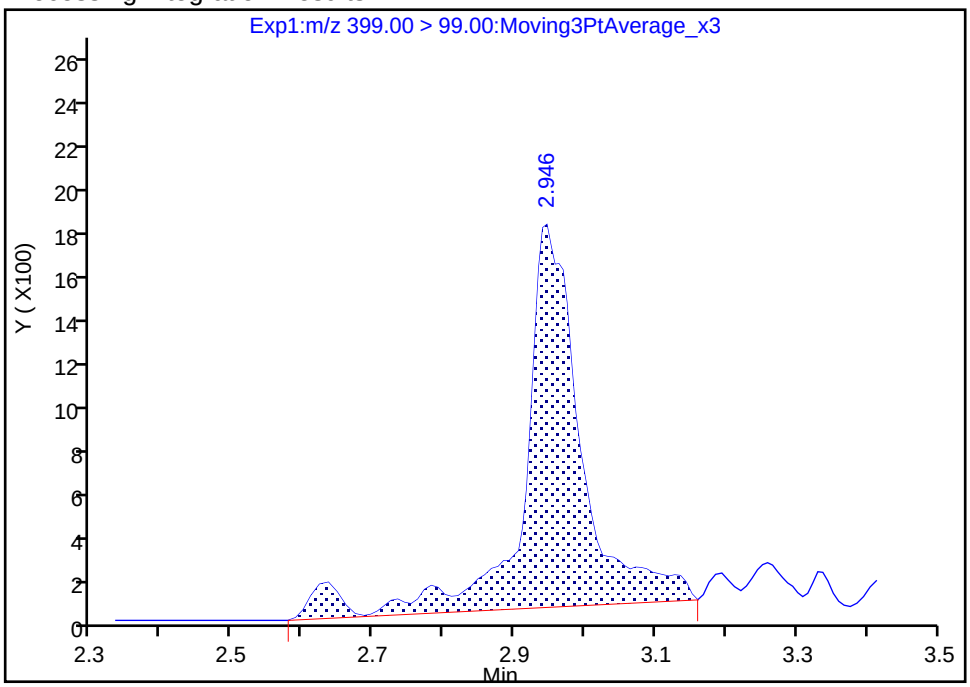
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

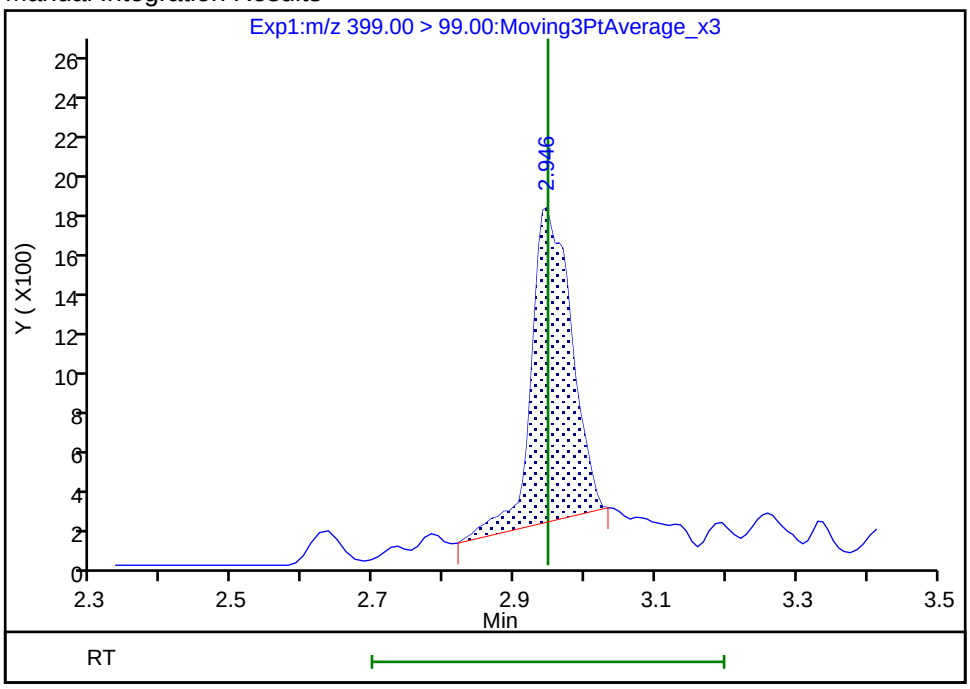
Processing Integration Results

RT: 2.95
Area: 10143
Amount: 0.009816
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 6258
Amount: 0.008089
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:39:52

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

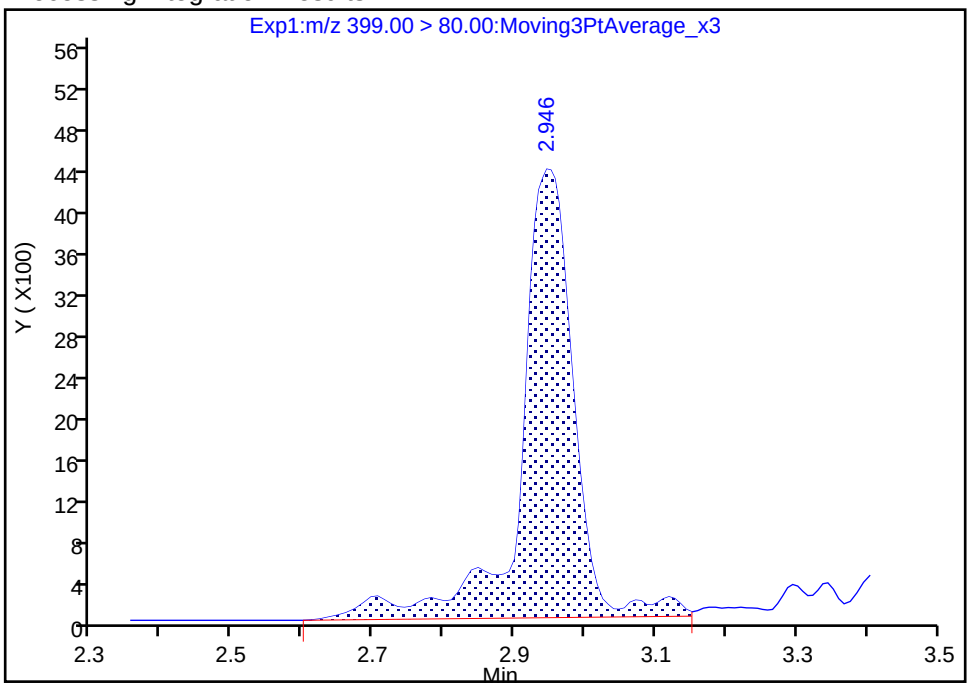
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

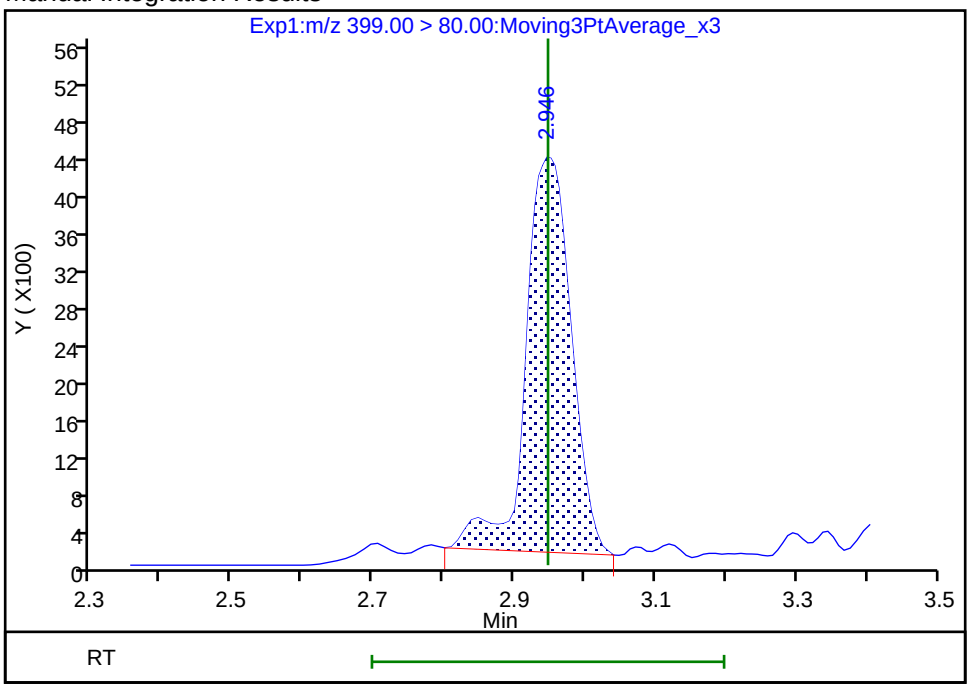
Processing Integration Results

RT: 2.95
Area: 22920
Amount: 0.009816
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 18888
Amount: 0.008089
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:39:57
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

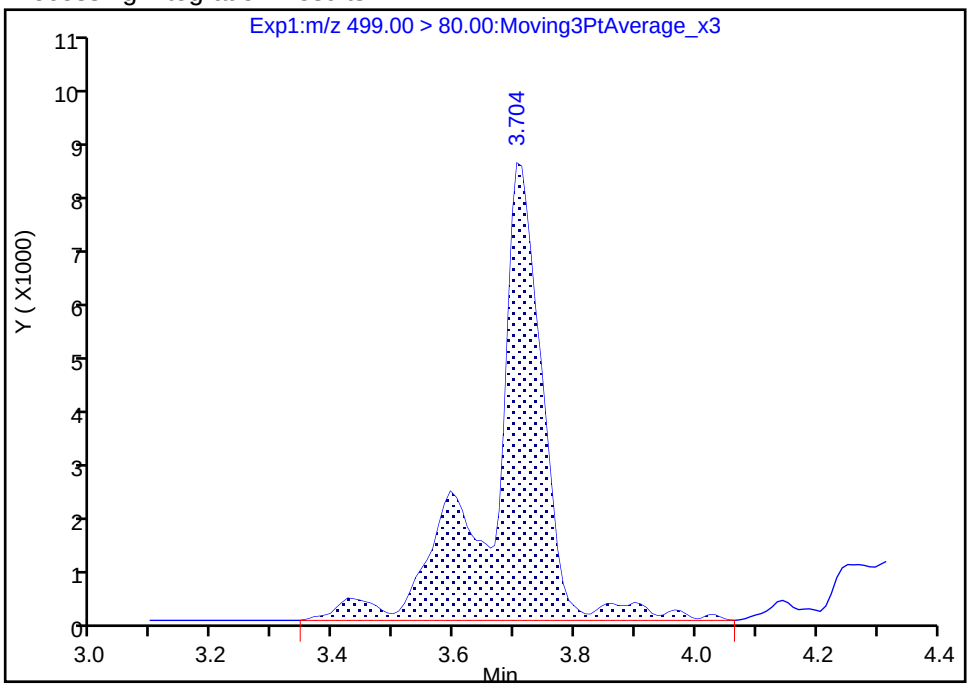
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._025.d				
Injection Date:	09-Oct-2019 01:40:30	Instrument ID:	A9		
Lims ID:	480-159547-B-18-C	Lab Sample ID:	320-159547-18		
Client ID:	RUSSO-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	15	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

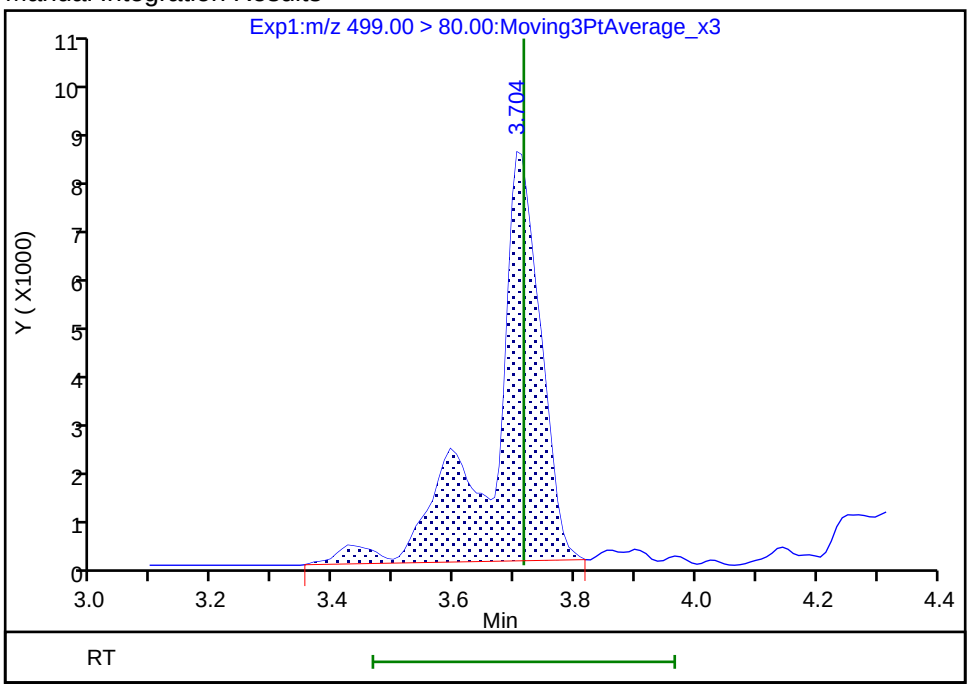
Processing Integration Results

RT: 3.70
Area: 48118
Amount: 0.022367
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 44229
Amount: 0.020559
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:40:15

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 2019.10.03.LLA_016.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:52

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 4.82(g) Date Analyzed: 10/03/2019 13:35

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.033	J	0.23	0.032
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.23		0.23	0.088
307-24-4	Perfluorohexanoic acid (PFHxA)	0.23		0.23	0.048
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.23		0.23	0.033
335-67-1	Perfluorooctanoic acid (PFOA)	0.23		0.23	0.098
375-95-1	Perfluorononanoic acid (PFNA)	0.23		0.23	0.041
335-76-2	Perfluorodecanoic acid (PFDA)	0.23		0.23	0.025
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.23		0.23	0.041
307-55-1	Perfluorododecanoic acid (PFDoA)	0.23		0.23	0.077
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.23		0.23	0.058
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.23		0.23	0.062
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.23		0.23	0.029
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.23		0.23	0.036
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.23		0.23	0.040
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.35	J	0.57	0.23
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.23		0.23	0.045
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.23		0.23	0.094
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.29		2.29	0.45
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.29		2.29	0.42
27619-97-2	6:2 FTS	2.29		2.29	0.17
39108-34-4	8:2 FTS	2.29		2.29	0.29

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid Lab File ID: 2019.10.03.LLA_016.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:52

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 4.82(g) Date Analyzed: 10/03/2019 13:35

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	102		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	111		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	113		25-150
STL00998	13C2 PFDoA	112		25-150
STL02116	13C2 PFTeDA	92		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	101		25-150
STL02118	d3-NMeFOSAA	88		25-150
STL02117	d5-NEtFOSAA	89		25-150
STL02279	M2-6:2 FTS	109		25-150
STL02280	M2-8:2 FTS	129		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_016.d
Lims ID: 480-159547-A-19-B
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 03-Oct-2019 13:35:18 ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-19-b
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:30:46 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:30:46
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.178	2.186	-0.008	0.587	6211083	2.56		102	5820	
3 Perfluorobutanoic acid										M
212.90 > 169.00	2.178	2.194	-0.016	1.000	31283	0.0145			5.1	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.511	2.522	-0.011	0.677	5495445	2.54		101	5813	
D 10 13C2 PFHxA										
315.00 > 270.00	2.896	2.908	-0.012	0.781	6175973	2.55		102	9303	
D 17 13C4 PFHpA										
367.00 > 322.00	3.309	3.312	-0.003	0.892	6168253	2.78		111	30674	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.309	3.322	-0.013	1.000	12660	0.006456	Target=2.92		22.5	
399.00 > 99.00	3.309	3.322	-0.013	1.000	5694		2.22(1.46-4.38)		8.9	
D 15 18O2 PFHxS										
403.00 > 84.00	3.309	3.322	-0.013	0.892	3629118	2.44		103	60187	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.684	3.694	-0.010	1.000	7722	0.006282			23.7	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.684	3.694	-0.010	0.993	1431856	2.59		109	3653	
D 25 13C4 PFOA										
417.00 > 372.00	3.709	3.711	-0.002	1.000	6836559	2.64		105	24192	
* 24 13C2 PFOA										
415.00 > 370.00	3.709	3.720	-0.011		7109977	2.50			19604	
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.709	3.720	-0.011	1.000	48172	0.0169	Target=2.83		10.9	M
413.00 > 169.00	3.701	3.720	-0.019	0.998	17568		2.74(1.41-4.24)		43.5	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.081	4.085	-0.004	1.002	198714	0.1523	Target=4.25		450	
499.00 > 99.00	4.081	4.085	-0.004	1.002	49008		4.05(2.13-6.38)		98.3	
D 28 13C4 PFOS										
503.00 > 80.00	4.073	4.085	-0.012	1.098	2865954	2.22		93.1	5433	
D 29 13C5 PFNA										
468.00 > 423.00	4.089	4.102	-0.013	1.102	5768913	2.54		101	62541	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.430	4.434	-0.004	1.000	22368	0.0127			108	
D 33 13C8 FOSA										
506.00 > 78.00	4.430	4.434	-0.004	1.194	4410262	2.52		101	20739	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.457	4.460	-0.003	1.000	1762	0.001081			13.0	
D 36 13C2 PFDA										
515.00 > 470.00	4.448	4.460	-0.012	1.199	5821531	2.40		96.0	50172	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.457	4.460	-0.003	1.201	2035597	3.10		129	6117	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.619	4.623	-0.004	1.245	3526929	2.20		87.8	13498	
D 43 13C2 PFUnA										
565.00 > 520.00	4.773	4.787	-0.014	1.287	6412911	2.82		113	52713	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.783	4.787	-0.004	1.289	3562191	2.21		88.6	14718	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.773	4.787	-0.014	1.000	20556	0.009631	Target=7.70		6.4	
563.00 > 169.00	4.783	4.787	-0.004	1.002	2271		9.05(3.85-11.55)		7.0	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.802	4.797	0.005	1.004	1977	0.001840			9.6	
D 57 13C2 PFDoA										
615.00 > 570.00	5.066	5.080	-0.014	1.366	6616992	2.79		112	13197	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.571	5.593	-0.022	1.502	4813398	2.30		92.1	13330	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 16:30:47 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_016.d

Injection Date: 03-Oct-2019 13:35:18 Instrument ID: A13

Lims ID: 480-159547-A-19-B Lab Sample ID: 320-159547-19

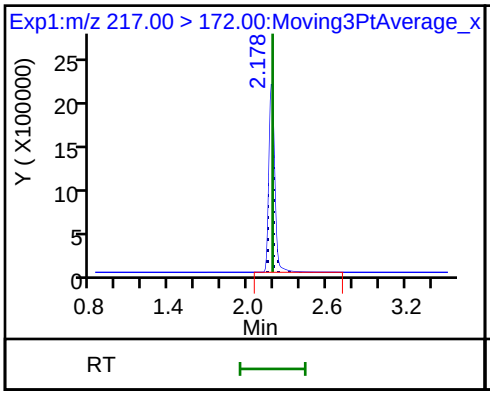
Client ID: RUSSO-CF-COMP 2

Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 13

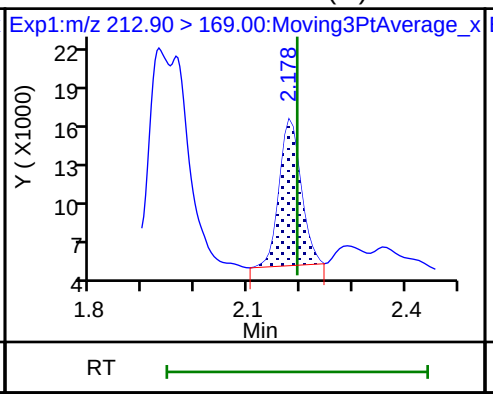
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

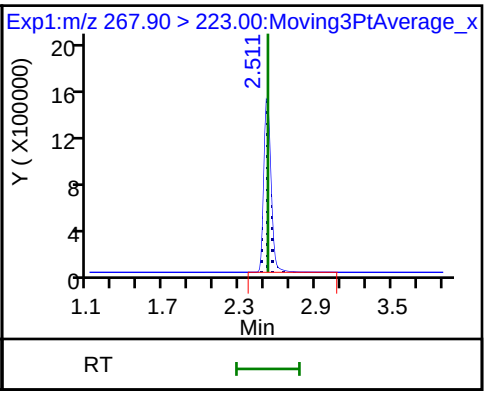
D 2 13C4 PFBA



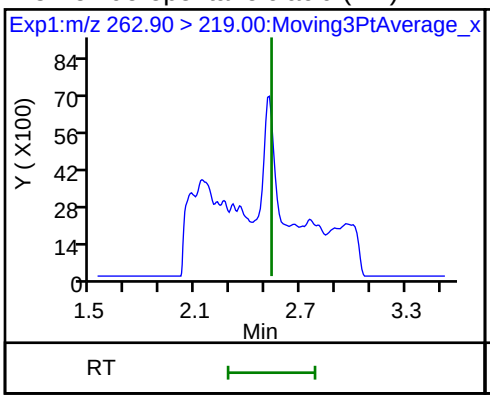
3 Perfluorobutanoic acid (M)



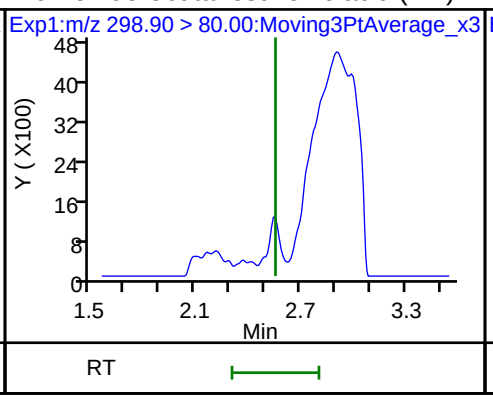
D 4 13C5 PFPeA



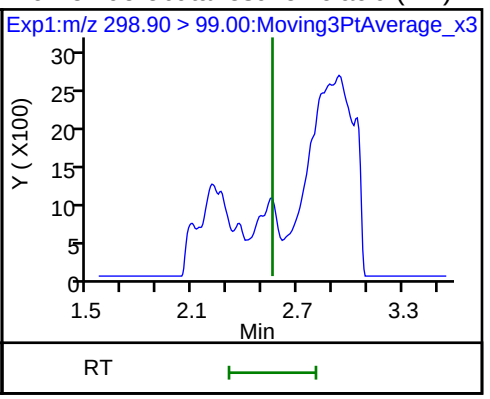
5 Perfluoropentanoic acid (ND)



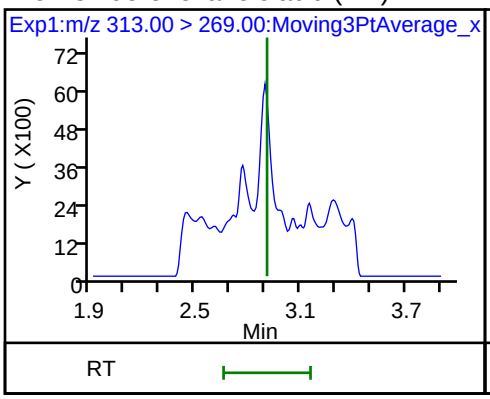
6 Perfluorobutanesulfonic acid (ND)



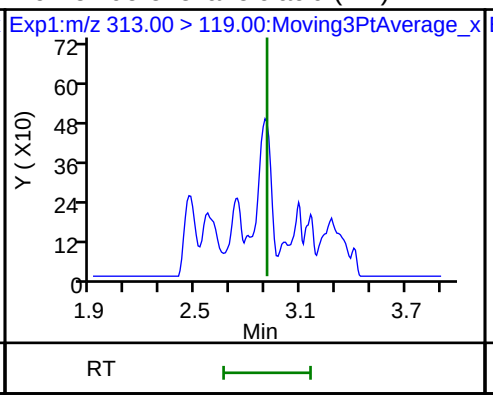
6 Perfluorobutanesulfonic acid (ND)



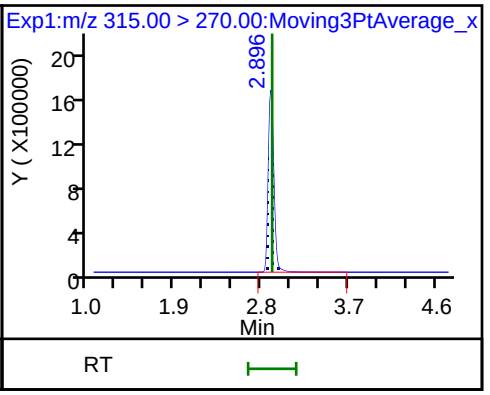
9 Perfluorohexanoic acid (ND)



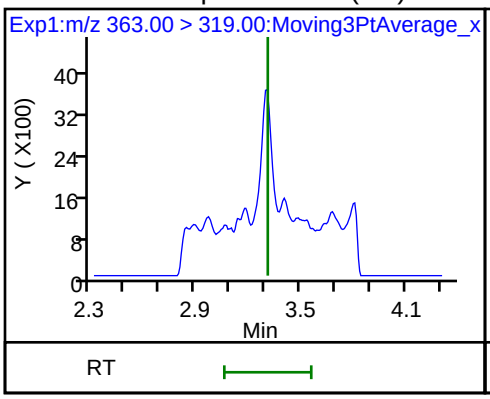
9 Perfluorohexanoic acid (ND)



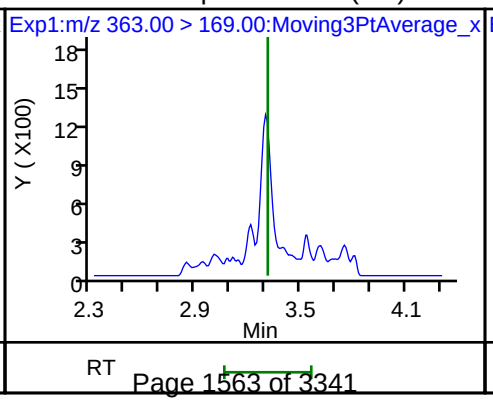
D 10 13C2 PFHxA



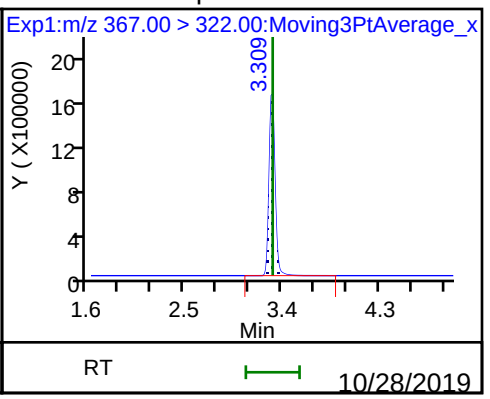
14 Perfluoroheptanoic acid (ND)



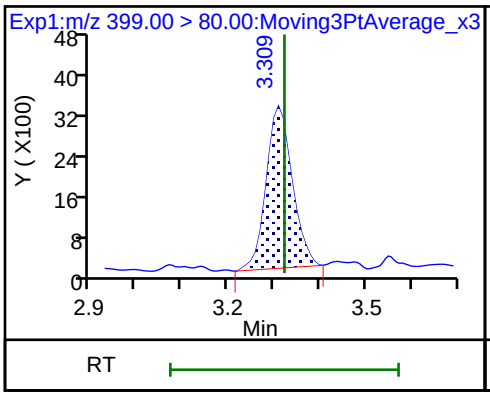
14 Perfluoroheptanoic acid (ND)



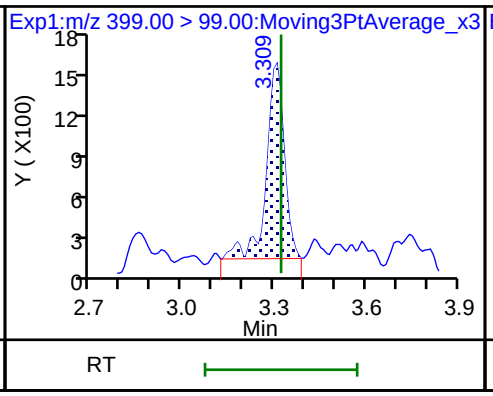
D 17 13C4 PFHpA



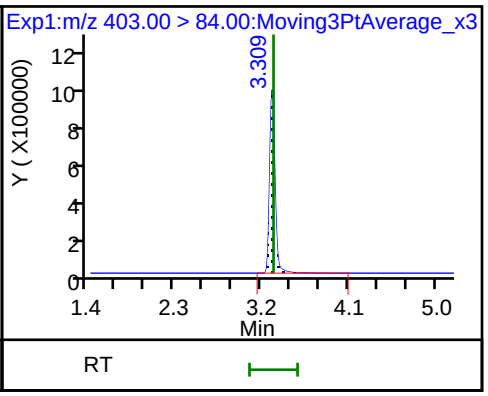
16 Perfluorohexanesulfonic acid



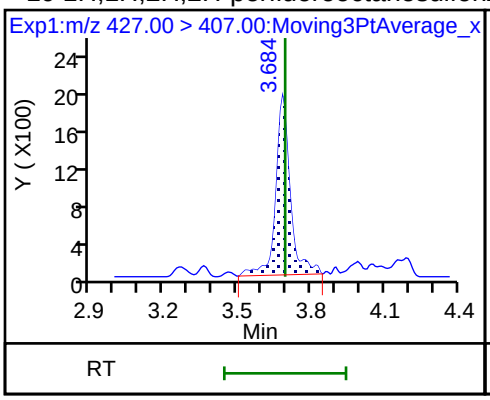
16 Perfluorohexanesulfonic acid



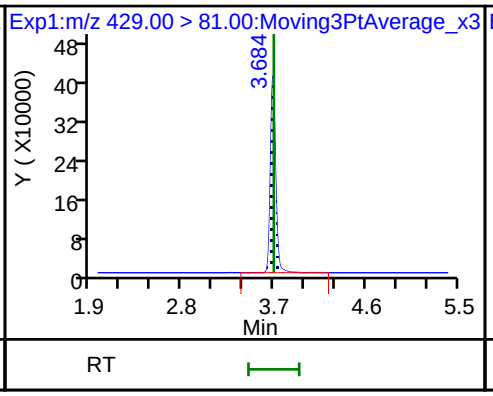
D 15 18O2 PFHxS



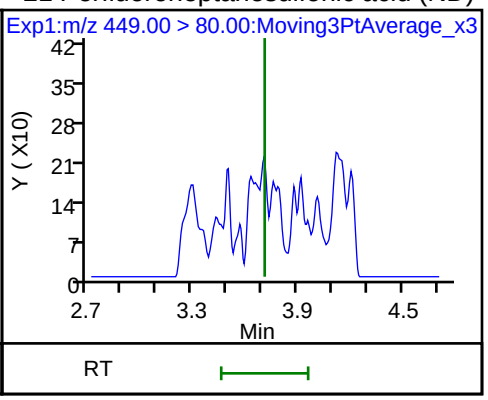
19 1H,1H,2H,2H-perfluorooctanesulfon



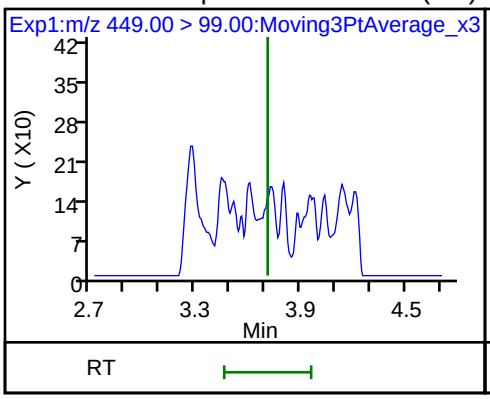
D 20 M2-6:2 FTS



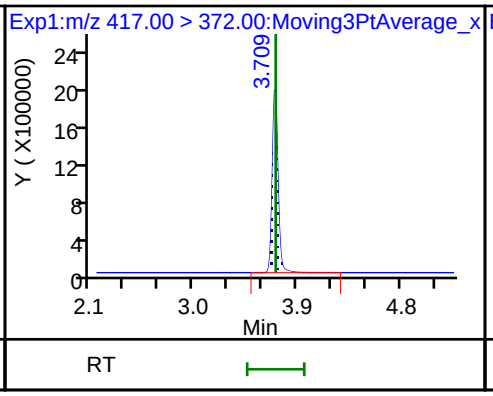
21 Perfluoroheptanesulfonic acid (ND)



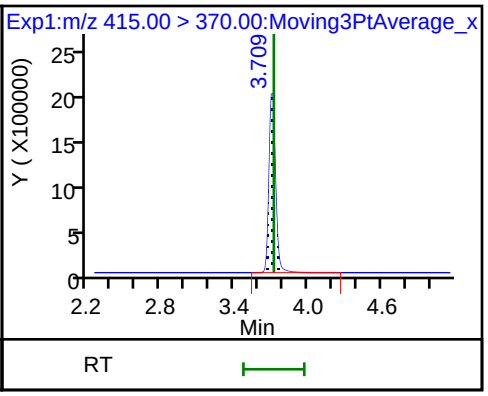
21 Perfluoroheptanesulfonic acid (ND)



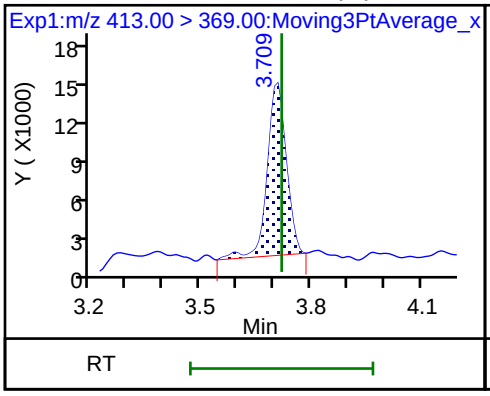
D 25 13C4 PFOA



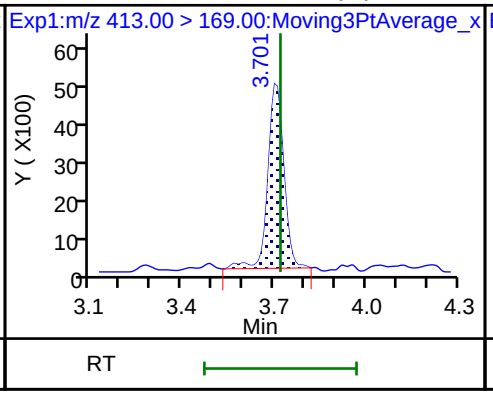
* 24 13C2 PFOA



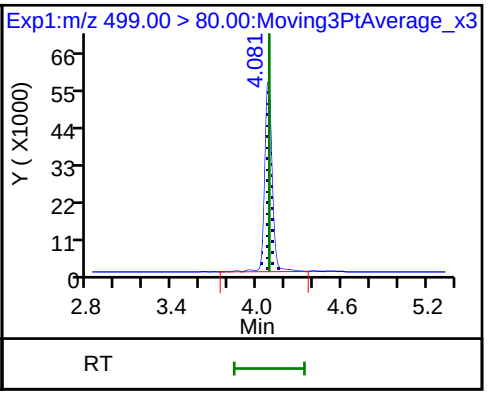
22 Perfluorooctanoic acid (M)



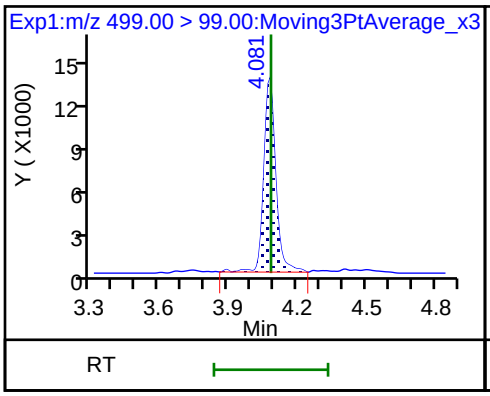
22 Perfluorooctanoic acid (M)



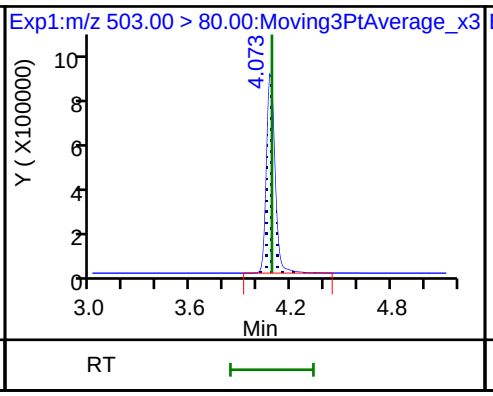
26 Perfluorooctanesulfonic acid



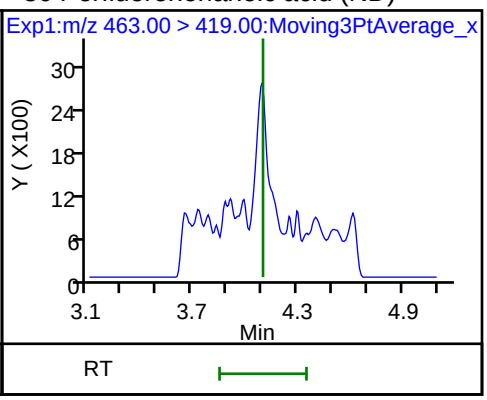
26 Perfluorooctanesulfonic acid



D 28 13C4 PFOS



30 Perfluorononanoic acid (ND)



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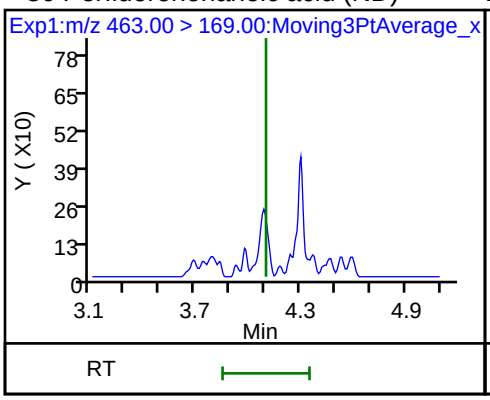
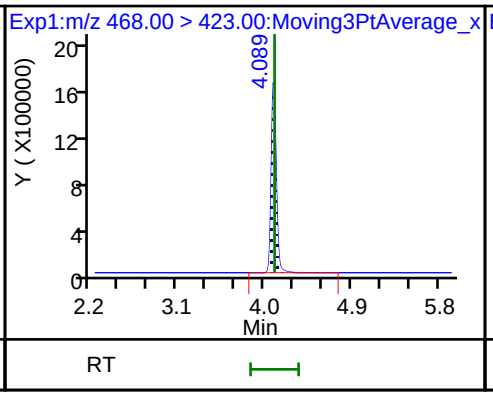
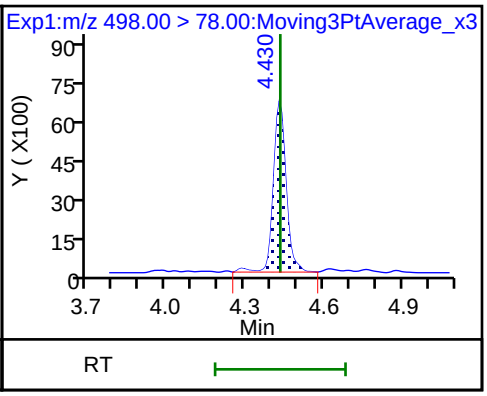


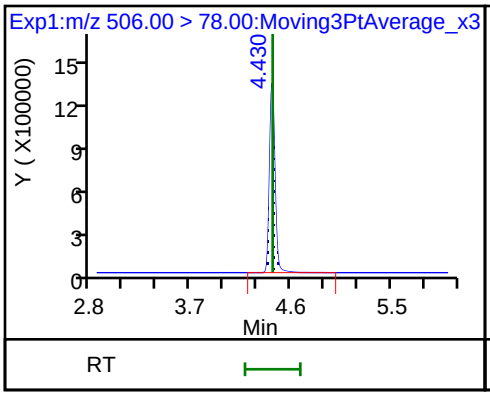
D 29 13C5 PFNA



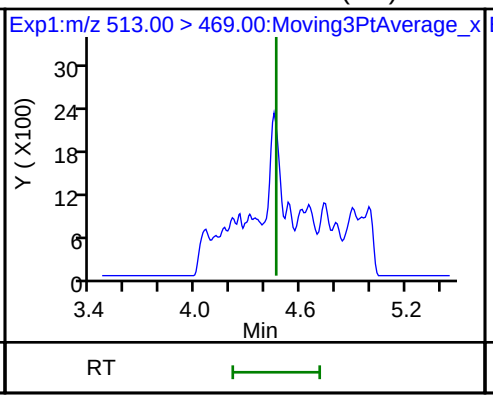
32 Perfluorooctanesulfonamide



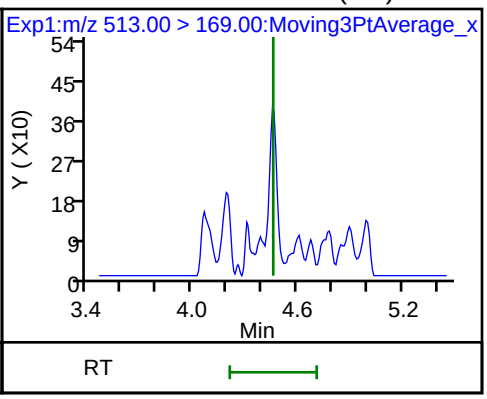
D 33 13C8 FOSA



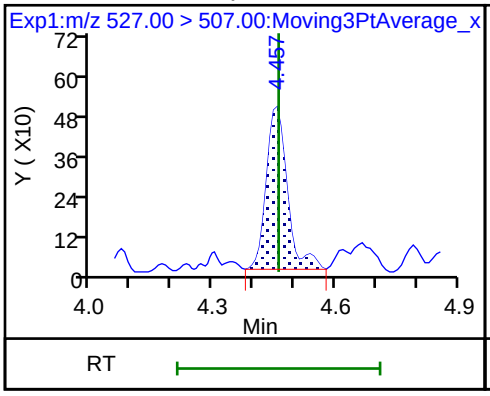
34 Perfluorodecanoic acid (ND)



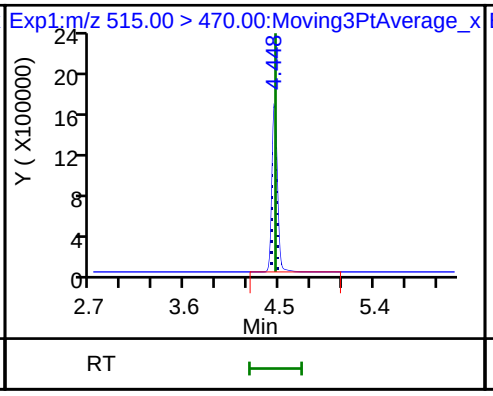
34 Perfluorodecanoic acid (ND)



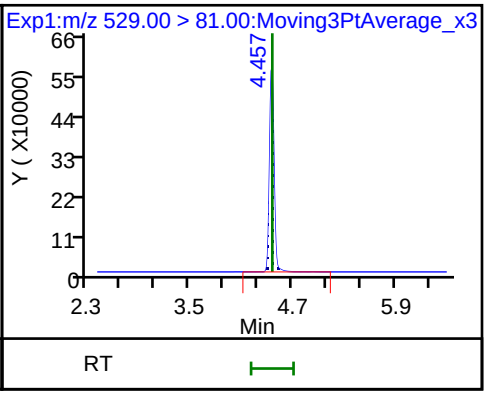
35 1H,1H,2H,2H-perfluorodecanesulfon



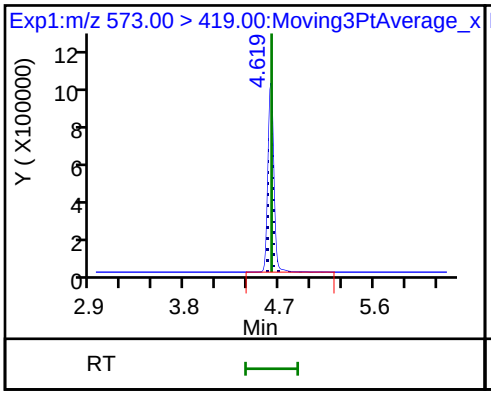
D 36 13C2 PFDA



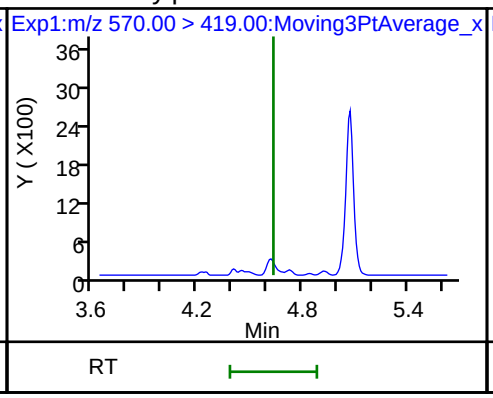
D 37 M2-8:2 FTS



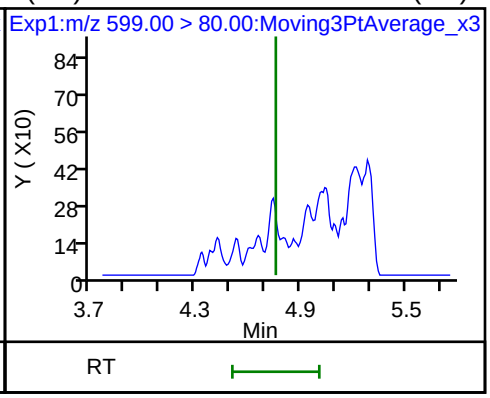
D 40 d3-NMeFOSAA



41 N-methylperfluorooctanesulfonamido (ND)



48 Perfluorodecanesulfonic acid (ND)



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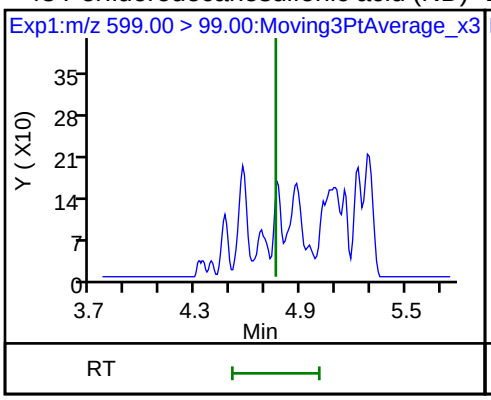
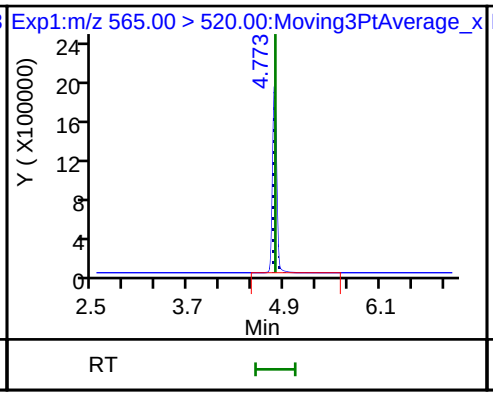
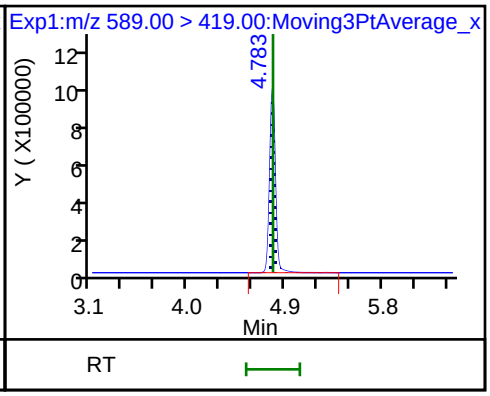


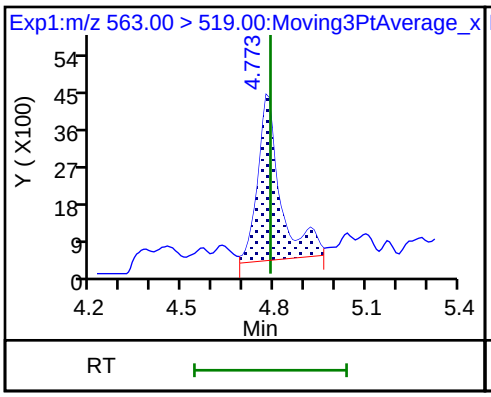
D 43 13C2 PFUnA



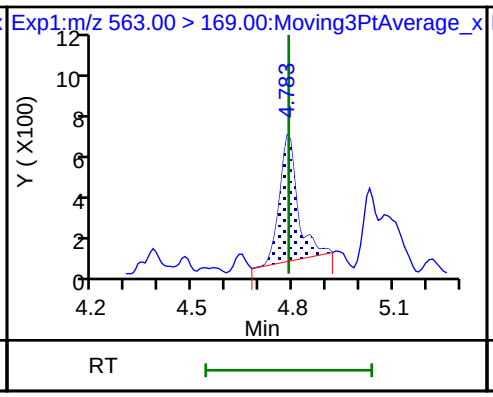
D 44 d5-NEtFOSAA



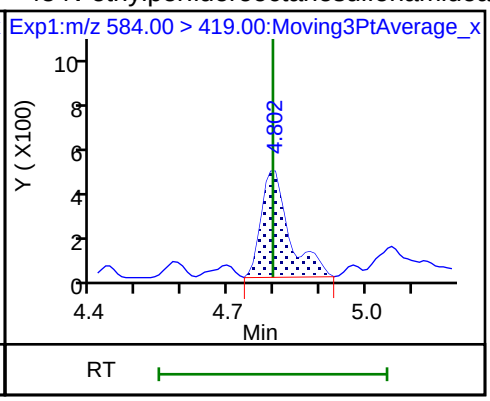
42 Perfluoroundecanoic acid



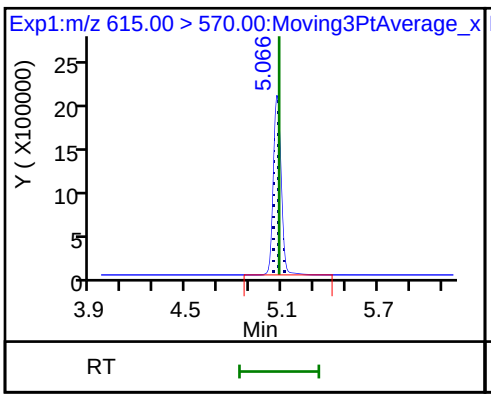
42 Perfluoroundecanoic acid



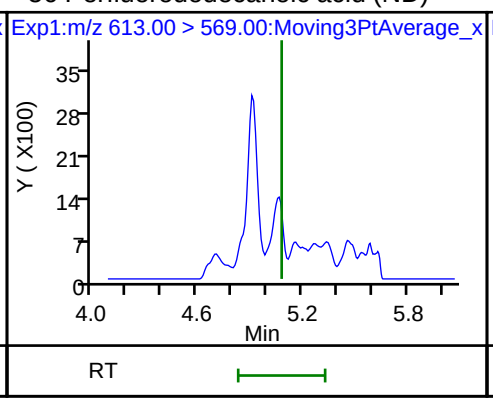
45 N-ethylperfluorooctanesulfonamidoa



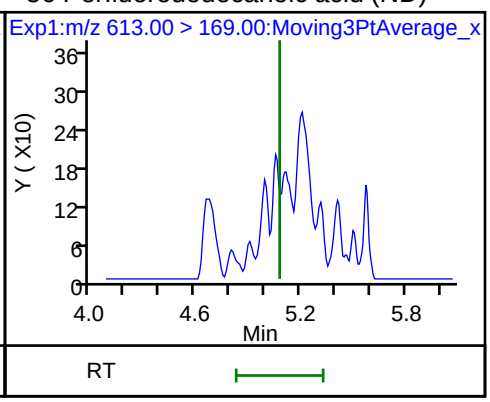
D 57 13C2 PFDoA



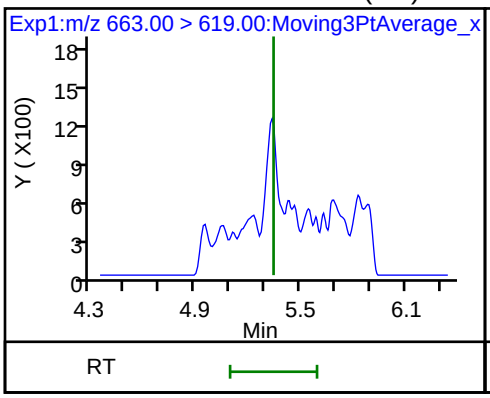
56 Perfluorododecanoic acid (ND)



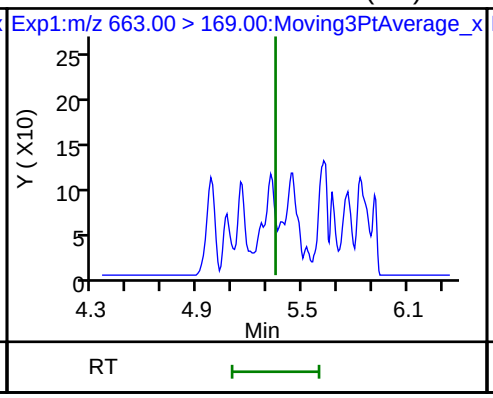
56 Perfluorododecanoic acid (ND)



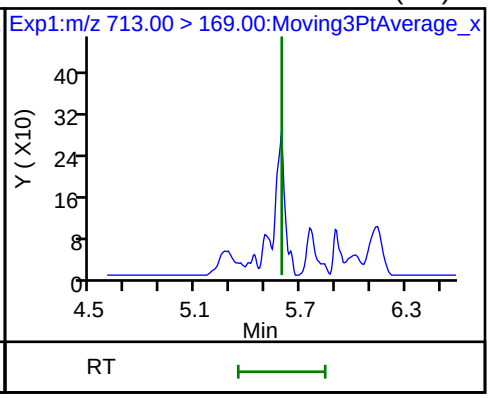
60 Perfluorotridecanoic acid (ND)



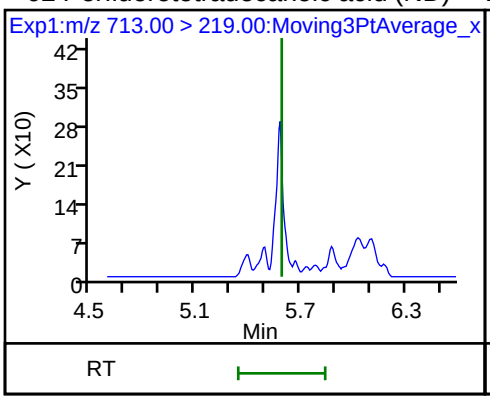
60 Perfluorotridecanoic acid (ND)



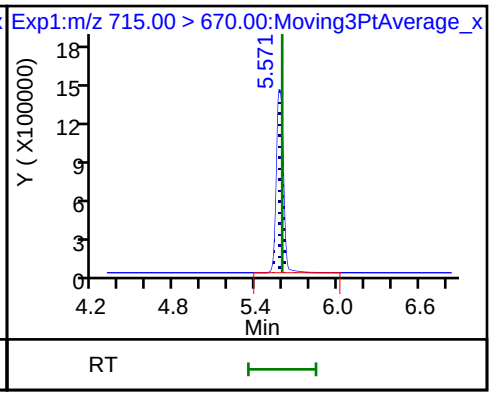
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

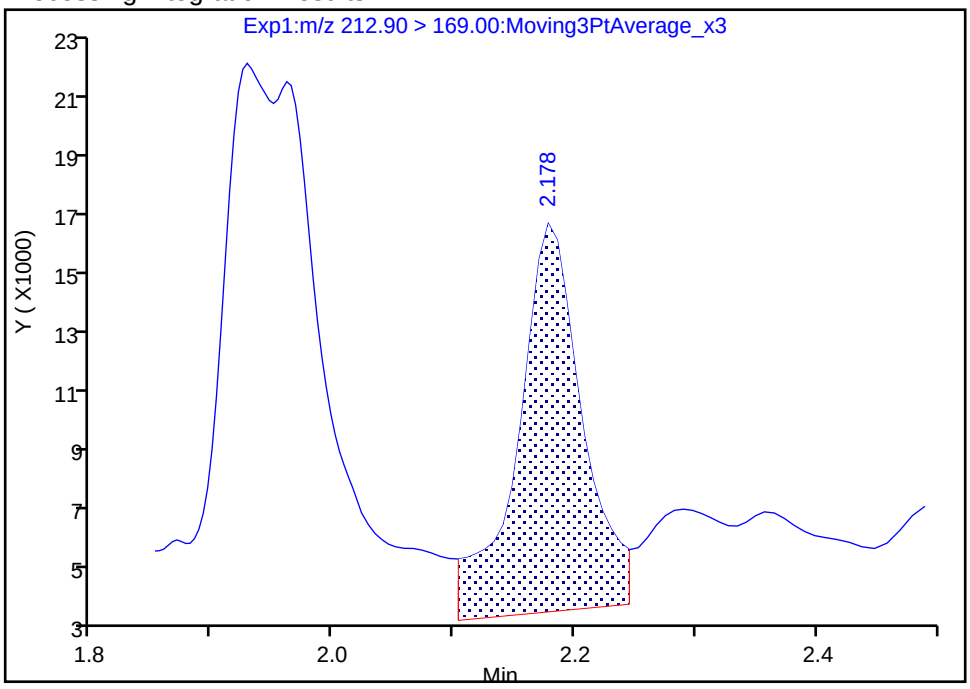
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_016.d				
Injection Date:	03-Oct-2019 13:35:18	Instrument ID:	A13		
Lims ID:	480-159547-A-19-B	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

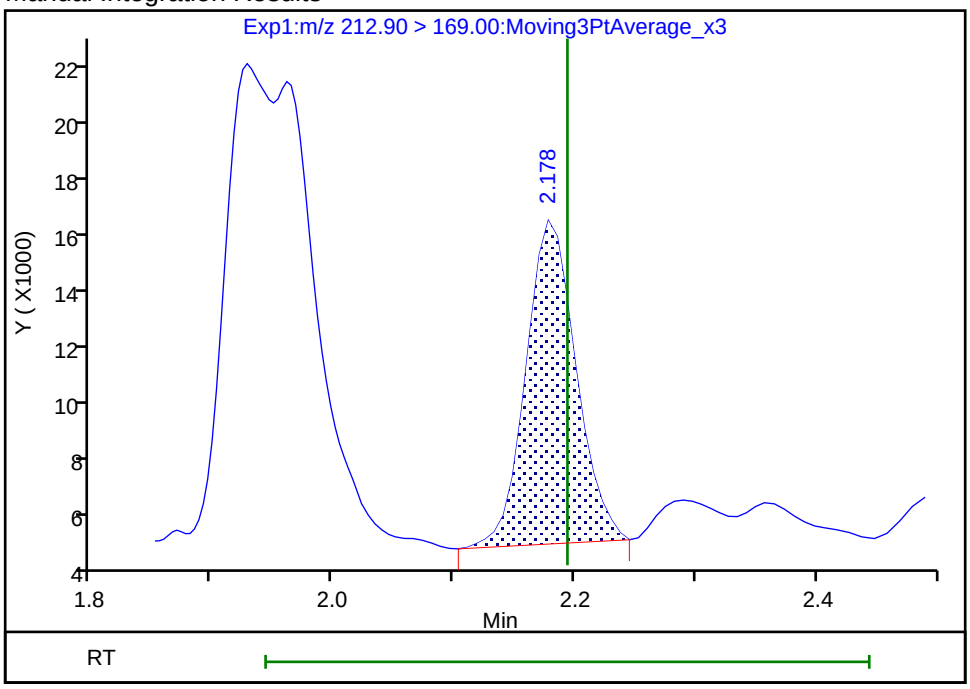
Processing Integration Results

RT: 2.18
Area: 47504
Amount: 0.021945
Amount Units: ng/ml



Manual Integration Results

RT: 2.18
Area: 31283
Amount: 0.014452
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:29:06

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

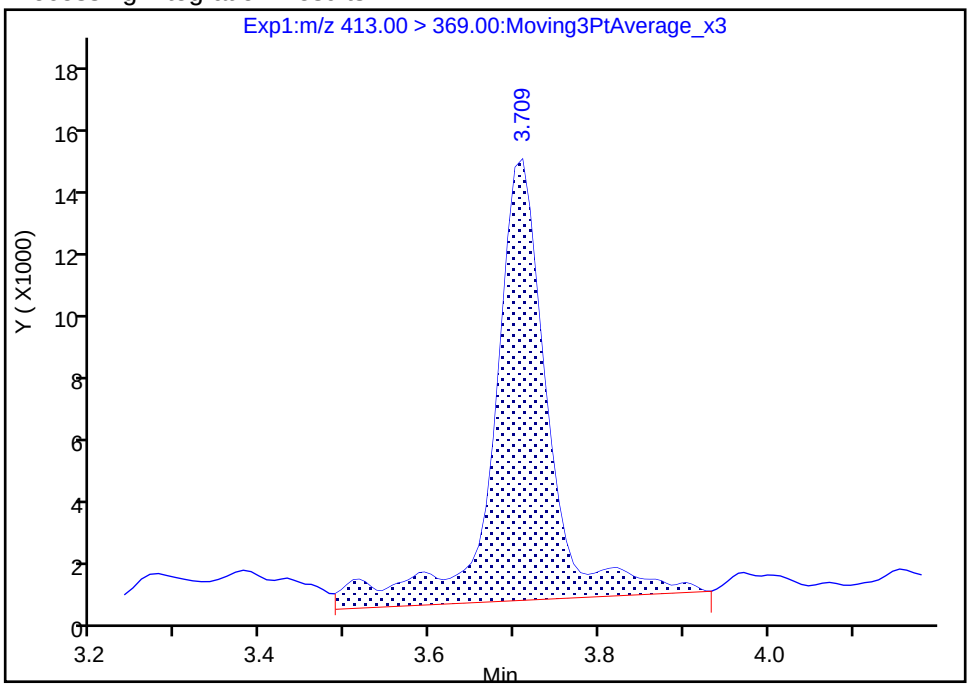
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_016.d				
Injection Date:	03-Oct-2019 13:35:18	Instrument ID:	A13		
Lims ID:	480-159547-A-19-B	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

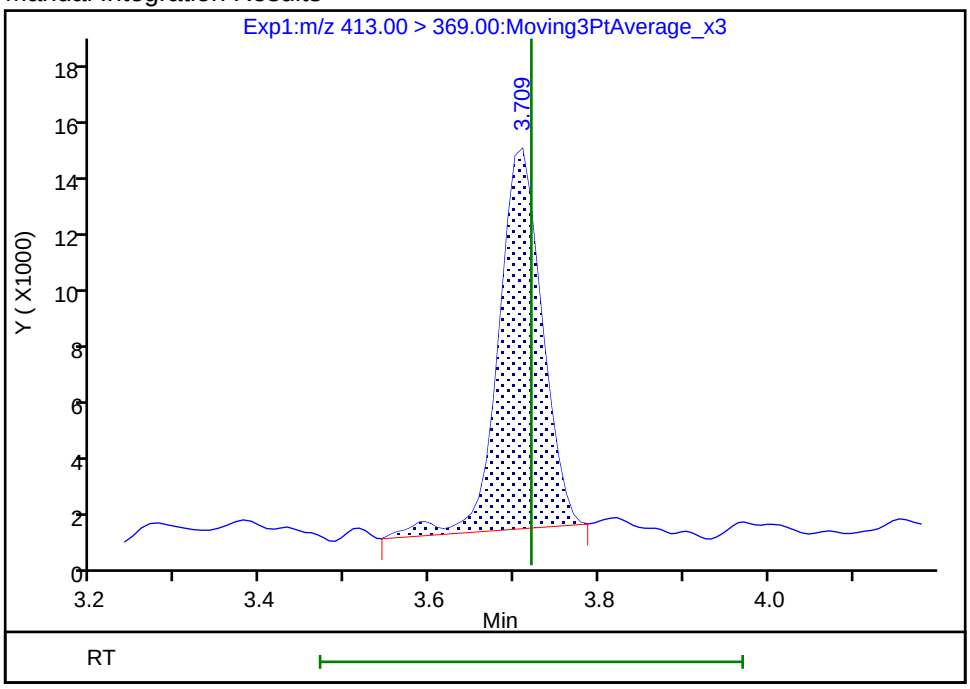
Processing Integration Results

RT: 3.71
Area: 63860
Amount: 0.022459
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 48172
Amount: 0.016941
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:30:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

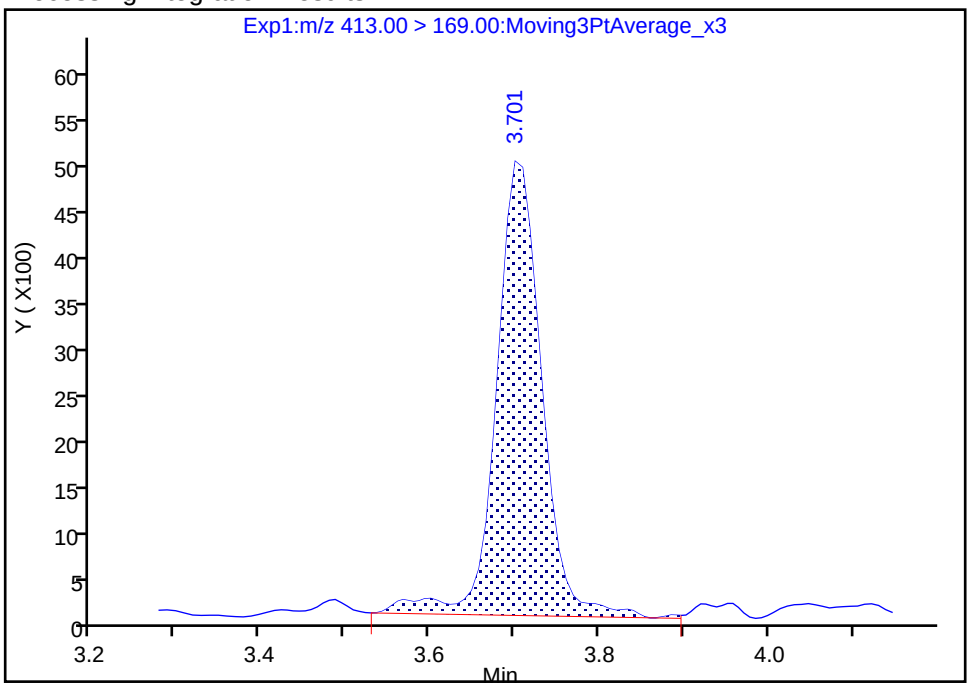
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_016.d				
Injection Date:	03-Oct-2019 13:35:18	Instrument ID:	A13		
Lims ID:	480-159547-A-19-B	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	10	Worklist Smp#:	13
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

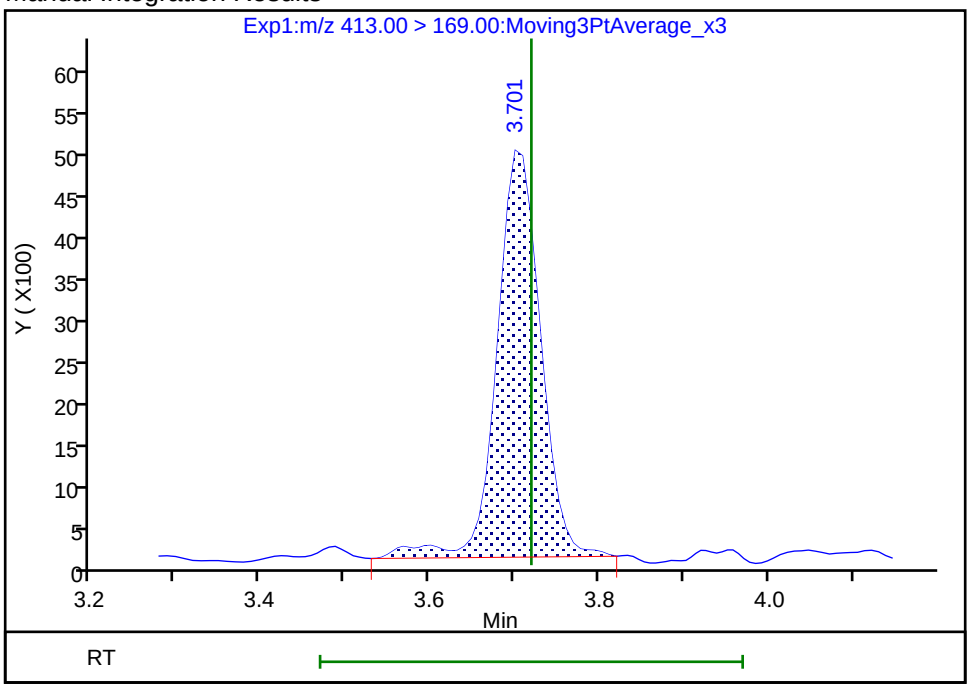
Processing Integration Results

RT: 3.70
Area: 18380
Amount: 0.022459
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 17568
Amount: 0.016941
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:30:14
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._029.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:52

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 271.5(mL) Date Analyzed: 10/09/2019 02:18

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.46	J	1.84	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.84		1.84	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	1.84		1.84	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.84		1.84	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.84		1.84	0.78
375-95-1	Perfluorononanoic acid (PFNA)	1.84		1.84	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.84		1.84	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.84		1.84	1.01
307-55-1	Perfluorododecanoic acid (PFDoA)	1.84		1.84	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.84		1.84	1.20
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.84		1.84	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.84		1.84	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.29	J B	1.84	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.84		1.84	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.64	J I B	1.84	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.84		1.84	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	105		25-150
STL00993	13C2 PFHxA	100		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	107		25-150
STL02116	13C2 PFTeDA	105		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	99		25-150
STL01892	13C4 PFHpA	105		25-150
STL01893	13C5 PFPeA	102		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d
Lims ID: 480-159547-A-19-C
Client ID: RUSSO-CF-COMP 2
Sample Type: Client
Inject. Date: 09-Oct-2019 02:18:52 ALS Bottle#: 16 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-19-c
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:52:13 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:42:38
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.888	1.719	0.169	1.000	26399	0.0124			4.2	M
D 1 13C4 PFBA										
217.00 > 172.00	1.888	1.901	-0.013	0.565	6251222	2.63		105	5459	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.206	-0.016	0.656	5083784	2.56		102	3074	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.206	-0.008	1.004	18370	0.008818			1.3	
D 9 13C2 PFHxA										
315.00 > 270.00	2.546	2.557	-0.011	0.762	5735885	2.51		100	3060	
D 14 13C4 PFHpA										
367.00 > 322.00	2.936	2.942	-0.006	0.879	6851916	2.62		105	3687	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.936	2.947	-0.011	0.998	17531	0.007778	Target=3.25		20.3	M
399.00 > 99.00	2.930	2.947	-0.017	0.996	7797		2.25(1.63-4.88)		12.8	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.942	2.947	-0.005	0.881	4357812	2.59		110	3998	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.318	0.0	1.000	10441	0.0166			33.1	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.318	0.0	0.994	642799	1.76		74.1	1259	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.347	-0.007	1.000	7961628	2.64		106	4108	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.347	-0.007		8049759	2.50			4048	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.333	3.347	-0.014	0.998	55698	0.0155	Target=3.06		5.6	M
413.00 > 169.00	3.333	3.347	-0.014	0.998	16093		3.46(1.53-4.58)		32.5	M
28 Perfluorooctanesulfonic acid										RM
499.00 > 80.00	3.708	3.715	-0.007	1.000	35764	0.0173	Target=4.13		13.6	RM
499.00 > 99.00	3.708	3.715	-0.007	1.000	5780		6.19(2.06-6.19)		20.3	M
D 27 13C4 PFOS										
503.00 > 80.00	3.708	3.715	-0.007	1.110	4606831	2.36		98.7	2694	
D 30 13C5 PFNA										
468.00 > 423.00	3.723	3.731	-0.008	1.115	6793407	2.53		101	2891	
29 Perfluorononanoic acid										R
463.00 > 419.00	3.731	3.731	0.0	1.002	17512	0.006256	Target=5.59		3.8	R
463.00 > 169.00	3.731	3.731	0.0	1.002	2025		8.65(2.80-8.39)		4.8	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.070	4.086	-0.016	0.996	1567	0.002635			19.4	
D 36 13C2 PFDA										
515.00 > 470.00	4.079	4.088	-0.009	1.221	7814694	2.58		103	4084	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.088	4.088	0.0	1.224	643070	1.87		78.2	2922	
D 32 13C8 FOSA										
506.00 > 78.00	4.105	4.114	-0.009	1.229	2619023	2.60		104	1410	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.105	4.123	-0.018	1.000	15109	0.005250			49.8	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.240	4.249	-0.009	1.269	3671144	2.57		103	2544	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.240	4.256	-0.016	1.000	5890	0.004897			1.1	
D 42 13C2 PFUnA										
565.00 > 520.00	4.397	4.406	-0.009	1.317	6680931	2.58		103	4413	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.406	4.414	-0.008	1.319	3368784	2.74		110	1877	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.681	4.587	0.094	1.000	9702	0.003099	Target=9.50		4.6	
613.00 > 169.00	4.700	4.587	0.113	1.004	722		13.44(4.75-14.25)		4.1	
D 55 13C2 PFDoA										
615.00 > 570.00	4.681	4.690	-0.009	1.402	7595103	2.67		107	4516	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.182	5.189	-0.007	1.000	1160	0.003880	Target=1.51		16.1	
713.00 > 219.00	5.174	5.189	-0.015	0.998	1127		1.03(0.76-2.27)		22.1	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.182	5.191	-0.009	1.552	5289473	2.62		105	4040	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags
M - Manually Integrated

Report Date: 18-Oct-2019 15:52:14 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d

Injection Date: 09-Oct-2019 02:18:52 Instrument ID: A9

Lims ID: 480-159547-A-19-C Lab Sample ID: 320-159547-19

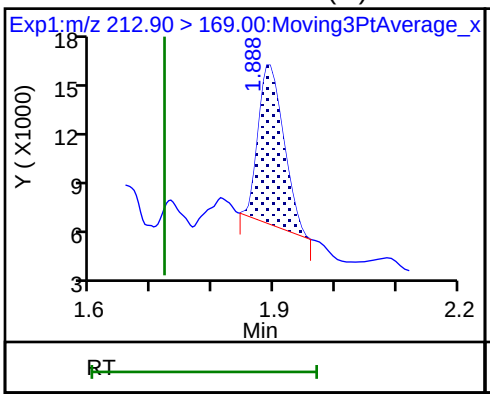
Client ID: RUSSO-CF-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 16 Worklist Smp#: 15

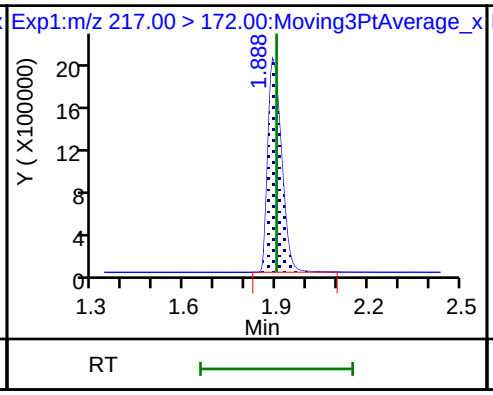
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid (M)



D 1 13C4 PFBA



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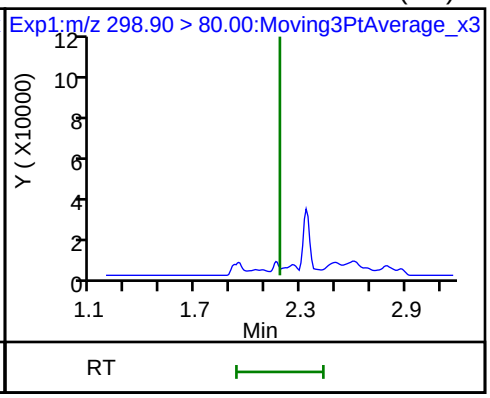

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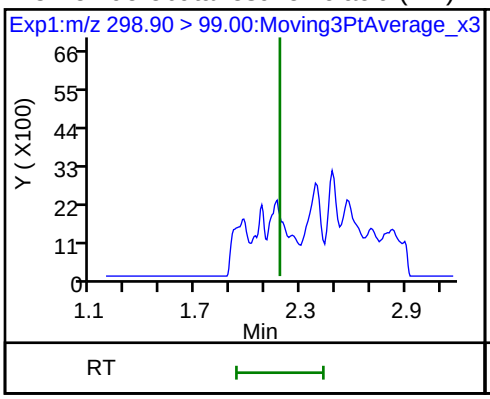
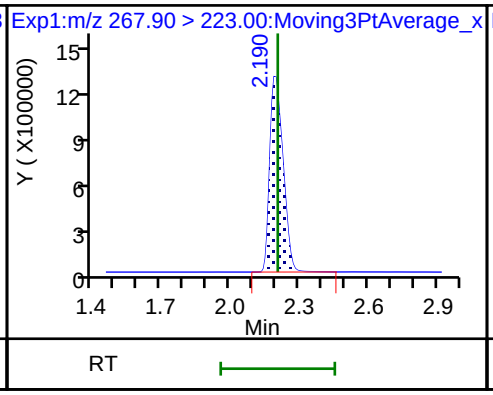
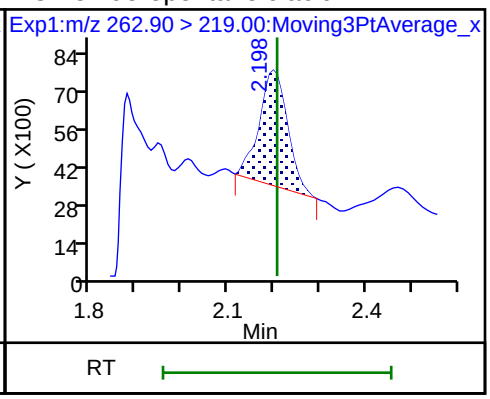


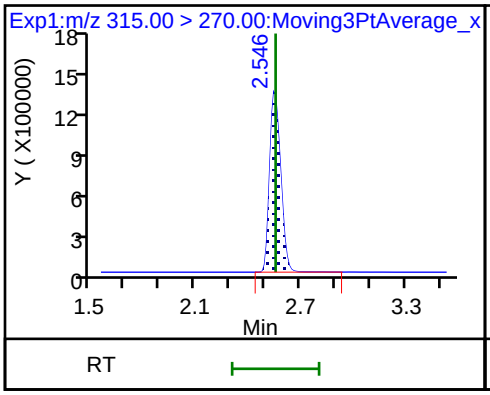
D 4 13C5 PFPeA



3 Perfluoropentanoic acid



D 9 13C2 PFHxA



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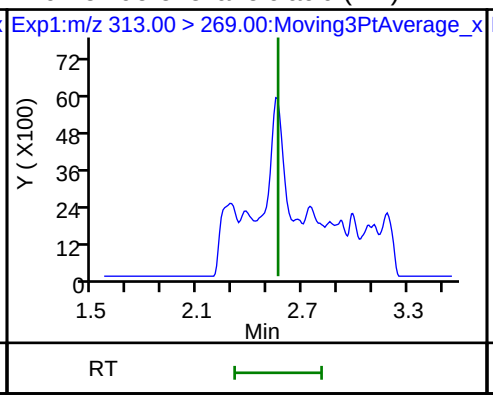

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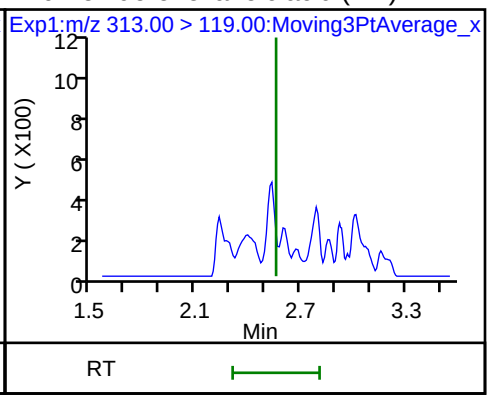

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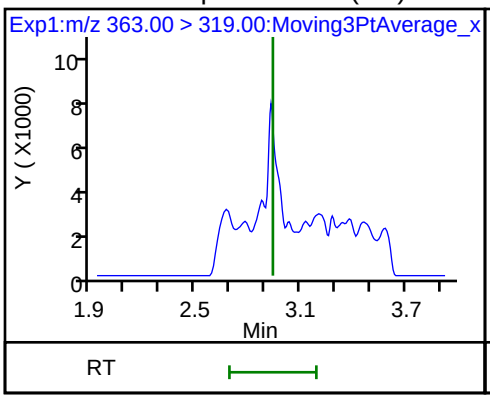

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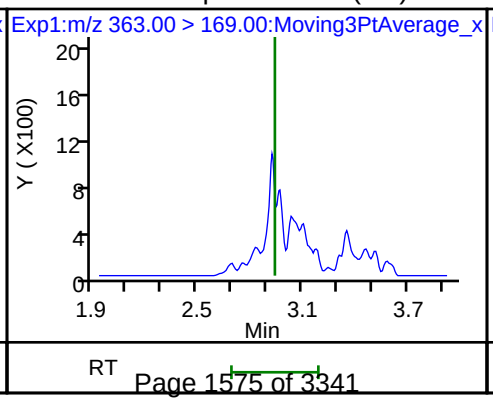

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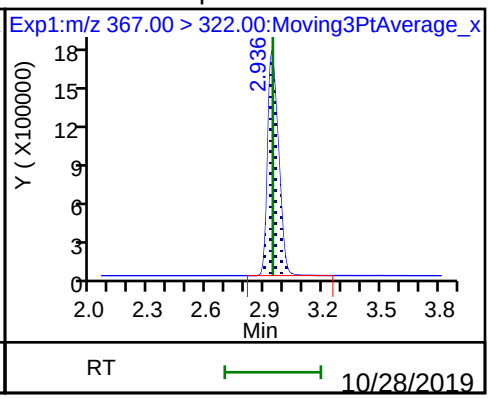
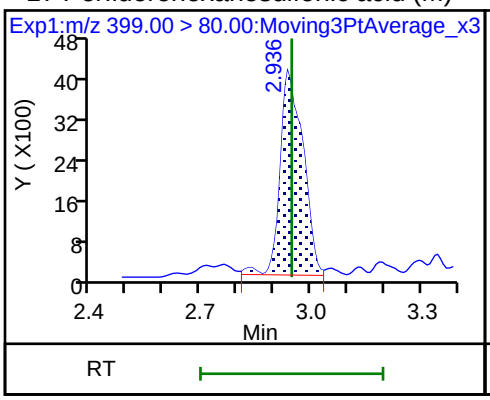


17 Perfluorohexanesulfonic acid (M)



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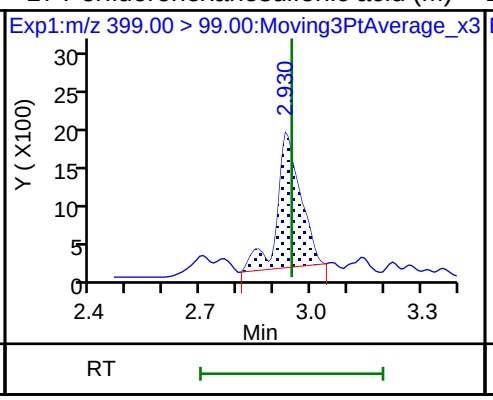
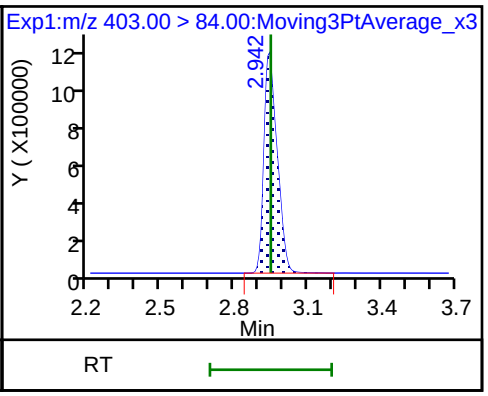
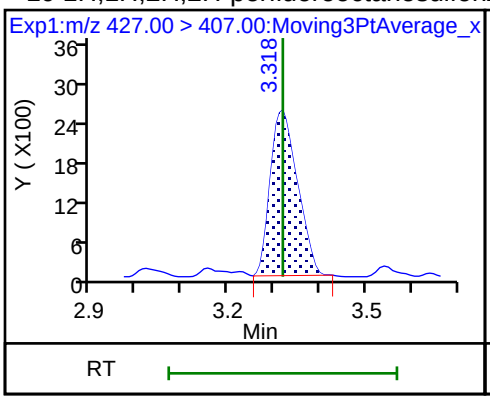


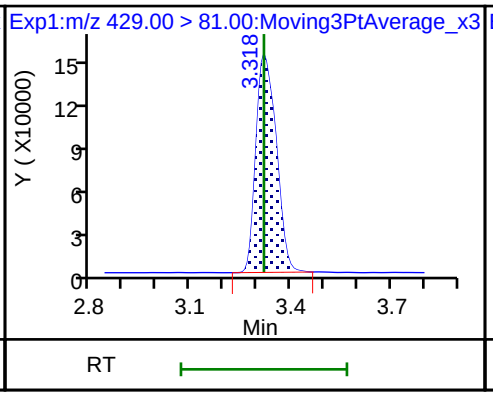
D 16 18O2 PFHxS



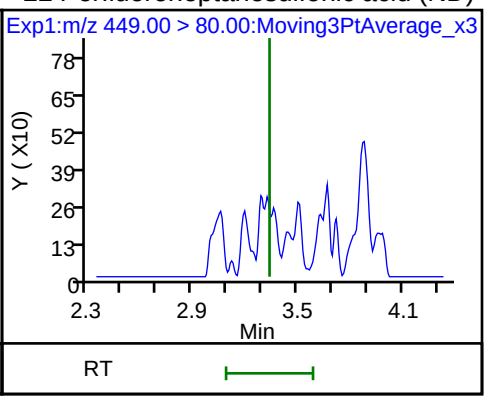
19 1H,1H,2H,2H-perfluorooctanesulfon



D 20 M2-6:2 FTS



22 Perfluoroheptanesulfonic acid (ND)



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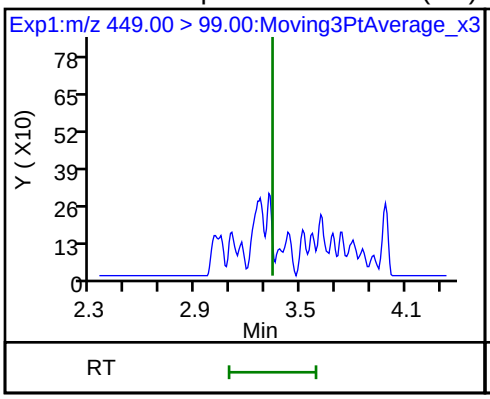
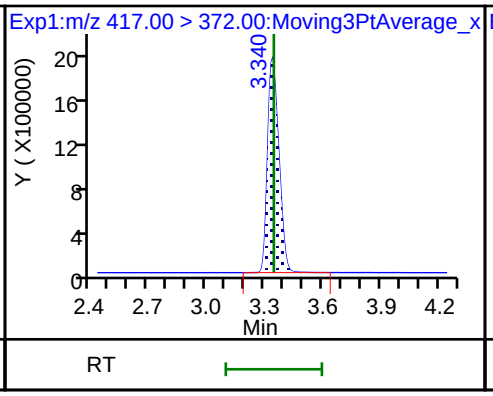
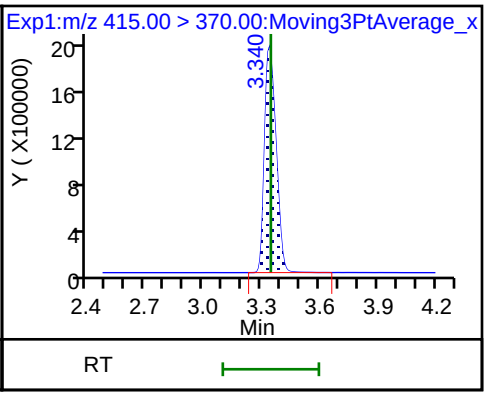


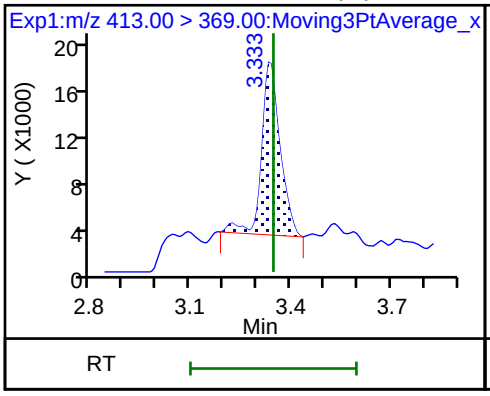
D 23 13C4 PFOA



* 25 13C2 PFOA



24 Perfluorooctanoic acid (M)



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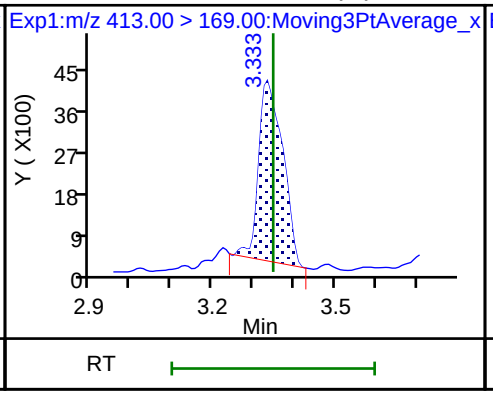
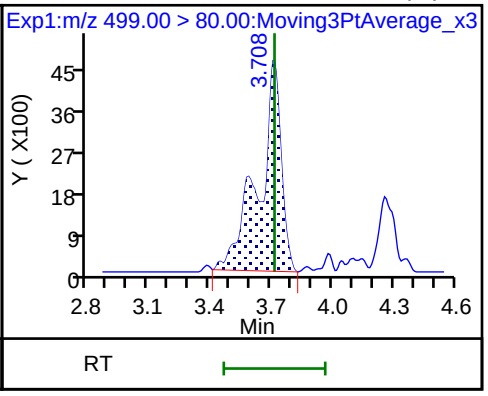


28 Perfluorooctanesulfonic acid (M)



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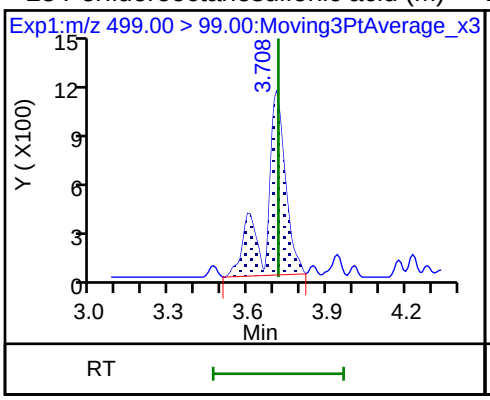

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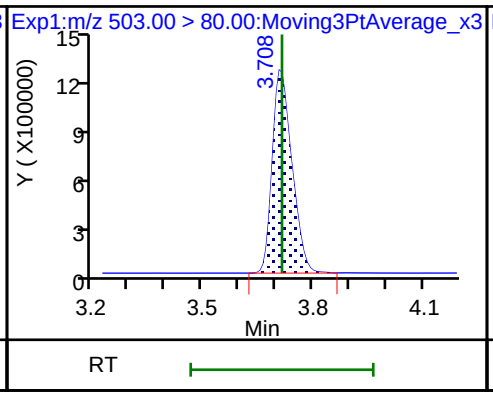

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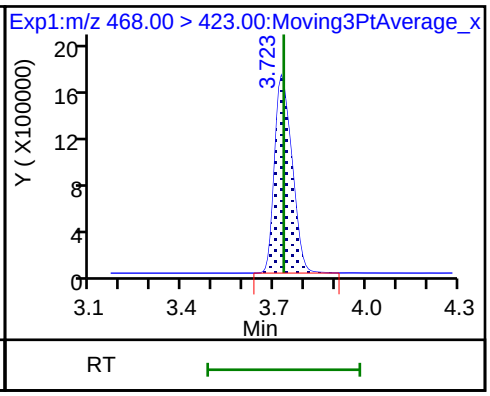
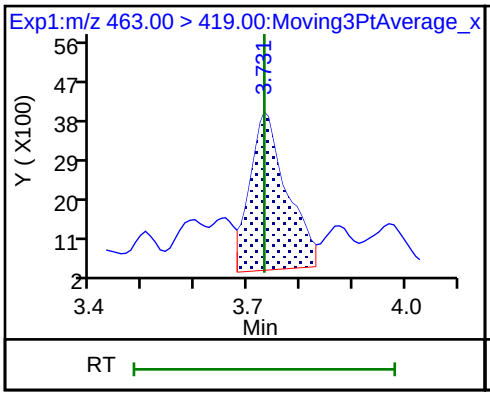
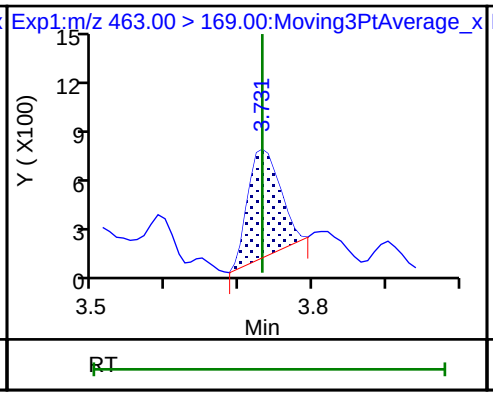


29 Perfluorononanoic acid



29 Perfluorononanoic acid



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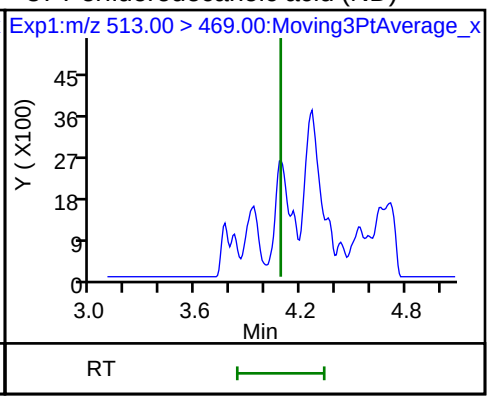
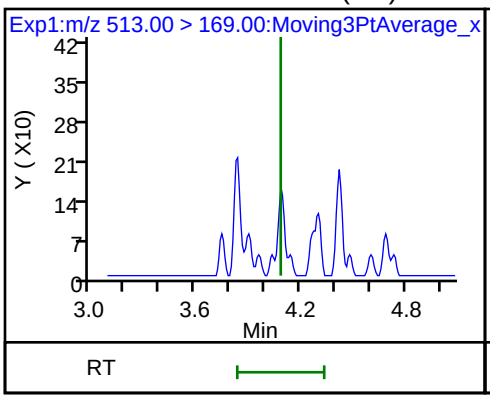
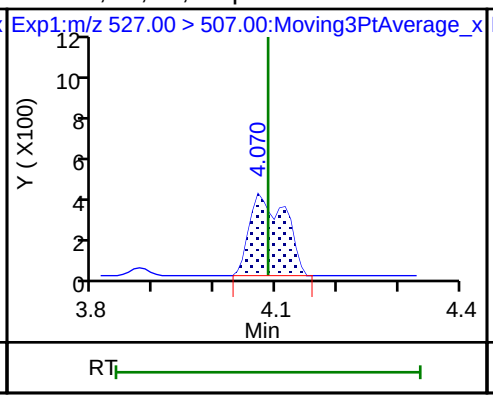


37 Perfluorodecanoic acid (ND)



38 1H,1H,2H,2H-perfluorodecanesulfon



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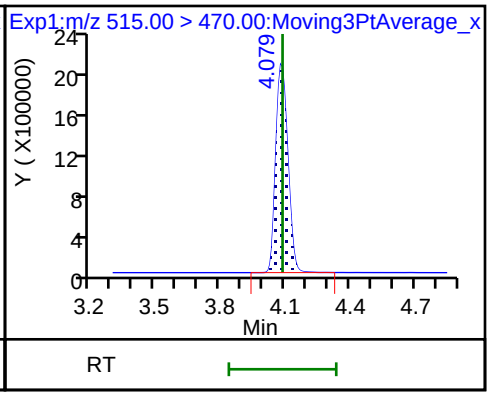
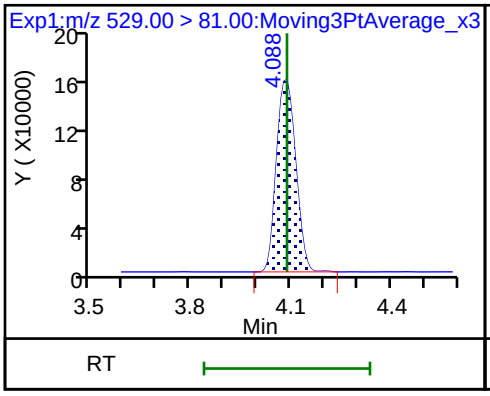


D 35 M2-8:2 FTS



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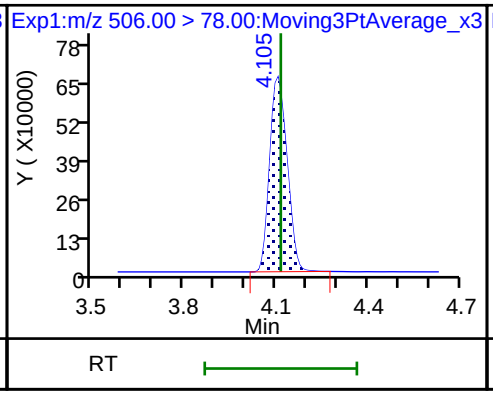
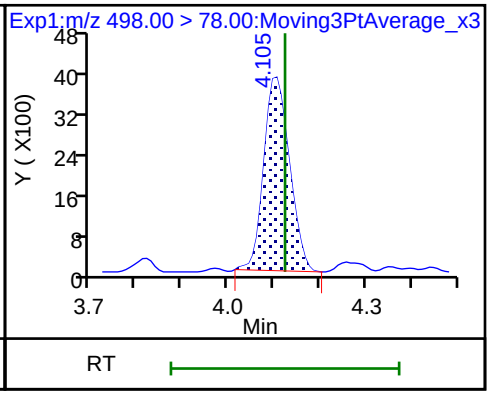


33 Perfluorooctanesulfonamide



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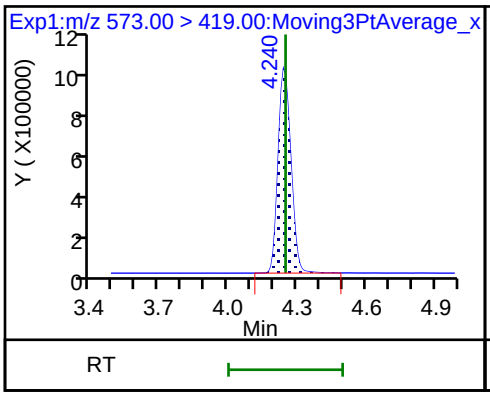
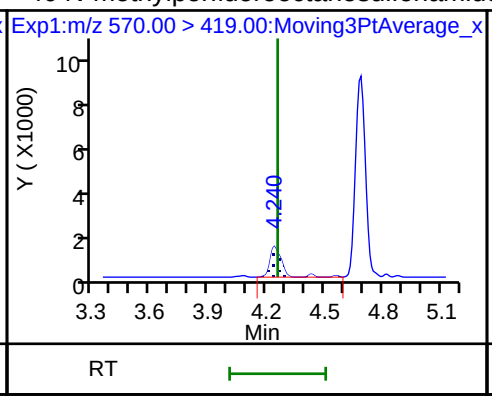
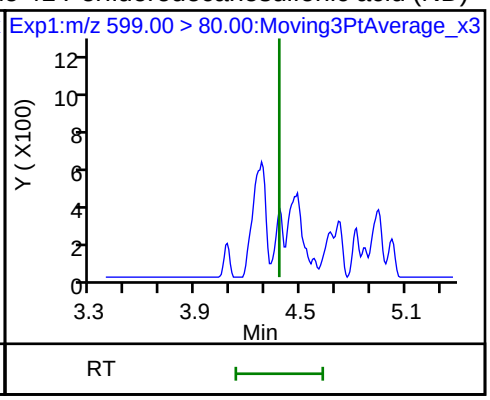


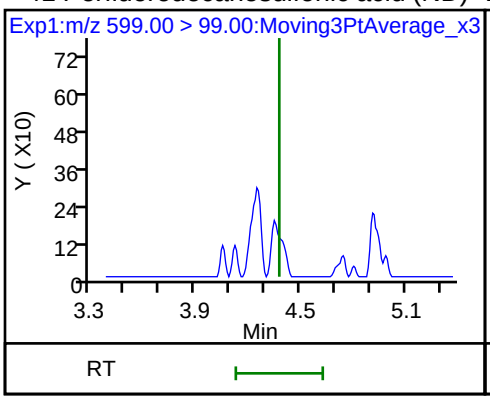
40 N-methylperfluorooctanesulfonamido



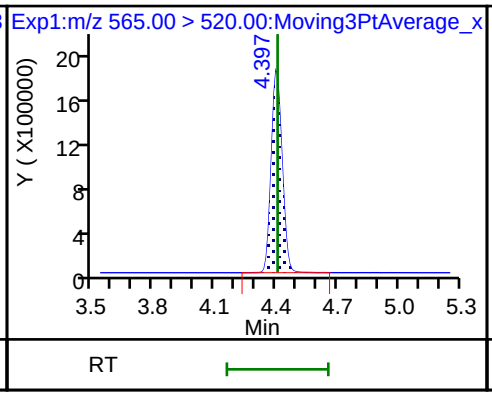
41 Perfluorodecanesulfonic acid (ND)



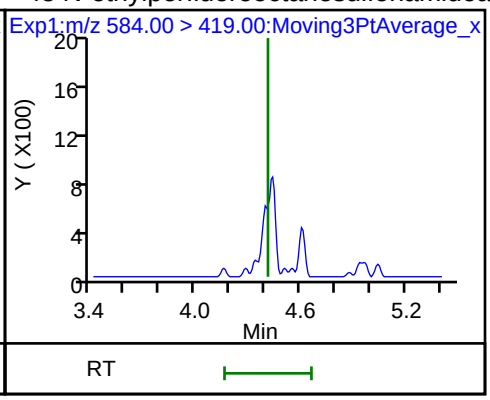
41 Perfluorodecanesulfonic acid (ND)



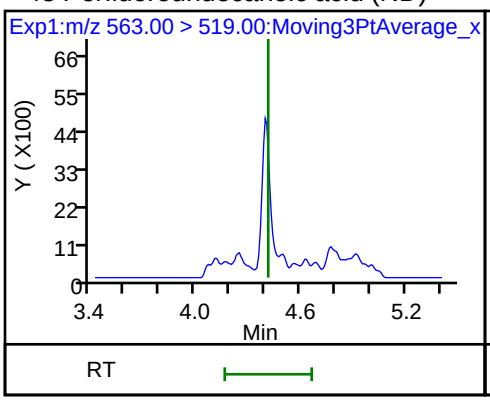
D 42 13C2 PFUnA



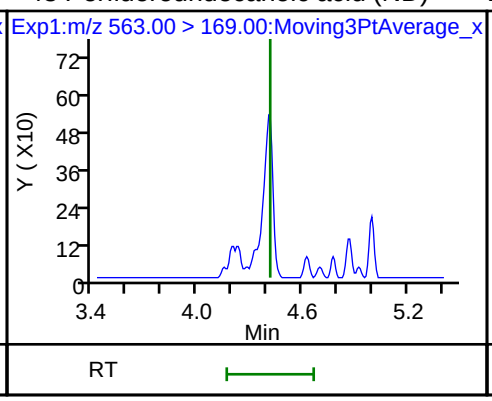
45 N-ethylperfluorooctanesulfonamidoa (ND)



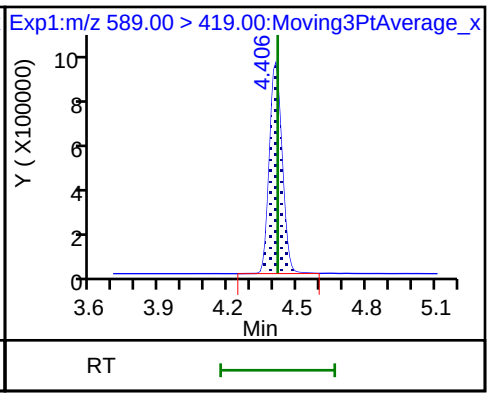
43 Perfluoroundecanoic acid (ND)



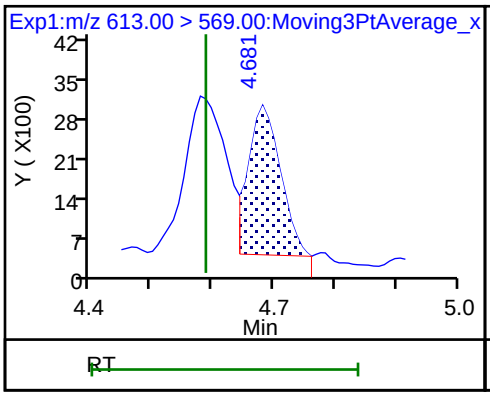
43 Perfluoroundecanoic acid (ND)



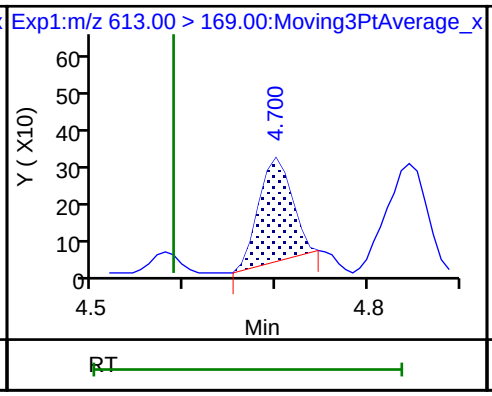
D 44 d5-NEtFOSAA



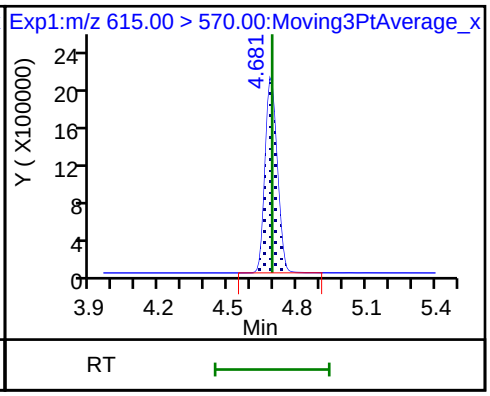
56 Perfluorododecanoic acid



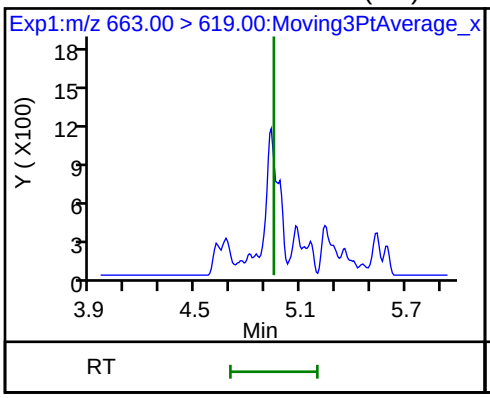
56 Perfluorododecanoic acid



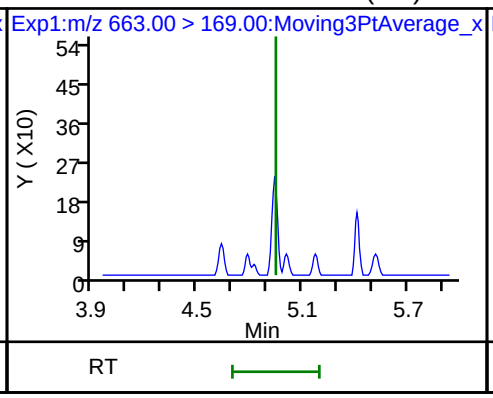
D 55 13C2 PFDoA



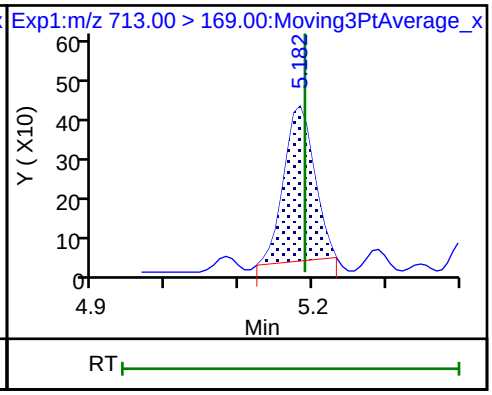
59 Perfluorotridecanoic acid (ND)



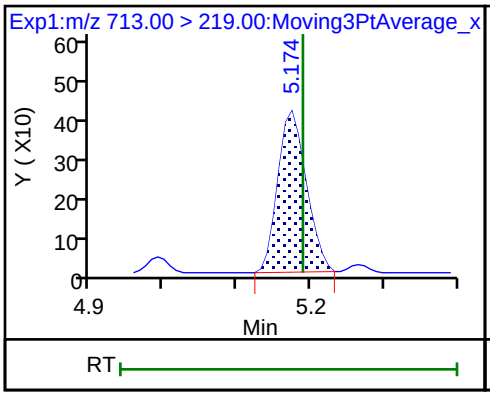
59 Perfluorotridecanoic acid (ND)



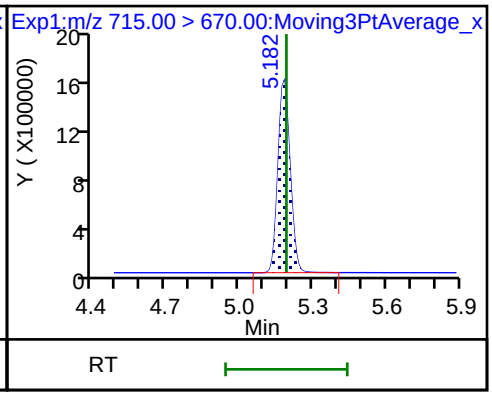
61 Perfluorotetradecanoic acid



61 Perfluorotetradecanoic acid



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

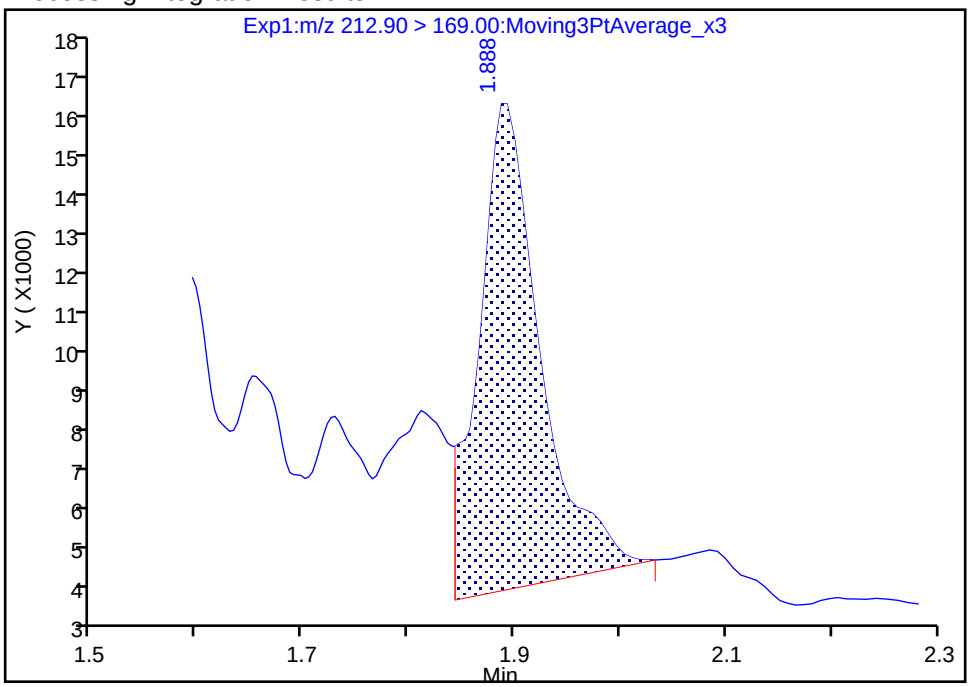
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

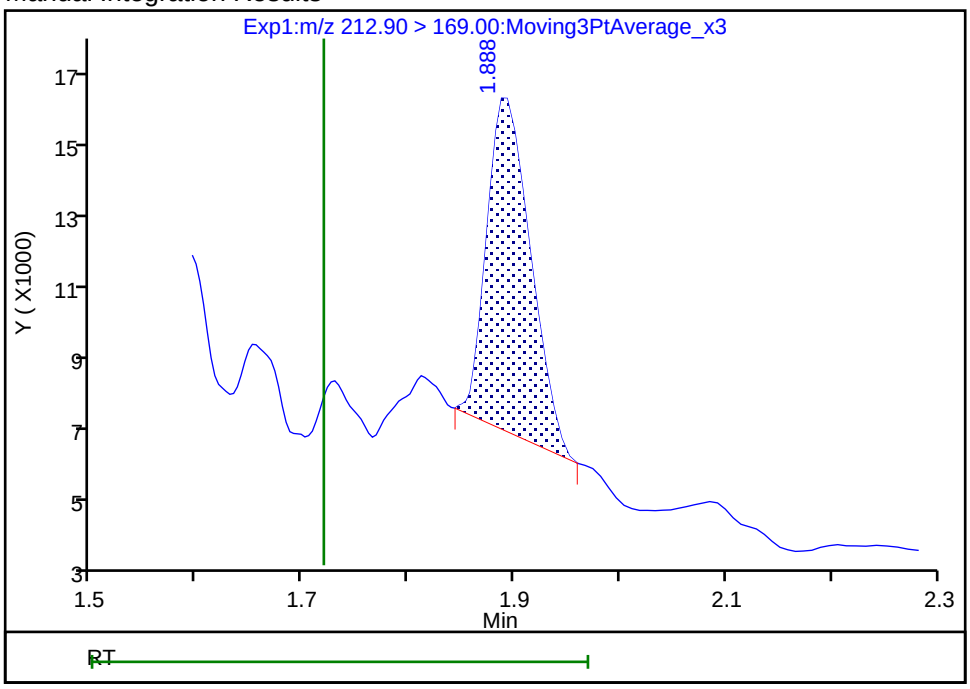
Processing Integration Results

RT: 1.89
Area: 48703
Amount: 0.022926
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 26399
Amount: 0.012427
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:52:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

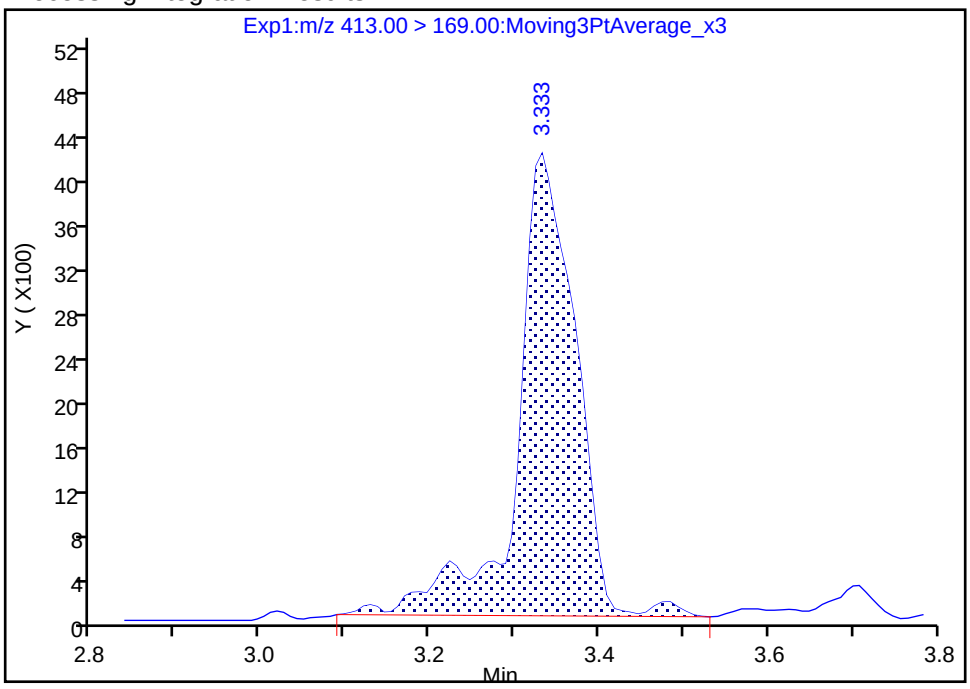
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

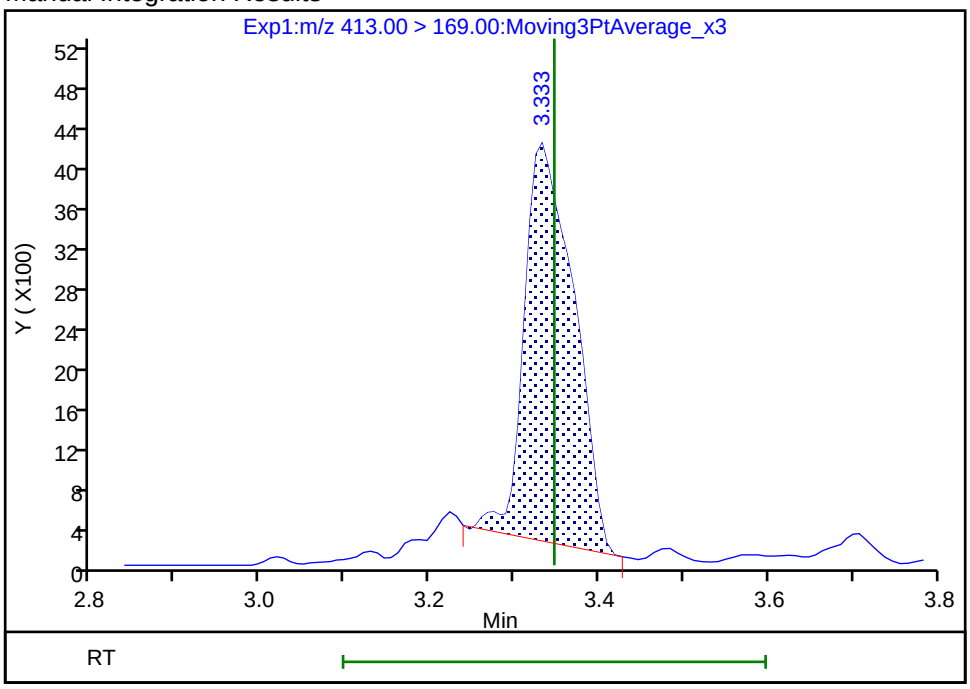
Processing Integration Results

RT: 3.33
Area: 20217
Amount: 0.020953
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 16093
Amount: 0.015470
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:41:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

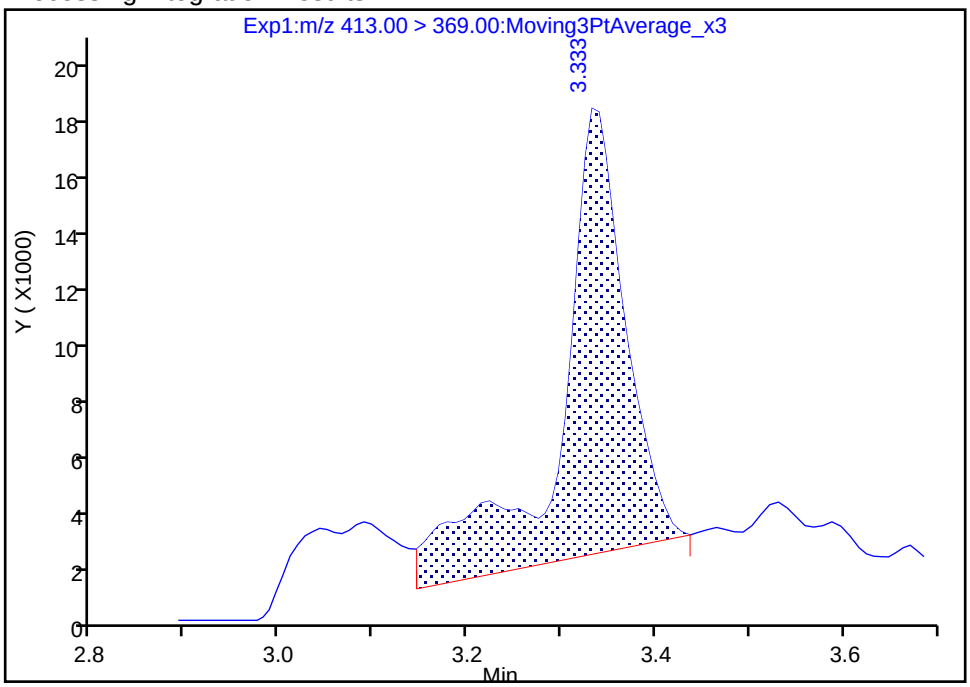
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

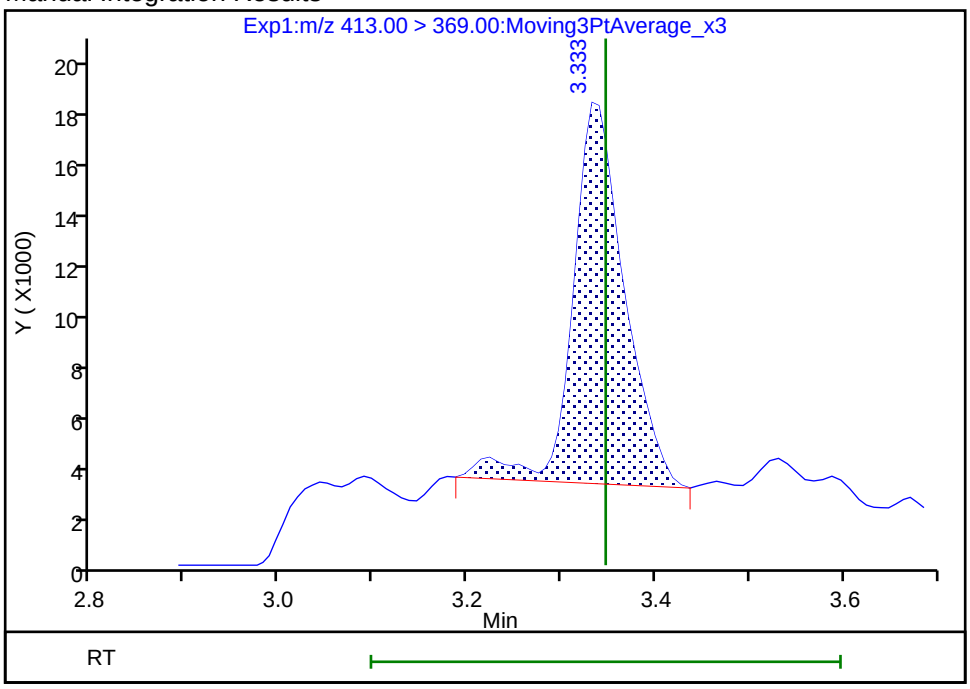
Processing Integration Results

RT: 3.33
Area: 75443
Amount: 0.020953
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 55698
Amount: 0.015470
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:42:02
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

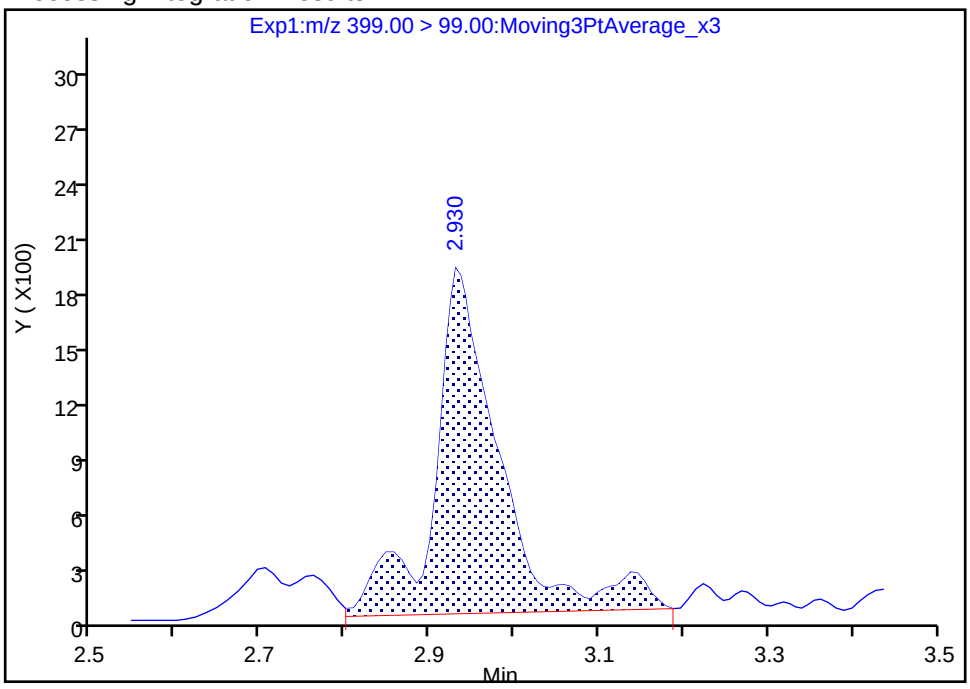
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

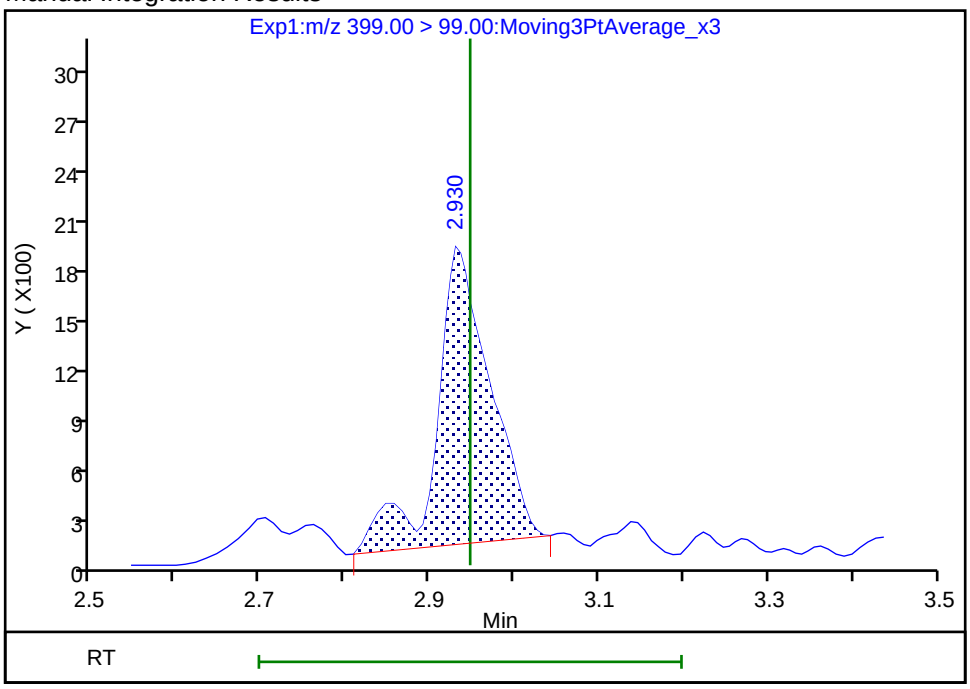
Processing Integration Results

RT: 2.93
Area: 10006
Amount: 0.009063
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 7797
Amount: 0.007778
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:41:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

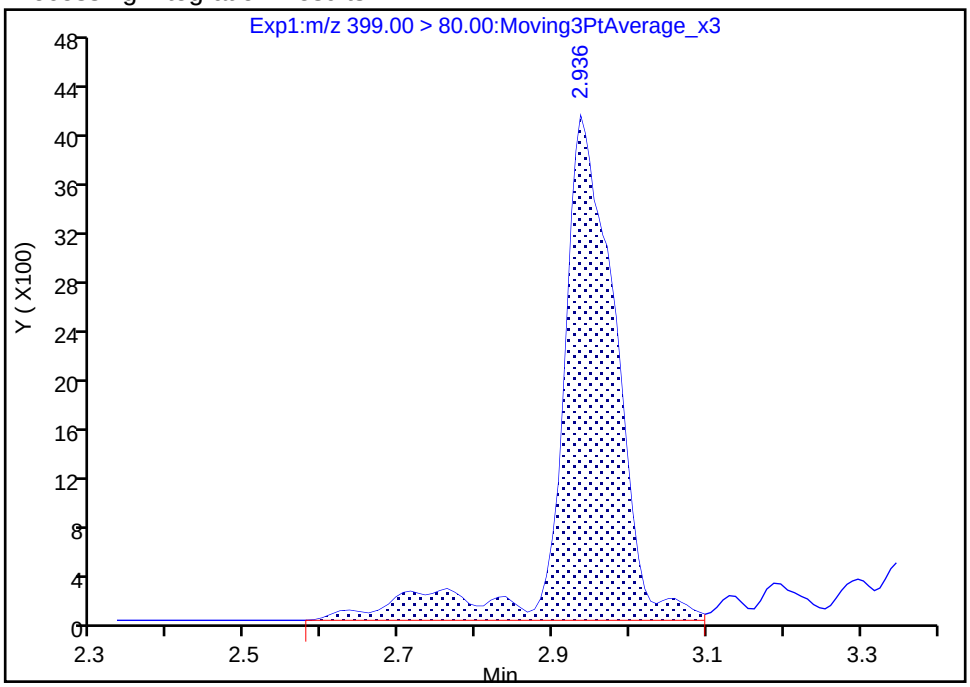
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

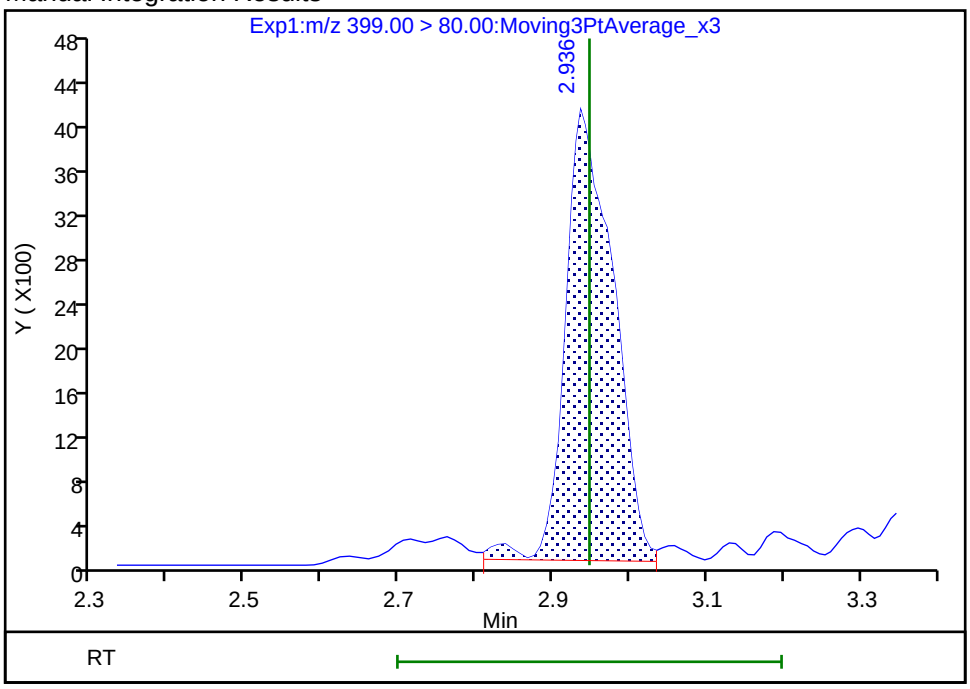
Processing Integration Results

RT: 2.94
Area: 20429
Amount: 0.009063
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 17531
Amount: 0.007778
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:41:46
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

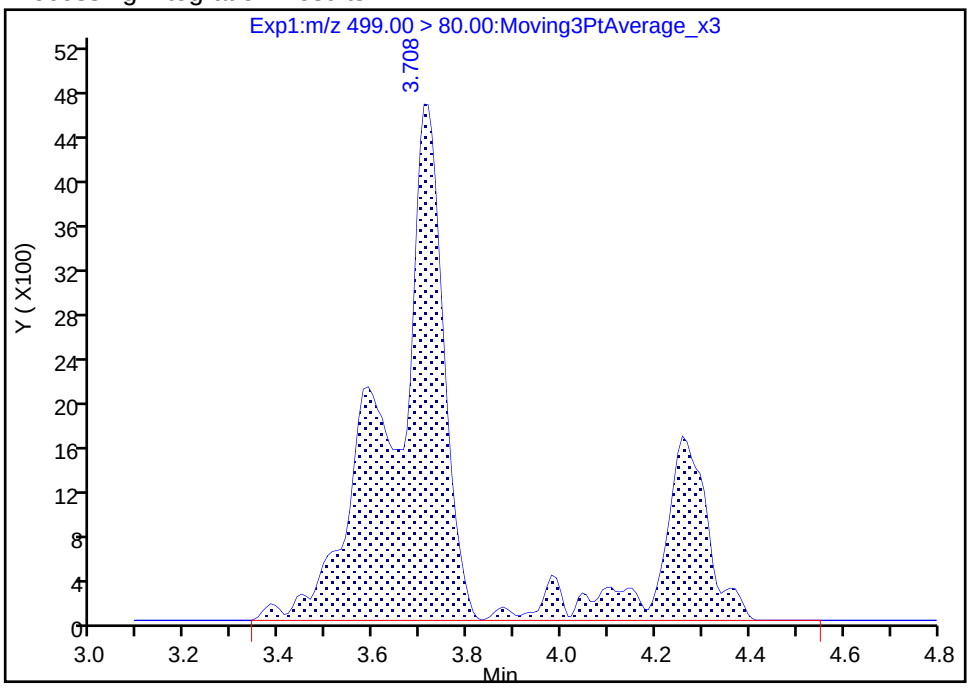
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

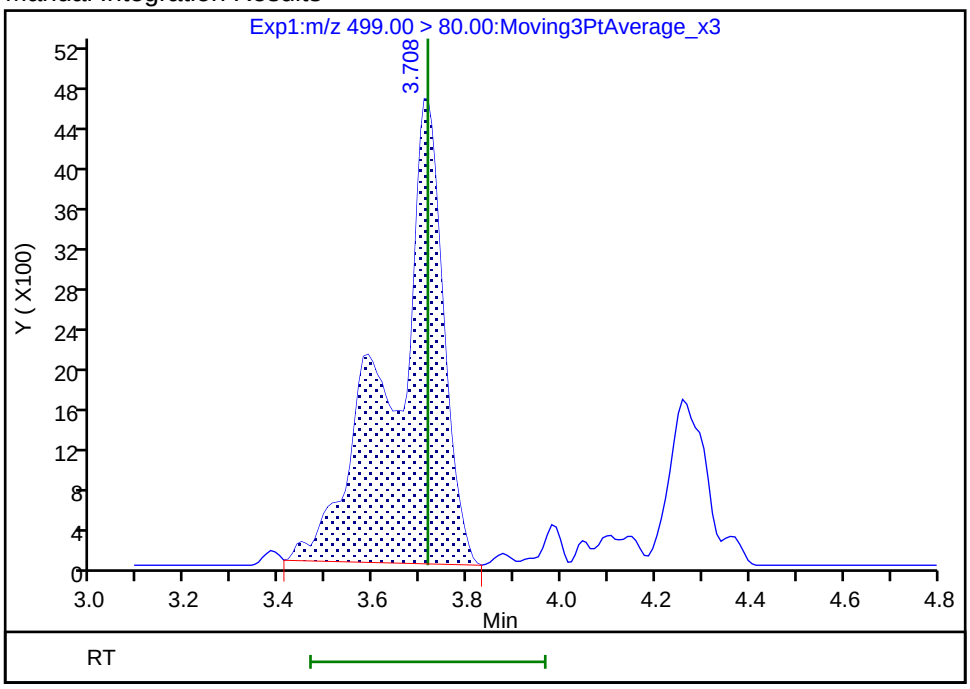
Processing Integration Results

RT: 3.71
Area: 49747
Amount: 0.024041
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 35764
Amount: 0.017284
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:42:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

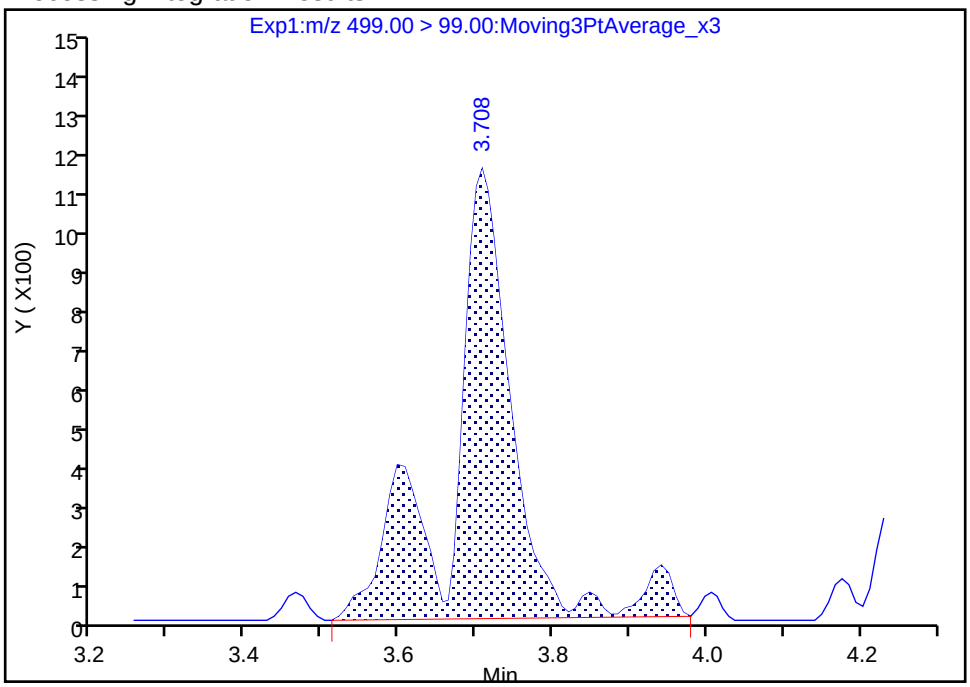
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._029.d				
Injection Date:	09-Oct-2019 02:18:52	Instrument ID:	A9		
Lims ID:	480-159547-A-19-C	Lab Sample ID:	320-159547-19		
Client ID:	RUSSO-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	16	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

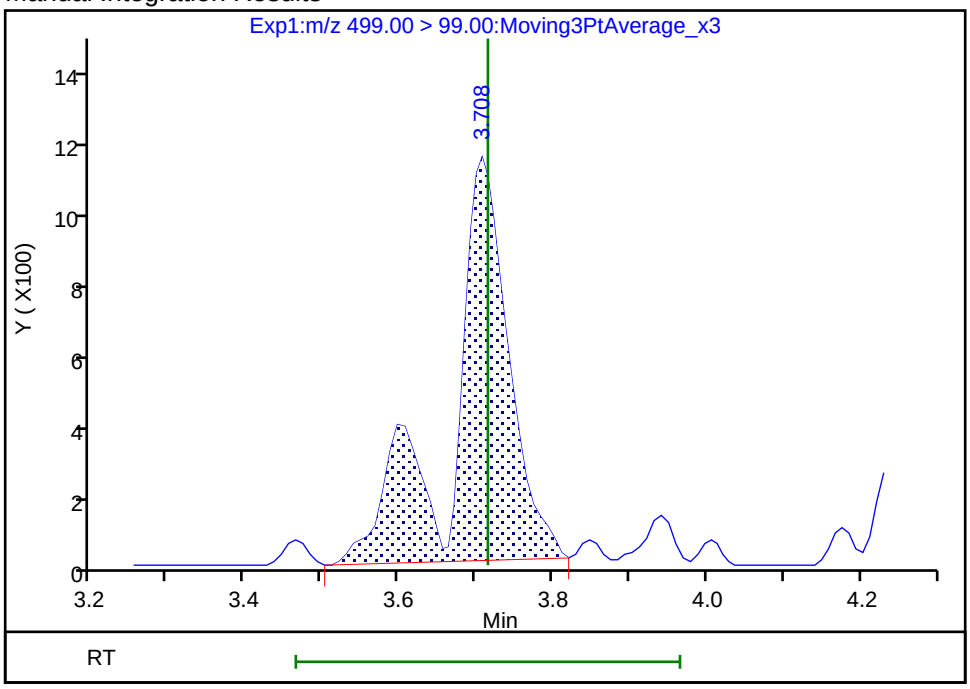
Processing Integration Results

RT: 3.71
Area: 6362
Amount: 0.024041
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 5780
Amount: 0.017284
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:42:15
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 2019.10.03.LLA_019.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:55

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.03(g) Date Analyzed: 10/03/2019 14:03

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.085
307-24-4	Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.046
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032
335-67-1	Perfluorooctanoic acid (PFOA)	0.22		0.22	0.095
375-95-1	Perfluorononanoic acid (PFNA)	0.22		0.22	0.040
335-76-2	Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040
307-55-1	Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.074
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.056
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.37	J	0.55	0.22
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.21		2.21	0.43
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.21		2.21	0.41
27619-97-2	6:2 FTS	2.21		2.21	0.17
39108-34-4	8:2 FTS	2.21		2.21	0.28

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid Lab File ID: 2019.10.03.LLA_019.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:55

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.03(g) Date Analyzed: 10/03/2019 14:03

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	96		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4 PFHpA	95		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2 PFTeDA	89		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	91		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	85		25-150
STL02117	d5-NEtFOSAA	84		25-150
STL02279	M2-6:2 FTS	102		25-150
STL02280	M2-8:2 FTS	114		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d
Lims ID: 480-159547-A-20-A
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 03-Oct-2019 14:03:51 ALS Bottle#: 11 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-20-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:45:01 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:45:01
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.186	2.186	0.0	0.589	5703410	2.40		95.9	5581	
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.680	5133877	2.42		96.6	5201	
D 10 13C2 PFHxA										
315.00 > 270.00	2.897	2.908	-0.012	0.781	5709081	2.40		96.2	10872	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.310	3.312	-0.002	1.000	15263	0.007072	Target=3.84		3.3	
363.00 > 169.00	3.310	3.312	-0.002	1.000	4848		3.15(1.92-5.76)		7.5	
D 17 13C4 PFHpA										
367.00 > 322.00	3.310	3.312	-0.002	0.892	5173794	2.38		95.2	11645	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.320	3.322	-0.002	1.003	16246	0.008708	Target=2.93		19.5	
399.00 > 99.00	3.320	3.322	-0.002	1.003	5427		2.99(1.46-4.39)		8.9	
D 15 18O2 PFHxS										
403.00 > 84.00	3.310	3.322	-0.012	0.892	3452730	2.36		100.0	33507	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.692	3.694	-0.002	1.000	9992	0.008884			24.4	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.692	3.694	-0.002	0.995	1310281	2.41		102	2891	
D 25 13C4 PFOA										
417.00 > 372.00	3.709	3.711	-0.002	1.000	6443794	2.53		101	25951	
* 24 13C2 PFOA										
415.00 > 370.00	3.709	3.720	-0.011		6972831	2.50			12307	
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.709	3.720	-0.011	1.000	40176	0.0150	Target=2.61		8.8	M
413.00 > 169.00	3.709	3.720	-0.011	1.000	16490		2.44(1.31-3.92)		36.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
26 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.081	4.085	-0.004	1.000	207968	0.1668	Target=4.15		284	M
499.00 > 99.00	4.081	4.085	-0.004	1.000	51287		4.05(2.08-6.23)		77.9	M
D 28 13C4 PFOS										
503.00 > 80.00	4.081	4.085	-0.004	1.100	2737685	2.17		90.6	6445	
D 29 13C5 PFNA										
468.00 > 423.00	4.097	4.102	-0.005	1.105	5624476	2.52		101	38141	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.439	4.434	0.005	1.002	16569	0.009869			60.6	
D 33 13C8 FOSA										
506.00 > 78.00	4.430	4.434	-0.004	1.194	4206950	2.45		98.1	17514	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.457	4.460	-0.004	1.000	4486	0.003176			20.8	
D 36 13C2 PFDA										
515.00 > 470.00	4.457	4.460	-0.004	1.202	5591956	2.35		94.0	20491	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.457	4.460	-0.004	1.202	1764318	2.74		114	3032	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.619	4.623	-0.004	1.245	3348425	2.13		85.0	13106	
41 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.628	4.633	-0.005	1.002	17947	0.0170			17.5	M
D 43 13C2 PFUnA										
565.00 > 520.00	4.782	4.787	-0.005	1.289	5759722	2.58		103	79486	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.782	4.787	-0.005	1.289	3296875	2.09		83.6	9669	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.792	4.797	-0.005	1.002	18711	0.0188			58.2	
D 57 13C2 PFDoA										
615.00 > 570.00	5.074	5.080	-0.006	1.368	5510242	2.37		94.9	13458	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.074	5.080	-0.006	1.000	19497	0.009227	Target=8.36		7.7	
613.00 > 169.00	5.074	5.080	-0.006	1.000	3472		5.62(4.18-12.54)		6.8	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.583	5.593	-0.010	1.505	4558482	2.22		89.0	16108	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 16:45:02 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d

Injection Date: 03-Oct-2019 14:03:51 Instrument ID: A13

Lims ID: 480-159547-A-20-A Lab Sample ID: 320-159547-20

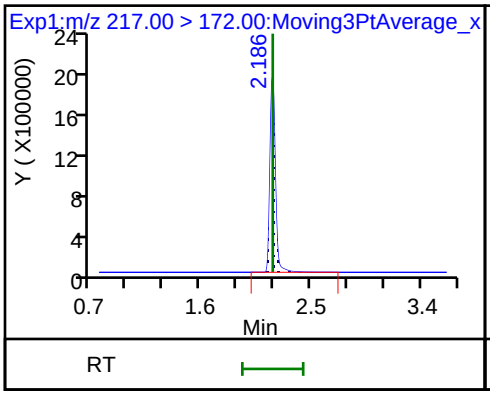
Client ID: RUSSO-CF-COMP 3

Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 16

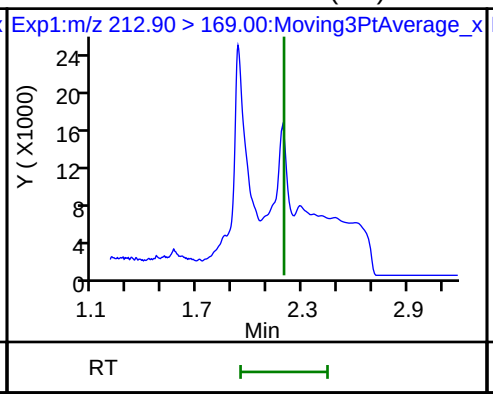
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

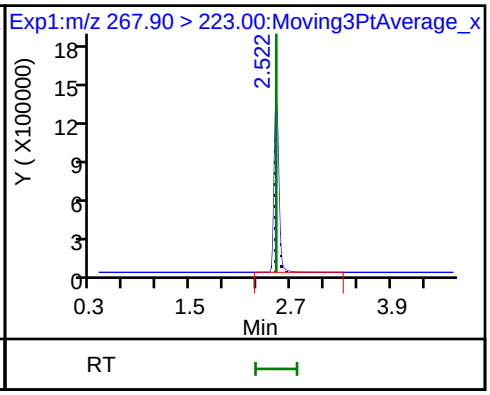
D 2 13C4 PFBA



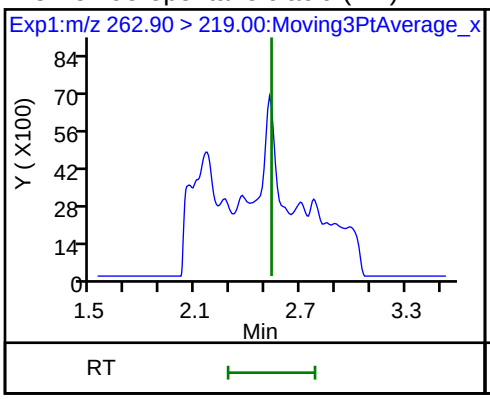
3 Perfluorobutanoic acid (ND)



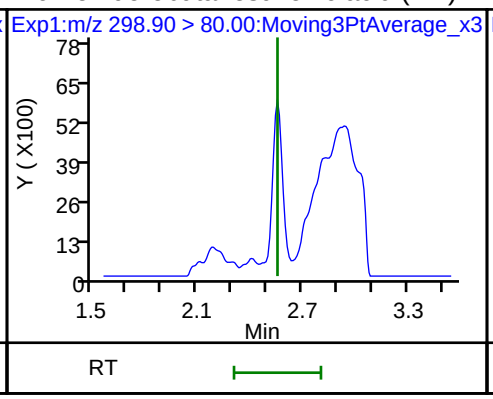
D 4 13C5 PFPeA



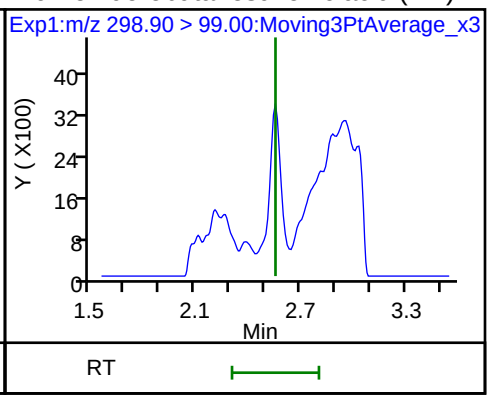
5 Perfluoropentanoic acid (ND)



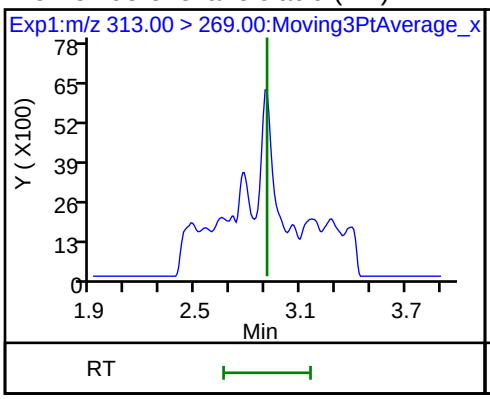
6 Perfluorobutanesulfonic acid (ND)



6 Perfluorobutanesulfonic acid (ND)



9 Perfluorohexanoic acid (ND)



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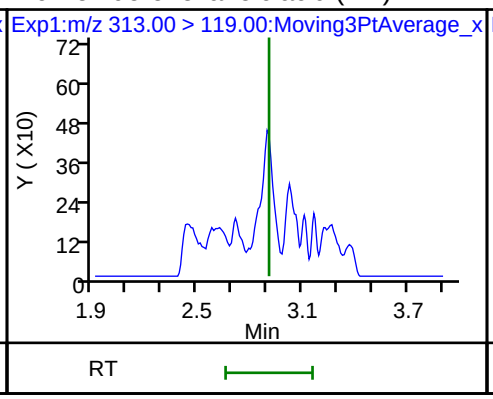
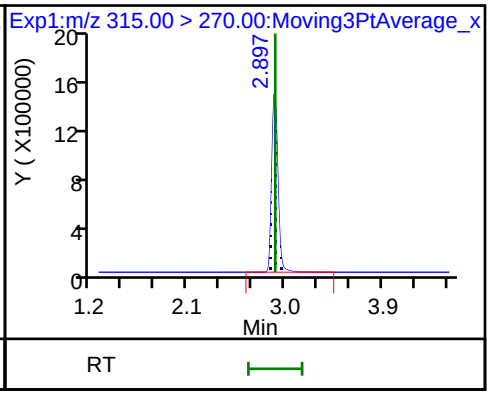
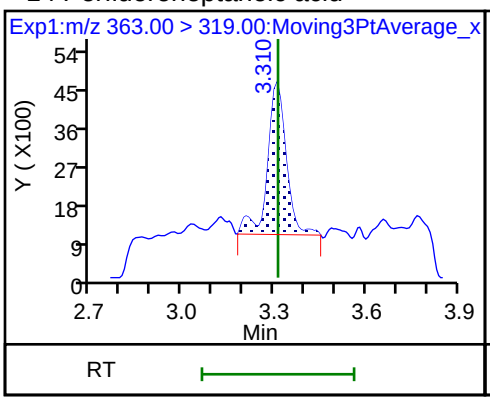


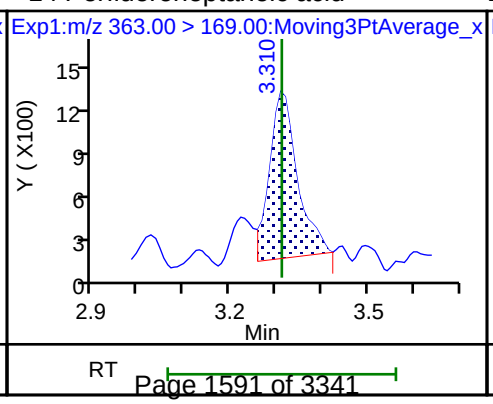
D 10 13C2 PFHxA



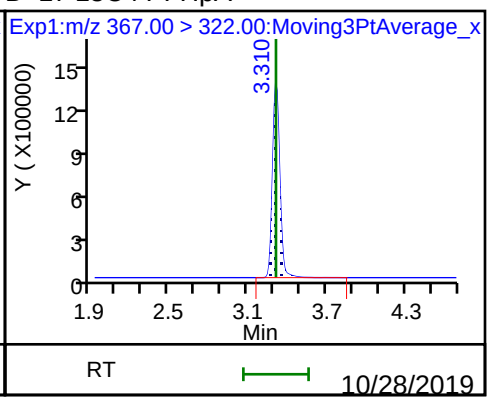
14 Perfluoroheptanoic acid



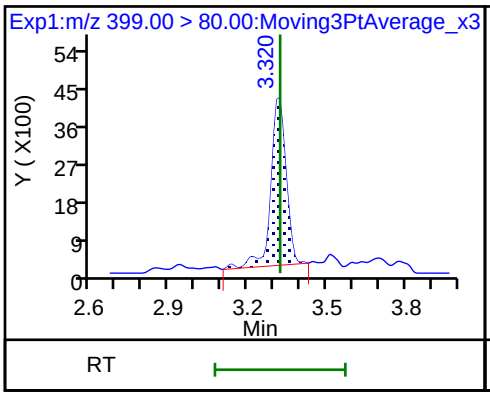
14 Perfluoroheptanoic acid



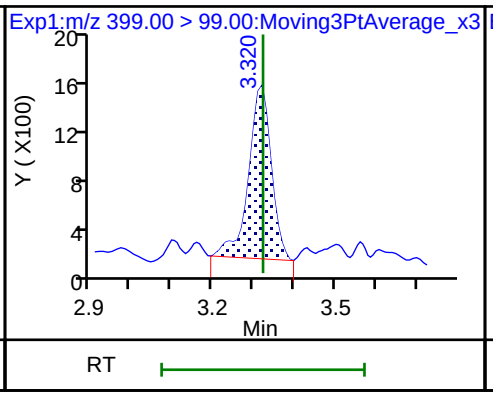
D 17 13C4 PFHpA



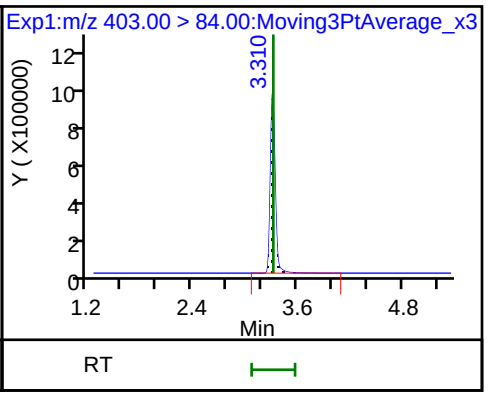
16 Perfluorohexanesulfonic acid



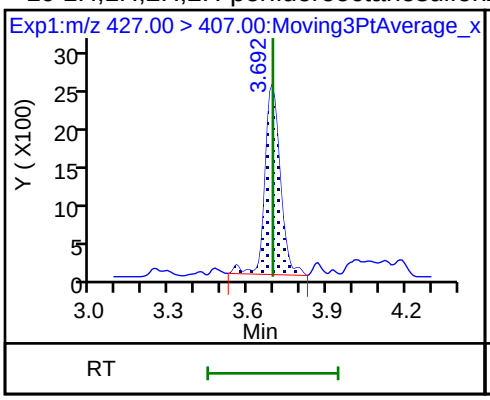
16 Perfluorohexanesulfonic acid



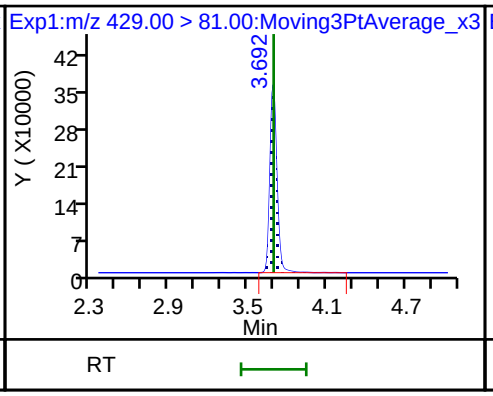
D 15 18O2 PFHxS



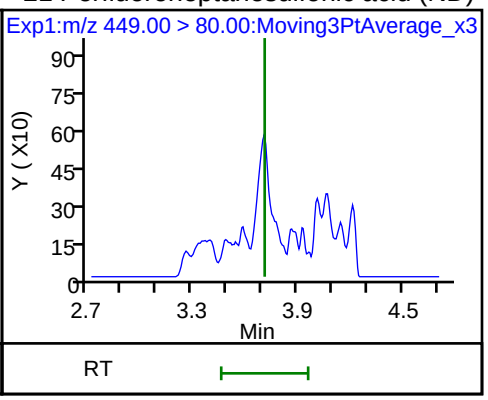
19 1H,1H,2H,2H-perfluorooctanesulfon



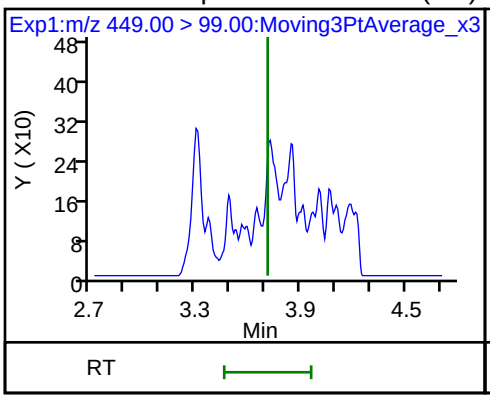
D 20 M2-6:2 FTS



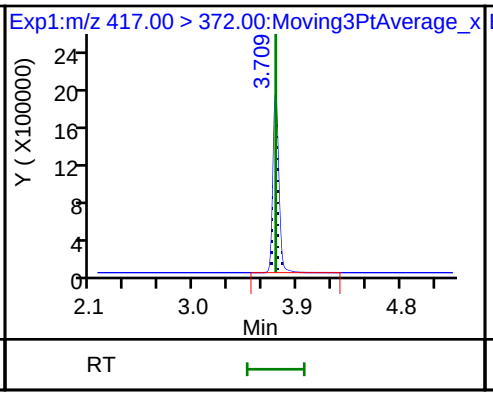
21 Perfluoroheptanesulfonic acid (ND)



21 Perfluoroheptanesulfonic acid (ND)



D 25 13C4 PFOA



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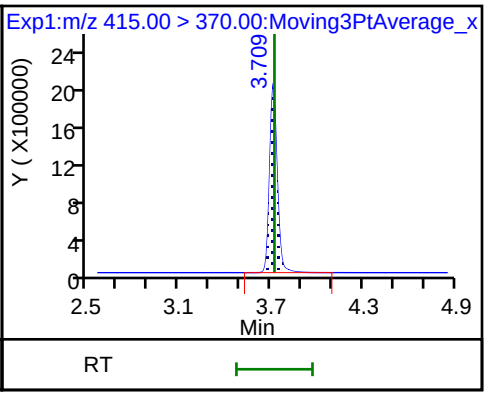
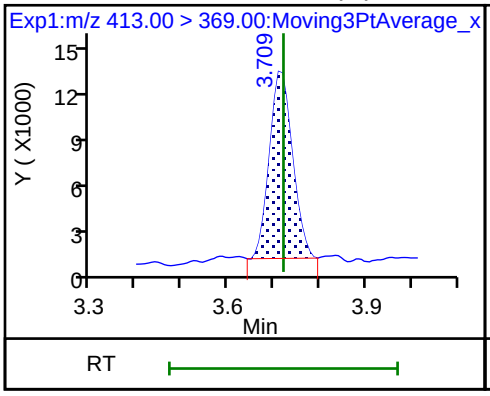
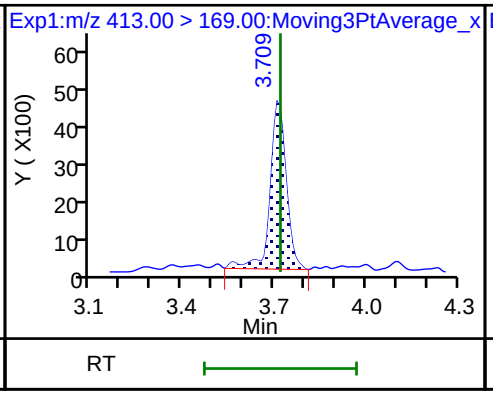


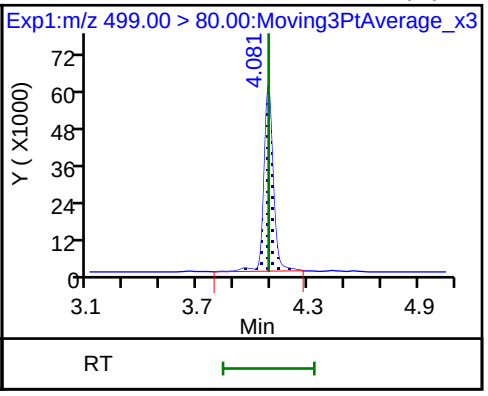
22 Perfluorooctanoic acid (M)



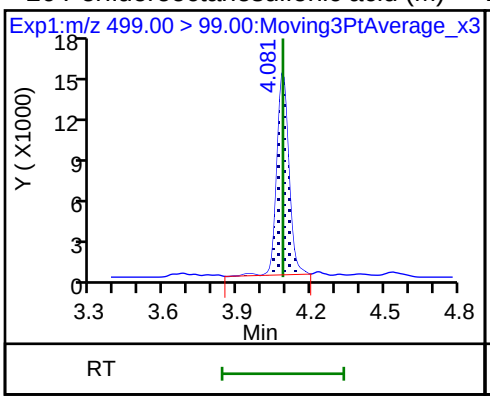
22 Perfluorooctanoic acid



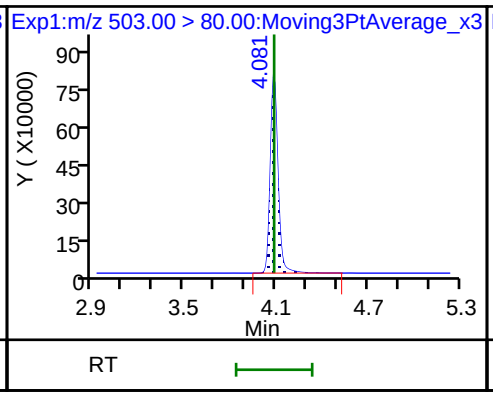
26 Perfluorooctanesulfonic acid (M)



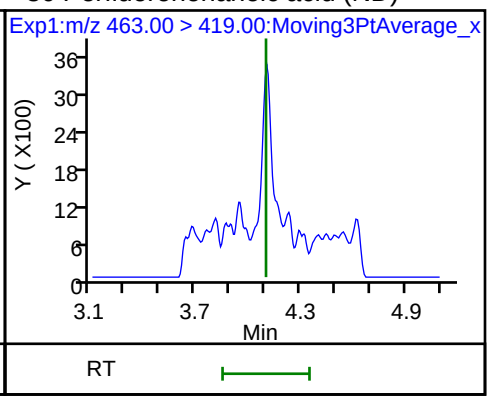
26 Perfluorooctanesulfonic acid (M)



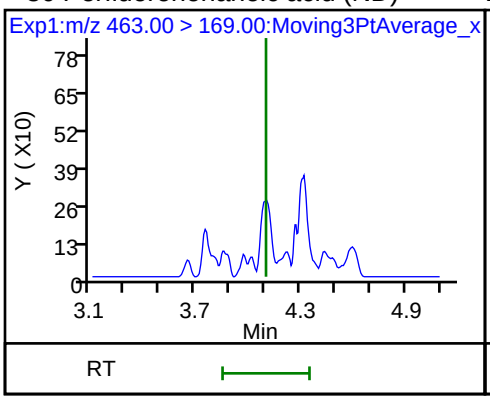
D 28 13C4 PFOS



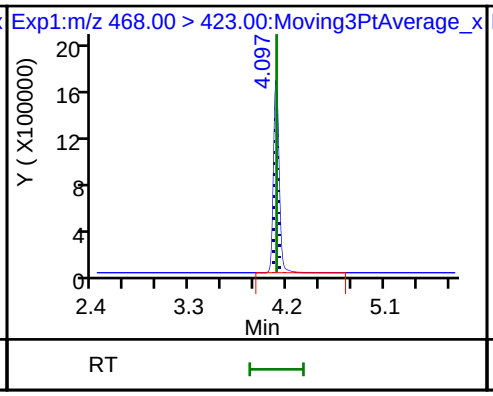
30 Perfluorononanoic acid (ND)



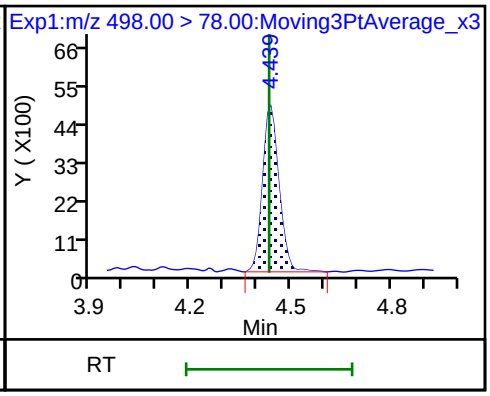
30 Perfluorononanoic acid (ND)



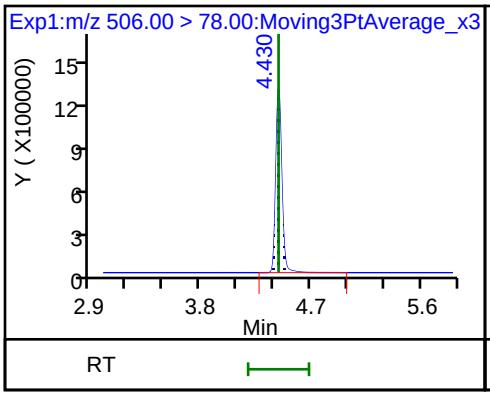
D 29 13C5 PFNA



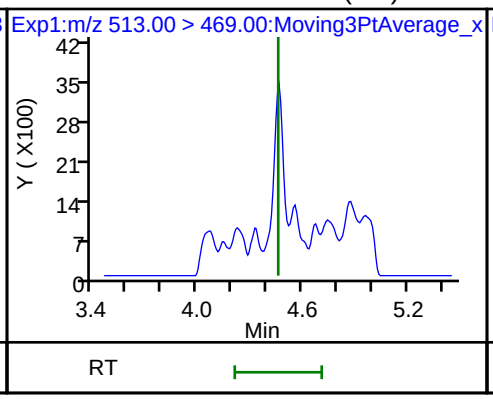
32 Perfluorooctanesulfonamide



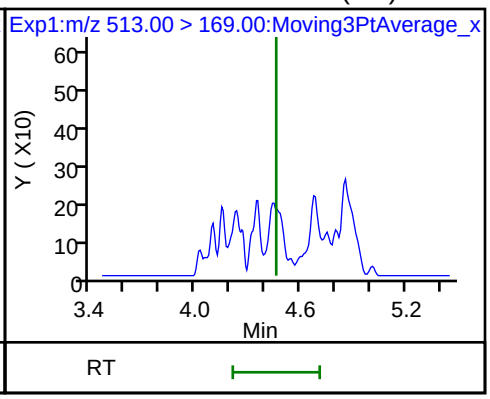
D 33 13C8 FOSA



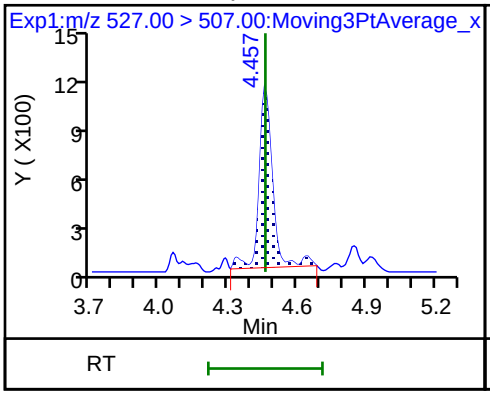
34 Perfluorodecanoic acid (ND)



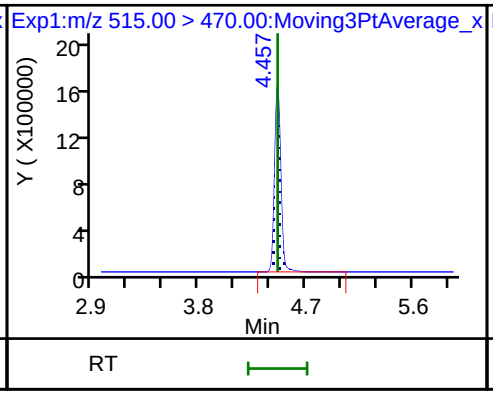
34 Perfluorodecanoic acid (ND)



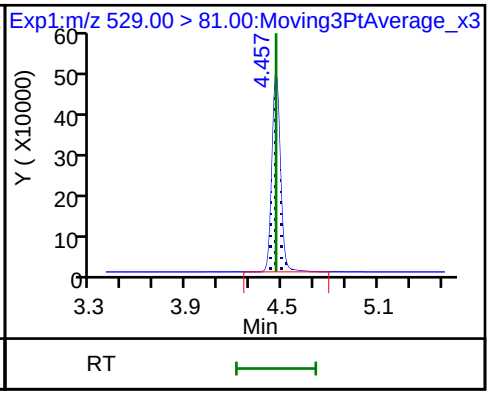
35 1H,1H,2H,2H-perfluorodecanesulfon



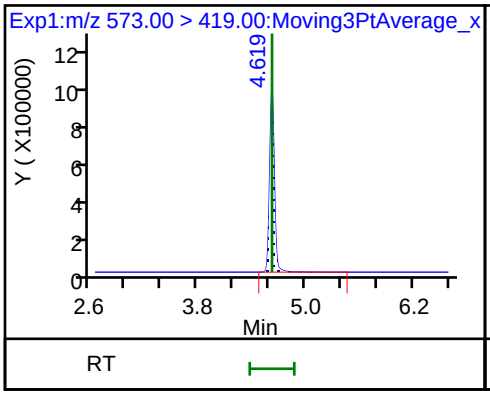
D 36 13C2 PFDA



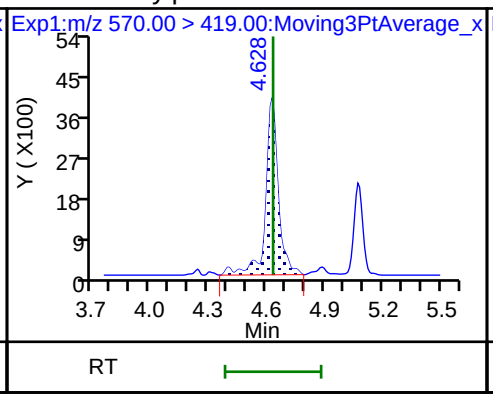
D 37 M2-8:2 FTS



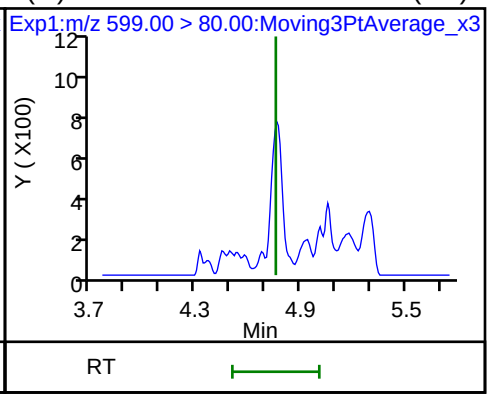
D 40 d3-NMeFOSAA



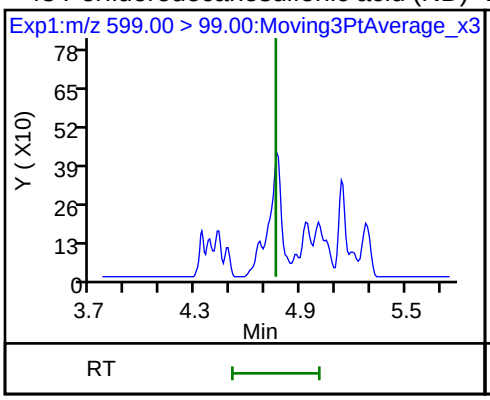
41 N-methylperfluorooctanesulfonamido (ND)



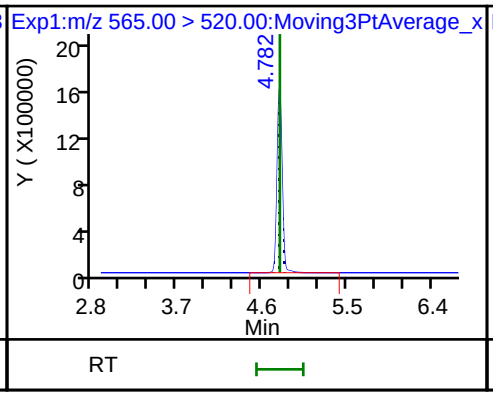
48 Perfluorodecanesulfonic acid (ND)



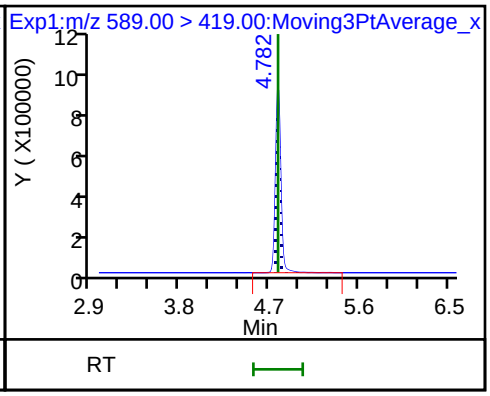
48 Perfluorodecanesulfonic acid (ND)



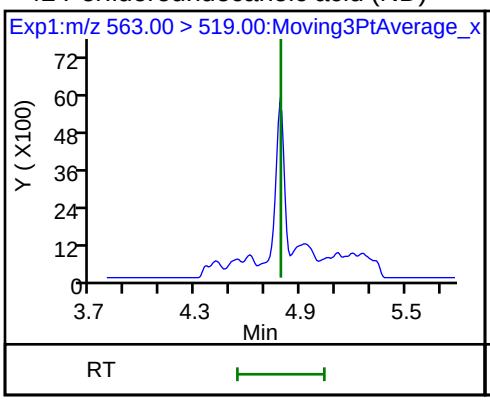
D 43 13C2 PFUnA



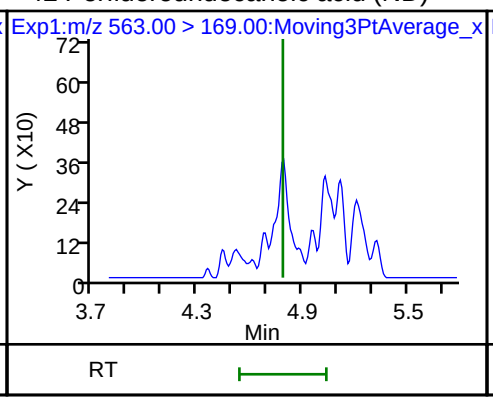
D 44 d5-NEtFOSAA



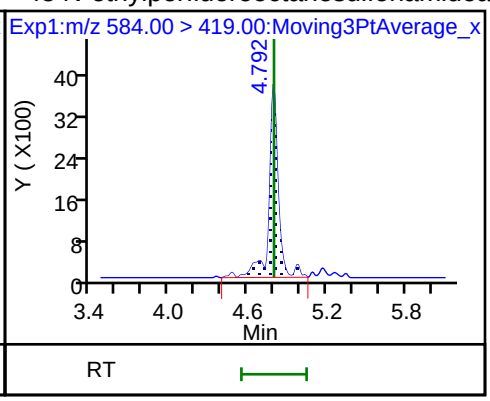
42 Perfluoroundecanoic acid (ND)



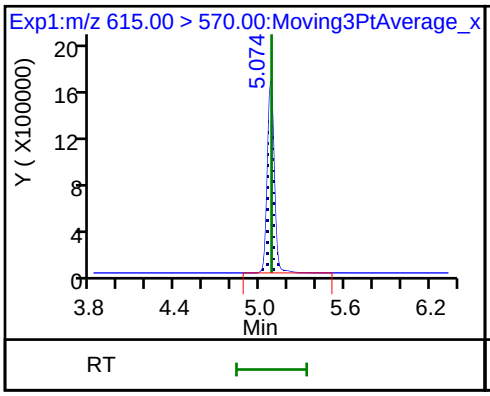
42 Perfluoroundecanoic acid (ND)



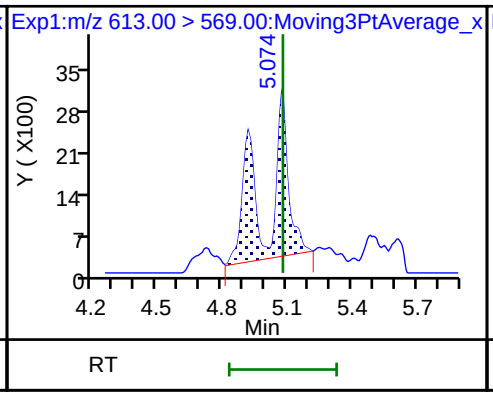
45 N-ethylperfluorooctanesulfonamidoa



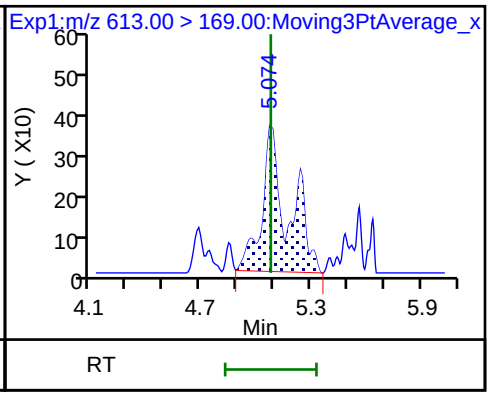
D 57 13C2 PFDoA



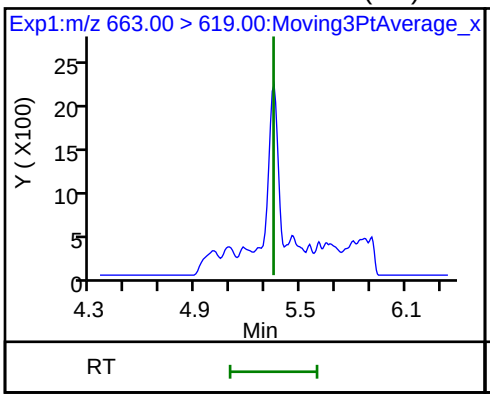
56 Perfluorododecanoic acid



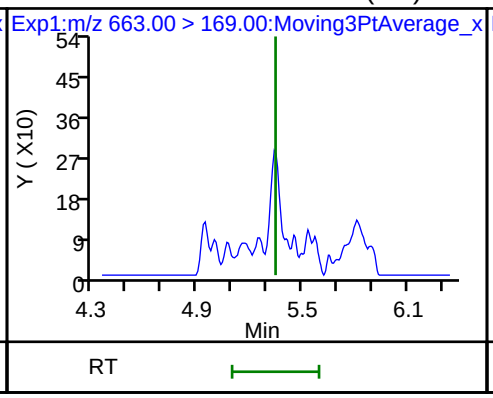
56 Perfluorododecanoic acid



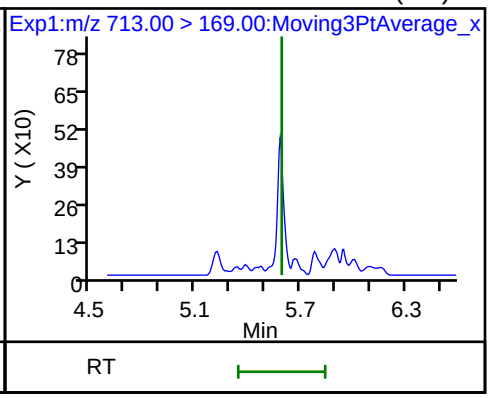
60 Perfluorotridecanoic acid (ND)



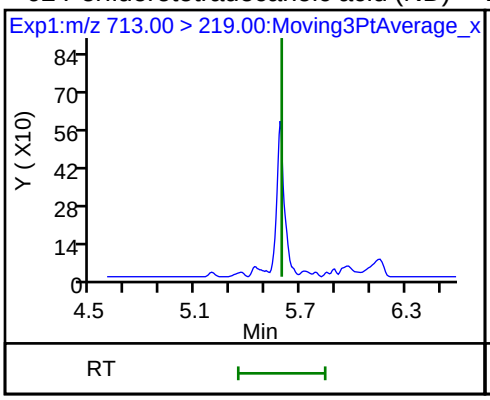
60 Perfluorotridecanoic acid (ND)



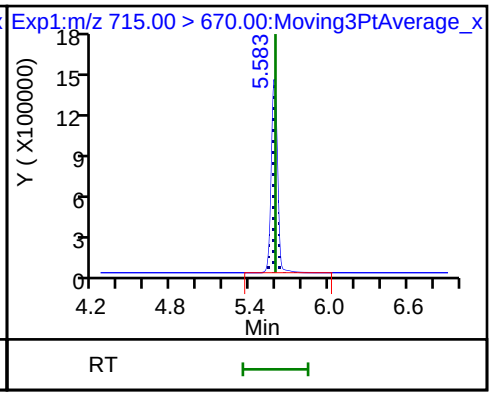
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

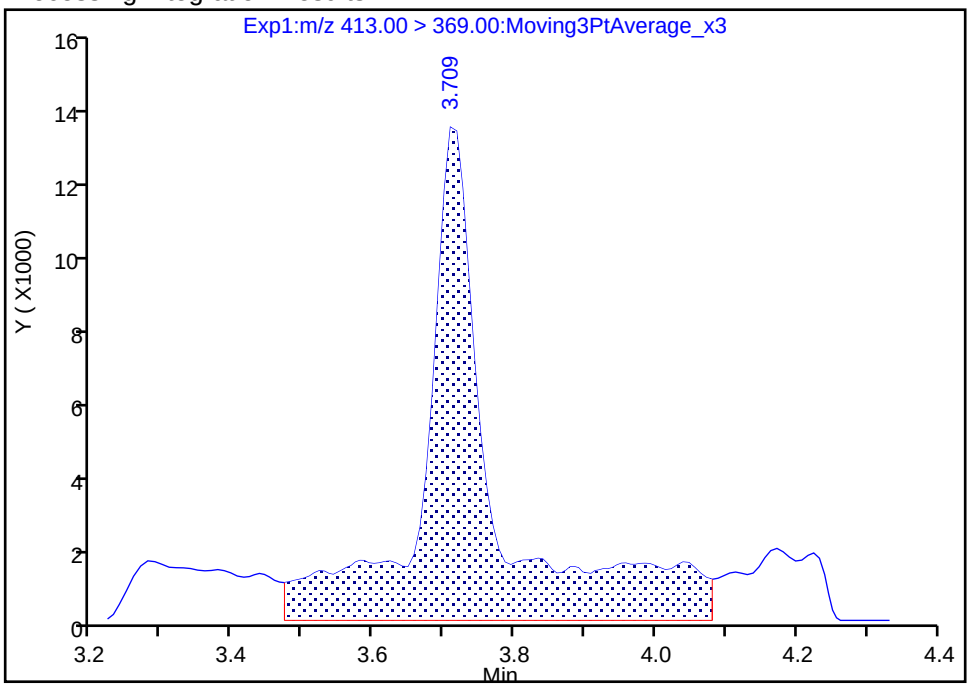
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d				
Injection Date:	03-Oct-2019 14:03:51	Instrument ID:	A13		
Lims ID:	480-159547-A-20-A	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

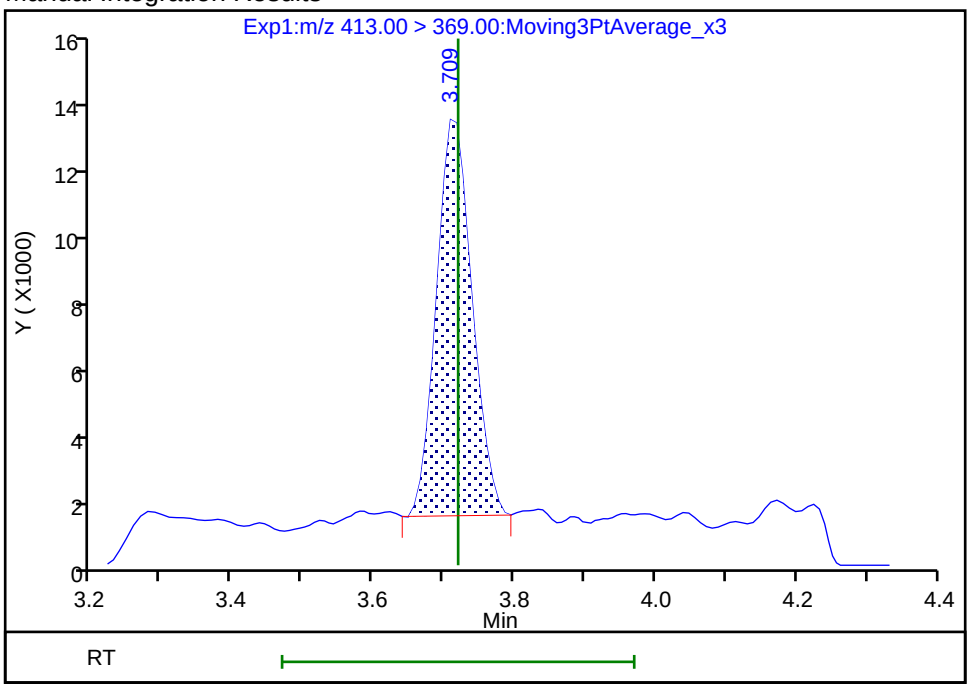
Processing Integration Results

RT: 3.71
Area: 91031
Amount: 0.033966
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 40176
Amount: 0.014991
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:43:35

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

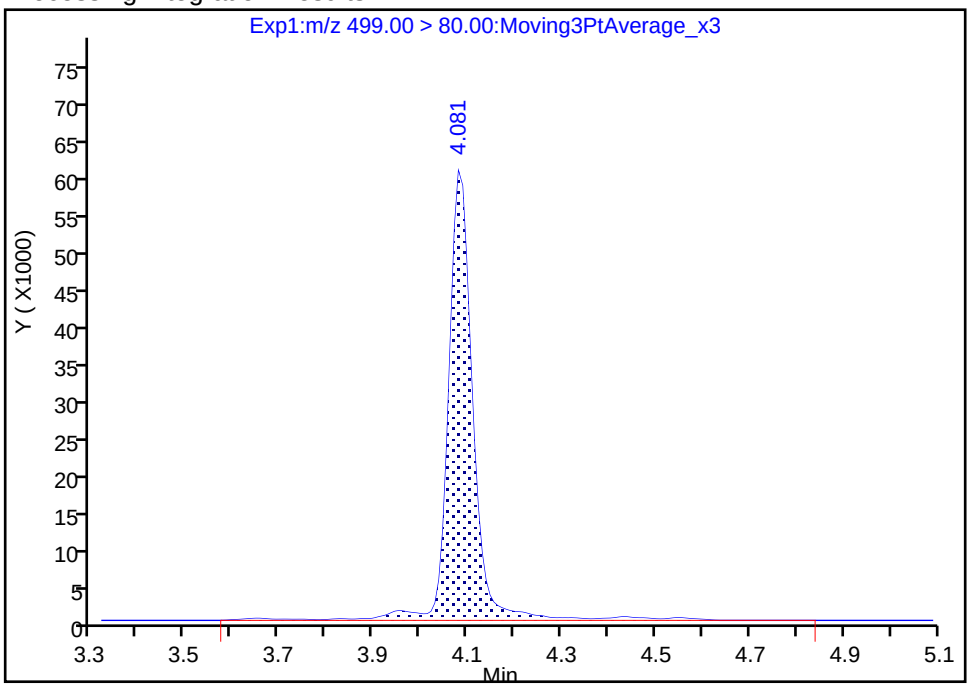
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d				
Injection Date:	03-Oct-2019 14:03:51	Instrument ID:	A13		
Lims ID:	480-159547-A-20-A	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

26 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

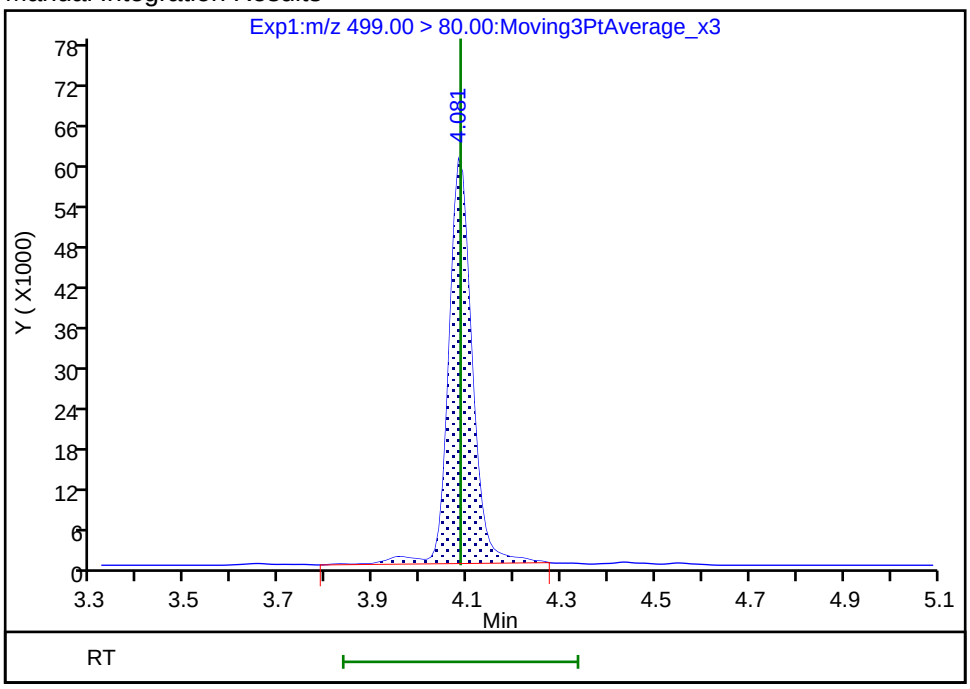
Processing Integration Results

RT: 4.08
Area: 221346
Amount: 0.177582
Amount Units: ng/ml



Manual Integration Results

RT: 4.08
Area: 207968
Amount: 0.166849
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:43:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

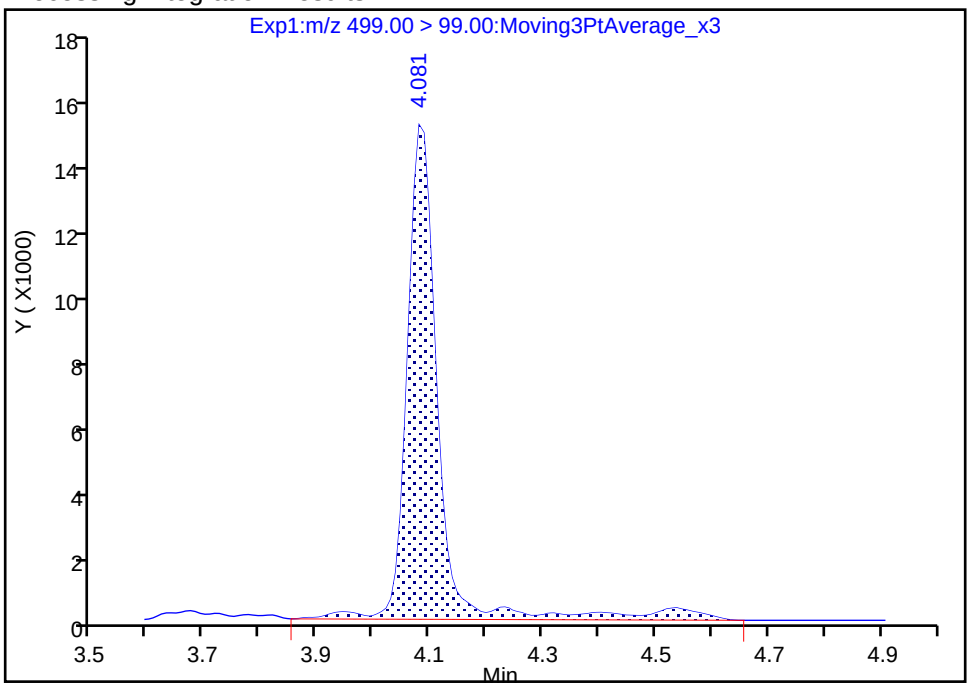
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d				
Injection Date:	03-Oct-2019 14:03:51	Instrument ID:	A13		
Lims ID:	480-159547-A-20-A	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

26 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

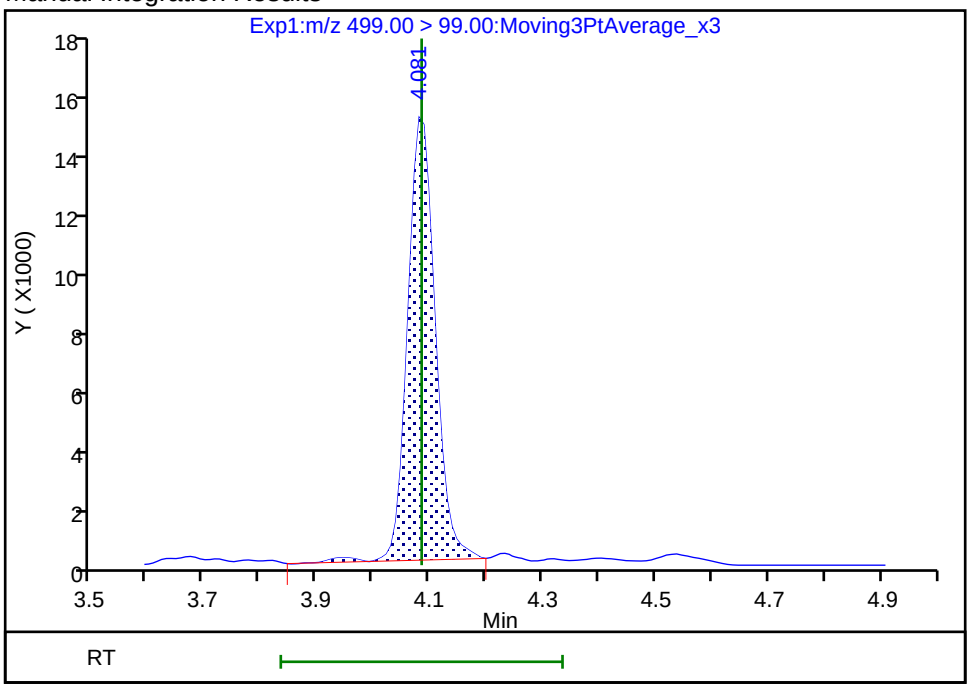
Processing Integration Results

RT: 4.08
Area: 58912
Amount: 0.177582
Amount Units: ng/ml



Manual Integration Results

RT: 4.08
Area: 51287
Amount: 0.166849
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:43:59

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

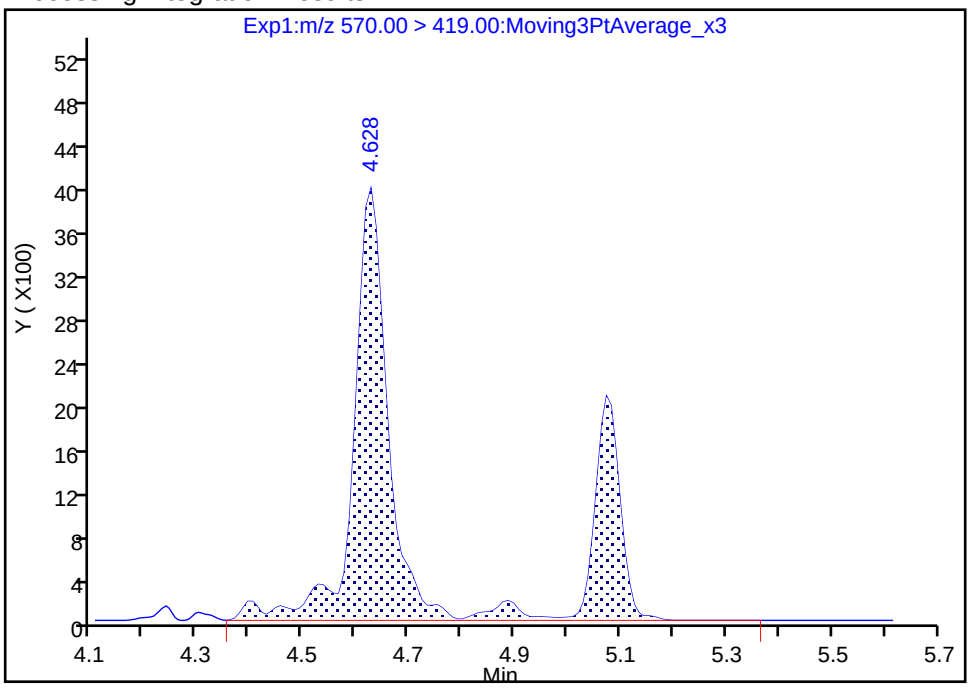
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_019.d				
Injection Date:	03-Oct-2019 14:03:51	Instrument ID:	A13		
Lims ID:	480-159547-A-20-A	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	11	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

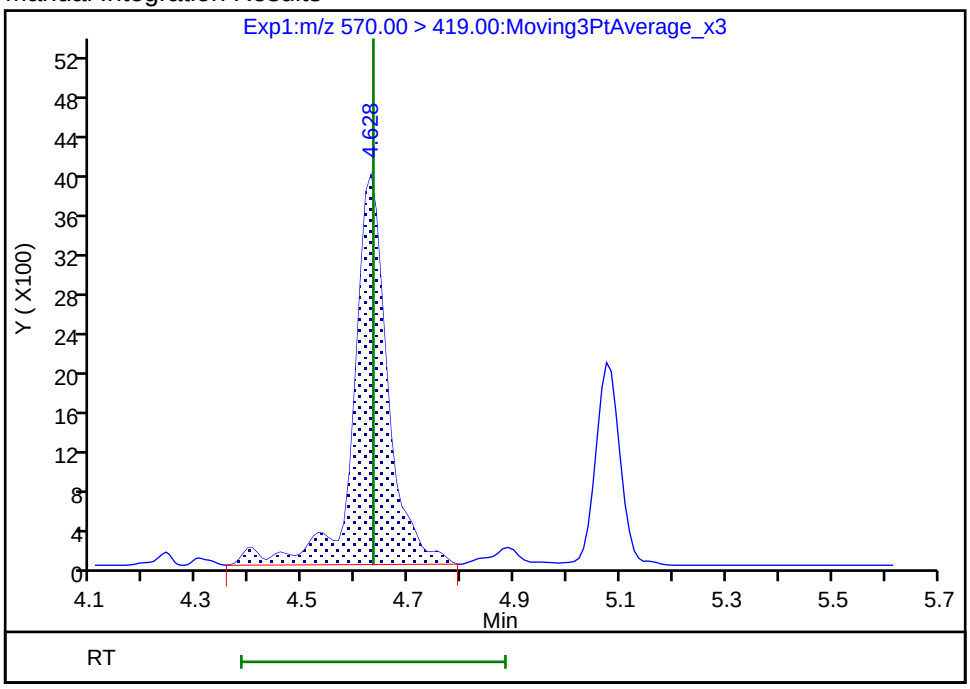
Processing Integration Results

RT: 4.63
Area: 25549
Amount: 0.024196
Amount Units: ng/ml



Manual Integration Results

RT: 4.63
Area: 17947
Amount: 0.016997
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:44:41

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._030.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 11:55

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 275.6(mL) Date Analyzed: 10/09/2019 02:28

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.58	J	1.81	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.34	J	1.81	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77
375-95-1	Perfluorononanoic acid (PFNA)	1.81		1.81	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.81		1.81	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.81	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	108		25-150
STL00993	13C2 PFHxA	108		25-150
STL00990	13C4 PFOA	110		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	102		25-150
STL00997	13C2 PFUnA	107		25-150
STL00998	13C2 PFDoA	103		25-150
STL02116	13C2 PFTeDA	107		25-150
STL00994	18O2 PFHxS	112		25-150
STL00991	13C4 PFOS	104		25-150
STL01892	13C4 PFHpA	109		25-150
STL01893	13C5 PFPeA	109		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d
Lims ID: 480-159547-B-20-B
Client ID: RUSSO-CF-COMP 3
Sample Type: Client
Inject. Date: 09-Oct-2019 02:28:26 ALS Bottle#: 17 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-20-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:51:52 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:44:29
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.894	1.719	0.175	1.000	33750	0.0159			5.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.894	1.901	-0.007	0.566	6237292	2.69		108	5667	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.206	-0.008	0.657	5273153	2.72		109	4094	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.190	2.206	-0.016	0.996	17140	0.007932			1.2	
D 9 13C2 PFHxA										
315.00 > 270.00	2.558	2.557	0.001	0.765	6016495	2.69		108	2995	
10 Perfluorohexanoic acid										M
313.00 > 269.00	2.547	2.560	-0.013	0.996	23690	0.0106	Target=15.40		2.7	M
313.00 > 119.00	2.558	2.560	-0.002	1.000	1583		14.97(7.70-23.09)		2.6	M
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.935	2.941	-0.006	0.998	29485	0.009397	Target=4.51		3.1	
363.00 > 169.00	2.952	2.941	0.011	1.004	4801		6.14(2.25-6.76)		7.0	
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.942	-0.002	0.879	6984443	2.73		109	3203	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.957	2.947	0.010	1.004	17349	0.007737	Target=3.25		31.7	M
399.00 > 99.00	2.940	2.947	-0.007	0.998	4888		3.55(1.63-4.88)		9.8	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.946	2.947	-0.001	0.881	4335317	2.64		112	5507	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.324	3.318	0.006	1.002	8341	0.0133			31.3	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.318	-0.001	0.991	638781	1.79		75.4	1599	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.347	-0.009	0.998	8142599	2.76		110	6297	
* 25 13C2 PFOA										
415.00 > 370.00	3.345	3.347	-0.002		7864362	2.50			4936	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.345	3.347	-0.002	1.002	63774	0.0173	Target=3.06		5.8	M
413.00 > 169.00	3.345	3.347	-0.002	1.002	21346		2.99(1.53-4.58)		40.8	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.704	3.715	-0.011	0.998	27256	0.0128	Target=4.13		14.0	M
499.00 > 99.00	3.719	3.715	0.004	1.002	7580		3.60(2.06-6.19)		18.7	M
D 27 13C4 PFOS										
503.00 > 80.00	3.712	3.715	-0.003	1.110	4733201	2.48		104	3290	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.731	-0.004	1.114	6943370	2.65		106	3549	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.086	-0.004	1.000	1304	0.002318			11.9	
D 36 13C2 PFDA										
515.00 > 470.00	4.091	4.088	0.003	1.223	7527635	2.54		102	3304	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.088	-0.006	1.220	608485	1.81		75.7	907	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.114	-0.005	1.228	2678129	2.72		109	2111	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.109	4.123	-0.014	1.000	15559	0.005287			52.0	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.249	-0.006	1.268	3574153	2.56		102	1844	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.243	4.256	-0.013	1.000	2622	0.002239			0.3	
D 42 13C2 PFUnA										
565.00 > 520.00	4.409	4.406	0.003	1.318	6772238	2.68		107	3586	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.414	-0.014	0.998	11266	0.005287	Target=9.66		7.5	
563.00 > 169.00	4.409	4.414	-0.005	1.000	1677		6.72(4.83-14.49)		9.8	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.409	4.414	-0.005	1.318	3448513	2.87		115	2883	
D 55 13C2 PFDoA										
615.00 > 570.00	4.693	4.690	0.003	1.403	7193729	2.59		103	3839	
59 Perfluorotridecanoic acid										R
663.00 > 619.00	4.952	4.947	0.005	1.055	8369	0.004512	Target=6.06		17.3	R
663.00 > 169.00	4.952	4.947	0.005	1.055	647		12.94(3.03-9.08)		10.1	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.186	5.191	-0.005	1.550	5268659	2.67		107	4096	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:51:52 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d

Injection Date: 09-Oct-2019 02:28:26 Instrument ID: A9

Lims ID: 480-159547-B-20-B Lab Sample ID: 320-159547-20

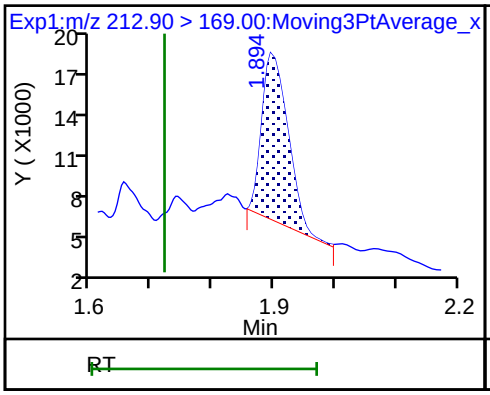
Client ID: RUSSO-CF-COMP 3

Operator ID: A9\Administrator ALS Bottle#: 17 Worklist Smp#: 16

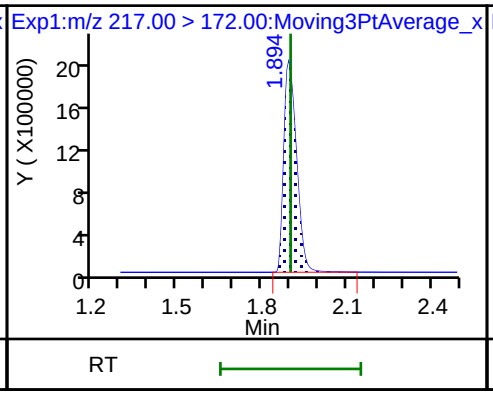
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

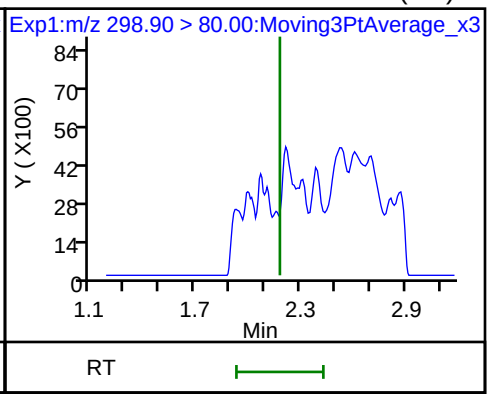
2 Perfluorobutanoic acid



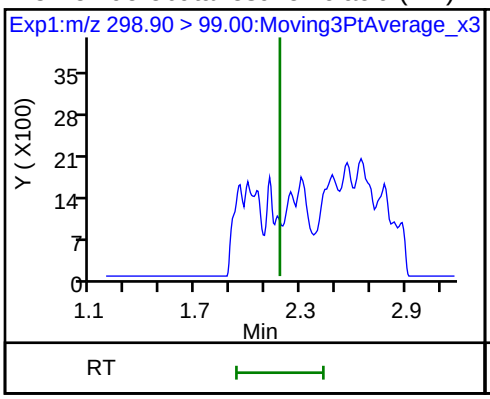
D 1 13C4 PFBA



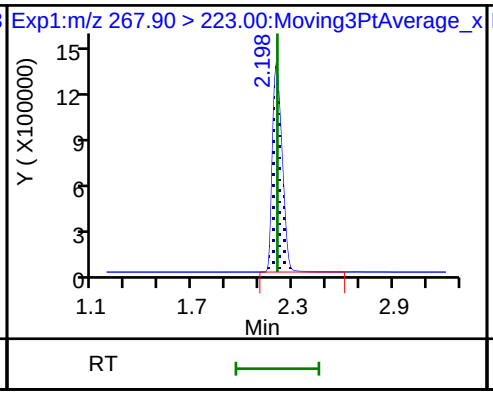
5 Perfluorobutanesulfonic acid (ND)



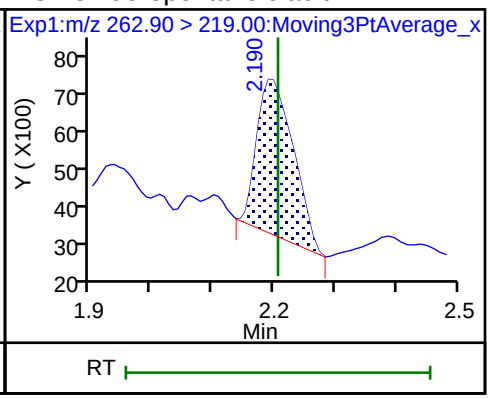
5 Perfluorobutanesulfonic acid (ND)



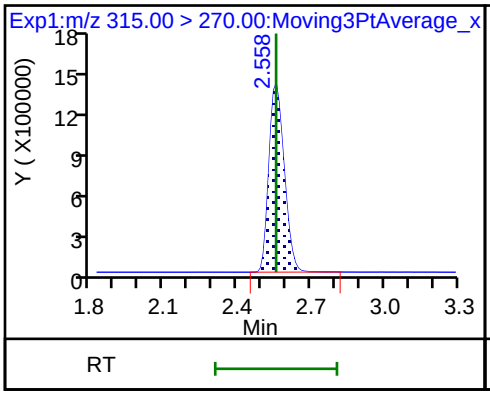
D 4 13C5 PFPeA



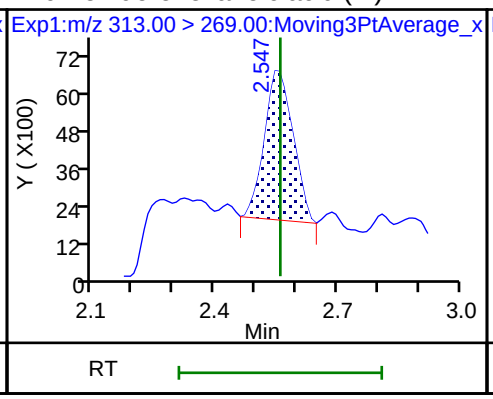
3 Perfluoropentanoic acid



D 9 13C2 PFHxA



10 Perfluorohexanoic acid (M)



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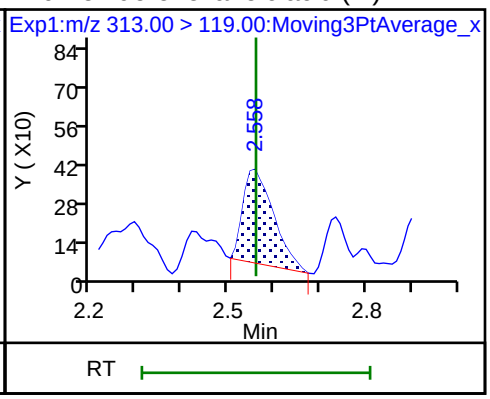
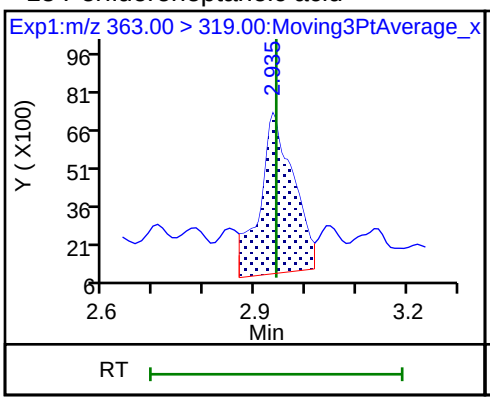


15 Perfluoroheptanoic acid



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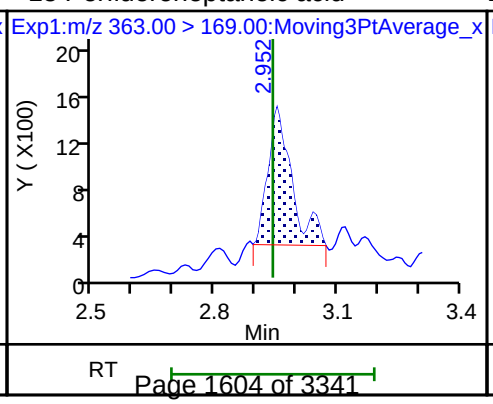
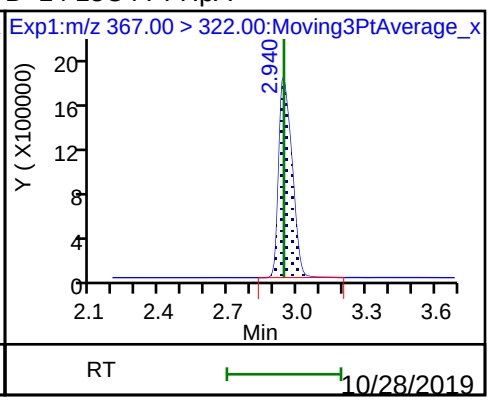
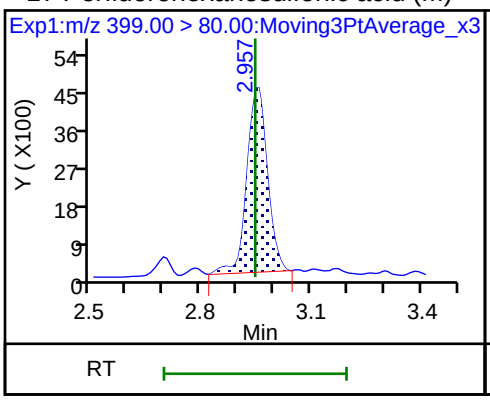


D 14 13C4 PFHpA



17 Perfluorohexanesulfonic acid (M)



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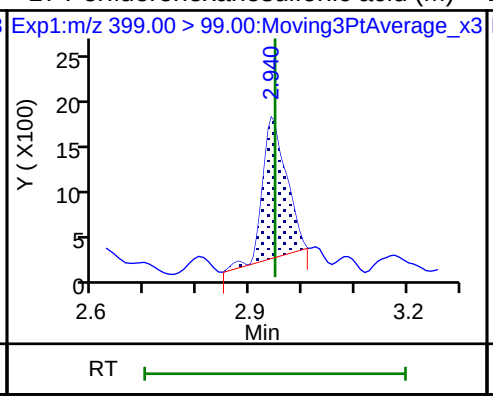
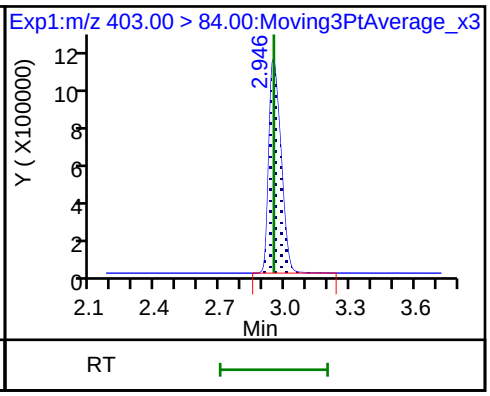
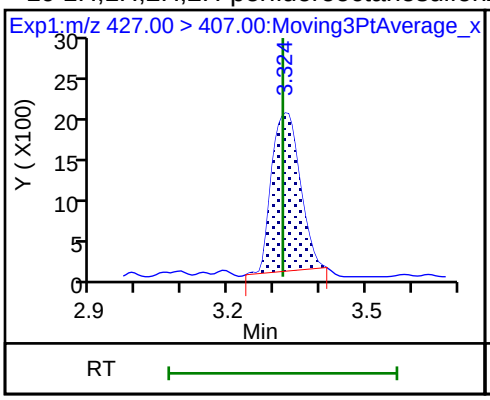


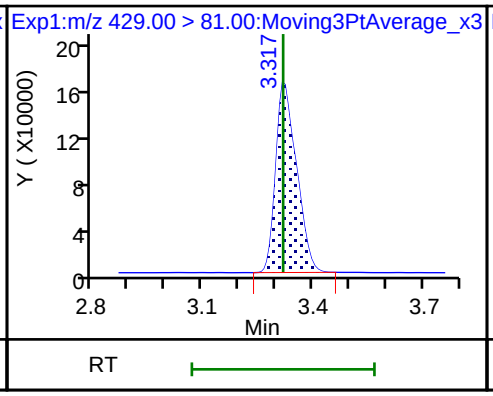
D 16 18O2 PFHxS



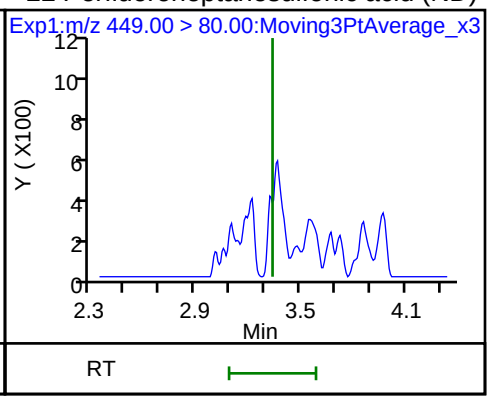
19 1H,1H,2H,2H-perfluorooctanesulfon



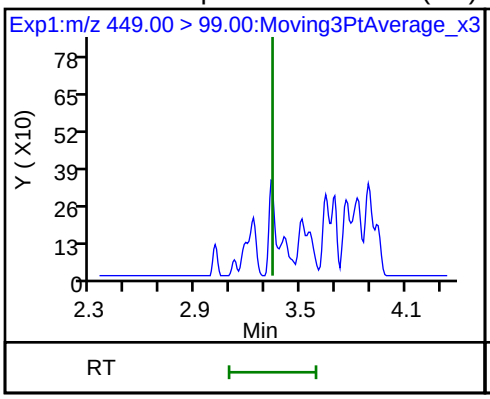
D 20 M2-6:2 FTS



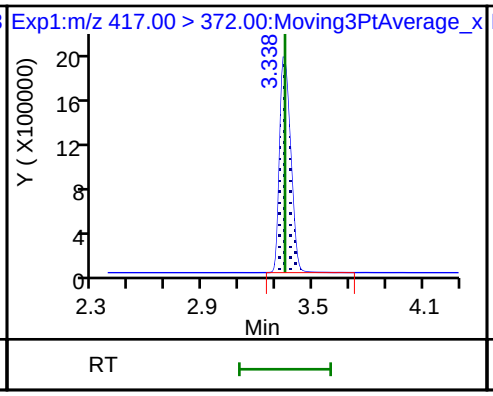
22 Perfluoroheptanesulfonic acid (ND)



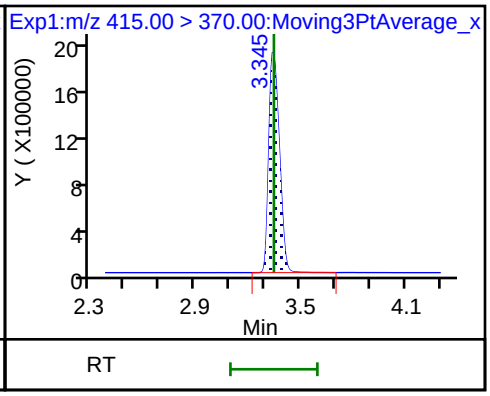
22 Perfluoroheptanesulfonic acid (ND)



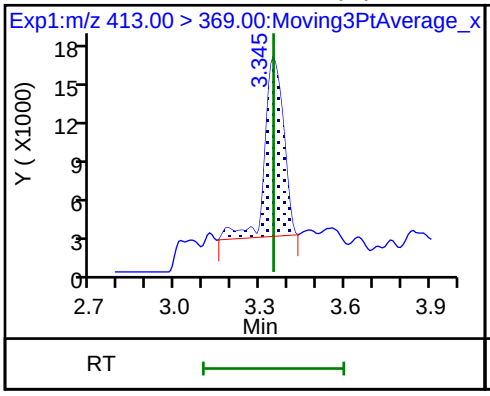
D 23 13C4 PFOA



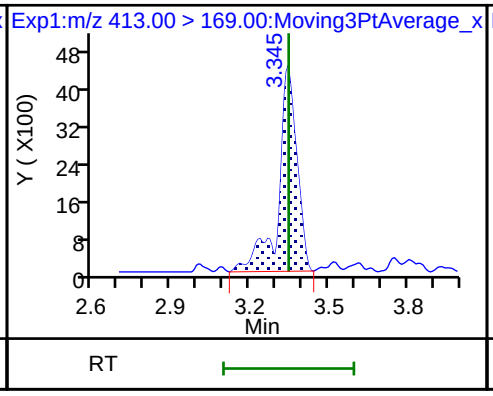
* 25 13C2 PFOA



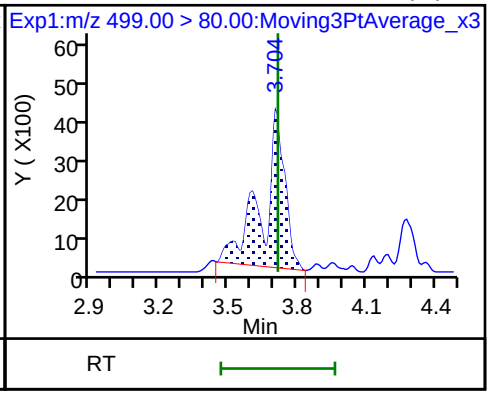
24 Perfluorooctanoic acid (M)



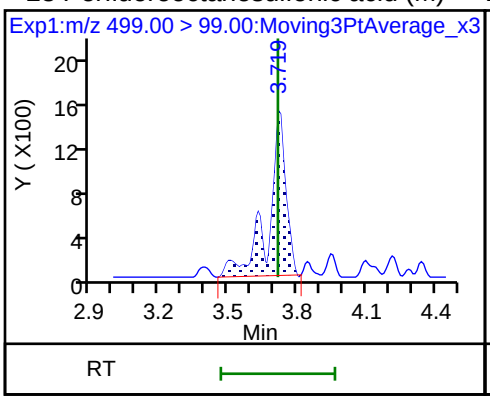
24 Perfluorooctanoic acid



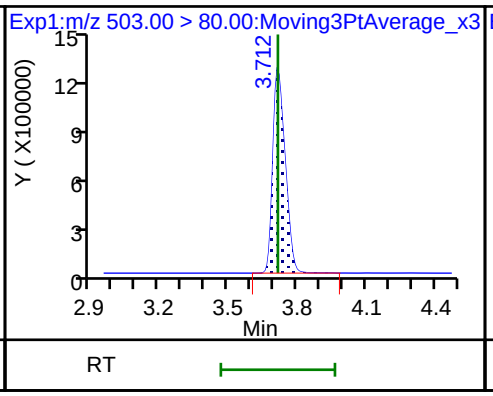
28 Perfluorooctanesulfonic acid (M)



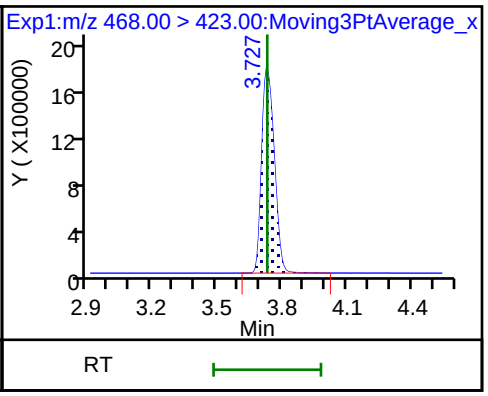
28 Perfluorooctanesulfonic acid (M)



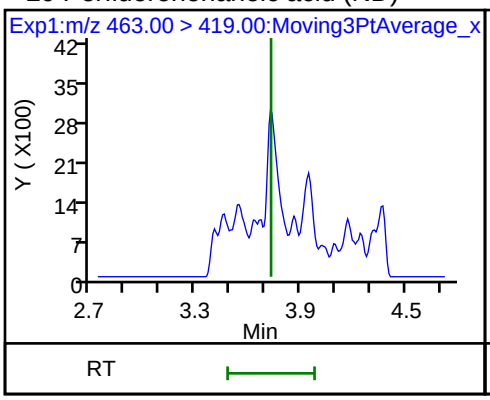
D 27 13C4 PFOS



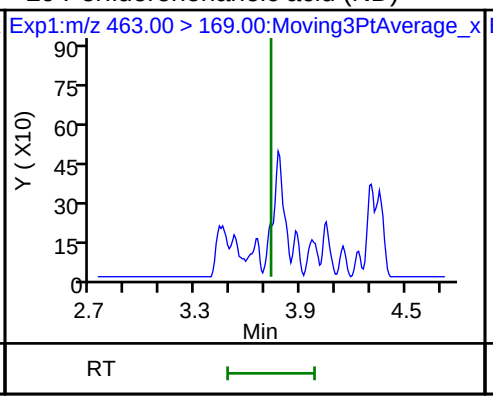
D 30 13C5 PFNA



29 Perfluorononanoic acid (ND)



29 Perfluorononanoic acid (ND)



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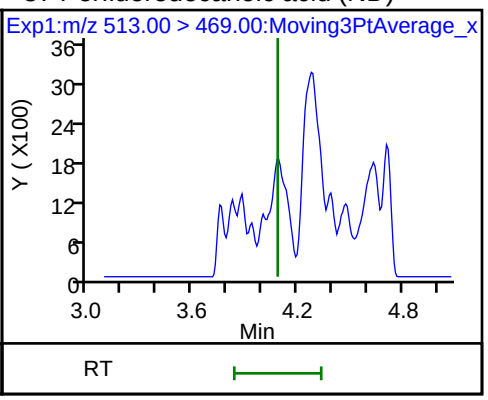

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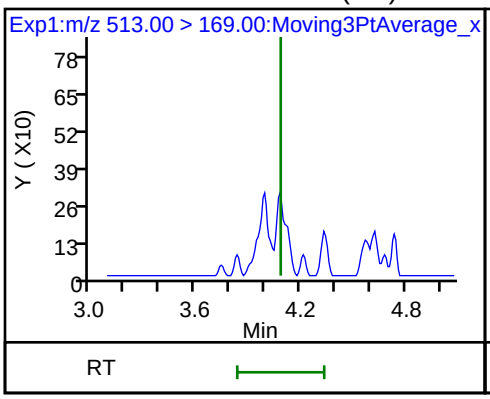
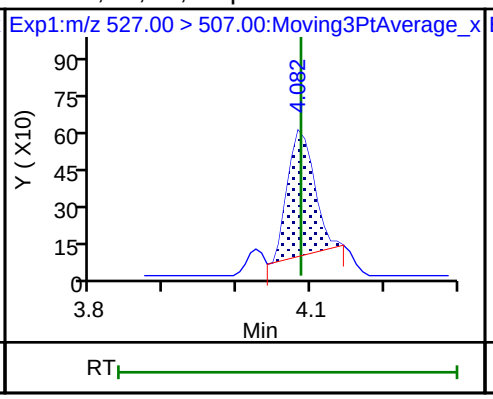
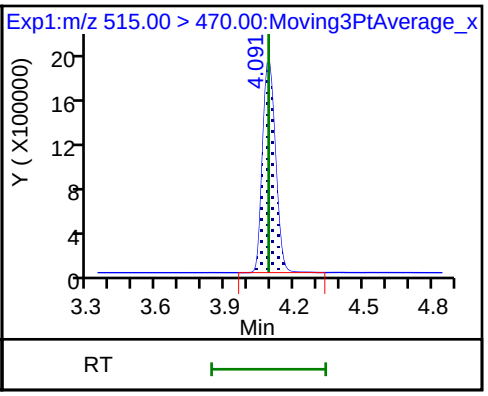


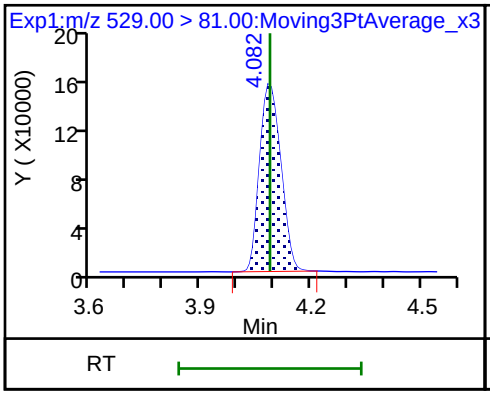
38 1H,1H,2H,2H-perfluorodecanesulfon



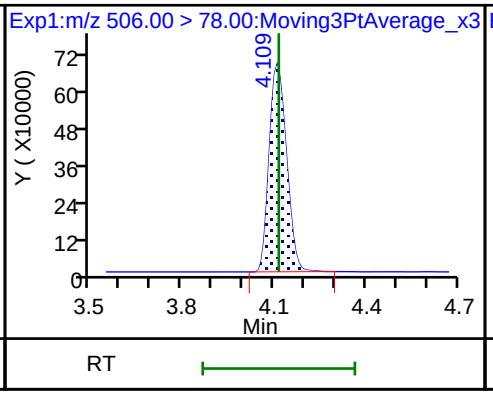
D 36 13C2 PFDA



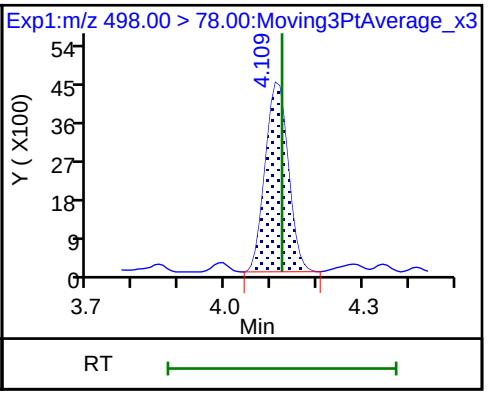
D 35 M2-8:2 FTS



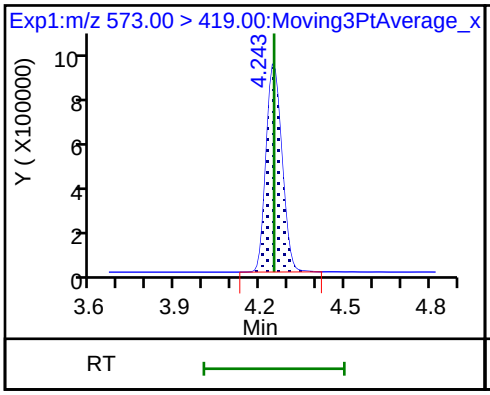
D 32 13C8 FOSA



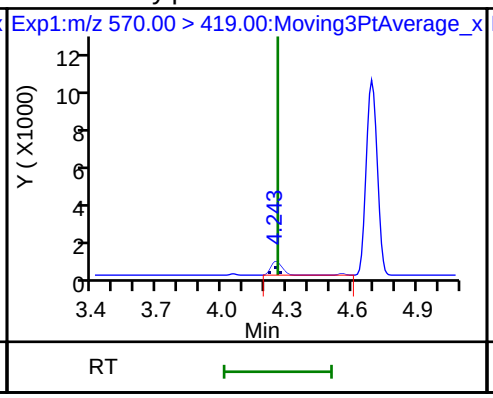
33 Perfluorooctanesulfonamide



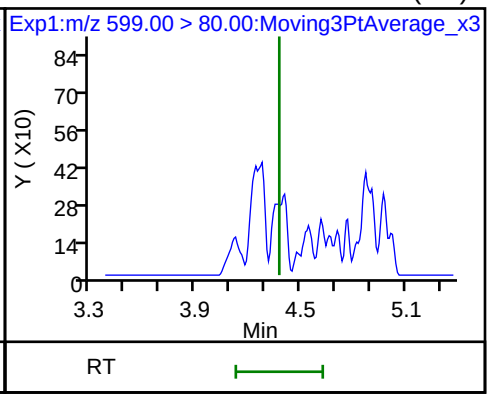
D 39 d3-NMeFOSAA



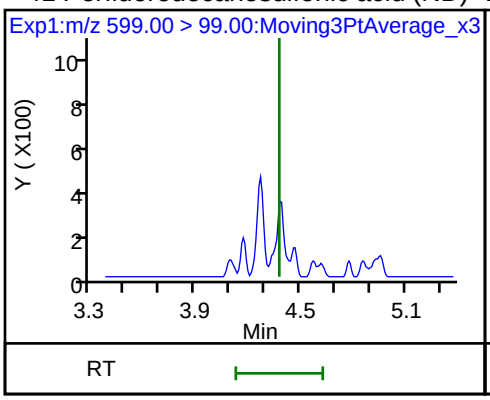
40 N-methylperfluorooctanesulfonamido



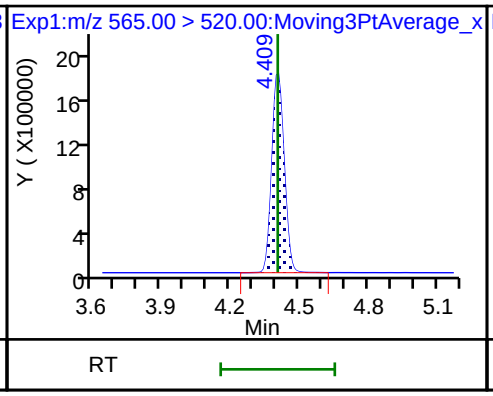
41 Perfluorodecanesulfonic acid (ND)



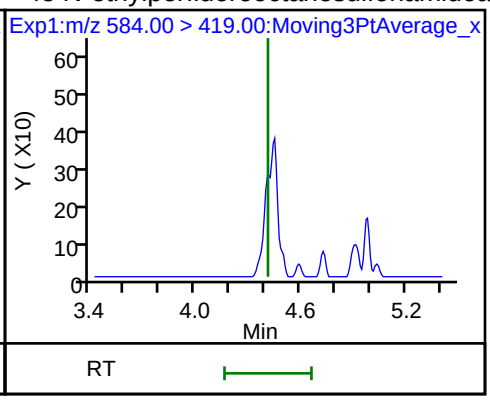
41 Perfluorodecanesulfonic acid (ND)



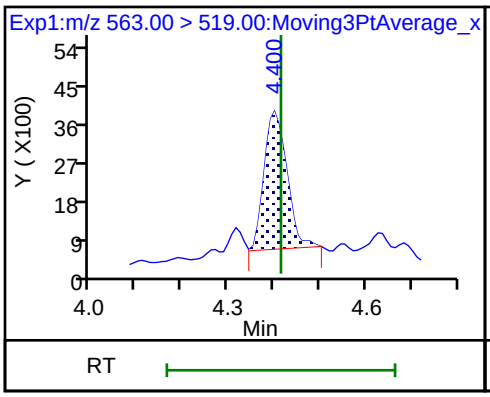
D 42 13C2 PFUnA



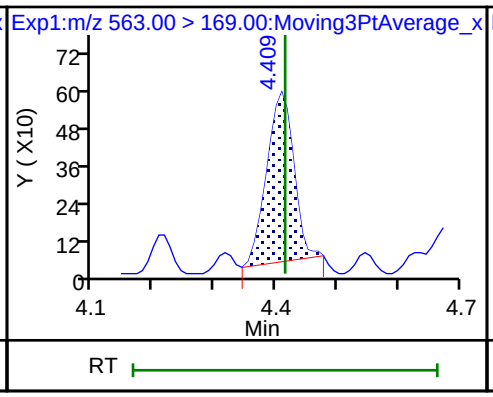
45 N-ethylperfluorooctanesulfonamidoa (ND)



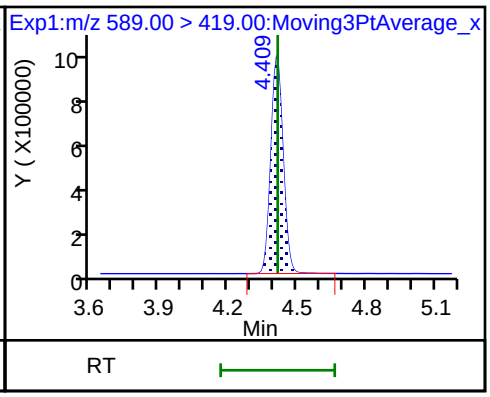
43 Perfluoroundecanoic acid



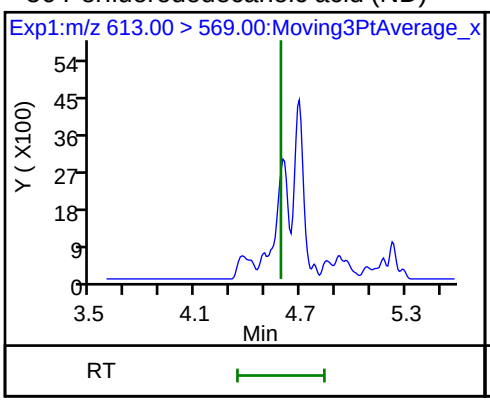
43 Perfluoroundecanoic acid



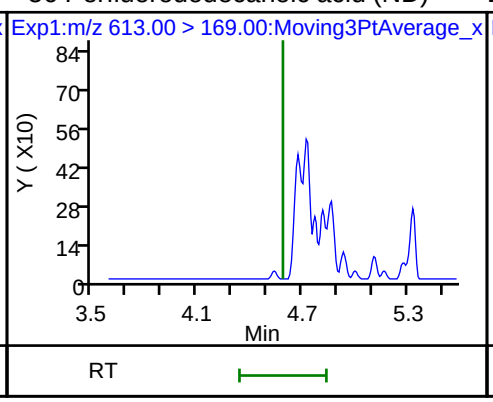
D 44 d5-NEtFOSAA



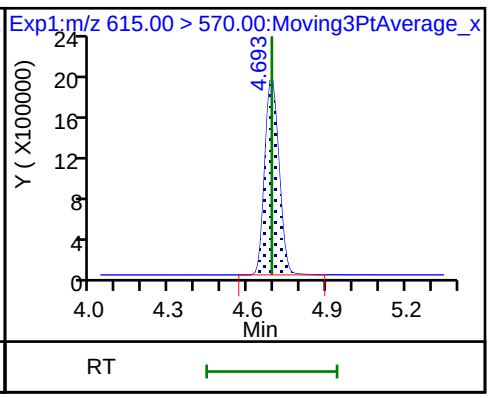
56 Perfluorododecanoic acid (ND)



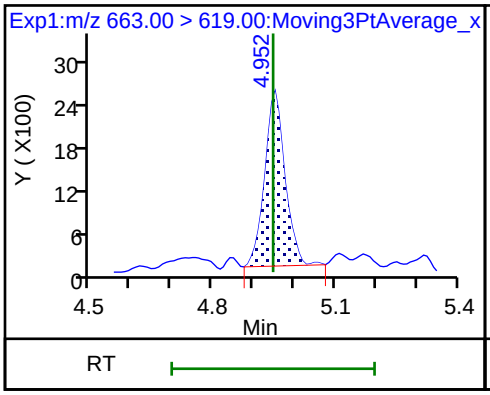
56 Perfluorododecanoic acid (ND)



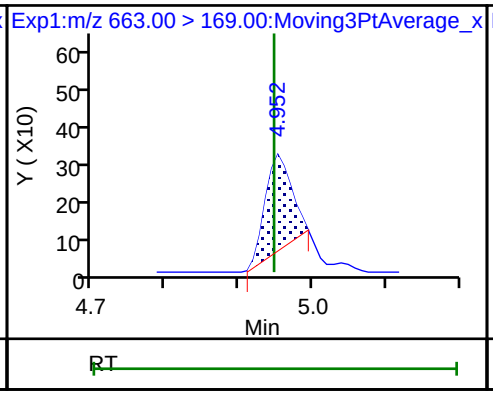
D 55 13C2 PFDoA



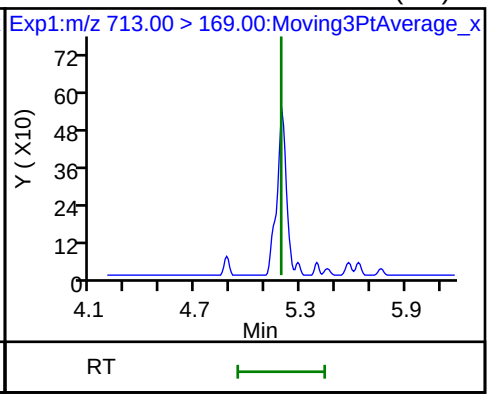
59 Perfluorotridecanoic acid



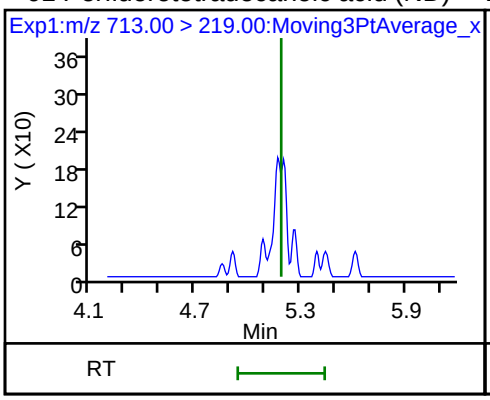
59 Perfluorotridecanoic acid



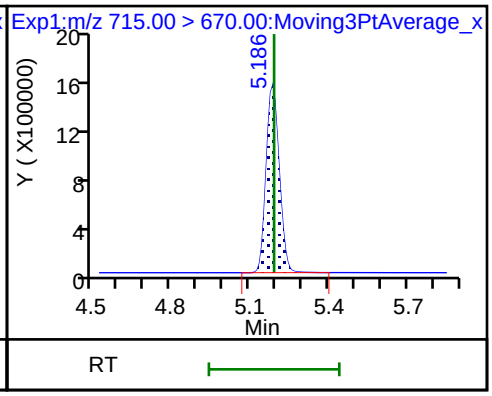
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

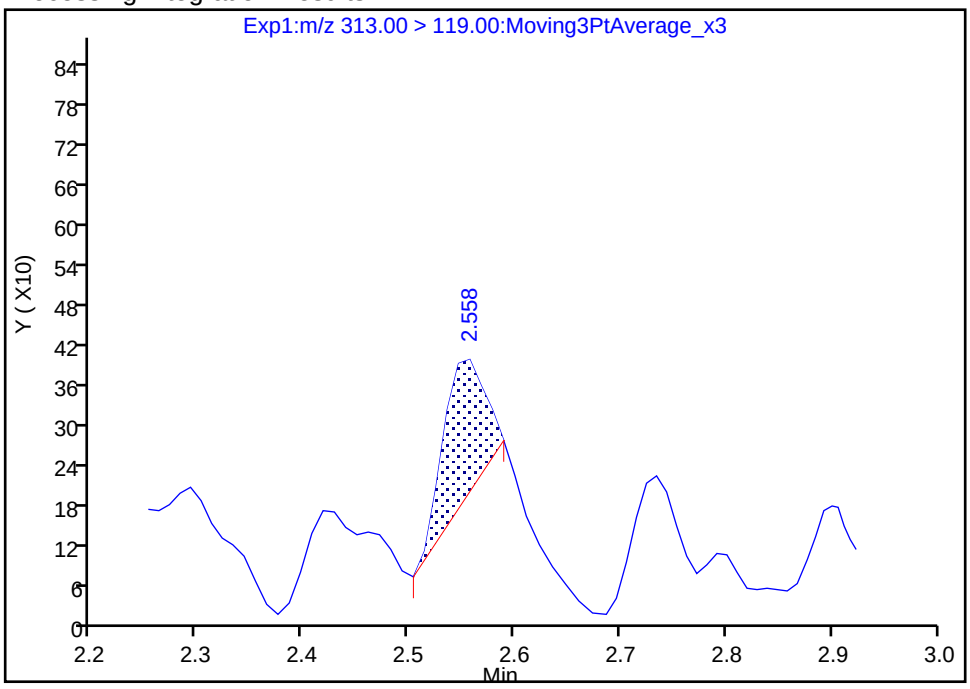
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

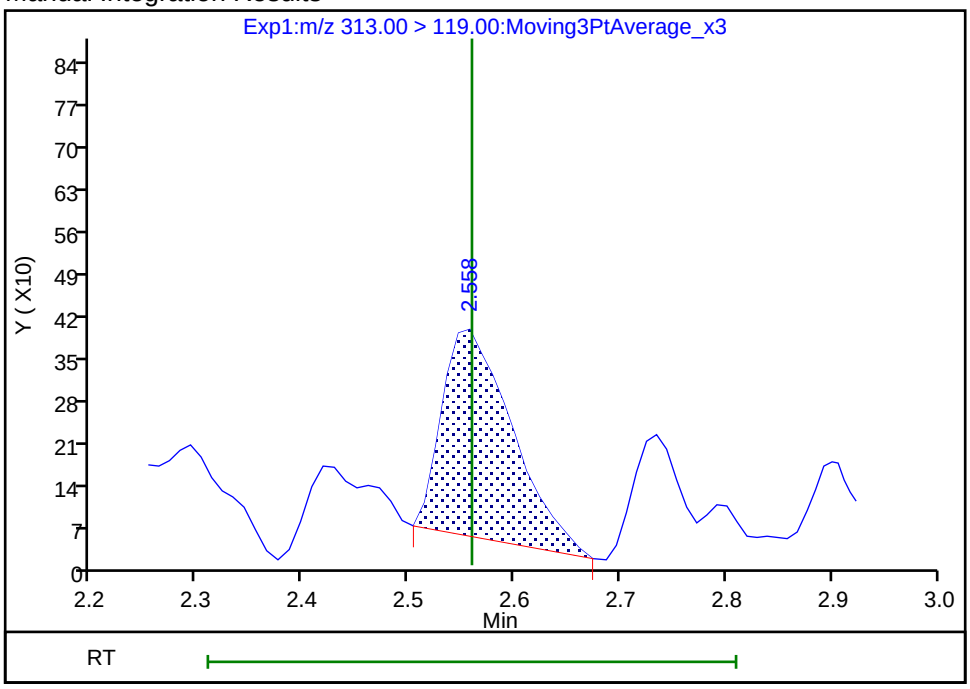
Processing Integration Results

RT: 2.56
Area: 569
Amount: 0.011357
Amount Units: ng/ml



Manual Integration Results

RT: 2.56
Area: 1583
Amount: 0.010598
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

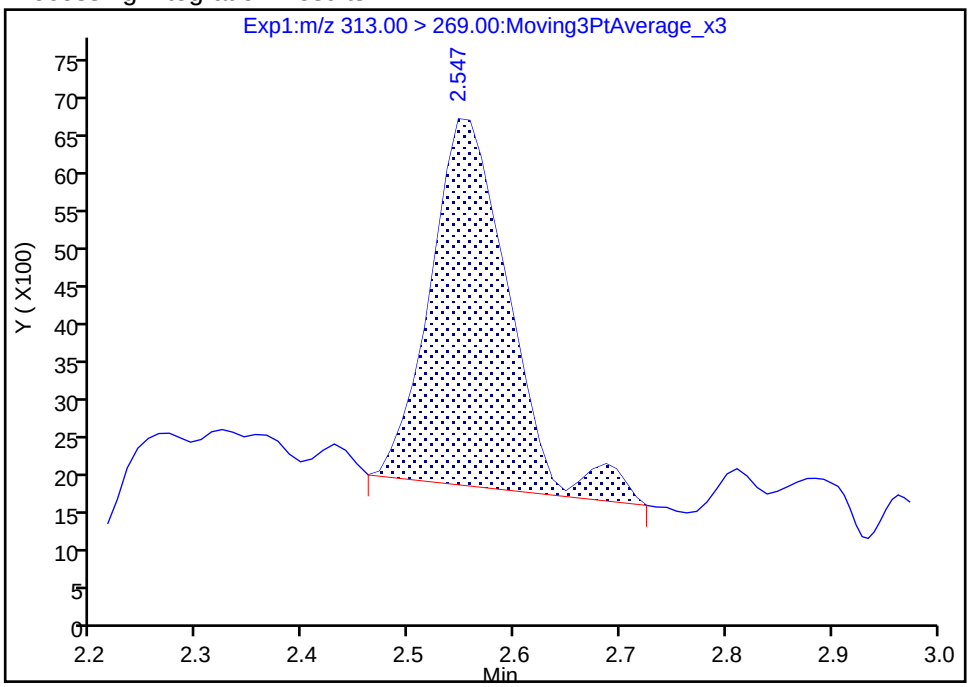
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

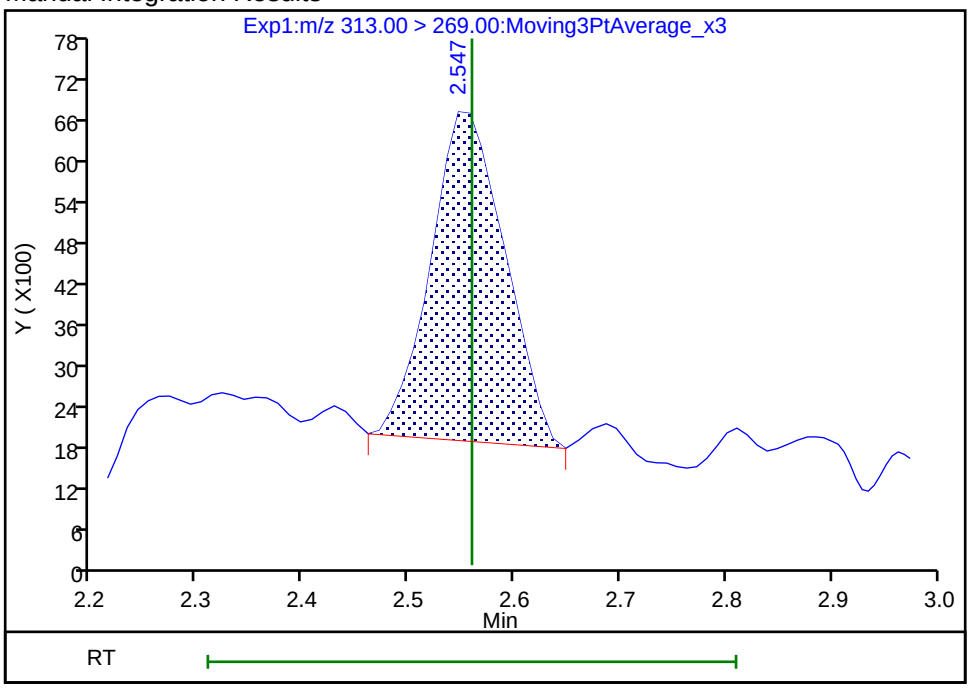
Processing Integration Results

RT: 2.55
Area: 25386
Amount: 0.011357
Amount Units: ng/ml



Manual Integration Results

RT: 2.55
Area: 23690
Amount: 0.010598
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

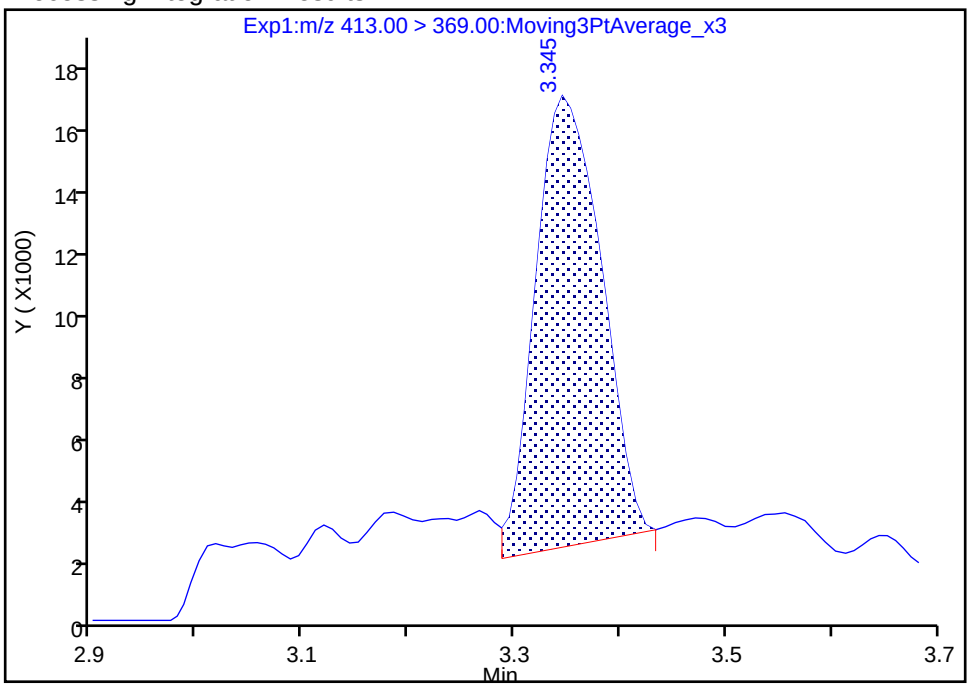
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

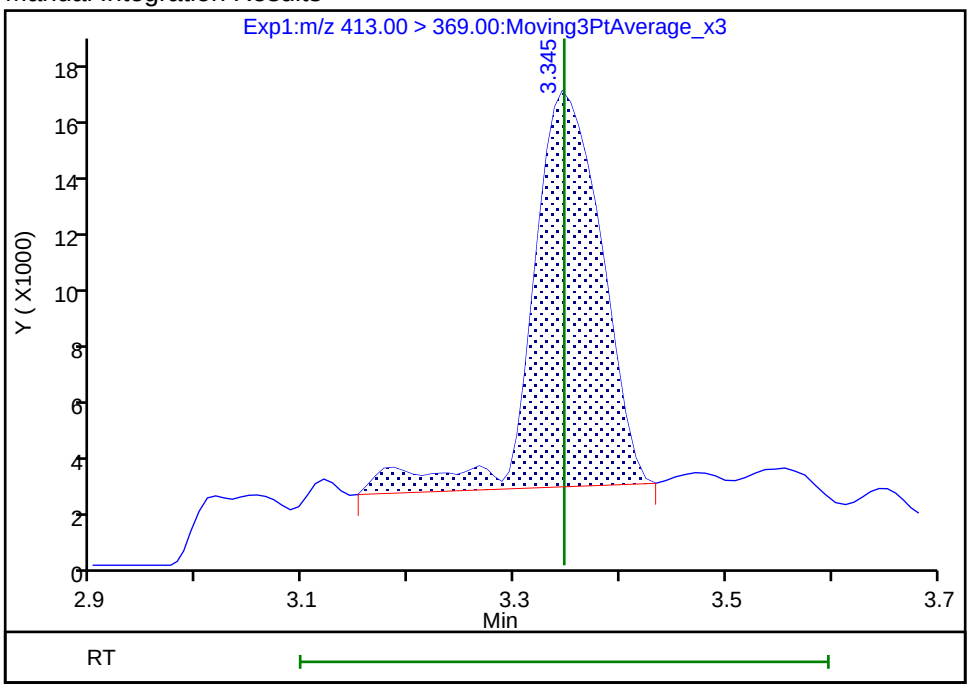
Processing Integration Results

RT: 3.35
Area: 61743
Amount: 0.016767
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 63774
Amount: 0.017319
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:45

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

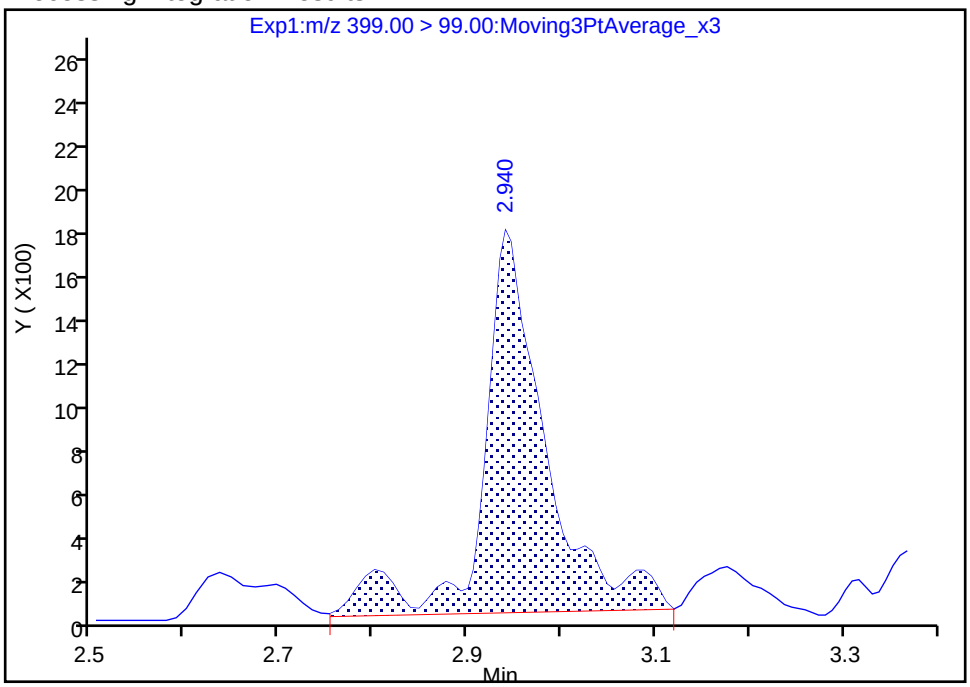
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

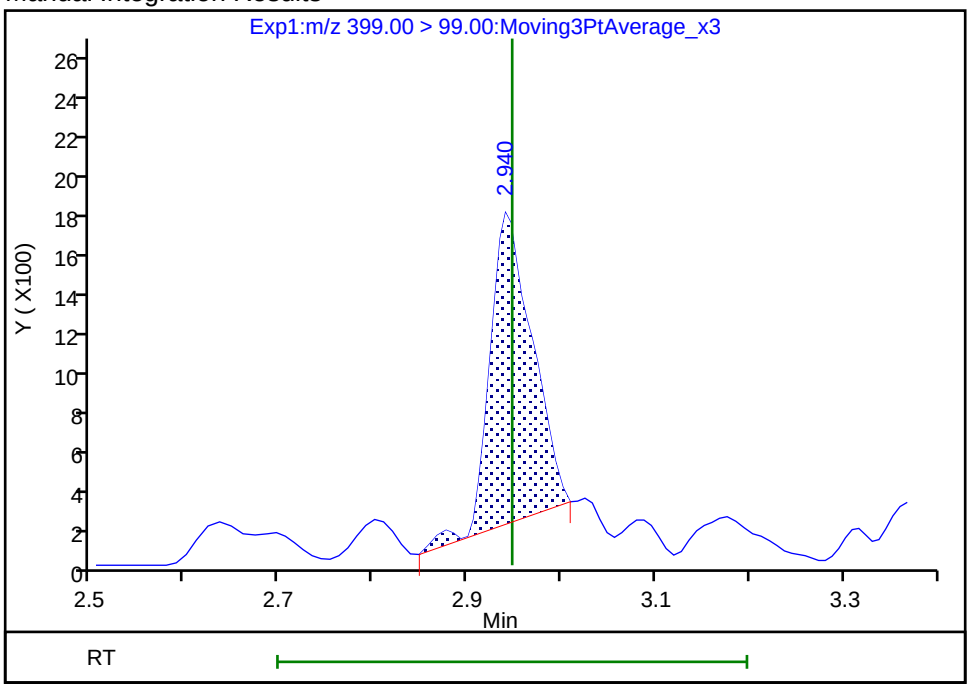
Processing Integration Results

RT: 2.94
Area: 8070
Amount: 0.009463
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 4888
Amount: 0.007737
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:27

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

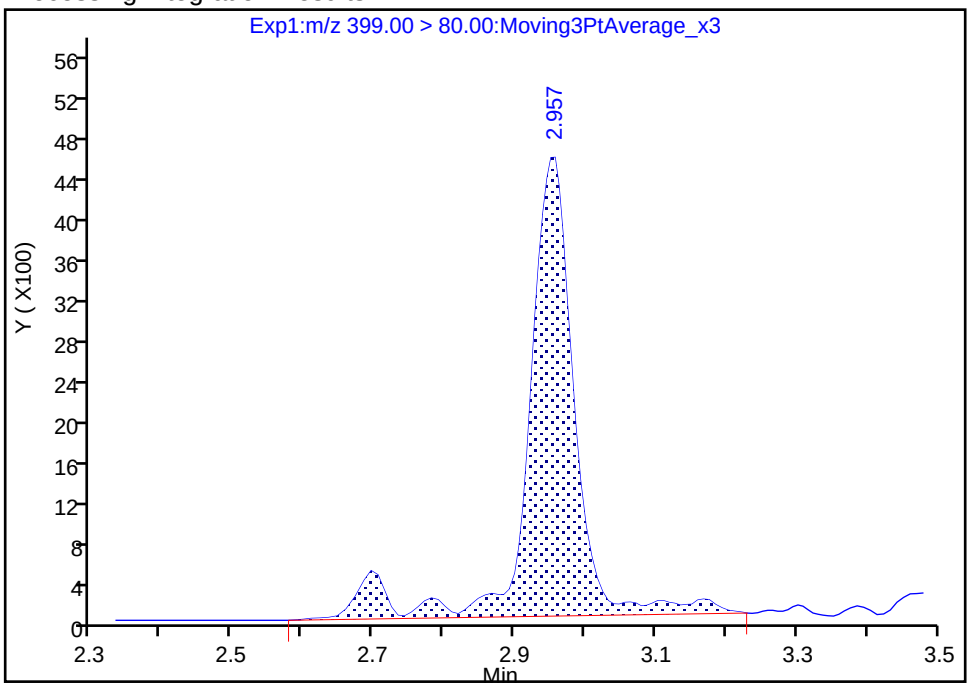
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

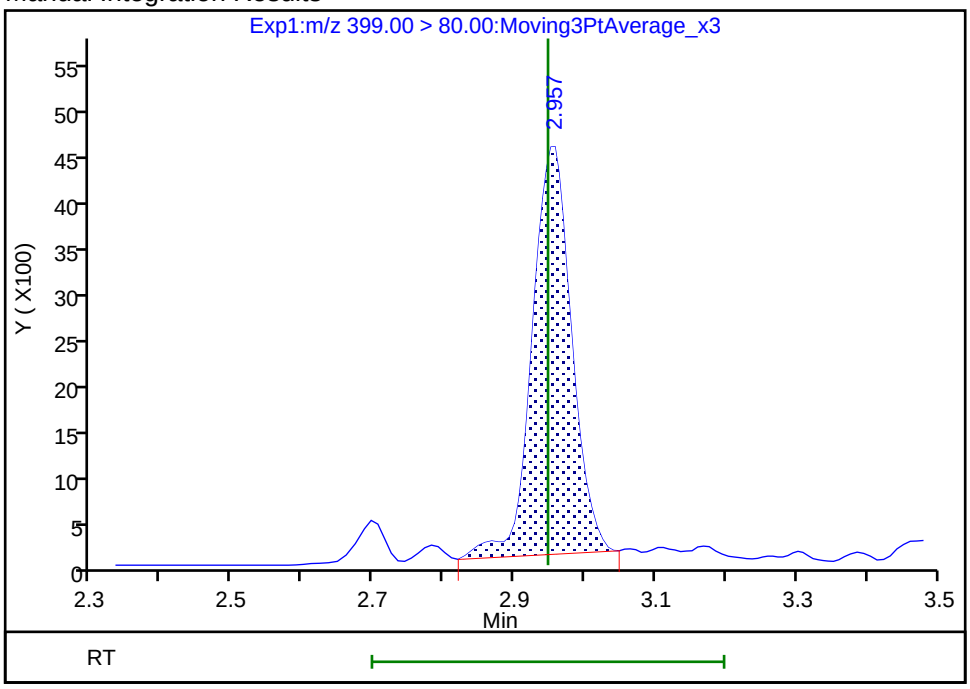
Processing Integration Results

RT: 2.96
Area: 21219
Amount: 0.009463
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 17349
Amount: 0.007737
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:32
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

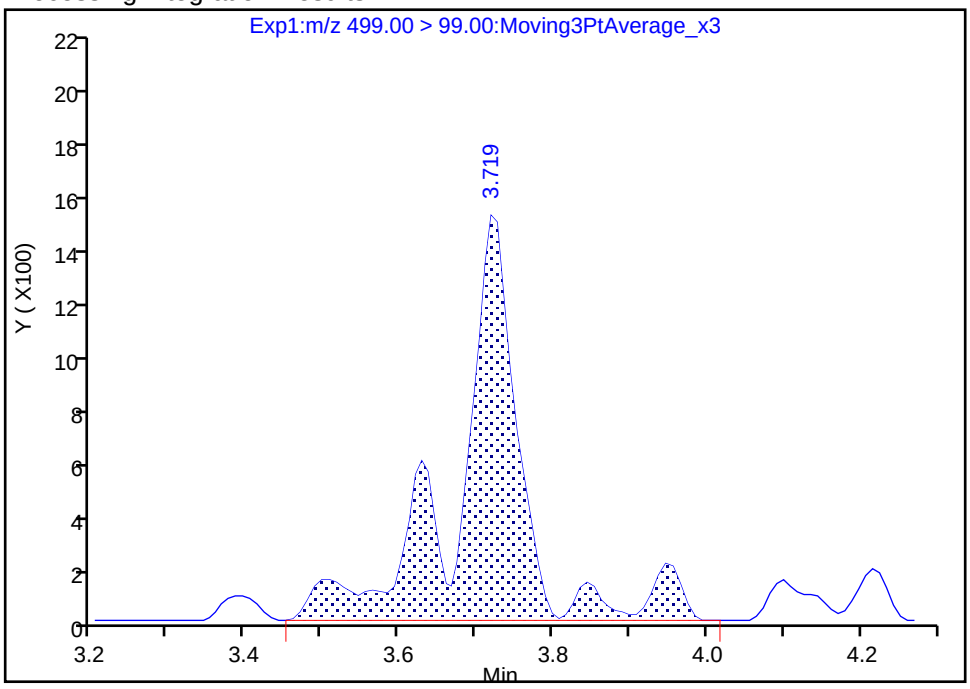
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

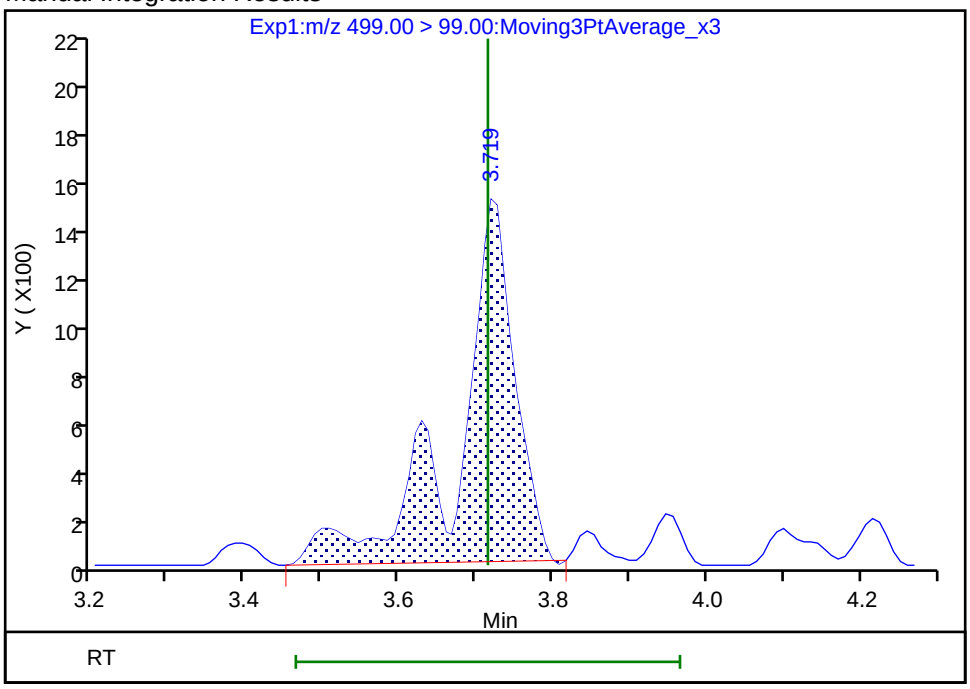
Processing Integration Results

RT: 3.72
Area: 8693
Amount: 0.015683
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 7580
Amount: 0.012820
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:43:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

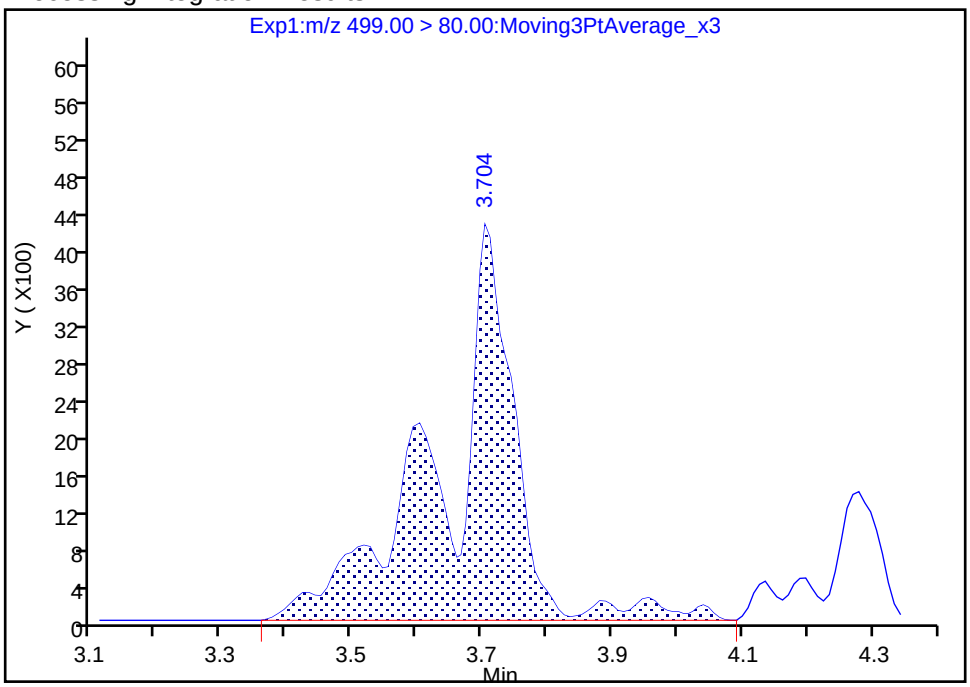
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._030.d				
Injection Date:	09-Oct-2019 02:28:26	Instrument ID:	A9		
Lims ID:	480-159547-B-20-B	Lab Sample ID:	320-159547-20		
Client ID:	RUSSO-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

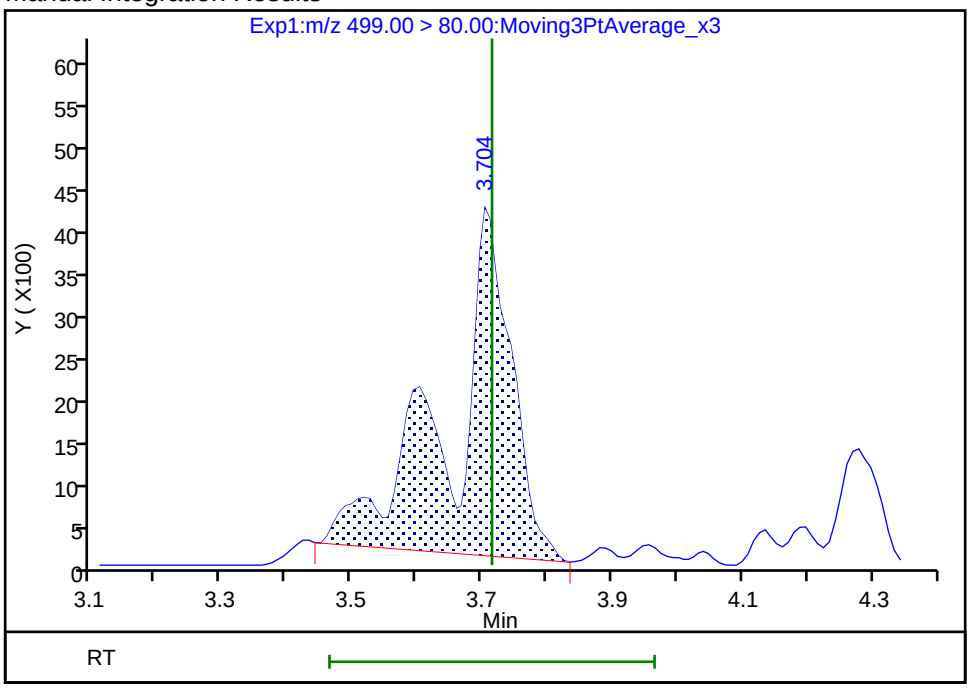
Processing Integration Results

RT: 3.70
Area: 33342
Amount: 0.015683
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 27256
Amount: 0.012820
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:44:01

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 2019.10.03.LLA_020.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:50

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.11(g) Date Analyzed: 10/03/2019 14:13

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.030	J	0.21	0.029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.081
307-24-4	Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.044
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031
335-67-1	Perfluorooctanoic acid (PFOA)	0.21		0.21	0.090
375-95-1	Perfluorononanoic acid (PFNA)	0.21		0.21	0.038
335-76-2	Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.070
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.53		0.53	0.21
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.086
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.10		2.10	0.41
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.10		2.10	0.39
27619-97-2	6:2 FTS	2.10		2.10	0.16
39108-34-4	8:2 FTS	2.10		2.10	0.26

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid Lab File ID: 2019.10.03.LLA_020.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:50

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.11(g) Date Analyzed: 10/03/2019 14:13

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4 PFHpA	104		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	100		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	100		25-150
STL02116	13C2 PFTeDA	95		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	89		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	91		25-150
STL02117	d5-NEtFOSAA	97		25-150
STL02279	M2-6:2 FTS	103		25-150
STL02280	M2-8:2 FTS	122		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_020.d
Lims ID: 480-159547-A-30-B
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 03-Oct-2019 14:13:25 ALS Bottle#: 12 Worklist Smp#: 17
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-30
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:46:25 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:46:25
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.179	2.186	-0.007	0.587	5838341	2.35		94.0	5727	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.186	2.194	-0.008	1.003	28947	0.0142			5.1	
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.680	5335695	2.40		96.2	6641	
D 10 13C2 PFHxA										
315.00 > 270.00	2.897	2.908	-0.011	0.781	5549010	2.24		89.5	11858	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.312	3.312	0.0	1.000	18228	0.007416	Target=3.84		4.9	
363.00 > 169.00	3.312	3.312	0.0	1.000	4961		3.67(1.92-5.76)		7.3	
D 17 13C4 PFHpA										
367.00 > 322.00	3.312	3.312	0.0	0.892	5891910	2.59		104	15481	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.312	3.322	-0.010	1.000	14741	0.007507	Target=2.93		23.6	
399.00 > 99.00	3.312	3.322	-0.010	1.000	5681		2.59(1.46-4.39)		11.1	
D 15 18O2 PFHxS										
403.00 > 84.00	3.312	3.322	-0.010	0.892	3633984	2.38		101	59232	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.686	3.694	-0.008	1.000	7376	0.006210			27.9	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.686	3.694	-0.008	0.993	1383700	2.44		103	2755	
D 25 13C4 PFOA										
417.00 > 372.00	3.712	3.711	0.001	1.000	6584948	2.48		99.1	23626	
* 24 13C2 PFOA										
415.00 > 370.00	3.712	3.720	-0.008		7282020	2.50			23035	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.712	3.720	-0.008	1.000	28754	0.0105	Target=2.61		7.1	M
413.00 > 169.00	3.712	3.720	-0.008	1.000	15085		1.91(1.31-3.92)		35.0	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.085	4.085	0.0	1.002	95228	0.0747	Target=4.15		175	
499.00 > 99.00	4.077	4.085	-0.008	1.000	25696		3.71(2.08-6.23)		47.9	
D 28 13C4 PFOS										
503.00 > 80.00	4.077	4.085	-0.008	1.098	2800511	2.12		88.8	10589	
D 29 13C5 PFNA										
468.00 > 423.00	4.094	4.102	-0.008	1.103	5819619	2.50		99.9	28496	
D 33 13C8 FOSA										
506.00 > 78.00	4.434	4.434	0.0	1.195	4153977	2.32		92.8	19921	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.434	4.434	0.0	1.000	13552	0.008175			71.3	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.461	4.460	0.001	1.000	1780	0.001131			10.0	
D 36 13C2 PFDA										
515.00 > 470.00	4.452	4.460	-0.008	1.199	5879708	2.37		94.7	42370	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.461	4.460	0.001	1.202	1966526	2.92		122	5592	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.624	4.623	0.001	1.246	3757424	2.28		91.4	11073	
D 43 13C2 PFUnA										
565.00 > 520.00	4.778	4.787	-0.009	1.287	5661085	2.43		97.2	28692	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.787	4.787	0.0	1.290	3995373	2.42		97.0	19224	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.778	4.787	-0.009	1.000	15471	0.008211	Target=8.92		6.9	
563.00 > 169.00	4.797	4.787	0.010	1.004	2009		7.70(4.46-13.39)		7.6	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.797	4.797	0.0	1.002	4235	0.003513			12.5	
D 57 13C2 PFDoA										
615.00 > 570.00	5.072	5.080	-0.008	1.366	6032365	2.49		99.5	14585	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.587	5.593	-0.006	1.505	5099144	2.38		95.3	21230	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 16:46:26 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_020.d

Injection Date: 03-Oct-2019 14:13:25 Instrument ID: A13

Lims ID: 480-159547-A-30-B Lab Sample ID: 320-159547-30

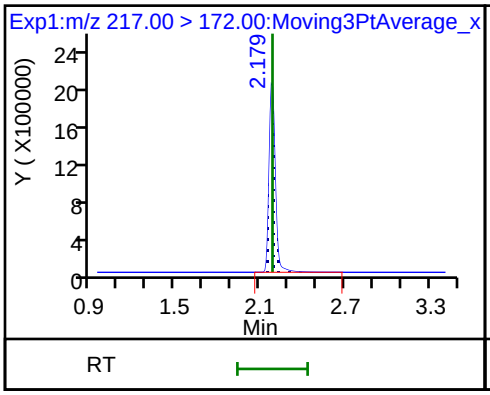
Client ID: GERNATT-CF-COMP 1

Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 17

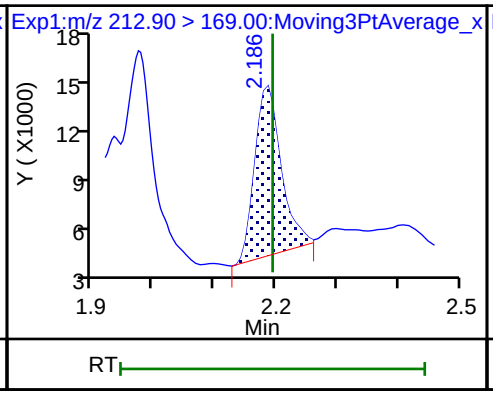
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

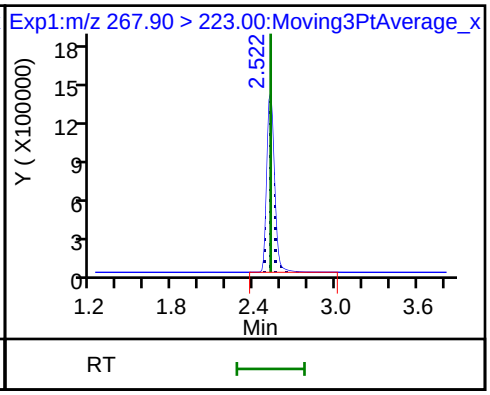
D 2 13C4 PFBA



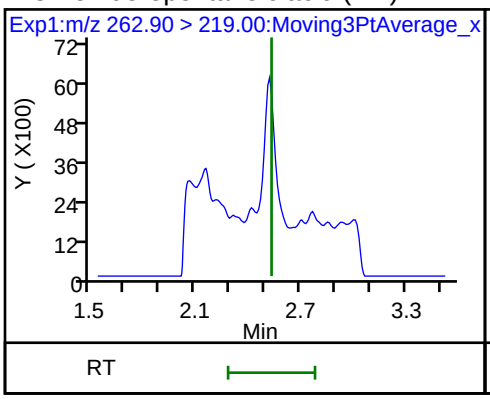
3 Perfluorobutanoic acid



D 4 13C5 PFPeA



5 Perfluoropentanoic acid (ND)



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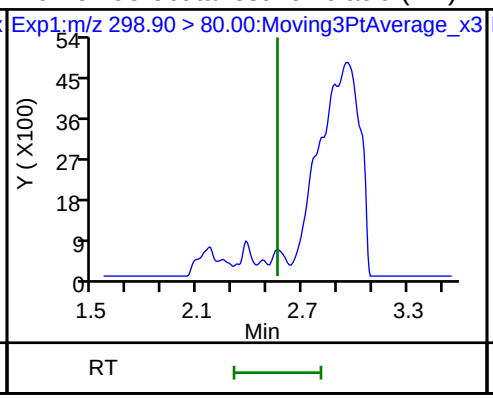

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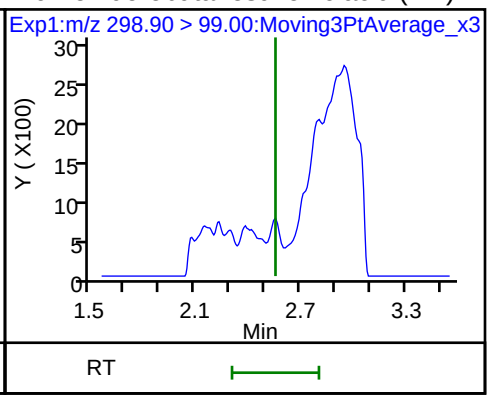
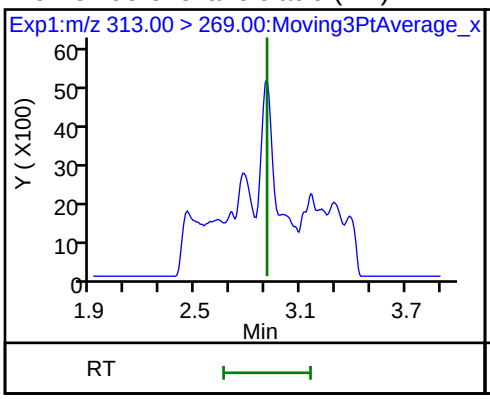
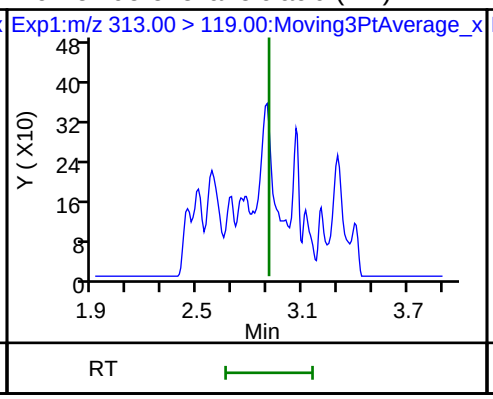


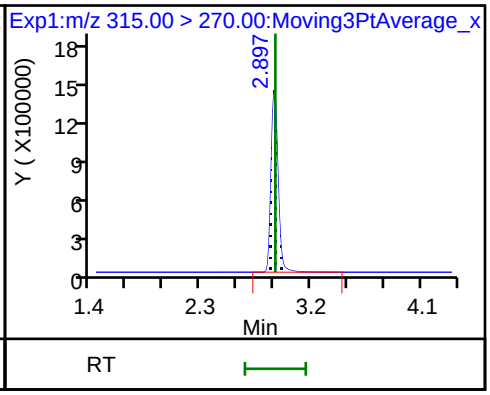
9 Perfluorohexanoic acid (ND)



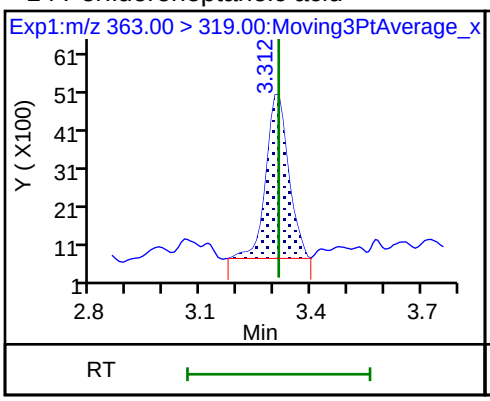
9 Perfluorohexanoic acid (ND)



D 10 13C2 PFHxA



14 Perfluoroheptanoic acid



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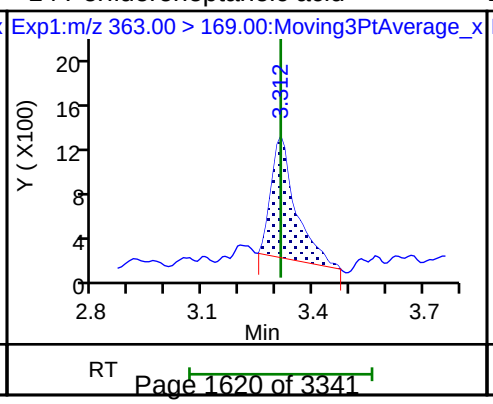
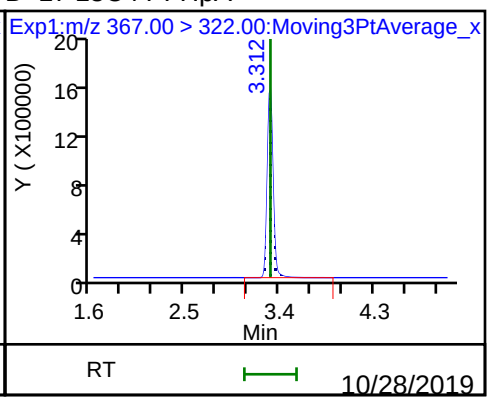
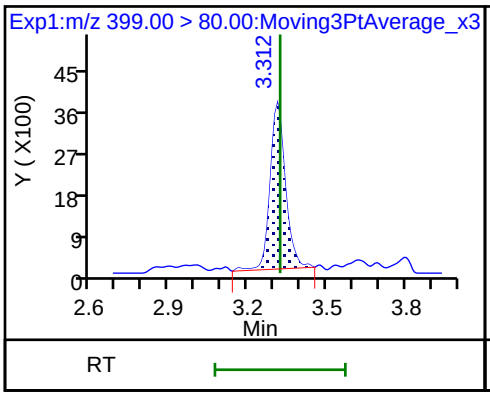


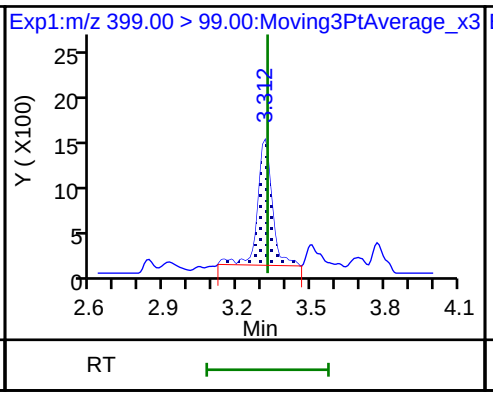
D 17 13C4 PFHpA



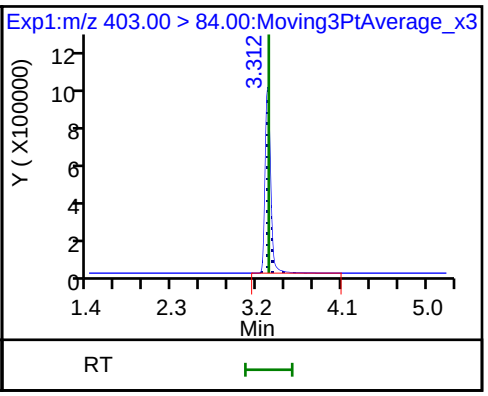
16 Perfluorohexanesulfonic acid



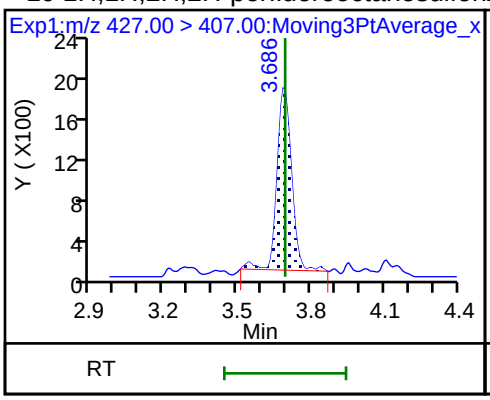
16 Perfluorohexanesulfonic acid



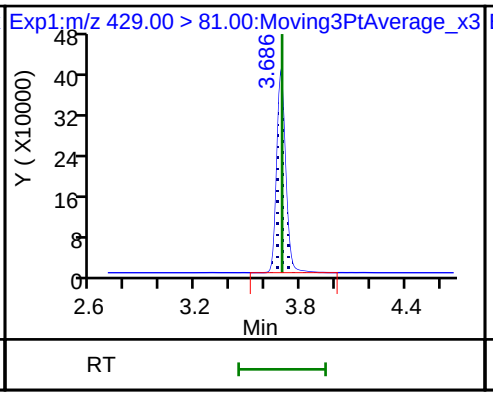
D 15 18O2 PFHxS



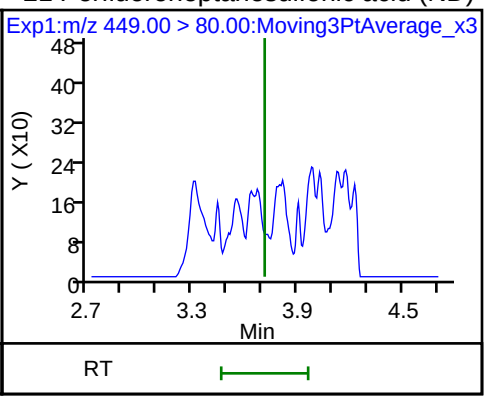
19 1H,1H,2H,2H-perfluorooctanesulfon



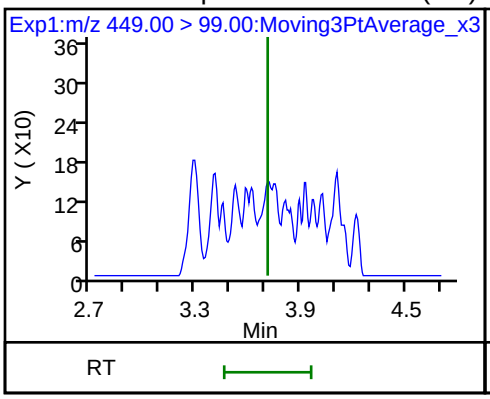
D 20 M2-6:2 FTS



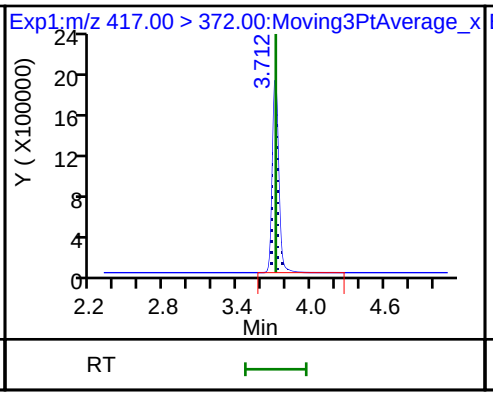
21 Perfluoroheptanesulfonic acid (ND)



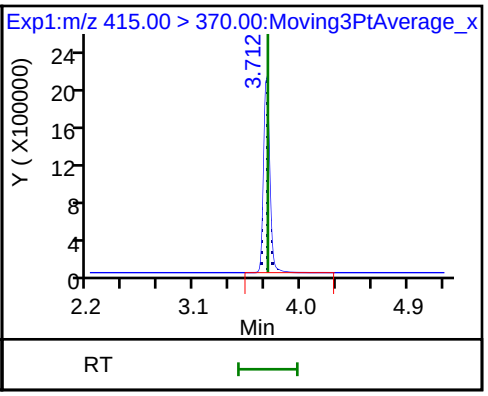
21 Perfluoroheptanesulfonic acid (ND)



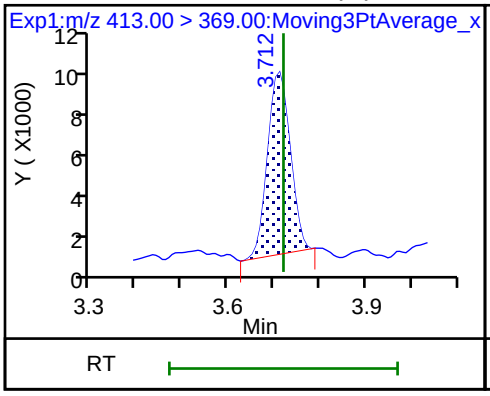
D 25 13C4 PFOA



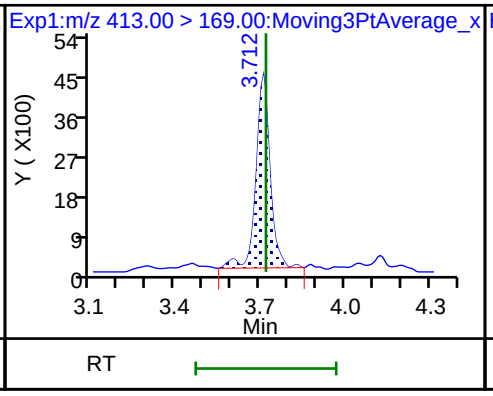
* 24 13C2 PFOA



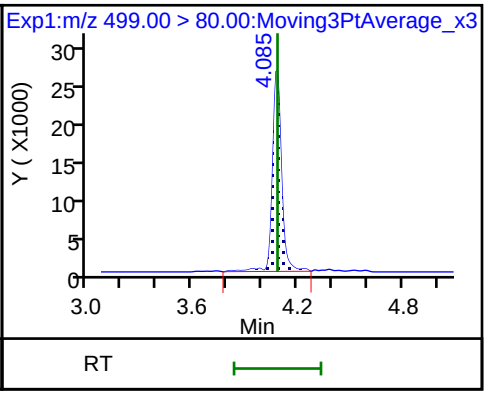
22 Perfluorooctanoic acid (M)



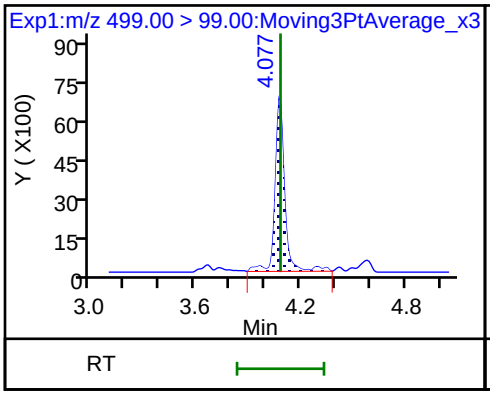
22 Perfluorooctanoic acid



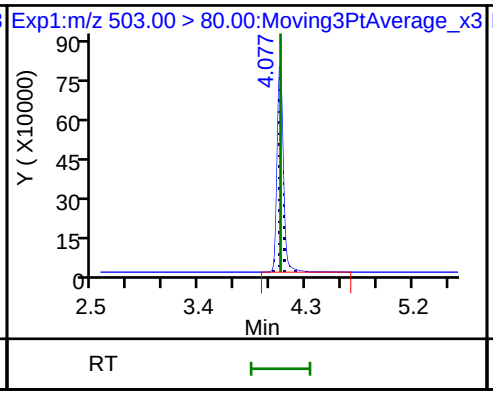
26 Perfluorooctanesulfonic acid



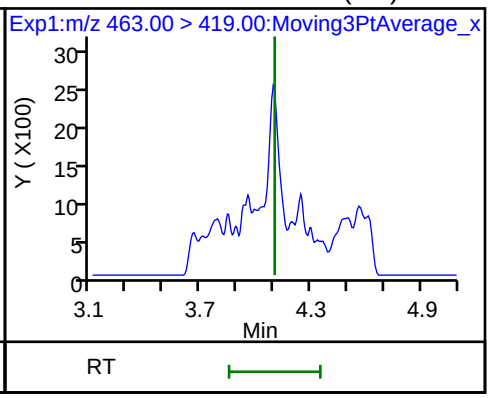
26 Perfluorooctanesulfonic acid



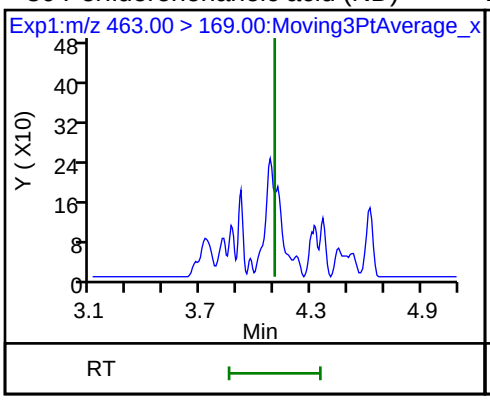
D 28 13C4 PFOS



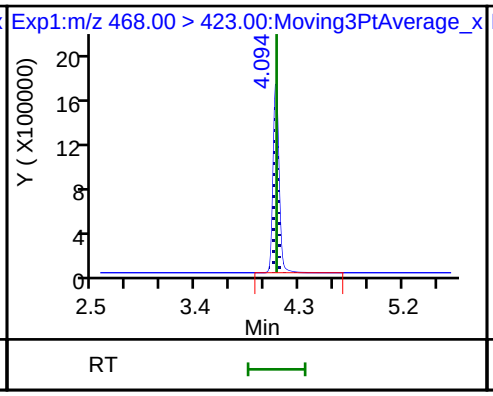
30 Perfluorononanoic acid (ND)



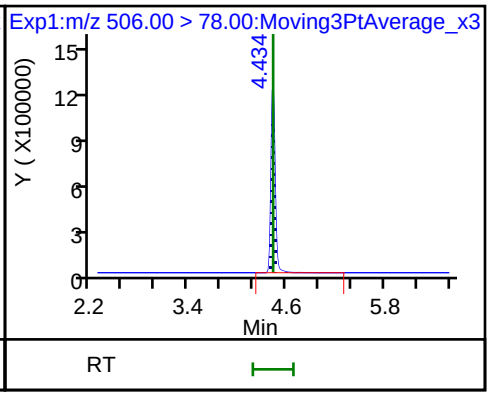
30 Perfluorononanoic acid (ND)



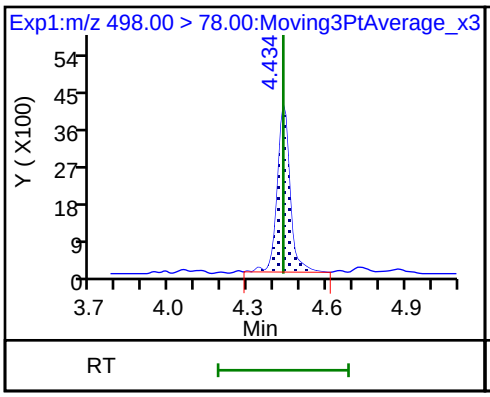
D 29 13C5 PFNA



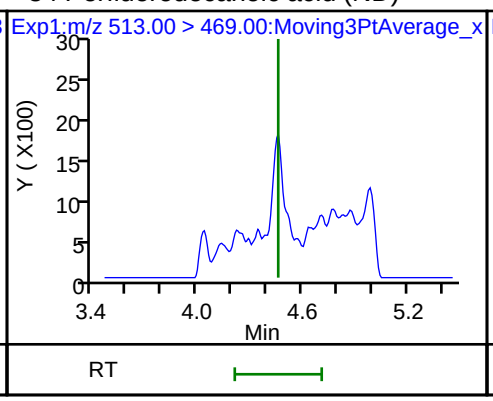
D 33 13C8 FOSA



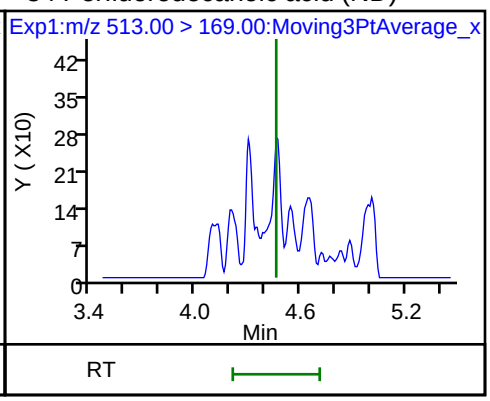
32 Perfluorooctanesulfonamide



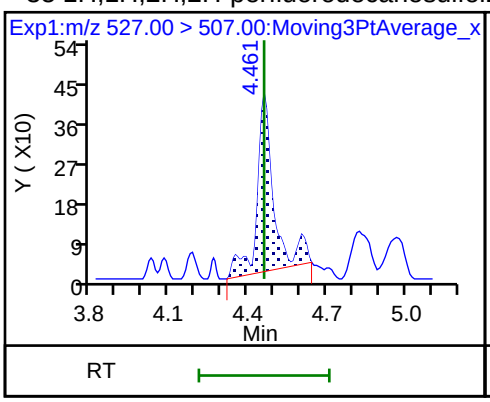
34 Perfluorodecanoic acid (ND)



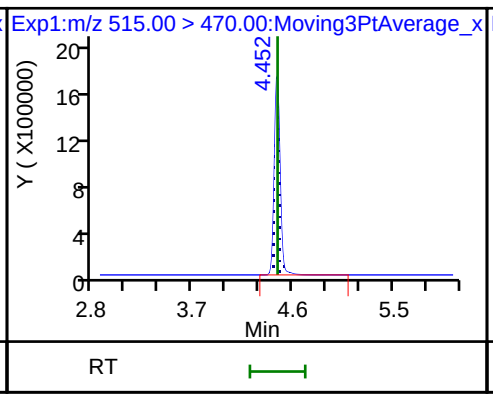
34 Perfluorodecanoic acid (ND)



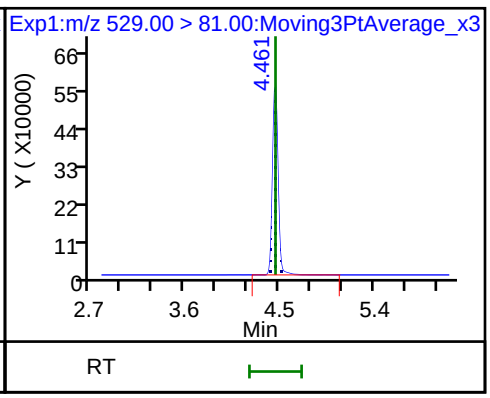
35 1H,1H,2H,2H-perfluorodecanesulfon



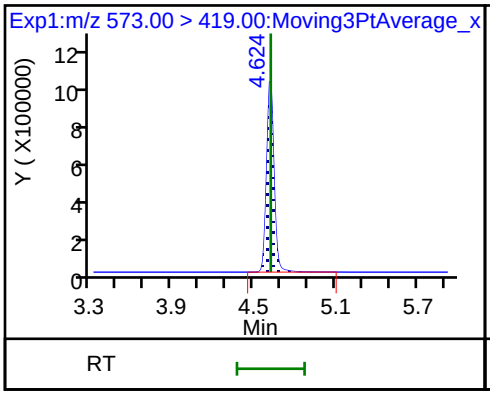
D 36 13C2 PFDA



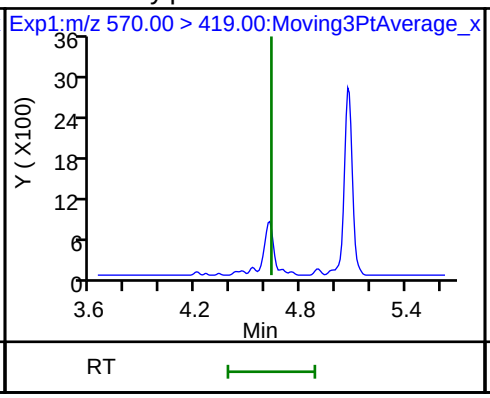
D 37 M2-8:2 FTS



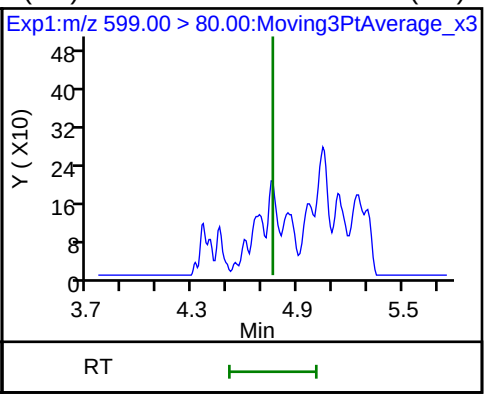
D 40 d3-NMeFOSAA



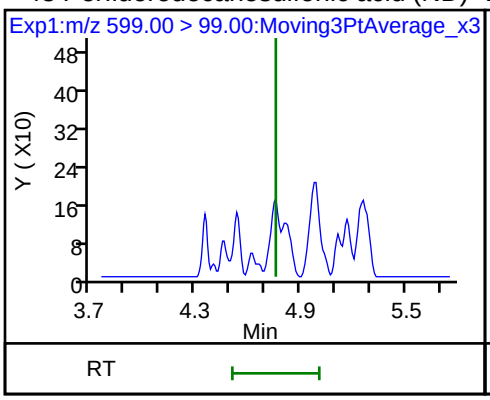
41 N-methylperfluorooctanesulfonamido (ND)



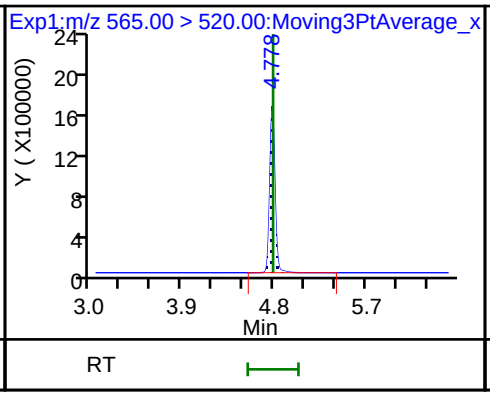
48 Perfluorodecanesulfonic acid (ND)



48 Perfluorodecanesulfonic acid (ND)



D 43 13C2 PFUnA



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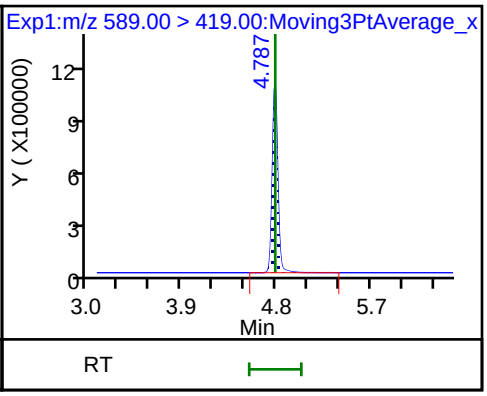
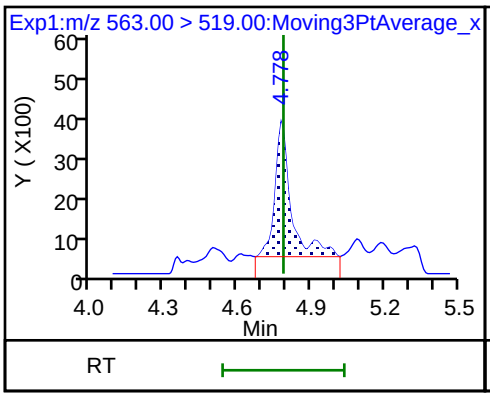
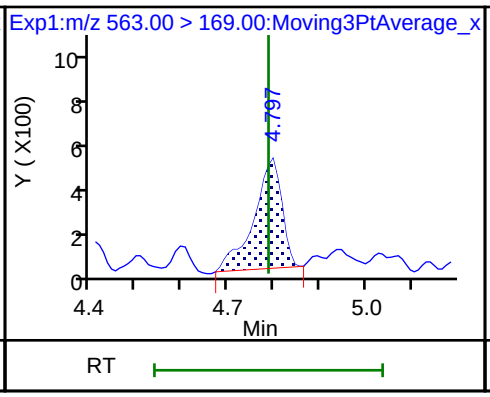


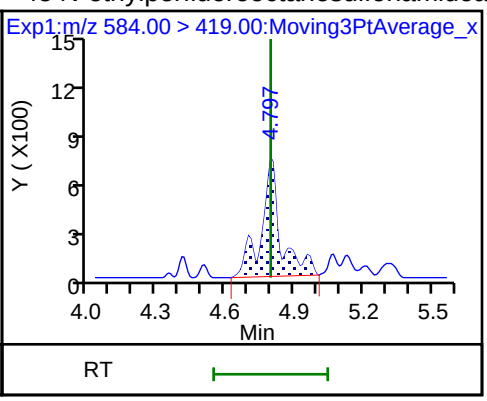
42 Perfluoroundecanoic acid



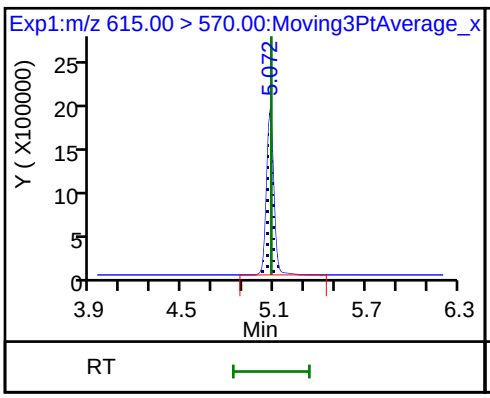
42 Perfluoroundecanoic acid



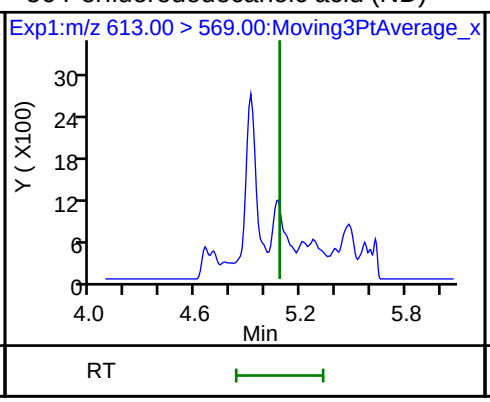
45 N-ethylperfluorooctanesulfonamidoa



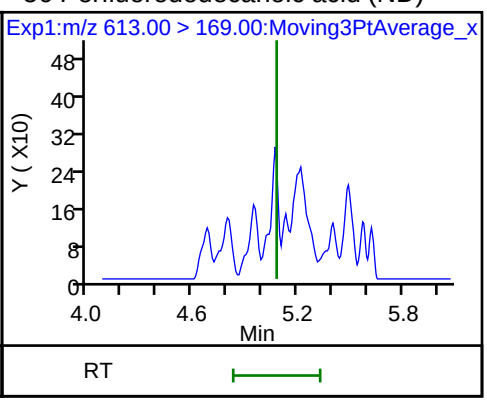
D 57 13C2 PFDoA



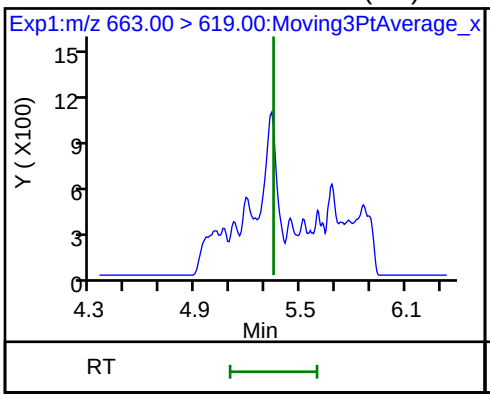
56 Perfluorododecanoic acid (ND)



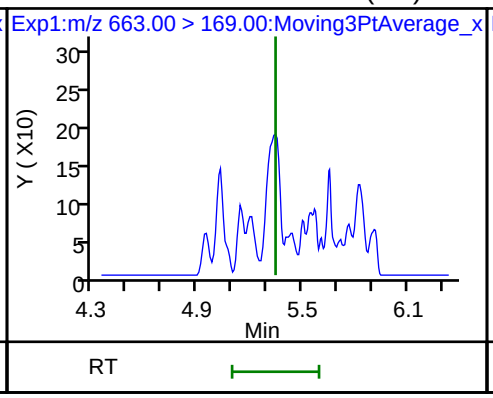
56 Perfluorododecanoic acid (ND)



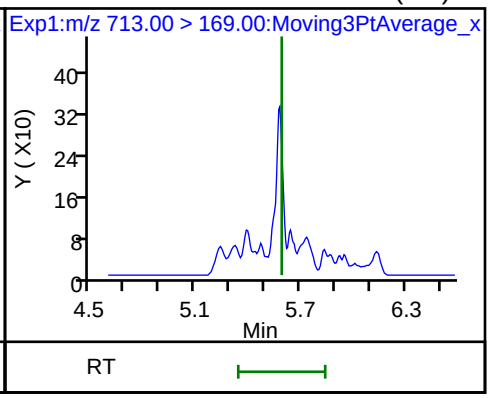
60 Perfluorotridecanoic acid (ND)



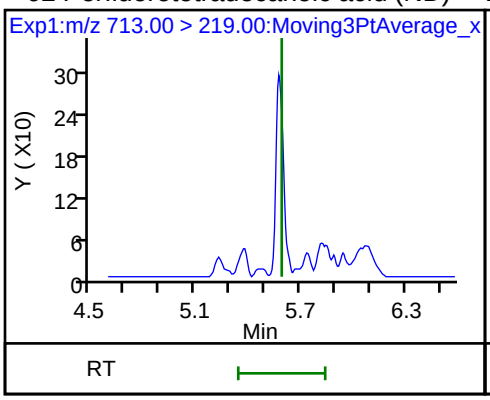
60 Perfluorotridecanoic acid (ND)



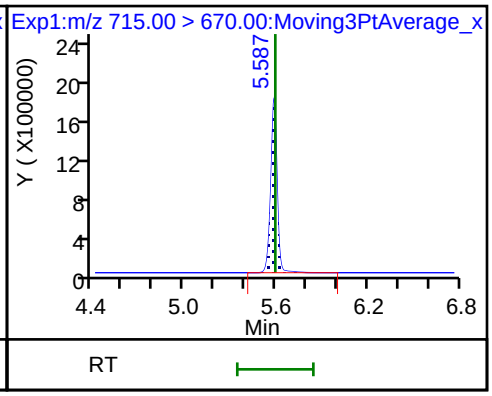
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

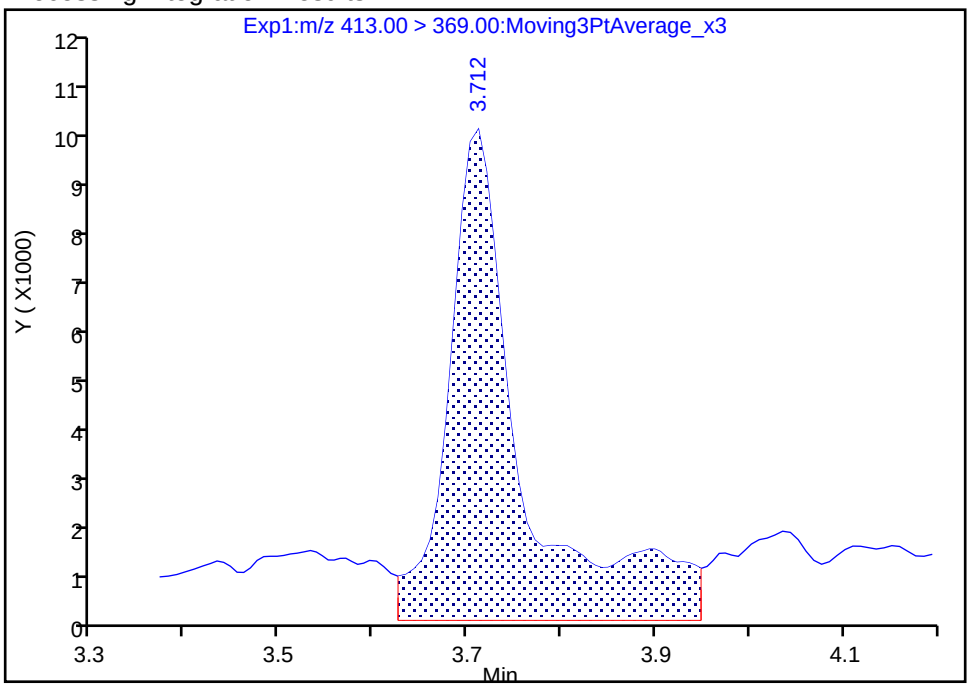
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_020.d				
Injection Date:	03-Oct-2019 14:13:25	Instrument ID:	A13		
Lims ID:	480-159547-A-30-B	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	12	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

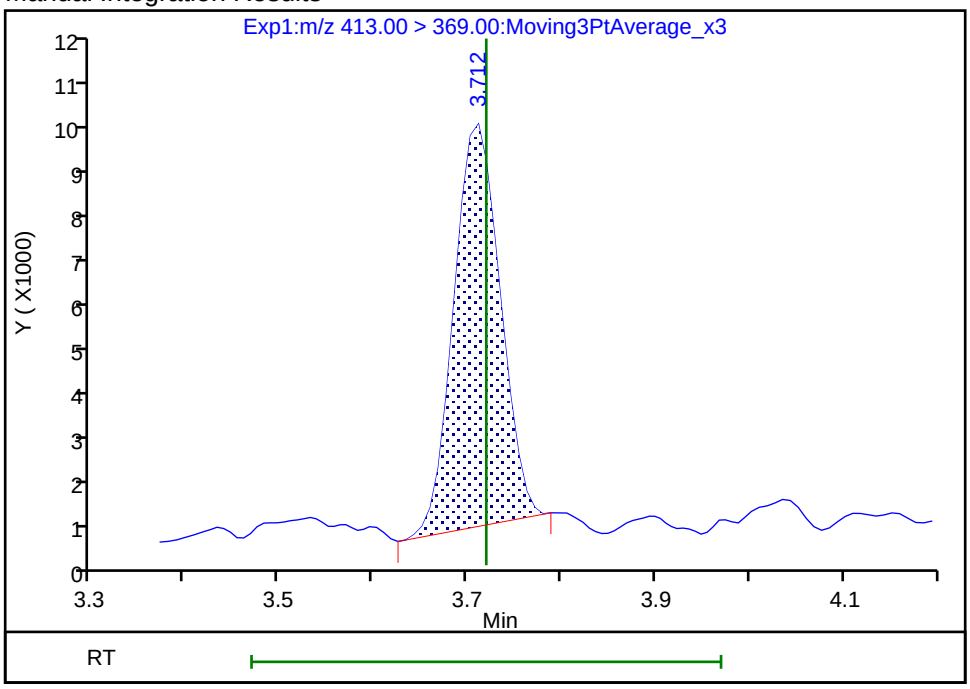
Processing Integration Results

RT: 3.71
Area: 51914
Amount: 0.018955
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 28754
Amount: 0.010499
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:45:54

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._031.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:50

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 288.7(mL) Date Analyzed: 10/09/2019 02:37

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.47	J	1.73	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.73		1.73	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	1.73		1.73	0.50
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.27	J	1.73	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	1.73		1.73	0.74
375-95-1	Perfluorononanoic acid (PFNA)	1.73		1.73	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	1.73		1.73	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.73		1.73	0.95
307-55-1	Perfluorododecanoic acid (PFDoA)	1.73		1.73	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.73		1.73	1.13
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.73		1.73	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.73		1.73	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.73	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.73		1.73	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.73		1.73	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.73		1.73	0.28

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	109		25-150
STL00993	13C2 PFHxA	108		25-150
STL00990	13C4 PFOA	108		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	105		25-150
STL00997	13C2 PFUnA	109		25-150
STL00998	13C2 PFDoA	102		25-150
STL02116	13C2 PFTeDA	108		25-150
STL00994	18O2 PFHxS	113		25-150
STL00991	13C4 PFOS	108		25-150
STL01892	13C4 PFHpA	112		25-150
STL01893	13C5 PFPeA	112		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d
Lims ID: 480-159547-A-30-D
Client ID: GERNATT-CF-COMP 1
Sample Type: Client
Inject. Date: 09-Oct-2019 02:37:59 ALS Bottle#: 18 Worklist Smp#: 17
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-30-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:46:48 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0327

First Level Reviewer: mongkols Date: 18-Oct-2019 15:46:48
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.893	1.719	0.174	1.000	28975	0.0137			4.6	M
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.901	-0.008	0.567	6219826	2.74		109	5020	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.206	-0.008	0.658	5309457	2.79		112	3359	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.198	2.206	-0.008	1.000	19417	0.008925			1.7	M
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.557	0.0	0.766	5939332	2.71		108	3285	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.936	2.941	-0.005	1.000	24513	0.007805	Target=4.51		3.8	M
363.00 > 169.00	2.942	2.941	0.001	1.002	3979		6.16(2.25-6.76)		7.8	
D 14 13C4 PFHpA										
367.00 > 322.00	2.936	2.942	-0.006	0.879	6991082	2.79		112	3531	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.942	2.947	-0.005	1.000	15825	0.007117	Target=3.25		24.7	
399.00 > 99.00	2.964	2.947	0.017	1.008	7423		2.13(1.63-4.88)		9.4	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.942	2.947	-0.005	0.881	4298639	2.67		113	6094	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.311	3.318	-0.007	0.998	6371	0.0099			34.1	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.318	0.0	0.994	653880	1.87		78.8	1589	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.347	-0.007	1.000	7796634	2.70		108	4860	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.347	-0.007		7707617	2.50			5232	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.347	-0.007	1.000	56705	0.0161	Target=3.06		5.5	
413.00 > 169.00	3.347	3.347	0.0	1.002	15359		3.69(1.53-4.58)		23.9	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.715	3.715	0.0	1.000	25188	0.0117	Target=4.13		15.1	M
499.00 > 99.00	3.715	3.715	0.0	1.000	6394		3.94(2.06-6.19)		26.4	M
D 27 13C4 PFOS										
503.00 > 80.00	3.715	3.715	0.0	1.112	4808971	2.57		108	4105	
D 30 13C5 PFNA										
468.00 > 423.00	3.723	3.731	-0.008	1.115	6705588	2.61		104	4345	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.088	4.086	0.002	1.000	13326	0.0213			168	
D 36 13C2 PFDA										
515.00 > 470.00	4.088	4.088	0.0	1.224	7589349	2.61		105	3300	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.088	4.088	0.0	1.224	675452	2.05		85.8	2033	
D 32 13C8 FOSA										
506.00 > 78.00	4.106	4.114	-0.008	1.229	2632383	2.73		109	2882	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.106	4.123	-0.017	1.000	24227	0.008376			66.8	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.240	4.249	-0.009	1.269	3726364	2.72		109	2075	
D 42 13C2 PFUnA										
565.00 > 520.00	4.406	4.406	0.0	1.319	6777914	2.74		109	4167	
43 Perfluoroundecanoic acid										R
563.00 > 519.00	4.406	4.414	-0.008	1.000	20118	0.009433	Target=9.66		12.8	R
563.00 > 169.00	4.406	4.414	-0.008	1.000	1255		16.03(4.83-14.49)		12.5	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.406	4.414	-0.008	1.319	3310096	2.81		112	2008	
D 55 13C2 PFDoA										
615.00 > 570.00	4.690	4.690	0.0	1.404	6943002	2.55		102	3889	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.183	5.191	-0.008	1.552	5200646	2.69		108	3358	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:46:48 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d

Injection Date: 09-Oct-2019 02:37:59 Instrument ID: A9

Lims ID: 480-159547-A-30-D Lab Sample ID: 320-159547-30

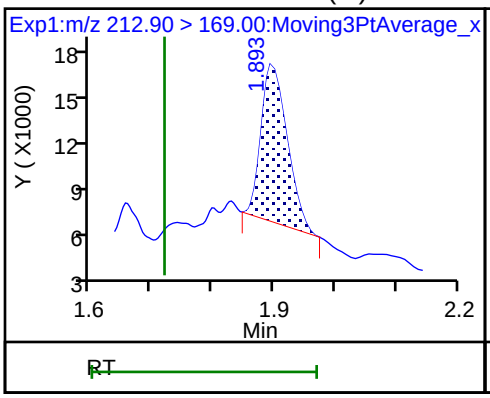
Client ID: GERNATT-CF-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 18 Worklist Smp#: 17

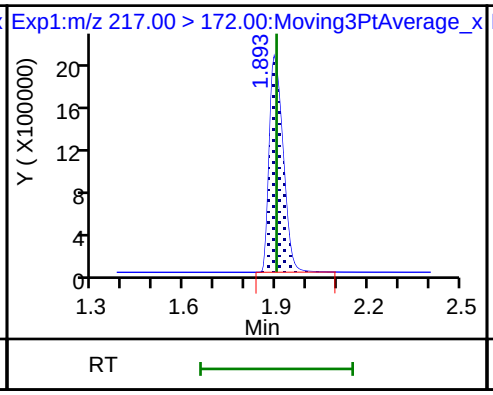
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

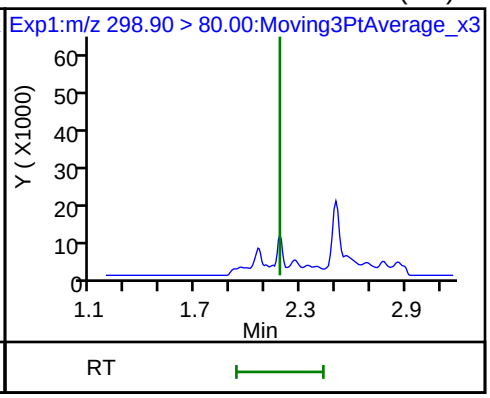
2 Perfluorobutanoic acid (M)



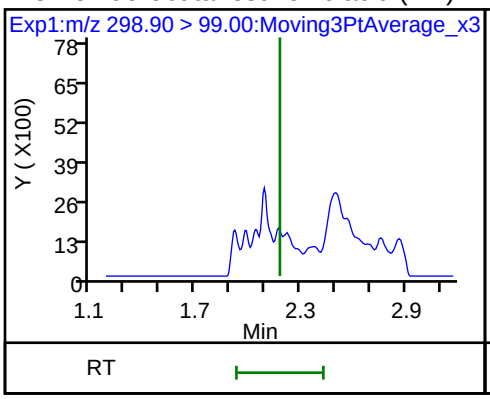
D 1 13C4 PFBA



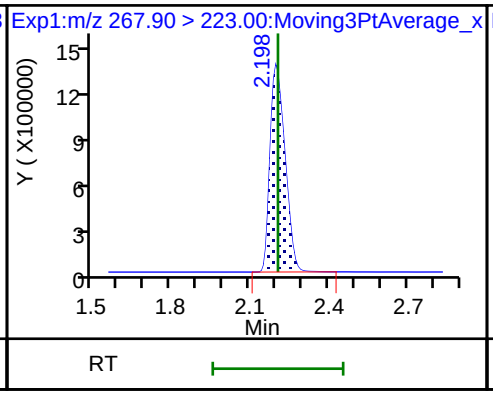
5 Perfluorobutanesulfonic acid (ND)



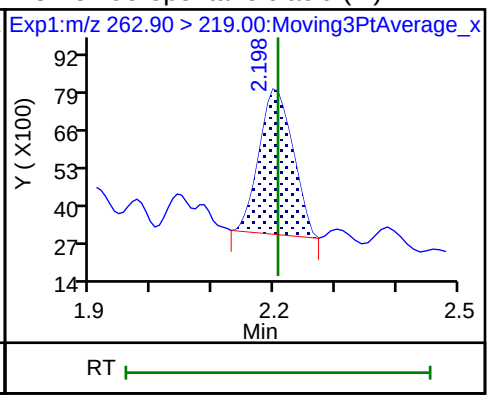
5 Perfluorobutanesulfonic acid (ND)



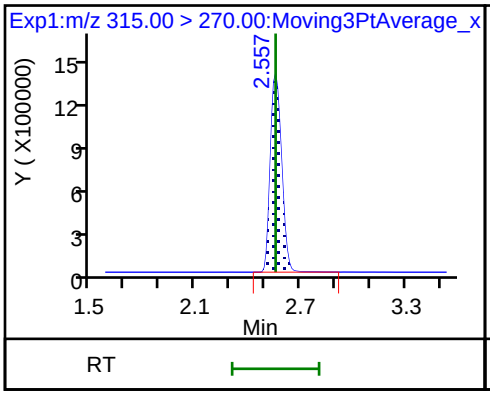
D 4 13C5 PFPeA



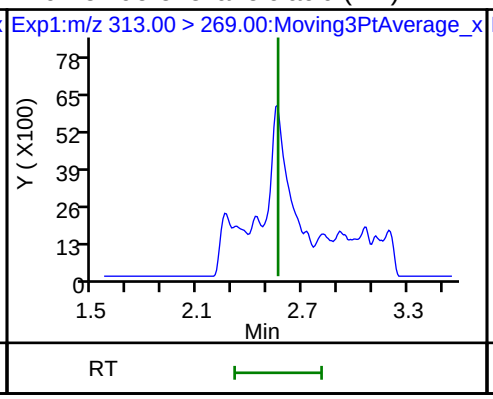
3 Perfluoropentanoic acid (M)



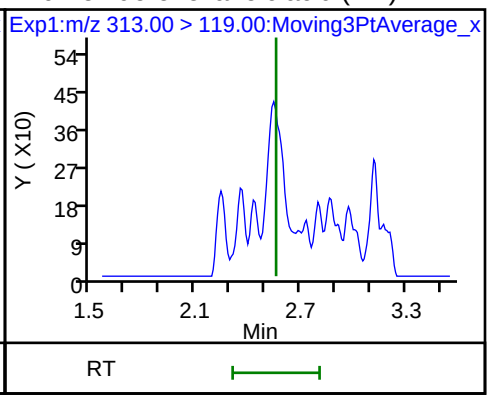
D 9 13C2 PFHxA



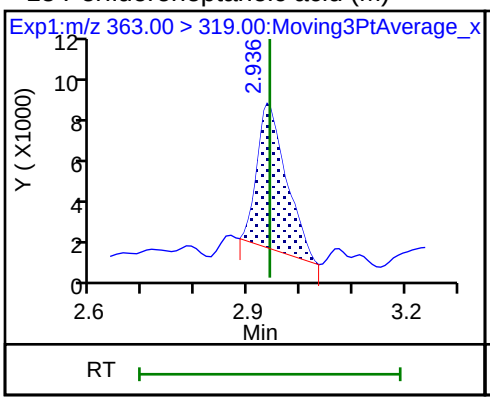
10 Perfluorohexanoic acid (ND)



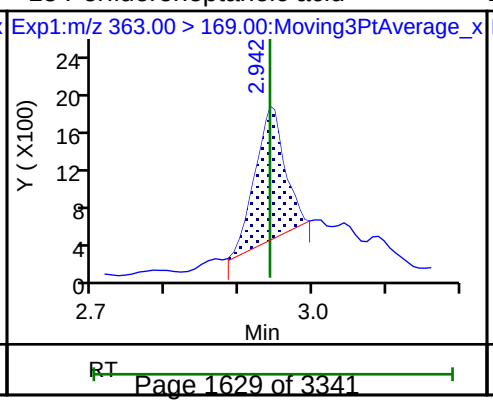
10 Perfluorohexanoic acid (ND)



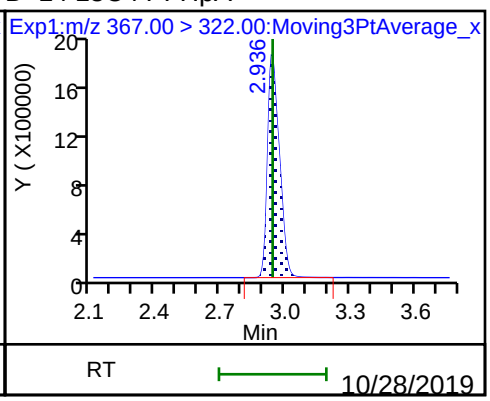
15 Perfluoroheptanoic acid (M)



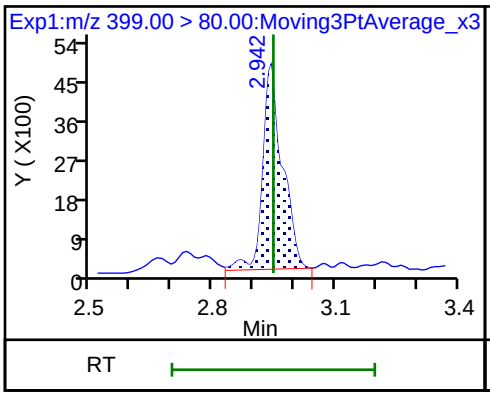
15 Perfluoroheptanoic acid



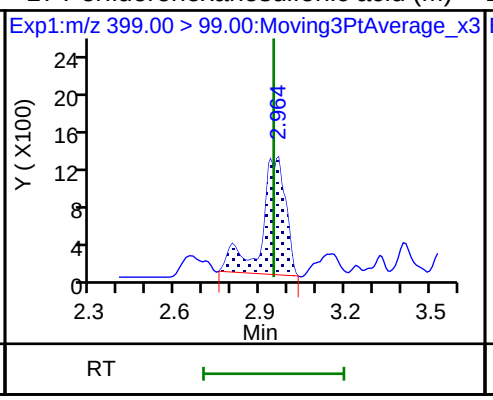
D 14 13C4 PFHpA



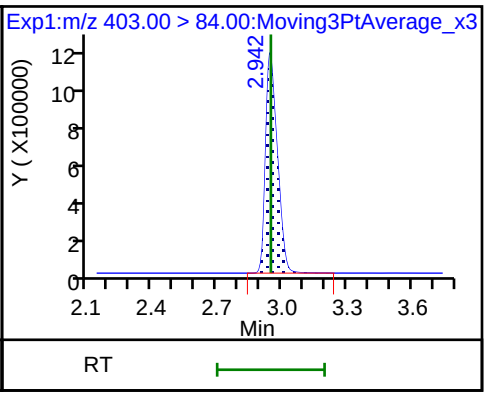
17 Perfluorohexanesulfonic acid



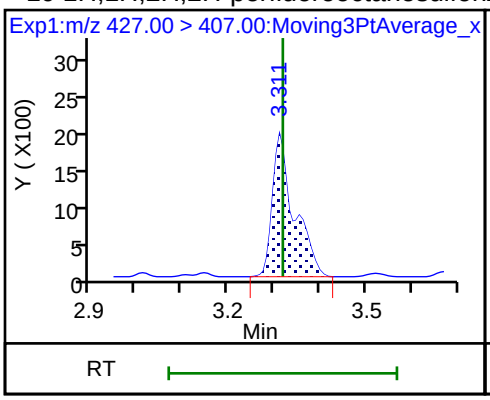
17 Perfluorohexanesulfonic acid (M)



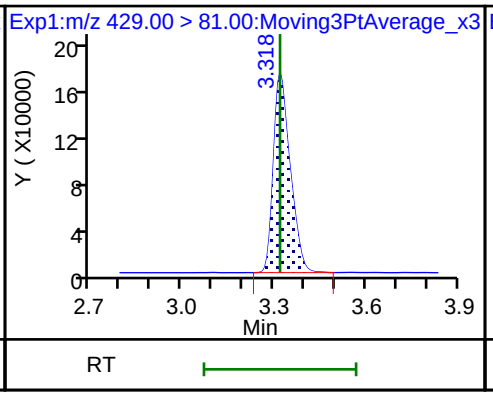
D 16 18O2 PFHxS



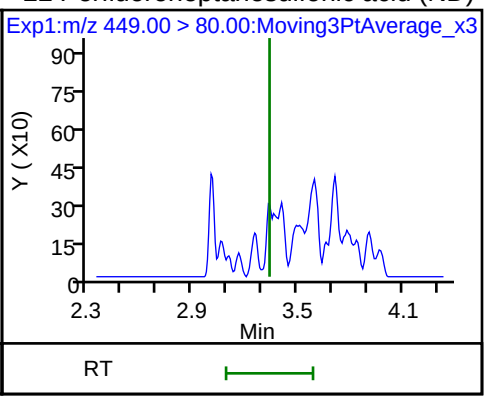
19 1H,1H,2H,2H-perfluorooctanesulfon



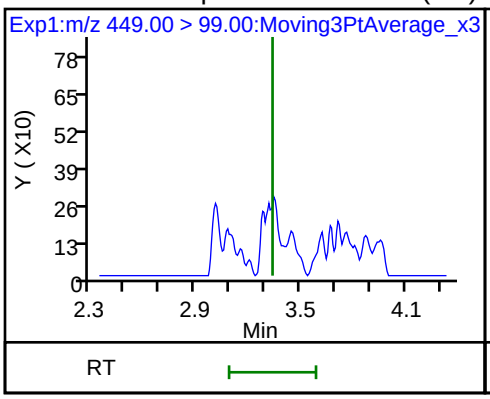
D 20 M2-6:2 FTS



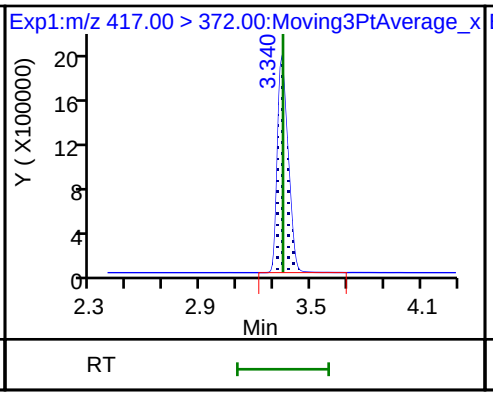
22 Perfluoroheptanesulfonic acid (ND)



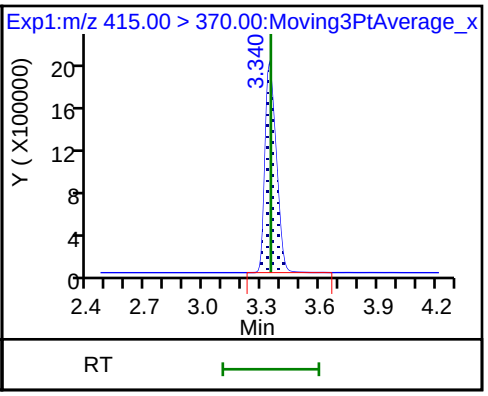
22 Perfluoroheptanesulfonic acid (ND)



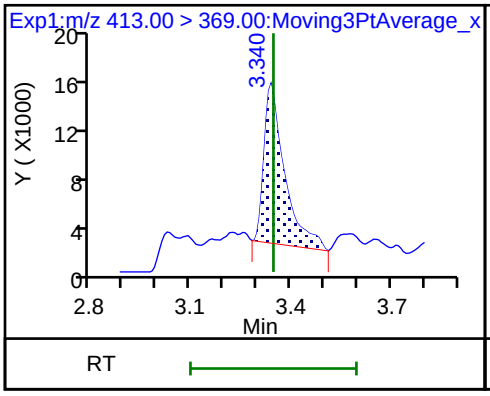
D 23 13C4 PFOA



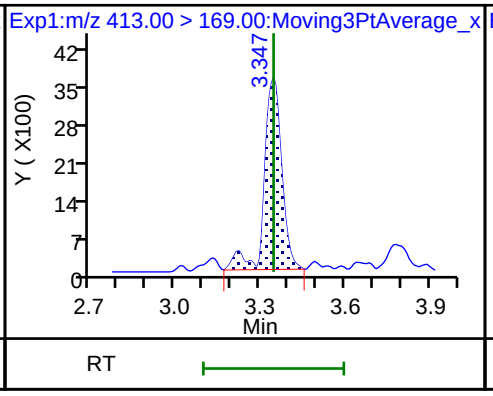
* 25 13C2 PFOA



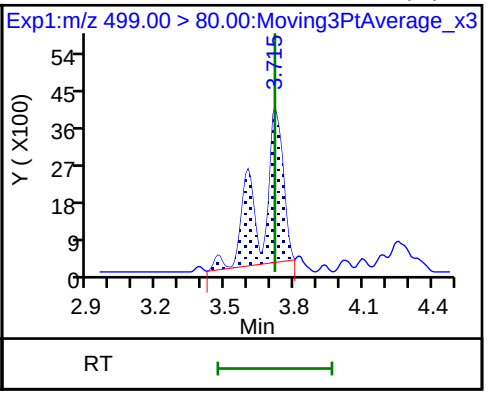
24 Perfluorooctanoic acid



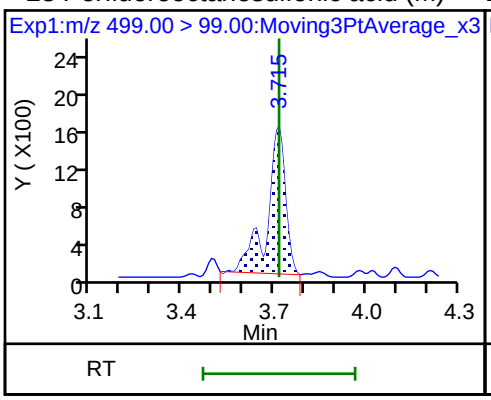
24 Perfluorooctanoic acid



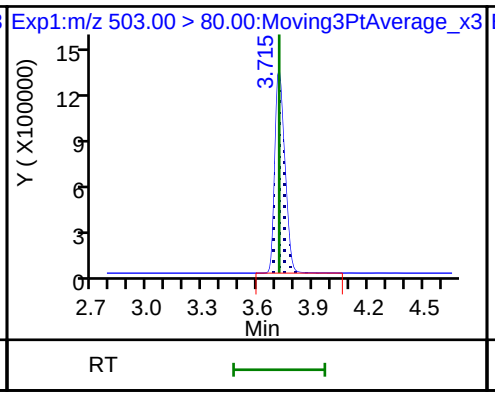
28 Perfluorooctanesulfonic acid (M)



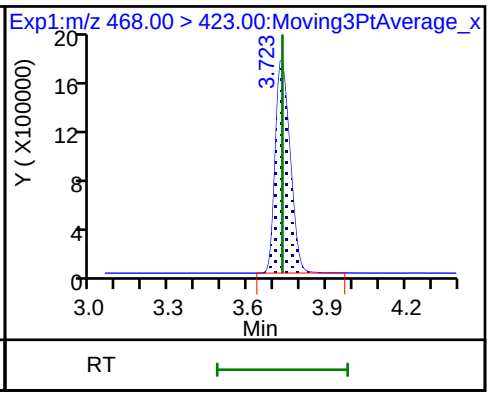
28 Perfluorooctanesulfonic acid (M)



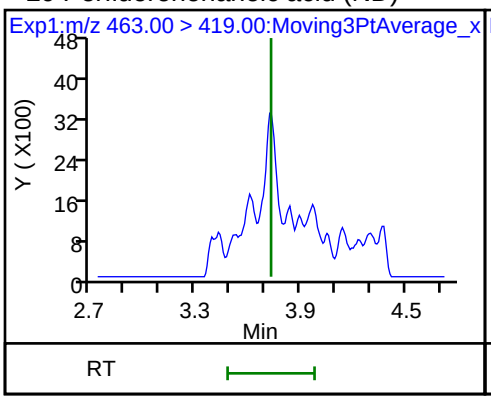
D 27 13C4 PFOS



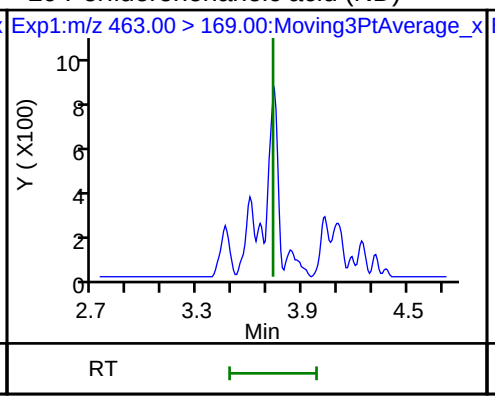
D 30 13C5 PFNA



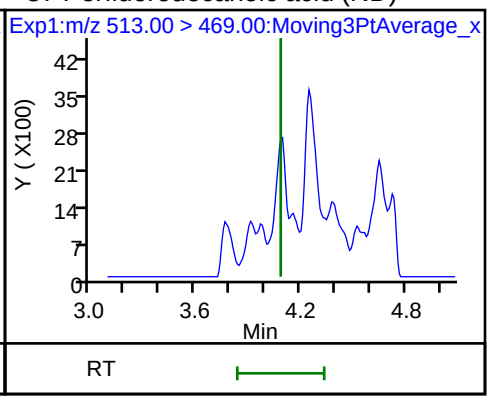
29 Perfluorononanoic acid (ND)



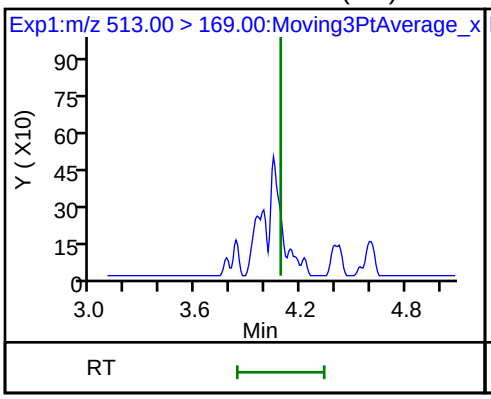
29 Perfluorononanoic acid (ND)



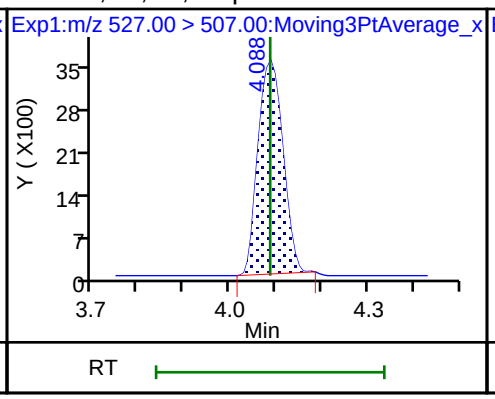
37 Perfluorodecanoic acid (ND)



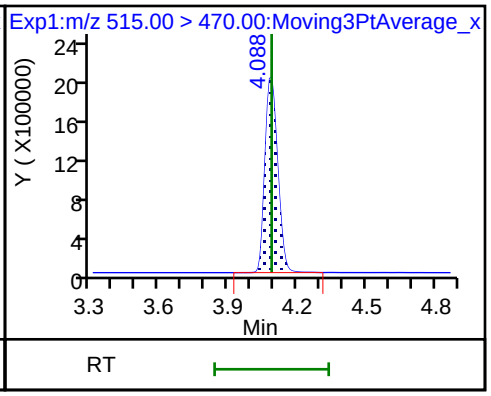
37 Perfluorodecanoic acid (ND)



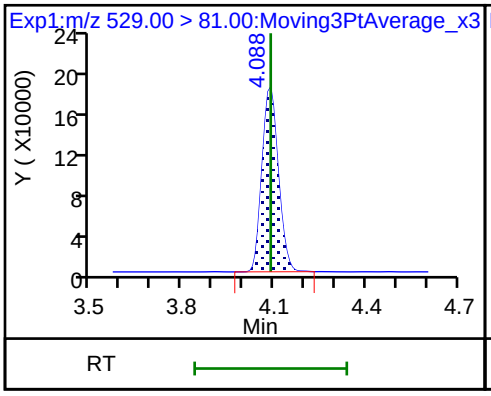
38 1H,1H,2H,2H-perfluorodecanesulfon



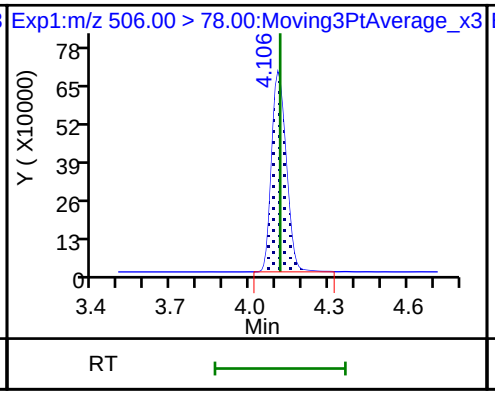
D 36 13C2 PFDA



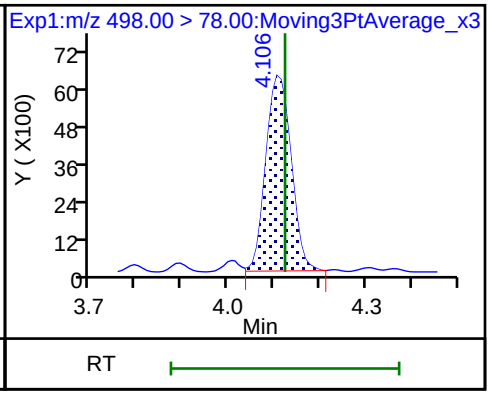
D 35 M2-8:2 FTS



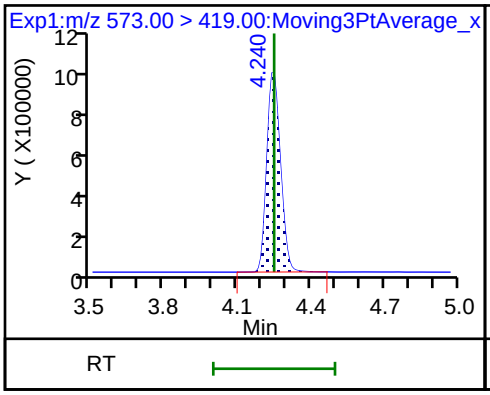
D 32 13C8 FOSA



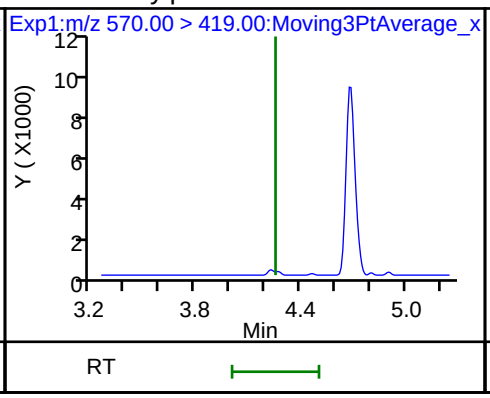
33 Perfluorooctanesulfonamide



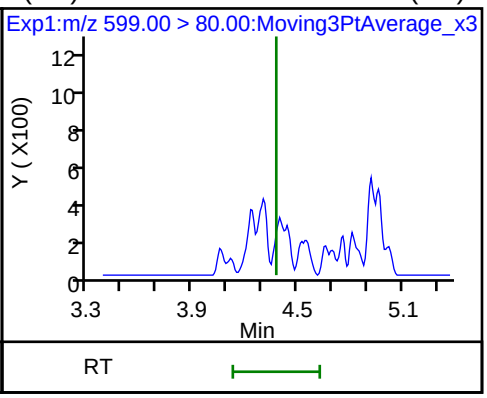
D 39 d3-NMeFOSAA



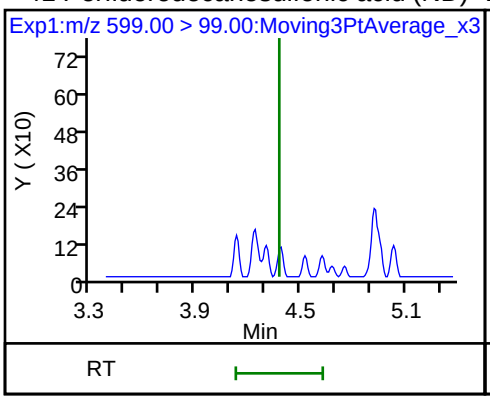
40 N-methylperfluorooctanesulfonamido (ND)



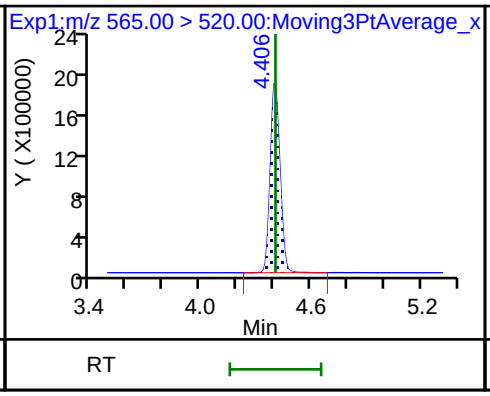
41 Perfluorodecanesulfonic acid (ND)



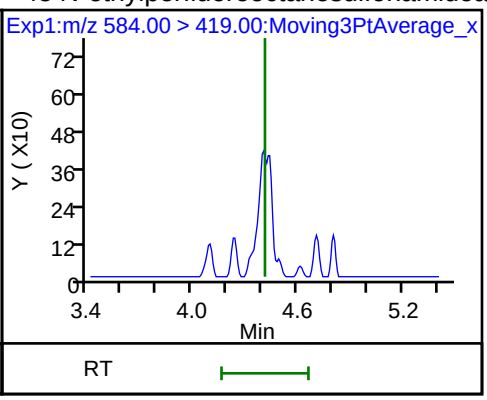
41 Perfluorodecanesulfonic acid (ND)



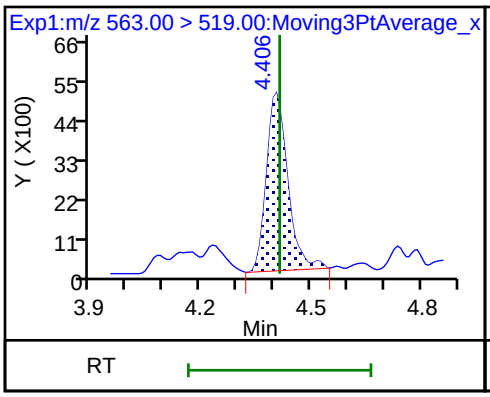
D 42 13C2 PFUnA



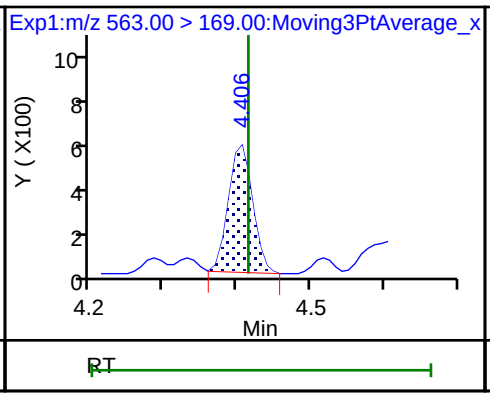
45 N-ethylperfluorooctanesulfonamidoa (ND)



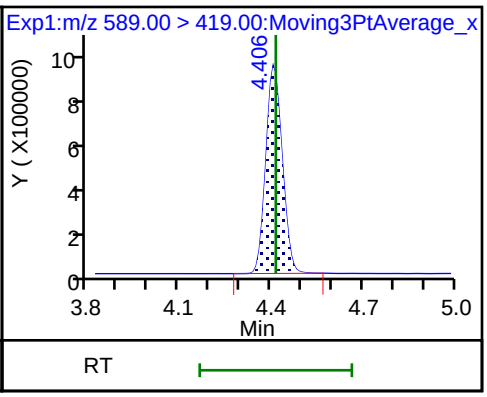
43 Perfluoroundecanoic acid



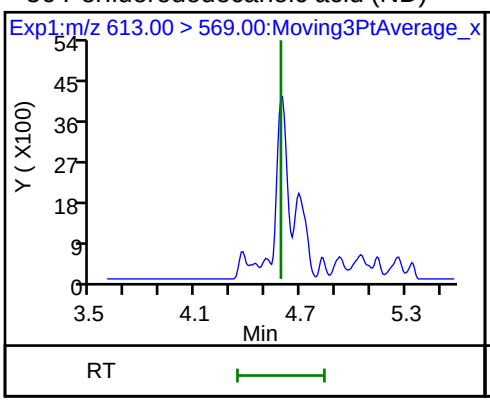
43 Perfluoroundecanoic acid



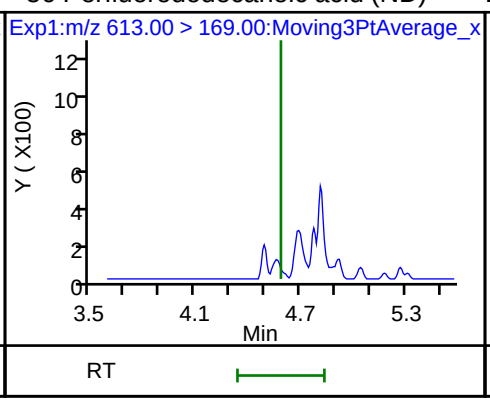
D 44 d5-NEtFOSAA



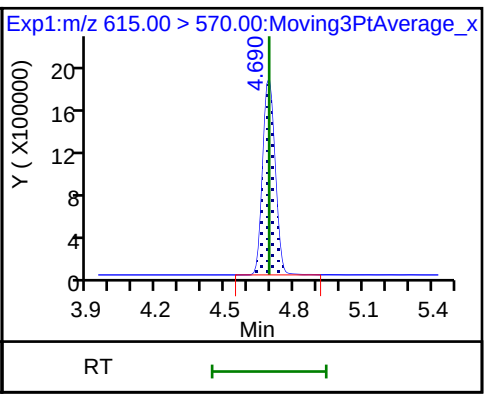
56 Perfluorododecanoic acid (ND)



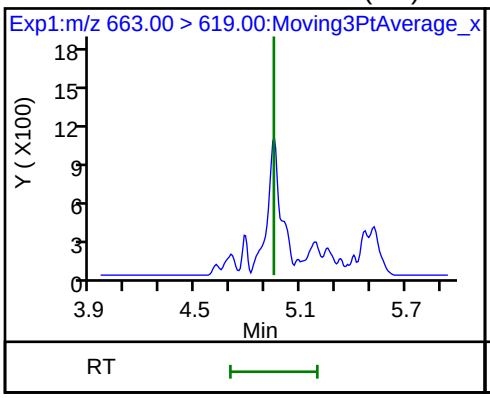
56 Perfluorododecanoic acid (ND)



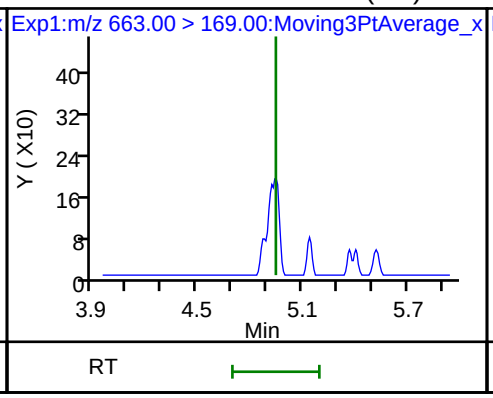
D 55 13C2 PFDoA



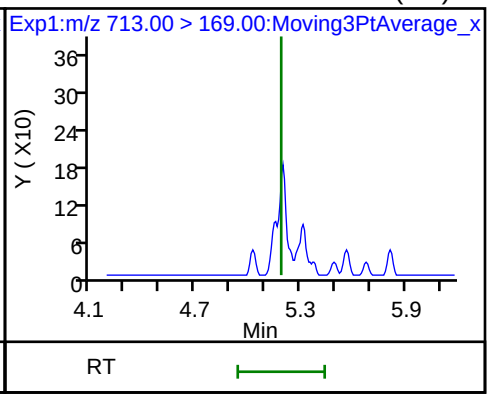
59 Perfluorotridecanoic acid (ND)



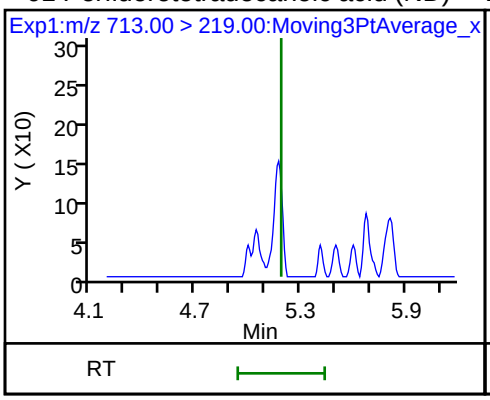
59 Perfluorotridecanoic acid (ND)



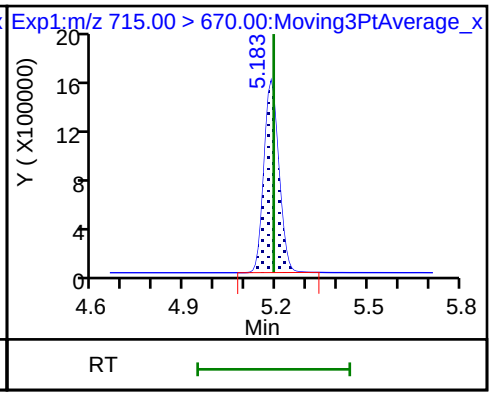
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

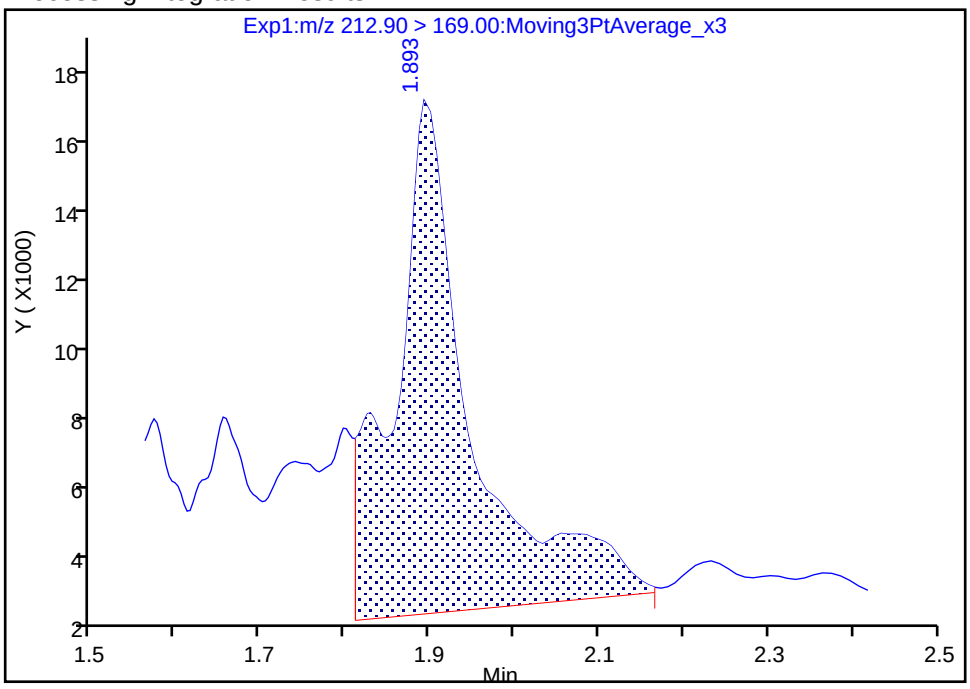
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

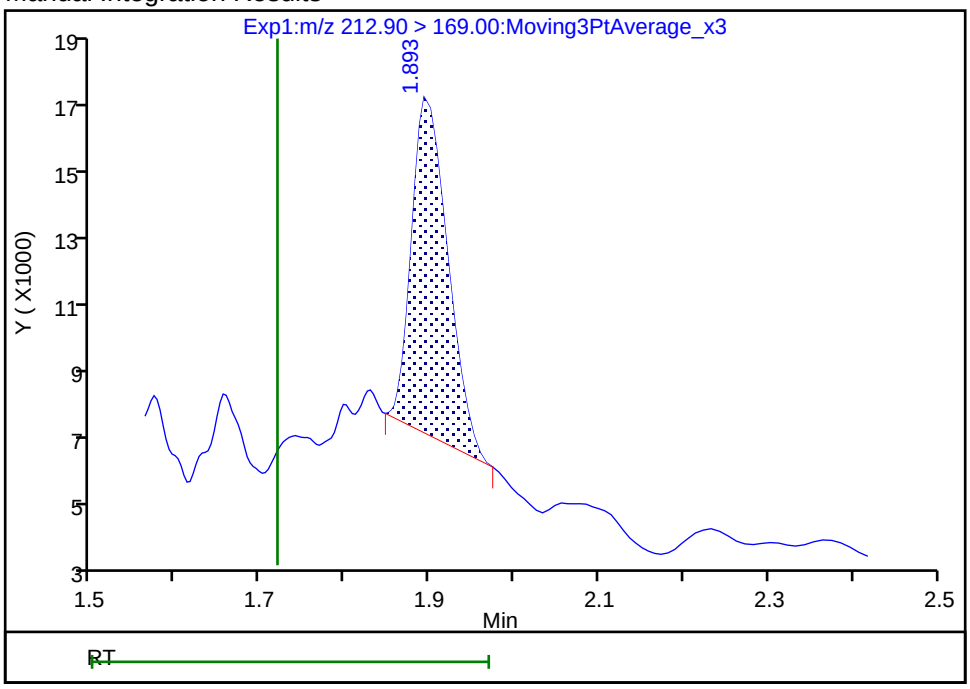
Processing Integration Results

RT: 1.89
Area: 88623
Amount: 0.041929
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 28975
Amount: 0.013708
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:00

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

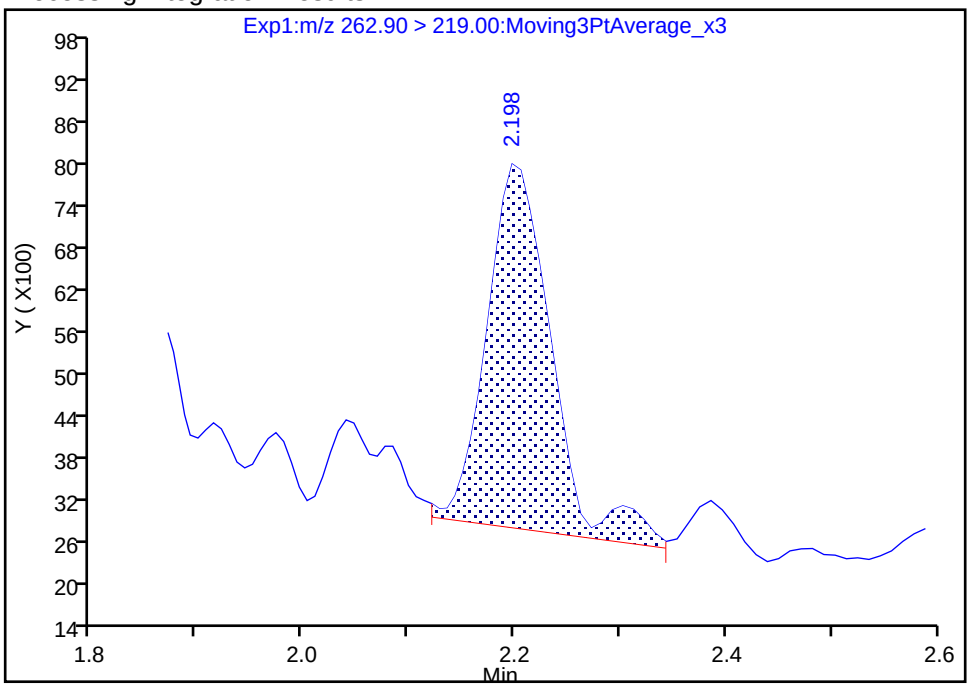
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

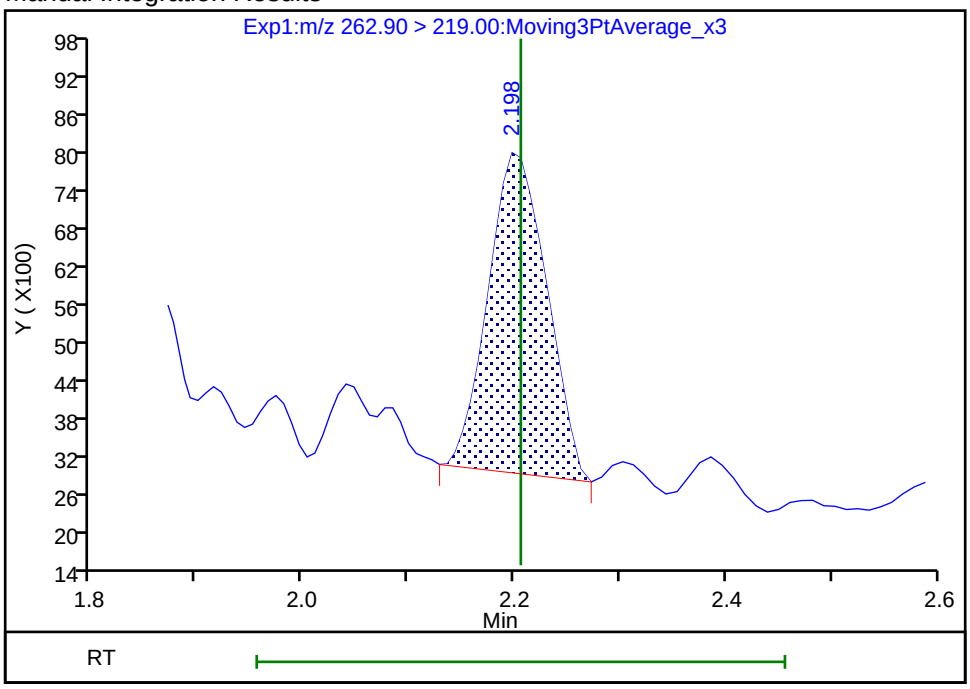
Processing Integration Results

RT: 2.20
Area: 22110
Amount: 0.010163
Amount Units: ng/ml



Manual Integration Results

RT: 2.20
Area: 19417
Amount: 0.008925
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

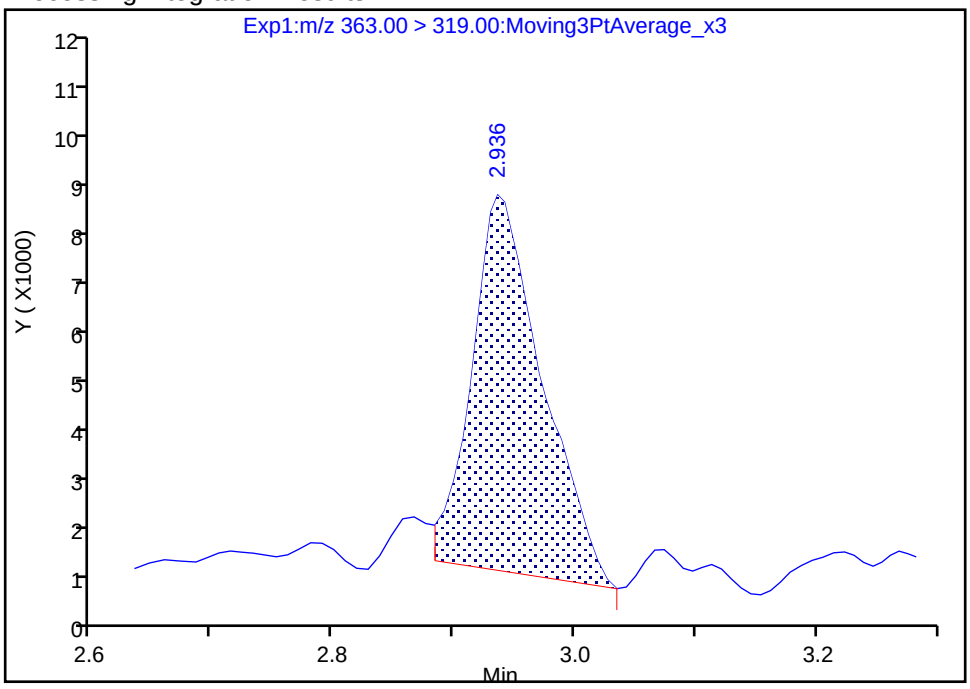
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

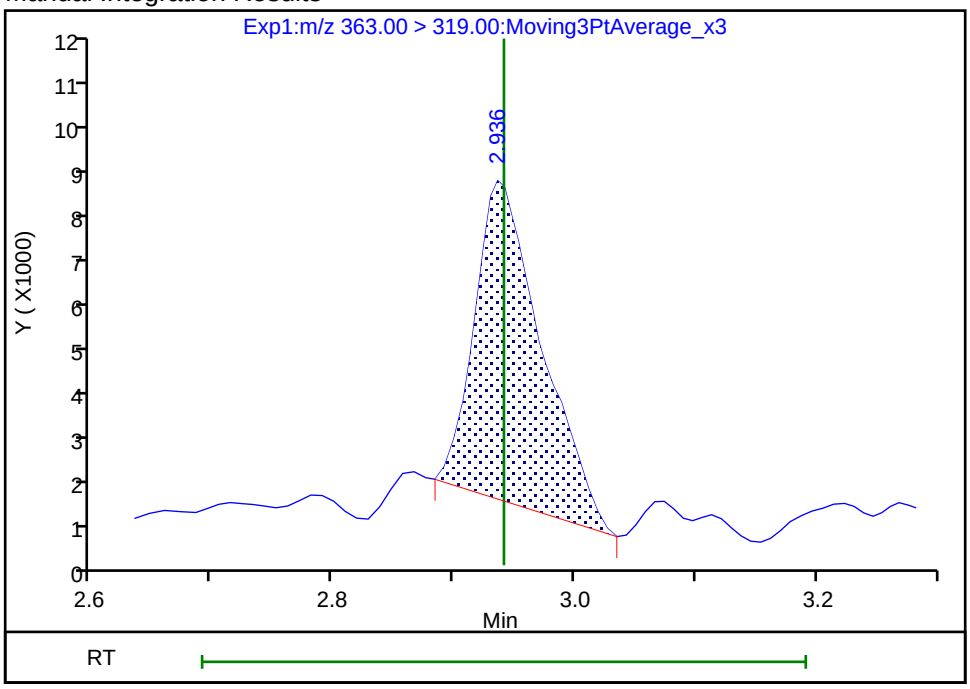
Processing Integration Results

RT: 2.94
Area: 27394
Amount: 0.008722
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 24513
Amount: 0.007805
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:15

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

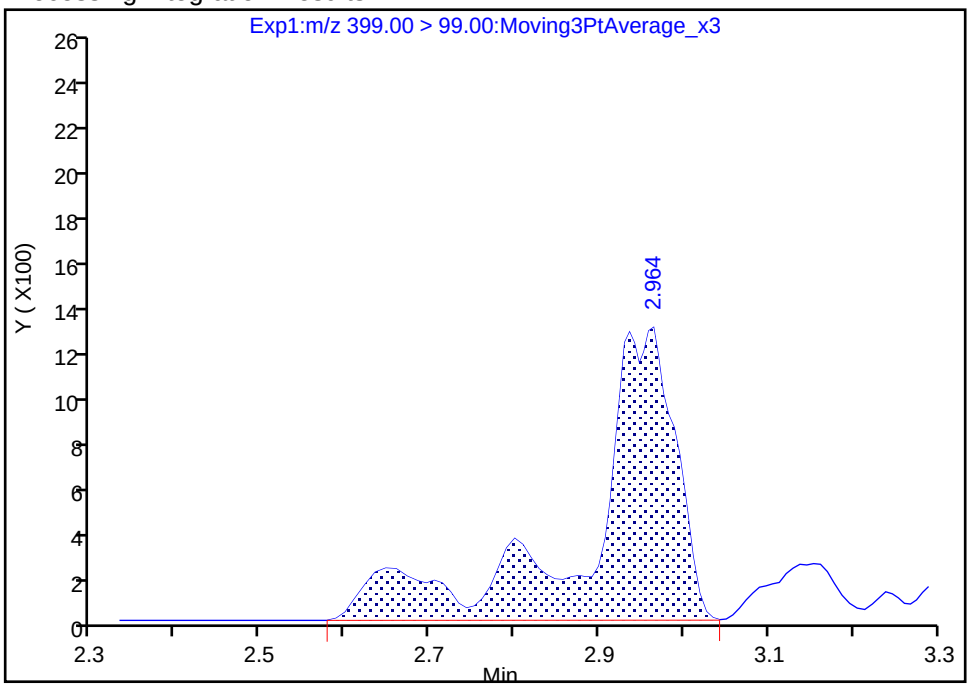
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

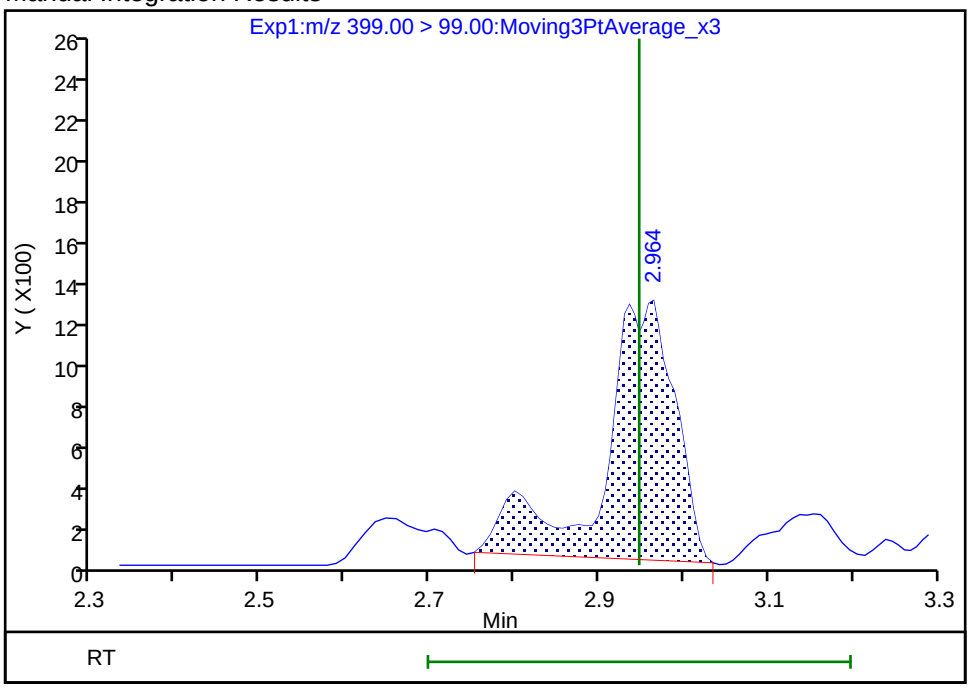
Processing Integration Results

RT: 2.96
Area: 9479
Amount: 0.007117
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 7423
Amount: 0.007117
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:21

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

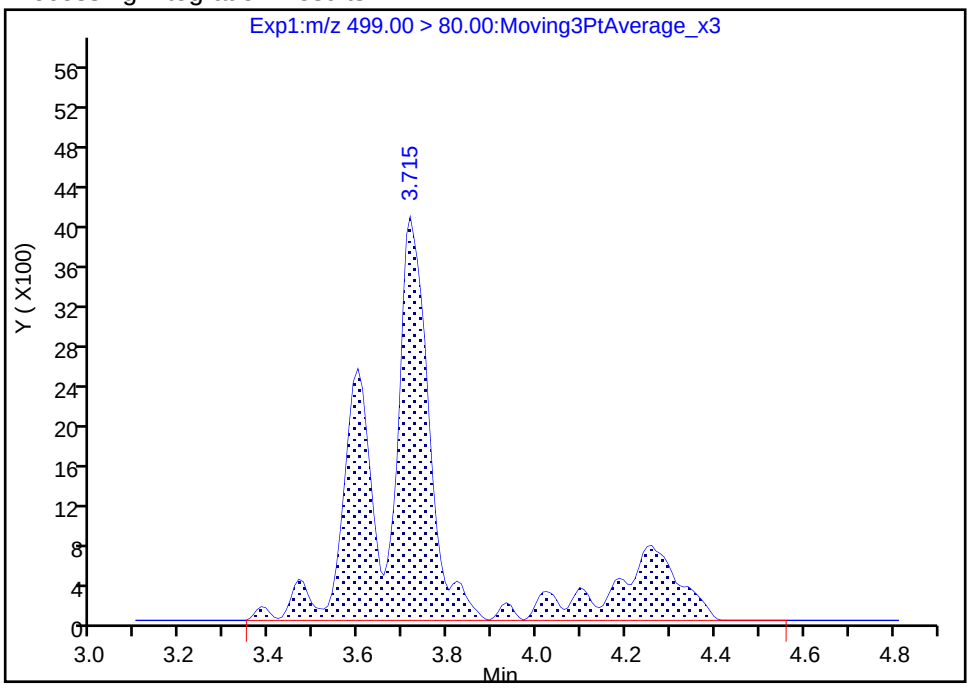
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

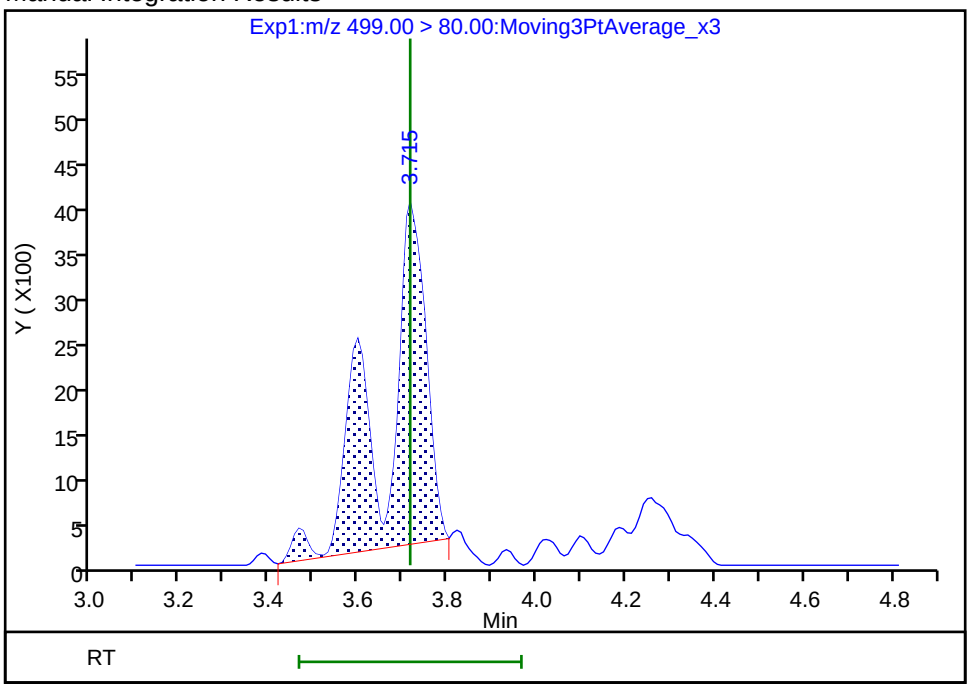
Processing Integration Results

RT: 3.72
Area: 38634
Amount: 0.017886
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 25188
Amount: 0.011661
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:30

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

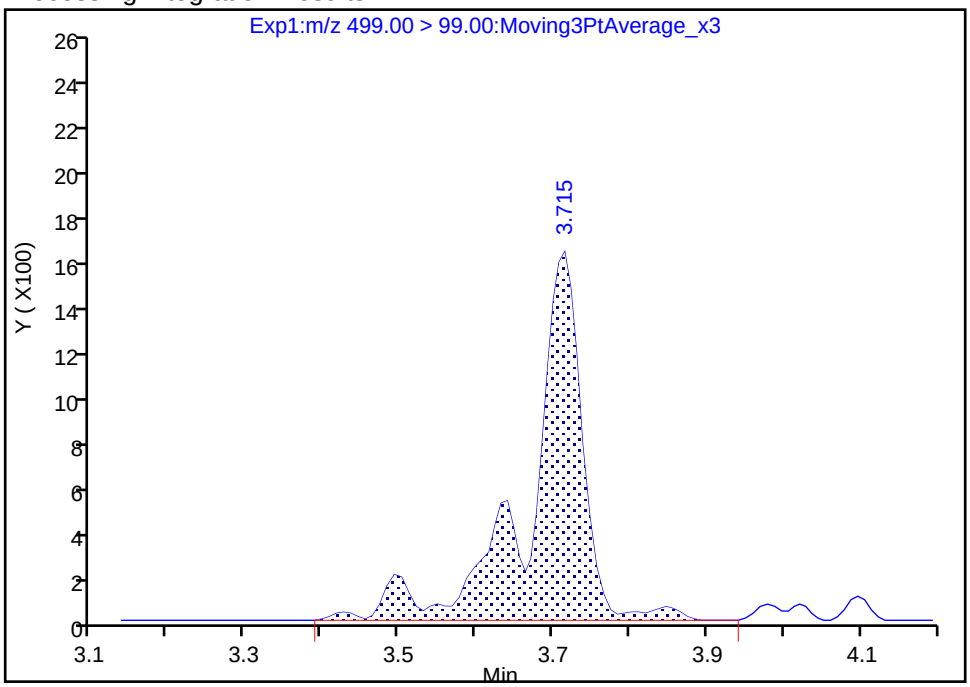
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._031.d				
Injection Date:	09-Oct-2019 02:37:59	Instrument ID:	A9		
Lims ID:	480-159547-A-30-D	Lab Sample ID:	320-159547-30		
Client ID:	GERNATT-CF-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	18	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

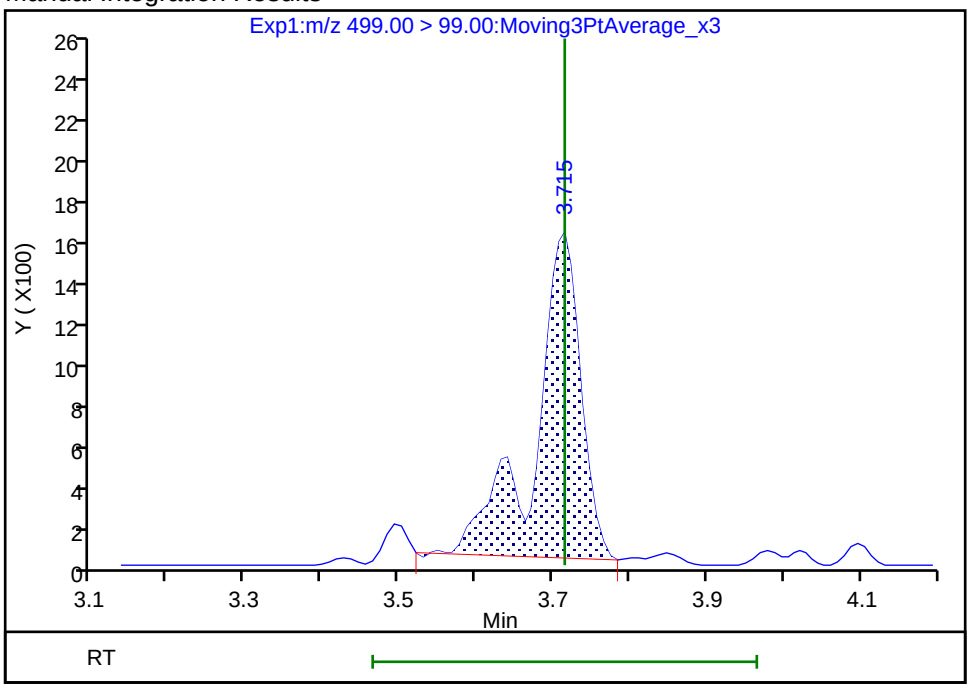
Processing Integration Results

RT: 3.72
Area: 7791
Amount: 0.017886
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 6394
Amount: 0.011661
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:46:34

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 2019.10.03.LLA_021.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:53

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.26(g) Date Analyzed: 10/03/2019 14:22

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.032	J	0.20	0.028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.20		0.20	0.078
307-24-4	Perfluorohexanoic acid (PFHxA)	0.20		0.20	0.042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.029
335-67-1	Perfluorooctanoic acid (PFOA)	0.20		0.20	0.087
375-95-1	Perfluorononanoic acid (PFNA)	0.20		0.20	0.036
335-76-2	Perfluorodecanoic acid (PFDA)	0.20		0.20	0.022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.20		0.20	0.036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.20		0.20	0.068
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.20		0.20	0.052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.20		0.20	0.055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20		0.20	0.025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.20		0.20	0.031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.20		0.20	0.035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.20
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.20		0.20	0.083
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.02		2.02	0.39
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.02		2.02	0.37
27619-97-2	6:2 FTS	2.02		2.02	0.15
39108-34-4	8:2 FTS	2.02		2.02	0.25

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid Lab File ID: 2019.10.03.LLA_021.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:53

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.26(g) Date Analyzed: 10/03/2019 14:22

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 5.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	95		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	89		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2 PFTeDA	79		25-150
STL00994	18O2 PFHxS	107		25-150
STL00991	13C4 PFOS	95		25-150
STL01056	13C8 FOSA	96		25-150
STL02118	d3-NMeFOSAA	95		25-150
STL02117	d5-NEtFOSAA	101		25-150
STL02279	M2-6:2 FTS	108		25-150
STL02280	M2-8:2 FTS	124		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_021.d
Lims ID: 480-159547-A-31-A
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 03-Oct-2019 14:22:58 ALS Bottle#: 13 Worklist Smp#: 18
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-31-
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:48:42 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:49:00
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.182	2.186	-0.004	0.588	6029326	2.38		95.3	6212	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.182	2.194	-0.012	1.000	33298	0.0158			5.2	
D 4 13C5 PFPeA										
267.90 > 223.00	2.517	2.522	-0.005	0.679	5425801	2.40		96.0	6730	
D 10 13C2 PFHxA										
315.00 > 270.00	2.895	2.908	-0.013	0.781	5604103	2.22		88.7	8564	
14 Perfluoroheptanoic acid										R
363.00 > 319.00	3.307	3.312	-0.005	1.000	16440	0.006841	Target=3.84		3.4	R
363.00 > 169.00	3.307	3.312	-0.005	1.000	2480		6.63(1.92-5.76)		5.1	
D 17 13C4 PFHpA										
367.00 > 322.00	3.307	3.312	-0.005	0.892	5760384	2.49		99.6	15907	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.307	3.322	-0.015	1.000	14577	0.006869	Target=2.93		23.2	
399.00 > 99.00	3.307	3.322	-0.015	1.000	6461		2.26(1.46-4.39)		8.7	
D 15 18O2 PFHxS										
403.00 > 84.00	3.307	3.322	-0.015	0.892	3927358	2.53		107	92340	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.691	3.694	-0.003	1.000	7607	0.005959			20.8	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.691	3.694	-0.003	0.995	1487188	2.57		108	3046	
D 25 13C4 PFOA										
417.00 > 372.00	3.708	3.711	-0.003	1.000	6853046	2.53		101	21773	
* 24 13C2 PFOA										
415.00 > 370.00	3.708	3.720	-0.012		7419824	2.50			39040	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.708	3.720	-0.012	1.000	27885	0.009783	Target=2.61		7.2	M
413.00 > 169.00	3.717	3.720	-0.003	1.002	11660		2.39(1.31-3.92)		23.0	M
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.084	4.085	-0.001	1.000	66981	0.0481	Target=4.15		136	
499.00 > 99.00	4.084	4.085	-0.001	1.000	17556		3.82(2.08-6.23)		40.7	
D 28 13C4 PFOS										
503.00 > 80.00	4.084	4.085	-0.001	1.101	3061660	2.28		95.3	12349	
D 29 13C5 PFNA										
468.00 > 423.00	4.101	4.102	-0.001	1.106	5828676	2.45		98.2	29566	
D 33 13C8 FOSA										
506.00 > 78.00	4.433	4.434	-0.001	1.195	4364101	2.39		95.7	14687	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.433	4.434	-0.001	1.000	10209	0.005862			49.7	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.468	4.460	0.008	1.002	1845	0.001134			13.7	
D 36 13C2 PFDA										
515.00 > 470.00	4.459	4.460	-0.001	1.202	5939979	2.35		93.9	44290	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.459	4.460	-0.001	1.202	2031938	2.96		124	3668	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.620	4.623	-0.003	1.246	3984618	2.38		95.1	25685	
D 43 13C2 PFUnA										
565.00 > 520.00	4.784	4.787	-0.003	1.290	5700054	2.40		96.0	42636	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.784	4.787	-0.003	1.290	4224976	2.52		101	3237	
42 Perfluoroundecanoic acid										M
563.00 > 519.00	4.784	4.787	-0.003	1.000	14176	0.007472	Target=8.92		6.2	M
563.00 > 169.00	4.774	4.787	-0.013	0.998	2302		6.16(4.46-13.39)		7.5	
D 57 13C2 PFDoA										
615.00 > 570.00	5.075	5.080	-0.005	1.369	5327817	2.16		86.3	10036	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.584	5.593	-0.009	1.506	4324312	1.98		79.3	29876	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 16:49:01 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_021.d

Injection Date: 03-Oct-2019 14:22:58 Instrument ID: A13

Lims ID: 480-159547-A-31-A Lab Sample ID: 320-159547-31

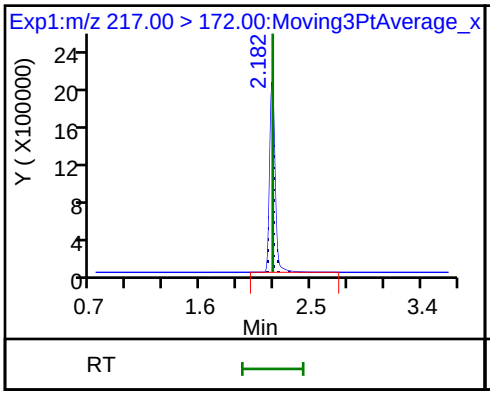
Client ID: GERNATT-CF-COMP 2

Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 18

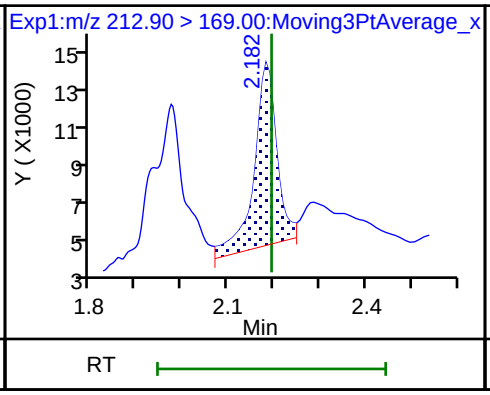
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

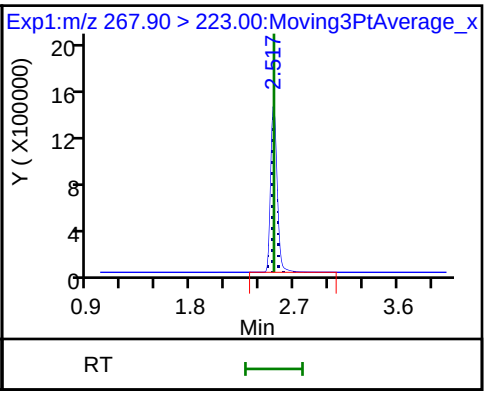
D 2 13C4 PFBA



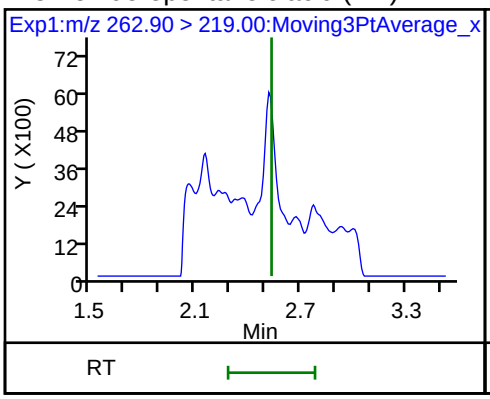
3 Perfluorobutanoic acid



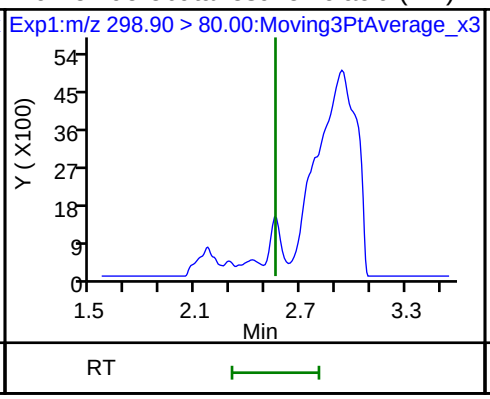
D 4 13C5 PFPeA



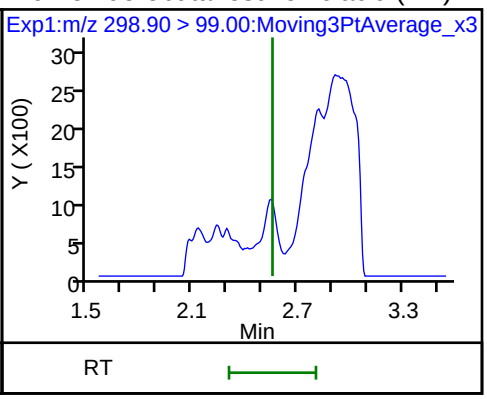
5 Perfluoropentanoic acid (ND)



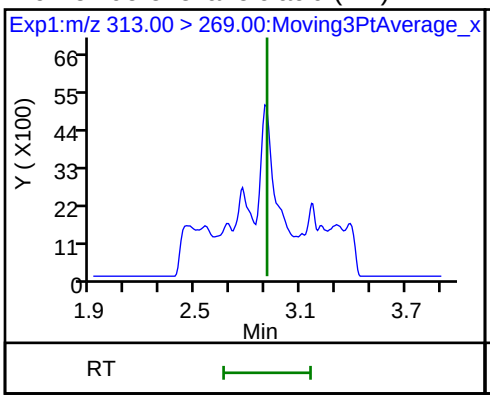
6 Perfluorobutanesulfonic acid (ND)



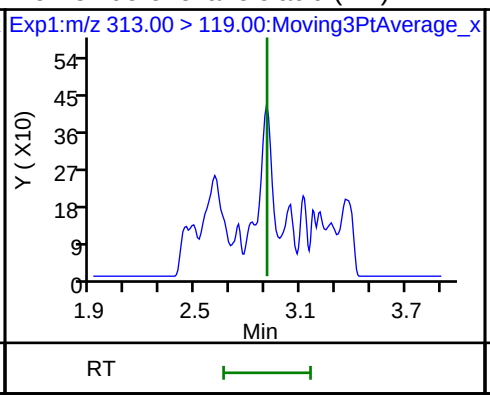
6 Perfluorobutanesulfonic acid (ND)



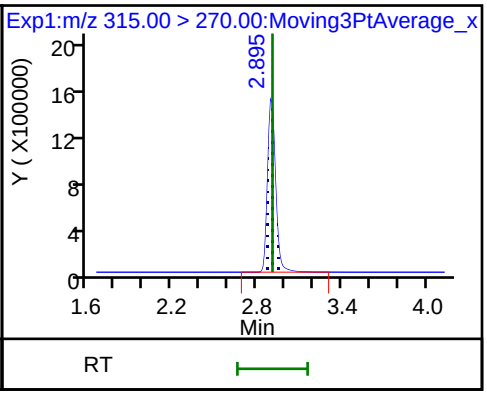
9 Perfluorohexanoic acid (ND)



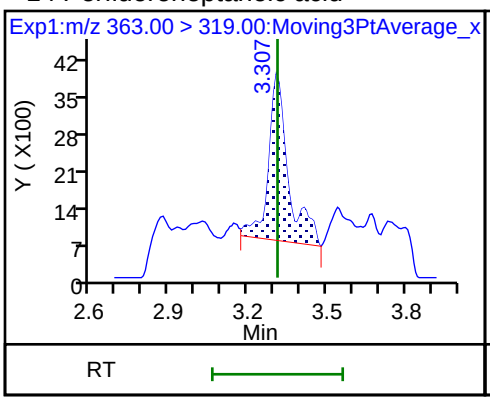
9 Perfluorohexanoic acid (ND)



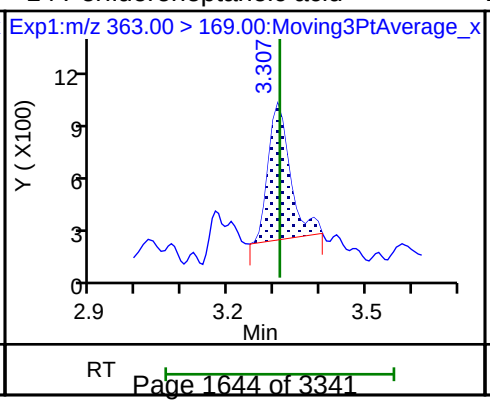
D 10 13C2 PFHxA



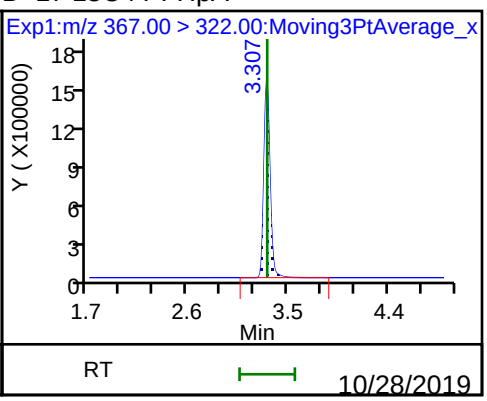
14 Perfluoroheptanoic acid



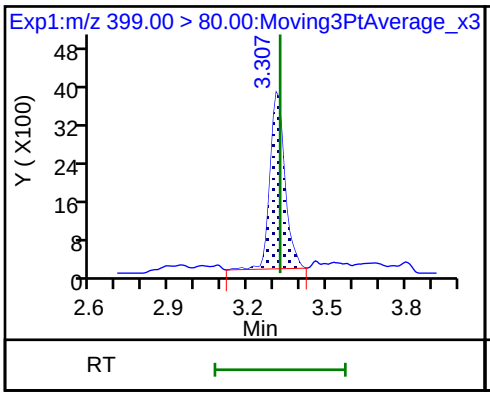
14 Perfluoroheptanoic acid



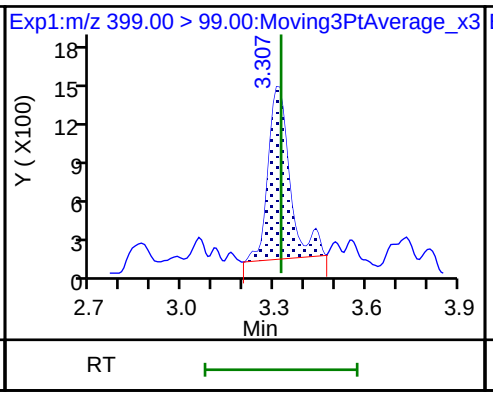
D 17 13C4 PFHpA



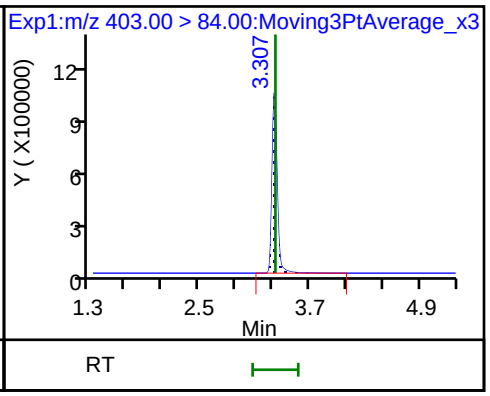
16 Perfluorohexanesulfonic acid



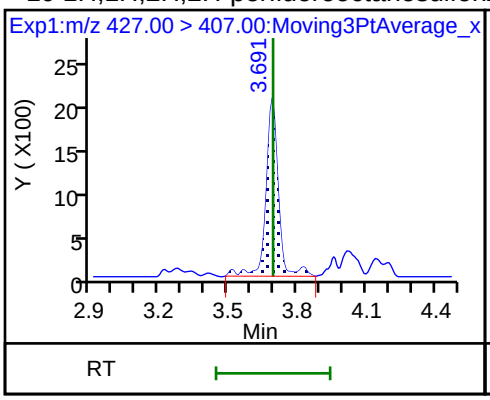
16 Perfluorohexanesulfonic acid



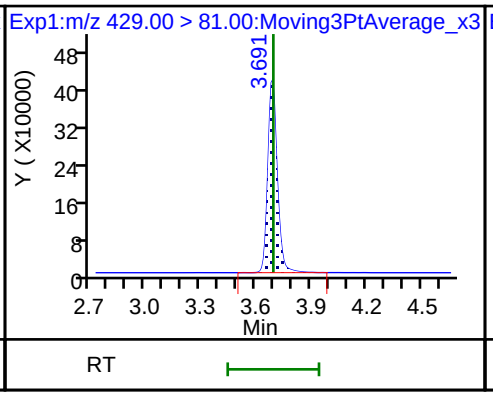
D 15 18O2 PFHxS



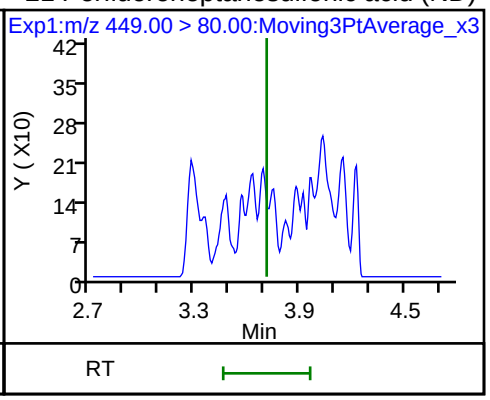
19 1H,1H,2H,2H-perfluorooctanesulfon



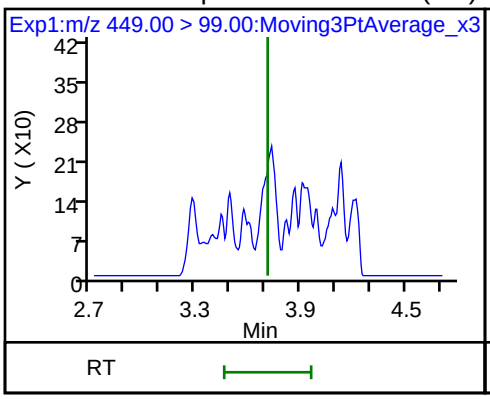
D 20 M2-6:2 FTS



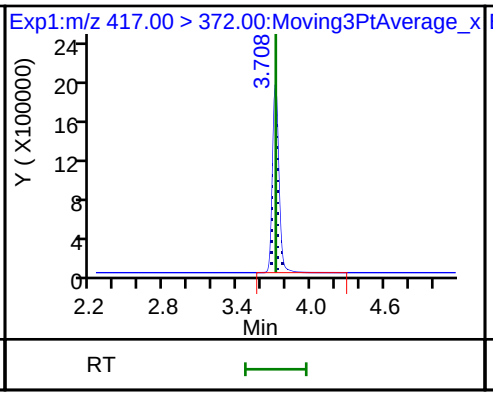
21 Perfluoroheptanesulfonic acid (ND)



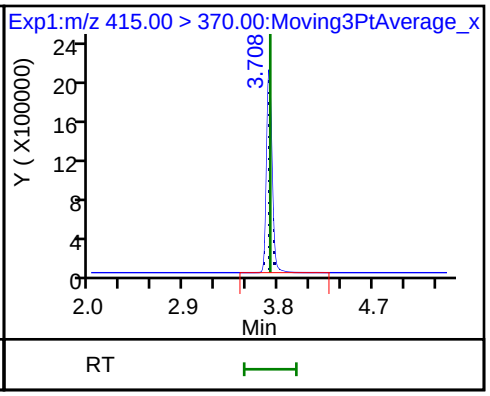
21 Perfluoroheptanesulfonic acid (ND)



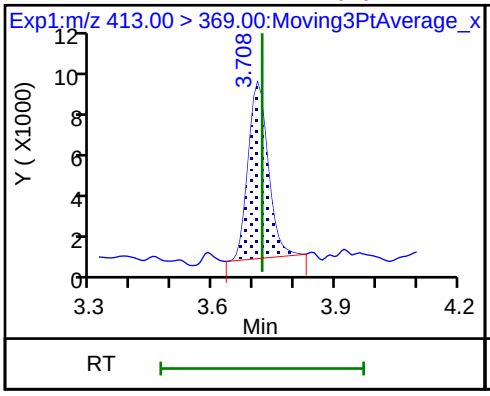
D 25 13C4 PFOA



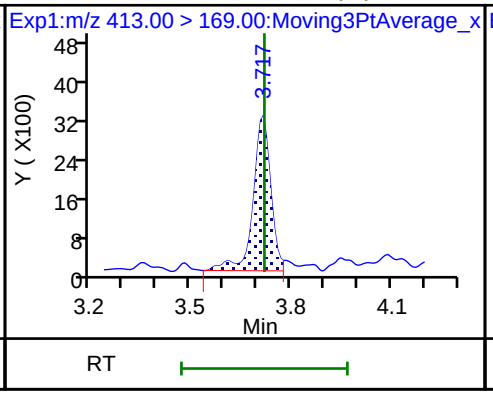
* 24 13C2 PFOA



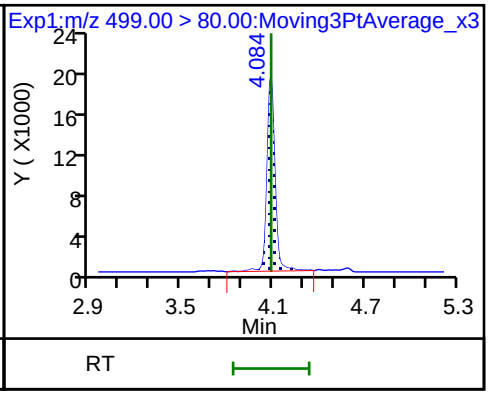
22 Perfluorooctanoic acid (M)



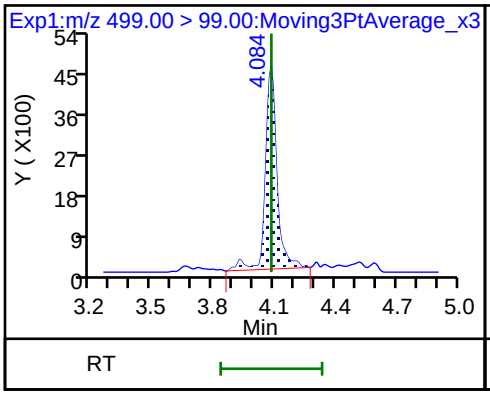
22 Perfluorooctanoic acid (M)



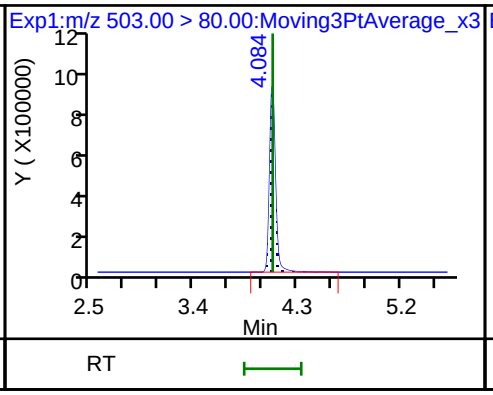
26 Perfluorooctanesulfonic acid



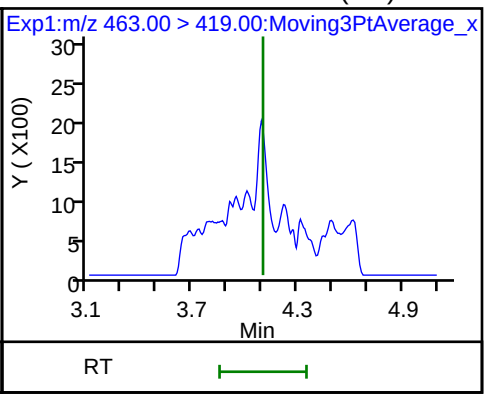
26 Perfluorooctanesulfonic acid



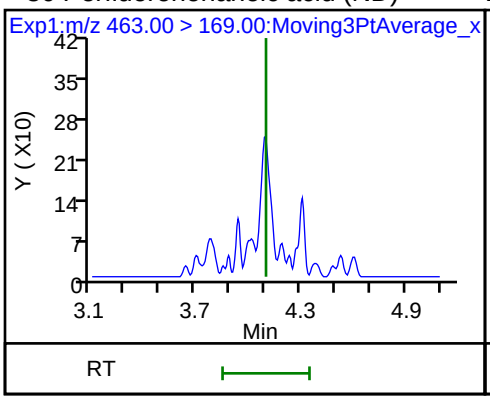
D 28 13C4 PFOS



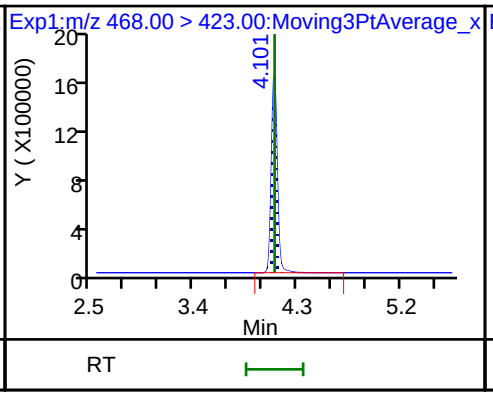
30 Perfluorononanoic acid (ND)



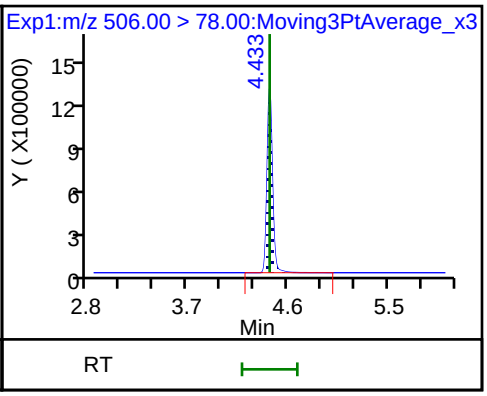
30 Perfluorononanoic acid (ND)



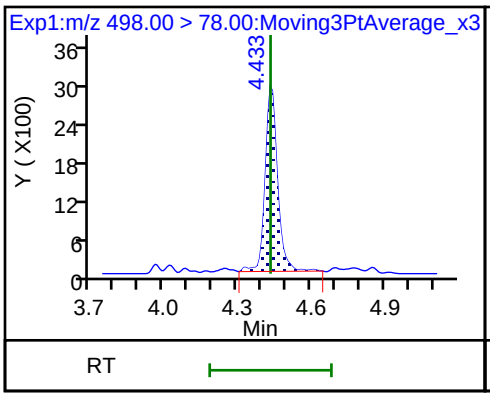
D 29 13C5 PFNA



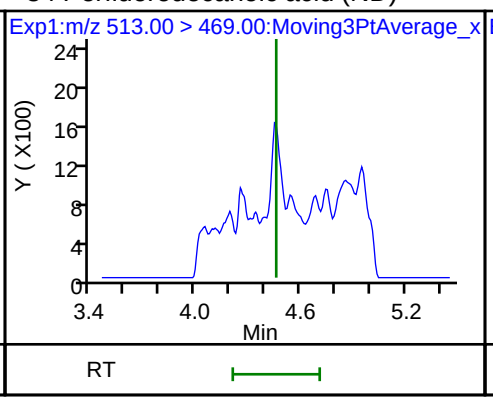
D 33 13C8 FOSA



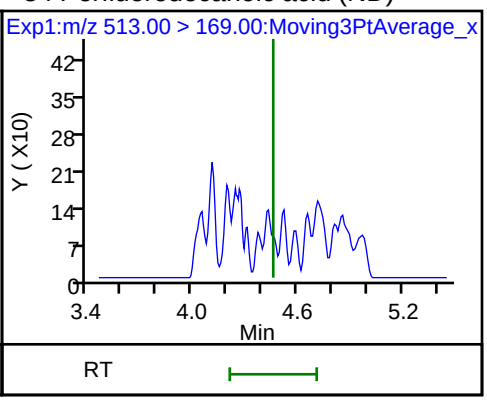
32 Perfluorooctanesulfonamide



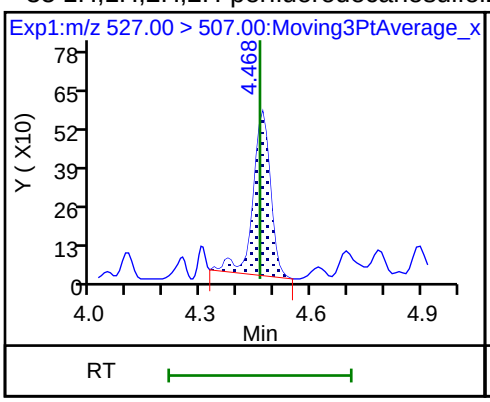
34 Perfluorodecanoic acid (ND)



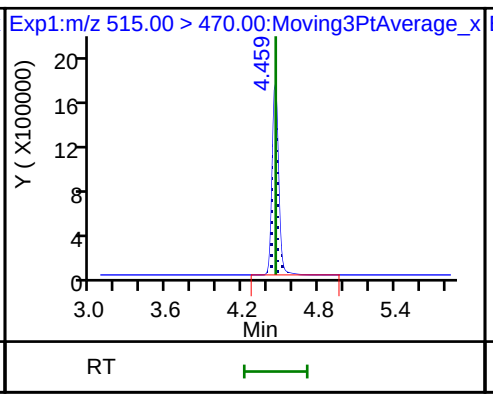
34 Perfluorodecanoic acid (ND)



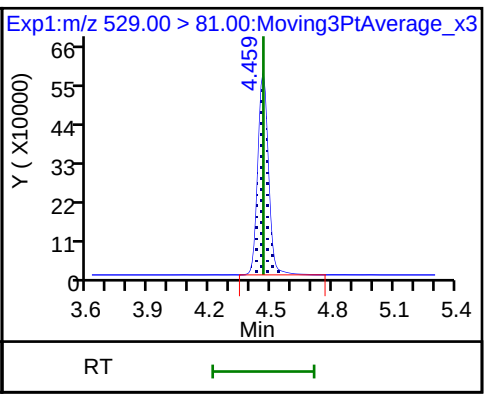
35 1H,1H,2H,2H-perfluorodecanesulfon



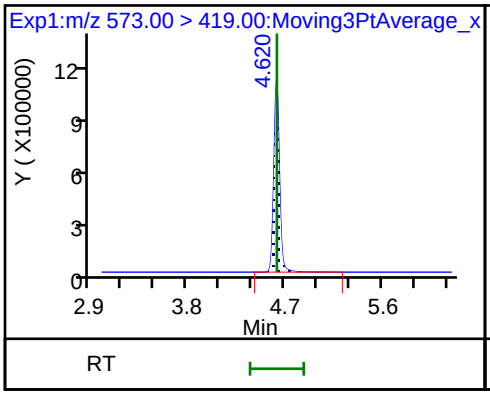
D 36 13C2 PFDA



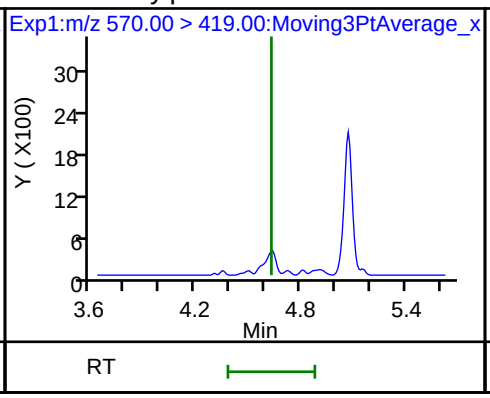
D 37 M2-8:2 FTS



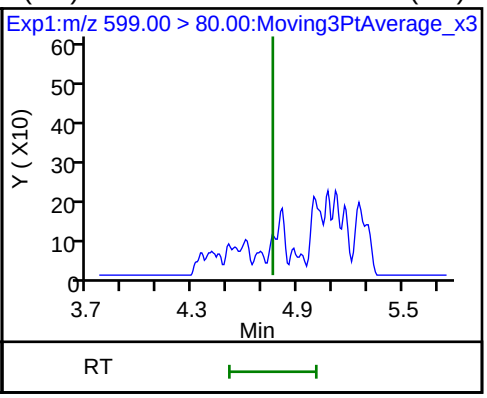
D 40 d3-NMeFOSAA



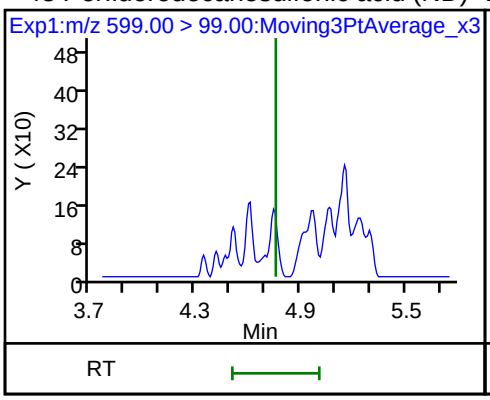
41 N-methylperfluorooctanesulfonamido (ND)



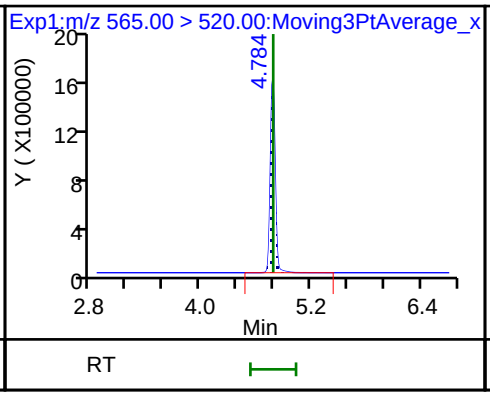
48 Perfluorodecanesulfonic acid (ND)



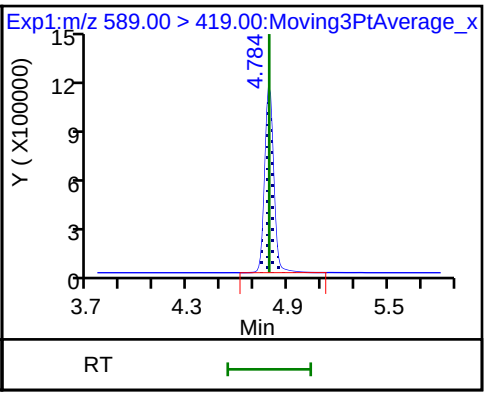
48 Perfluorodecanesulfonic acid (ND)



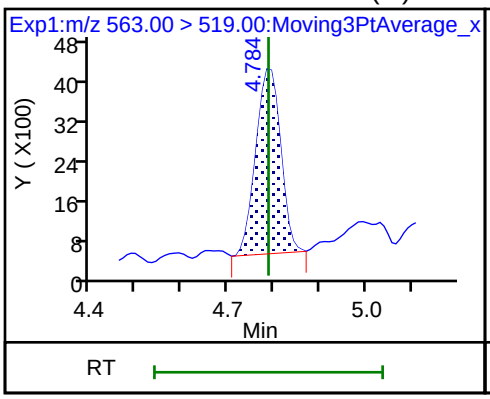
D 43 13C2 PFUnA



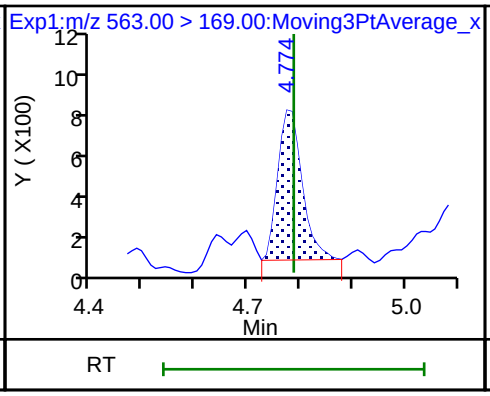
D 44 d5-NEtFOSAA



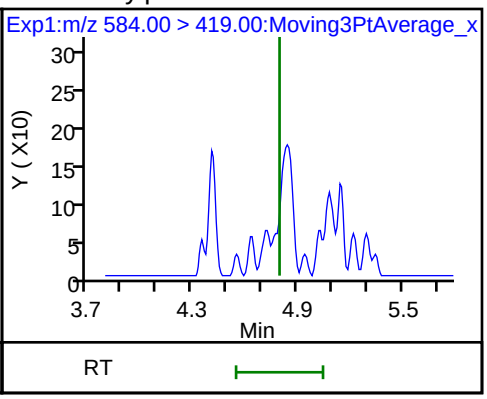
42 Perfluoroundecanoic acid (M)



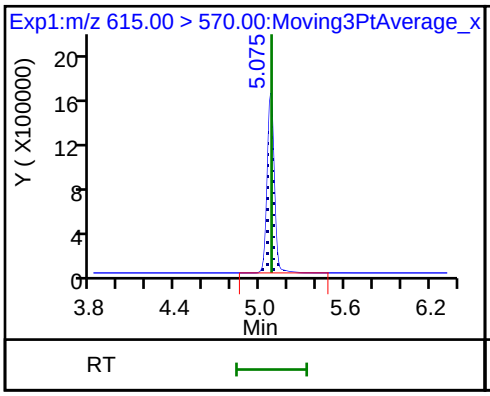
42 Perfluoroundecanoic acid



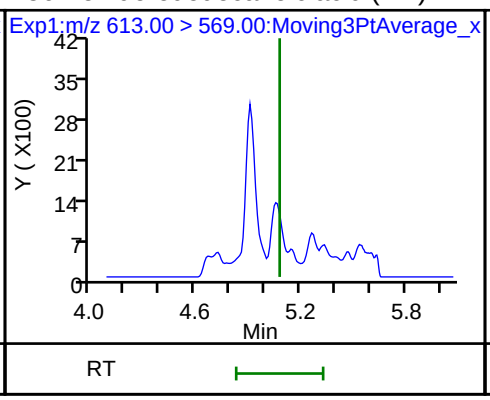
45 N-ethylperfluorooctanesulfonamidoa (ND)



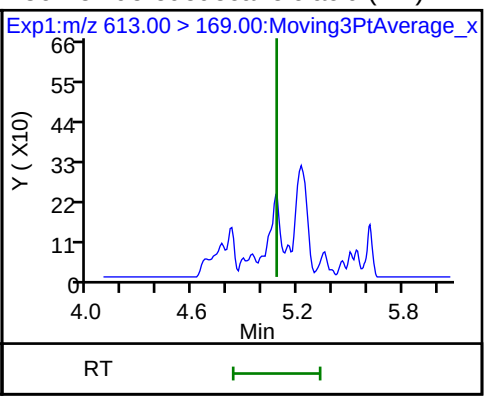
D 57 13C2 PFDoA



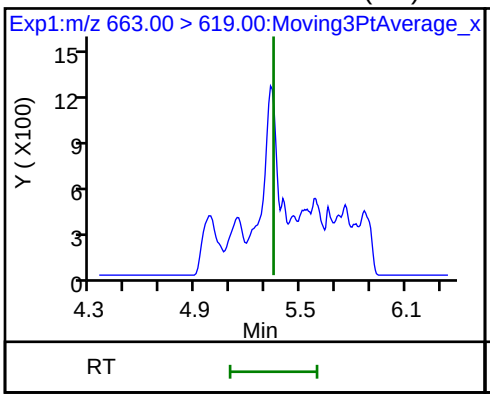
56 Perfluorododecanoic acid (ND)



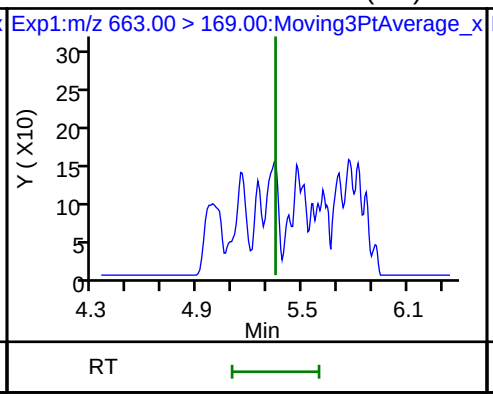
56 Perfluorododecanoic acid (ND)



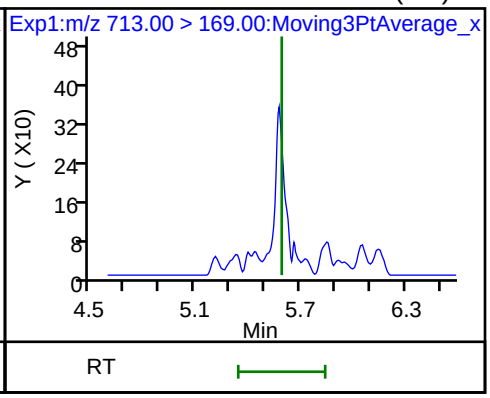
60 Perfluorotridecanoic acid (ND)



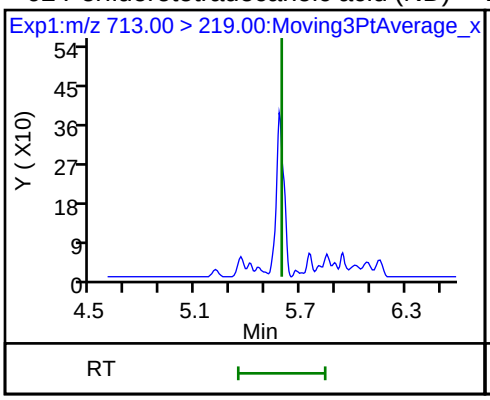
60 Perfluorotridecanoic acid (ND)



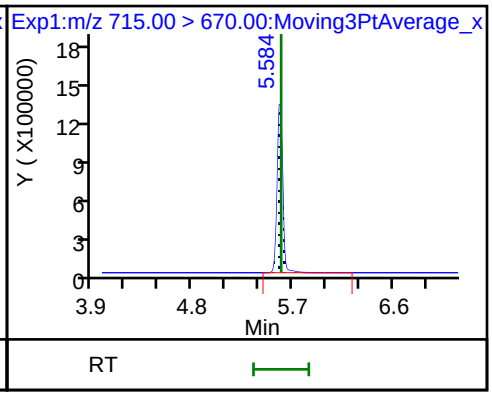
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

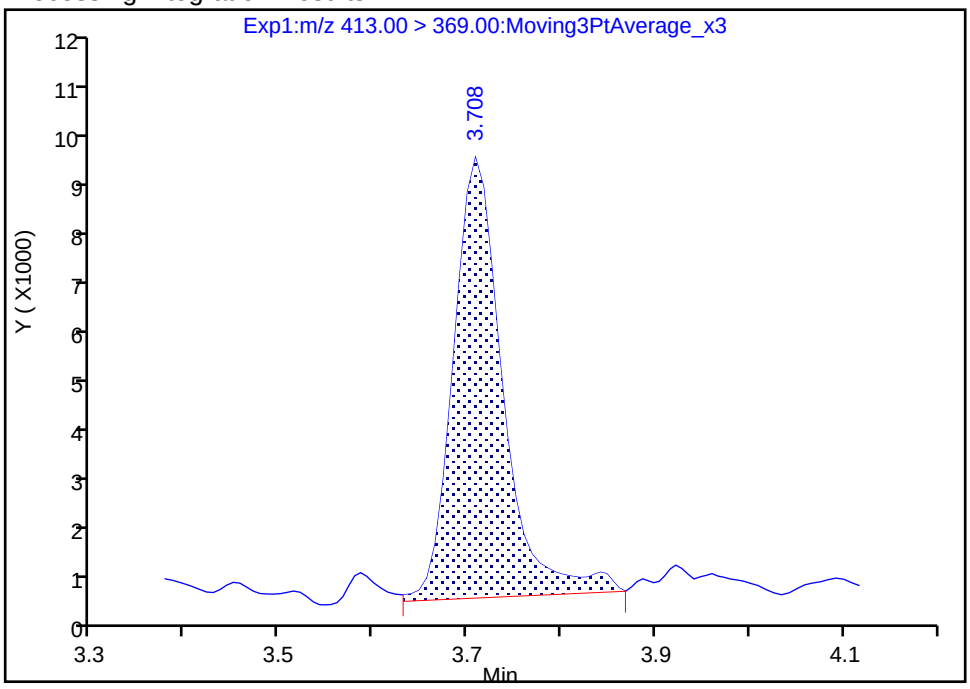
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_021.d				
Injection Date:	03-Oct-2019 14:22:58	Instrument ID:	A13		
Lims ID:	480-159547-A-31-A	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	13	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

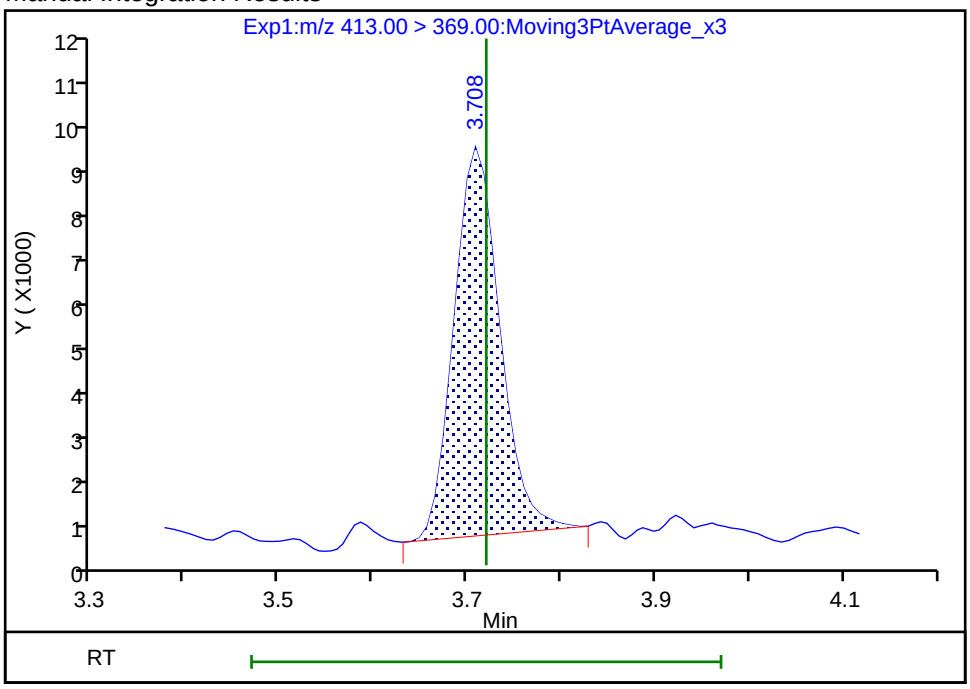
Processing Integration Results

RT: 3.71
Area: 31006
Amount: 0.010878
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 27885
Amount: 0.009783
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:47:42
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

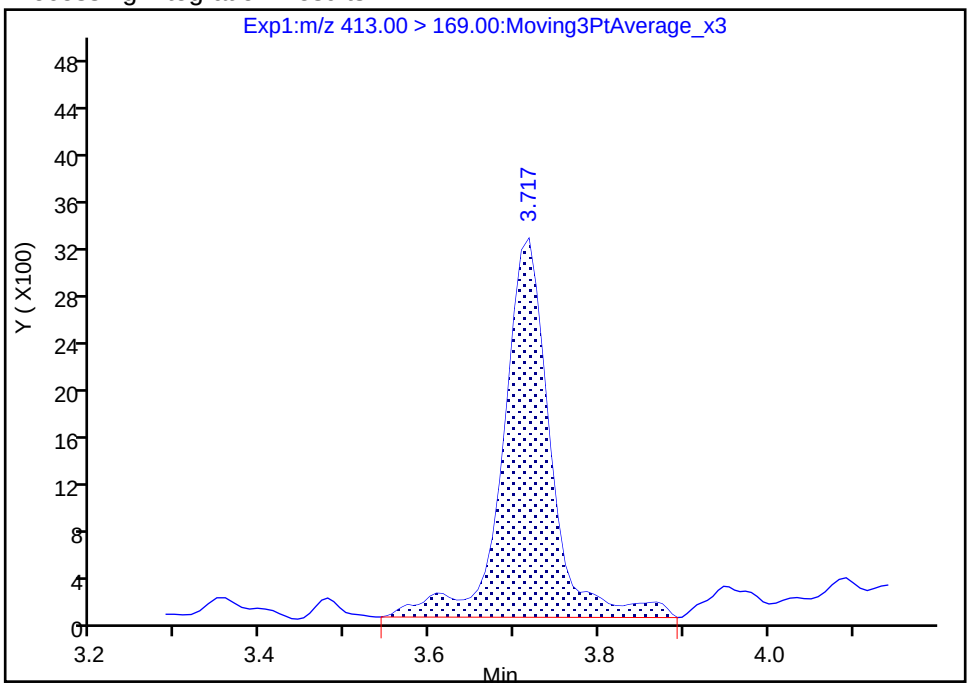
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_021.d				
Injection Date:	03-Oct-2019 14:22:58	Instrument ID:	A13		
Lims ID:	480-159547-A-31-A	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	13	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

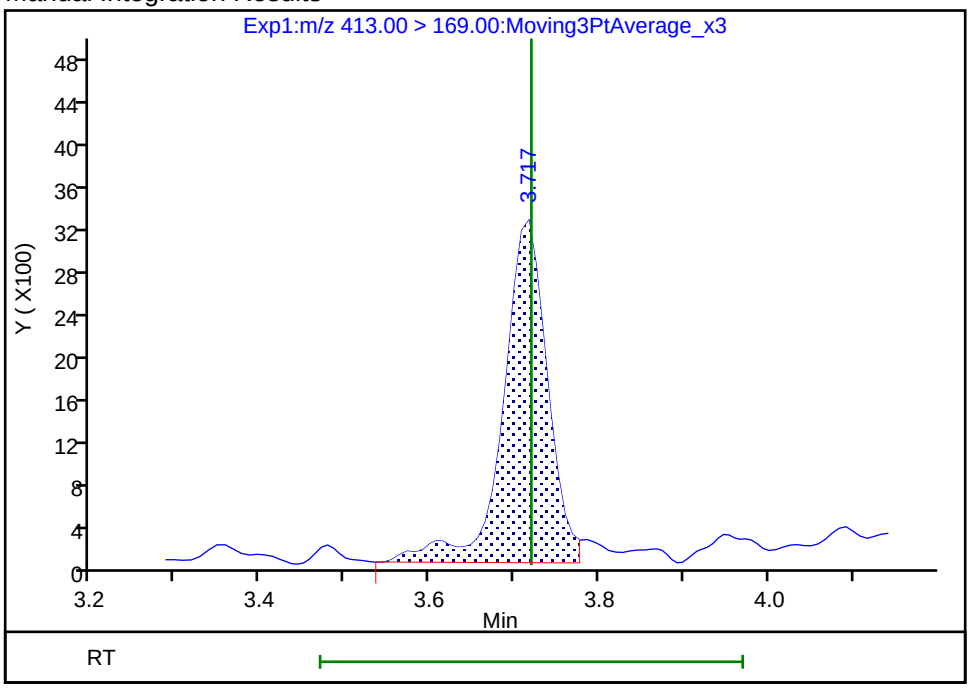
Processing Integration Results

RT: 3.72
Area: 12507
Amount: 0.010878
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 11660
Amount: 0.009783
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:48:02
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

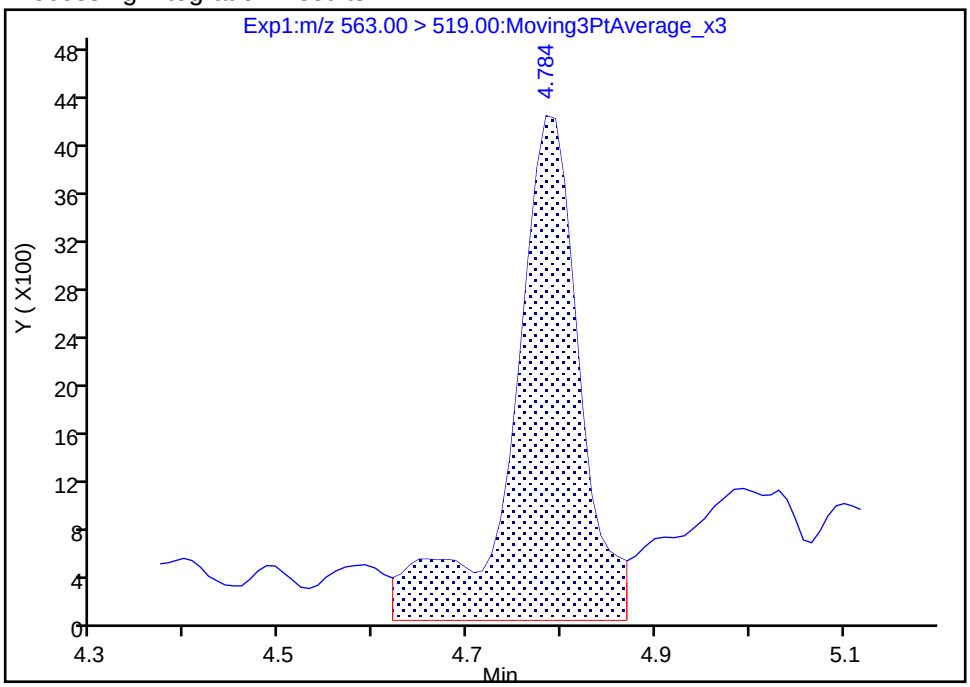
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_021.d				
Injection Date:	03-Oct-2019 14:22:58	Instrument ID:	A13		
Lims ID:	480-159547-A-31-A	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	13	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

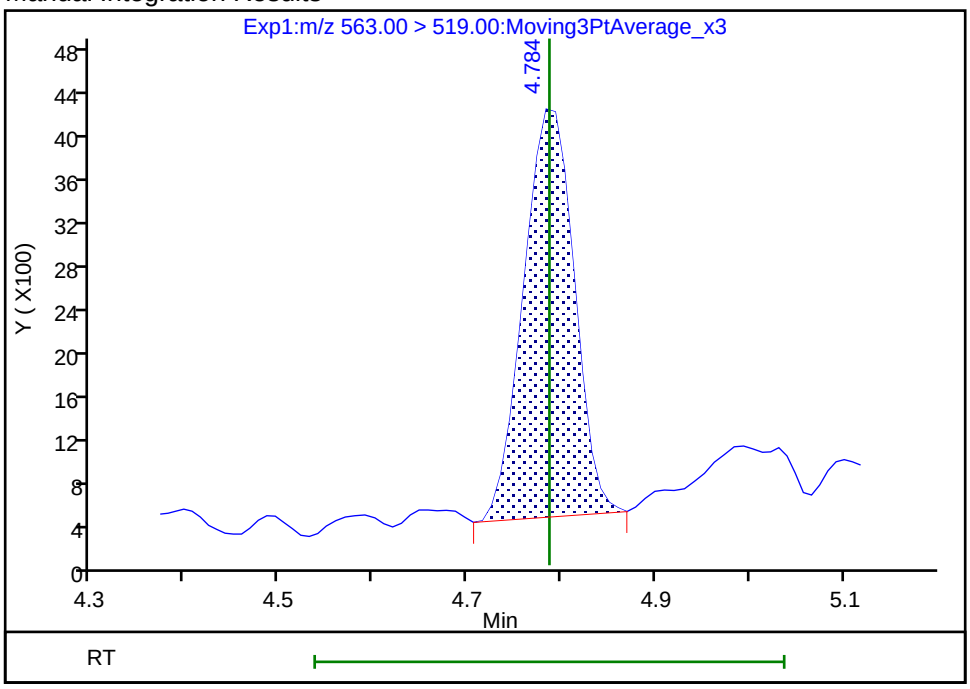
Processing Integration Results

RT: 4.78
Area: 20978
Amount: 0.011057
Amount Units: ng/ml



Manual Integration Results

RT: 4.78
Area: 14176
Amount: 0.007472
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:48:31

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._032.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:53

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 268.6(mL) Date Analyzed: 10/09/2019 02:47

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.43	J	1.86	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.86		1.86	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	1.86		1.86	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.33	J	1.86	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.86		1.86	0.79
375-95-1	Perfluorononanoic acid (PFNA)	1.86		1.86	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.86		1.86	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.86		1.86	1.02
307-55-1	Perfluorododecanoic acid (PFDoA)	1.86		1.86	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.86		1.86	1.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.86		1.86	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.86		1.86	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.30	J B	1.86	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.86		1.86	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.86		1.86	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.86		1.86	0.30

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	110		25-150
STL00993	13C2 PFHxA	106		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	107		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	104		25-150
STL00998	13C2 PFDoA	108		25-150
STL02116	13C2 PFTeDA	104		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	100		25-150
STL01892	13C4 PFHpA	110		25-150
STL01893	13C5 PFPeA	108		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d
Lims ID: 480-159547-A-31-D
Client ID: GERNATT-CF-COMP 2
Sample Type: Client
Inject. Date: 09-Oct-2019 02:47:31 ALS Bottle#: 19 Worklist Smp#: 18
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-31-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:51:33 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: mongkols Date: 18-Oct-2019 15:48:24
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.887	1.719	0.168	1.000	24589	0.0116			3.6	M
D 1 13C4 PFBA										
217.00 > 172.00	1.887	1.901	-0.014	0.566	6215221	2.75		110	5509	
D 4 13C5 PFPeA										
267.90 > 223.00	2.189	2.206	-0.017	0.657	5087060	2.69		108	2572	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.189	2.206	-0.017	1.000	19961	0.009576			1.3	M
D 9 13C2 PFHxA										
315.00 > 270.00	2.545	2.557	-0.012	0.764	5778712	2.66		106	2660	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.930	2.941	-0.011	1.000	27356	0.008860	Target=4.51		3.4	M
363.00 > 169.00	2.947	2.941	0.006	1.006	5122		5.34(2.25-6.76)		9.1	
D 14 13C4 PFHpA										
367.00 > 322.00	2.930	2.942	-0.012	0.879	6872947	2.76		110	3959	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.941	2.947	-0.006	1.002	17509	0.008155	Target=3.25		25.2	M
399.00 > 99.00	2.930	2.947	-0.017	0.998	3871		4.52(1.63-4.88)		5.3	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.935	2.947	-0.012	0.881	4150718	2.59		110	2990	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.310	3.318	-0.008	1.000	7355	0.0113			27.6	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.310	3.318	-0.008	0.994	661790	1.91		80.2	1989	
D 23 13C4 PFOA										
417.00 > 372.00	3.332	3.347	-0.015	1.000	7612039	2.65		106	3366	
* 25 13C2 PFOA										
415.00 > 370.00	3.332	3.347	-0.015		7657303	2.50			3836	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.332	3.347	-0.015	1.000	37038	0.0108	Target=3.06		3.3	M
413.00 > 169.00	3.325	3.347	-0.022	0.998	15483		2.39(1.53-4.58)		29.3	M
D 27 13C4 PFOS										
503.00 > 80.00	3.706	3.715	-0.009	1.112	4441010	2.39		100	2910	
D 30 13C5 PFNA										
468.00 > 423.00	3.721	3.731	-0.010	1.117	6859614	2.68		107	3985	
38 1H,1H,2H,2H-perfluorodecanesulfoni										M
527.00 > 507.00	4.058	4.086	-0.028	0.996	2105	0.003588			26.4	M
D 36 13C2 PFDA										
515.00 > 470.00	4.076	4.088	-0.012	1.223	7723828	2.68		107	4559	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.076	4.088	-0.012	1.223	634485	1.94		81.1	1464	
D 32 13C8 FOSA										
506.00 > 78.00	4.103	4.114	-0.011	1.231	2543497	2.66		106	3158	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.103	4.123	-0.020	1.000	19915	0.007126			74.2	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.237	4.249	-0.012	1.272	3582787	2.63		105	2704	
D 42 13C2 PFUnA										
565.00 > 520.00	4.394	4.406	-0.012	1.319	6381092	2.59		104	4581	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.403	4.414	-0.011	1.321	3091978	2.64		106	2413	
D 55 13C2 PFDoA										
615.00 > 570.00	4.677	4.690	-0.013	1.404	7282148	2.69		108	2956	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.179	5.191	-0.012	1.554	4997143	2.60		104	3489	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:51:33 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d

Injection Date: 09-Oct-2019 02:47:31 Instrument ID: A9

Lims ID: 480-159547-A-31-D Lab Sample ID: 320-159547-31

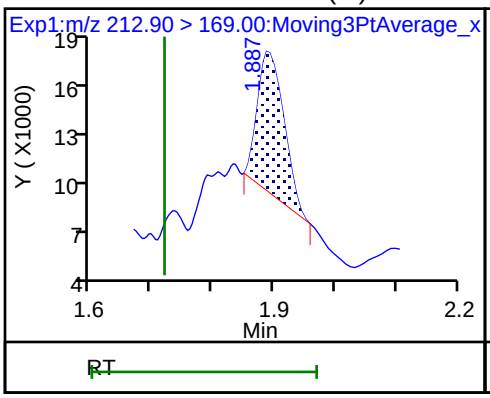
Client ID: GERNATT-CF-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 19 Worklist Smp#: 18

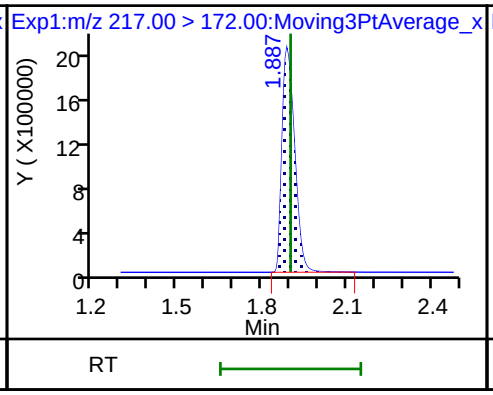
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

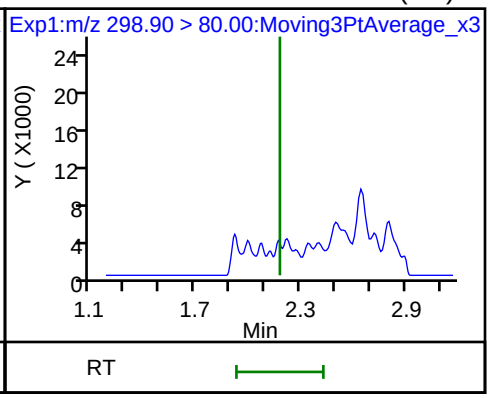
2 Perfluorobutanoic acid (M)



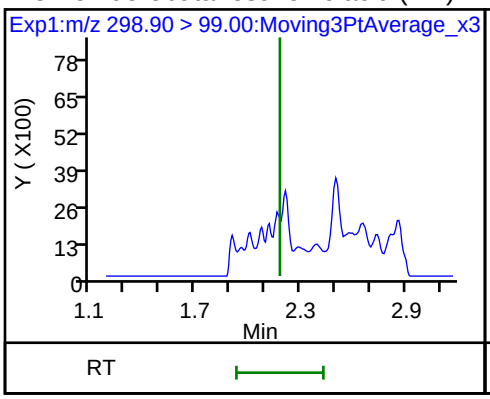
D 1 13C4 PFBA



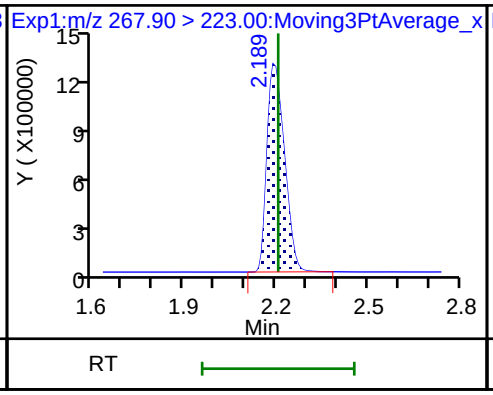
5 Perfluorobutanesulfonic acid (ND)



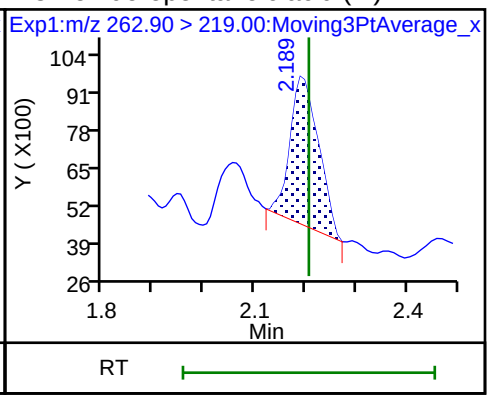
5 Perfluorobutanesulfonic acid (ND)



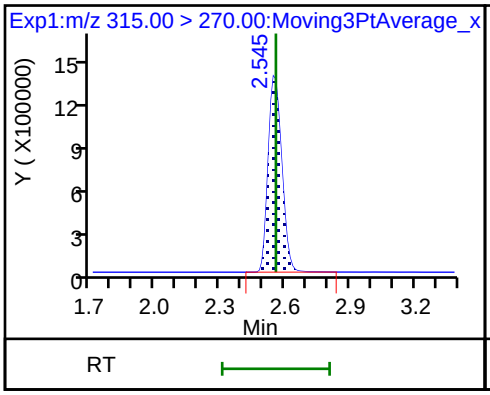
D 4 13C5 PFPeA



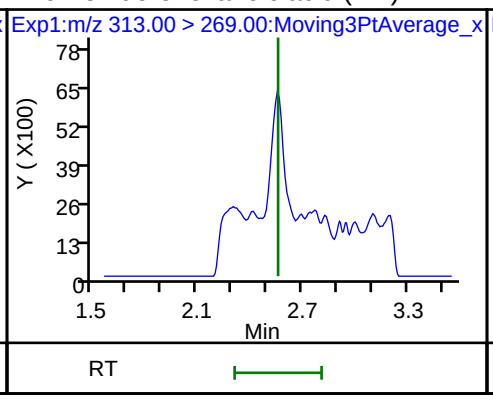
3 Perfluoropentanoic acid (M)



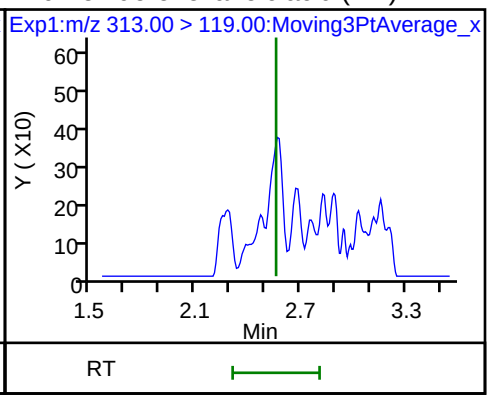
D 9 13C2 PFHxA



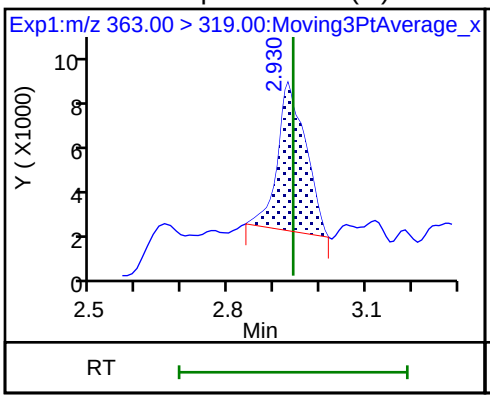
10 Perfluorohexanoic acid (ND)



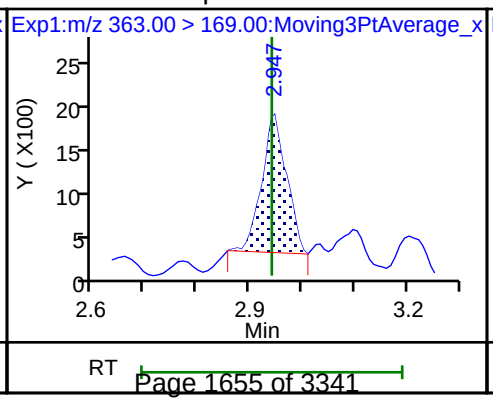
10 Perfluorohexanoic acid (ND)



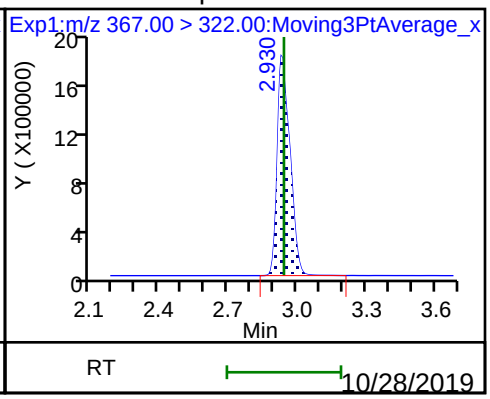
15 Perfluoroheptanoic acid (M)



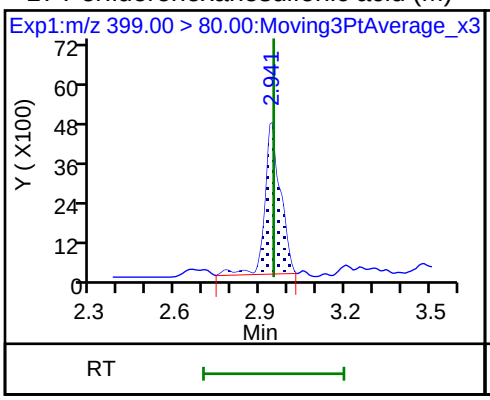
15 Perfluoroheptanoic acid



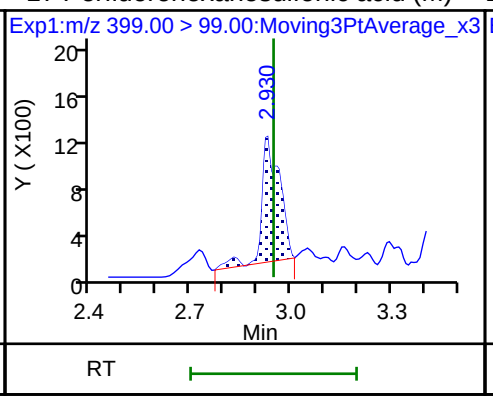
D 14 13C4 PFHpA



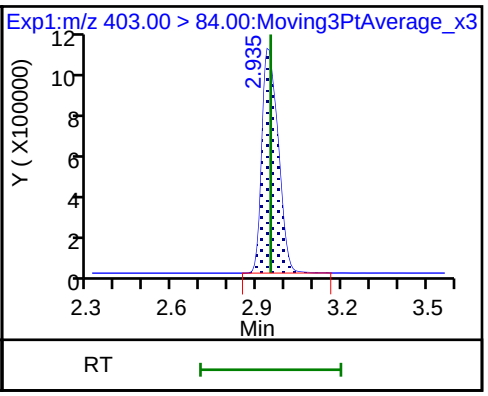
17 Perfluorohexanesulfonic acid (M)



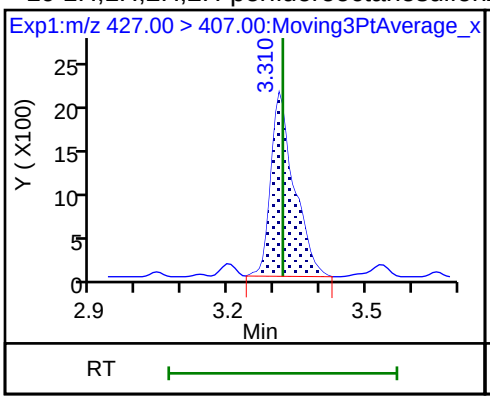
17 Perfluorohexanesulfonic acid (M)



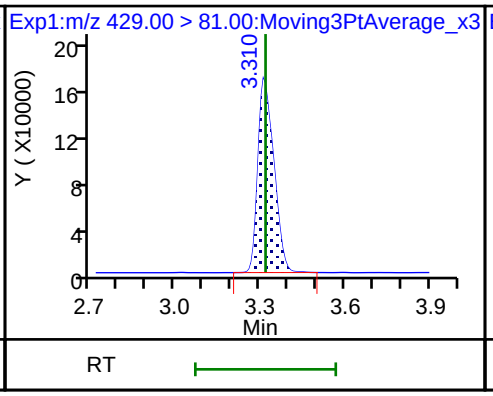
D 16 18O2 PFHxS



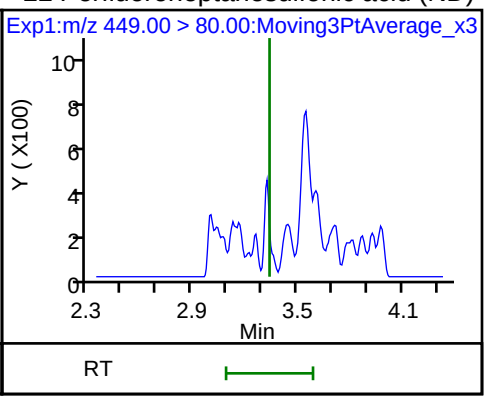
19 1H,1H,2H,2H-perfluorooctanesulfon



D 20 M2-6:2 FTS



22 Perfluoroheptanesulfonic acid (ND)



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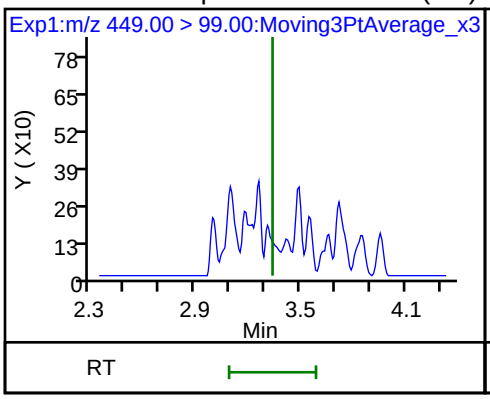
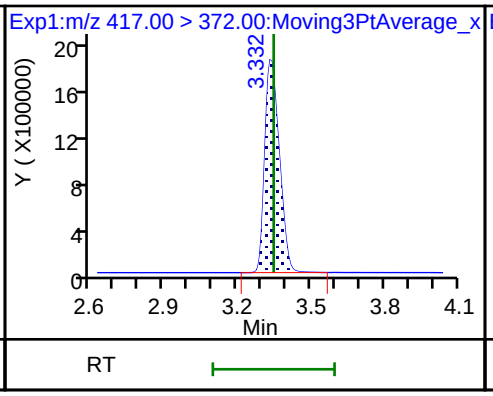
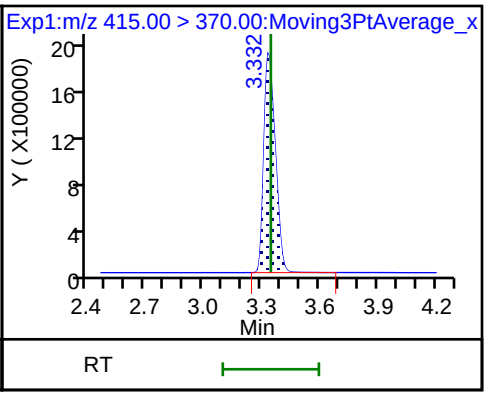


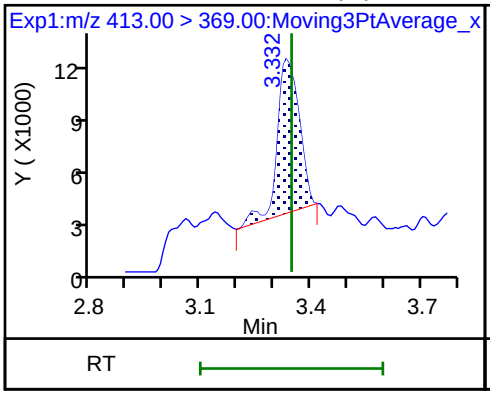
D 23 13C4 PFOA



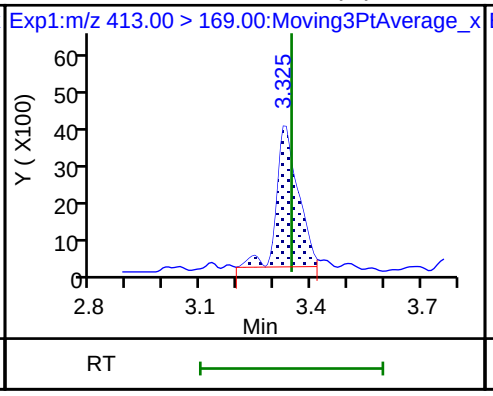
* 25 13C2 PFOA



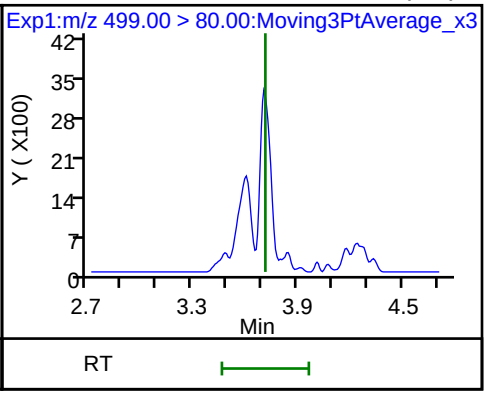
24 Perfluorooctanoic acid (M)



24 Perfluorooctanoic acid (M)



28 Perfluorooctanesulfonic acid (ND)



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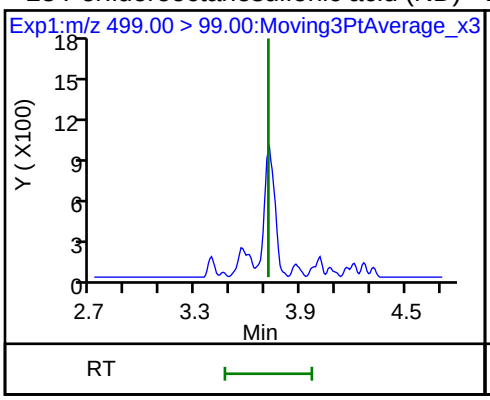
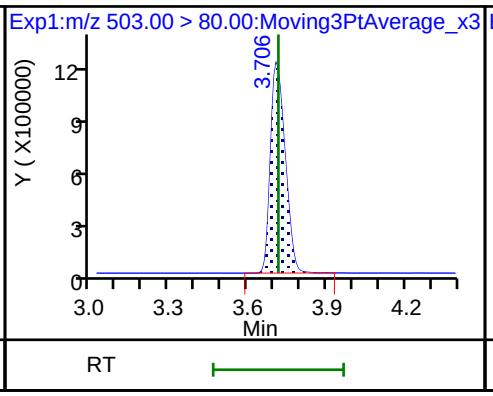
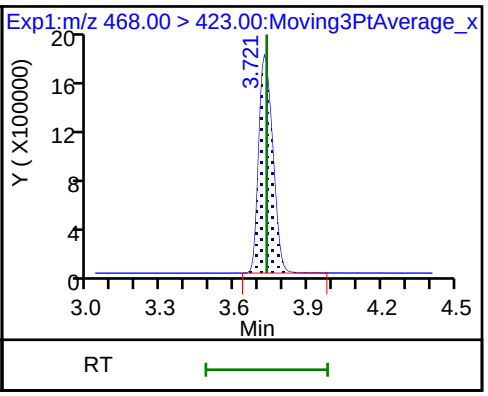


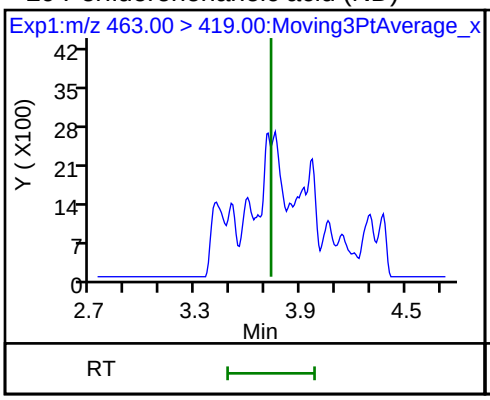
D 27 13C4 PFOS



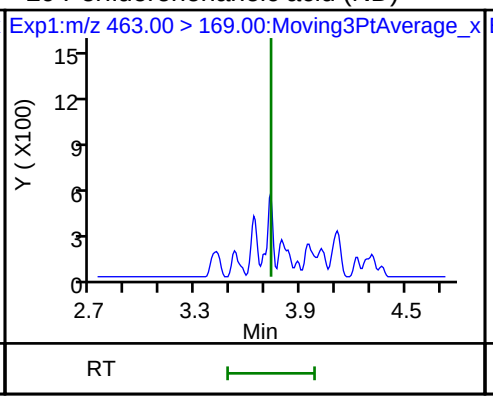
D 30 13C5 PFNA



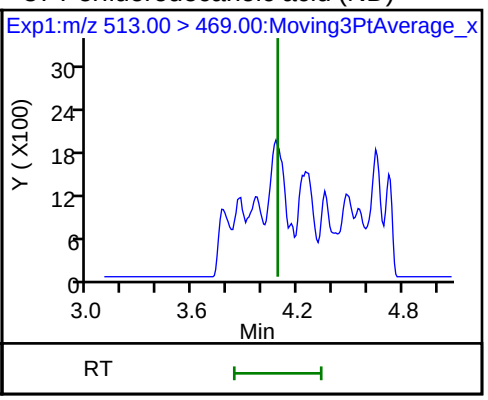
29 Perfluorononanoic acid (ND)



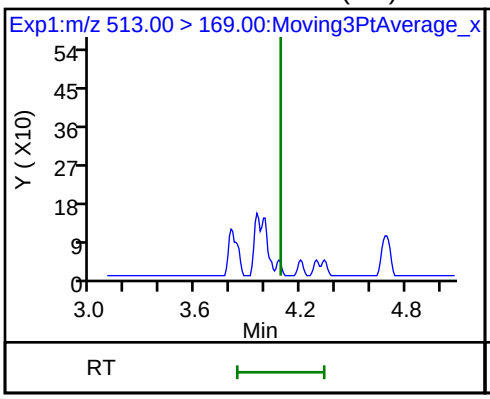
29 Perfluorononanoic acid (ND)



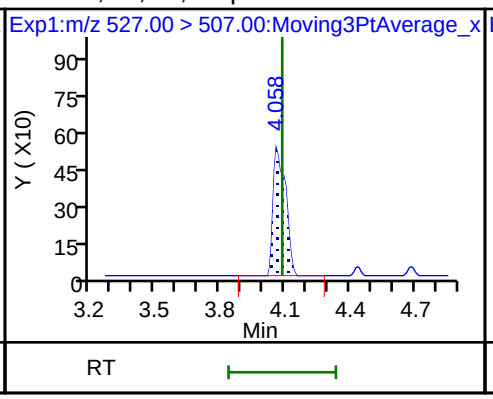
37 Perfluorodecanoic acid (ND)



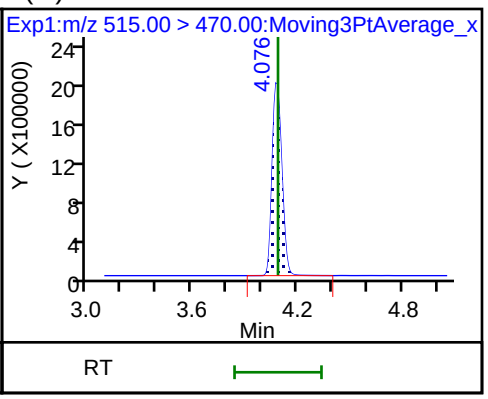
37 Perfluorodecanoic acid (ND)



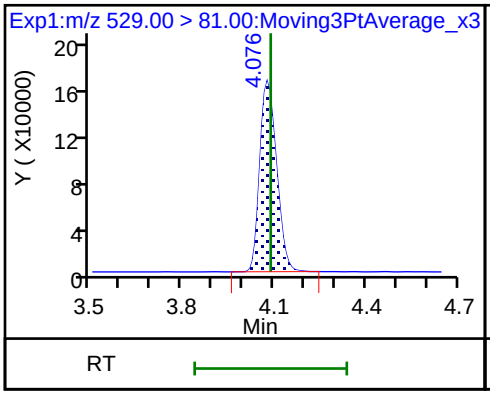
38 1H,1H,2H,2H-perfluorodecanesulfonic (M6



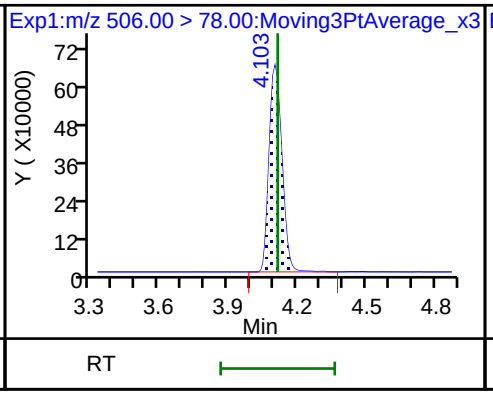
D 36 13C2 PFDA



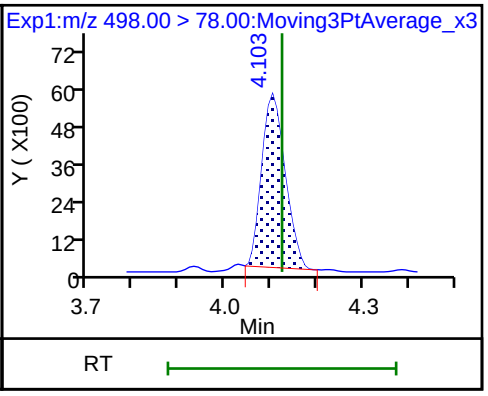
D 35 M2-8:2 FTS



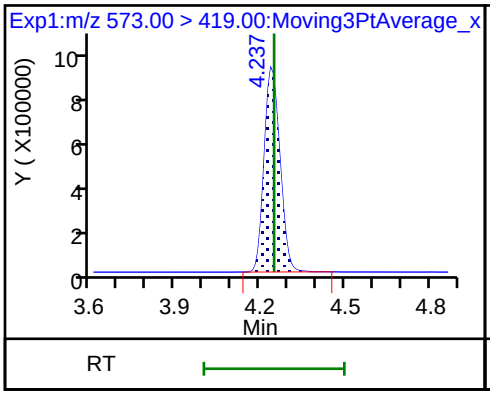
D 32 13C8 FOSA



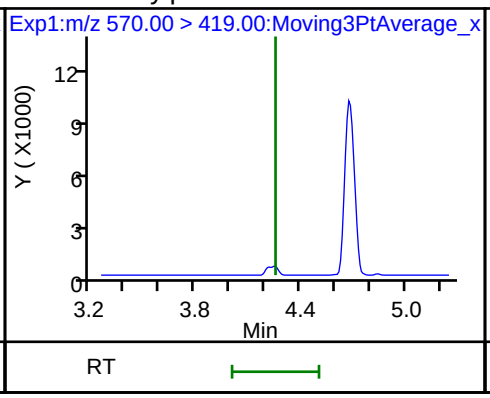
33 Perfluorooctanesulfonamide



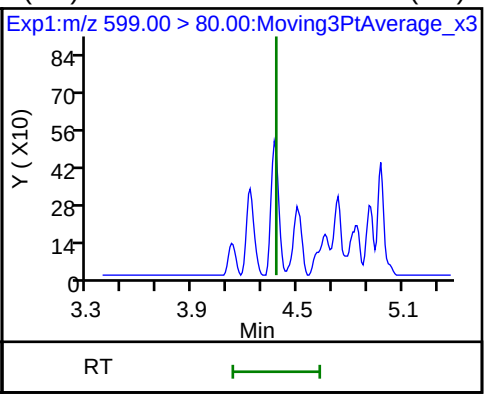
D 39 d3-NMeFOSAA



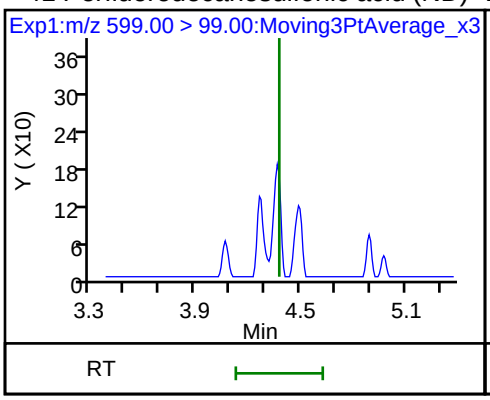
40 N-methylperfluorooctanesulfonamido (ND)



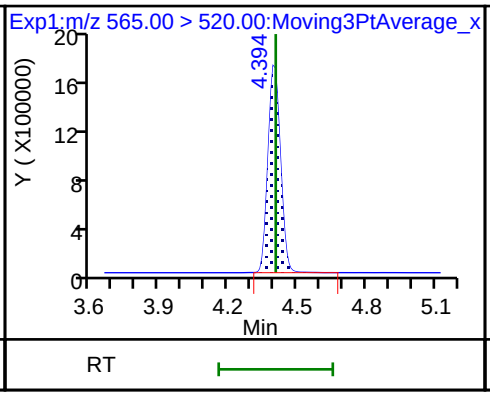
41 Perfluorodecanesulfonic acid (ND)



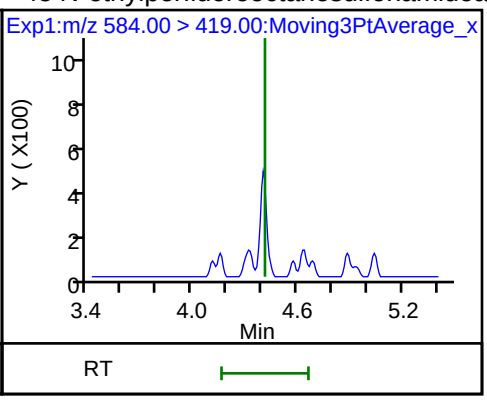
41 Perfluorodecanesulfonic acid (ND)



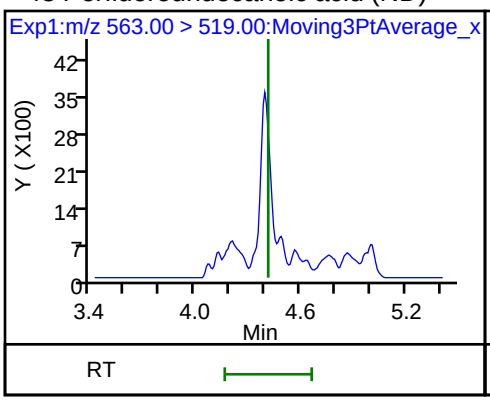
D 42 13C2 PFUnA



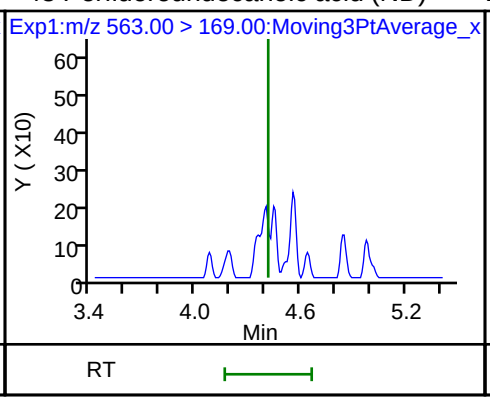
45 N-ethylperfluorooctanesulfonamidoa (ND)



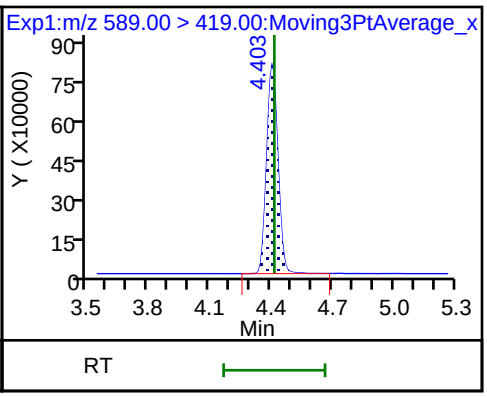
43 Perfluoroundecanoic acid (ND)



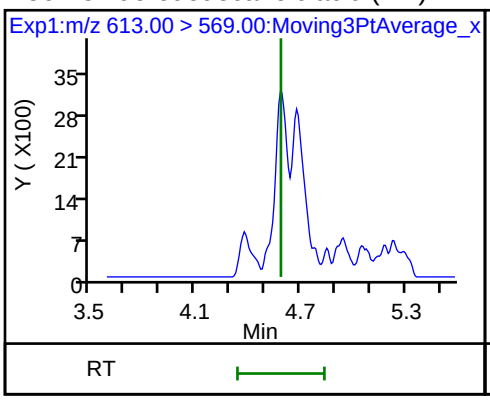
43 Perfluoroundecanoic acid (ND)



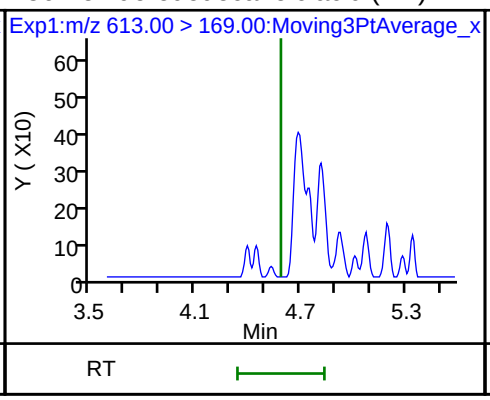
D 44 d5-NEtFOSAA



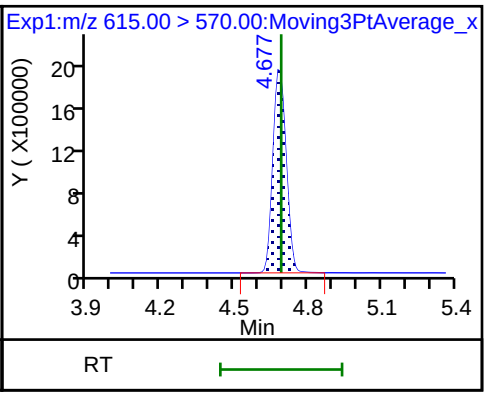
56 Perfluorododecanoic acid (ND)



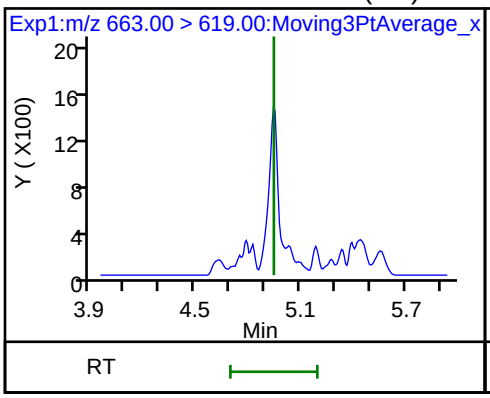
56 Perfluorododecanoic acid (ND)



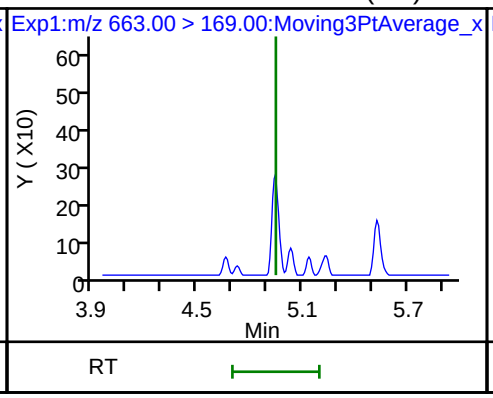
D 55 13C2 PFDoA



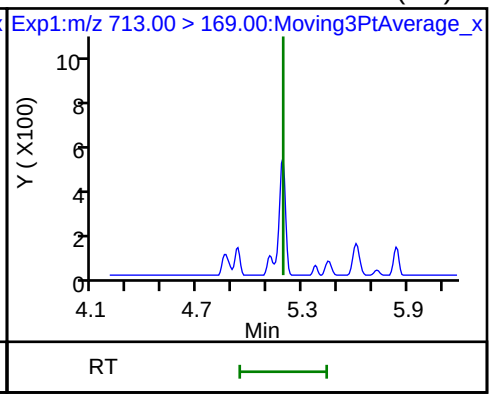
59 Perfluorotridecanoic acid (ND)



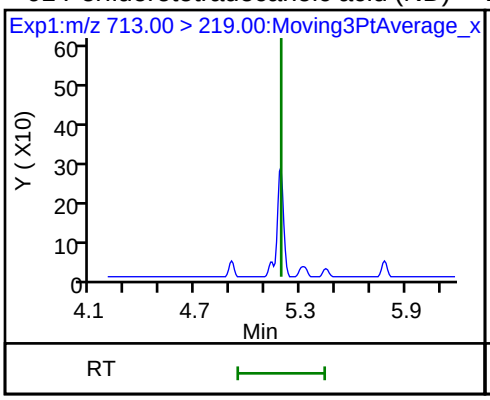
59 Perfluorotridecanoic acid (ND)



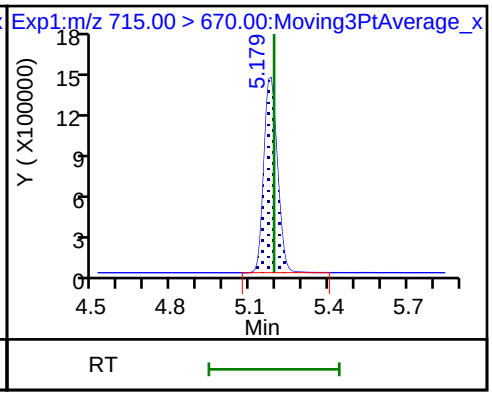
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

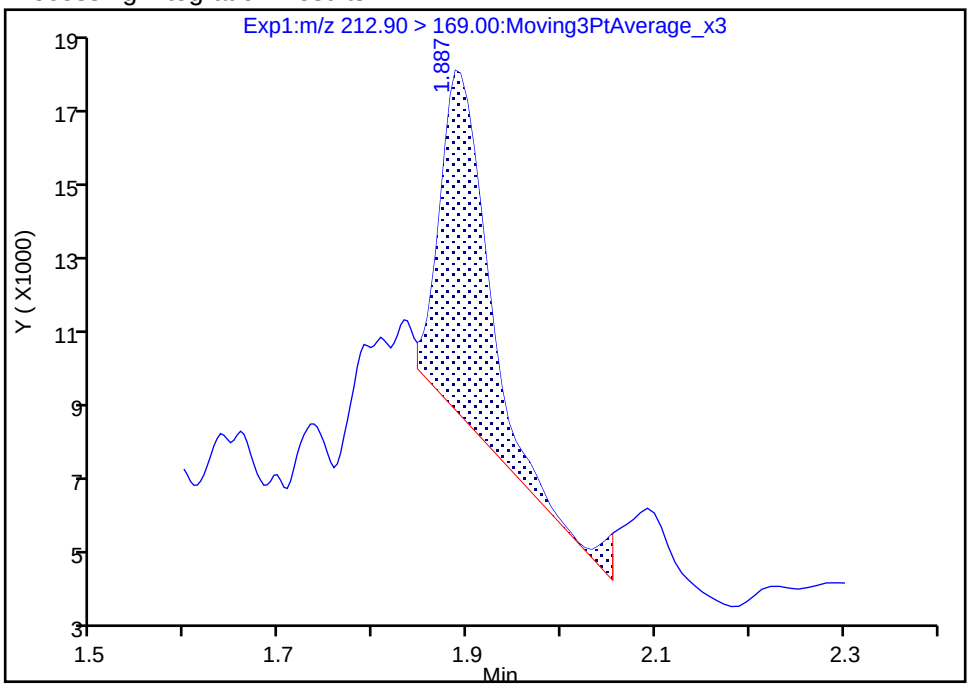
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

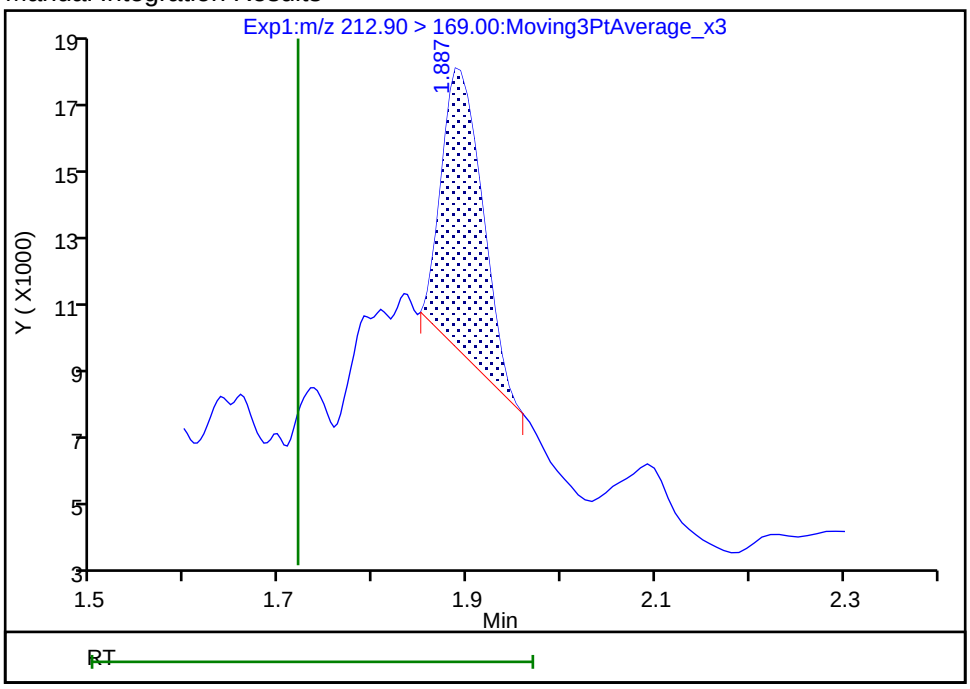
Processing Integration Results

RT: 1.89
Area: 32189
Amount: 0.015240
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 24589
Amount: 0.011642
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:09

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

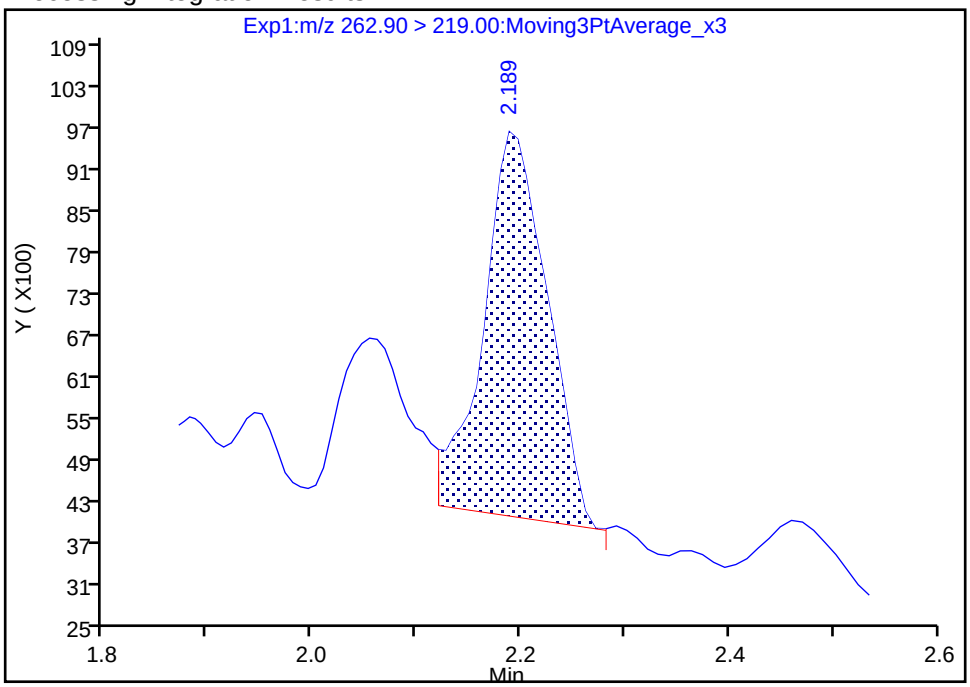
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

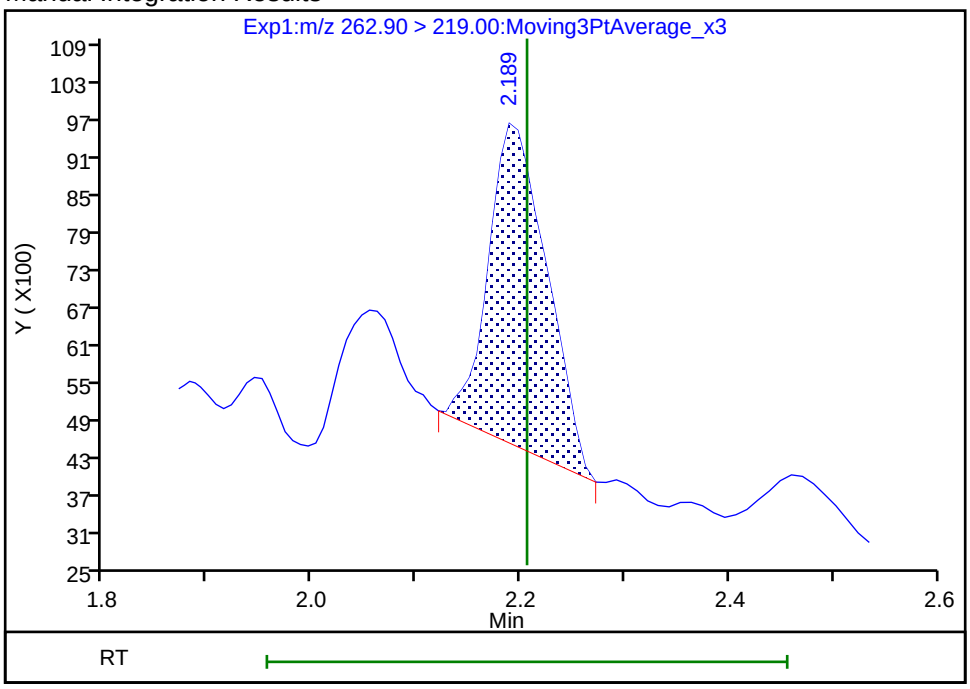
Processing Integration Results

RT: 2.19
Area: 23642
Amount: 0.011342
Amount Units: ng/ml



Manual Integration Results

RT: 2.19
Area: 19961
Amount: 0.009576
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:18

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

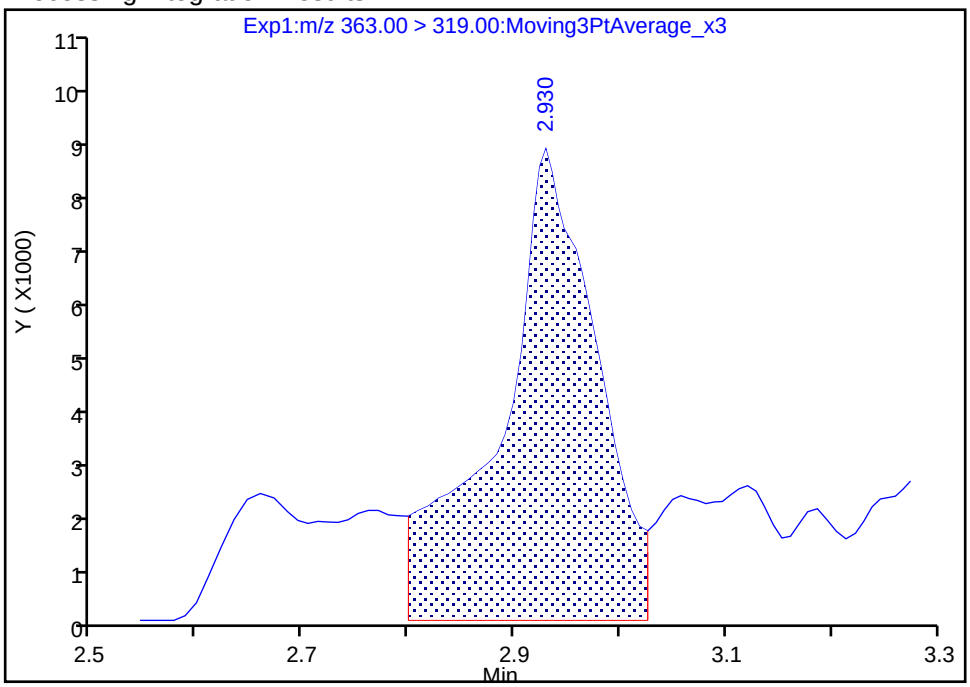
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

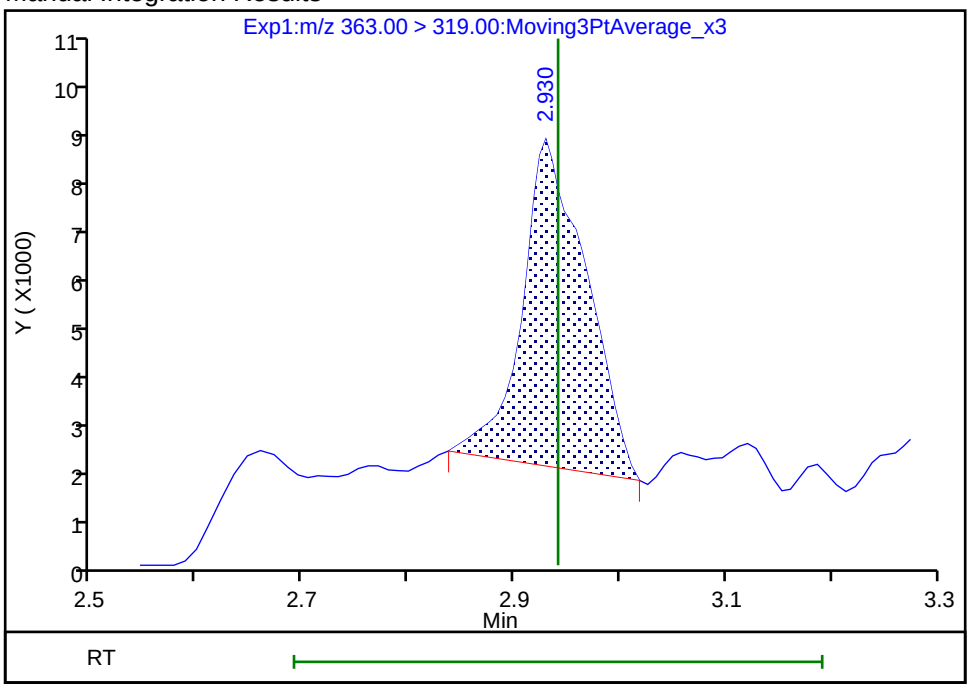
Processing Integration Results

RT: 2.93
Area: 54191
Amount: 0.017551
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 27356
Amount: 0.008860
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:25

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

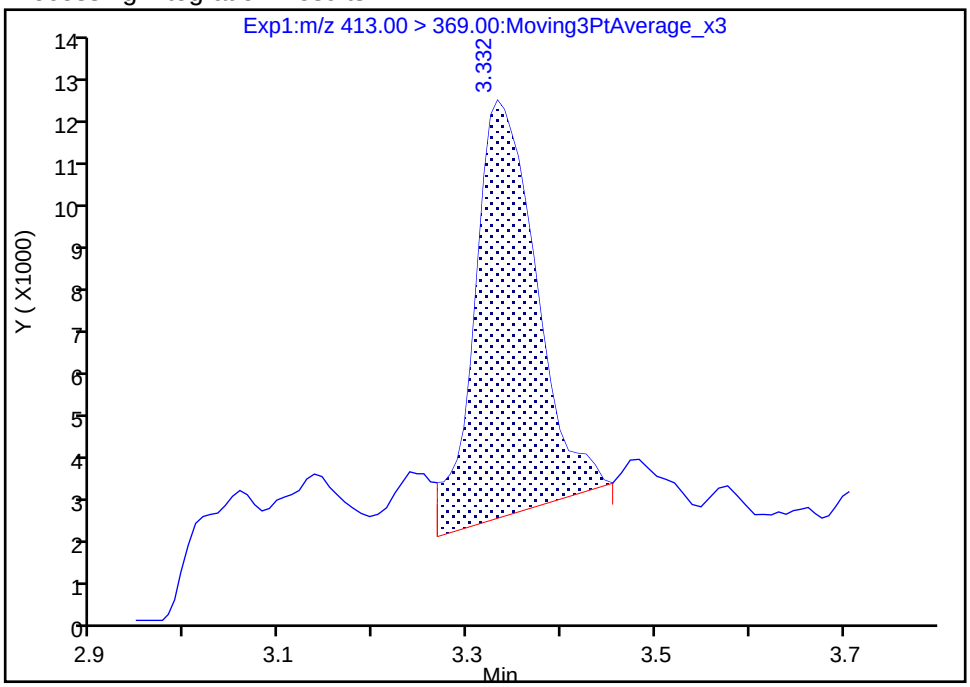
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

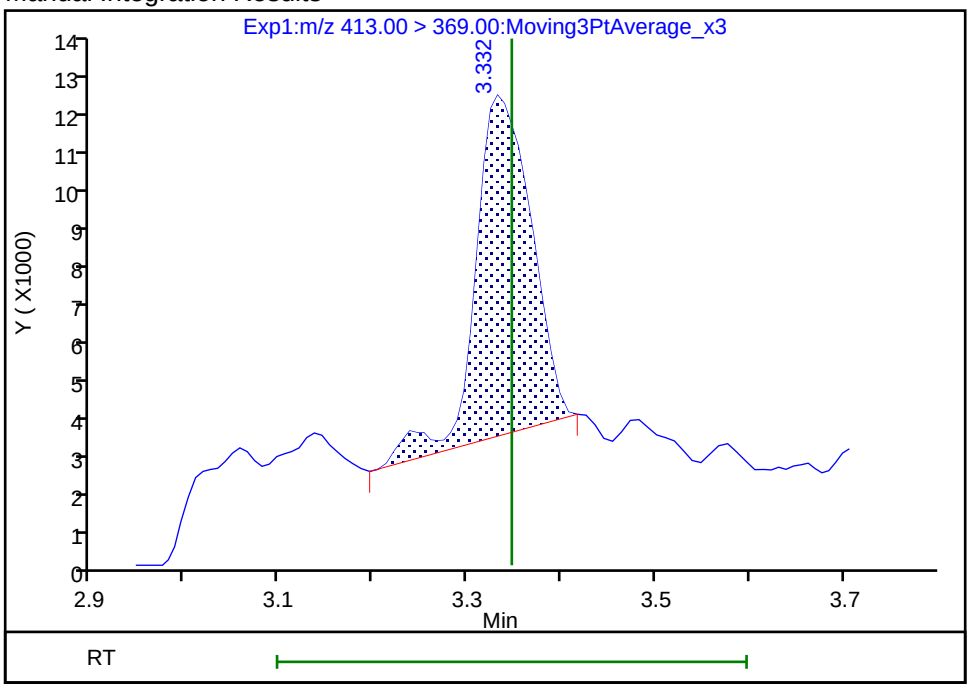
Processing Integration Results

RT: 3.33
Area: 45188
Amount: 0.013127
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 37038
Amount: 0.010759
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:50

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

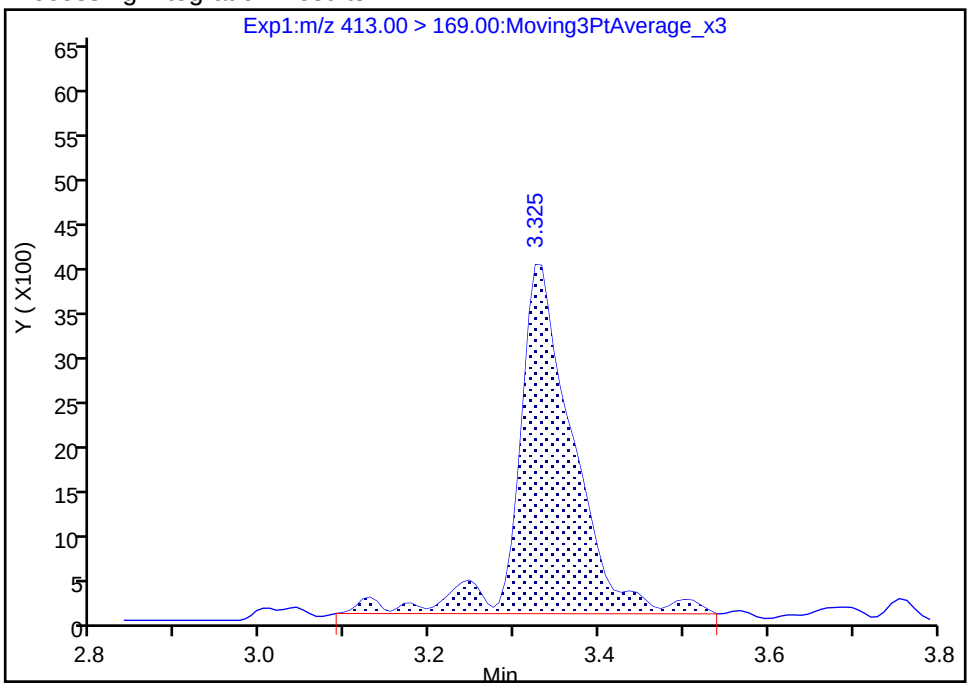
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

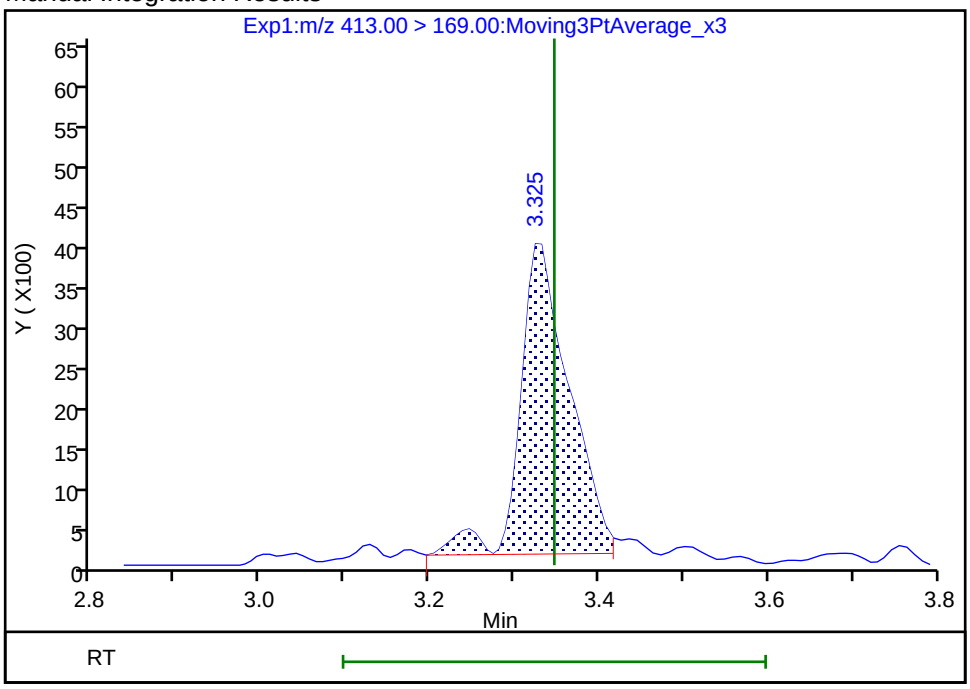
Processing Integration Results

RT: 3.32
Area: 17842
Amount: 0.013127
Amount Units: ng/ml



Manual Integration Results

RT: 3.32
Area: 15483
Amount: 0.010759
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:58

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

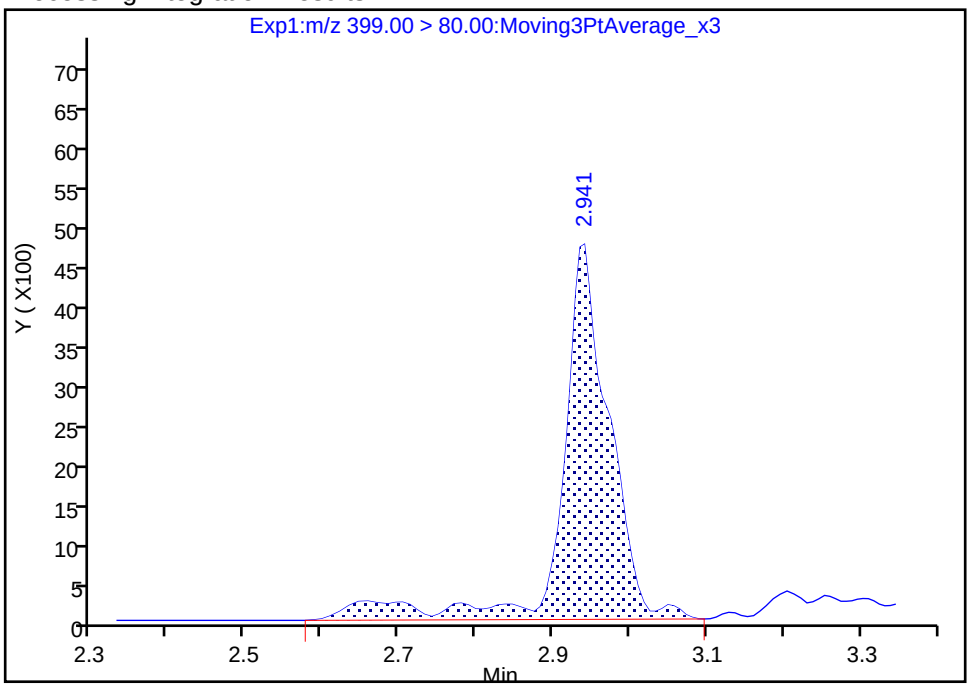
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

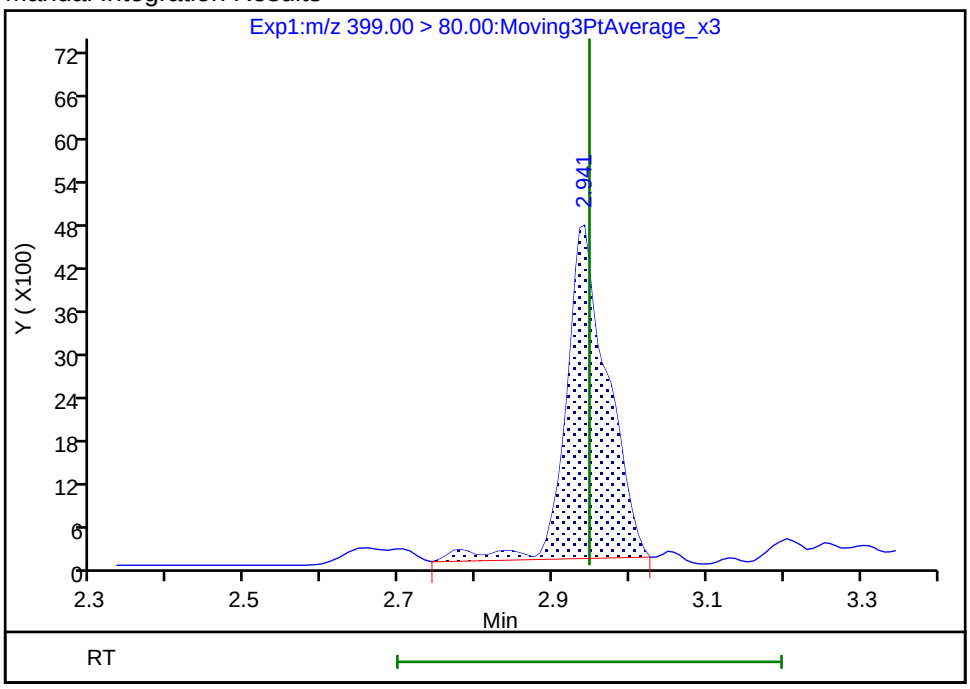
Processing Integration Results

RT: 2.94
Area: 20528
Amount: 0.009562
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 17509
Amount: 0.008155
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

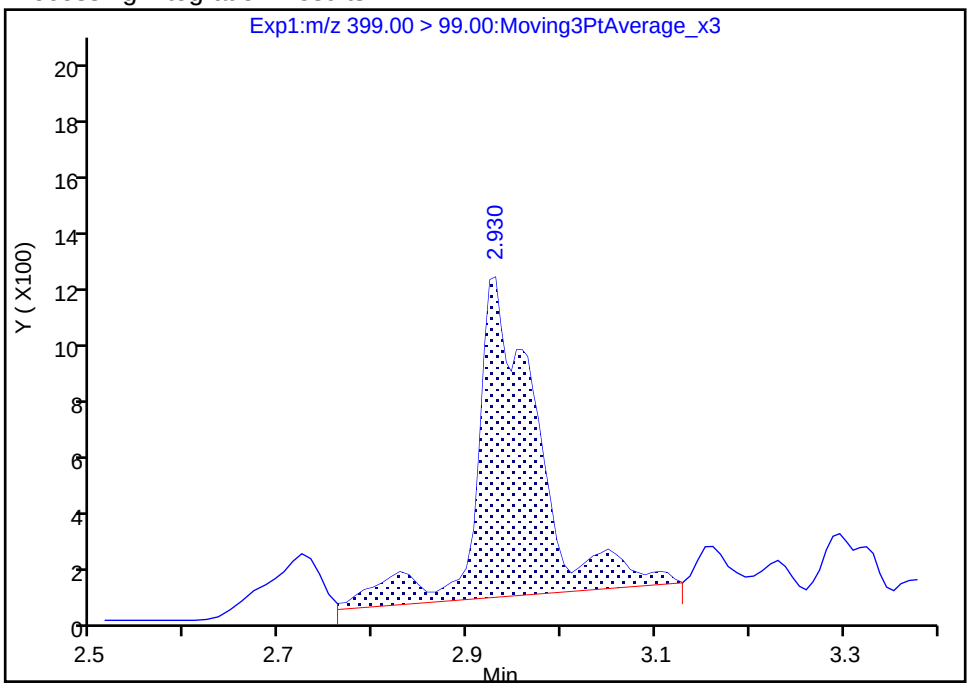
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._032.d				
Injection Date:	09-Oct-2019 02:47:31	Instrument ID:	A9		
Lims ID:	480-159547-A-31-D	Lab Sample ID:	320-159547-31		
Client ID:	GERNATT-CF-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	19	Worklist Smp#:	18
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

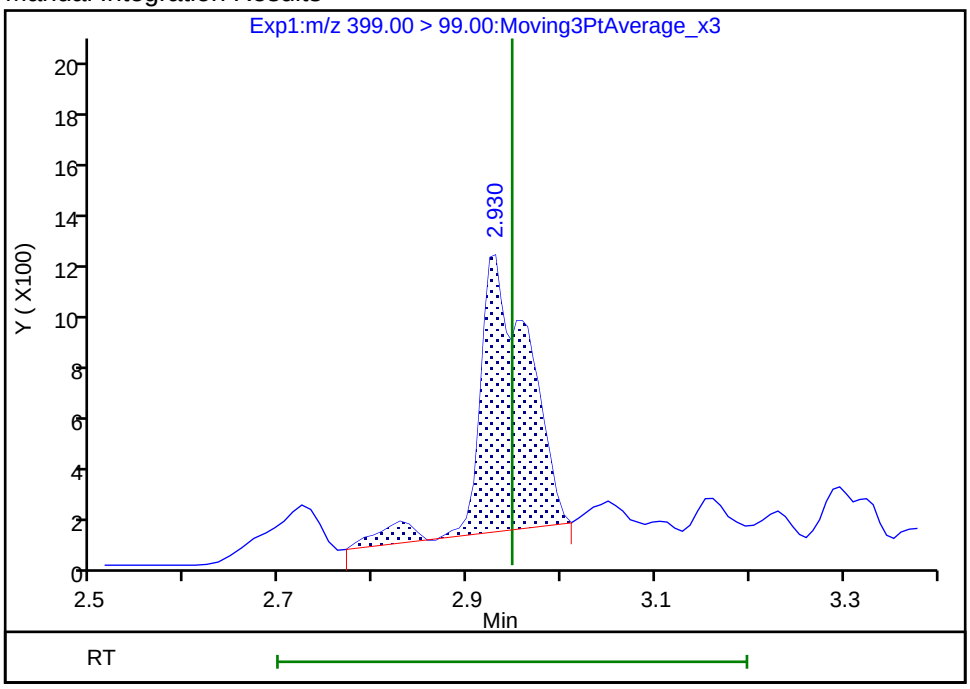
Processing Integration Results

RT: 2.93
Area: 4977
Amount: 0.009562
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 3871
Amount: 0.008155
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:47:43

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 2019.10.03.LLA_022.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:57

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.25(g) Date Analyzed: 10/03/2019 14:32

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.039	J	0.21	0.029
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.079
307-24-4	Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.043
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.030
335-67-1	Perfluorooctanoic acid (PFOA)	0.21		0.21	0.088
375-95-1	Perfluorononanoic acid (PFNA)	0.21		0.21	0.037
335-76-2	Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.037
307-55-1	Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.069
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.052
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.055
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.026
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.032
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.036
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.51		0.51	0.21
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.040
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.084
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.05		2.05	0.40
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.05		2.05	0.38
27619-97-2	6:2 FTS	2.05		2.05	0.15
39108-34-4	8:2 FTS	2.05		2.05	0.26

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid Lab File ID: 2019.10.03.LLA_022.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:57

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.25(g) Date Analyzed: 10/03/2019 14:32

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 7.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	95		25-150
STL01893	13C5 PFPeA	97		25-150
STL00993	13C2 PFHxA	92		25-150
STL01892	13C4 PFHpA	102		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	91		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	94		25-150
STL02116	13C2 PFTeDA	89		25-150
STL00994	18O2 PFHxS	105		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	102		25-150
STL02117	d5-NEtFOSAA	102		25-150
STL02279	M2-6:2 FTS	103		25-150
STL02280	M2-8:2 FTS	131		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d
Lims ID: 480-159547-A-32-B
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 03-Oct-2019 14:32:31 ALS Bottle#: 14 Worklist Smp#: 19
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-32-b
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:51:04 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:51:04
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.186	2.186	0.0	0.589	5822891	2.38		95.2	6137	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.186	2.194	-0.008	1.000	38338	0.0189			6.3	
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.680	5300094	2.43		97.0	6786	
D 10 13C2 PFHxA										
315.00 > 270.00	2.907	2.908	-0.001	0.784	5598518	2.29		91.7	11085	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.310	3.312	-0.002	1.000	16106	0.006751	Target=3.84		3.8	
363.00 > 169.00	3.320	3.312	0.008	1.003	5769		2.79(1.92-5.76)		9.2	
D 17 13C4 PFHpA										
367.00 > 322.00	3.310	3.312	-0.002	0.892	5718549	2.56		102	18714	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.310	3.322	-0.012	1.000	18513	0.009162	Target=2.93		43.9	
399.00 > 99.00	3.310	3.322	-0.012	1.000	6044		3.06(1.46-4.39)		10.0	
D 15 18O2 PFHxS										
403.00 > 84.00	3.310	3.322	-0.012	0.892	3739323	2.49		105	44089	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.692	3.694	-0.002	1.000	5864	0.004986			20.6	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.692	3.694	-0.002	0.995	1369998	2.45		103	3694	
D 25 13C4 PFOA										
417.00 > 372.00	3.709	3.711	-0.002	1.000	6410631	2.45		98.0	10930	
* 24 13C2 PFOA										
415.00 > 370.00	3.709	3.720	-0.011		7171060	2.50			24355	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.709	3.720	-0.011	1.000	25090	0.009410	Target=2.61		6.4	M
413.00 > 169.00	3.709	3.720	-0.011	1.000	10000		2.51(1.31-3.92)		23.1	M
26 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.089	4.085	0.004	1.002	53571	0.0406	Target=4.15		116	M
499.00 > 99.00	4.089	4.085	0.004	1.002	11303		4.74(2.08-6.23)		21.8	M
D 28 13C4 PFOS										
503.00 > 80.00	4.081	4.085	-0.004	1.100	2895768	2.23		93.2	10594	
D 29 13C5 PFNA										
468.00 > 423.00	4.097	4.102	-0.005	1.105	5853843	2.55		102	41548	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.439	4.434	0.005	1.000	11471	0.006679			50.6	
D 33 13C8 FOSA										
506.00 > 78.00	4.439	4.434	0.005	1.197	4303545	2.44		97.6	21966	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.457	4.460	-0.003	1.000	2495	0.001502			9.6	
D 36 13C2 PFDA										
515.00 > 470.00	4.457	4.460	-0.003	1.202	5574589	2.28		91.1	62443	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.457	4.460	-0.003	1.202	2075304	3.13		131	7722	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.619	4.623	-0.004	1.245	4139383	2.56		102	18756	
D 43 13C2 PFUnA										
565.00 > 520.00	4.783	4.787	-0.004	1.289	5385530	2.35		93.9	51717	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.792	4.787	0.005	1.292	4145615	2.56		102	15932	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.783	4.787	-0.004	1.000	16574	0.009246	Target=8.92		7.6	
563.00 > 169.00	4.792	4.787	0.005	1.002	1673		9.91(4.46-13.39)		6.2	
D 57 13C2 PFDoA										
615.00 > 570.00	5.074	5.080	-0.006	1.368	5623118	2.35		94.2	13526	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.583	5.593	-0.010	1.505	4711405	2.24		89.4	48003	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 16:51:05 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d

Injection Date: 03-Oct-2019 14:32:31 Instrument ID: A13

Lims ID: 480-159547-A-32-B Lab Sample ID: 320-159547-32

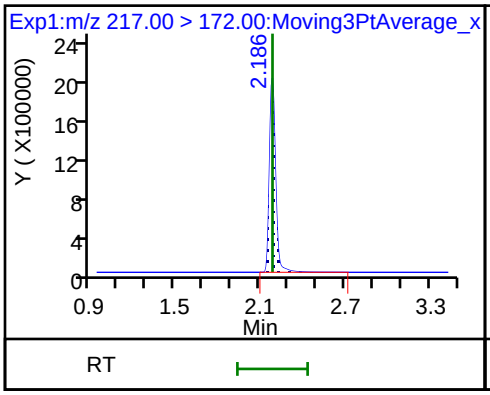
Client ID: GERNATT-CF-COMP 3

Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 19

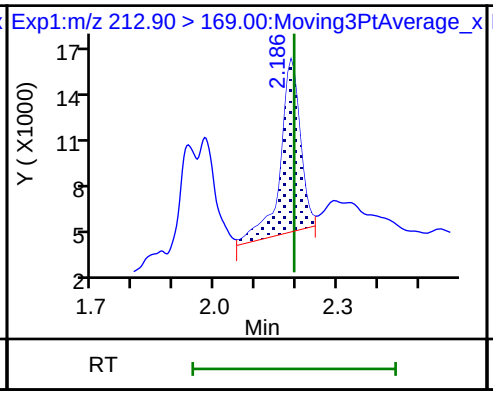
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

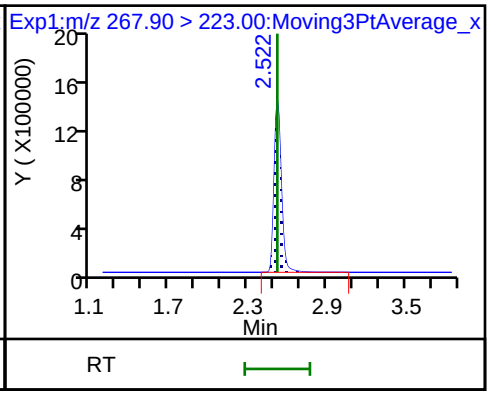
D 2 13C4 PFBA



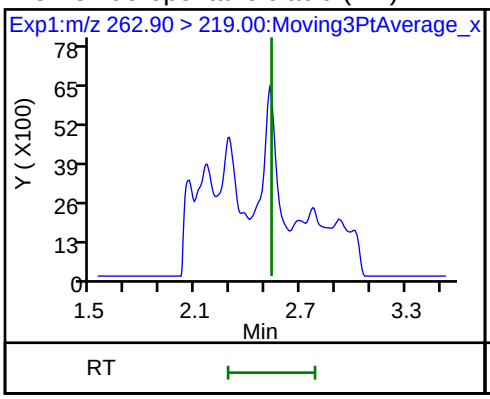
3 Perfluorobutanoic acid



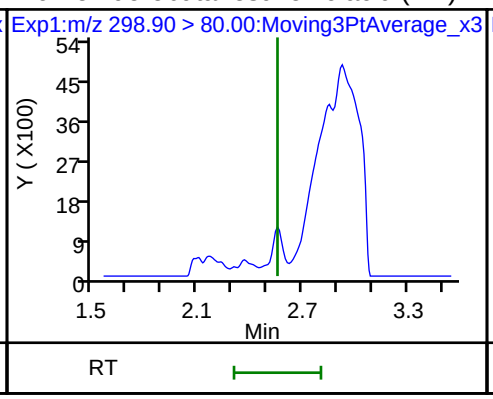
D 4 13C5 PFPeA



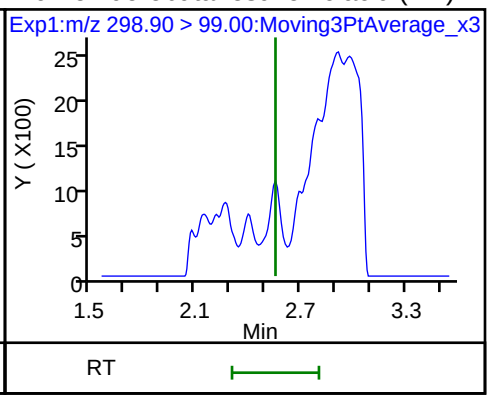
5 Perfluoropentanoic acid (ND)



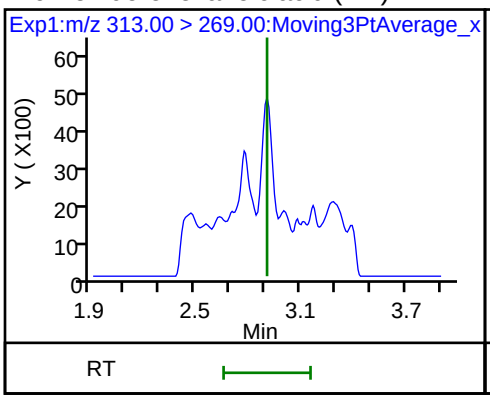
6 Perfluorobutanesulfonic acid (ND)



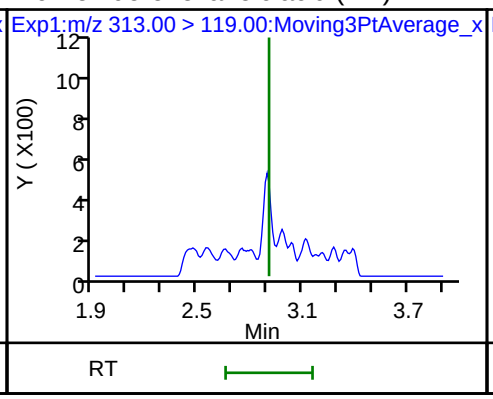
6 Perfluorobutanesulfonic acid (ND)



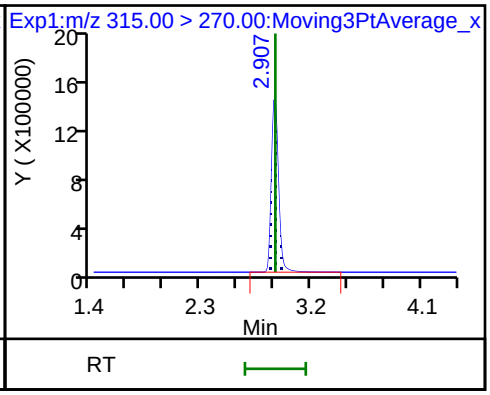
9 Perfluorohexanoic acid (ND)



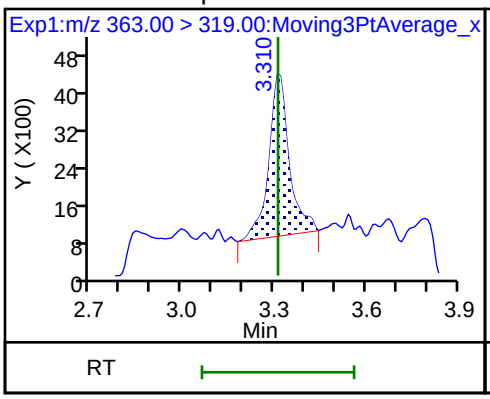
9 Perfluorohexanoic acid (ND)



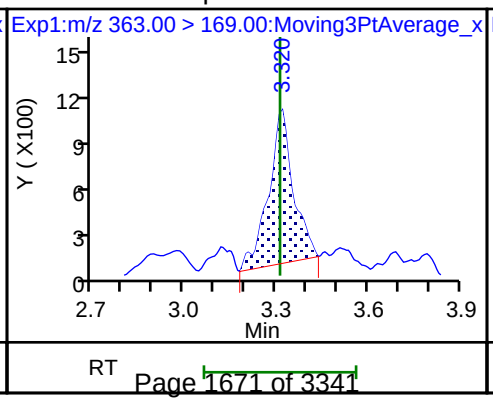
D 10 13C2 PFHxA



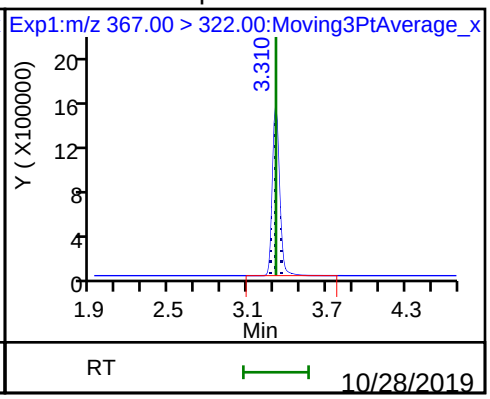
14 Perfluoroheptanoic acid



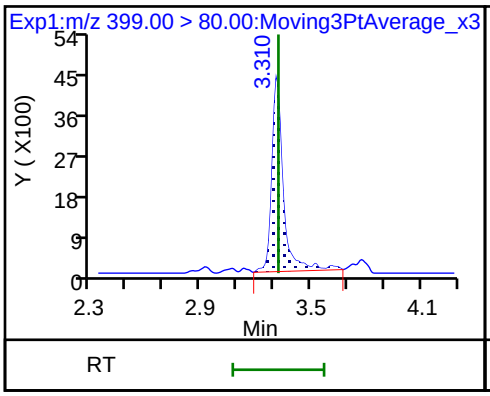
14 Perfluoroheptanoic acid



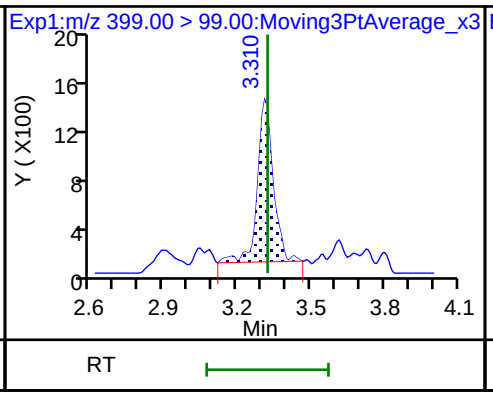
D 17 13C4 PFHpA



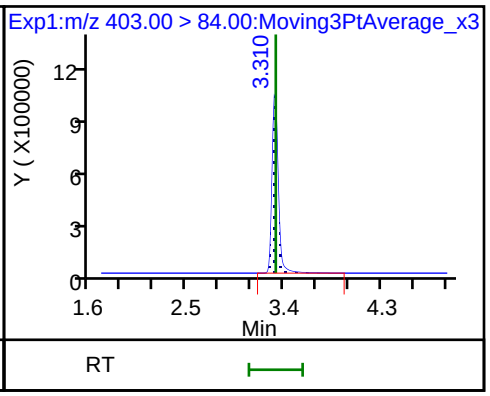
16 Perfluorohexanesulfonic acid



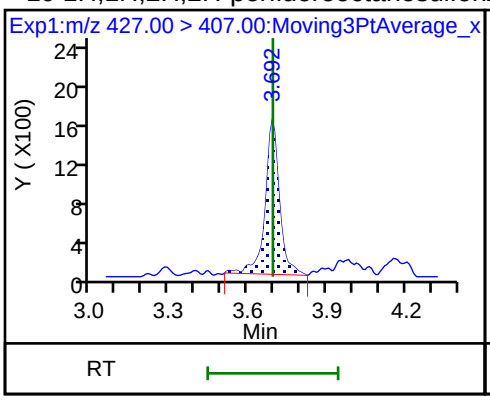
16 Perfluorohexanesulfonic acid



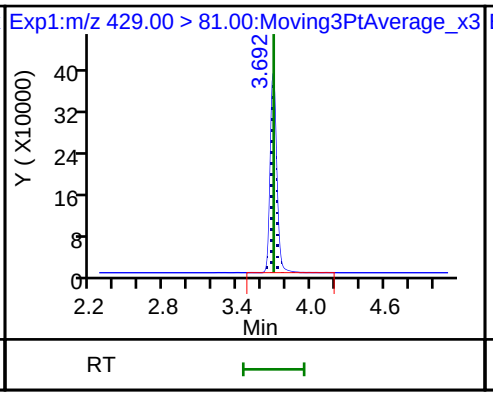
D 15 18O2 PFHxS



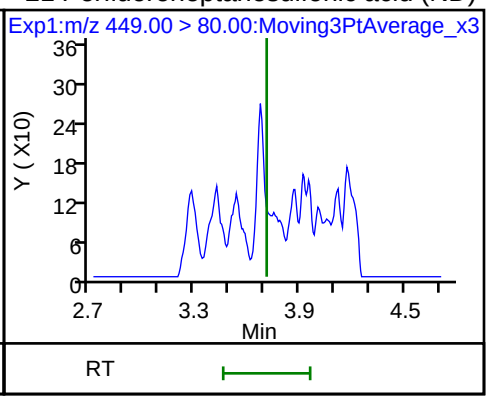
19 1H,1H,2H,2H-perfluorooctanesulfon



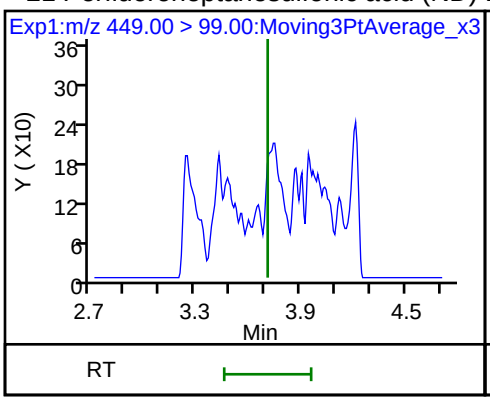
D 20 M2-6:2 FTS



21 Perfluoroheptanesulfonic acid (ND)



21 Perfluoroheptanesulfonic acid (ND)



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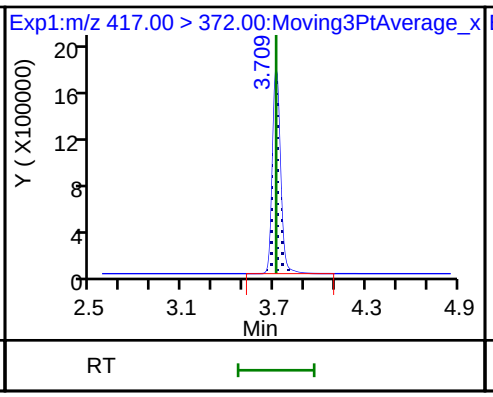

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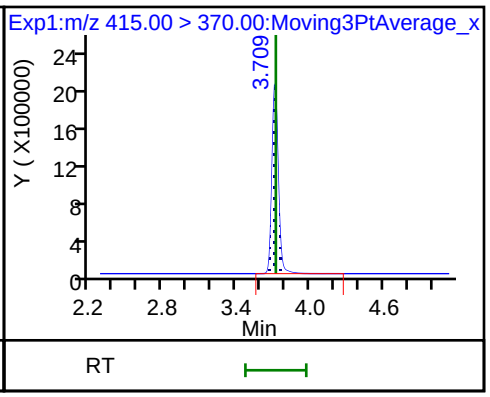
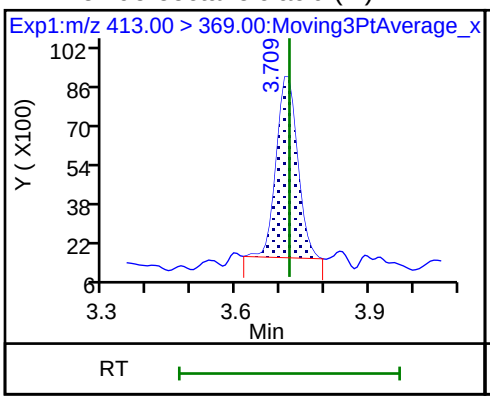
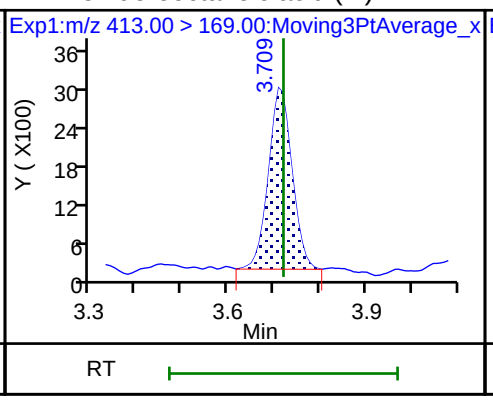


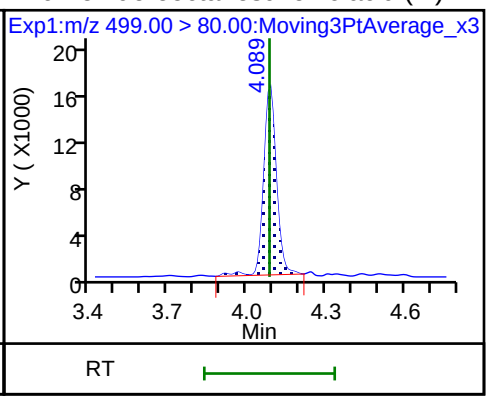
22 Perfluorooctanoic acid (M)



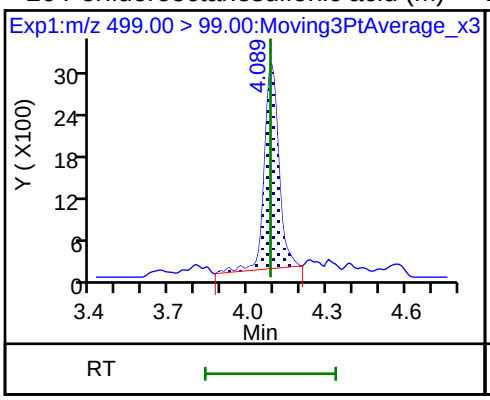
22 Perfluorooctanoic acid (M)



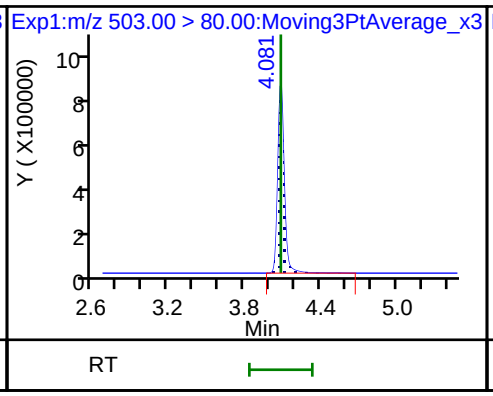
26 Perfluorooctanesulfonic acid (M)



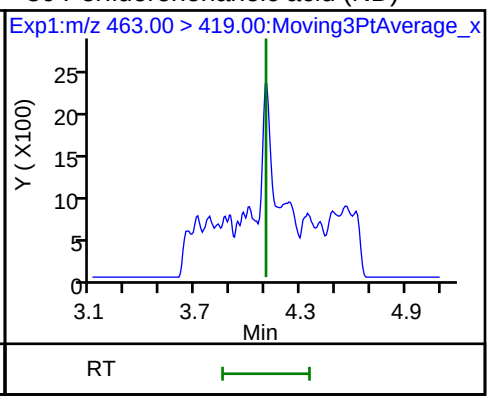
26 Perfluorooctanesulfonic acid (M)



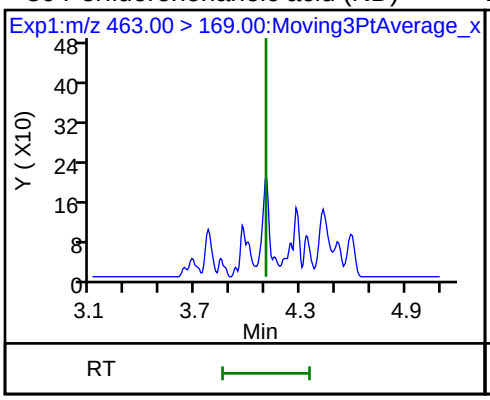
D 28 13C4 PFOS



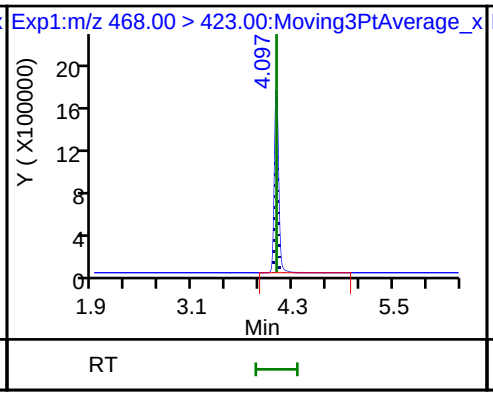
30 Perfluorononanoic acid (ND)



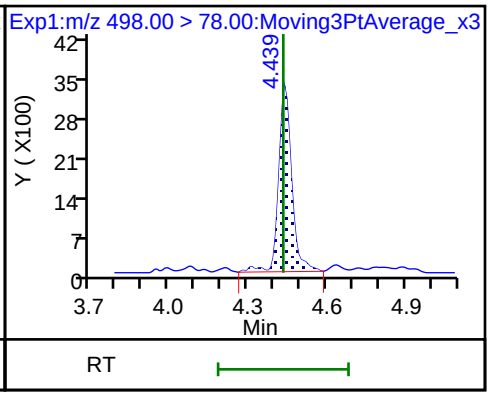
30 Perfluorononanoic acid (ND)



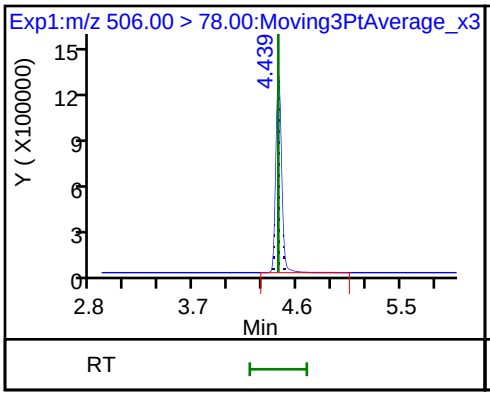
D 29 13C5 PFNA



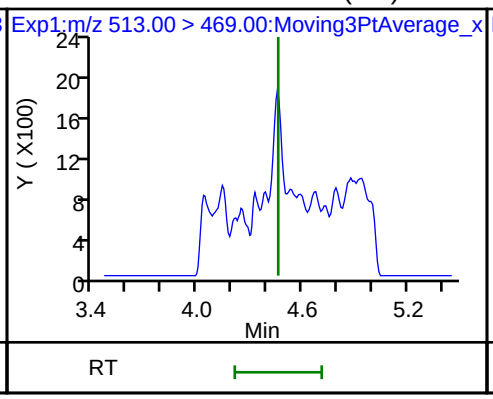
32 Perfluorooctanesulfonamide



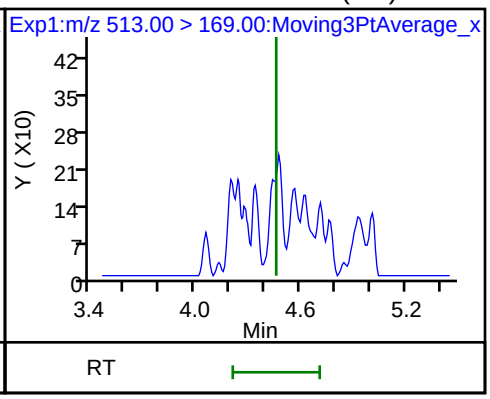
D 33 13C8 FOSA



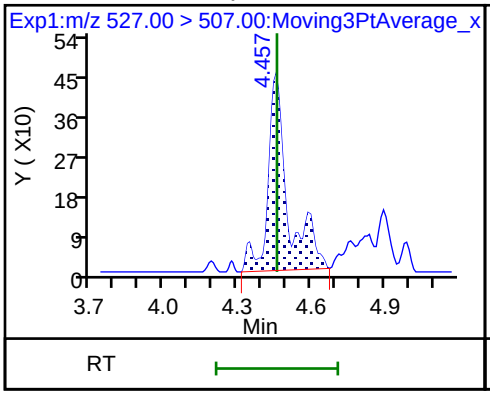
34 Perfluorodecanoic acid (ND)



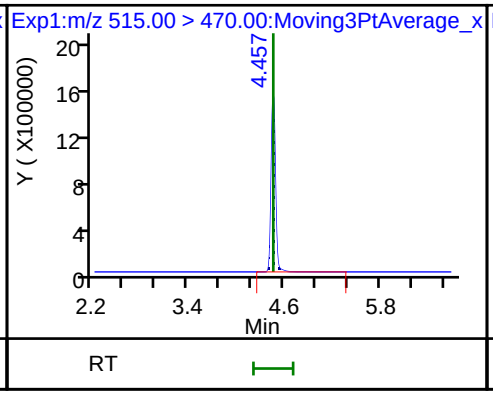
34 Perfluorodecanoic acid (ND)



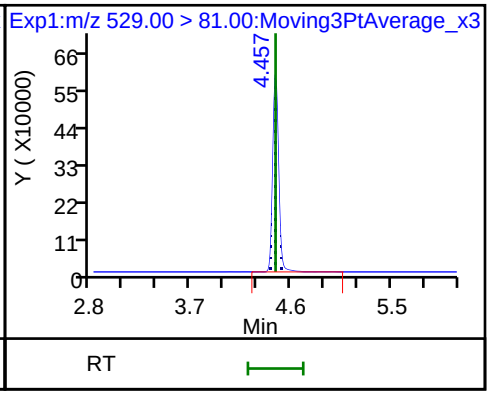
35 1H,1H,2H,2H-perfluorodecanesulfon



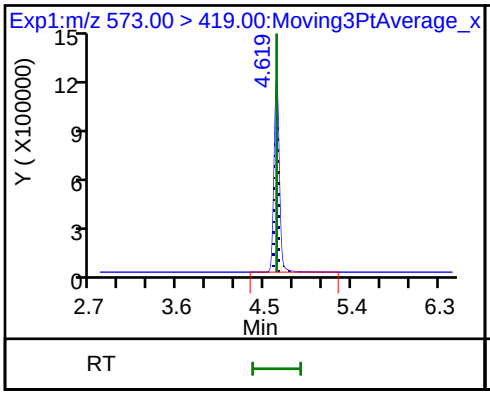
D 36 13C2 PFDA



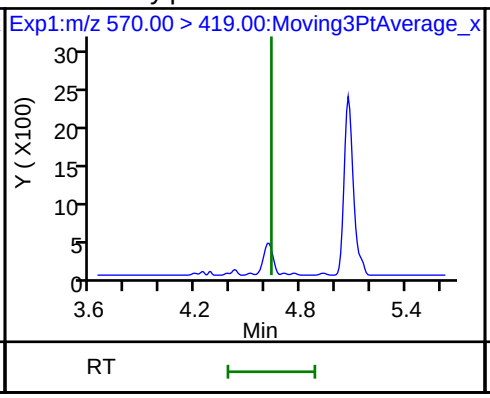
D 37 M2-8:2 FTS



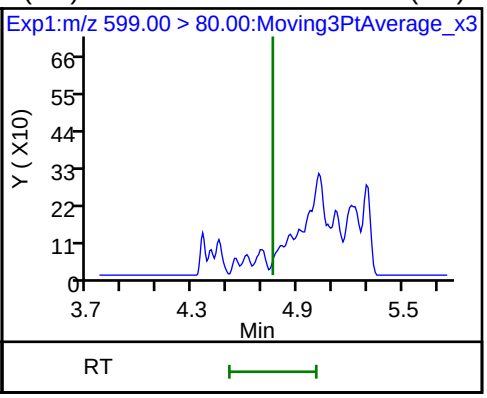
D 40 d3-NMeFOSAA



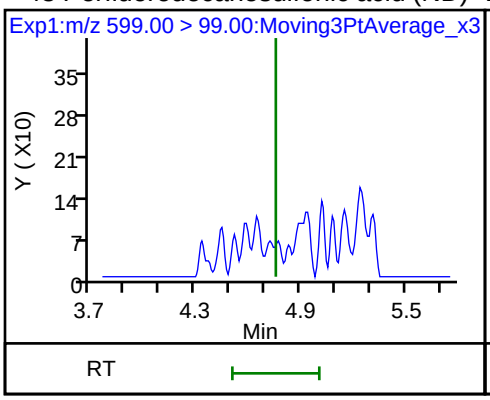
41 N-methylperfluorooctanesulfonamido (ND)



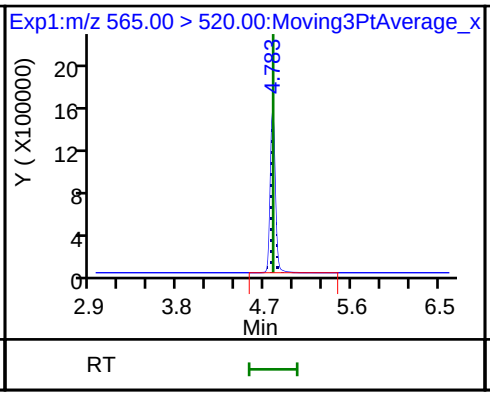
48 Perfluorodecanesulfonic acid (ND)



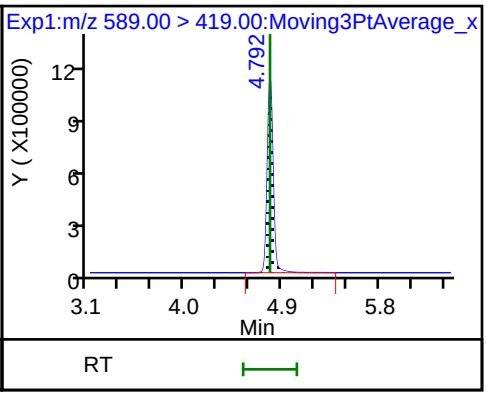
48 Perfluorodecanesulfonic acid (ND)



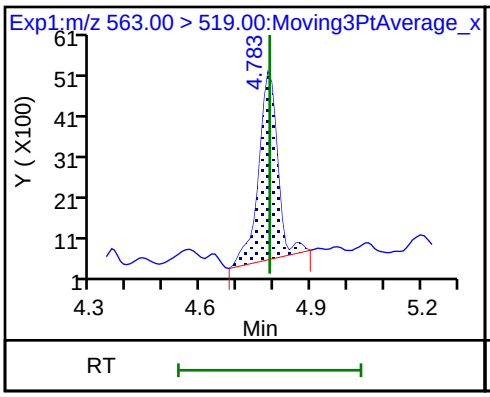
D 43 13C2 PFUnA



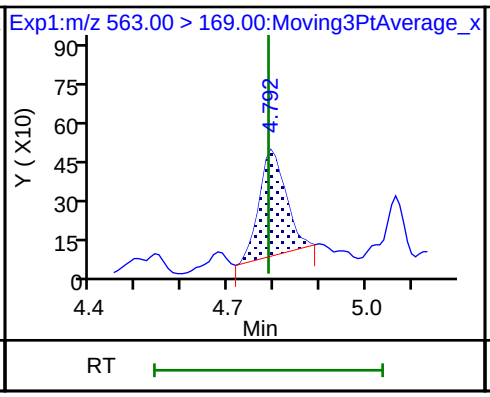
D 44 d5-NEtFOSAA



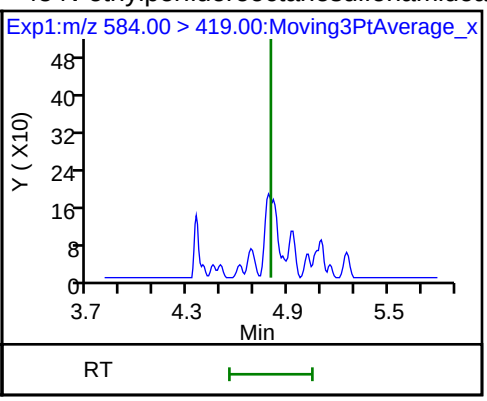
42 Perfluoroundecanoic acid



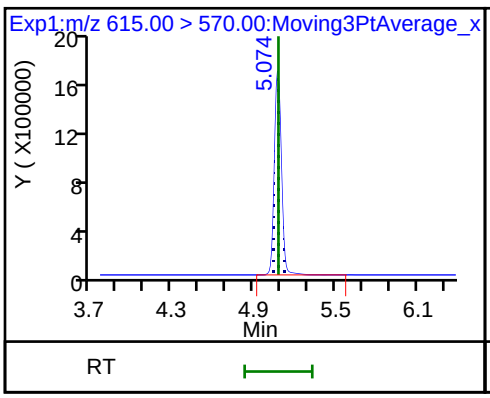
42 Perfluoroundecanoic acid



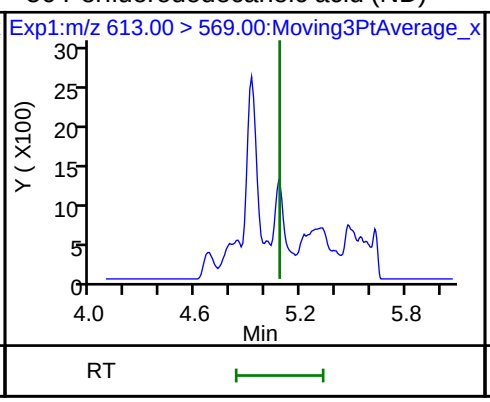
45 N-ethylperfluorooctanesulfonamidoa (ND)



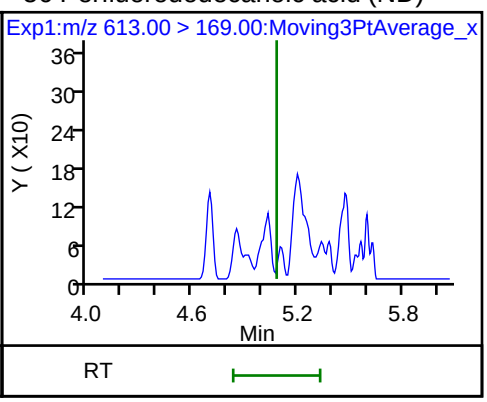
D 57 13C2 PFDoA



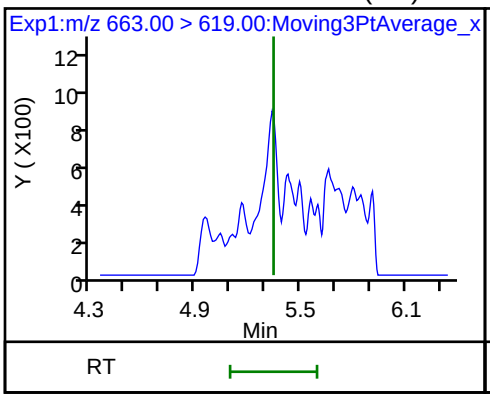
56 Perfluorododecanoic acid (ND)



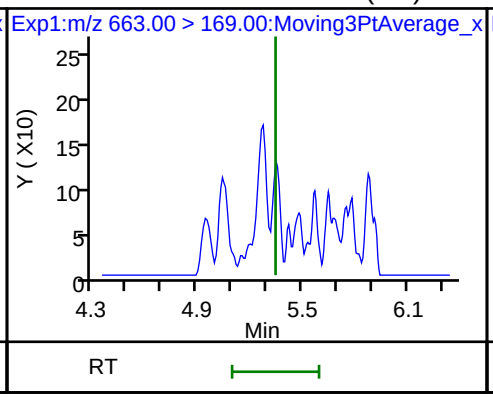
56 Perfluorododecanoic acid (ND)



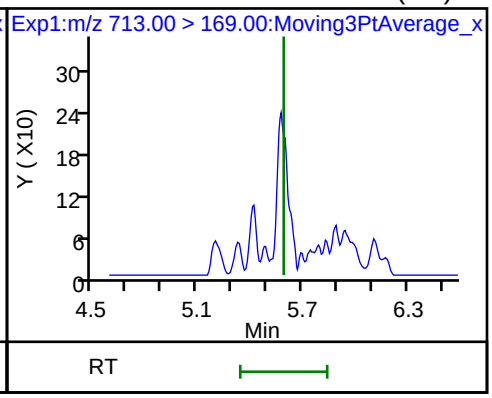
60 Perfluorotridecanoic acid (ND)



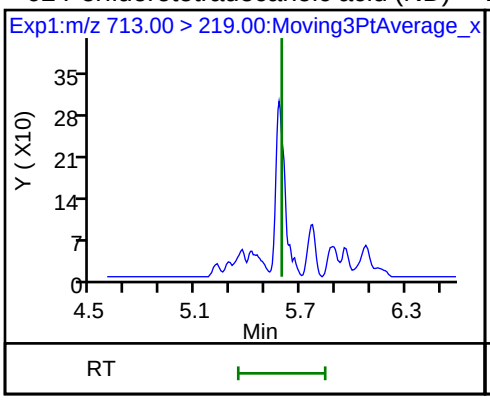
60 Perfluorotridecanoic acid (ND)



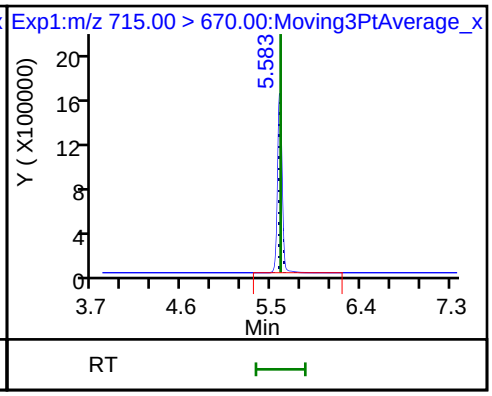
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

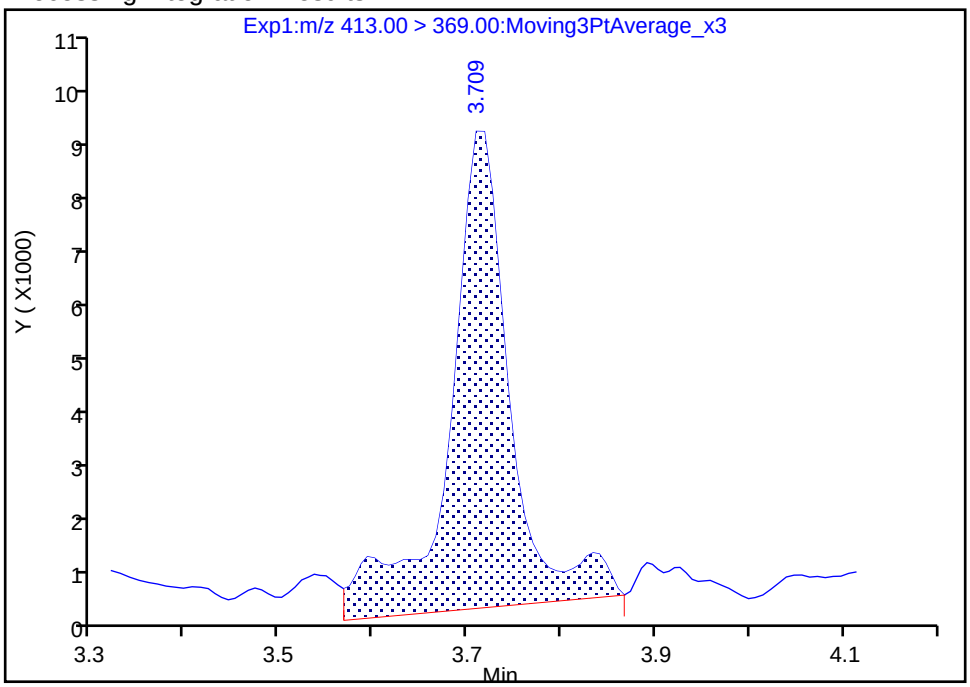
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d				
Injection Date:	03-Oct-2019 14:32:31	Instrument ID:	A13		
Lims ID:	480-159547-A-32-B	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

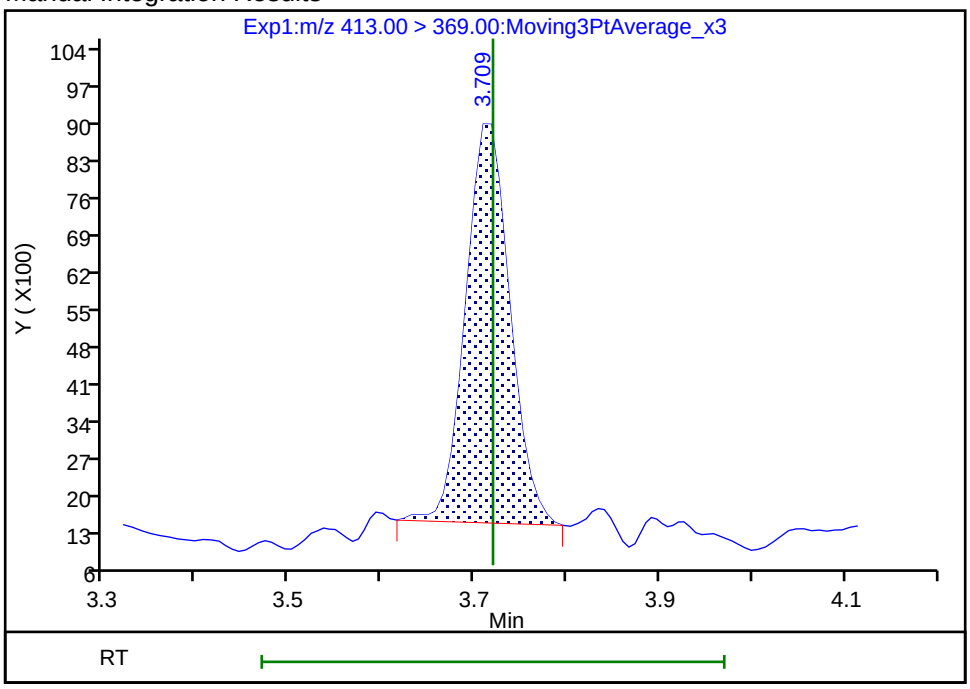
Processing Integration Results

RT: 3.71
Area: 37288
Amount: 0.013985
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 25090
Amount: 0.009410
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:49:52

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

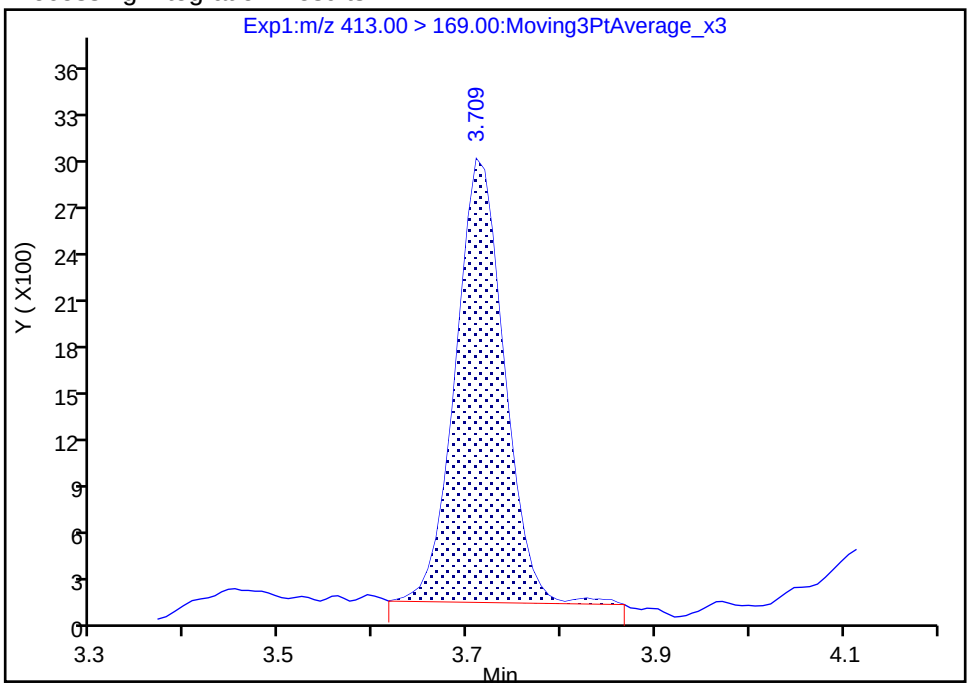
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d				
Injection Date:	03-Oct-2019 14:32:31	Instrument ID:	A13		
Lims ID:	480-159547-A-32-B	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

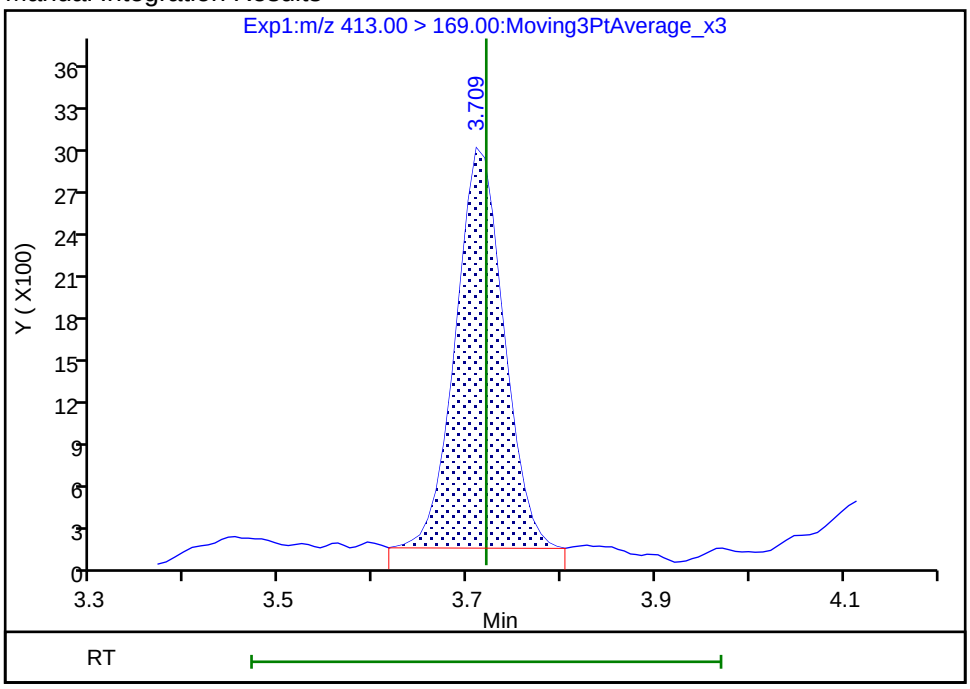
Processing Integration Results

RT: 3.71
Area: 10165
Amount: 0.013985
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 10000
Amount: 0.009410
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:50:05
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

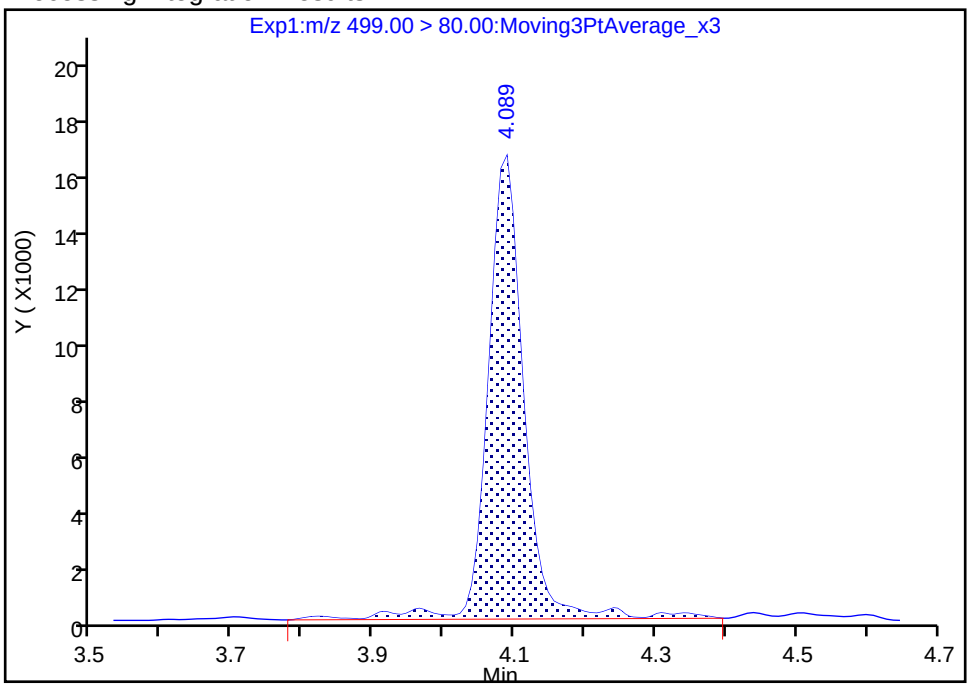
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d				
Injection Date:	03-Oct-2019 14:32:31	Instrument ID:	A13		
Lims ID:	480-159547-A-32-B	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

26 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

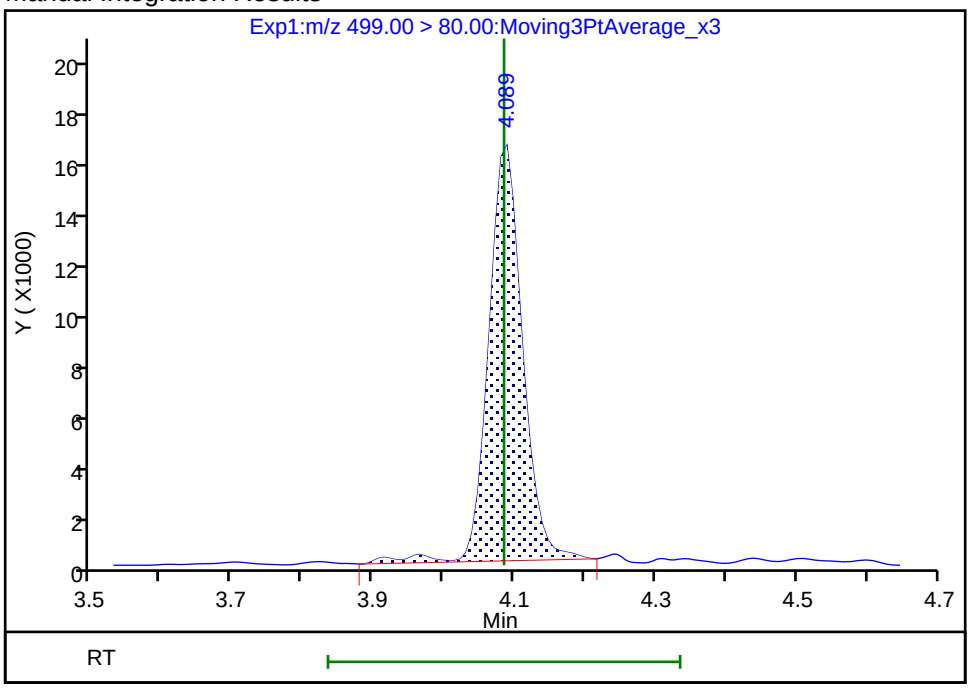
Processing Integration Results

RT: 4.09
Area: 57602
Amount: 0.043690
Amount Units: ng/ml



Manual Integration Results

RT: 4.09
Area: 53571
Amount: 0.040633
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:50:30
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

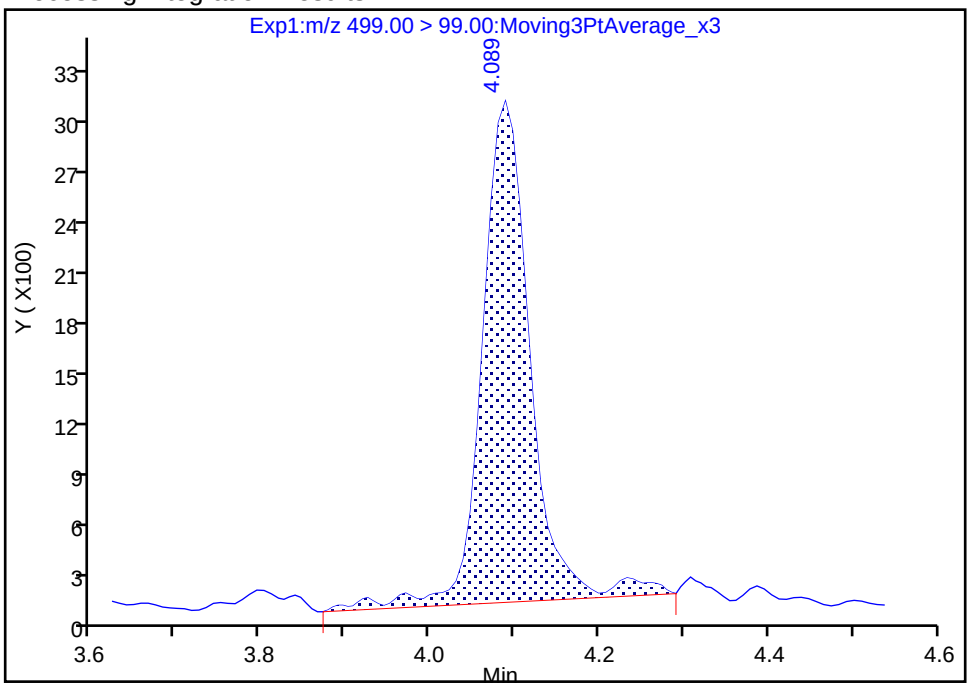
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_022.d				
Injection Date:	03-Oct-2019 14:32:31	Instrument ID:	A13		
Lims ID:	480-159547-A-32-B	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	14	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

26 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

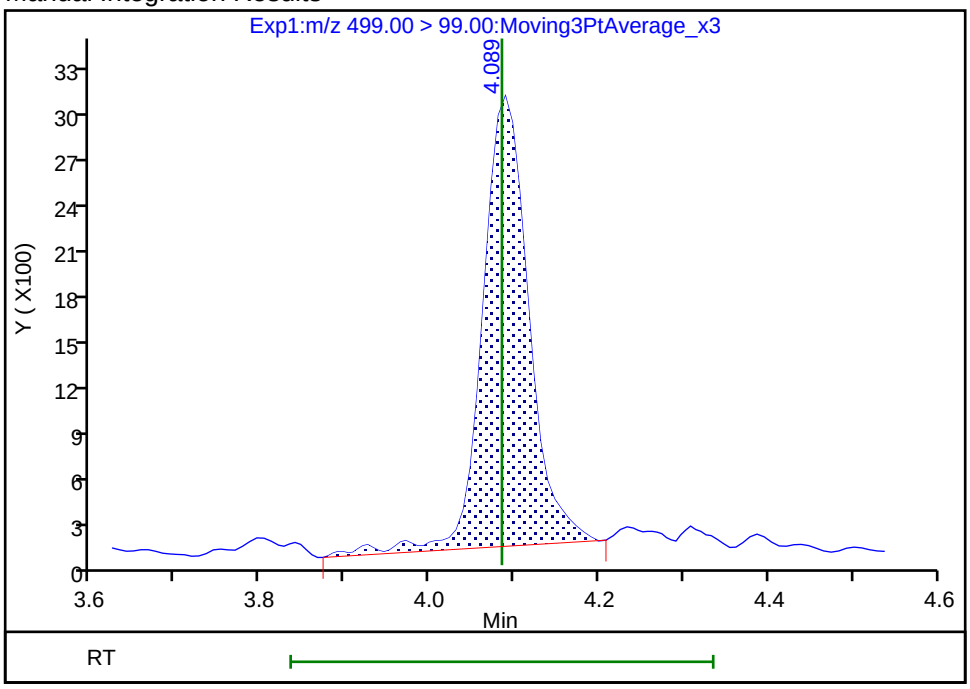
Processing Integration Results

RT: 4.09
Area: 11900
Amount: 0.043690
Amount Units: ng/ml



Manual Integration Results

RT: 4.09
Area: 11303
Amount: 0.040633
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 16:50:43
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._033.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 13:57

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 276.5(mL) Date Analyzed: 10/09/2019 02:57

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.57	J	1.81	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.81		1.81	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77
375-95-1	Perfluorononanoic acid (PFNA)	1.81		1.81	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.81		1.81	0.99
307-55-1	Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.18
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.23	J B	1.81	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.81		1.81	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	109		25-150
STL00993	13C2 PFHxA	103		25-150
STL00990	13C4 PFOA	109		25-150
STL00995	13C5 PFNA	105		25-150
STL00996	13C2 PFDA	105		25-150
STL00997	13C2 PFUnA	108		25-150
STL00998	13C2 PFDoA	105		25-150
STL02116	13C2 PFTeDA	105		25-150
STL00994	18O2 PFHxS	111		25-150
STL00991	13C4 PFOS	100		25-150
STL01892	13C4 PFHpA	111		25-150
STL01893	13C5 PFPeA	106		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d
Lims ID: 480-159547-A-32-D
Client ID: GERNATT-CF-COMP 3
Sample Type: Client
Inject. Date: 09-Oct-2019 02:57:05 ALS Bottle#: 20 Worklist Smp#: 19
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-32-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:51:19 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: mongkols Date: 18-Oct-2019 15:49:33
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.888	1.719	0.169	1.000	33484	0.0157			5.2	M
D 1 13C4 PFBA										
217.00 > 172.00	1.888	1.901	-0.013	0.566	6270436	2.73		109	5555	
D 4 13C5 PFPeA										
267.90 > 223.00	2.189	2.206	-0.017	0.657	5101045	2.66		106	3731	
D 9 13C2 PFHxA										
315.00 > 270.00	2.550	2.557	-0.007	0.765	5719455	2.59		103	2771	
D 14 13C4 PFHpA										
367.00 > 322.00	2.936	2.942	-0.006	0.881	7006084	2.77		111	3240	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.931	2.947	-0.016	0.998	14268	0.006483	Target=3.25		16.2	M
399.00 > 99.00	2.931	2.947	-0.016	0.998	5060		2.82(1.63-4.88)		7.8	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.936	2.947	-0.011	0.881	4255054	2.62		111	6326	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.326	3.318	0.008	1.004	3633	0.005869			11.6	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.312	3.318	-0.006	0.994	631200	1.79		75.3	1788	
D 23 13C4 PFOA										
417.00 > 372.00	3.333	3.347	-0.014	1.000	7952077	2.73		109	3558	
* 25 13C2 PFOA										
415.00 > 370.00	3.333	3.347	-0.014		7779979	2.50			4332	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.333	3.347	-0.014	1.000	50232	0.0140	Target=3.06		4.9	M
413.00 > 169.00	3.333	3.347	-0.014	1.000	18124		2.77(1.53-4.58)		32.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.708	3.715	-0.007	1.000	18683	0.009187	Target=4.13		15.4	M
499.00 > 99.00	3.708	3.715	-0.007	1.000	4505		4.15(2.06-6.19)		9.2	M
D 27 13C4 PFOS										
503.00 > 80.00	3.708	3.715	-0.007	1.112	4527677	2.40		100	3591	
D 30 13C5 PFNA										
468.00 > 423.00	3.723	3.731	-0.008	1.117	6847521	2.64		105	4984	
D 36 13C2 PFDA										
515.00 > 470.00	4.079	4.088	-0.009	1.224	7656364	2.61		105	5247	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.079	4.088	-0.009	1.224	641158	1.93		80.7	2396	
D 32 13C8 FOSA										
506.00 > 78.00	4.096	4.114	-0.018	1.229	2539541	2.61		104	2235	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.105	4.123	-0.018	1.002	9479	0.003397			47.1	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.239	4.249	-0.010	1.272	3671518	2.66		106	2644	
D 42 13C2 PFUnA										
565.00 > 520.00	4.397	4.406	-0.009	1.319	6721590	2.69		108	3837	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.397	4.414	-0.017	1.000	12482	0.005902	Target=9.66		7.7	
563.00 > 169.00	4.388	4.414	-0.026	0.998	1443		8.65(4.83-14.49)		8.2	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.405	4.414	-0.009	1.322	3188810	2.68		107	1854	
D 55 13C2 PFDoA										
615.00 > 570.00	4.681	4.690	-0.009	1.404	7203390	2.62		105	3628	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.174	5.191	-0.017	1.552	5104342	2.62		105	4084	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:51:20 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d

Injection Date: 09-Oct-2019 02:57:05 Instrument ID: A9

Lims ID: 480-159547-A-32-D Lab Sample ID: 320-159547-32

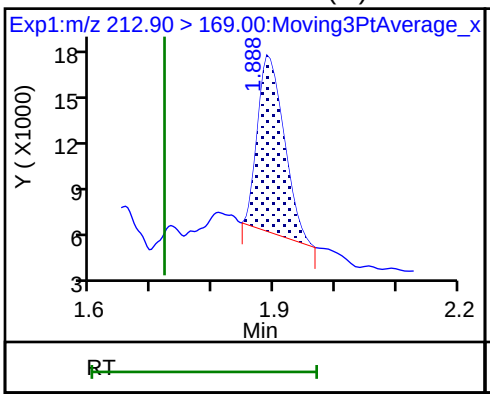
Client ID: GERNATT-CF-COMP 3

Operator ID: A9\Administrator ALS Bottle#: 20 Worklist Smp#: 19

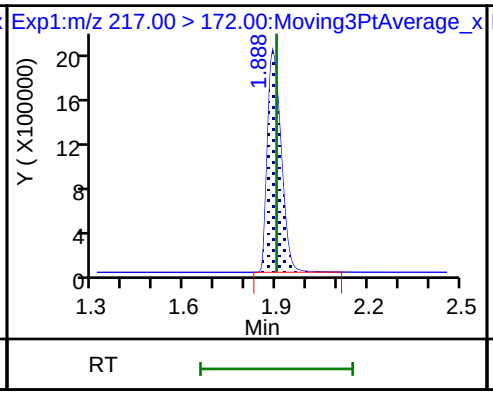
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

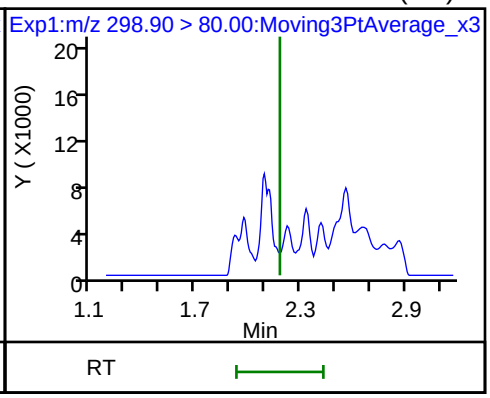
2 Perfluorobutanoic acid (M)



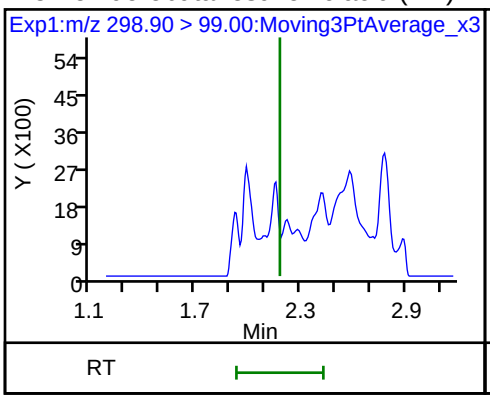
D 1 13C4 PFBA



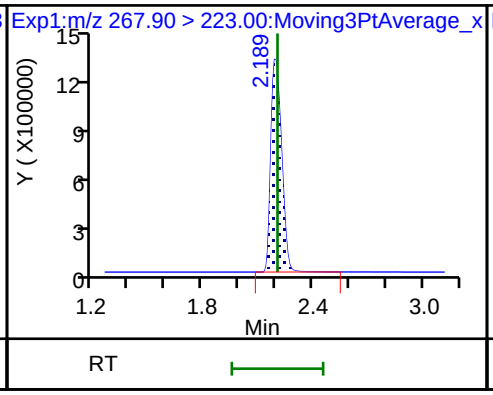
5 Perfluorobutanesulfonic acid (ND)



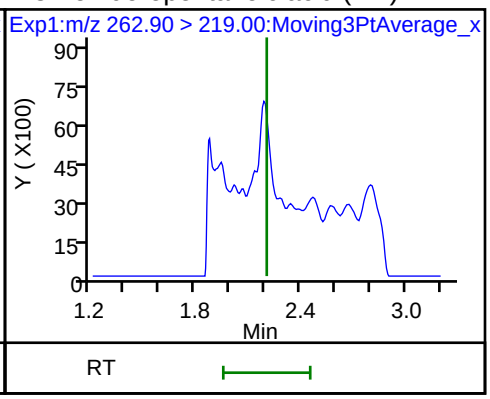
5 Perfluorobutanesulfonic acid (ND)



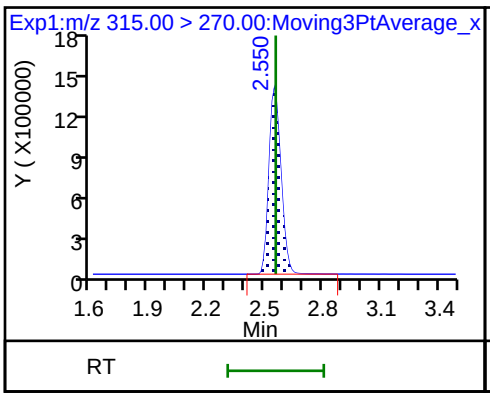
D 4 13C5 PFPeA



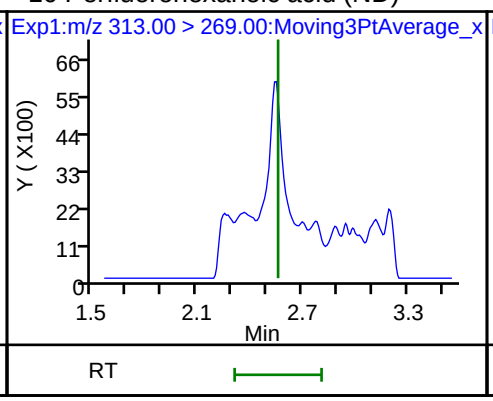
3 Perfluoropentanoic acid (ND)



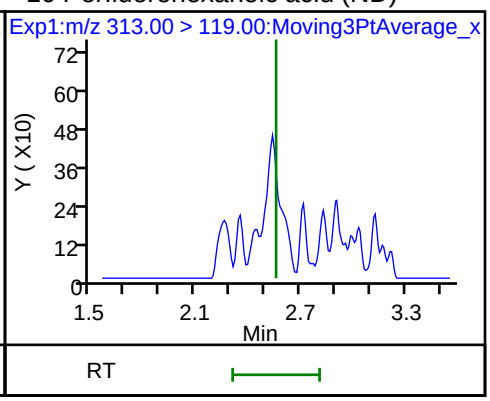
D 9 13C2 PFHxA



10 Perfluorohexanoic acid (ND)



10 Perfluorohexanoic acid (ND)



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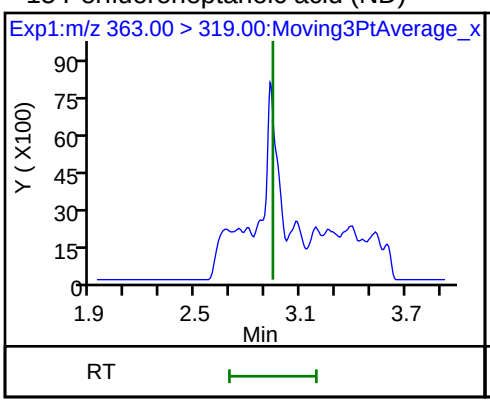

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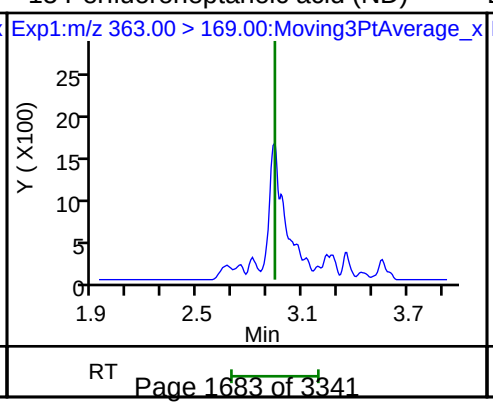
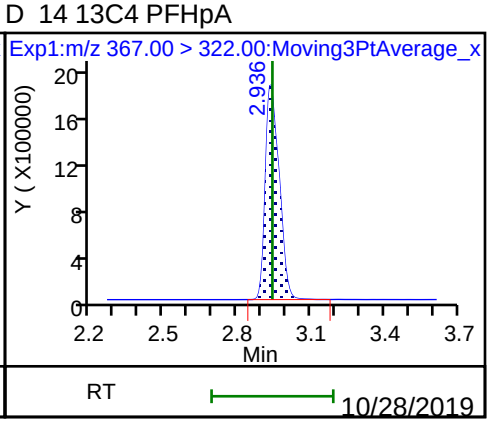
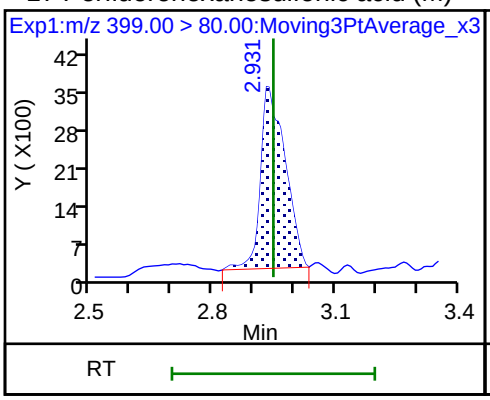


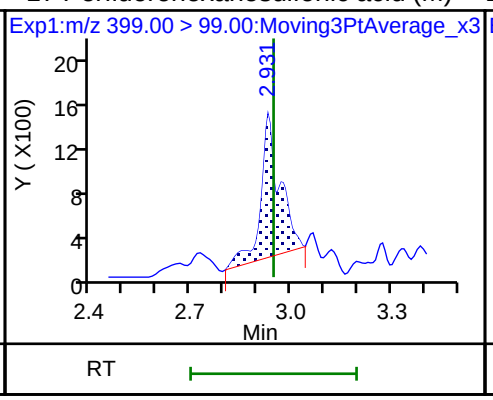
D 14 13C4 PFHpA



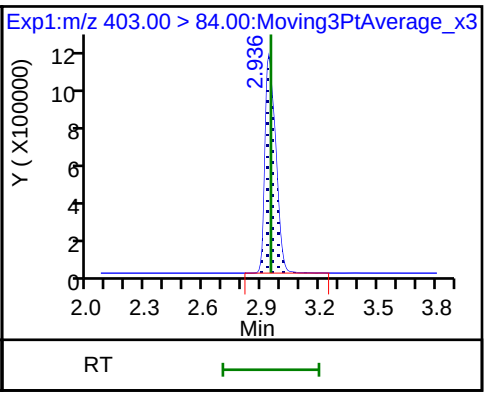
17 Perfluorohexanesulfonic acid (M)



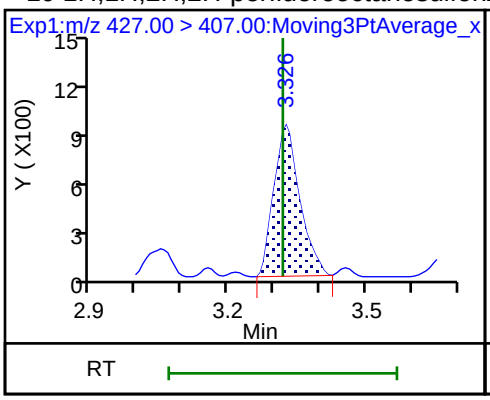
17 Perfluorohexanesulfonic acid (M)



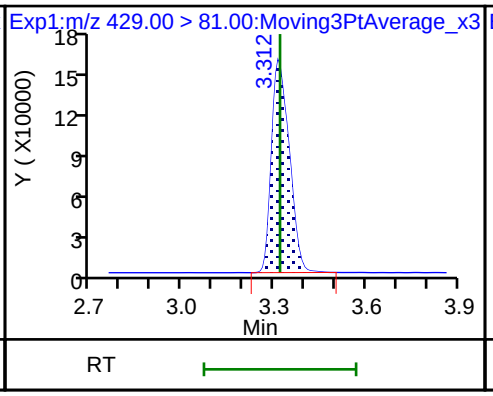
D 16 18O2 PFHxS



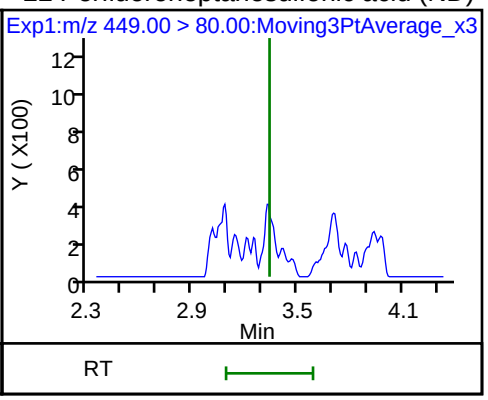
19 1H,1H,2H,2H-perfluorooctanesulfon



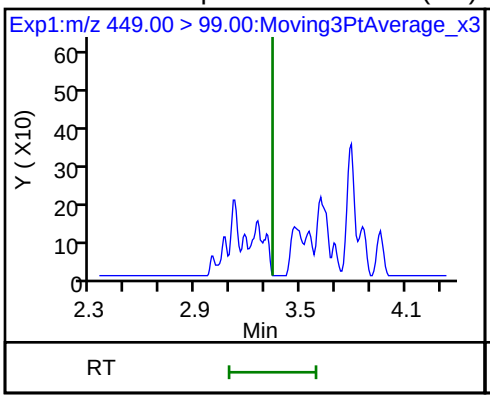
D 20 M2-6:2 FTS



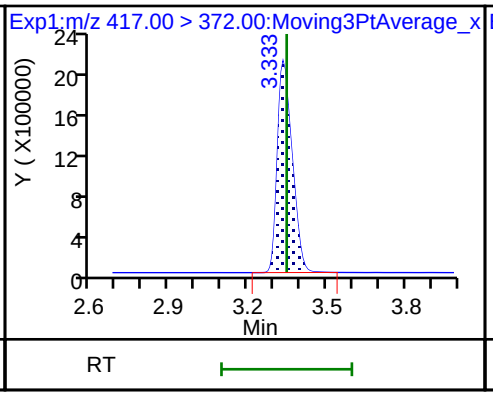
22 Perfluoroheptanesulfonic acid (ND)



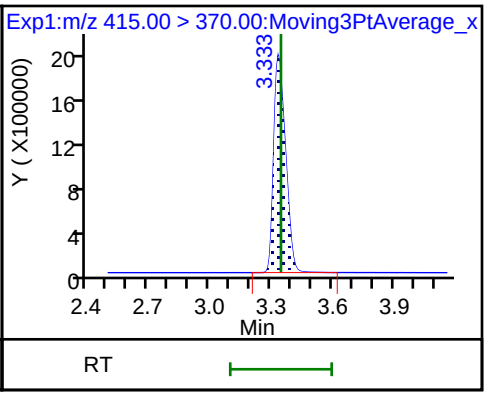
22 Perfluoroheptanesulfonic acid (ND)



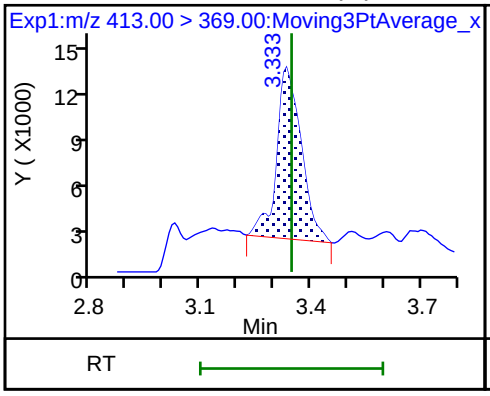
D 23 13C4 PFOA



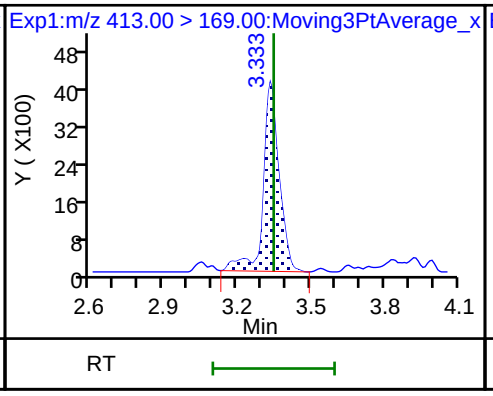
* 25 13C2 PFOA



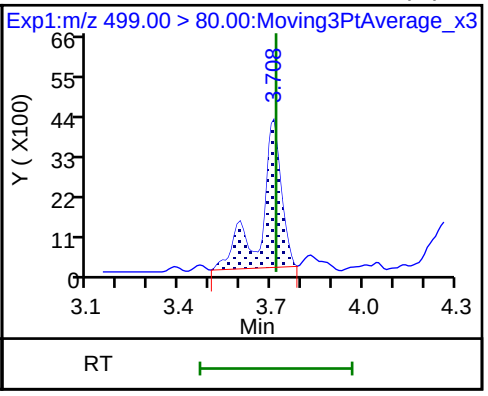
24 Perfluorooctanoic acid (M)



24 Perfluorooctanoic acid



28 Perfluorooctanesulfonic acid (M)



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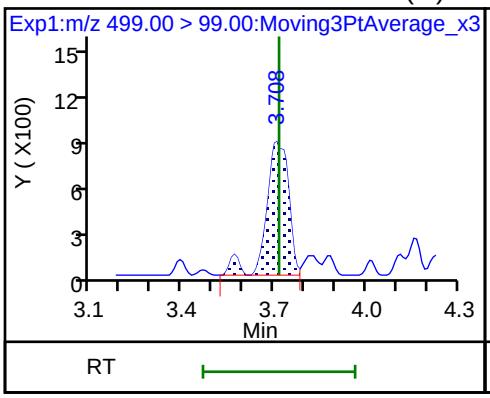
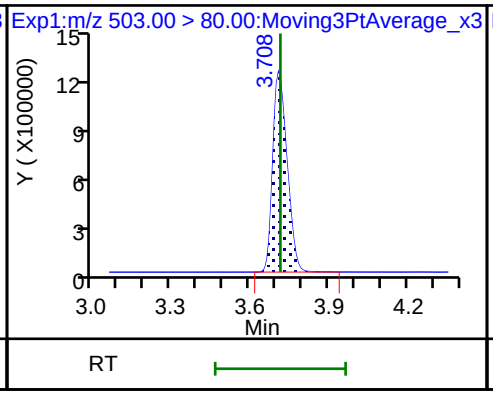
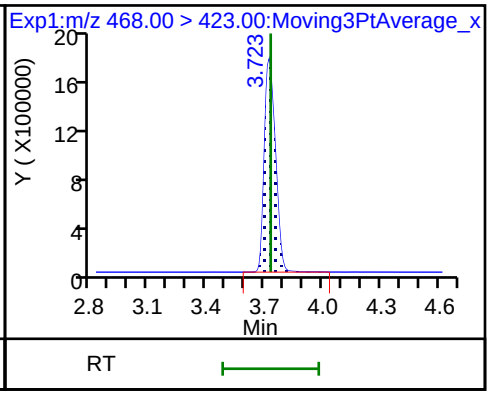


D 27 13C4 PFOS



D 30 13C5 PFNA



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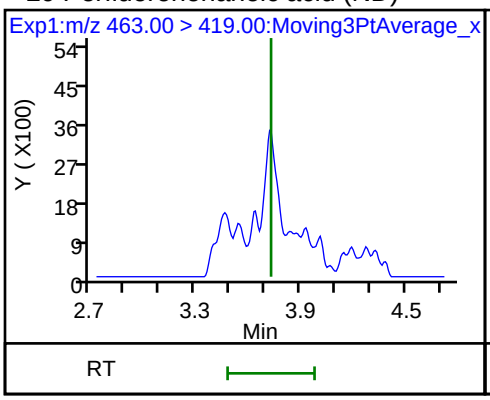
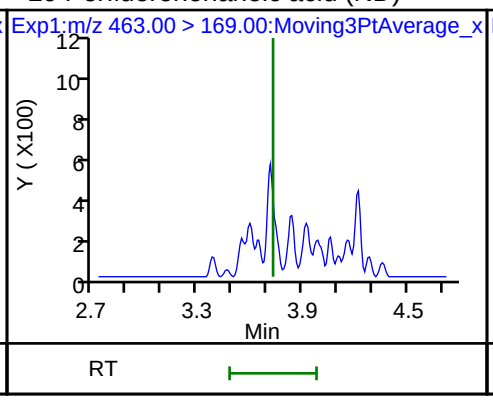
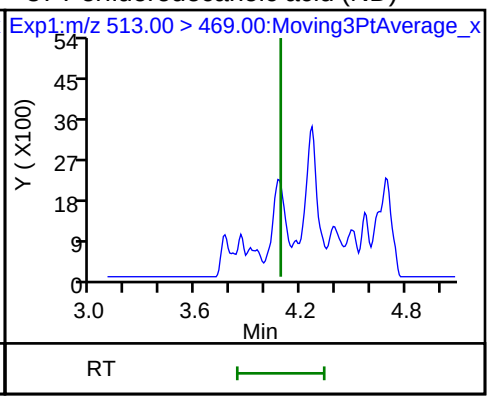


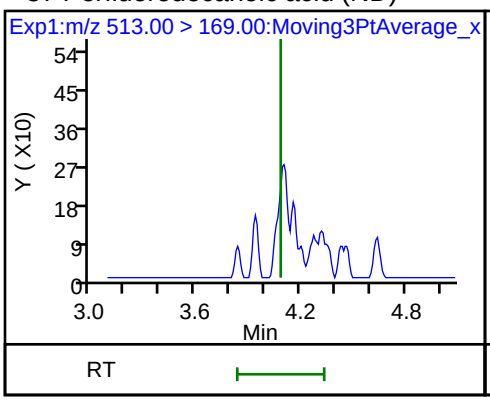
29 Perfluorononanoic acid (ND)



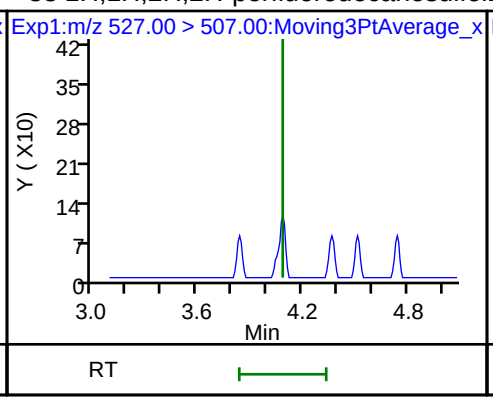
37 Perfluorodecanoic acid (ND)



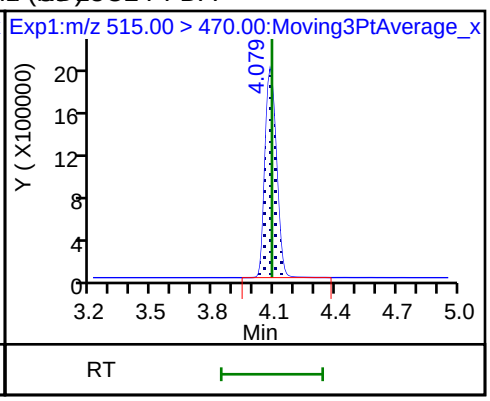
37 Perfluorodecanoic acid (ND)



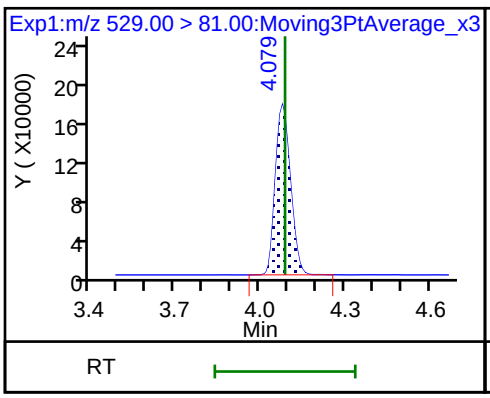
38 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)



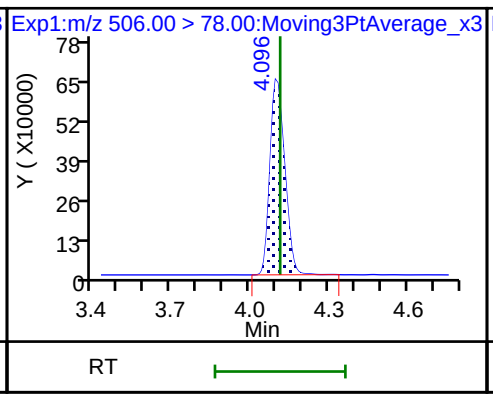
D 36 13C2 PFDA



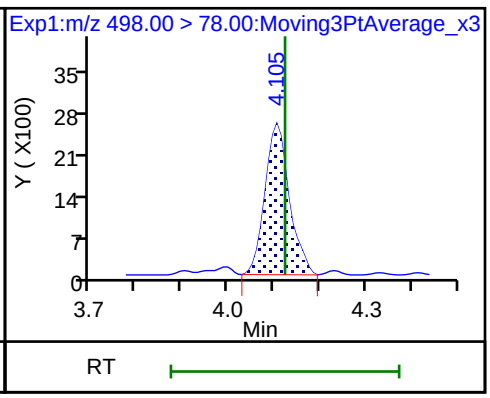
D 35 M2-8:2 FTS



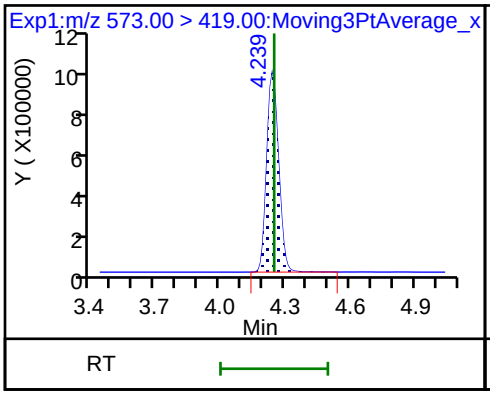
D 32 13C8 FOSA



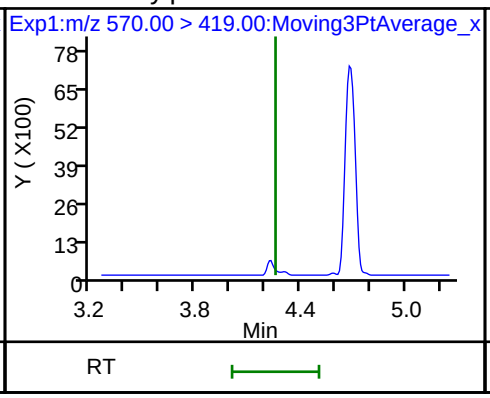
33 Perfluorooctanesulfonamide



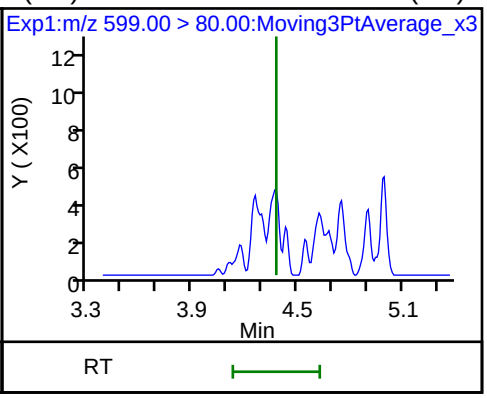
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido (ND)



41 Perfluorodecanesulfonic acid (ND)



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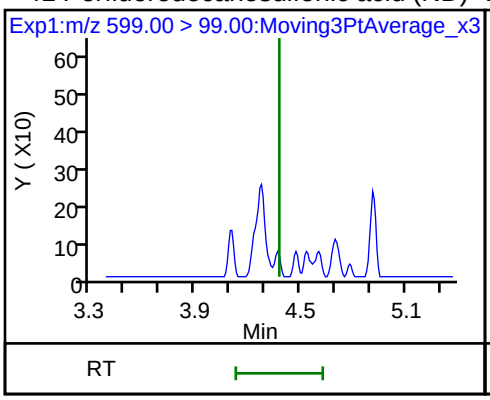
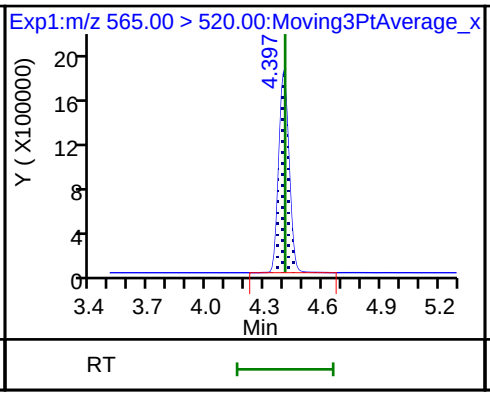
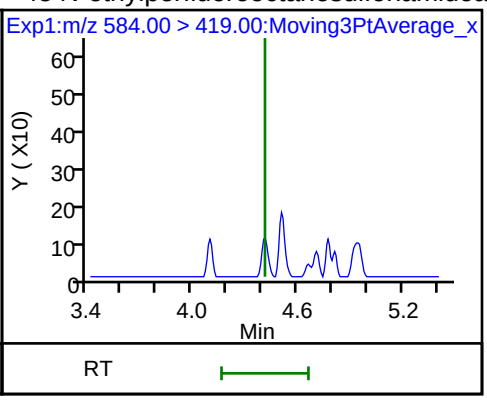


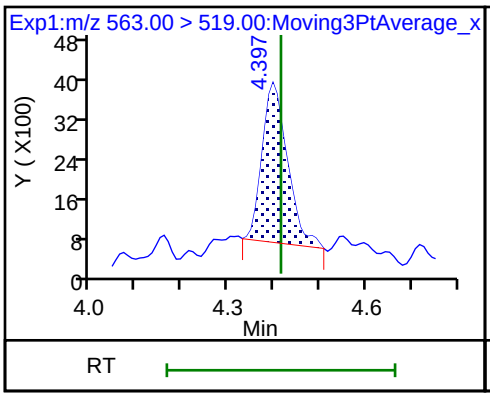
D 42 13C2 PFUnA



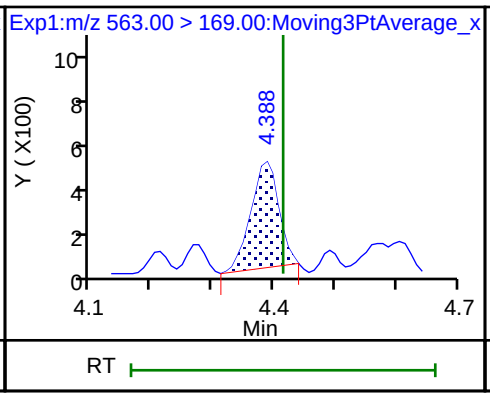
45 N-ethylperfluorooctanesulfonamidoa (ND)



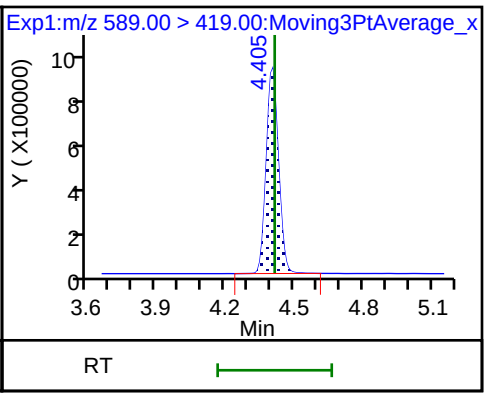
43 Perfluoroundecanoic acid



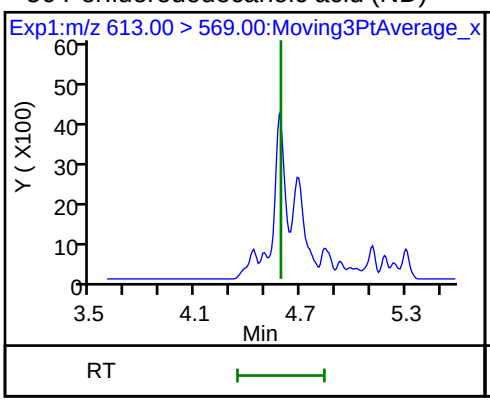
43 Perfluoroundecanoic acid



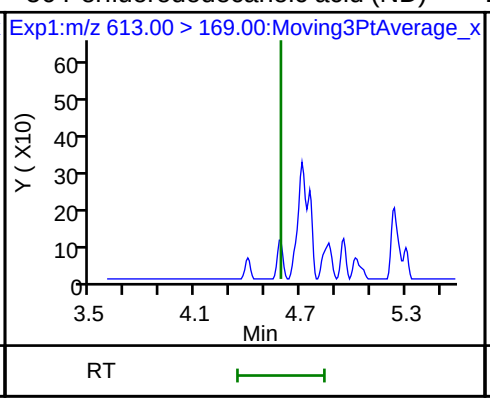
D 44 d5-NEtFOSAA



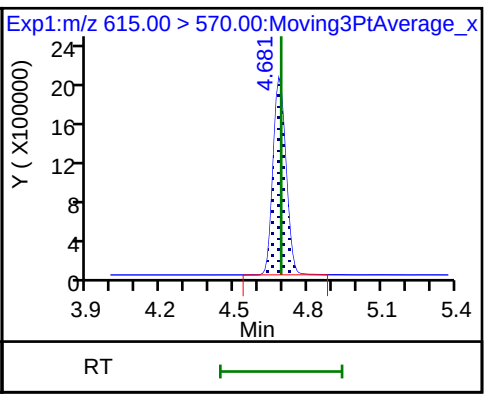
56 Perfluorododecanoic acid (ND)



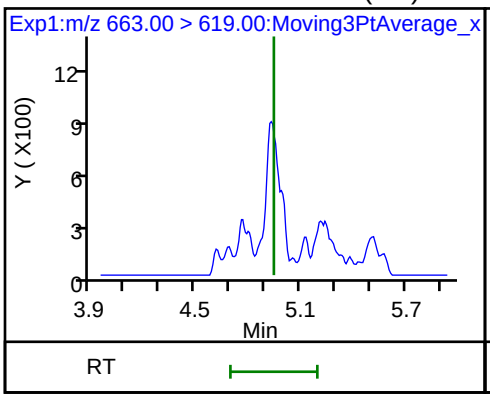
56 Perfluorododecanoic acid (ND)



D 55 13C2 PFDoA



59 Perfluorotridecanoic acid (ND)



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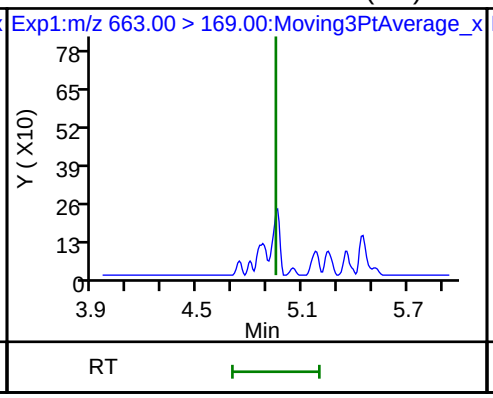
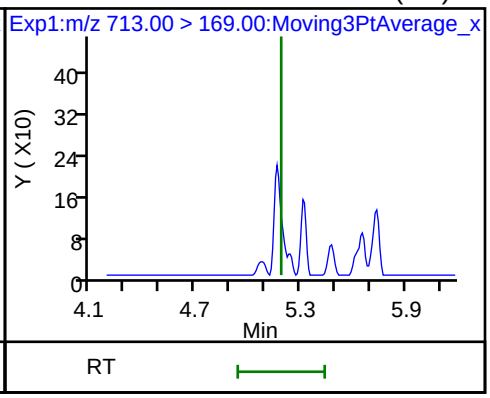
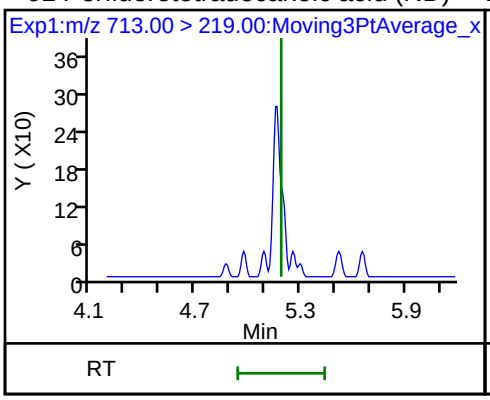


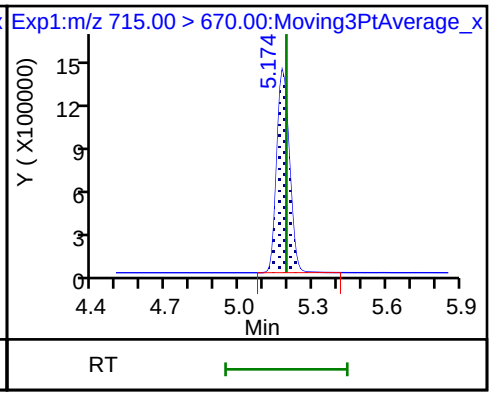
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

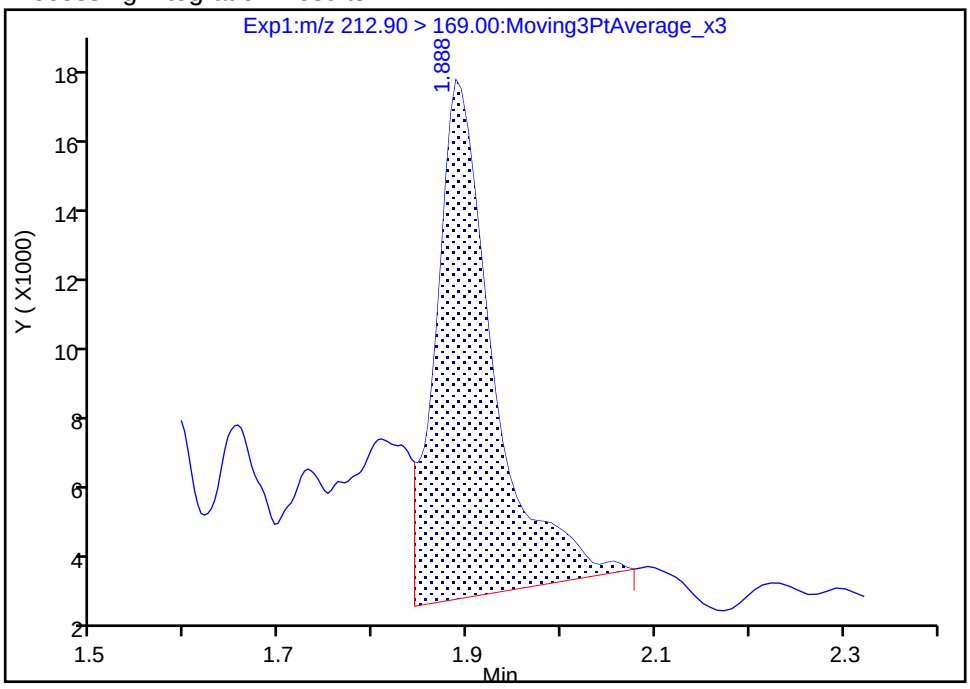
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

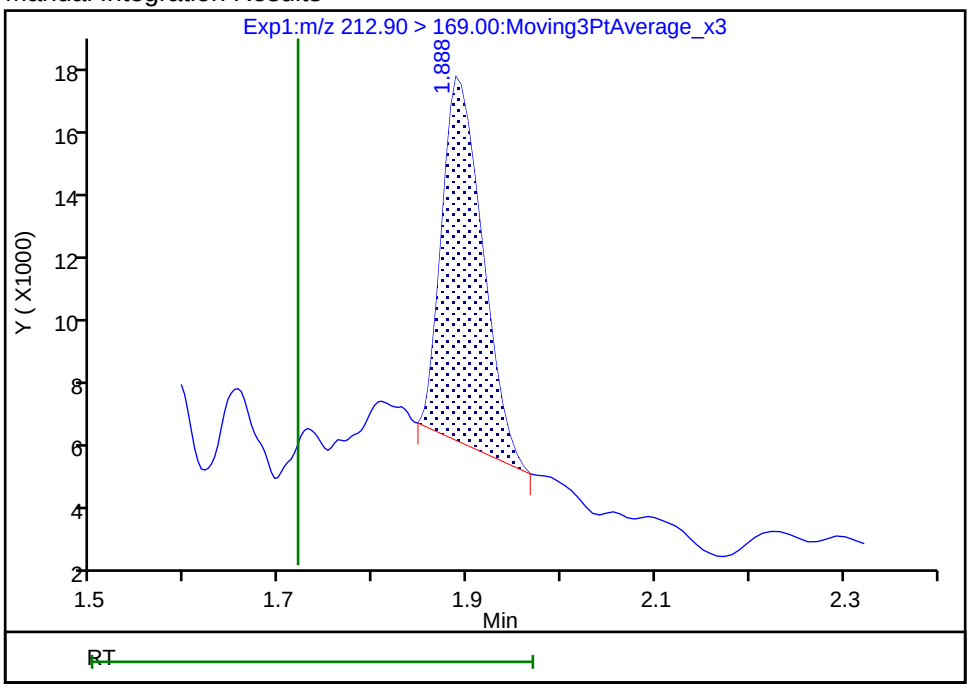
Processing Integration Results

RT: 1.89
Area: 61038
Amount: 0.028645
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 33484
Amount: 0.015714
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:48:42

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

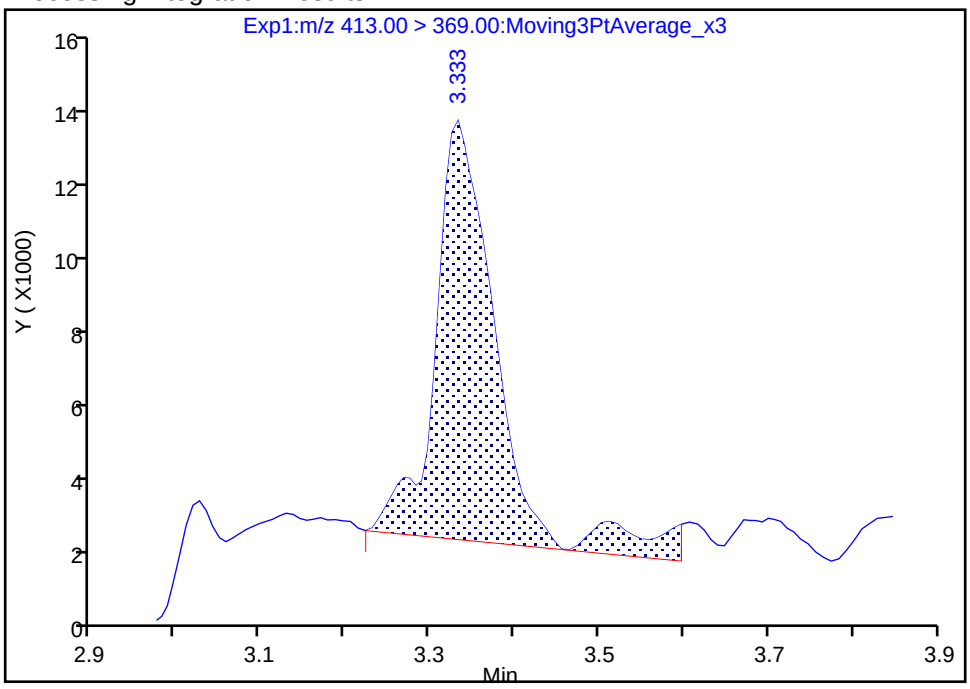
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

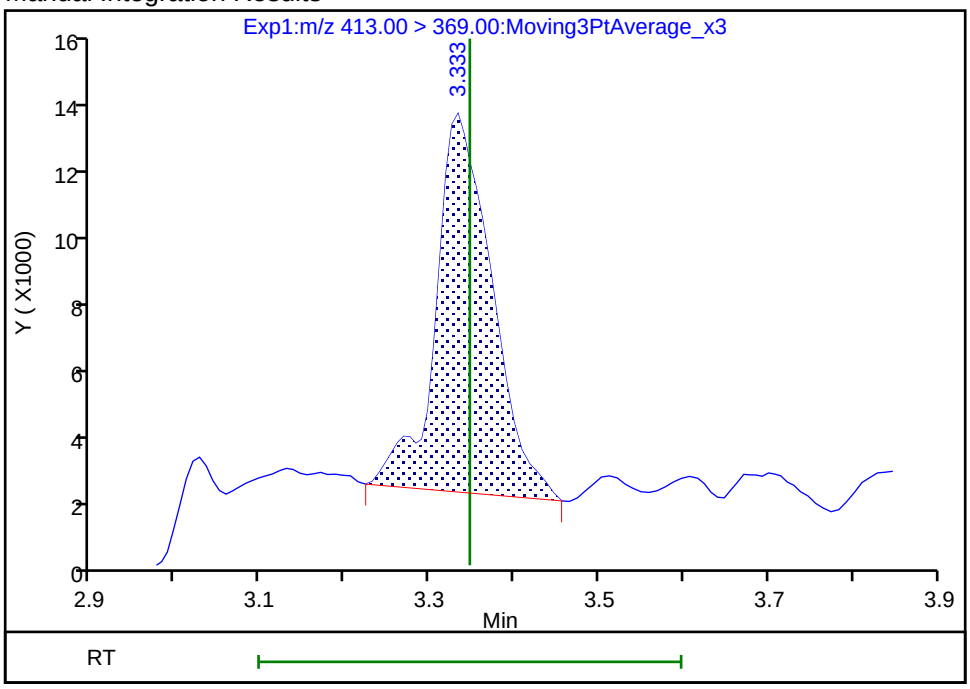
Processing Integration Results

RT: 3.33
Area: 54929
Amount: 0.015274
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 50232
Amount: 0.013968
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:49:07

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

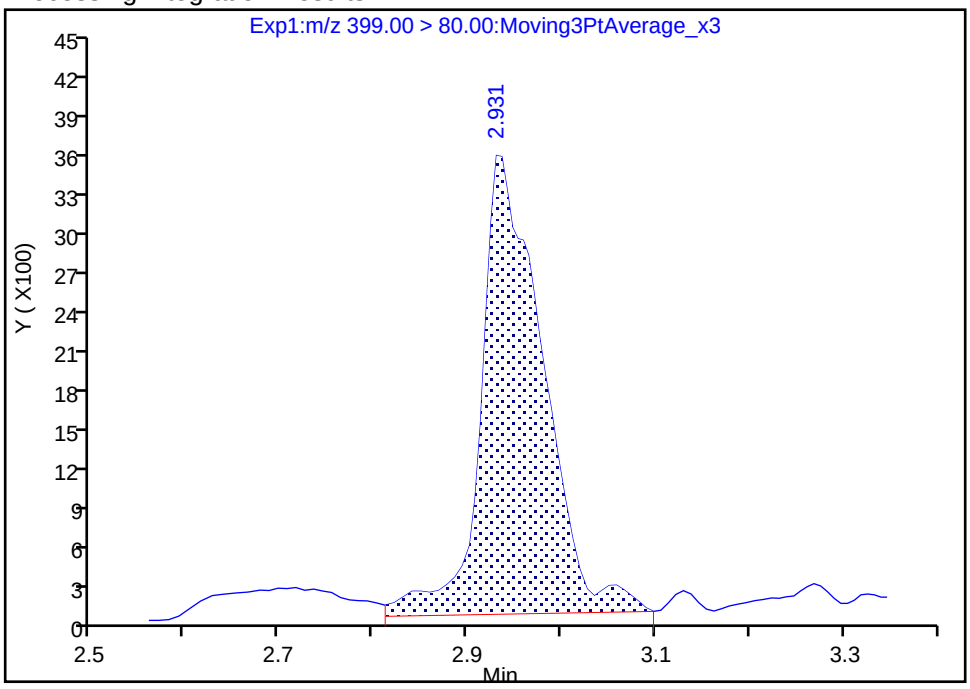
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

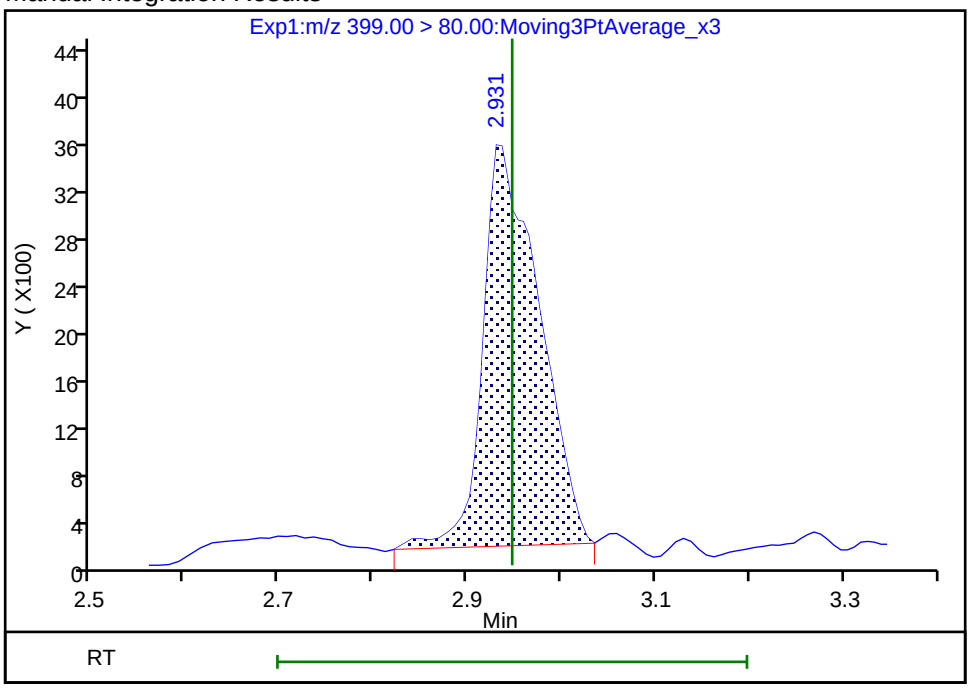
Processing Integration Results

RT: 2.93
Area: 16287
Amount: 0.007400
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 14268
Amount: 0.006483
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:48:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

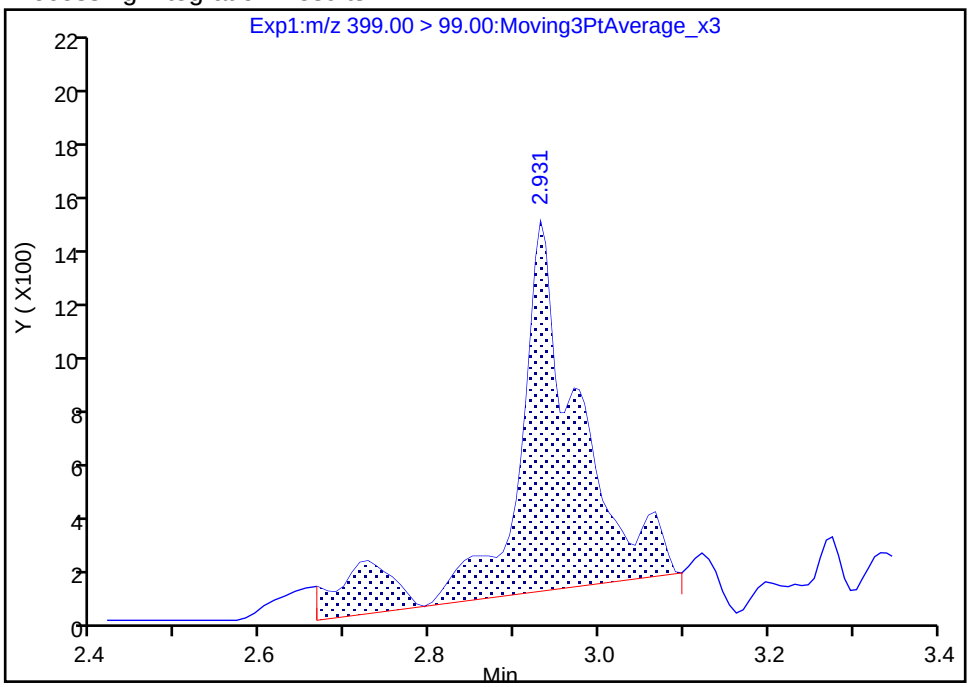
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

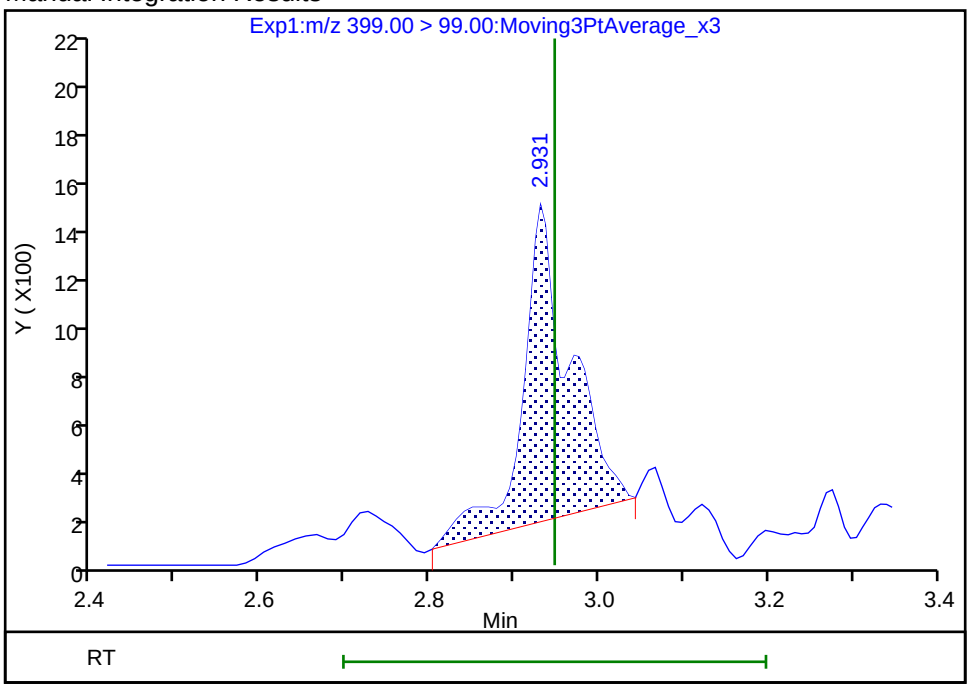
Processing Integration Results

RT: 2.93
Area: 7367
Amount: 0.007400
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 5060
Amount: 0.006483
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:49:01

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

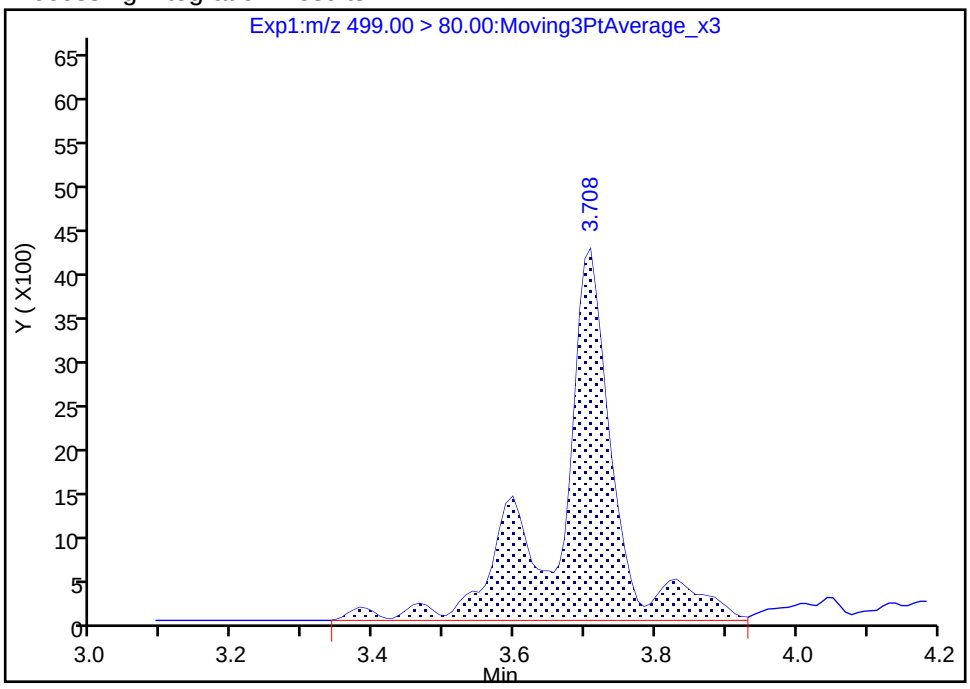
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

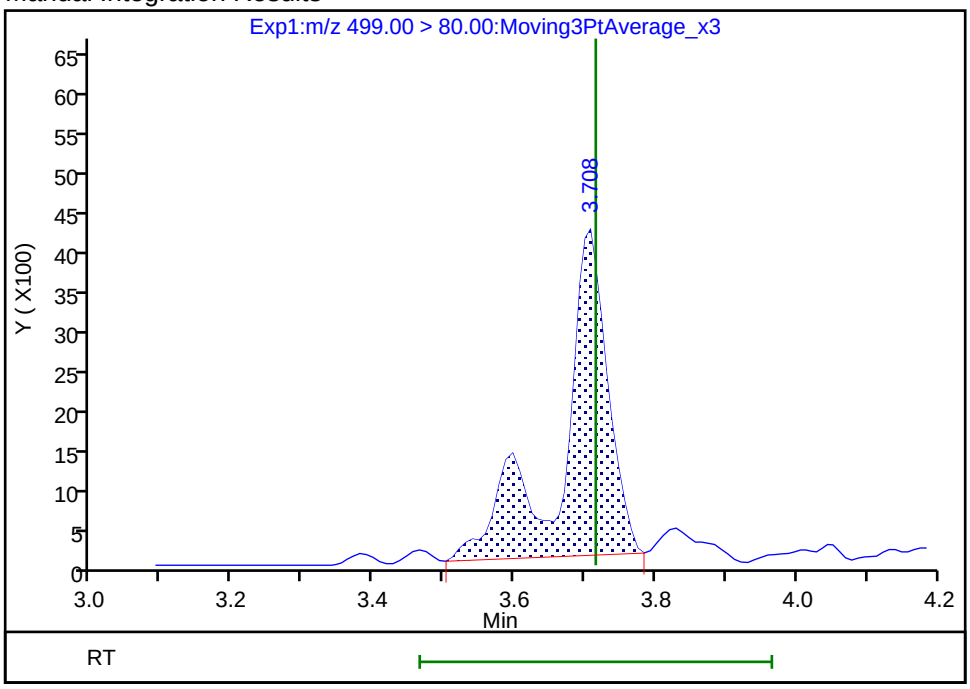
Processing Integration Results

RT: 3.71
Area: 23586
Amount: 0.011598
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 18683
Amount: 0.009187
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:49:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

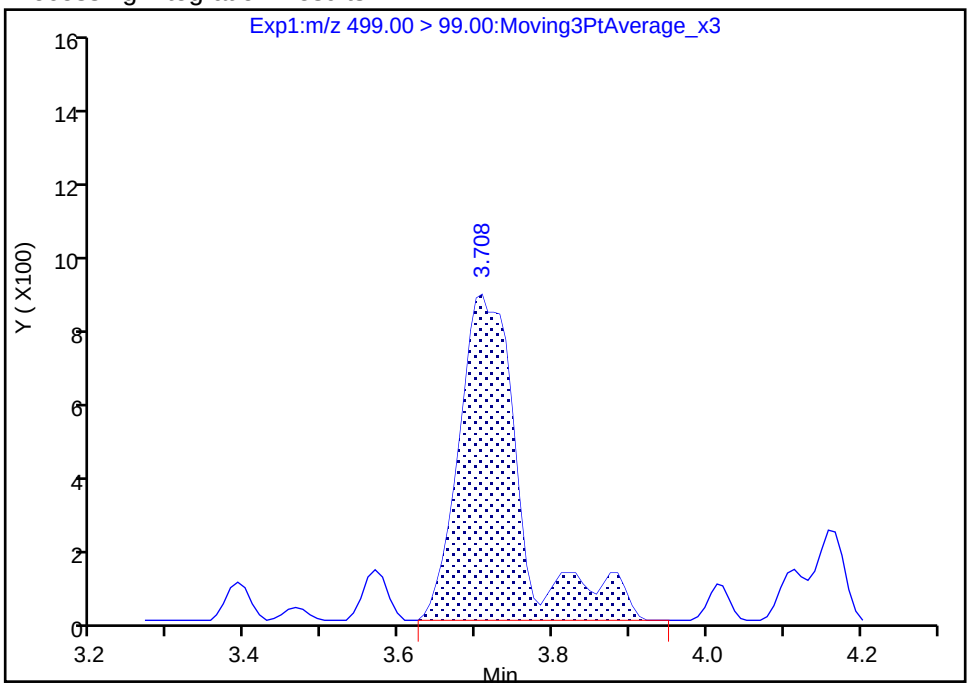
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._033.d				
Injection Date:	09-Oct-2019 02:57:05	Instrument ID:	A9		
Lims ID:	480-159547-A-32-D	Lab Sample ID:	320-159547-32		
Client ID:	GERNATT-CF-COMP 3				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	19
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

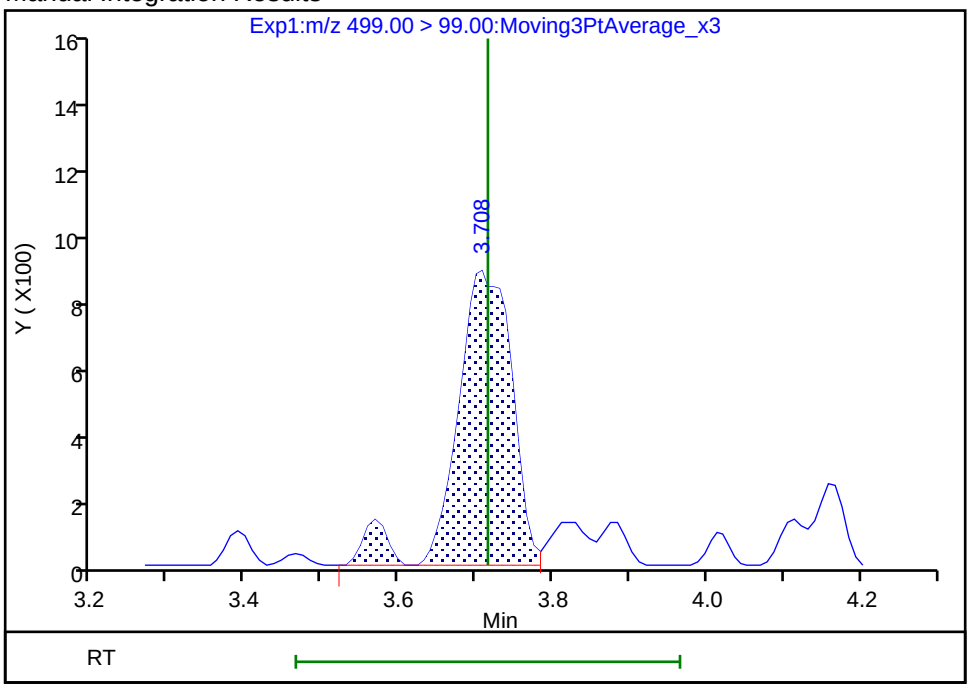
Processing Integration Results

RT: 3.71
Area: 4927
Amount: 0.011598
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 4505
Amount: 0.009187
Amount Units: ng/ml



Reviewer: mongkols, 18-Oct-2019 15:49:21

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 2019.10.10_LLA_012.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:30

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.33(g) Date Analyzed: 10/10/2019 06:15

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.16	J	0.21	0.030
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.21		0.21	0.082
307-24-4	Perfluorohexanoic acid (PFHxA)	0.21		0.21	0.045
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.21		0.21	0.031
335-67-1	Perfluorooctanoic acid (PFOA)	0.11	J	0.21	0.091
375-95-1	Perfluorononanoic acid (PFNA)	0.050	J	0.21	0.038
335-76-2	Perfluorodecanoic acid (PFDA)	0.21		0.21	0.023
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.21		0.21	0.038
307-55-1	Perfluorododecanoic acid (PFDoA)	0.21		0.21	0.071
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.21		0.21	0.054
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.21		0.21	0.057
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.21		0.21	0.027
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21		0.21	0.033
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.21		0.21	0.037
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.37	J	0.53	0.21
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.21		0.21	0.041
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.21		0.21	0.087
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.12		2.12	0.41
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.12		2.12	0.39
27619-97-2	6:2 FTS	2.12		2.12	0.16
39108-34-4	8:2 FTS	2.12		2.12	0.27

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid Lab File ID: 2019.10.10_LLA_012.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:30

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.33(g) Date Analyzed: 10/10/2019 06:15

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 11.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	92		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	85		25-150
STL01892	13C4 PFHpA	91		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	87		25-150
STL00996	13C2 PFDA	90		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	85		25-150
STL02116	13C2 PFTeDA	99		25-150
STL00994	18O2 PFHxS	100		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	75		25-150
STL02117	d5-NEtFOSAA	88		25-150
STL02279	M2-6:2 FTS	115		25-150
STL02280	M2-8:2 FTS	114		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_012.d
Lims ID: 480-159547-B-39-B
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 10-Oct-2019 06:15:49 ALS Bottle#: 6 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-39-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:32:37 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:32:37
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.836	1.903	-0.067	0.970	123690	0.0738			2.9	
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.903	-0.010	0.567	4928847	2.29		91.7	4369	
D 4 13C5 PFPeA										
267.90 > 223.00	2.197	2.208	-0.011	0.658	4111459	2.28		91.4	2344	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.570	-0.014	0.766	4424770	2.13		85.4	1978	
D 14 13C4 PFHpA										
367.00 > 322.00	2.936	2.952	-0.016	0.879	5423615	2.29		91.5	3607	
D 16 18O2 PFHxS										
403.00 > 84.00	2.941	2.957	-0.016	0.881	3602769	2.36		100.0	5001	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.331	-0.013	1.000	5458	0.006181			4.6	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.331	-0.013	0.994	900390	2.72		115	719	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.353	-0.014		7293726	2.50			3540	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.339	3.353	-0.014	1.000	151437	0.0526	Target=3.01		11.7	M
413.00 > 169.00	3.339	3.353	-0.014	1.000	60824		2.49(1.51-4.52)		77.9	M
D 23 13C4 PFOA										
417.00 > 372.00	3.339	3.353	-0.014	1.000	6361822	2.33		93.1	2969	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.714	3.727	-0.013	1.000	307356	0.1733	Target=3.98		179	M
499.00 > 99.00	3.707	3.727	-0.020	0.998	84796		3.62(1.99-5.97)		109	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.727	-0.013	1.112	3949251	2.23		93.4	2455	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 30 13C5 PFNA										
468.00 > 423.00	3.722	3.744	-0.022	1.115	5277927	2.17		86.7	3925	
29 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.744	-0.014	1.002	50849	0.0234	Target=5.53		7.1	
463.00 > 169.00	3.737	3.744	-0.007	1.004	9437		5.39(2.77-8.30)		20.1	
D 36 13C2 PFDA										
515.00 > 470.00	4.077	4.100	-0.023	1.221	6186832	2.25		90.1	3067	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.086	4.100	-0.014	1.224	850157	2.73		114	934	
D 32 13C8 FOSA										
506.00 > 78.00	4.104	4.118	-0.014	1.229	2119487	2.32		92.9	2275	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.118	-0.014	1.000	17560	0.007540			35.4	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.238	4.252	-0.014	1.269	2427856	1.87		74.9	1741	
D 42 13C2 PFUnA										
565.00 > 520.00	4.396	4.409	-0.012	1.316	5416253	2.31		92.4	3394	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.404	4.417	-0.013	1.319	2458421	2.21		88.3	1506	
D 55 13C2 PFDoA										
615.00 > 570.00	4.688	4.702	-0.014	1.404	5514184	2.14		85.5	4795	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.181	5.194	-0.014	1.551	4517594	2.47		98.8	7894	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-Oct-2019 14:32:37 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_012.d

Injection Date: 10-Oct-2019 06:15:49 Instrument ID: A9

Lims ID: 480-159547-B-39-B Lab Sample ID: 320-159547-39

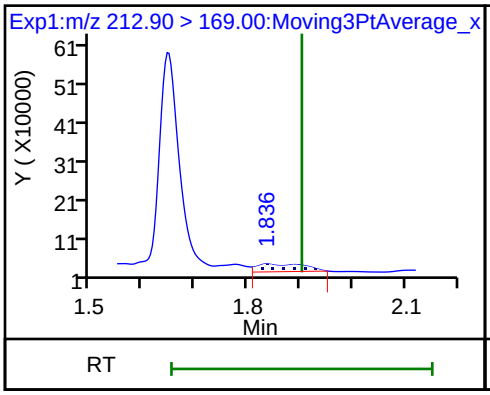
Client ID: GERNATT-TS-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 6 Worklist Smp#: 9

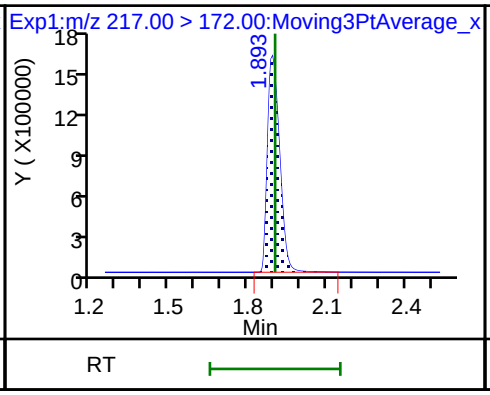
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

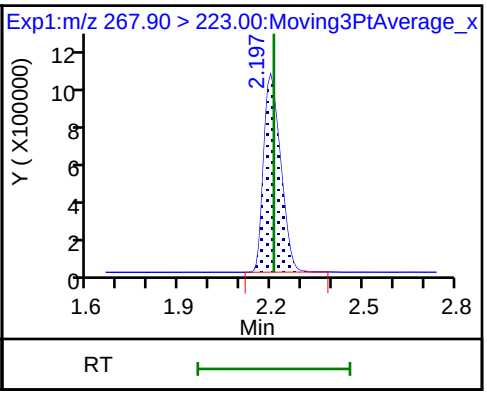
2 Perfluorobutanoic acid



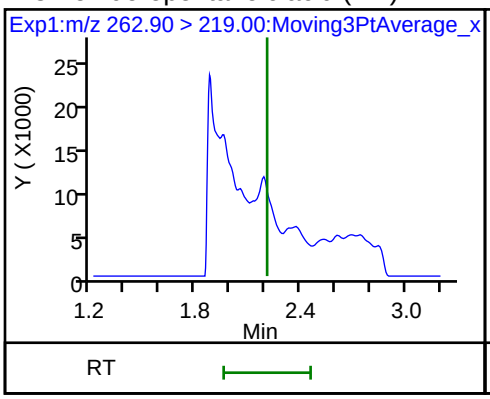
D 1 13C4 PFBA



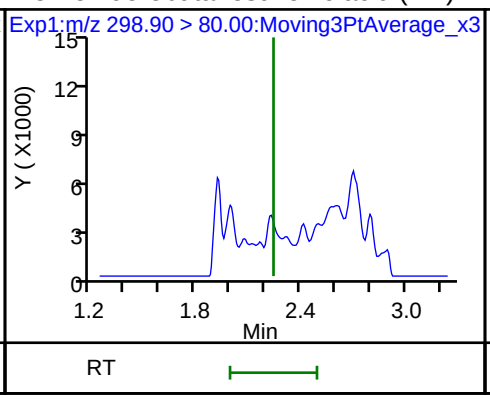
D 4 13C5 PFPeA



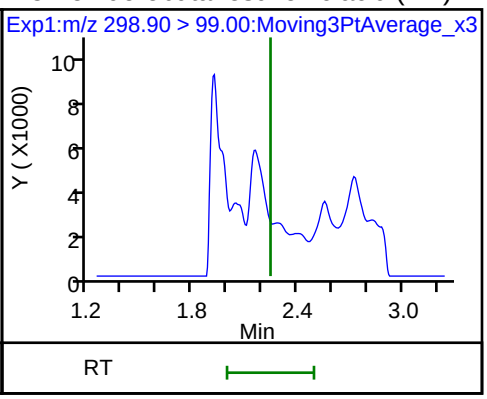
3 Perfluoropentanoic acid (ND)



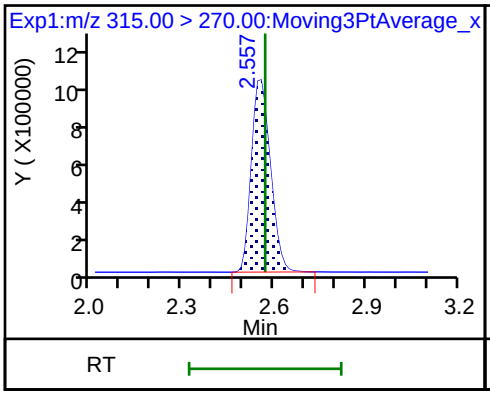
5 Perfluorobutanesulfonic acid (ND)



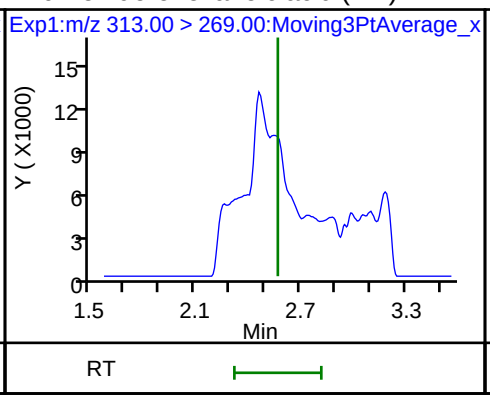
5 Perfluorobutanesulfonic acid (ND)



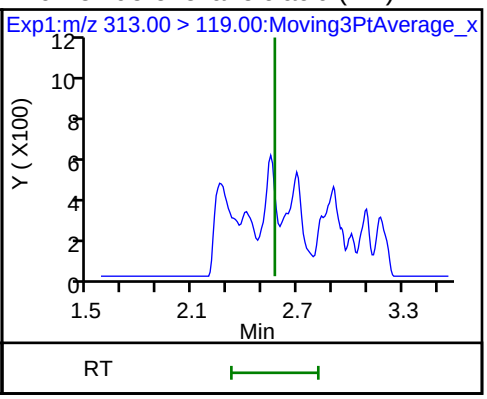
D 9 13C2 PFHxA



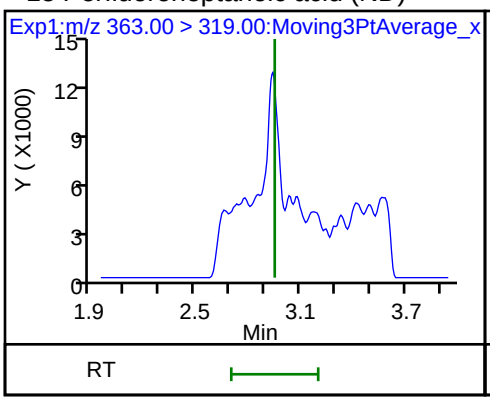
10 Perfluorohexanoic acid (ND)



10 Perfluorohexanoic acid (ND)



15 Perfluoroheptanoic acid (ND)



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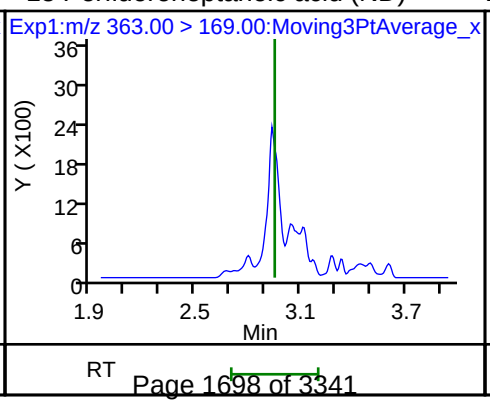
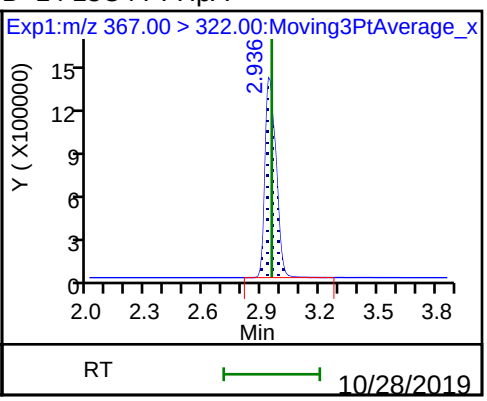
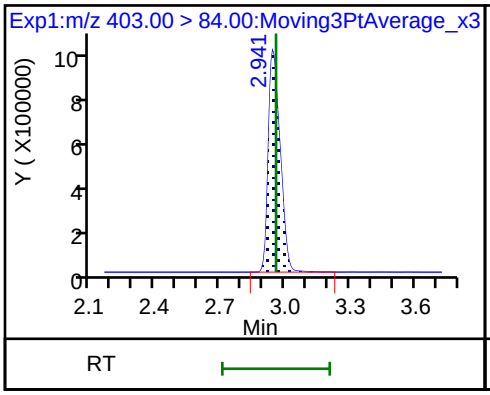


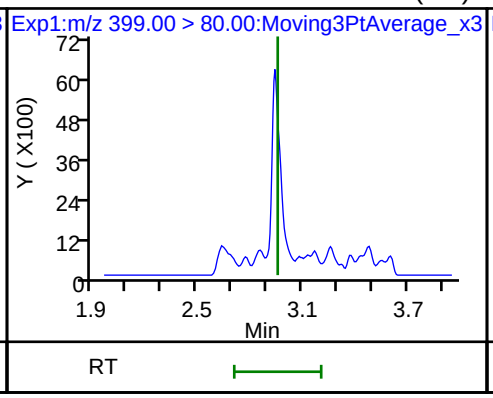
D 14 13C4 PFHpA



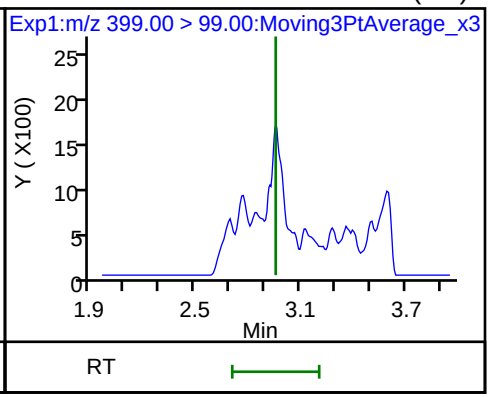
D 16 18O2 PFHxS



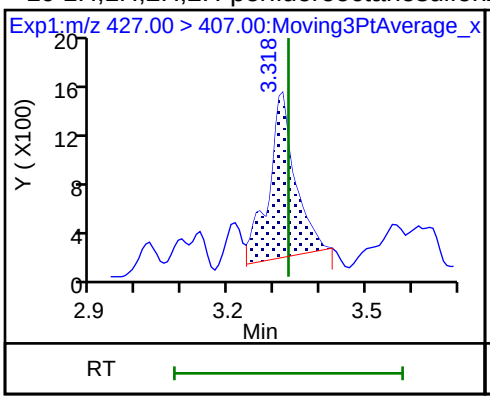
17 Perfluorohexanesulfonic acid (ND)



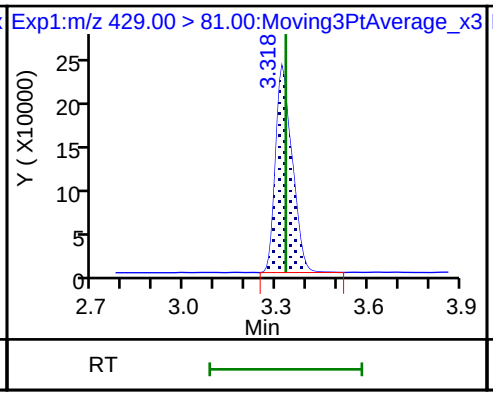
17 Perfluorohexanesulfonic acid (ND)



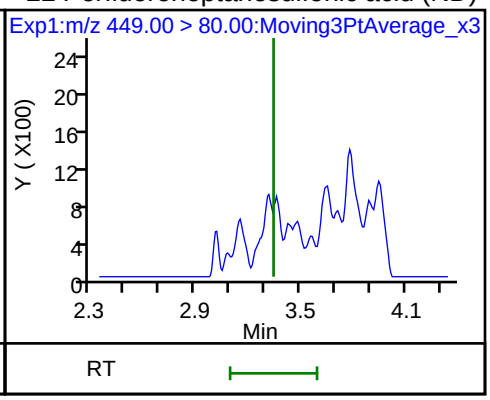
19 1H,1H,2H,2H-perfluorooctanesulfon



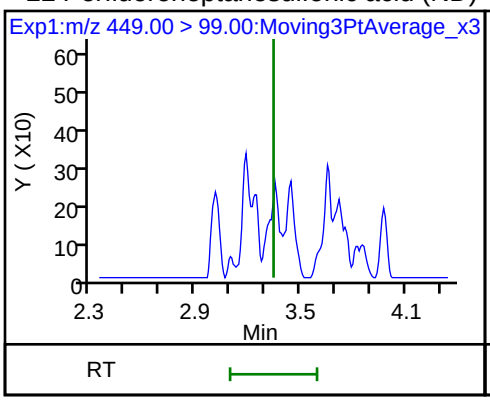
D 20 M2-6:2 FTS



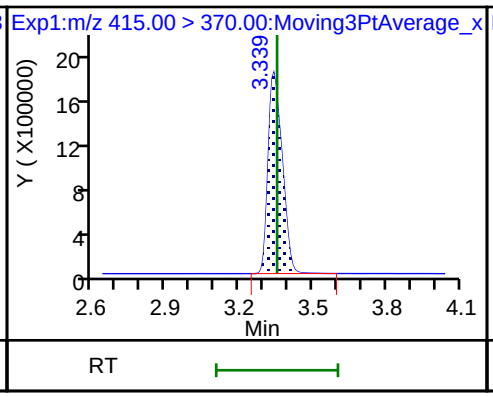
22 Perfluoroheptanesulfonic acid (ND)



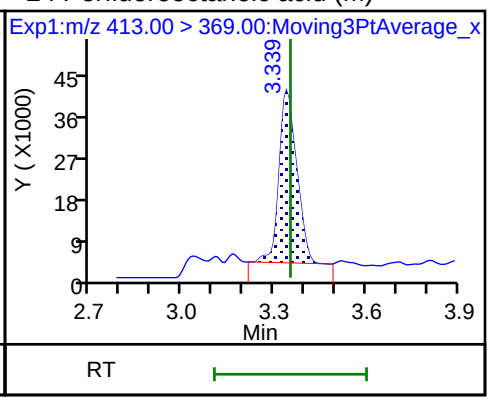
22 Perfluoroheptanesulfonic acid (ND) *



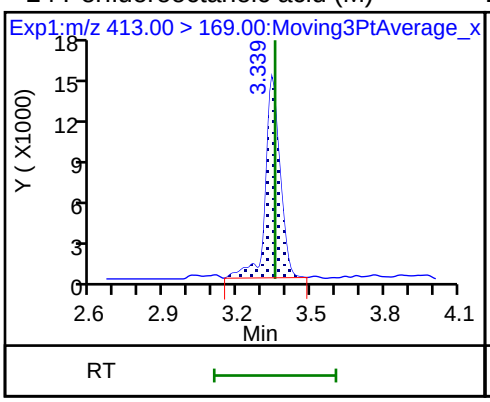
25 13C2 PFOA



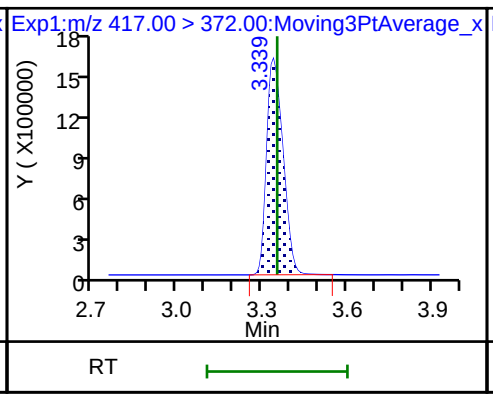
24 Perfluorooctanoic acid (M)



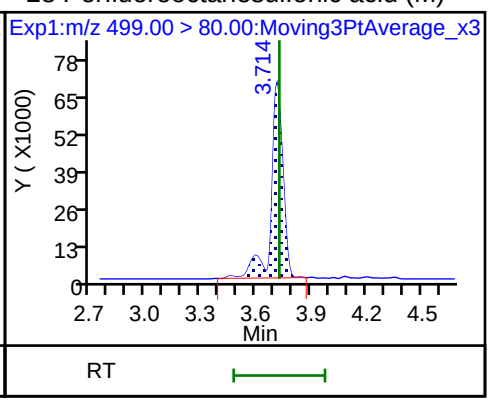
24 Perfluorooctanoic acid (M)



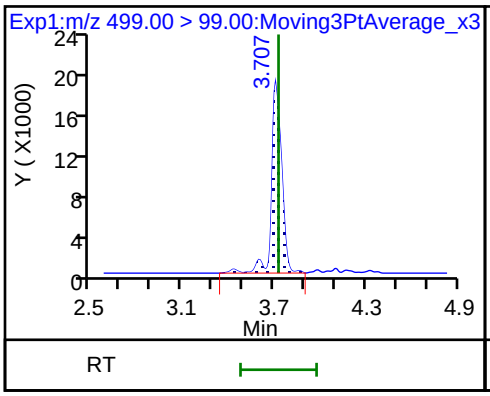
D 23 13C4 PFOA



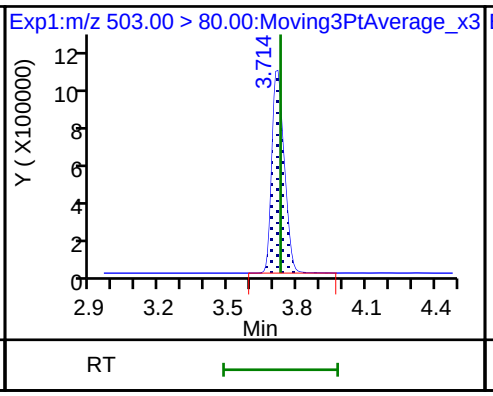
28 Perfluorooctanesulfonic acid (M)



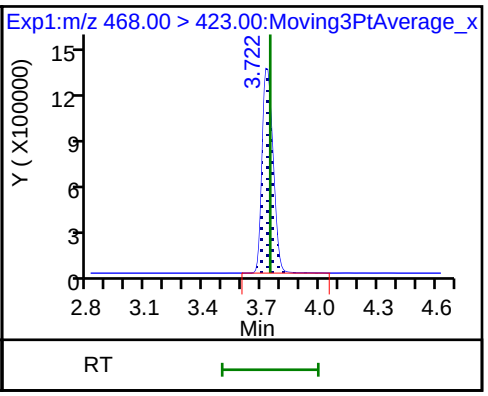
28 Perfluorooctanesulfonic acid



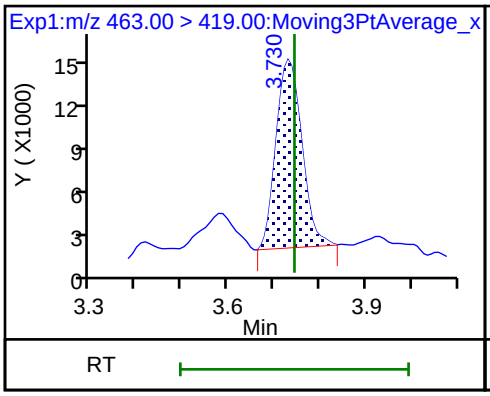
D 27 13C4 PFOS



D 30 13C5 PFNA



29 Perfluorononanoic acid



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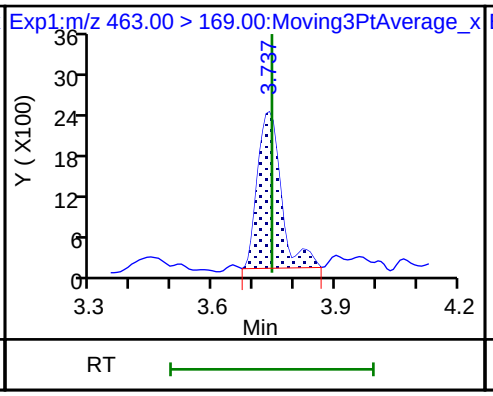
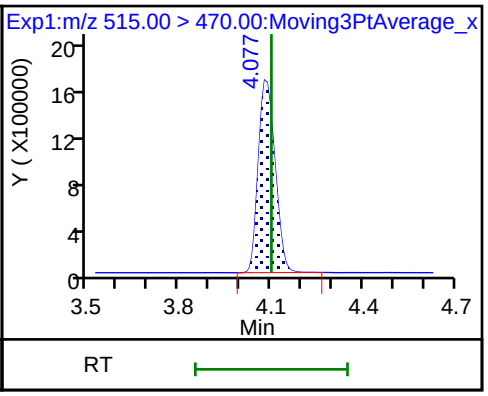
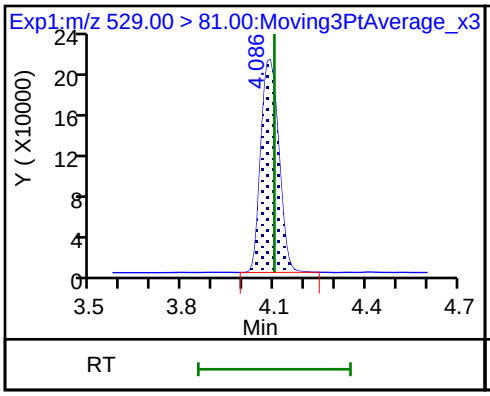


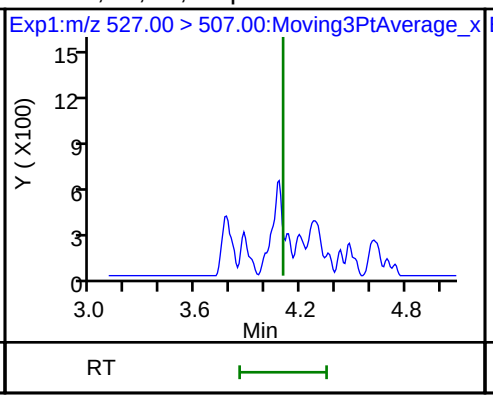
D 36 13C2 PFDA



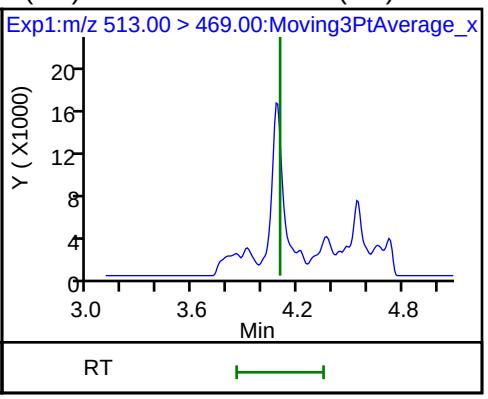
D 35 M2-8:2 FTS



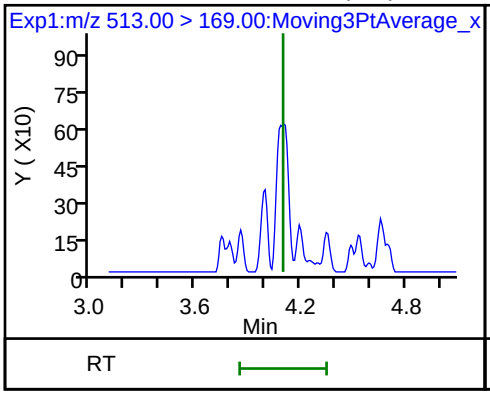
38 1H,1H,2H,2H-perfluorodecanesulfoni



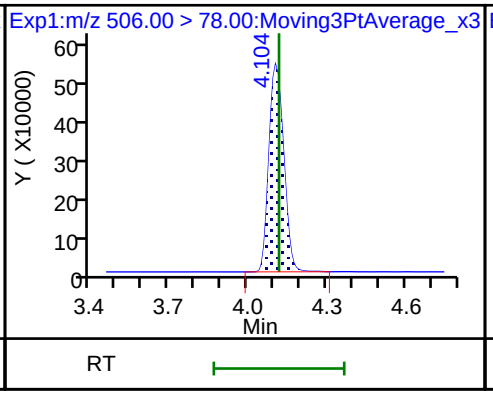
perfluorodecanoic acid (ND)



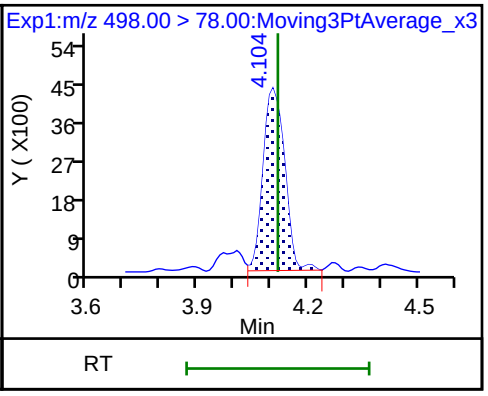
37 Perfluorodecanoic acid (ND)



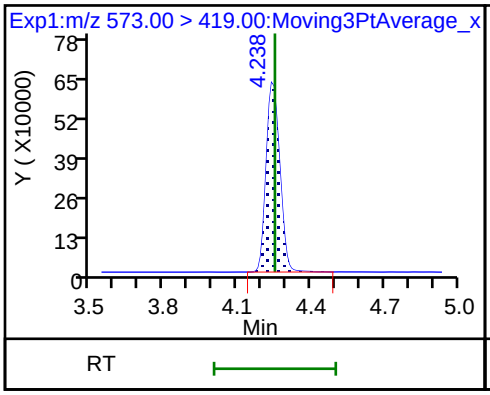
D 32 13C8 FOSA



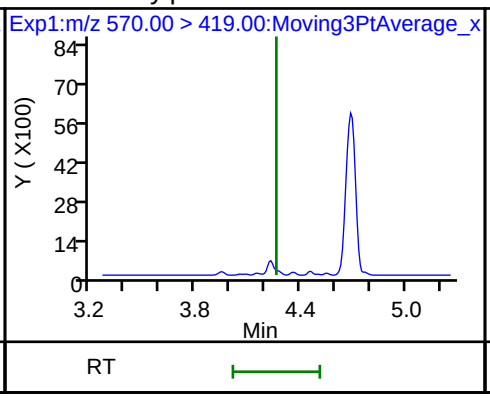
33 Perfluorooctanesulfonamide



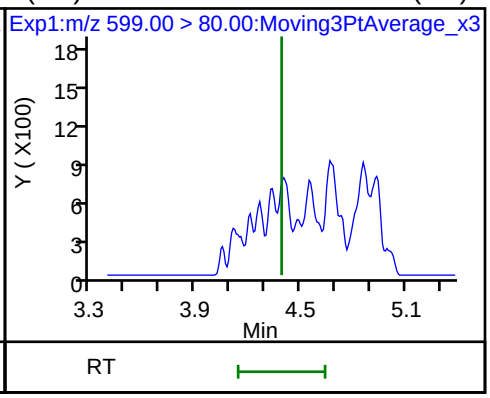
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido (ND)



41 Perfluorodecanesulfonic acid (ND)



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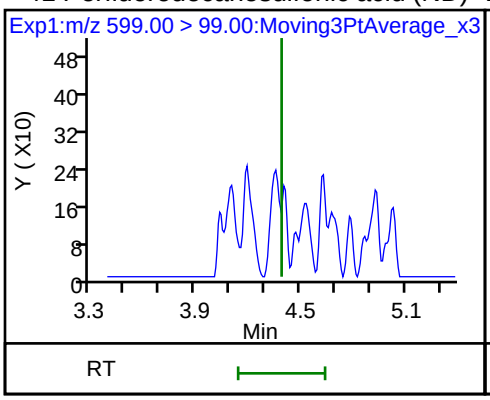
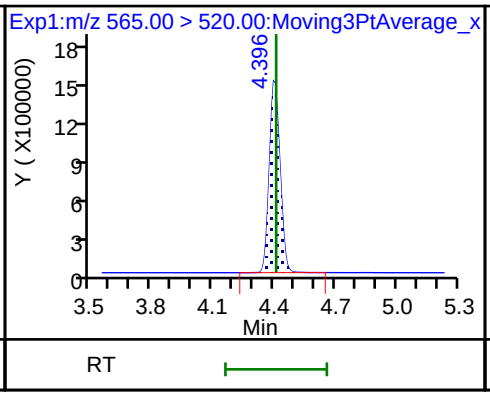
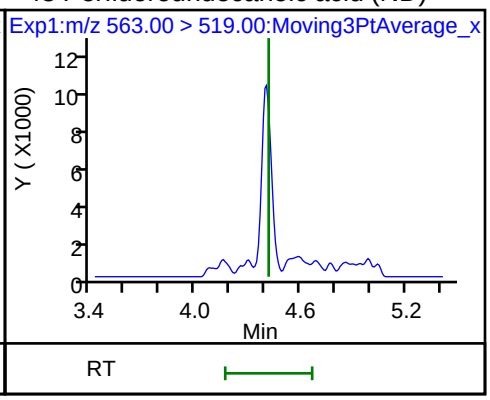


D 42 13C2 PFUnA



43 Perfluoroundecanoic acid (ND)



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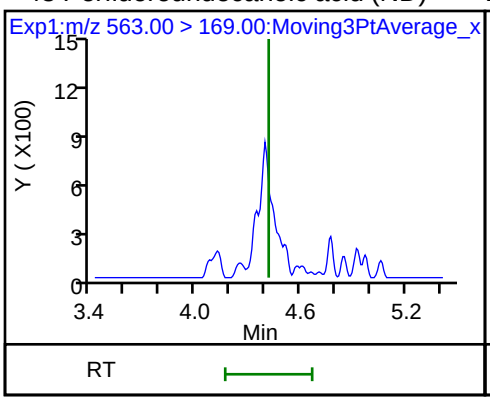
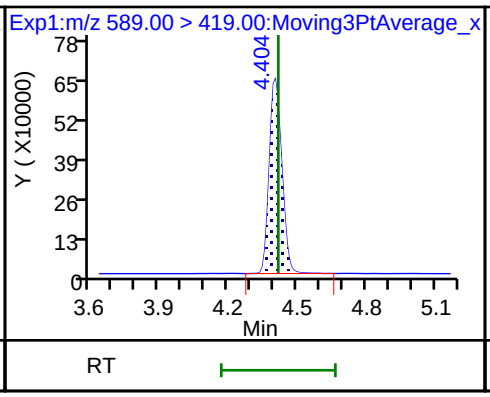
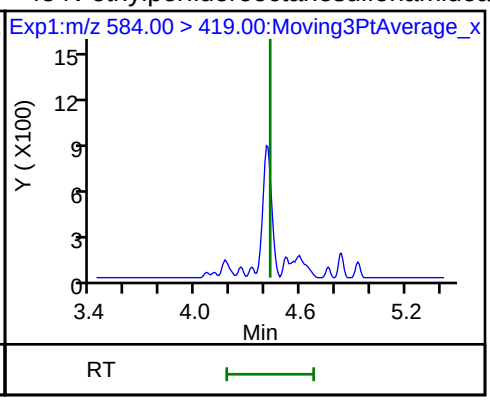


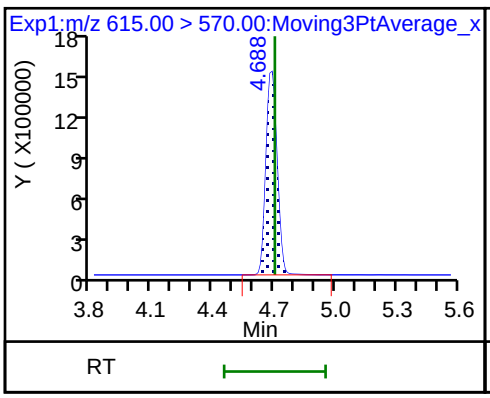
D 44 d5-NEtFOSAA



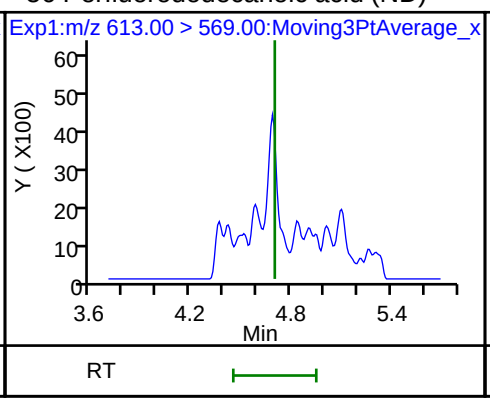
45 N-ethylperfluorooctanesulfonamidoa (ND)



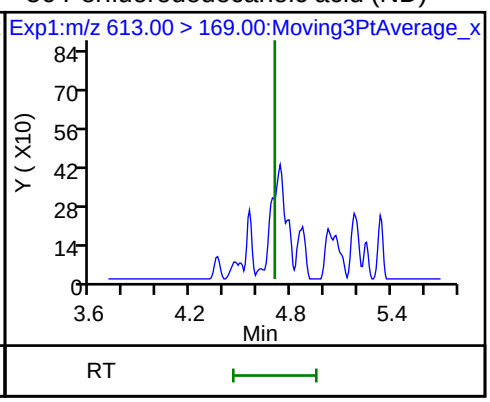
D 55 13C2 PFDoA



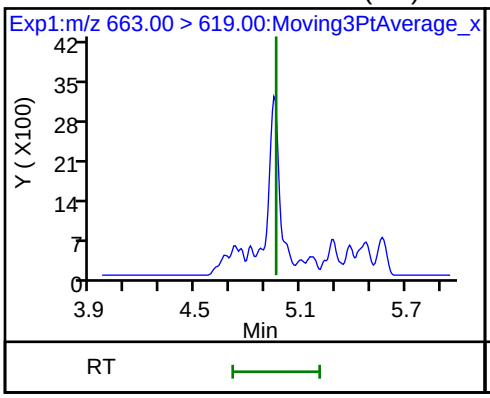
56 Perfluorododecanoic acid (ND)



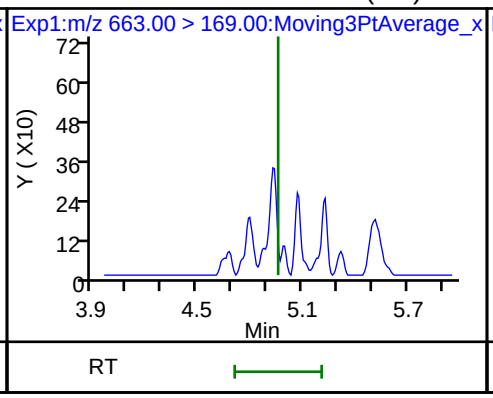
56 Perfluorododecanoic acid (ND)



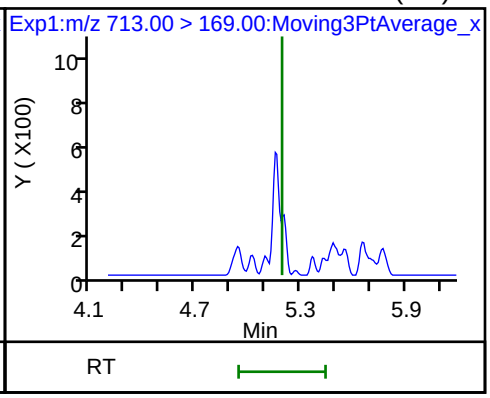
59 Perfluorotridecanoic acid (ND)



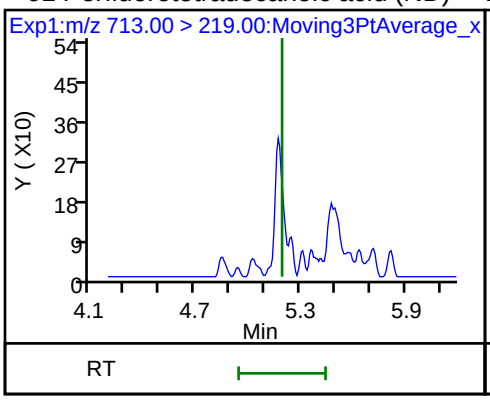
59 Perfluorotridecanoic acid (ND)



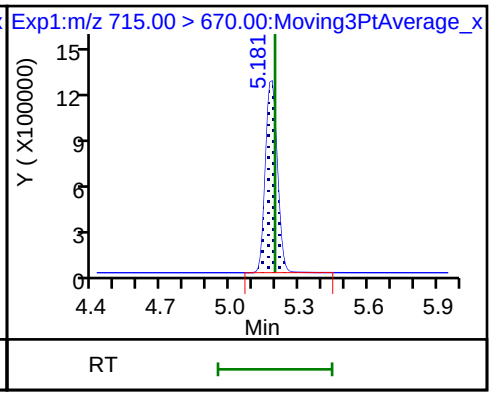
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

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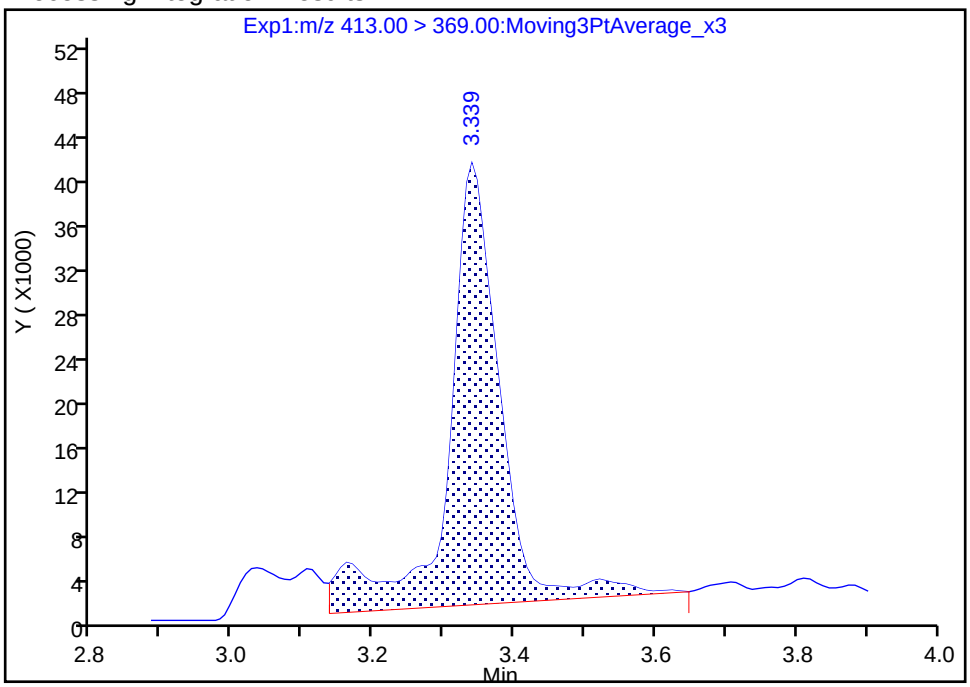
Lims ID:	480-159547-B-39-B	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	6	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

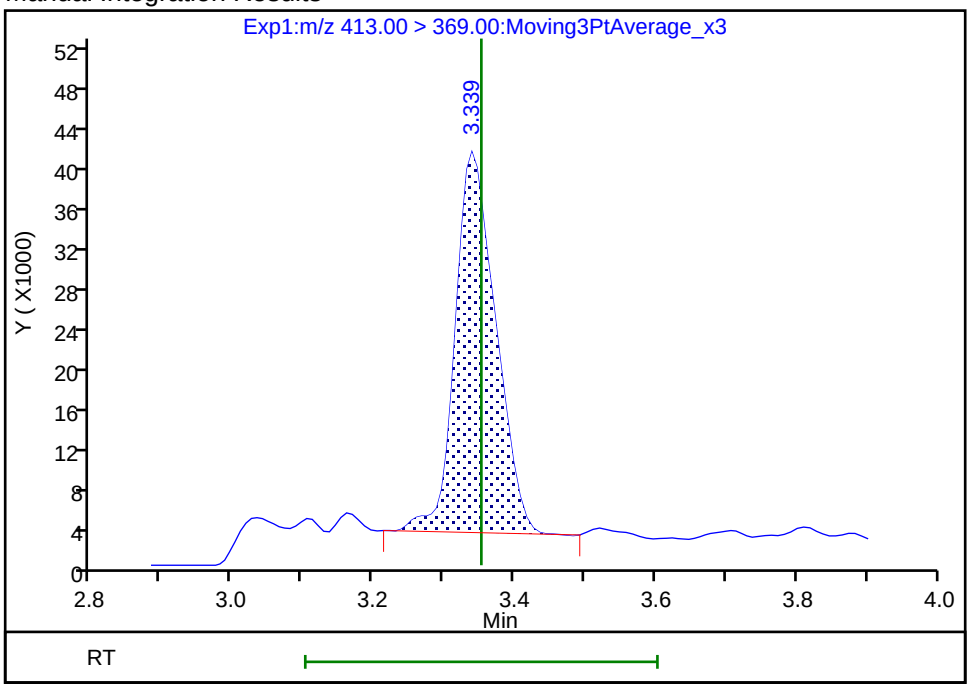
Processing Integration Results

RT: 3.34
Area: 204337
Amount: 0.071024
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 151437
Amount: 0.052637
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:31:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

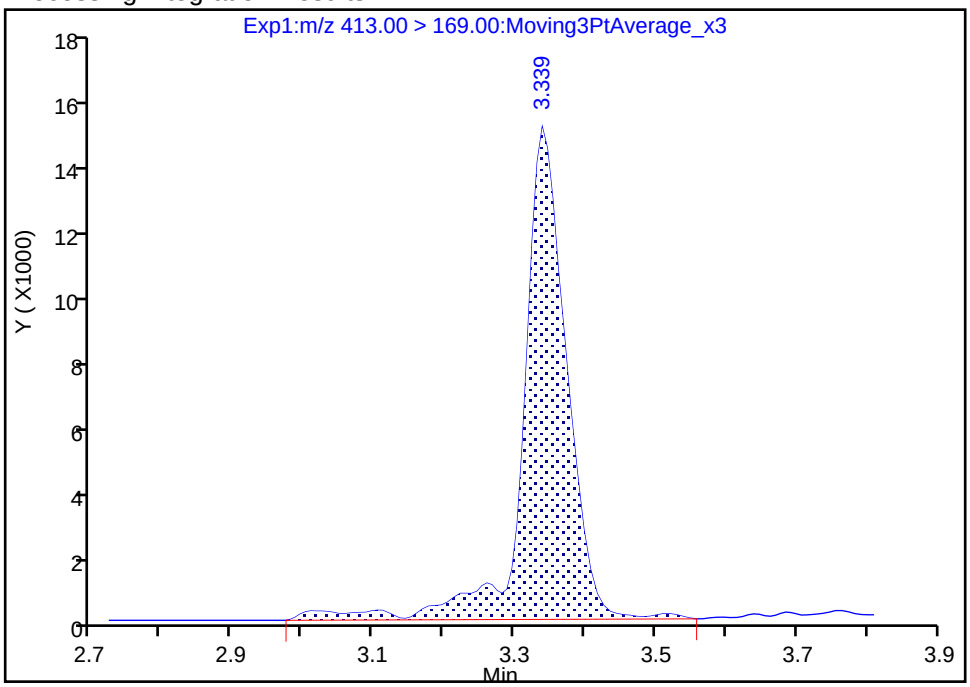
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_012.d				
Injection Date:	10-Oct-2019 06:15:49	Instrument ID:	A9		
Lims ID:	480-159547-B-39-B	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	6	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

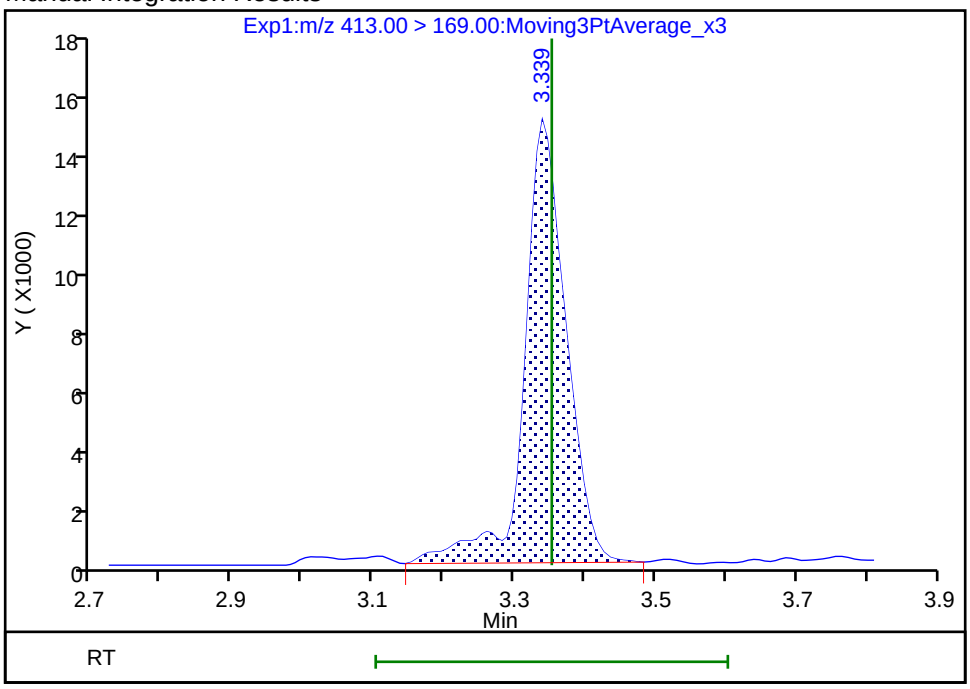
Processing Integration Results

RT: 3.34
Area: 64357
Amount: 0.071024
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 60824
Amount: 0.052637
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:31:53
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

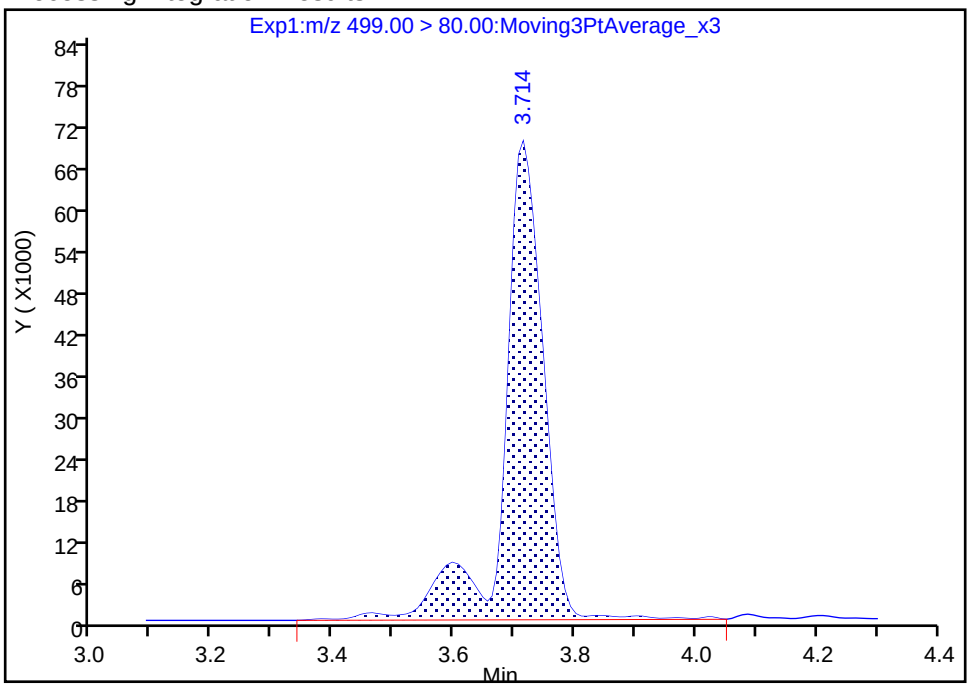
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_012.d				
Injection Date:	10-Oct-2019 06:15:49	Instrument ID:	A9		
Lims ID:	480-159547-B-39-B	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	6	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

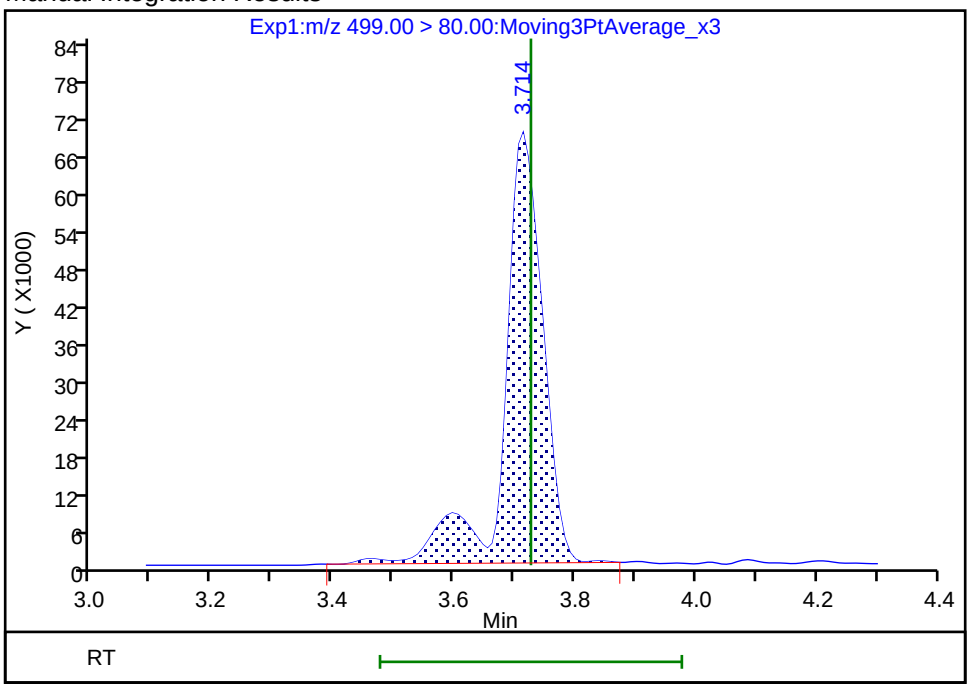
Processing Integration Results

RT: 3.71
Area: 317476
Amount: 0.178974
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 307356
Amount: 0.173269
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:32:09

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._034.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:30

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 273.2(mL) Date Analyzed: 10/09/2019 03:06

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.99	J	1.83	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.83		1.83	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	1.83		1.83	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.83	J	1.83	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	2.65		1.83	0.78
375-95-1	Perfluorononanoic acid (PFNA)	0.57	J	1.83	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01
307-55-1	Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.37	J B	1.83	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.01	J	1.83	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	103		25-150
STL00993	13C2 PFHxA	104		25-150
STL00990	13C4 PFOA	103		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	104		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	90		25-150
STL00994	18O2 PFHxS	105		25-150
STL00991	13C4 PFOS	101		25-150
STL01892	13C4 PFHpA	106		25-150
STL01893	13C5 PFPeA	103		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d
Lims ID: 480-159547-B-39-D
Client ID: GERNATT-TS-COMP 1
Sample Type: Client
Inject. Date: 09-Oct-2019 03:06:39 ALS Bottle#: 21 Worklist Smp#: 20
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-39-d
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:51:05 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:51:05
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.888	1.719	0.169	1.000	55048	0.0271			5.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.888	1.901	-0.013	0.567	5969287	2.57		103	5166	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.206	-0.008	0.660	4999874	2.58		103	2789	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.190	2.206	-0.016	0.996	17818	0.008697			0.5	M
D 9 13C2 PFHxA										
315.00 > 270.00	2.547	2.557	-0.010	0.765	5799524	2.60		104	2982	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.929	2.941	-0.012	0.998	68365	0.0225	Target=4.51		4.8	M
363.00 > 169.00	2.929	2.941	-0.012	0.998	12795		5.34(2.25-6.76)		20.5	
D 14 13C4 PFHpA										
367.00 > 322.00	2.934	2.942	-0.008	0.881	6750057	2.64		106	3607	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.946	2.947	-0.001	1.004	21581	0.0102	Target=3.25		27.5	M
399.00 > 99.00	2.929	2.947	-0.018	0.998	6728		3.21(1.63-4.88)		8.1	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.934	2.947	-0.013	0.881	4086518	2.49		105	4675	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.316	3.318	-0.002	1.002	4707	0.007077			19.9	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.309	3.318	-0.009	0.994	678185	1.90		80.1	1151	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.347	-0.009	1.002	7581936	2.57		103	3532	
* 25 13C2 PFOA										
415.00 > 370.00	3.330	3.347	-0.017		7863246	2.50			4138	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.338	3.347	-0.009	1.000	248530	0.0725	Target=3.06		17.7	M
413.00 > 169.00	3.338	3.347	-0.009	1.000	86698		2.87(1.53-4.58)		123	M
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.711	3.715	-0.004	1.000	57277	0.0277	Target=4.13		35.6	M
499.00 > 99.00	3.711	3.715	-0.004	1.000	13365		4.29(2.06-6.19)		50.2	M
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.715	-0.004	1.114	4601521	2.41		101	4000	
D 30 13C5 PFNA										
468.00 > 423.00	3.719	3.731	-0.012	1.117	6594307	2.51		101	3311	
29 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.731	-0.004	1.002	42481	0.0156	Target=5.59		8.2	
463.00 > 169.00	3.727	3.731	-0.004	1.002	7486		5.67(2.80-8.39)		16.5	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.088	-0.006	1.226	7701883	2.60		104	4080	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.088	-0.006	1.226	591621	1.76		73.6	1193	
D 32 13C8 FOSA										
506.00 > 78.00	4.100	4.114	-0.014	1.231	2520666	2.56		103	1721	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.100	4.123	-0.023	1.000	10979	0.003964			22.7	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.249	-0.006	1.274	3519818	2.52		101	2094	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.406	-0.006	1.321	6381521	2.53		101	5386	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.414	-0.014	1.000	11420	0.005687	Target=9.66		6.9	
563.00 > 169.00	4.408	4.414	-0.006	1.002	1707		6.69(4.83-14.49)		8.8	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.414	-0.014	1.321	3143430	2.62		105	1953	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.581	4.587	-0.006	0.978	12979	0.004480	Target=9.50		7.7	
613.00 > 169.00	4.702	4.587	0.115	1.004	1218		10.66(4.75-14.25)		7.2	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.690	-0.007	1.406	7027114	2.53		101	4253	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.177	5.191	-0.014	1.554	4416105	2.24		89.5	4317	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:51:05 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d

Injection Date: 09-Oct-2019 03:06:39 Instrument ID: A9

Lims ID: 480-159547-B-39-D Lab Sample ID: 320-159547-39

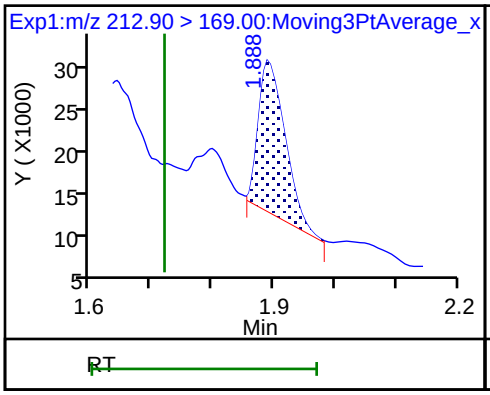
Client ID: GERNATT-TS-COMP 1

Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 20

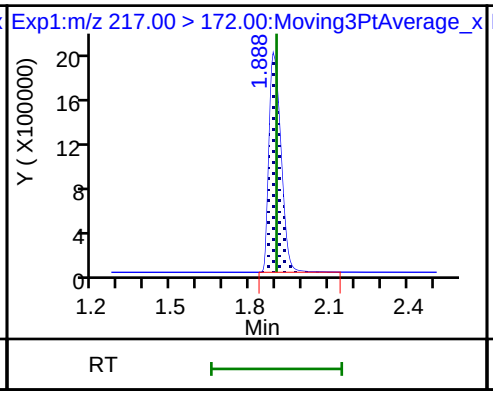
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

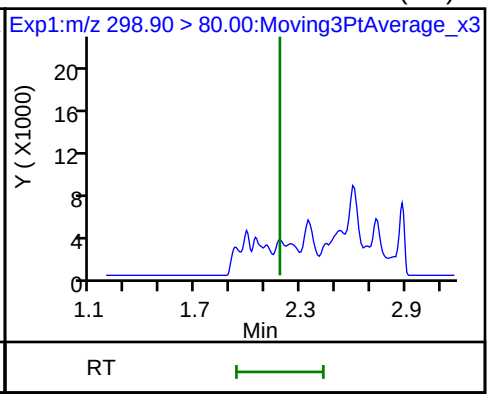
2 Perfluorobutanoic acid



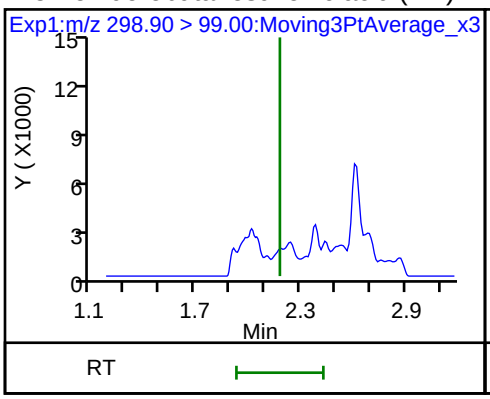
D 1 13C4 PFBA



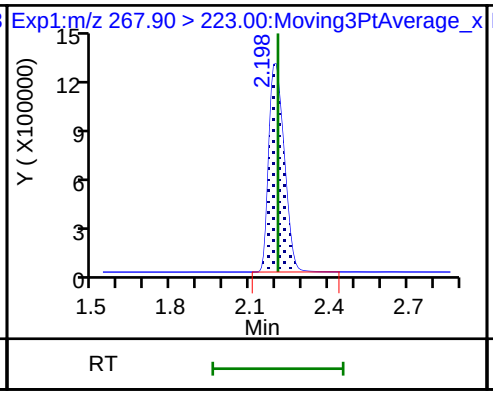
5 Perfluorobutanesulfonic acid (ND)



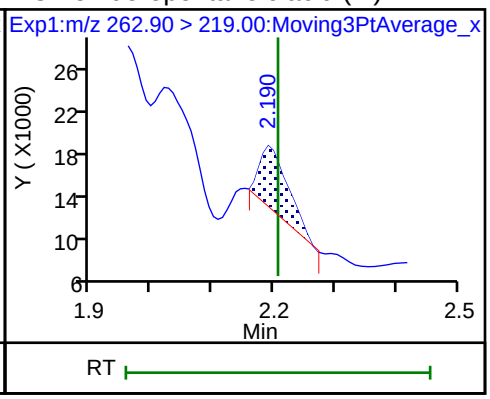
5 Perfluorobutanesulfonic acid (ND)



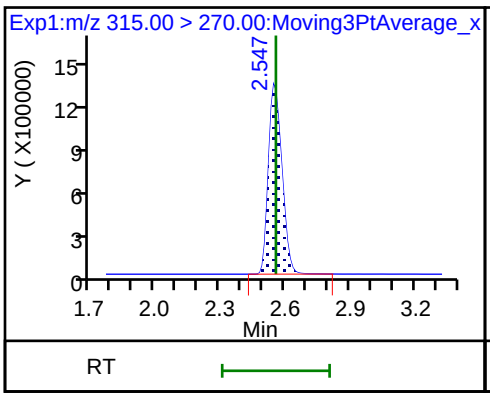
D 4 13C5 PFPeA



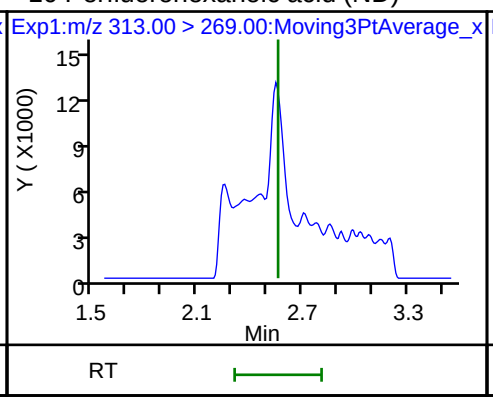
3 Perfluoropentanoic acid (M)



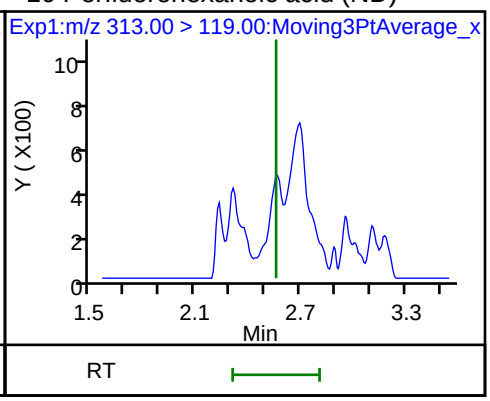
D 9 13C2 PFHxA



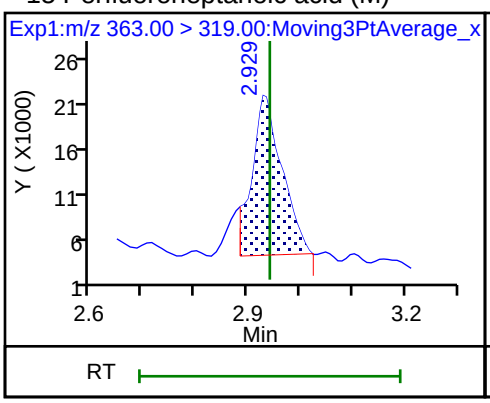
10 Perfluorohexanoic acid (ND)



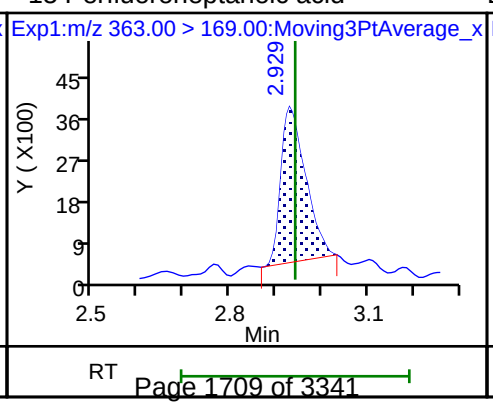
10 Perfluorohexanoic acid (ND)



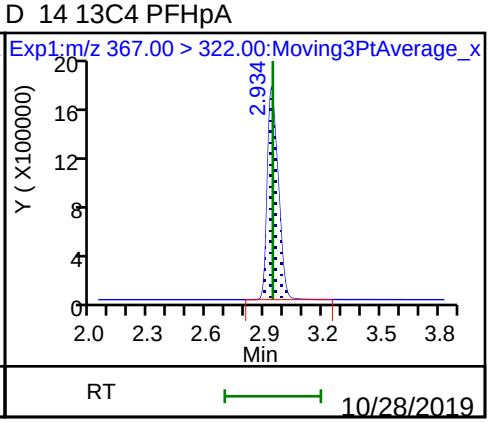
15 Perfluoroheptanoic acid (M)



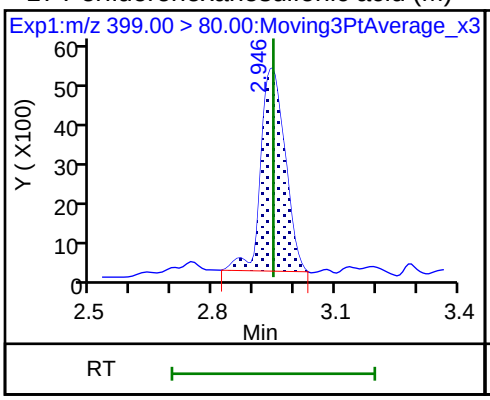
15 Perfluoroheptanoic acid



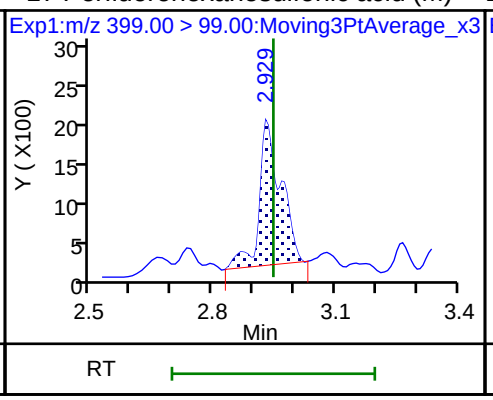
D 14 13C4 PFHpA



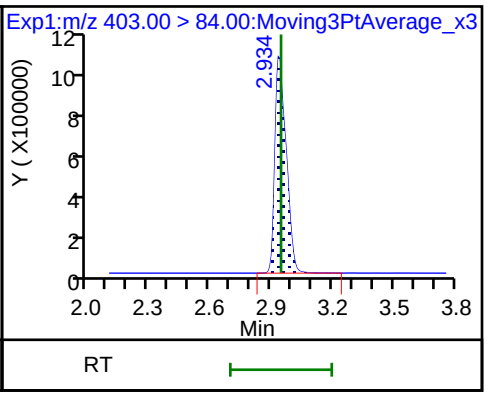
17 Perfluorohexanesulfonic acid (M)



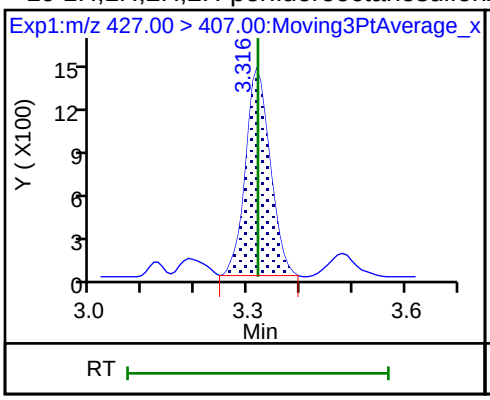
17 Perfluorohexanesulfonic acid (M)



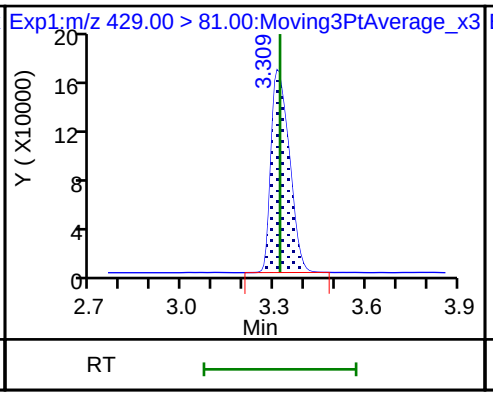
D 16 18O2 PFHxS



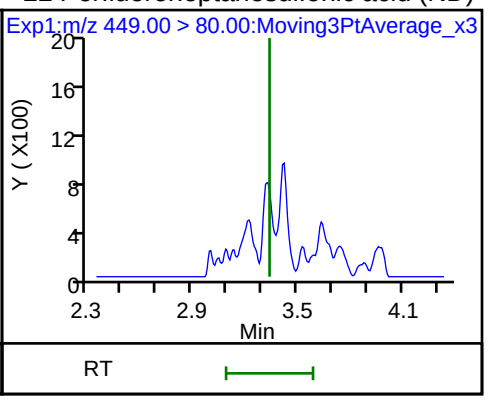
19 1H,1H,2H,2H-perfluorooctanesulfon



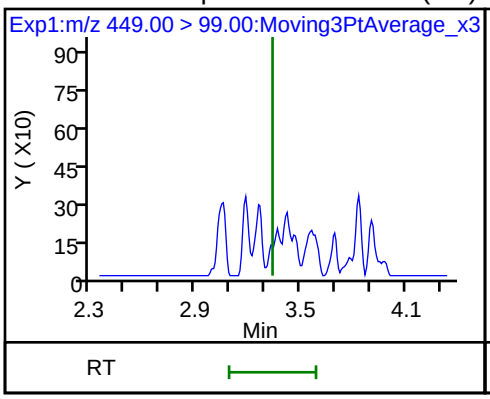
D 20 M2-6:2 FTS



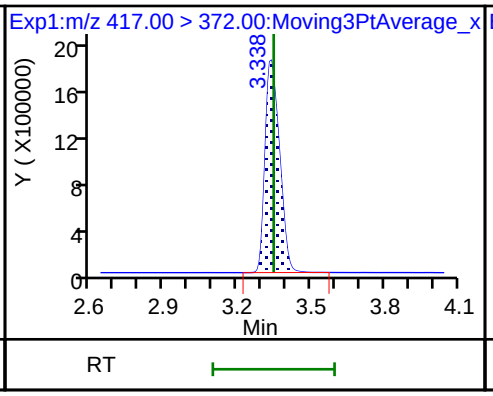
22 Perfluoroheptanesulfonic acid (ND)



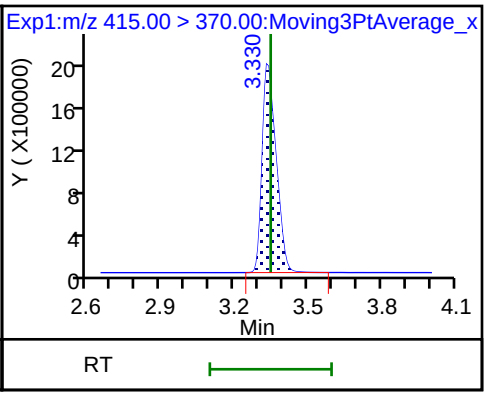
22 Perfluoroheptanesulfonic acid (ND)



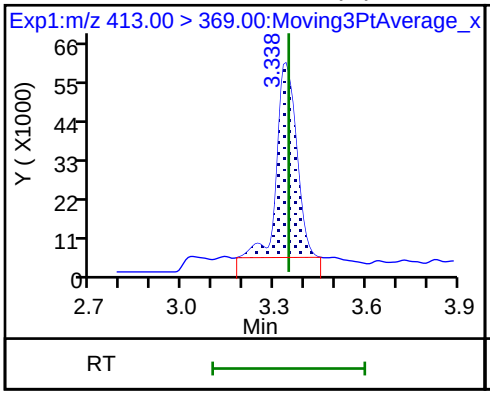
D 23 13C4 PFOA



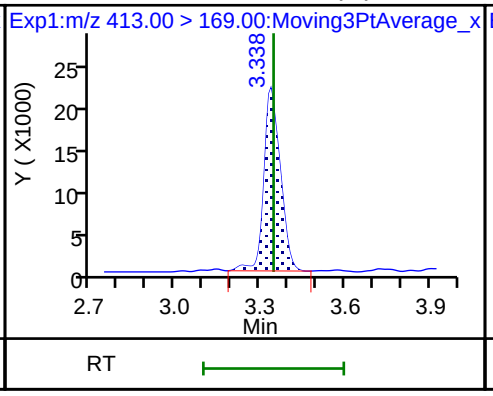
* 25 13C2 PFOA



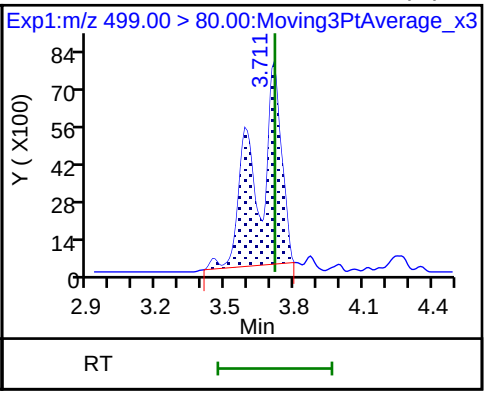
24 Perfluorooctanoic acid (M)



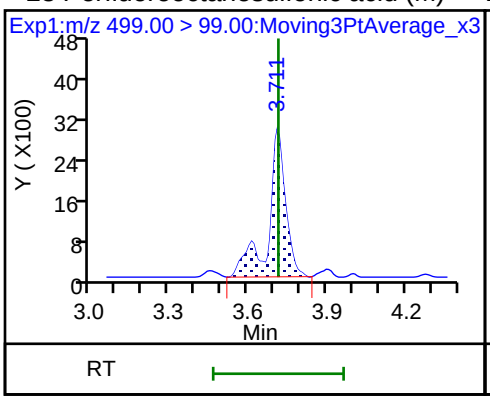
24 Perfluorooctanoic acid (M)



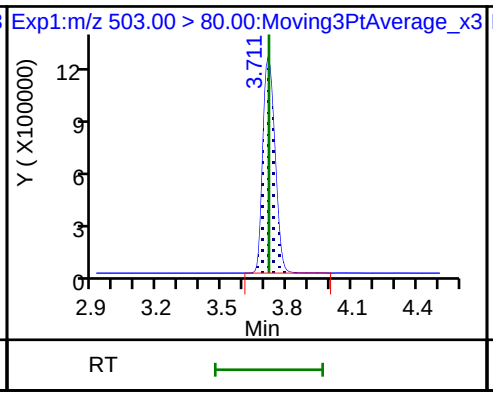
28 Perfluorooctanesulfonic acid (M)



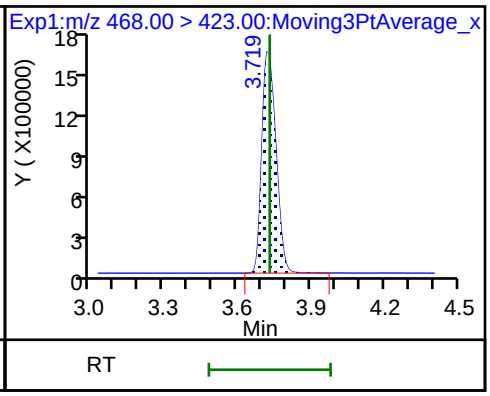
28 Perfluorooctanesulfonic acid (M)



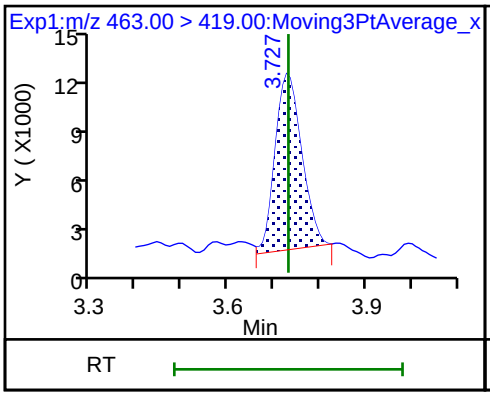
D 27 13C4 PFOS



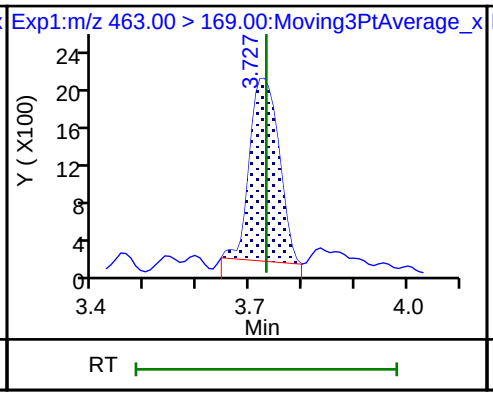
D 30 13C5 PFNA



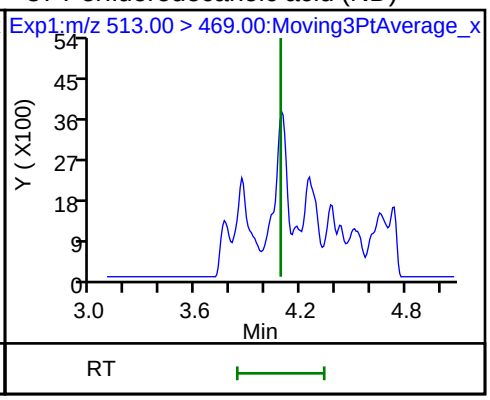
29 Perfluorononanoic acid



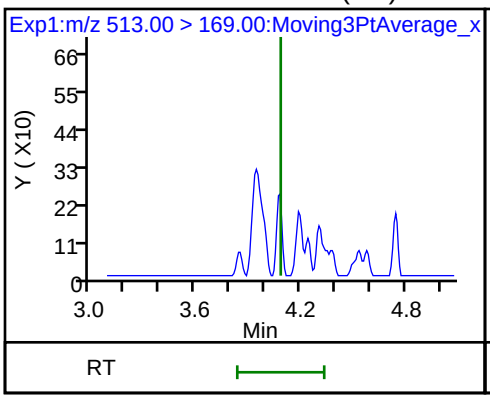
29 Perfluorononanoic acid



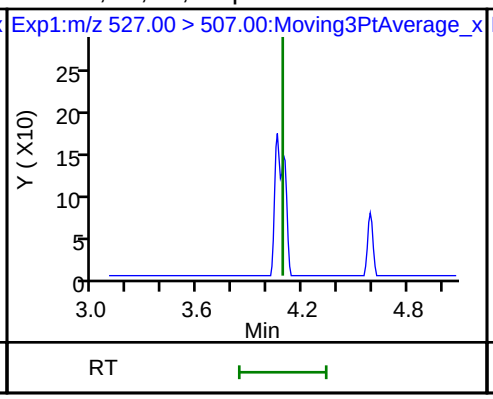
37 Perfluorodecanoic acid (ND)



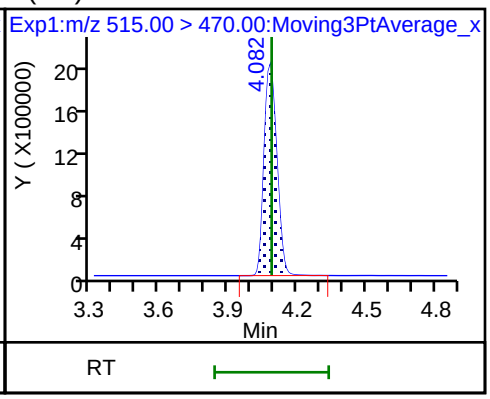
37 Perfluorodecanoic acid (ND)



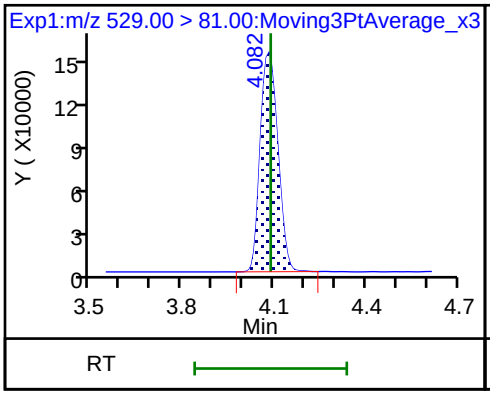
38 1H,1H,2H,2H-perfluorodecanesulfonic (ND)



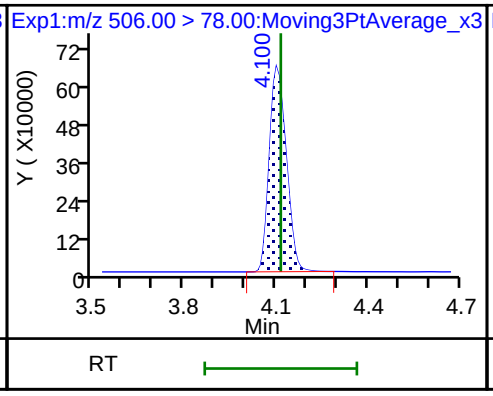
D 36 13C2 PFDA



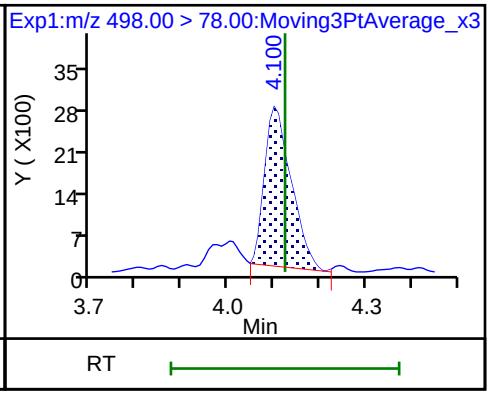
D 35 M2-8:2 FTS



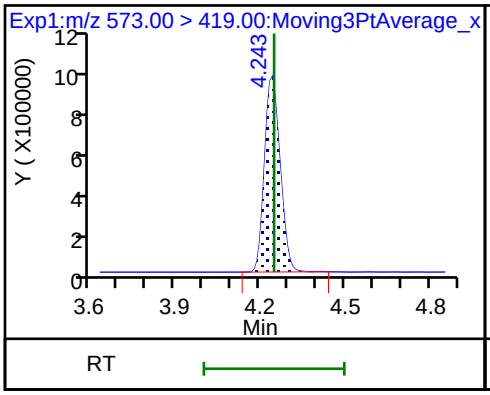
D 32 13C8 FOSA



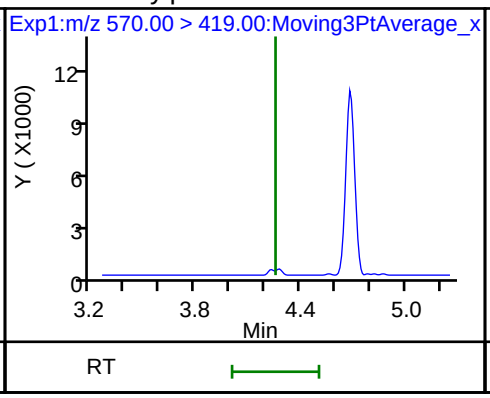
33 Perfluorooctanesulfonamide



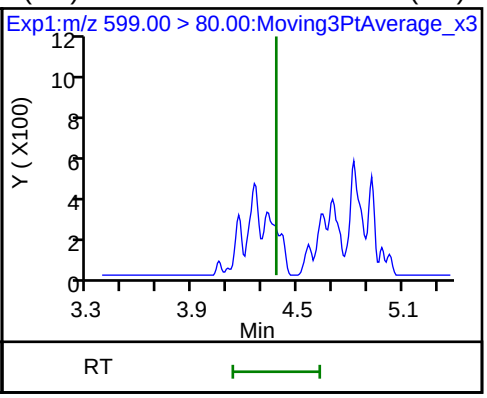
D 39 d3-NMeFOSAA



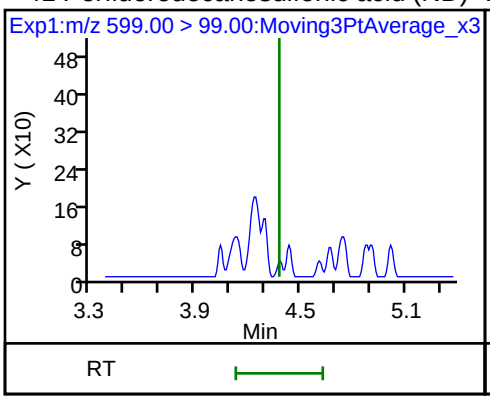
40 N-methylperfluorooctanesulfonamido (ND)



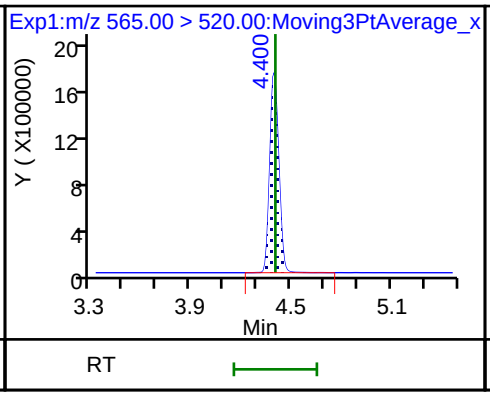
41 Perfluorodecanesulfonic acid (ND)



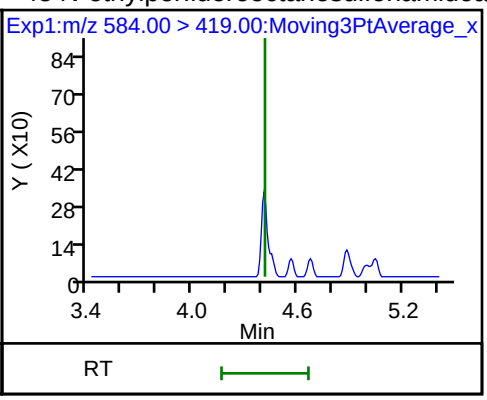
41 Perfluorodecanesulfonic acid (ND)



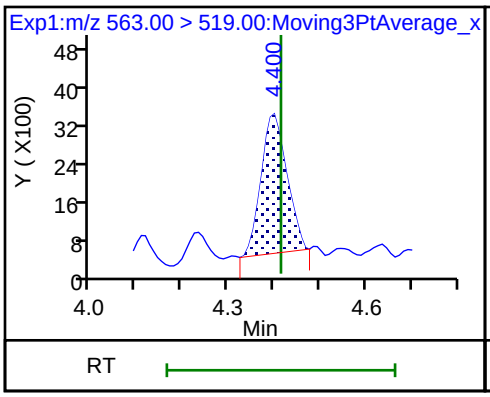
D 42 13C2 PFUnA



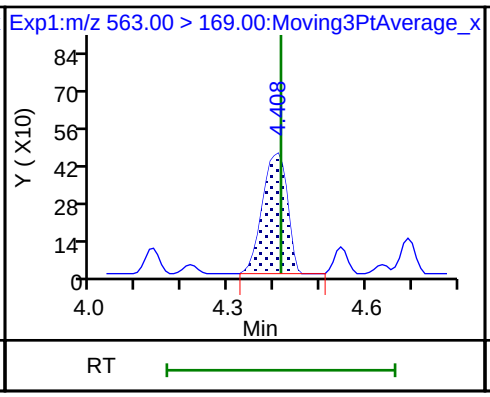
45 N-ethylperfluorooctanesulfonamidoa (ND)



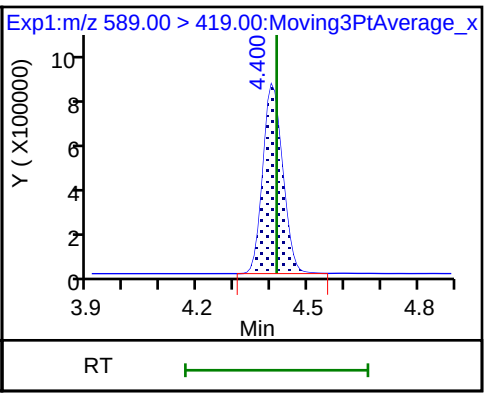
43 Perfluoroundecanoic acid



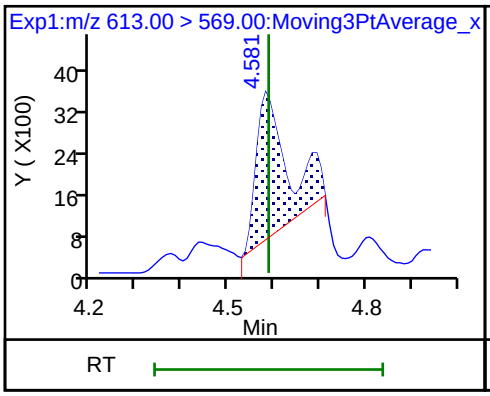
43 Perfluoroundecanoic acid



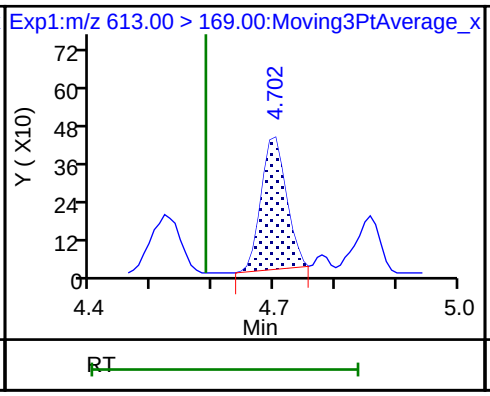
D 44 d5-NEtFOSAA



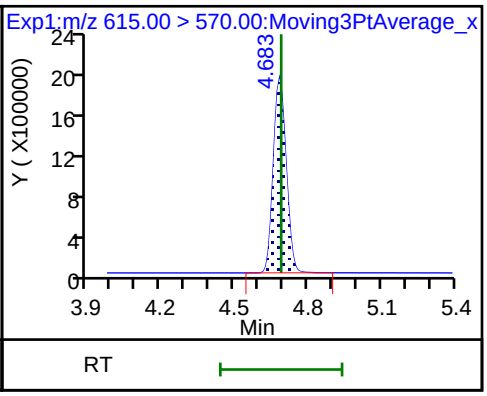
56 Perfluorododecanoic acid



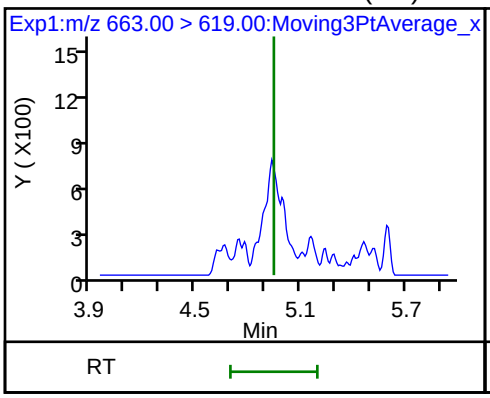
56 Perfluorododecanoic acid



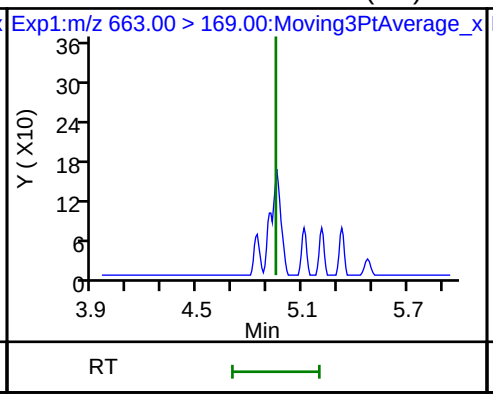
D 55 13C2 PFDoA



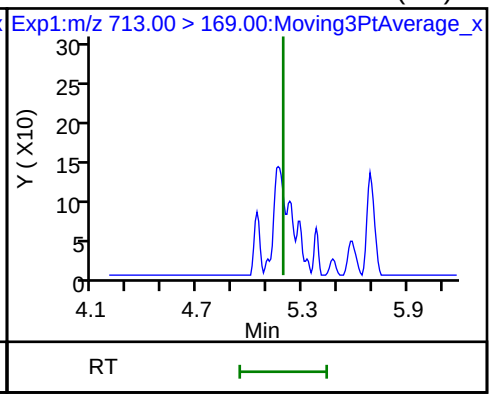
59 Perfluorotridecanoic acid (ND)



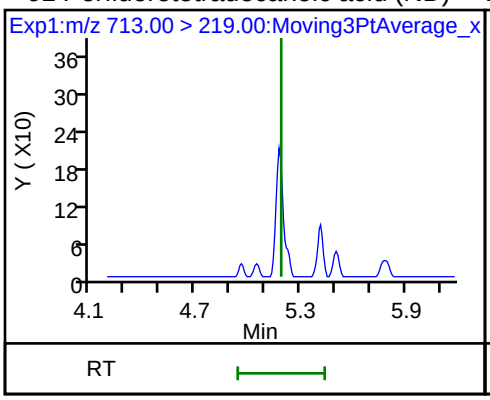
59 Perfluorotridecanoic acid (ND)



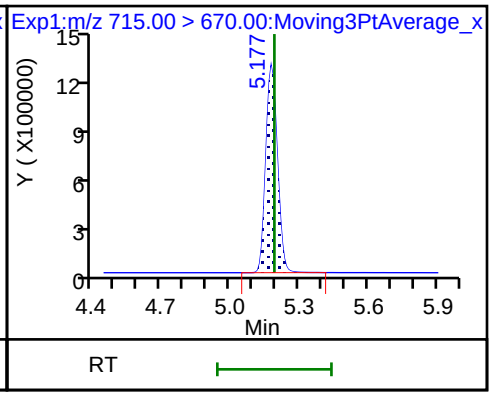
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

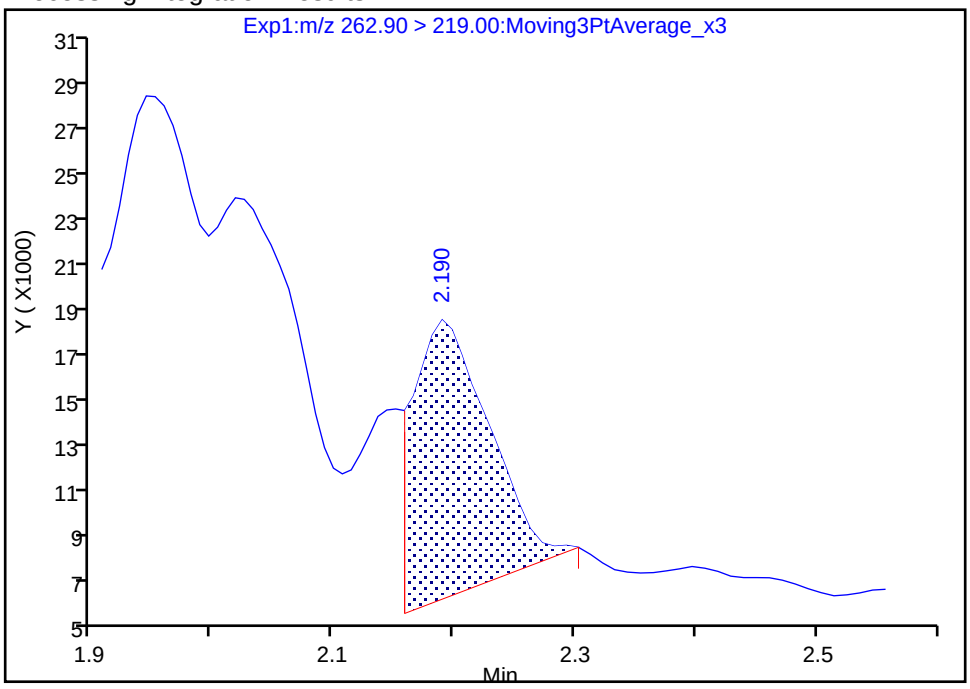
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
Injection Date:	09-Oct-2019 03:06:39	Instrument ID:	A9		
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

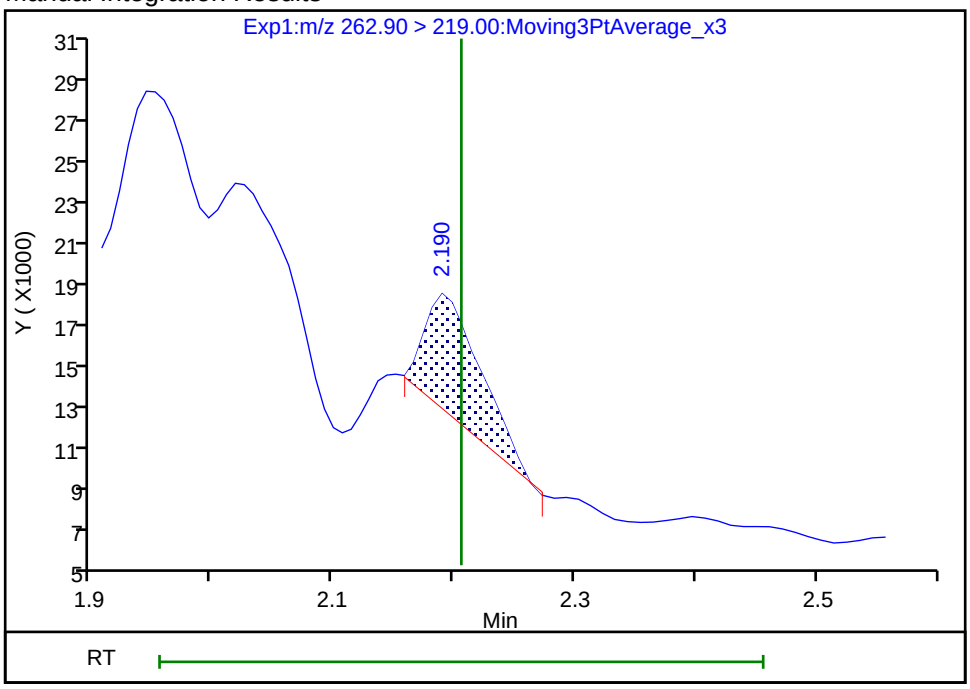
Processing Integration Results

RT: 2.19
Area: 50755
Amount: 0.024774
Amount Units: ng/ml



Manual Integration Results

RT: 2.19
Area: 17818
Amount: 0.008697
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:49:37

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
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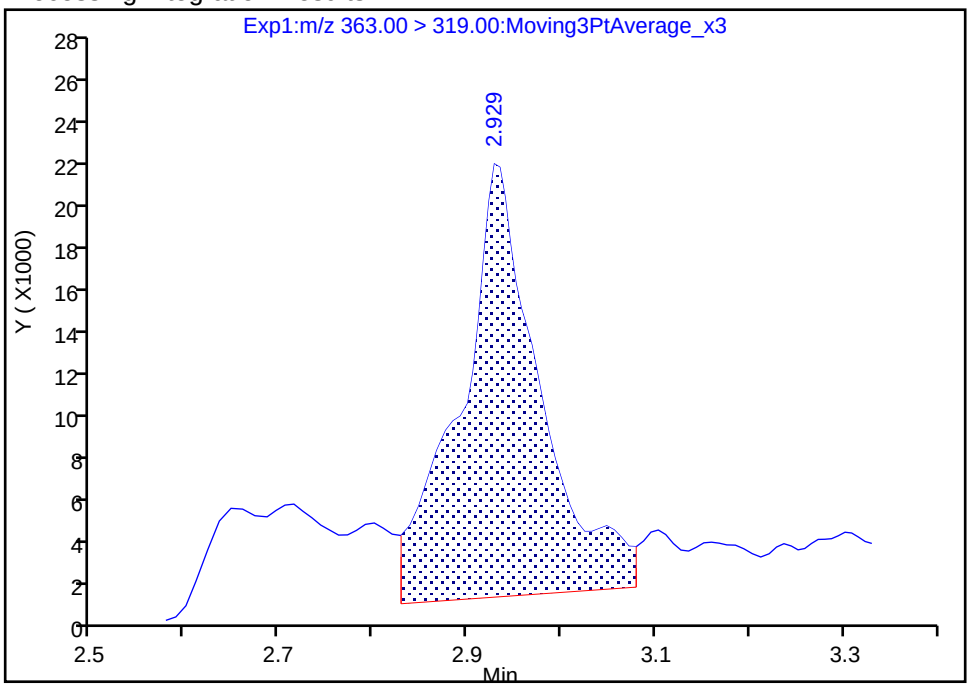
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

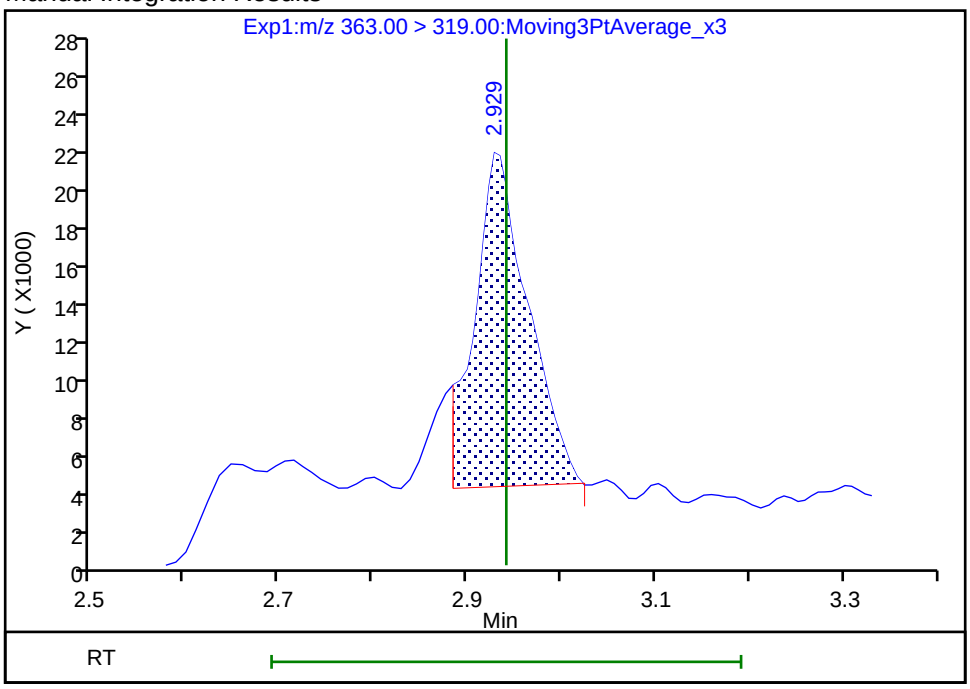
Processing Integration Results

RT: 2.93
Area: 121185
Amount: 0.039963
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 68365
Amount: 0.022545
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
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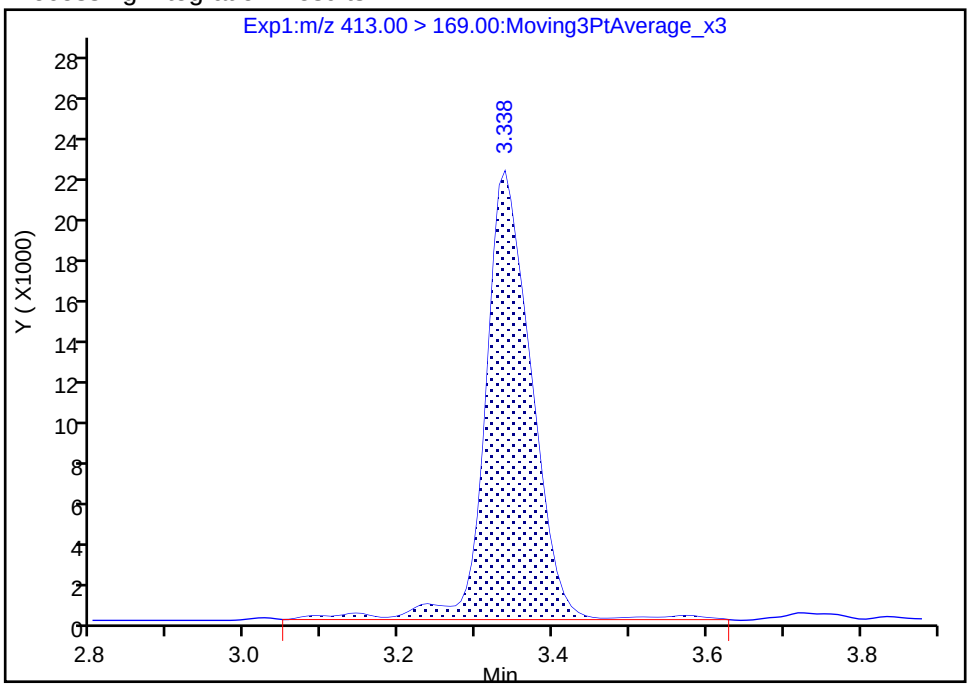
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

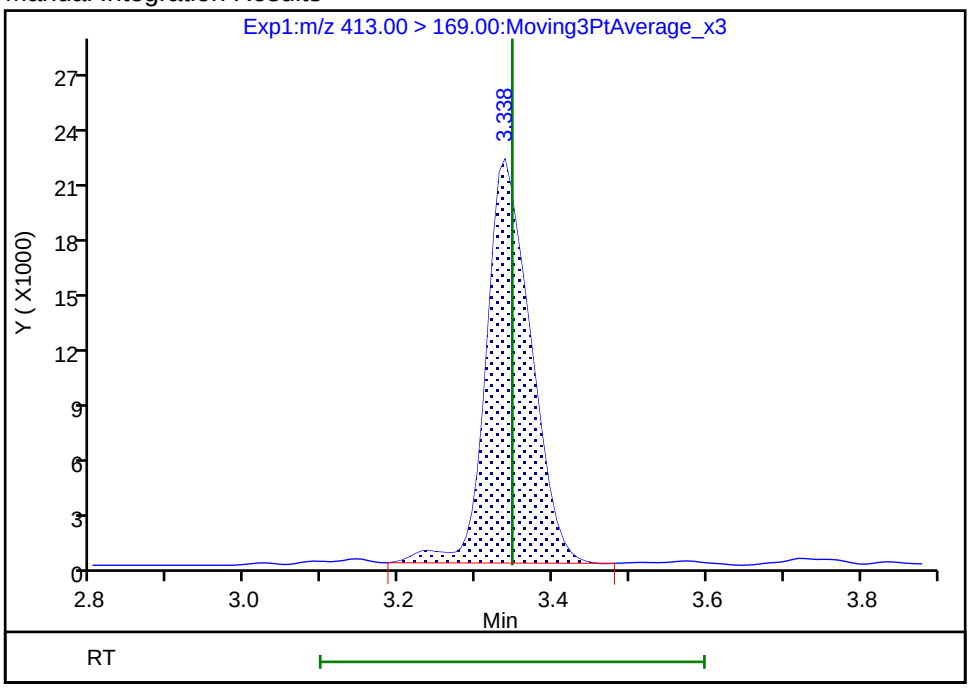
Processing Integration Results

RT: 3.34
Area: 90404
Amount: 0.080752
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 86698
Amount: 0.072483
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
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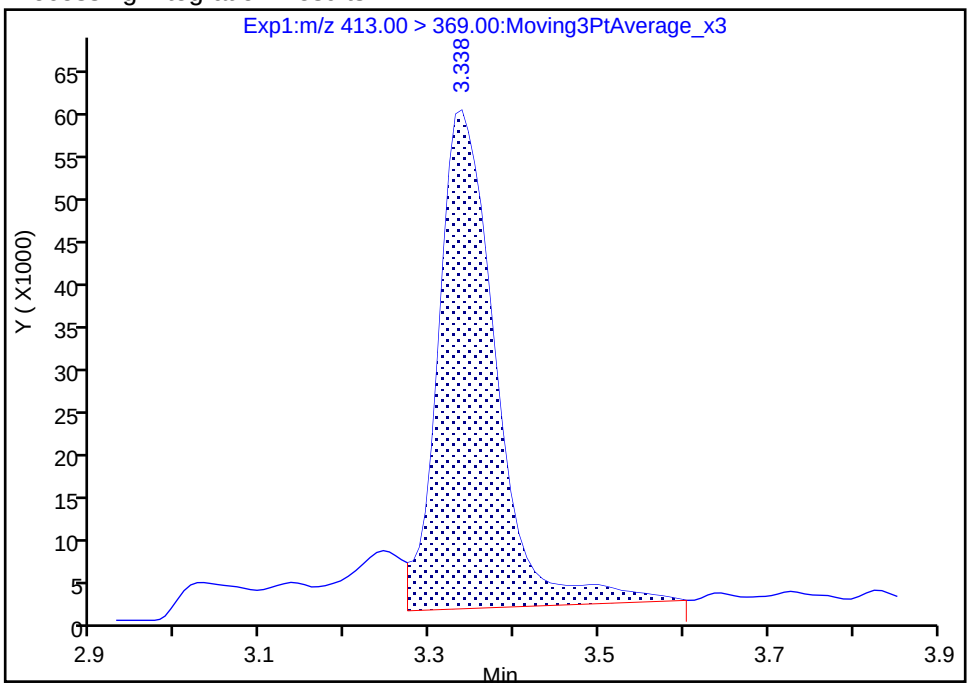
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

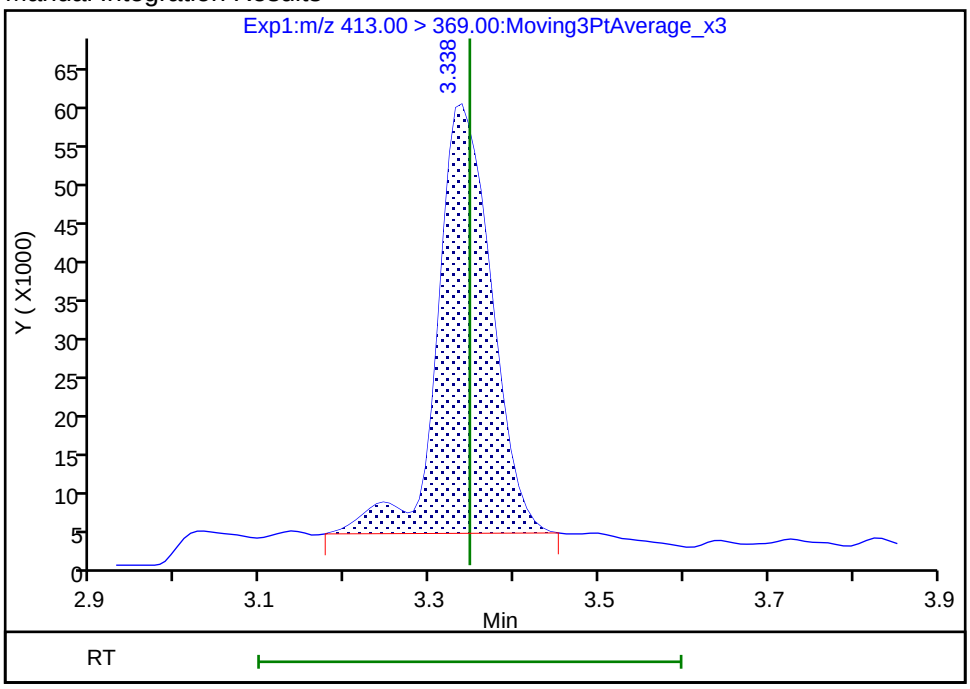
Processing Integration Results

RT: 3.34
Area: 276882
Amount: 0.080752
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 248530
Amount: 0.072483
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:33
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

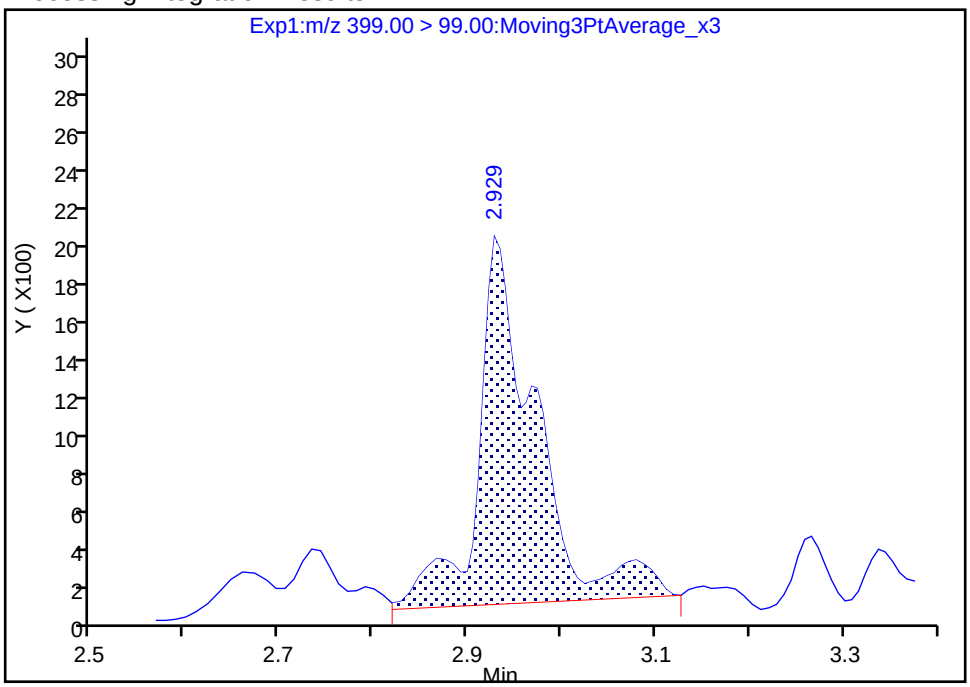
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
Injection Date:	09-Oct-2019 03:06:39	Instrument ID:	A9		
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

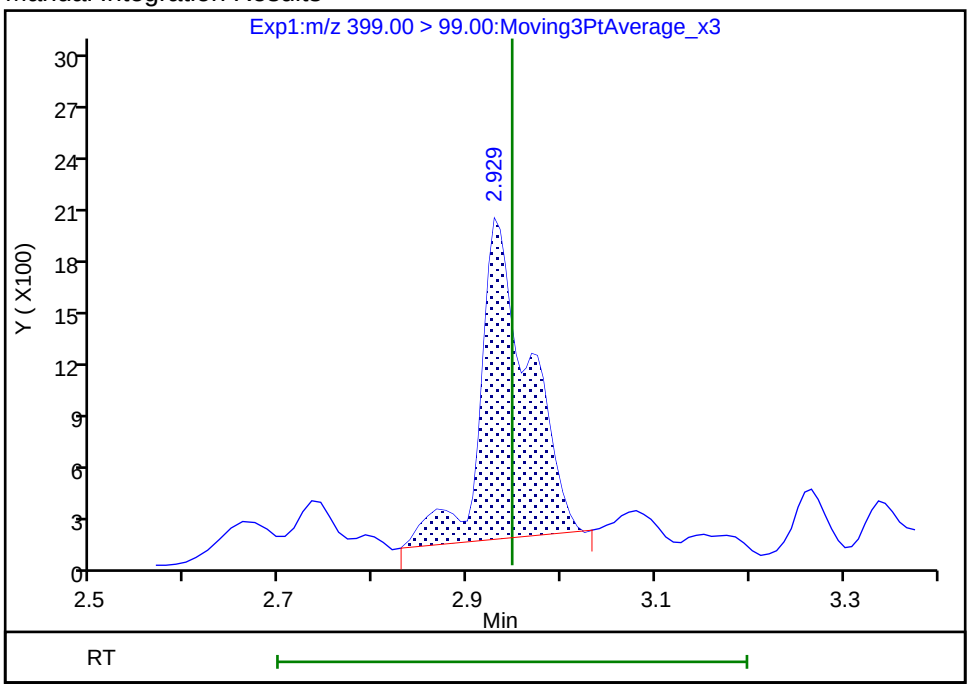
Processing Integration Results

RT: 2.93
Area: 8234
Amount: 0.011723
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 6728
Amount: 0.010210
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

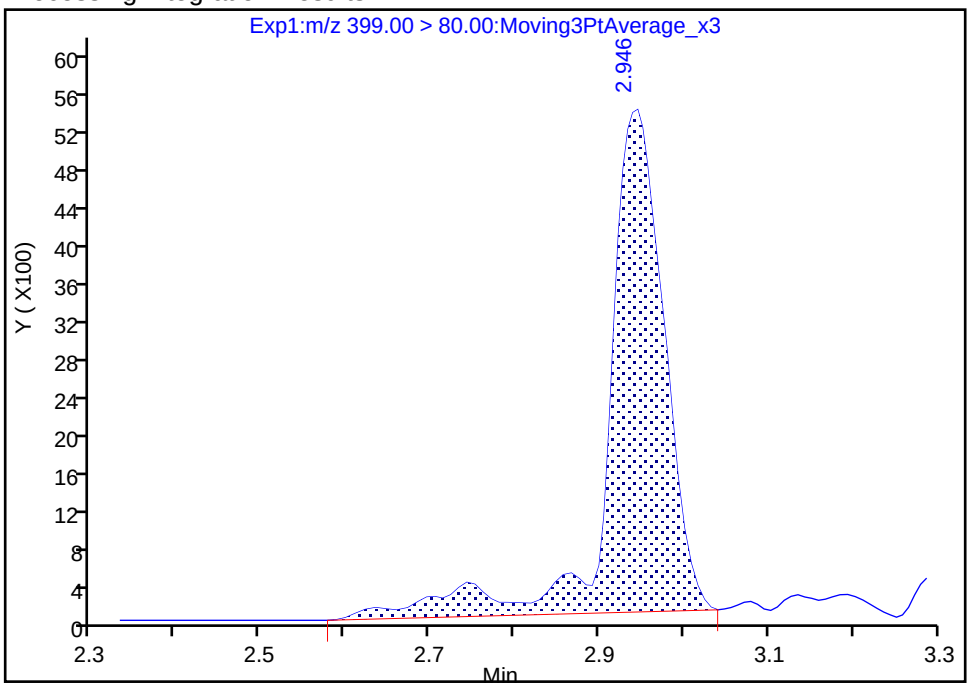
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
Injection Date:	09-Oct-2019 03:06:39	Instrument ID:	A9		
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

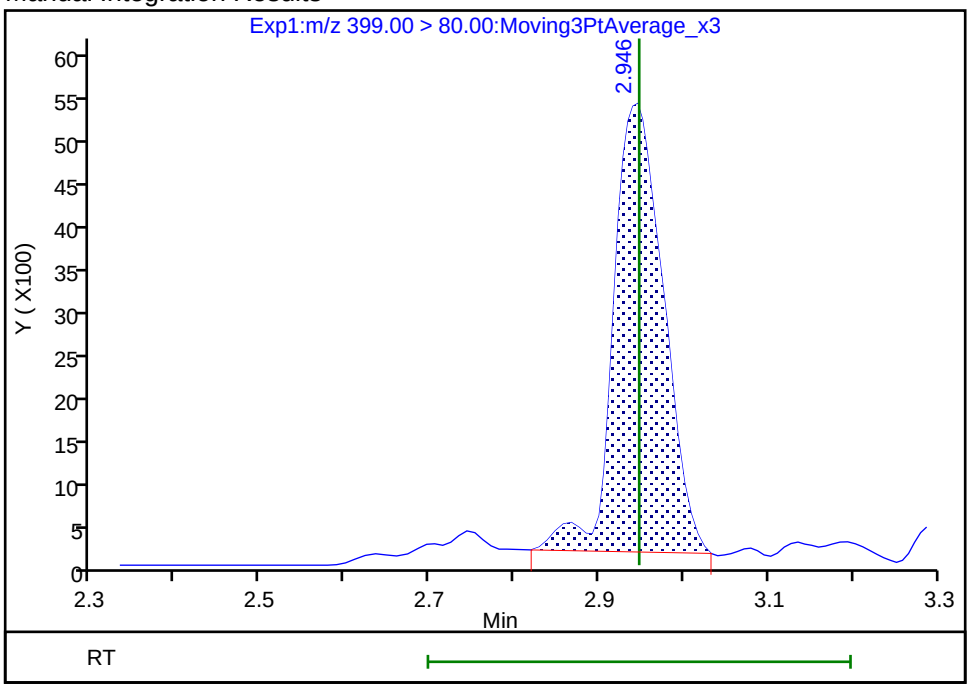
Processing Integration Results

RT: 2.95
Area: 24780
Amount: 0.011723
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 21581
Amount: 0.010210
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:18
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

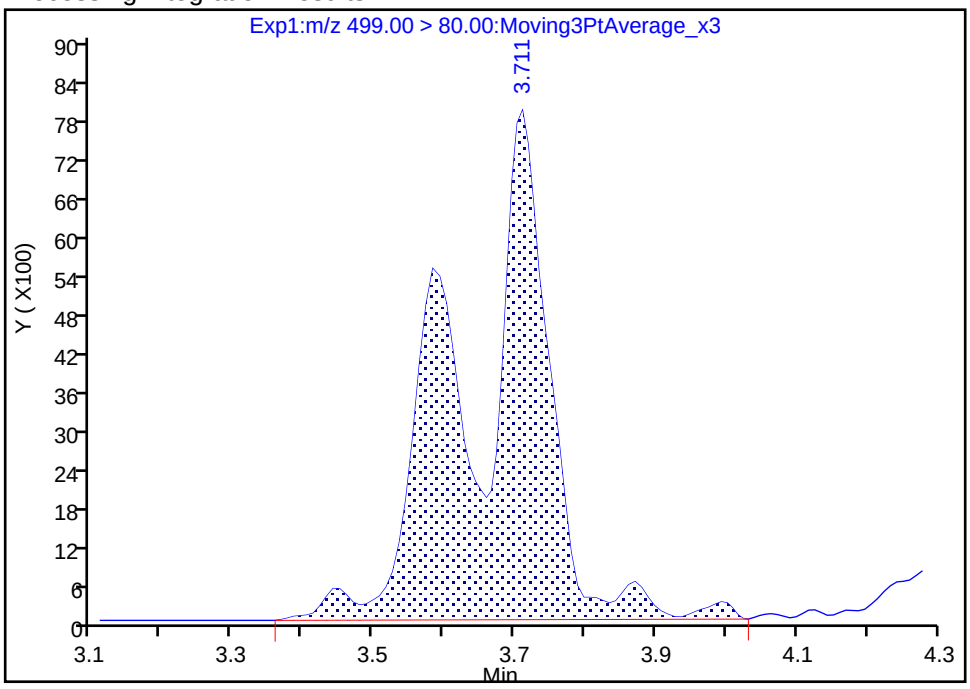
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
Injection Date:	09-Oct-2019 03:06:39	Instrument ID:	A9		
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

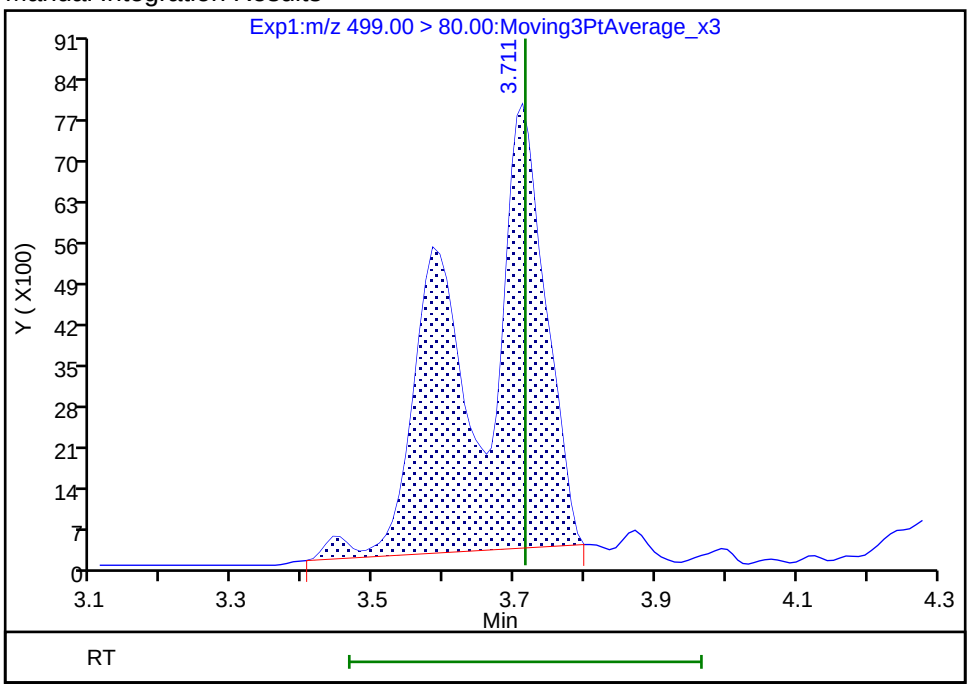
Processing Integration Results

RT: 3.71
Area: 65621
Amount: 0.031749
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 57277
Amount: 0.027712
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:44

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

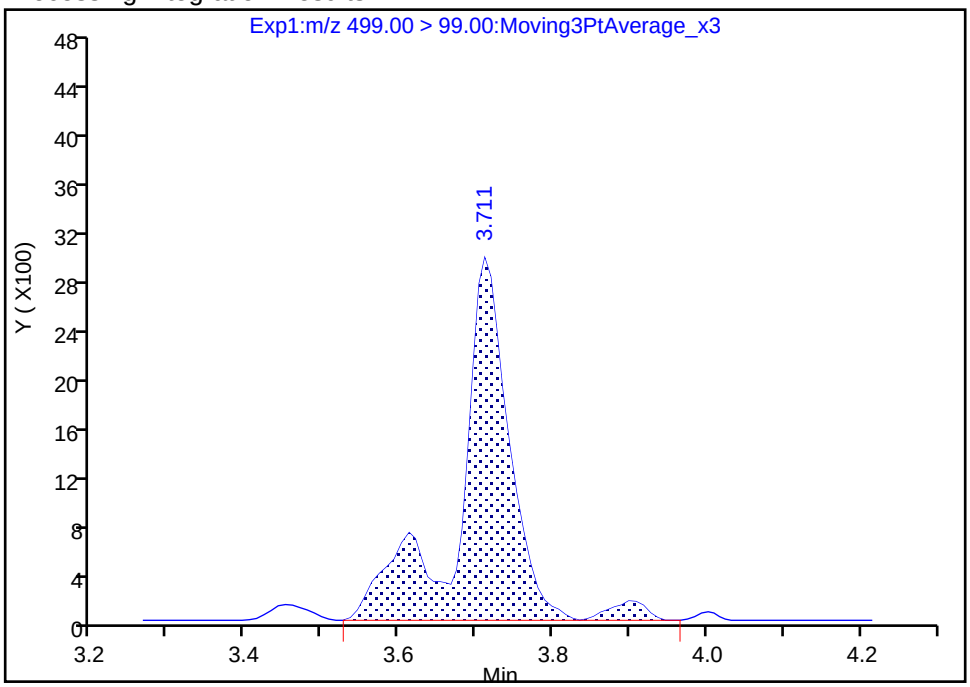
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._034.d				
Injection Date:	09-Oct-2019 03:06:39	Instrument ID:	A9		
Lims ID:	480-159547-B-39-D	Lab Sample ID:	320-159547-39		
Client ID:	GERNATT-TS-COMP 1				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	20
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

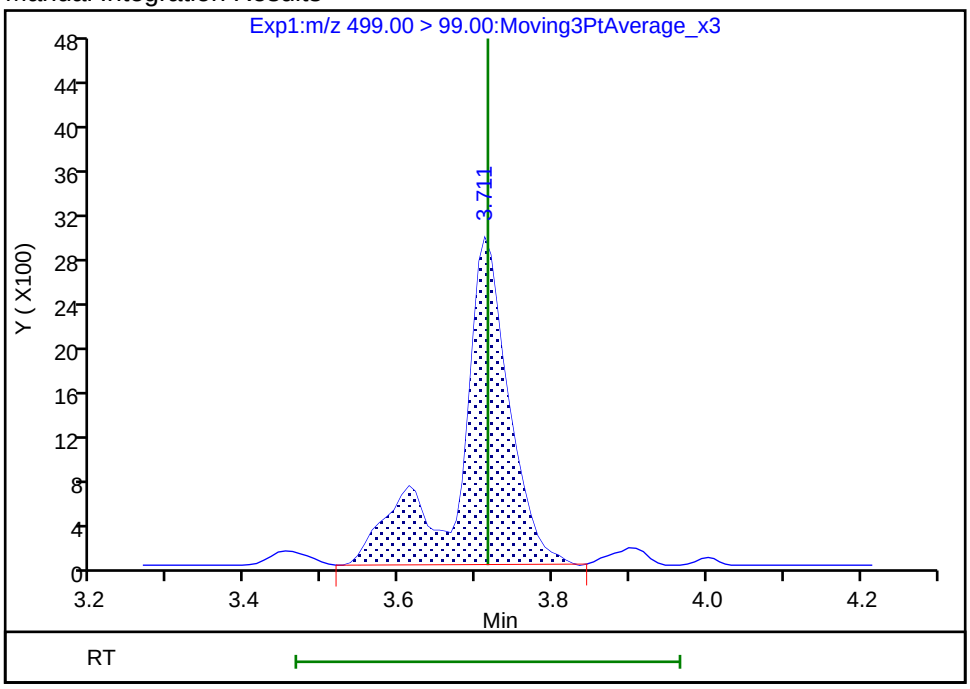
Processing Integration Results

RT: 3.71
Area: 13984
Amount: 0.031749
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 13365
Amount: 0.027712
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:50:49
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 2019.10.10_LLA_013.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:35

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.17(g) Date Analyzed: 10/10/2019 06:25

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.22		0.22	0.031
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.22		0.22	0.086
307-24-4	Perfluorohexanoic acid (PFHxA)	0.22		0.22	0.047
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.22		0.22	0.032
335-67-1	Perfluorooctanoic acid (PFOA)	0.098	J	0.22	0.096
375-95-1	Perfluorononanoic acid (PFNA)	0.22		0.22	0.040
335-76-2	Perfluorodecanoic acid (PFDA)	0.22		0.22	0.024
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.22		0.22	0.040
307-55-1	Perfluorododecanoic acid (PFDoA)	0.22		0.22	0.075
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.22		0.22	0.057
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.22		0.22	0.060
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.22		0.22	0.028
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.22		0.22	0.034
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.22		0.22	0.039
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.44	J	0.56	0.22
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.22		0.22	0.043
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.22		0.22	0.091
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.22		2.22	0.43
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.22		2.22	0.41
27619-97-2	6:2 FTS	2.22		2.22	0.17
39108-34-4	8:2 FTS	2.22		2.22	0.28

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid Lab File ID: 2019.10.10_LLA_013.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:35

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.17(g) Date Analyzed: 10/10/2019 06:25

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: 13.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	103		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4 PFHpA	97		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	93		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	93		25-150
STL00998	13C2 PFDoA	97		25-150
STL02116	13C2 PFTeDA	102		25-150
STL00994	18O2 PFHxS	107		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	99		25-150
STL02118	d3-NMeFOSAA	76		25-150
STL02117	d5-NEtFOSAA	84		25-150
STL02279	M2-6:2 FTS	103		25-150
STL02280	M2-8:2 FTS	101		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_013.d
Lims ID: 480-159547-B-40-B
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 10-Oct-2019 06:25:27 ALS Bottle#: 7 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-b-40-b
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:34:40 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:34:40
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.903	-0.010	0.567	5198588	2.45		98.1	4318	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.208	-0.010	0.659	4546146	2.56		103	2802	
D 9 13C2 PFHxA										
315.00 > 270.00	2.547	2.570	-0.023	0.763	4887000	2.39		95.7	2271	
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.952	-0.012	0.881	5644206	2.41		96.6	3173	
D 16 18O2 PFHxS										
403.00 > 84.00	2.940	2.957	-0.017	0.881	3807872	2.53		107	4664	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.957	2.957	0.0	1.006	28932	0.0147	Target=3.46		12.4	M
399.00 > 99.00	2.946	2.957	-0.011	1.002	13988		2.07(1.73-5.19)		4.6	M
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.309	3.331	-0.022	0.998	4540	0.005830			5.4	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.331	-0.015	0.994	794024	2.43		103	771	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.353	-0.015		7190071	2.50			5122	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.338	3.353	-0.015	1.000	135697	0.0443	Target=3.01		10.7	
413.00 > 169.00	3.345	3.353	-0.008	1.002	46322		2.93(1.51-4.52)		63.1	M
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.353	-0.015	1.000	6776483	2.51		101	3912	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.711	3.727	-0.016	1.000	369531	0.1987	Target=3.98		293	
499.00 > 99.00	3.704	3.727	-0.023	0.998	97028		3.81(1.99-5.97)		150	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.727	-0.016	1.112	4141462	2.38		99.4	2770	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.744	-0.017	1.117	5571246	2.32		92.9	3367	
29 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.744	-0.017	1.000	34303	0.0149	Target=5.53		5.6	
463.00 > 169.00	3.727	3.744	-0.017	1.000	8217		4.17(2.77-8.30)		17.2	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.100	-0.018	1.223	6654404	2.46		98.3	3534	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.100	-0.018	1.223	741310	2.42		101	1164	
D 32 13C8 FOSA										
506.00 > 78.00	4.100	4.118	-0.018	1.228	2234853	2.49		99.4	1497	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.100	4.118	-0.018	1.000	19201	0.007819			30.5	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.252	-0.009	1.271	2424248	1.90		75.9	1525	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.409	-0.008	1.318	5355498	2.32		92.7	5112	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.391	4.417	-0.026	0.998	24136	0.0143	Target=9.81		8.7	
563.00 > 169.00	4.391	4.417	-0.026	0.998	3751		6.43(4.91-14.72)		8.4	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.417	-0.017	1.318	2301062	2.10		83.8	1278	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.702	-0.019	1.403	6146333	2.42		96.6	4565	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.935	4.960	-0.025	1.054	9562	0.006034	Target=6.04		8.6	
663.00 > 169.00	4.935	4.960	-0.025	1.054	1416		6.75(3.02-9.06)		14.5	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.177	5.194	-0.017	1.551	4609909	2.56		102	4063	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 10-Oct-2019 14:34:41 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_013.d

Injection Date: 10-Oct-2019 06:25:27 Instrument ID: A9

Lims ID: 480-159547-B-40-B Lab Sample ID: 320-159547-40

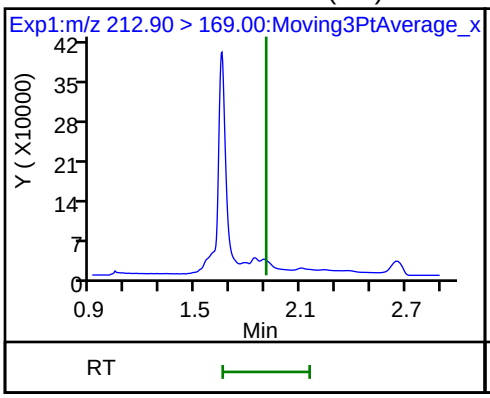
Client ID: GERNATT-TS-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 7 Worklist Smp#: 10

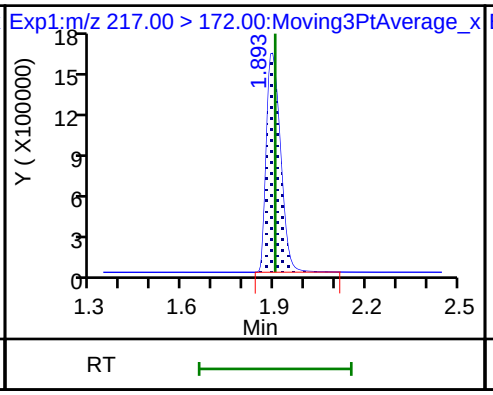
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

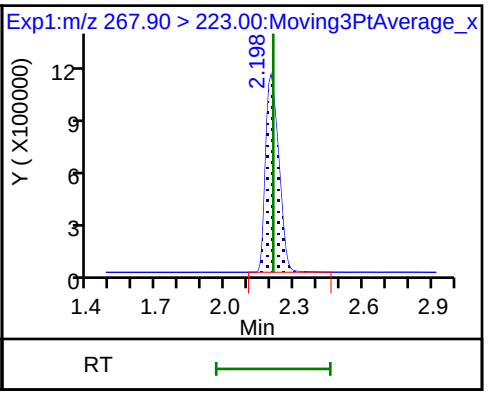
2 Perfluorobutanoic acid (ND)



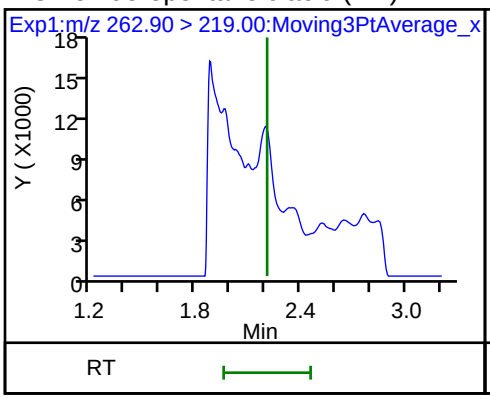
D 1 13C4 PFBA



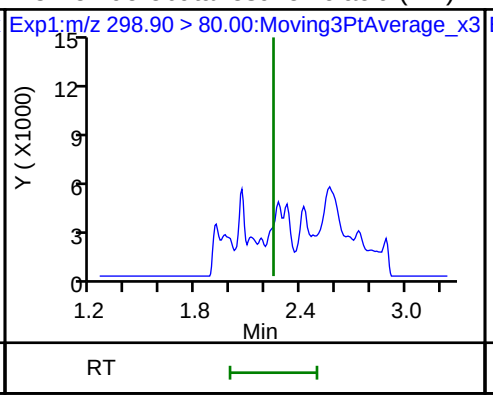
D 4 13C5 PFPeA



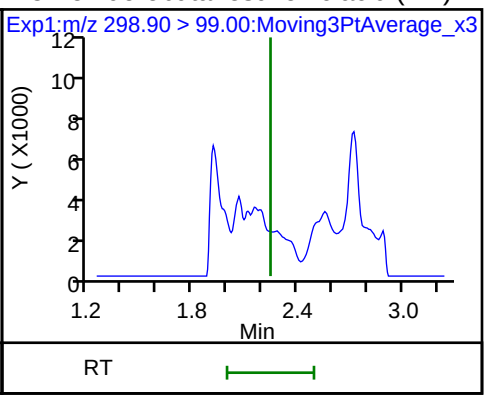
3 Perfluoropentanoic acid (ND)



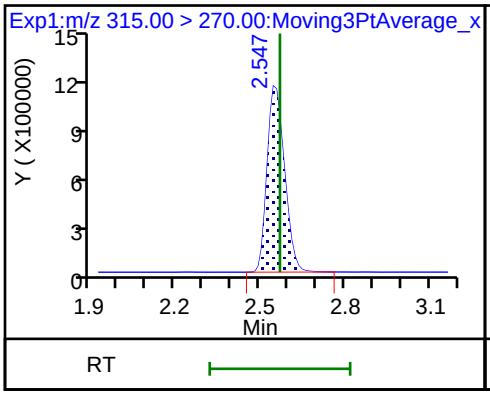
5 Perfluorobutanesulfonic acid (ND)



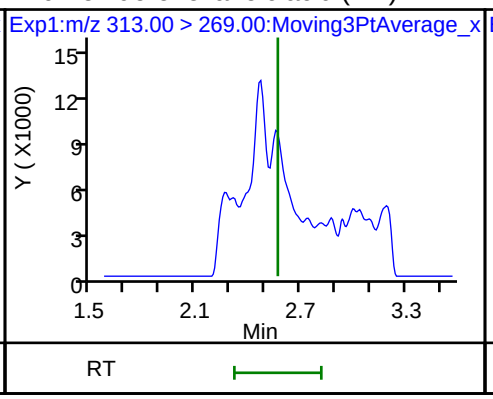
5 Perfluorobutanesulfonic acid (ND)



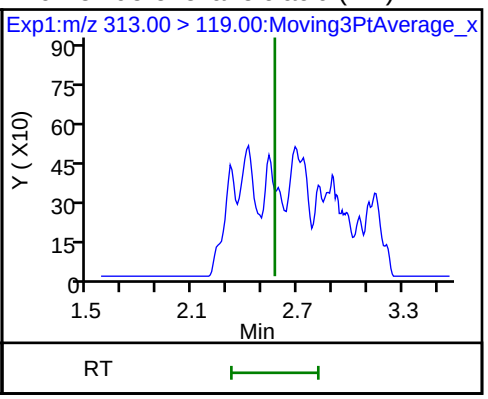
D 9 13C2 PFHxA



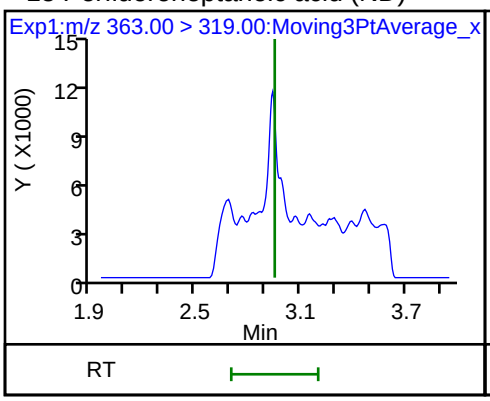
10 Perfluorohexanoic acid (ND)



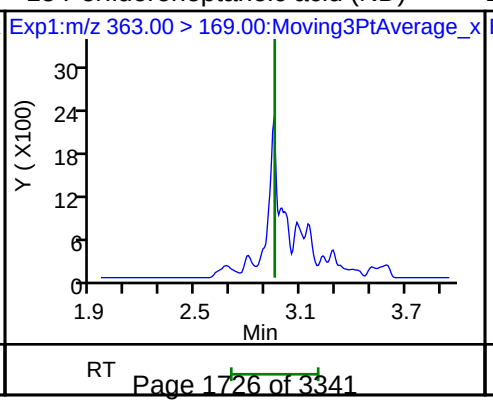
10 Perfluorohexanoic acid (ND)



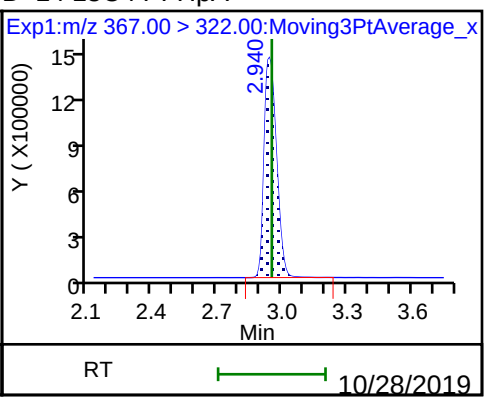
15 Perfluoroheptanoic acid (ND)



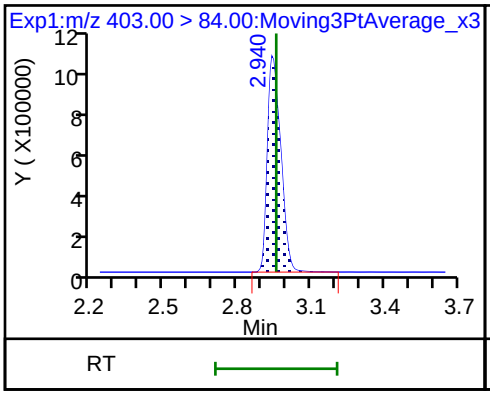
15 Perfluoroheptanoic acid (ND)



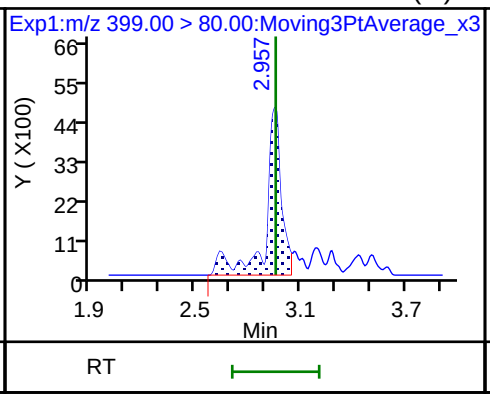
D 14 13C4 PFHpA



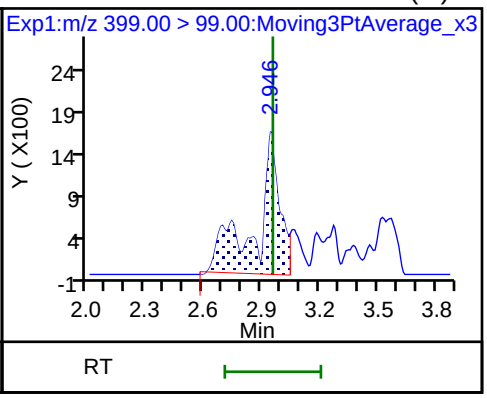
D 16 18O2 PFHxS



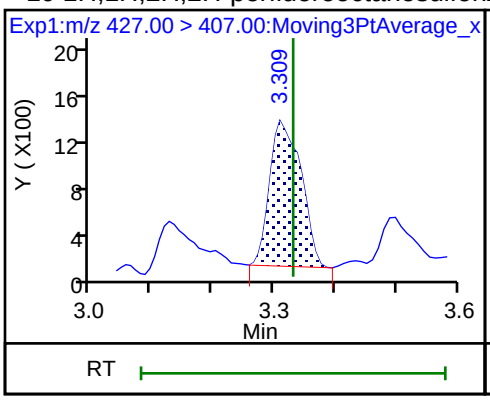
17 Perfluorohexanesulfonic acid (M)



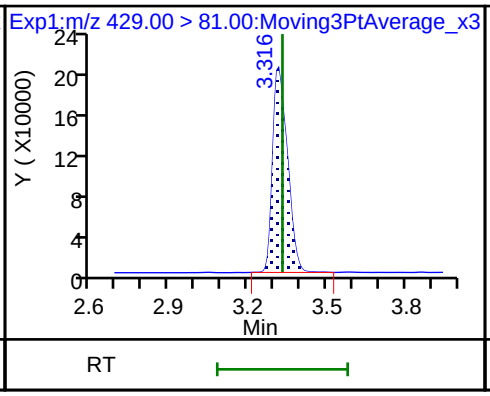
17 Perfluorohexanesulfonic acid (M)



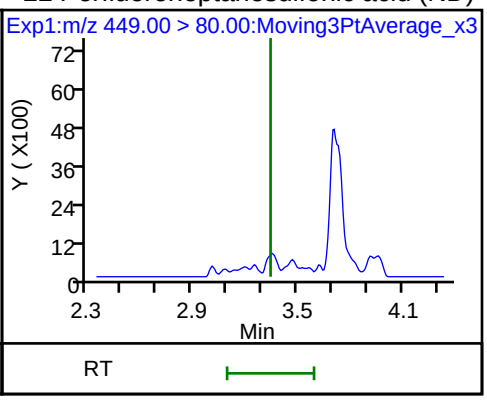
19 1H,1H,2H,2H-perfluorooctanesulfon



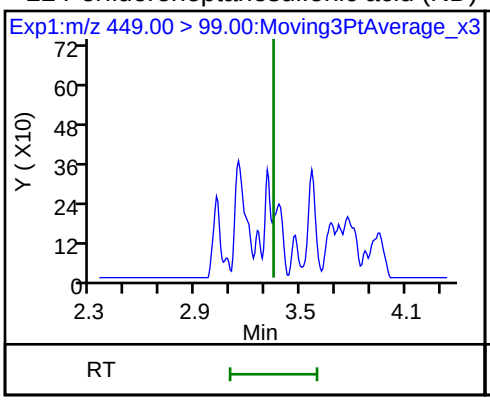
D 20 M2-6:2 FTS



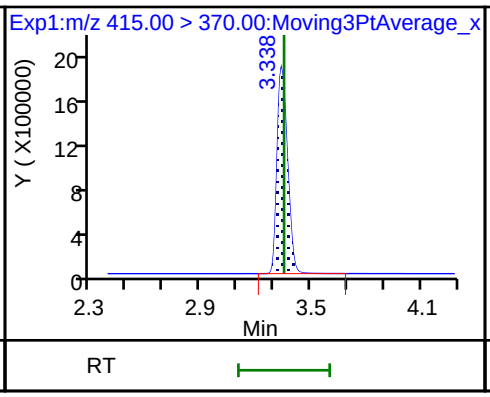
22 Perfluoroheptanesulfonic acid (ND)



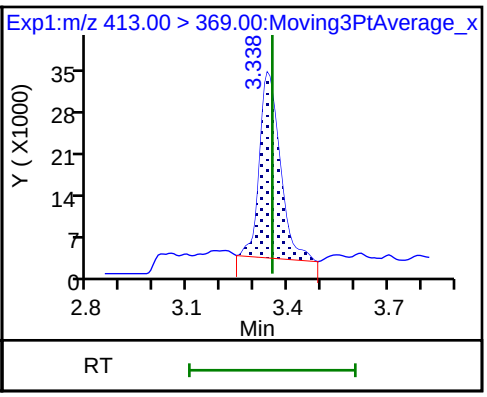
22 Perfluoroheptanesulfonic acid (ND) *



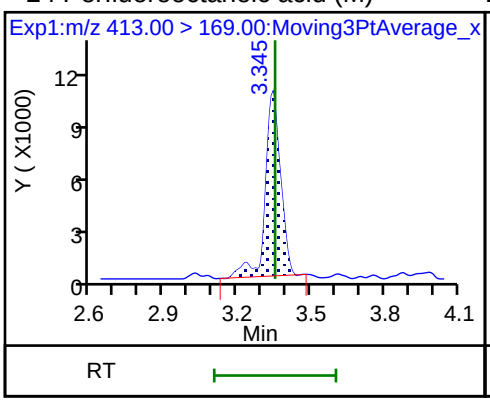
25 13C2 PFOA



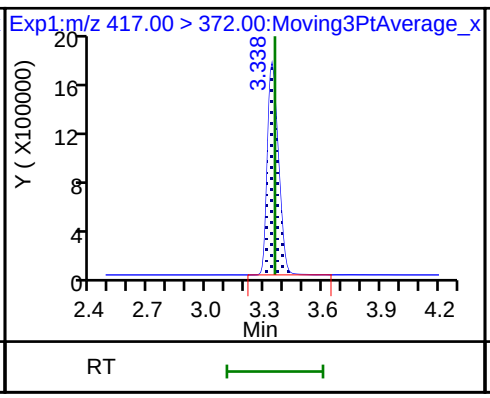
24 Perfluorooctanoic acid



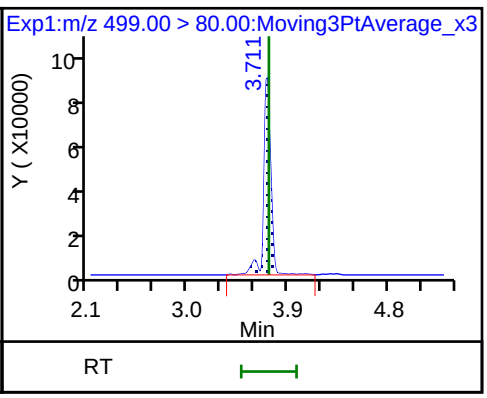
24 Perfluorooctanoic acid (M)



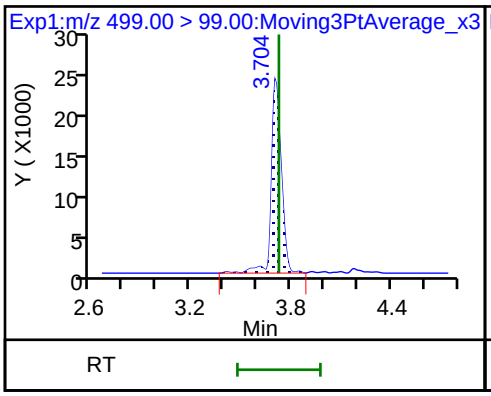
D 23 13C4 PFOA



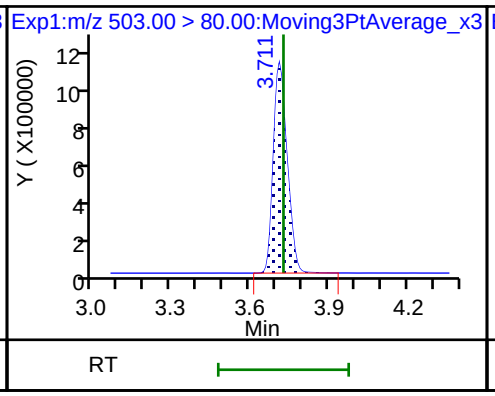
28 Perfluorooctanesulfonic acid



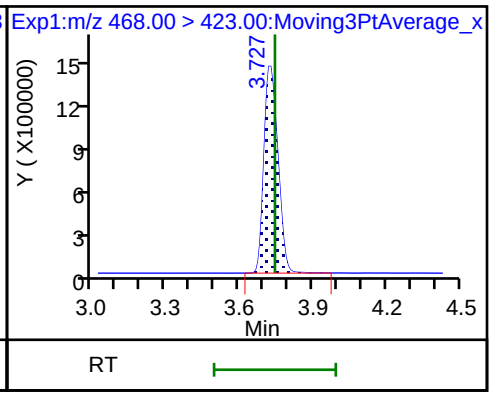
28 Perfluorooctanesulfonic acid



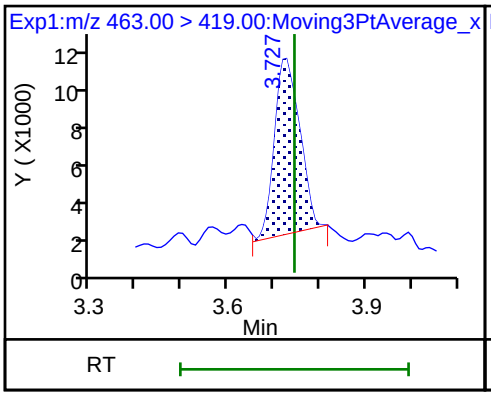
D 27 13C4 PFOS



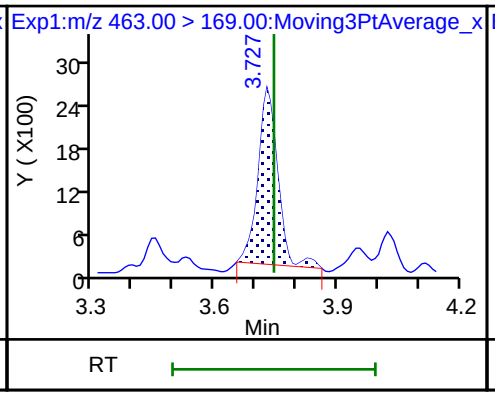
D 30 13C5 PFNA



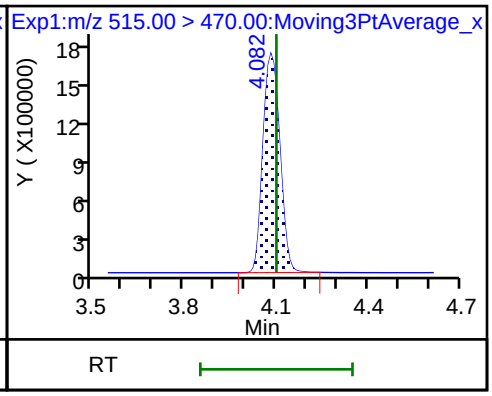
29 Perfluorononanoic acid



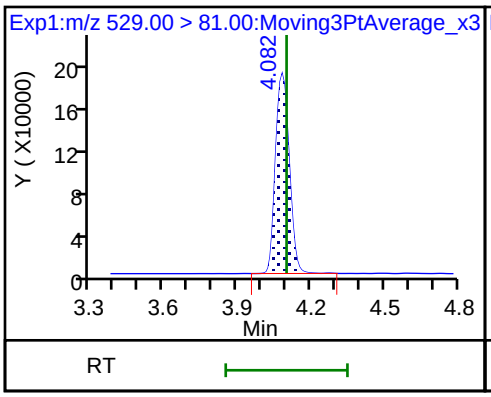
29 Perfluorononanoic acid



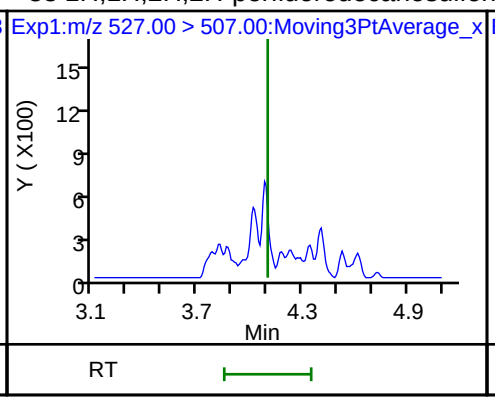
D 36 13C2 PFDA



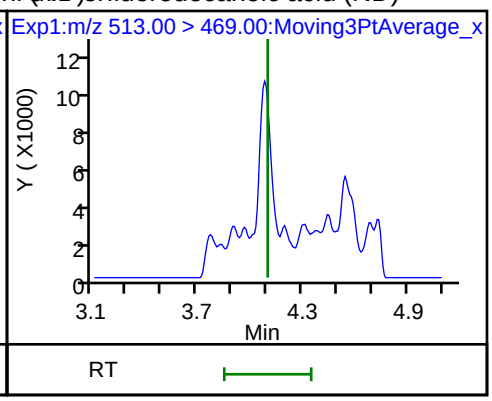
D 35 M2-8:2 FTS



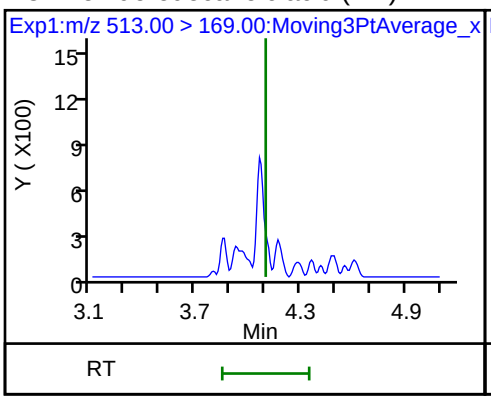
38 1H,1H,2H,2H-perfluorodecanesulfoni



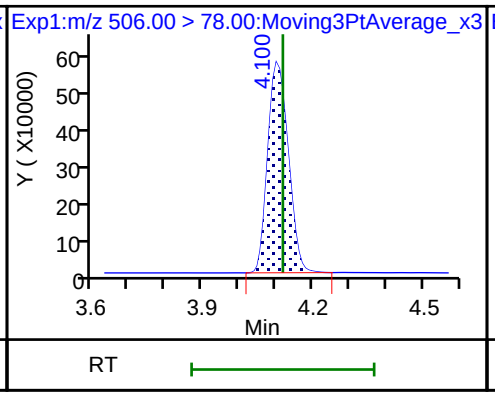
perfluorodecanoic acid (ND)



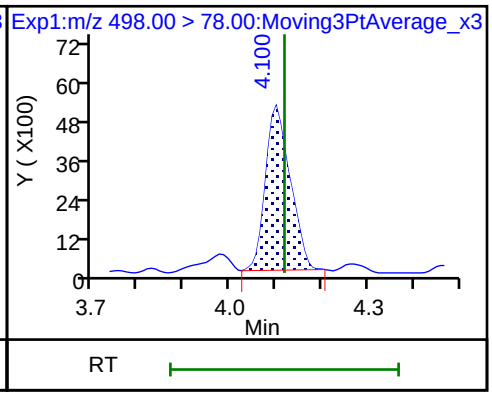
37 Perfluorodecanoic acid (ND)



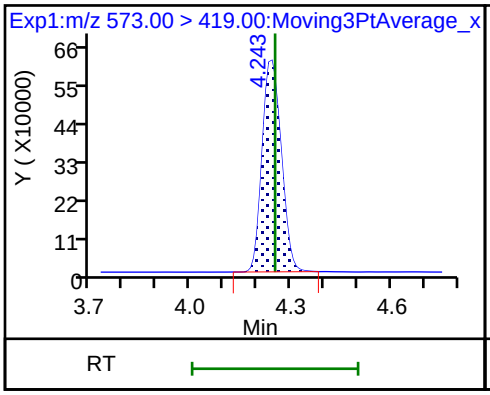
D 32 13C8 FOSA



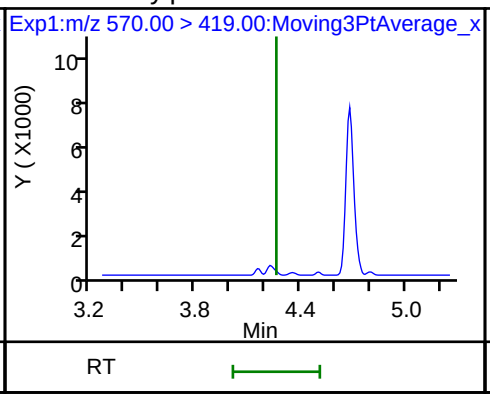
33 Perfluorooctanesulfonamide



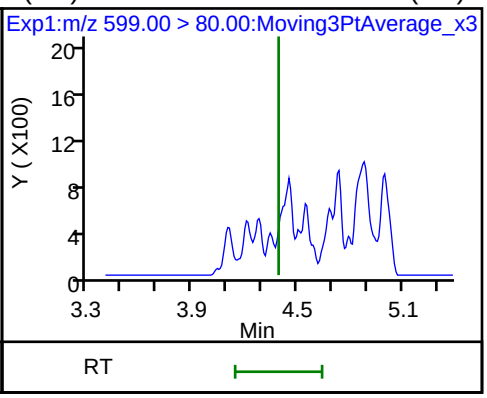
D 39 d3-NMeFOSAA



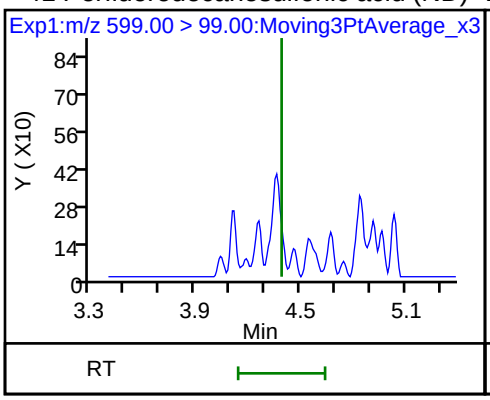
40 N-methylperfluorooctanesulfonamido (ND)



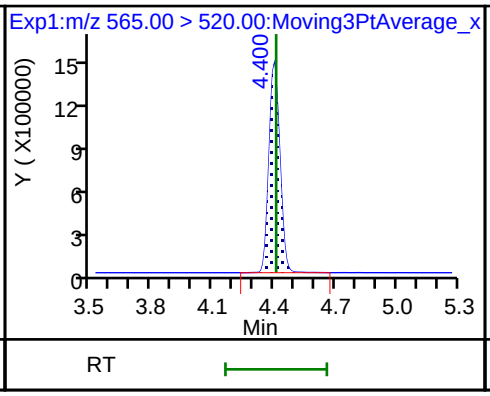
41 Perfluorodecanesulfonic acid (ND)



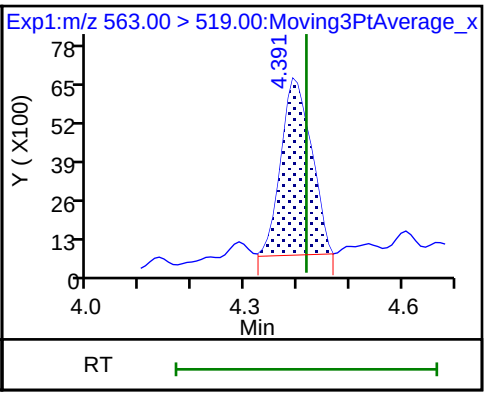
41 Perfluorodecanesulfonic acid (ND)



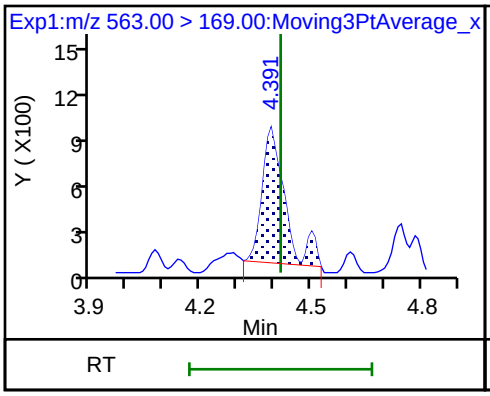
D 42 13C2 PFUnA



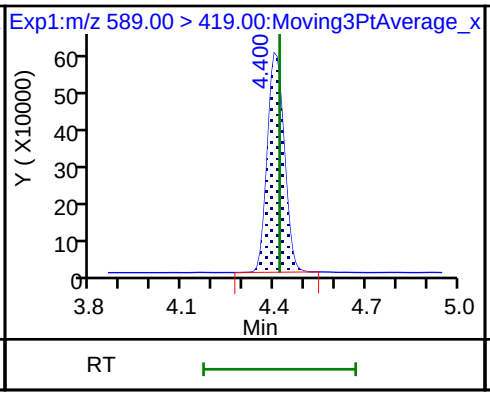
43 Perfluoroundecanoic acid



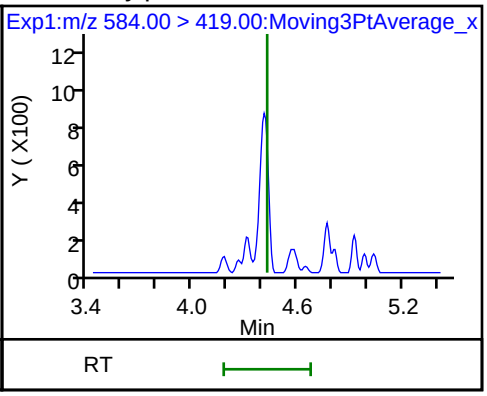
43 Perfluoroundecanoic acid



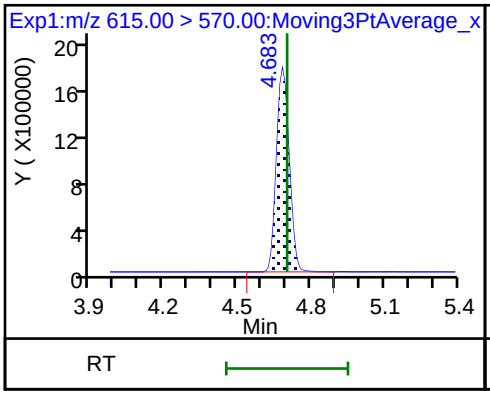
D 44 d5-NEtFOSAA



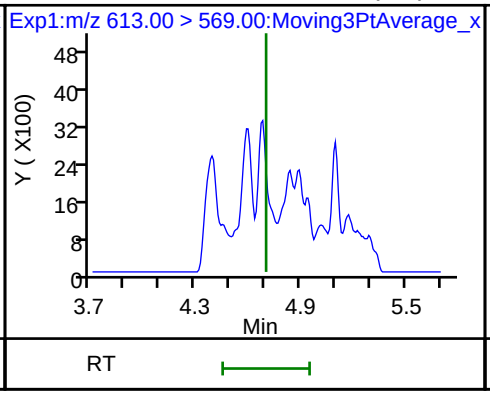
45 N-ethylperfluorooctanesulfonamidoa (ND)



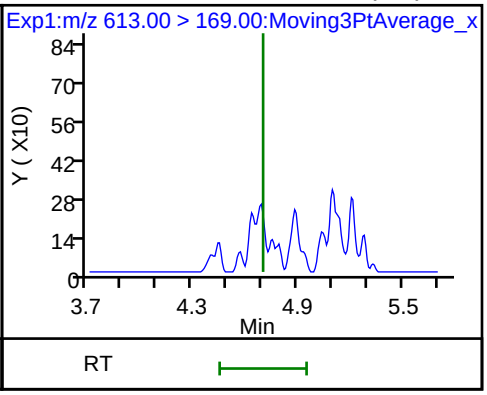
D 55 13C2 PFDoA



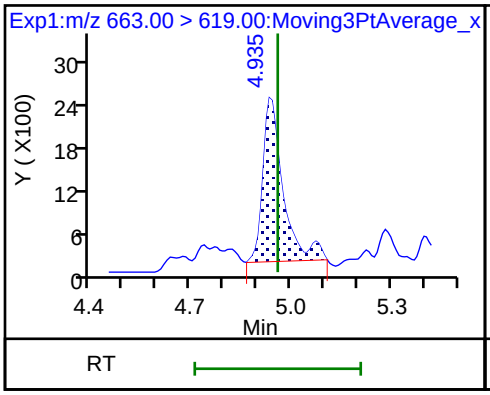
56 Perfluorododecanoic acid (ND)



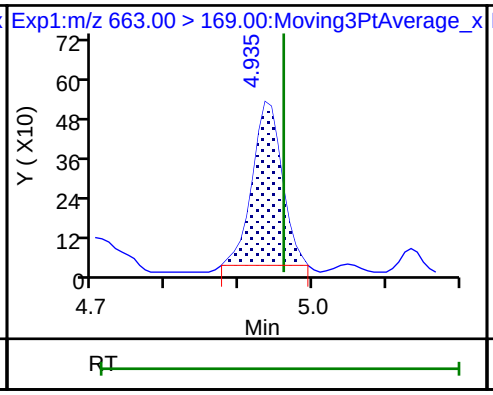
56 Perfluorododecanoic acid (ND)



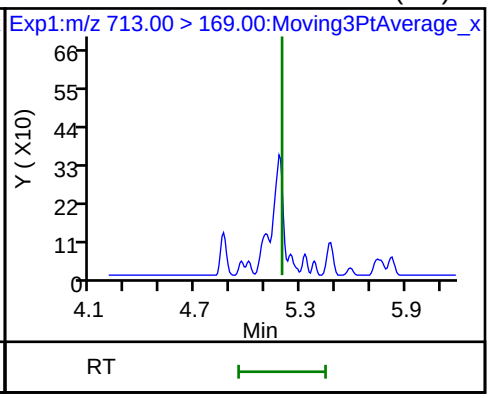
59 Perfluorotridecanoic acid



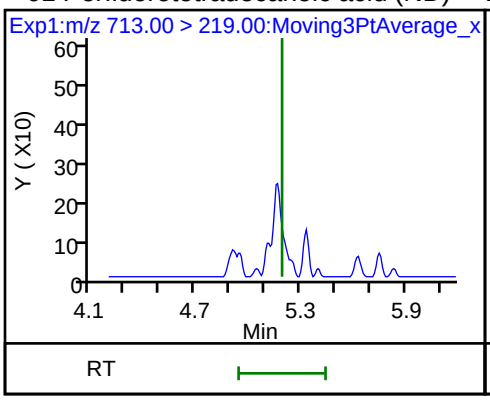
59 Perfluorotridecanoic acid



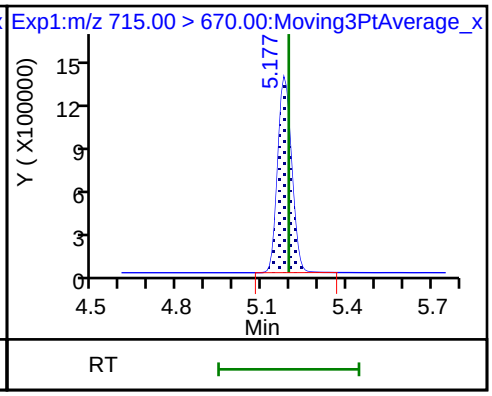
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

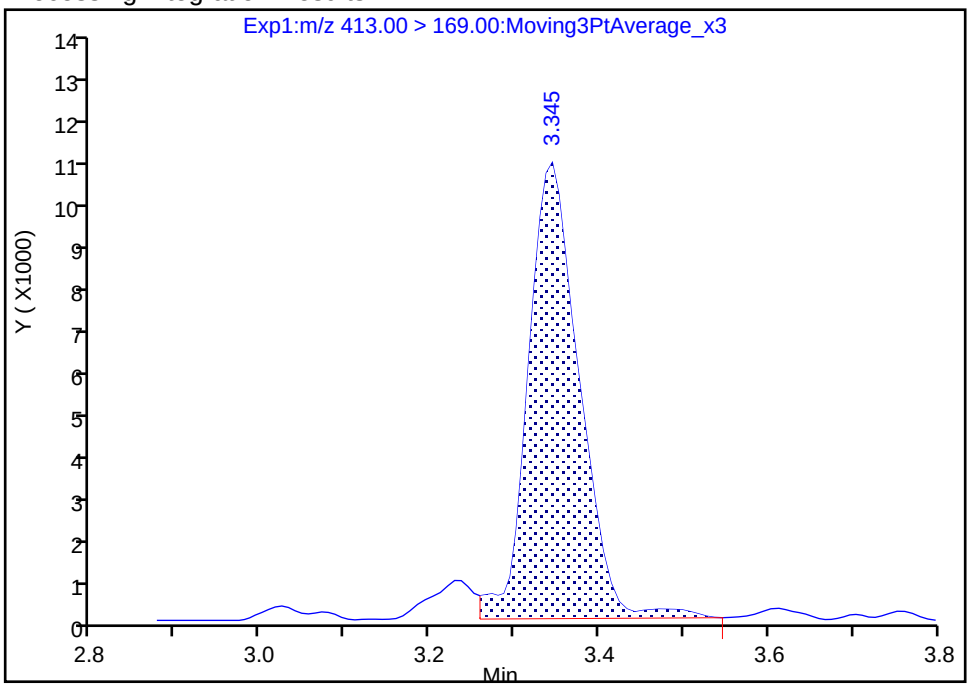
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_013.d				
Injection Date:	10-Oct-2019 06:25:27	Instrument ID:	A9		
Lims ID:	480-159547-B-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

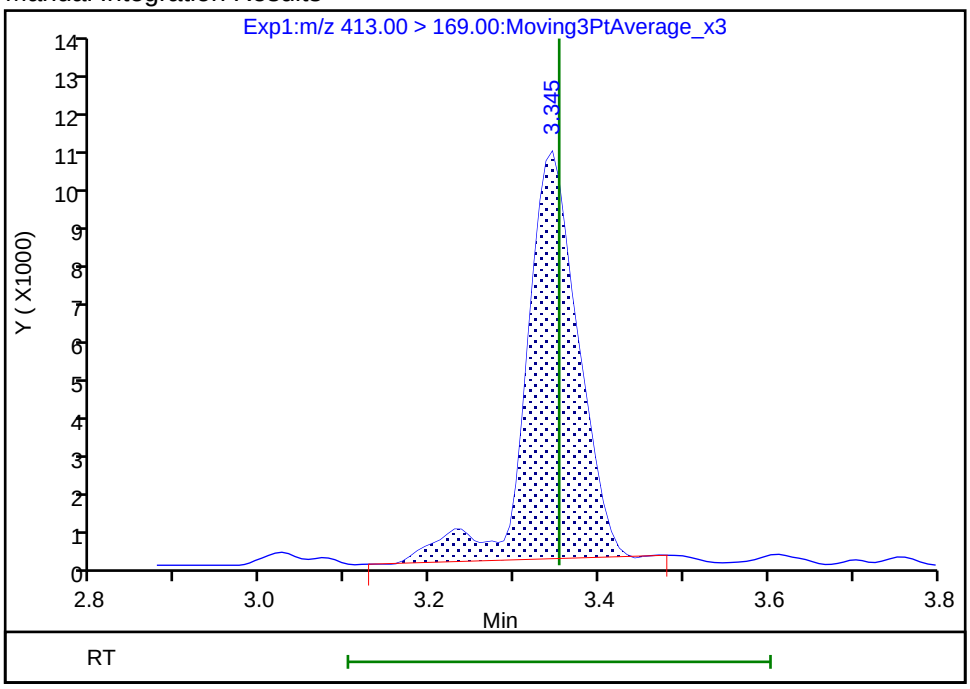
Processing Integration Results

RT: 3.34
Area: 45809
Amount: 0.044280
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 46322
Amount: 0.044280
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:34:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

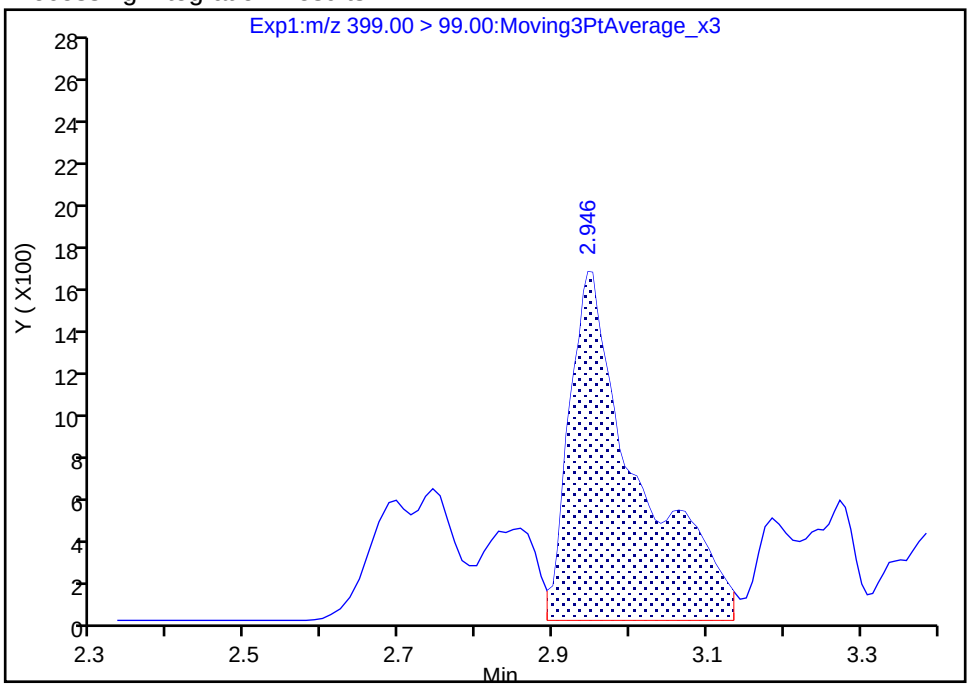
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_013.d				
Injection Date:	10-Oct-2019 06:25:27	Instrument ID:	A9		
Lims ID:	480-159547-B-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

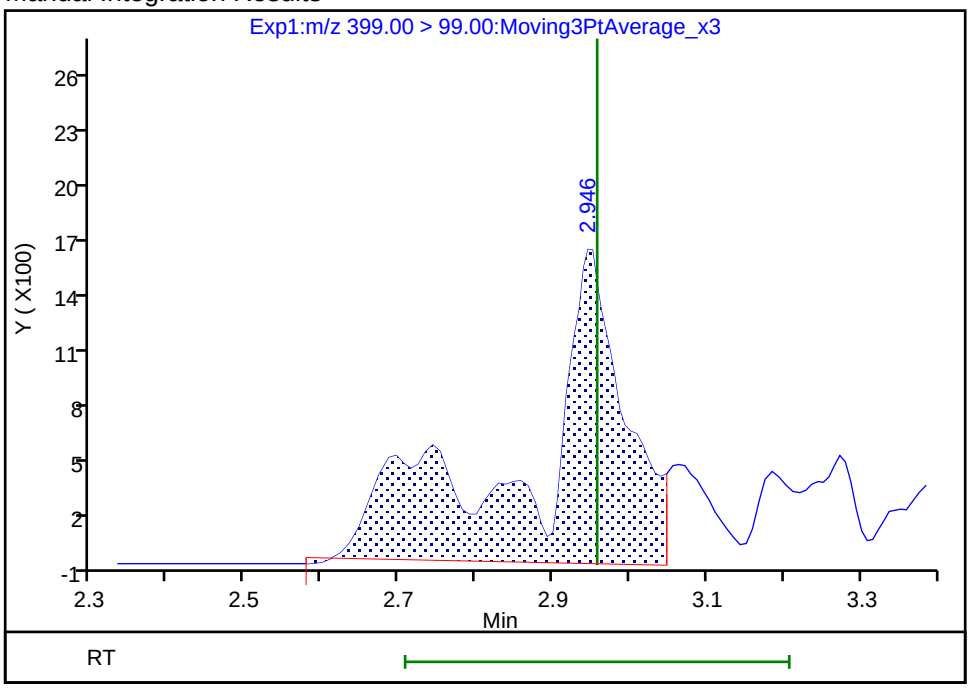
Processing Integration Results

RT: 2.95
Area: 9976
Amount: 0.017418
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 13988
Amount: 0.014689
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:33:38

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

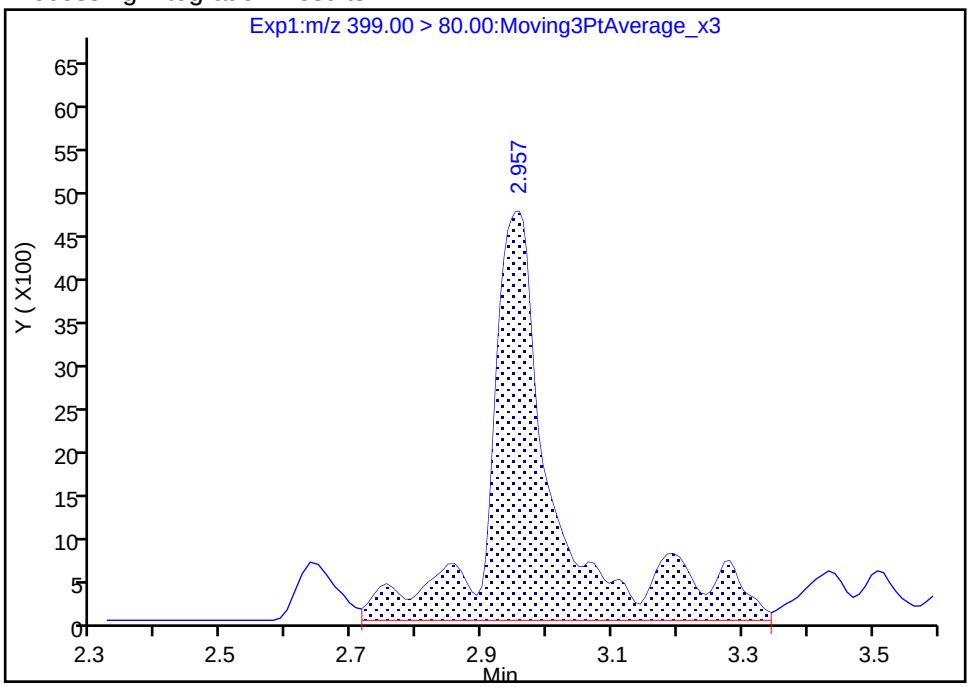
Data File:	\\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_013.d				
Injection Date:	10-Oct-2019 06:25:27	Instrument ID:	A9		
Lims ID:	480-159547-B-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

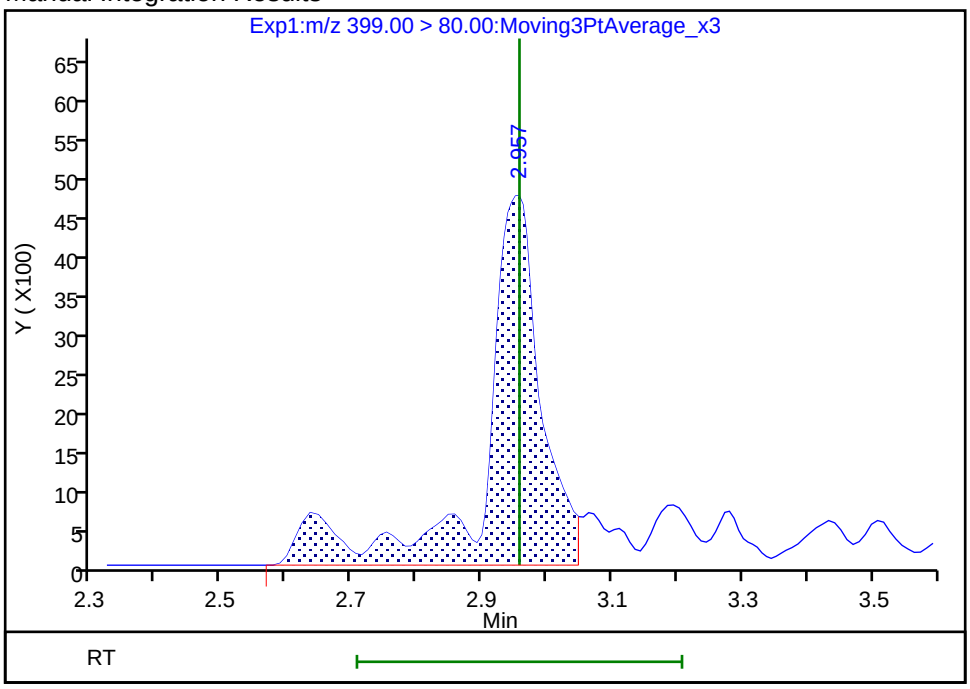
Processing Integration Results

RT: 2.96
Area: 34306
Amount: 0.017418
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 28932
Amount: 0.014689
Amount Units: ng/ml



Reviewer: melnikv, 10-Oct-2019 14:33:45
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._035.d

Analysis Method: 537 (modified) Date Collected: 09/16/2019 14:35

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 273.3(mL) Date Analyzed: 10/09/2019 03:16

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.97	J	1.83	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.46	J	1.83	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	0.61	J	1.83	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.98	J	1.83	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	2.70		1.83	0.78
375-95-1	Perfluorononanoic acid (PFNA)	0.56	J	1.83	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.83		1.83	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.83		1.83	1.01
307-55-1	Perfluorododecanoic acid (PFDoA)	1.83		1.83	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.83		1.83	1.19
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.83		1.83	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.83		1.83	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	1.83	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.83		1.83	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.09	J	1.83	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.83		1.83	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	105		25-150
STL00993	13C2 PFHxA	105		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	109		25-150
STL00997	13C2 PFUnA	104		25-150
STL00998	13C2 PFDoA	105		25-150
STL02116	13C2 PFTeDA	90		25-150
STL00994	18O2 PFHxS	108		25-150
STL00991	13C4 PFOS	99		25-150
STL01892	13C4 PFHpA	108		25-150
STL01893	13C5 PFPeA	104		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d
Lims ID: 480-159547-A-40-B
Client ID: GERNATT-TS-COMP 2
Sample Type: Client
Inject. Date: 09-Oct-2019 03:16:16 ALS Bottle#: 22 Worklist Smp#: 21
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 480-159547-a-40-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:54:43 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:54:43
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.892	1.719	0.173	1.000	53166	0.0265			4.5	
D 1 13C4 PFBA										
217.00 > 172.00	1.892	1.901	-0.009	0.568	5893511	2.62		105	4700	
D 4 13C5 PFPeA										
267.90 > 223.00	2.197	2.206	-0.009	0.659	4897442	2.60		104	2930	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.189	2.206	-0.017	0.996	25094	0.0125			0.5	M
D 9 13C2 PFHxA										
315.00 > 270.00	2.556	2.557	-0.001	0.767	5682142	2.62		105	2668	
10 Perfluorohexanoic acid										M
313.00 > 269.00	2.556	2.560	-0.004	1.000	34927	0.0165	Target=15.40		2.7	M
313.00 > 119.00	2.556	2.560	-0.004	1.000	2371		14.73(7.70-23.09)		3.1	M
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.935	2.941	-0.006	1.000	80670	0.0268	Target=4.51		5.3	M
363.00 > 169.00	2.958	2.941	0.017	1.008	15627		5.16(2.25-6.76)		15.0	M
D 14 13C4 PFHpA										
367.00 > 322.00	2.935	2.942	-0.007	0.881	6698738	2.70		108	4100	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.941	2.947	-0.006	1.002	19296	0.009181	Target=3.25		24.8	M
399.00 > 99.00	2.958	2.947	0.011	1.008	8131		2.37(1.63-4.88)		7.3	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.935	2.947	-0.012	0.881	4063369	2.54		108	3294	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.311	3.318	-0.008	1.000	1749	0.002677			8.1	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.311	3.318	-0.008	0.994	666154	1.92		80.9	1308	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C4 PFOA										
417.00 > 372.00	3.339	3.347	-0.008	1.002	7447992	2.60		104	3608	
* 25 13C2 PFOA										
415.00 > 370.00	3.332	3.347	-0.015		7642830	2.50			4232	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.339	3.347	-0.008	1.000	248808	0.0739	Target=3.06		17.5	M
413.00 > 169.00	3.332	3.347	-0.015	0.998	86016		2.89(1.53-4.58)		144	M
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.707	3.715	-0.008	1.000	58828	0.0298	Target=4.13		41.5	M
499.00 > 99.00	3.714	3.715	-0.001	1.002	14594		4.03(2.06-6.19)		28.0	M
D 27 13C4 PFOS										
503.00 > 80.00	3.707	3.715	-0.008	1.112	4398757	2.37		99.3	2167	
D 30 13C5 PFNA										
468.00 > 423.00	3.722	3.731	-0.009	1.117	6493858	2.55		102	4895	
29 Perfluorononanoic acid										M
463.00 > 419.00	3.722	3.731	-0.009	1.000	40686	0.0152	Target=5.59		8.5	M
463.00 > 169.00	3.722	3.731	-0.009	1.000	11079		3.67(2.80-8.39)		23.1	
D 36 13C2 PFDA										
515.00 > 470.00	4.085	4.088	-0.003	1.226	7856670	2.73		109	4954	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.076	4.088	-0.012	1.223	591053	1.81		75.7	1086	
D 32 13C8 FOSA										
506.00 > 78.00	4.103	4.114	-0.011	1.231	2382062	2.49		99.7	1812	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.103	4.123	-0.020	1.000	13291	0.005078			43.4	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.237	4.249	-0.012	1.272	3581617	2.64		106	2114	
D 42 13C2 PFUnA										
565.00 > 520.00	4.394	4.406	-0.012	1.319	6380826	2.60		104	3703	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.403	4.414	-0.011	1.321	3126440	2.68		107	2059	
D 55 13C2 PFDoA										
615.00 > 570.00	4.687	4.690	-0.003	1.407	7120572	2.63		105	3516	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.182	5.191	-0.009	1.555	4333391	2.26		90.4	4615	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 15:54:44 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d

Injection Date: 09-Oct-2019 03:16:16 Instrument ID: A9

Lims ID: 480-159547-A-40-B Lab Sample ID: 320-159547-40

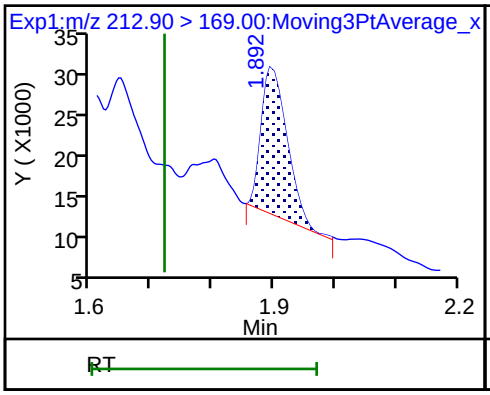
Client ID: GERNATT-TS-COMP 2

Operator ID: A9\Administrator ALS Bottle#: 22 Worklist Smp#: 21

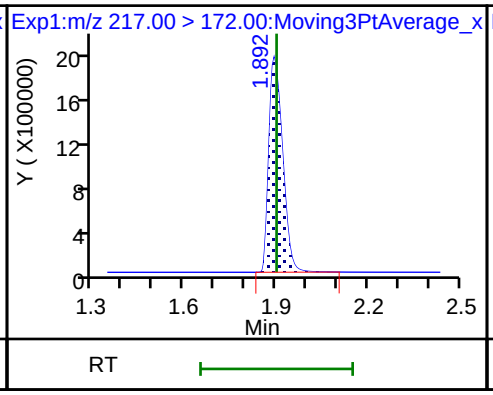
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

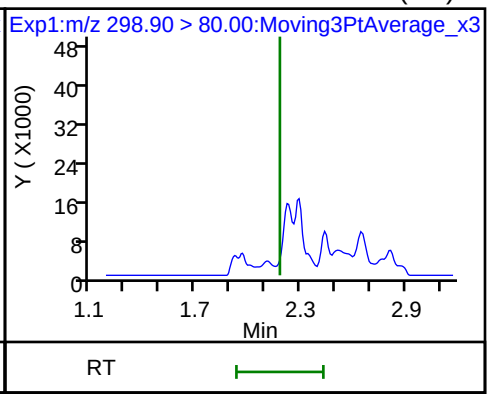
2 Perfluorobutanoic acid



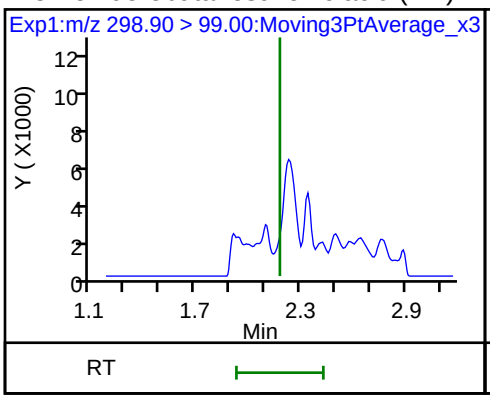
D 1 13C4 PFBA



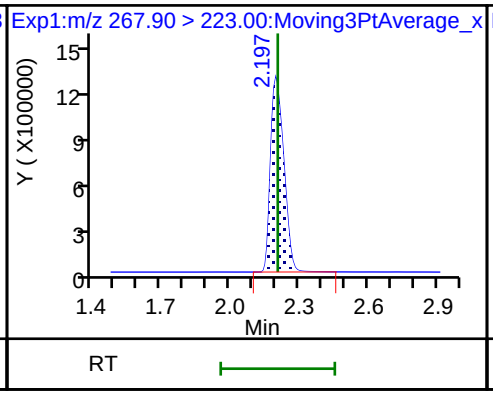
5 Perfluorobutanesulfonic acid (ND)



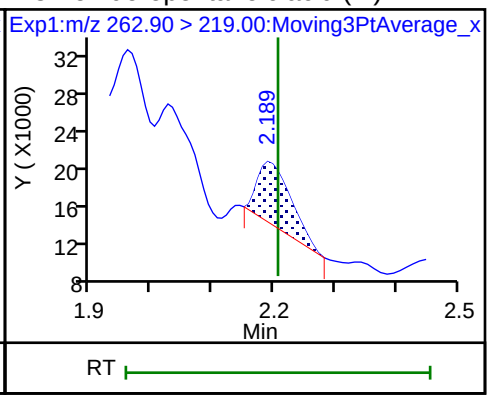
5 Perfluorobutanesulfonic acid (ND)



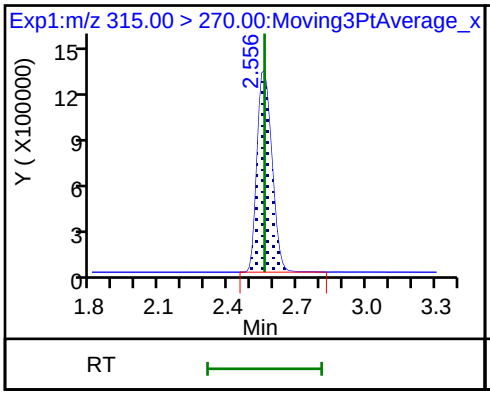
D 4 13C5 PFPeA



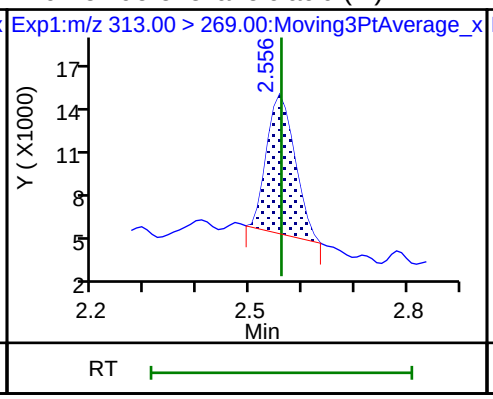
3 Perfluoropentanoic acid (M)



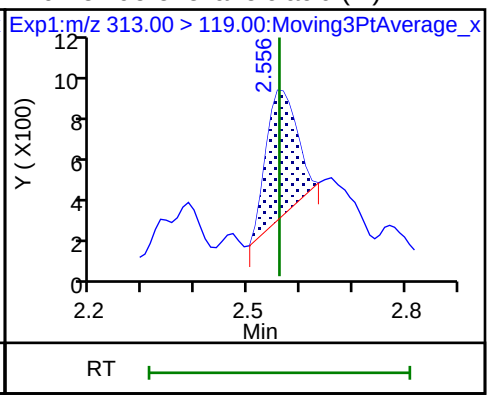
D 9 13C2 PFHxA



10 Perfluorohexanoic acid (M)



10 Perfluorohexanoic acid (M)



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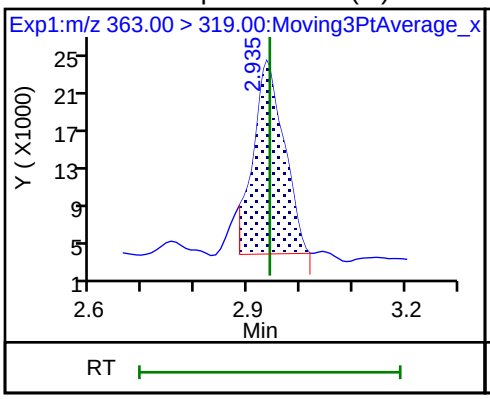

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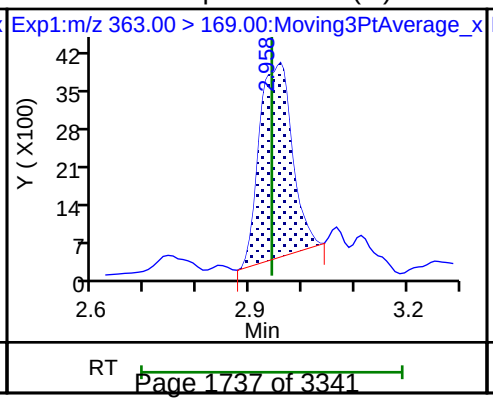
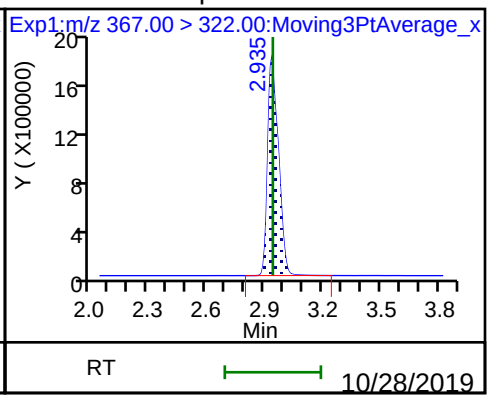
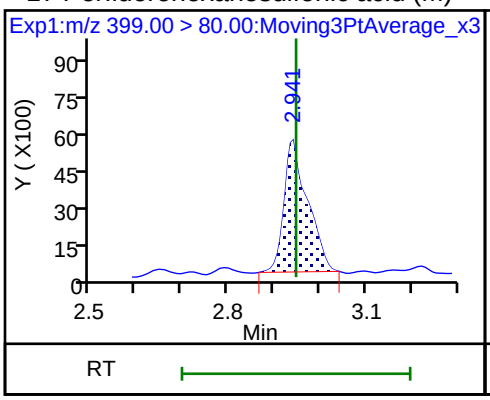


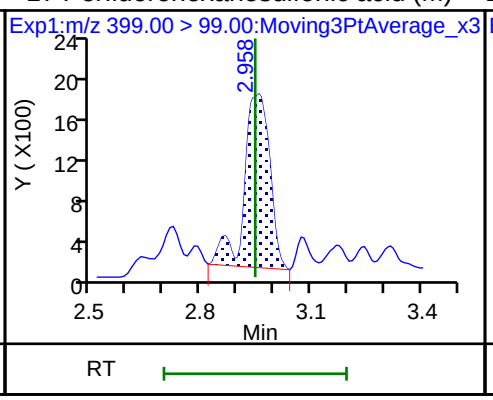
D 14 13C4 PFHpA



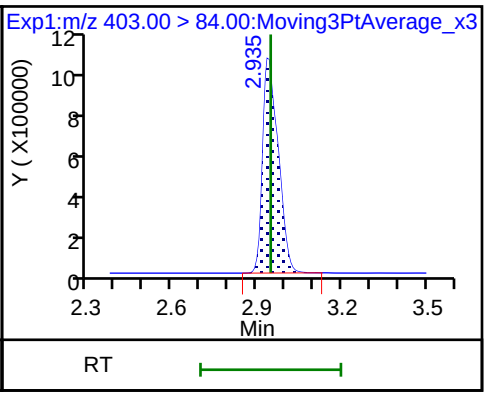
17 Perfluorohexanesulfonic acid (M)



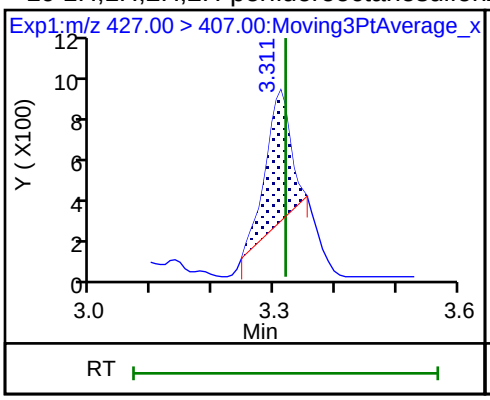
17 Perfluorohexanesulfonic acid (M)



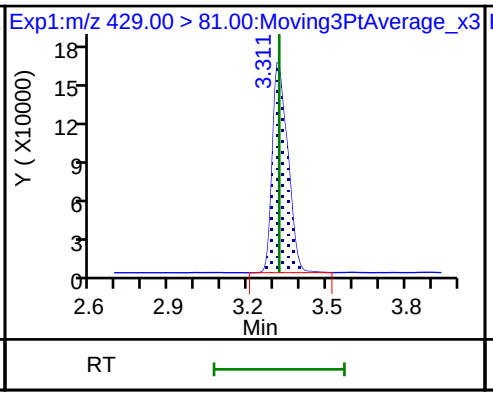
D 16 18O2 PFHxS



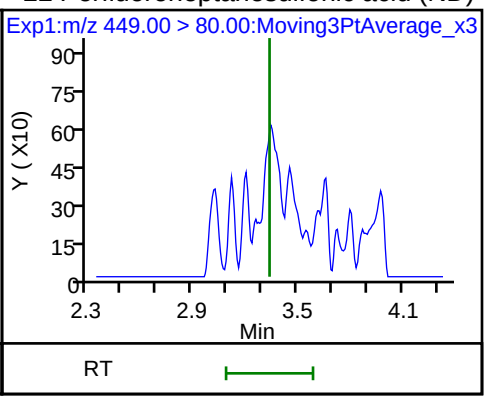
19 1H,1H,2H,2H-perfluorooctanesulfon



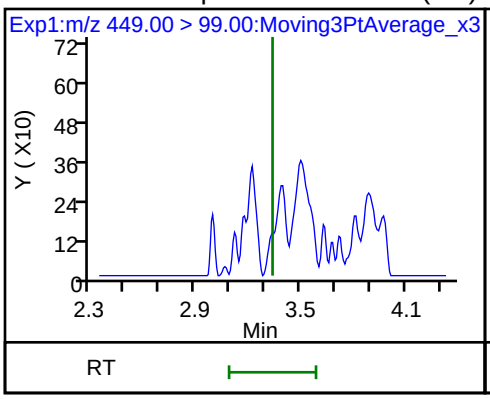
D 20 M2-6:2 FTS



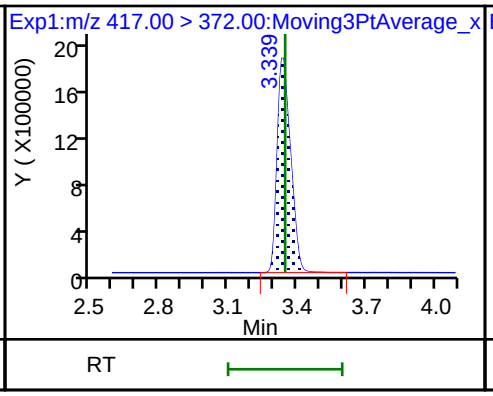
22 Perfluoroheptanesulfonic acid (ND)



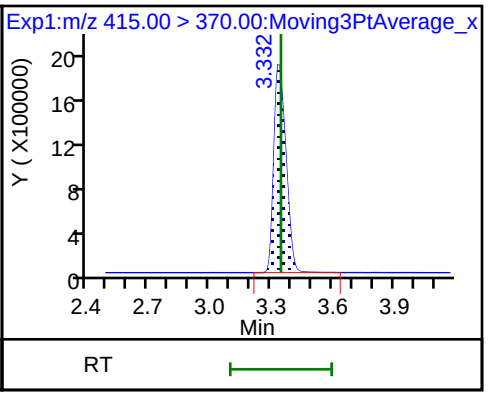
22 Perfluoroheptanesulfonic acid (ND)



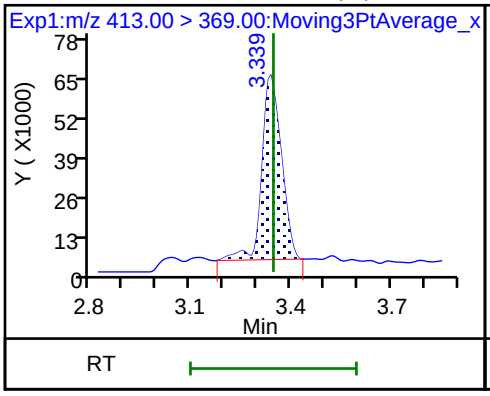
D 23 13C4 PFOA



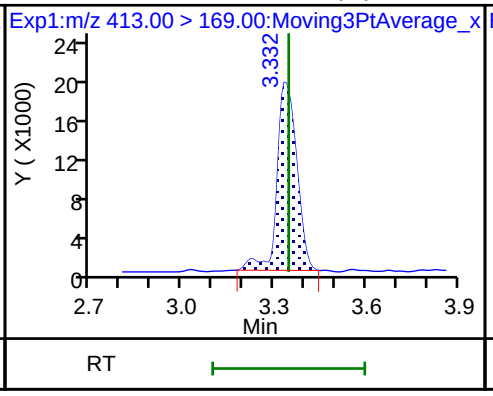
* 25 13C2 PFOA



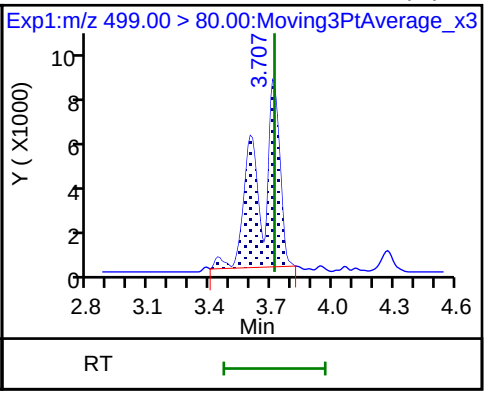
24 Perfluorooctanoic acid (M)



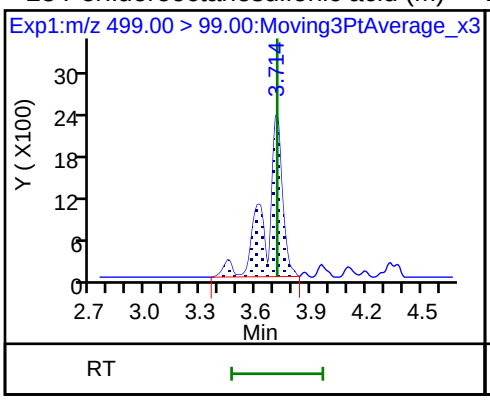
24 Perfluorooctanoic acid (M)



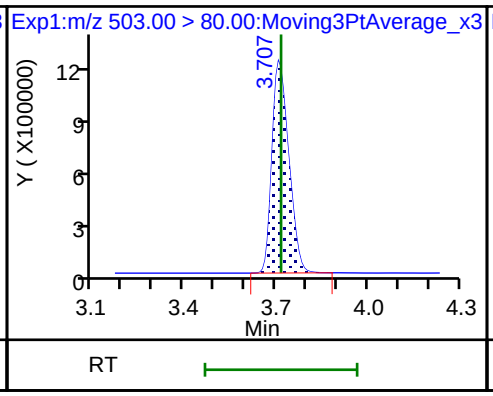
28 Perfluorooctanesulfonic acid (M)



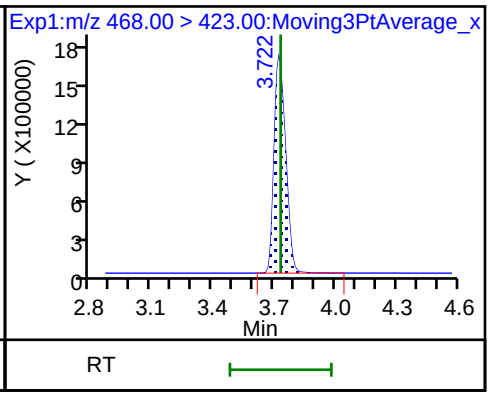
28 Perfluorooctanesulfonic acid (M)



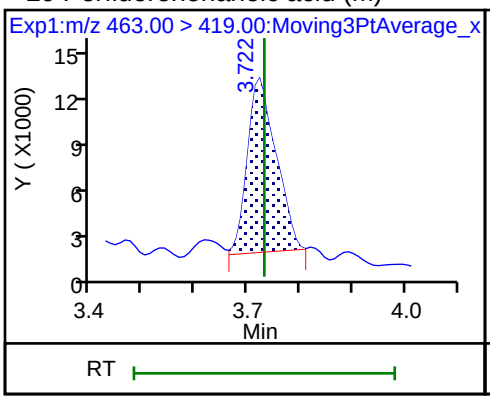
D 27 13C4 PFOS



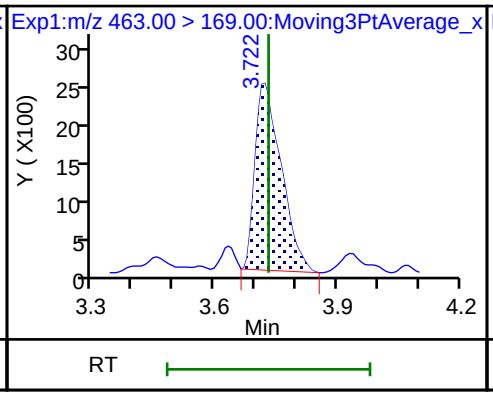
D 30 13C5 PFNA



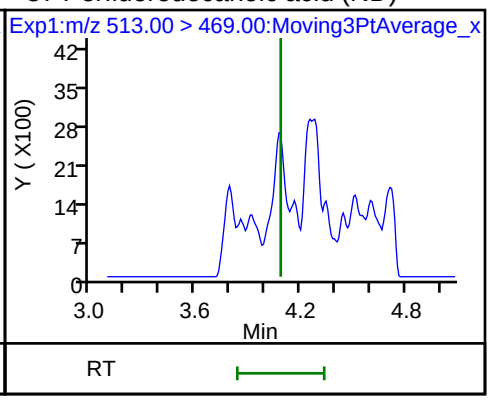
29 Perfluorononanoic acid (M)



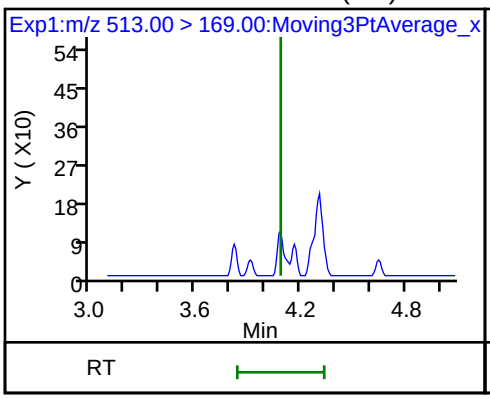
29 Perfluorononanoic acid



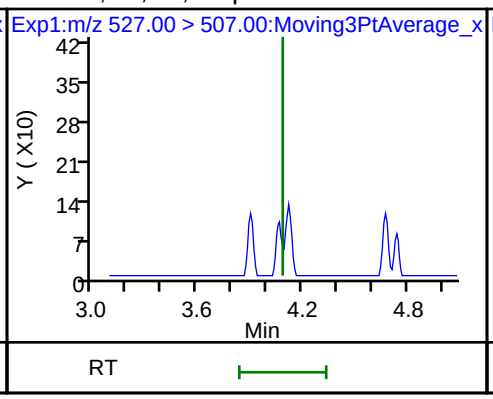
37 Perfluorodecanoic acid (ND)



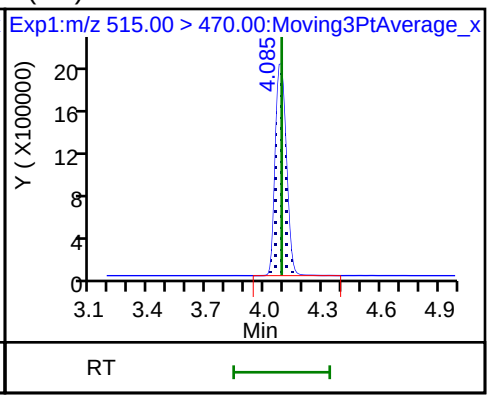
37 Perfluorodecanoic acid (ND)



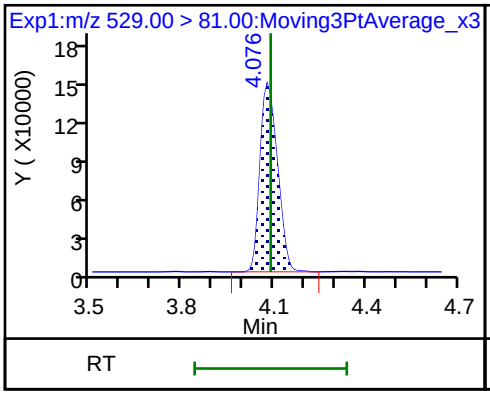
38 1H,1H,2H,2H-perfluorodecanesulfonic (ND)



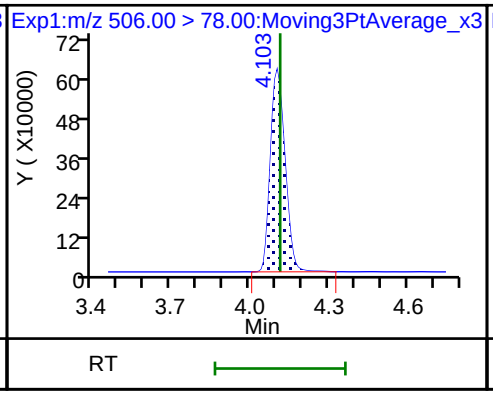
D 36 13C2 PFDA



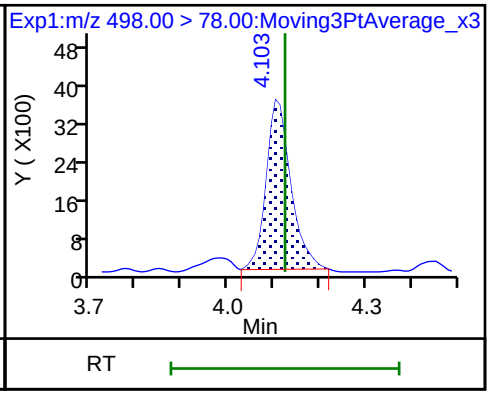
D 35 M2-8:2 FTS



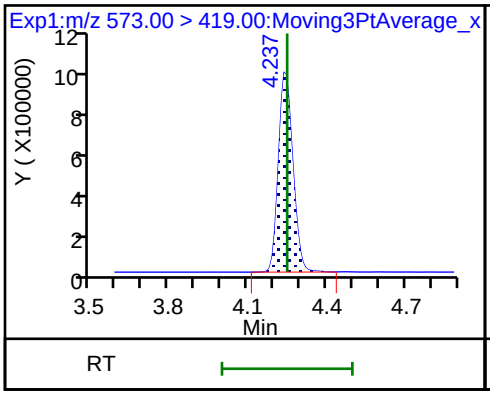
D 32 13C8 FOSA



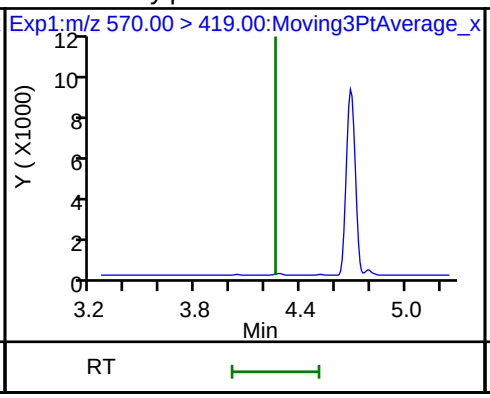
33 Perfluorooctanesulfonamide



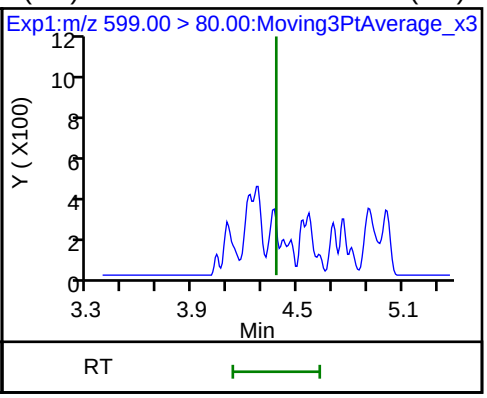
D 39 d3-NMeFOSAA



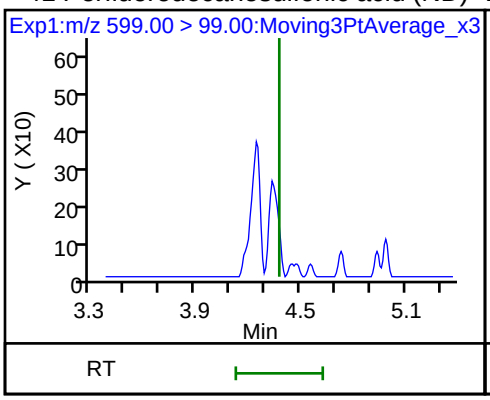
40 N-methylperfluorooctanesulfonamido (ND)



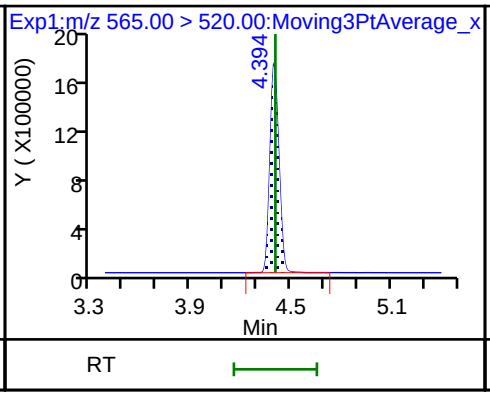
41 Perfluorodecanesulfonic acid (ND)



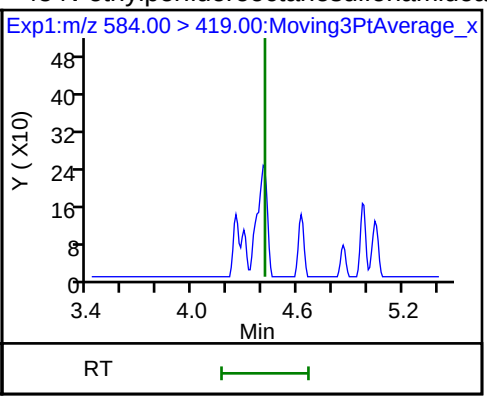
41 Perfluorodecanesulfonic acid (ND)



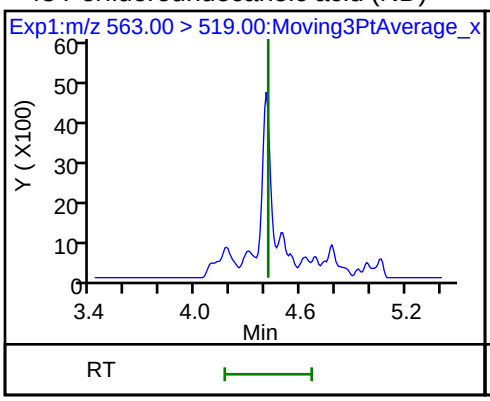
D 42 13C2 PFUnA



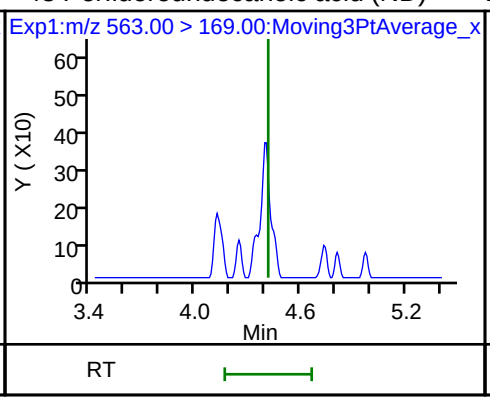
45 N-ethylperfluorooctanesulfonamidoa (ND)



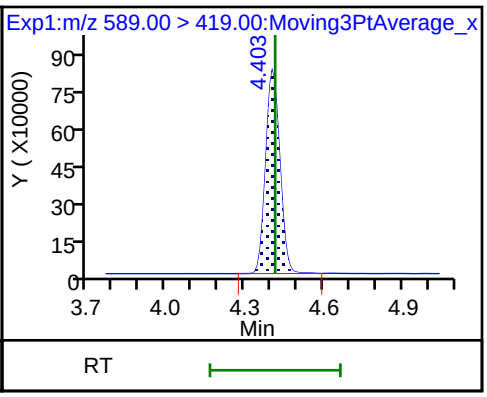
43 Perfluoroundecanoic acid (ND)



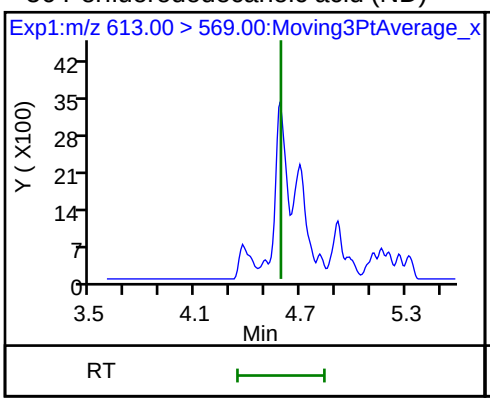
43 Perfluoroundecanoic acid (ND)



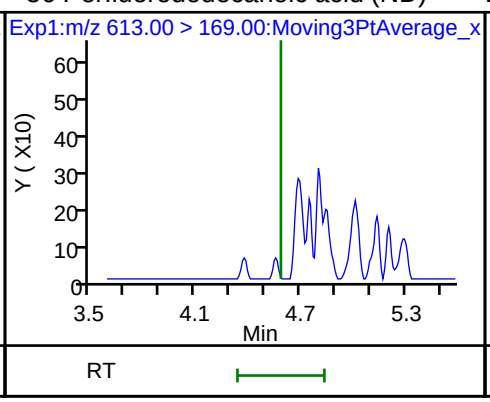
D 44 d5-NEtFOSAA



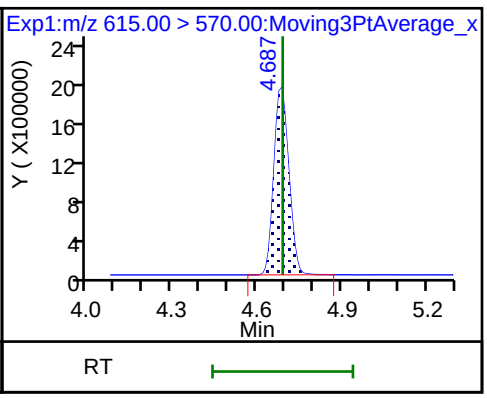
56 Perfluorododecanoic acid (ND)



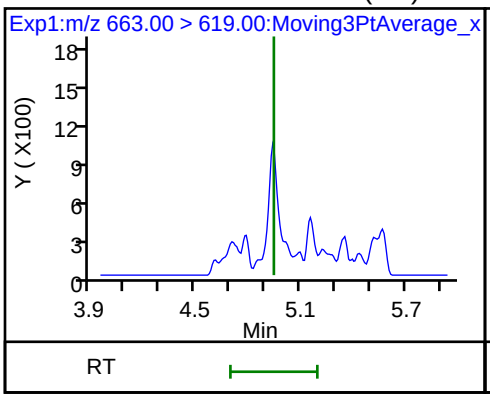
56 Perfluorododecanoic acid (ND)



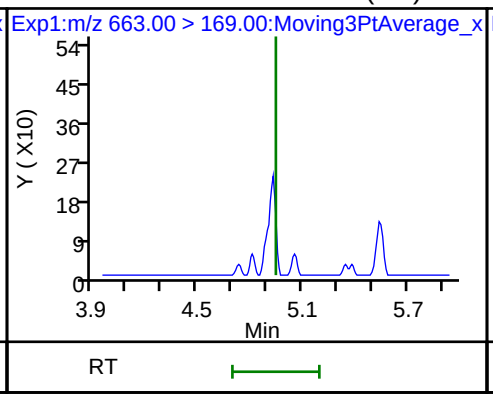
D 55 13C2 PFDoA



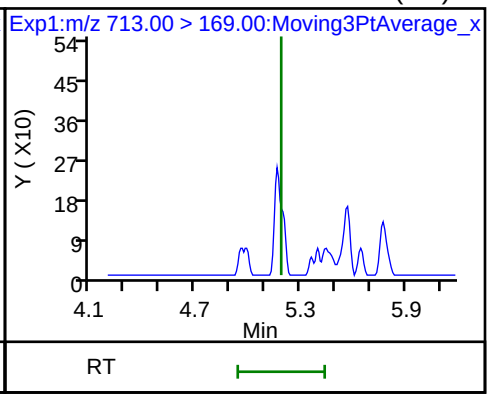
59 Perfluorotridecanoic acid (ND)



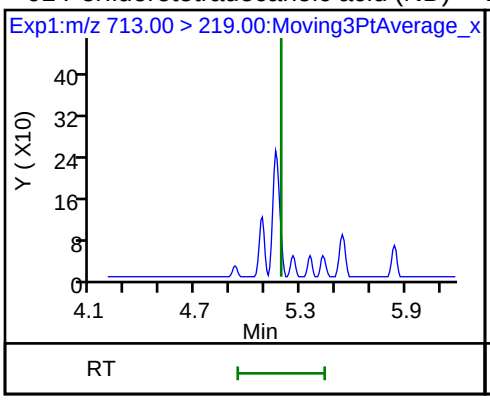
59 Perfluorotridecanoic acid (ND)



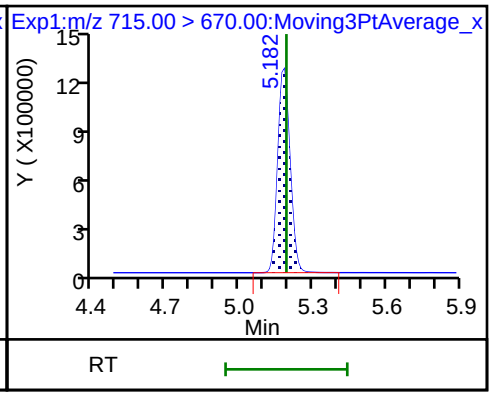
61 Perfluorotetradecanoic acid (ND)



61 Perfluorotetradecanoic acid (ND)



D 60 13C2 PFTeDA



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

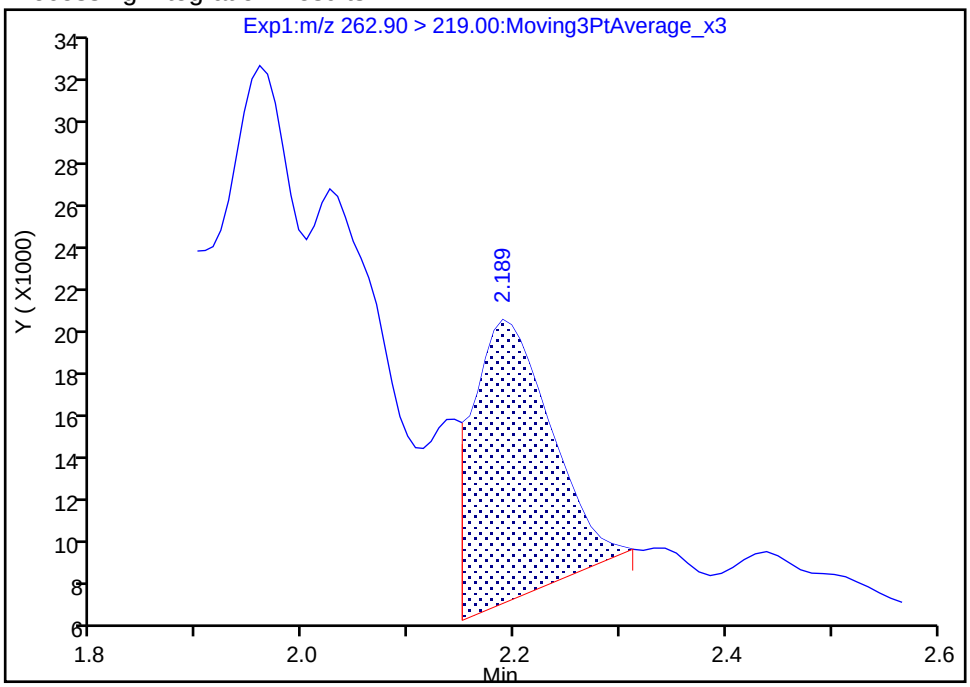
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

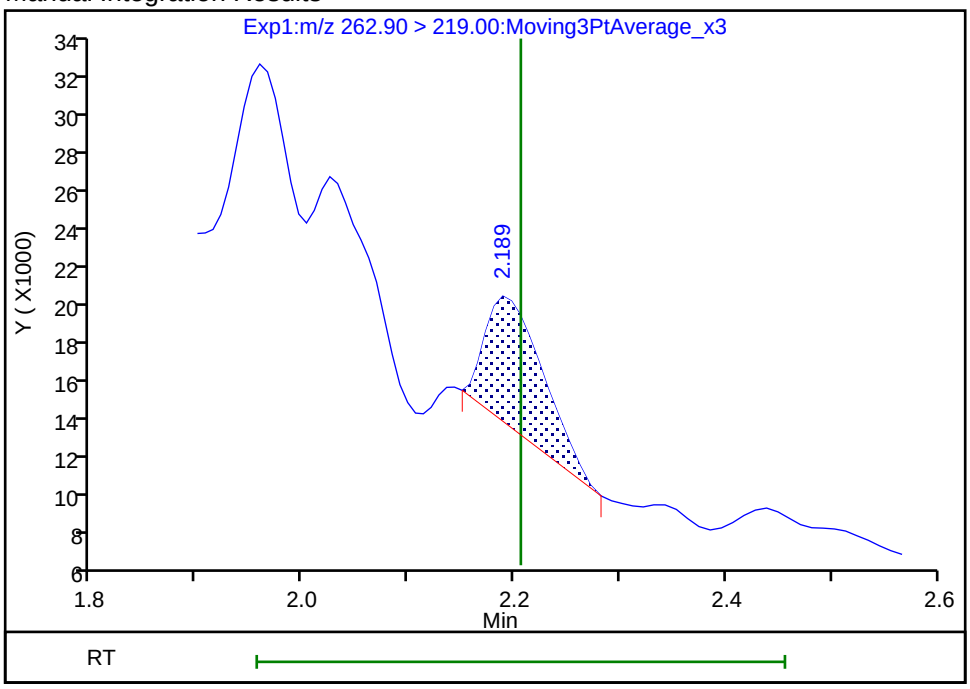
Processing Integration Results

RT: 2.19
Area: 66526
Amount: 0.033151
Amount Units: ng/ml



Manual Integration Results

RT: 2.19
Area: 25094
Amount: 0.012505
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:52:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

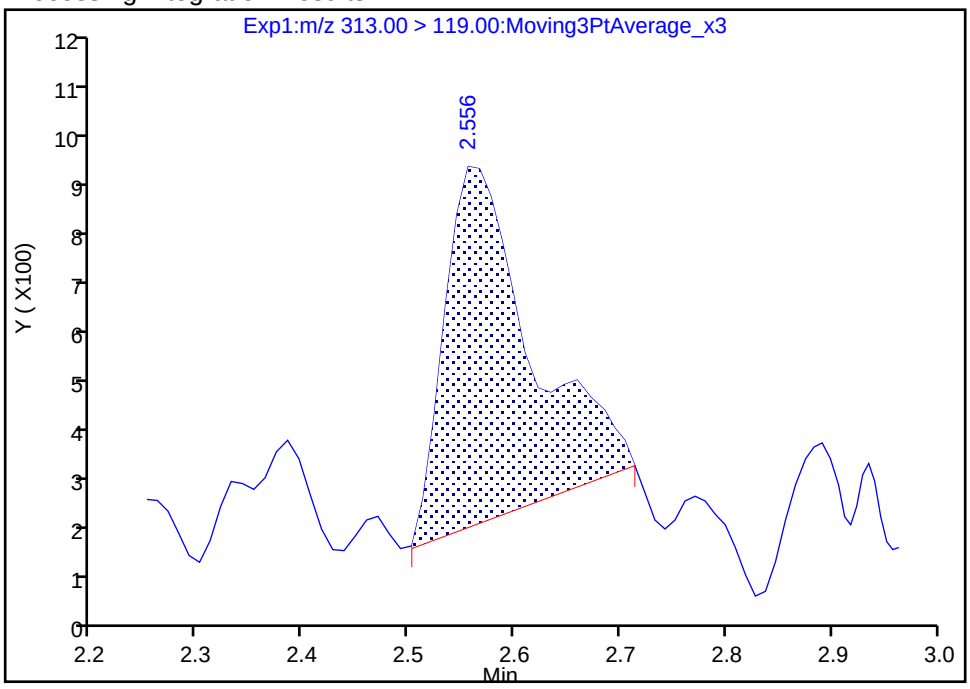
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

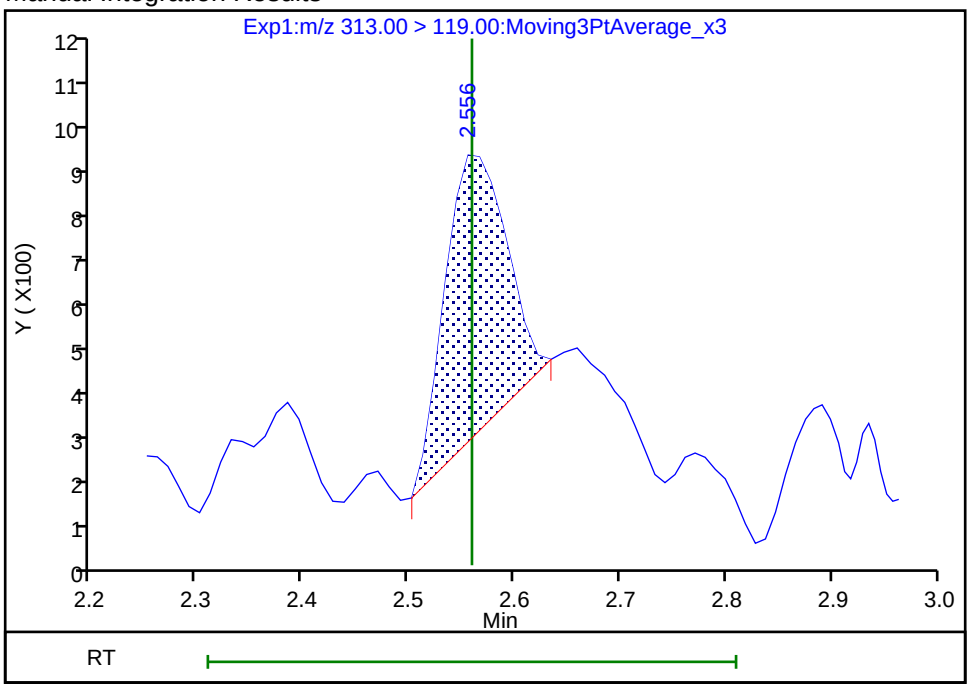
Processing Integration Results

RT: 2.56
Area: 3839
Amount: 0.017931
Amount Units: ng/ml



Manual Integration Results

RT: 2.56
Area: 2371
Amount: 0.016545
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:05

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

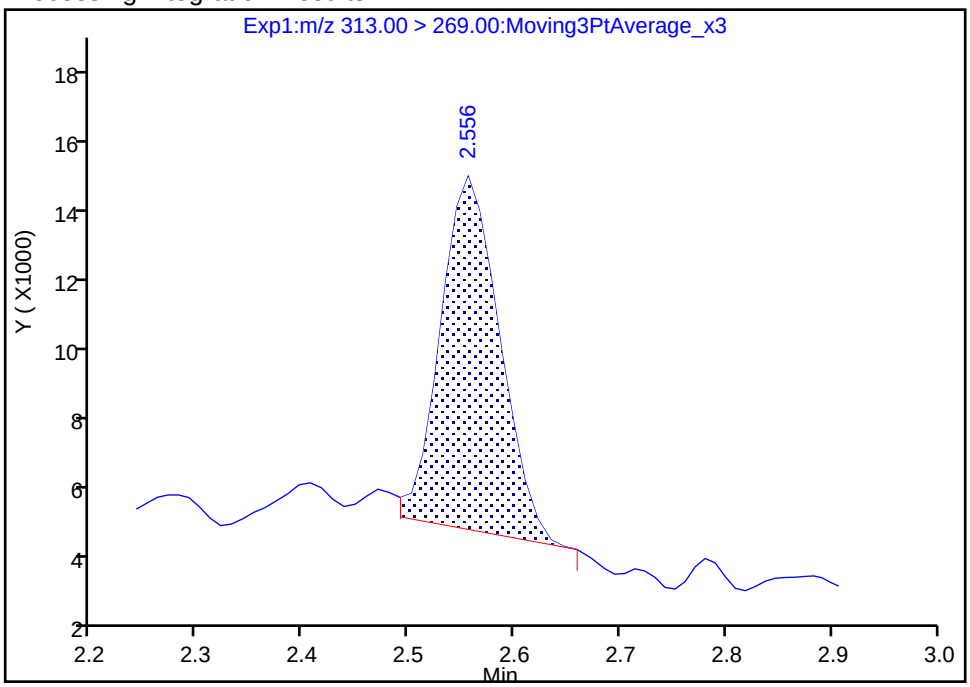
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

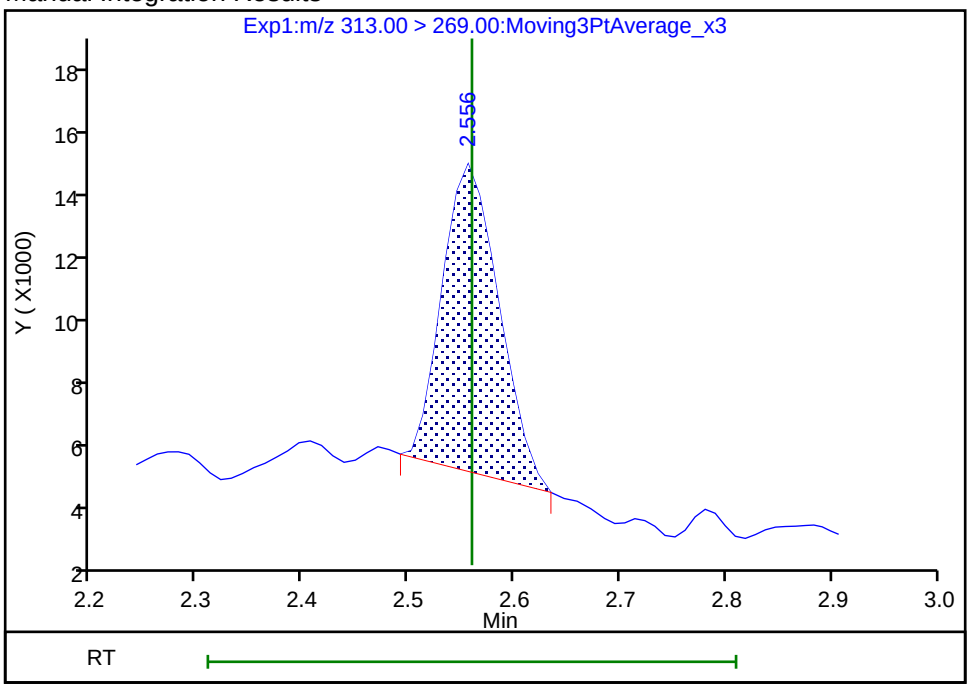
Processing Integration Results

RT: 2.56
Area: 37854
Amount: 0.017931
Amount Units: ng/ml



Manual Integration Results

RT: 2.56
Area: 34927
Amount: 0.016545
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:09

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

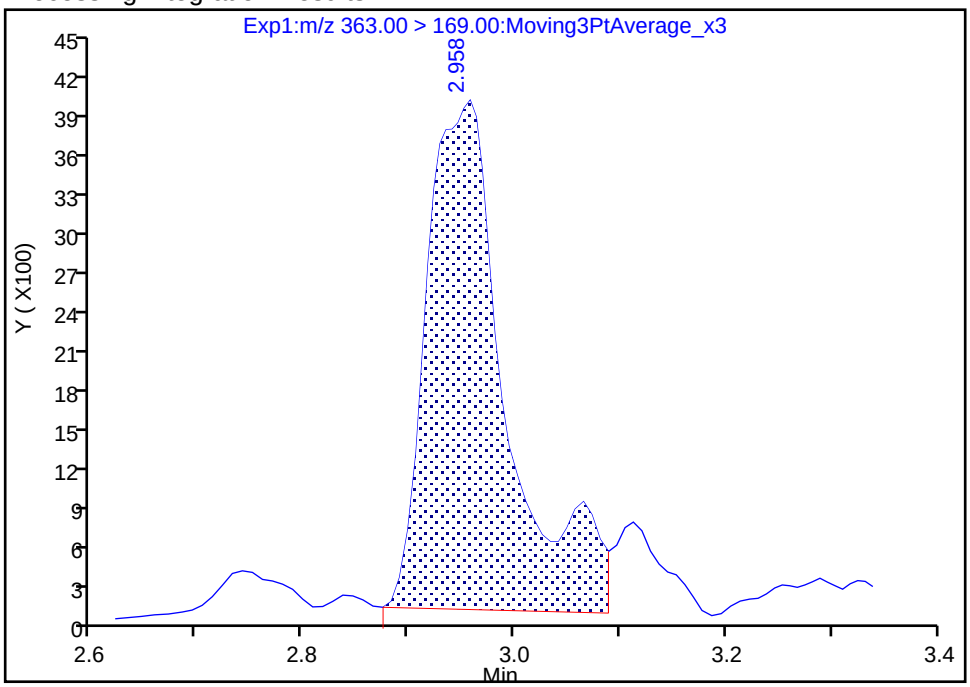
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

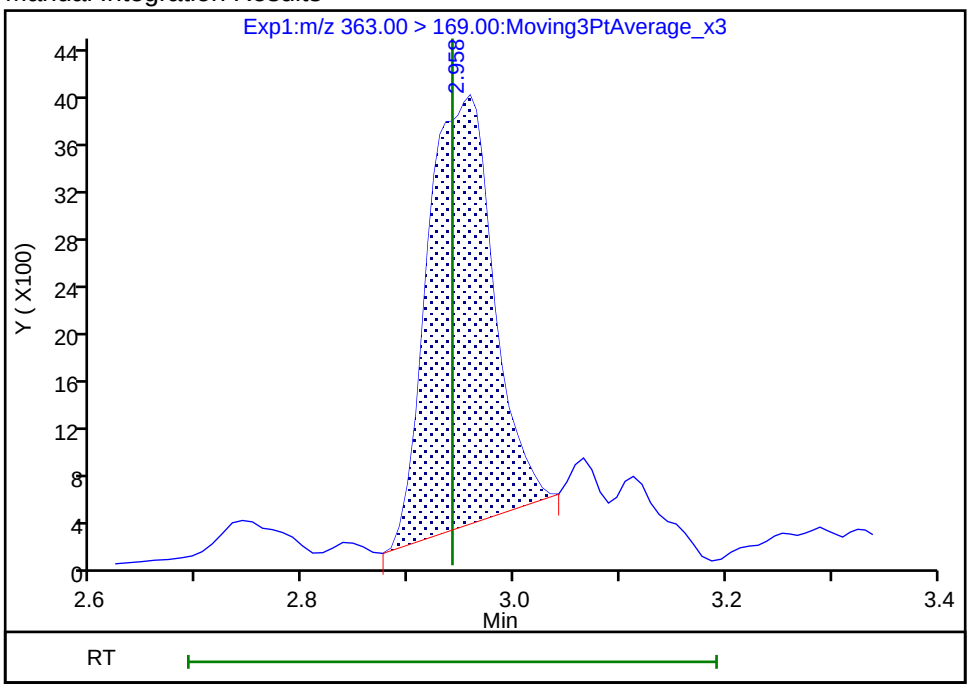
Processing Integration Results

RT: 2.96
Area: 20181
Amount: 0.043605
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 15627
Amount: 0.026806
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:16

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

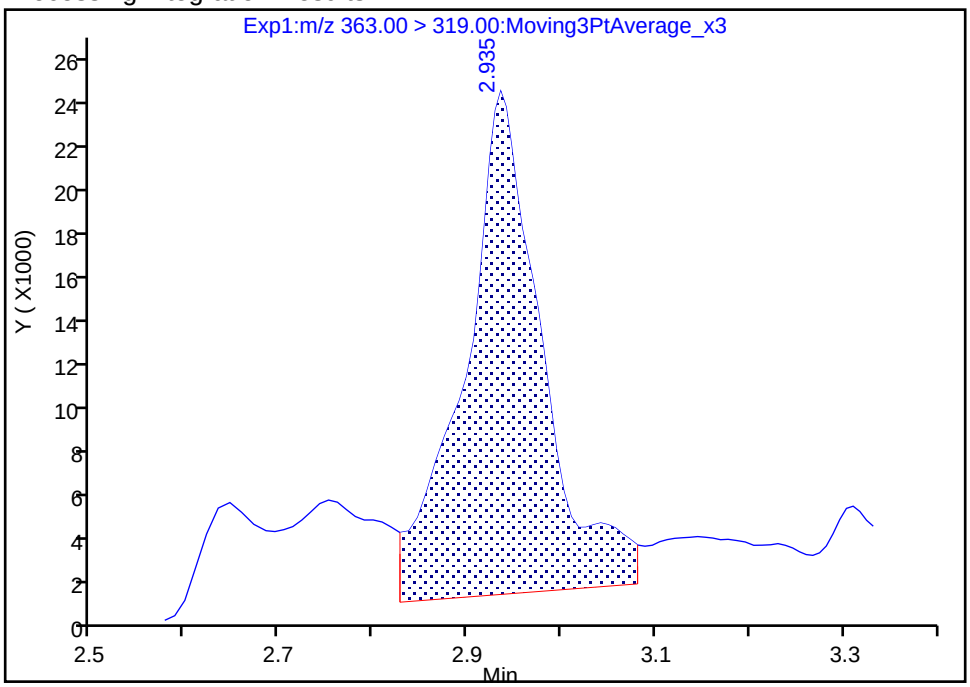
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

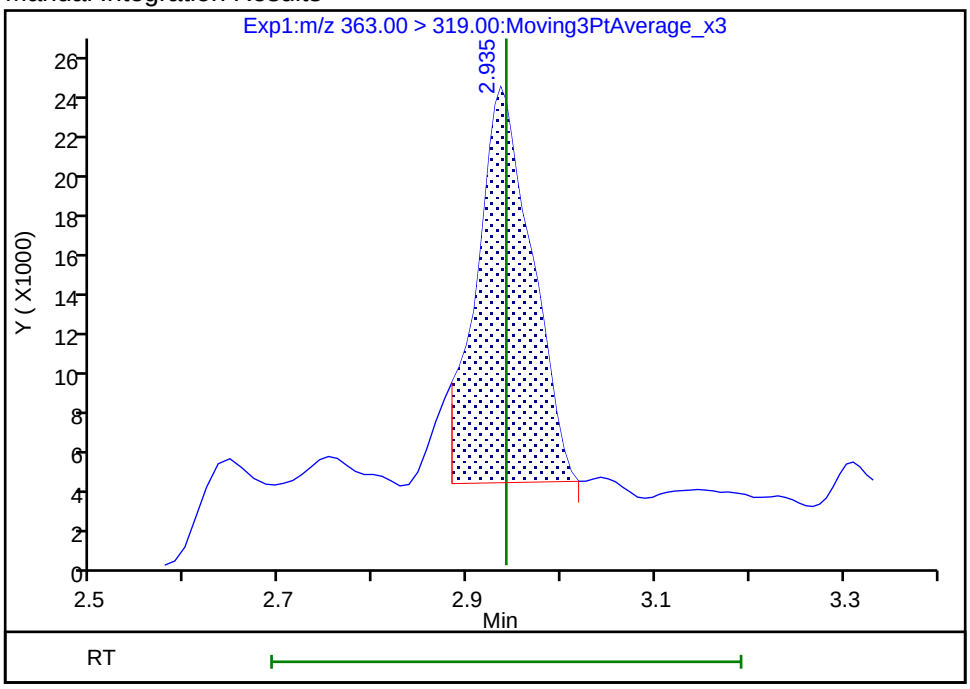
Processing Integration Results

RT: 2.94
Area: 131224
Amount: 0.043605
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 80670
Amount: 0.026806
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:24
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

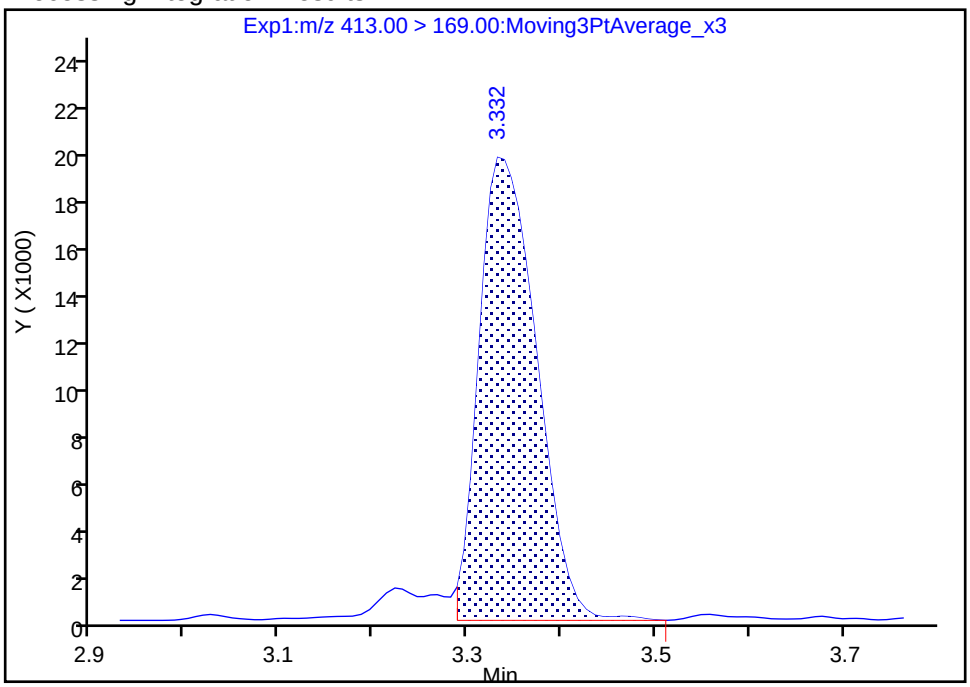
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

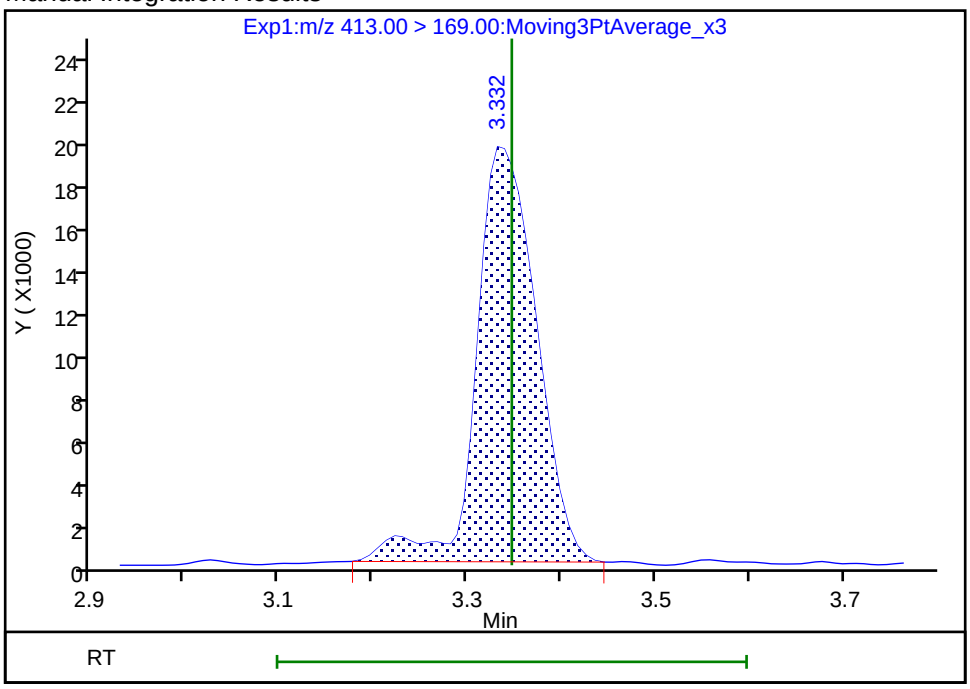
Processing Integration Results

RT: 3.33
Area: 82728
Amount: 0.085537
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 86016
Amount: 0.073869
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:54

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

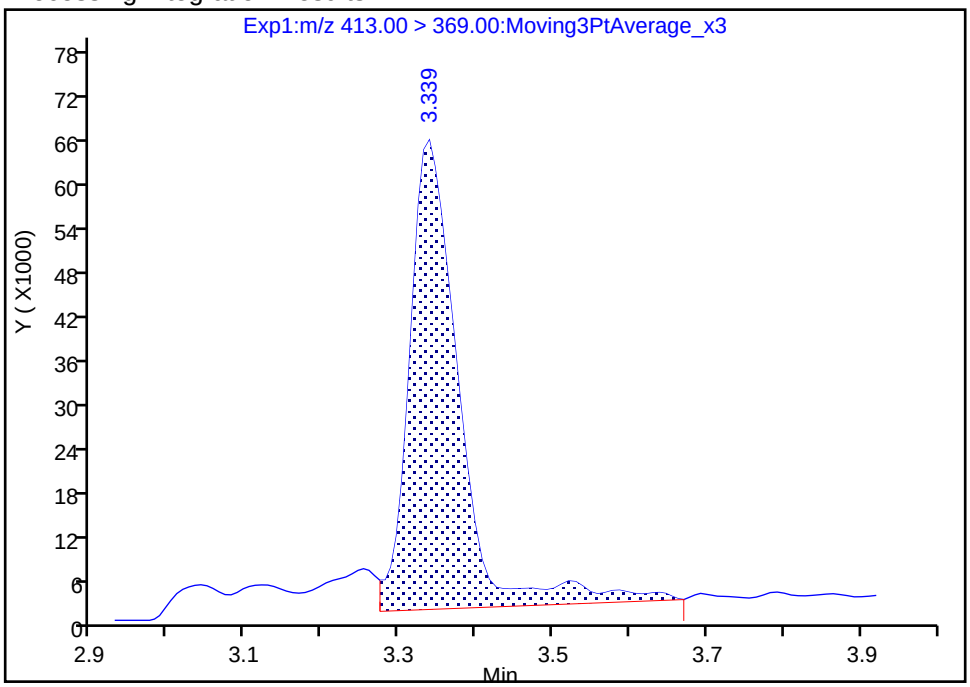
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

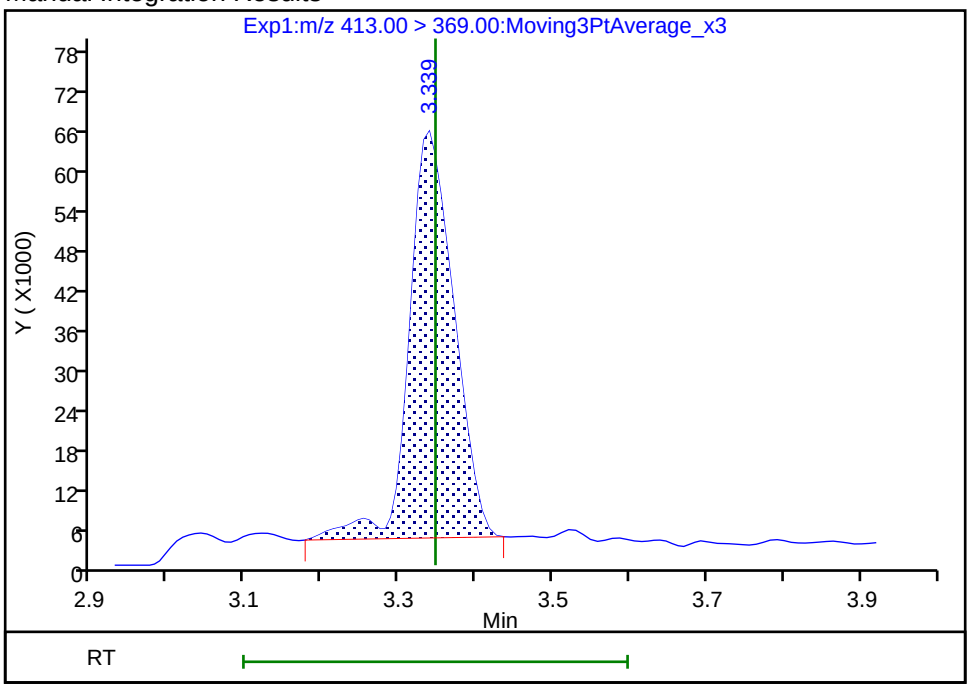
Processing Integration Results

RT: 3.34
Area: 288107
Amount: 0.085537
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 248808
Amount: 0.073869
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:58
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

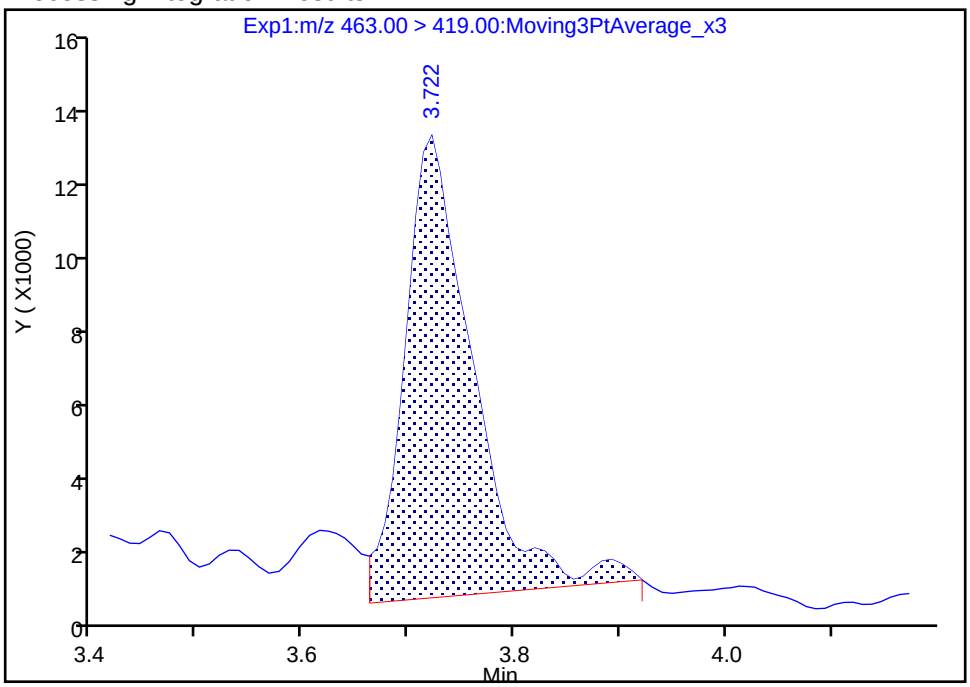
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

29 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

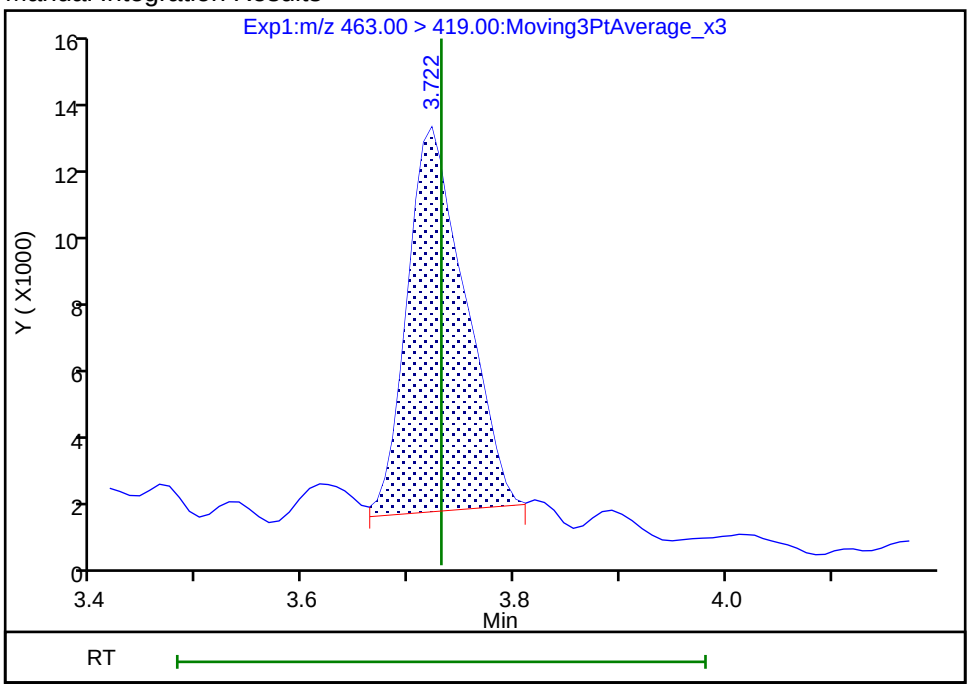
Processing Integration Results

RT: 3.72
Area: 52235
Amount: 0.019522
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 40686
Amount: 0.015206
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:54:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

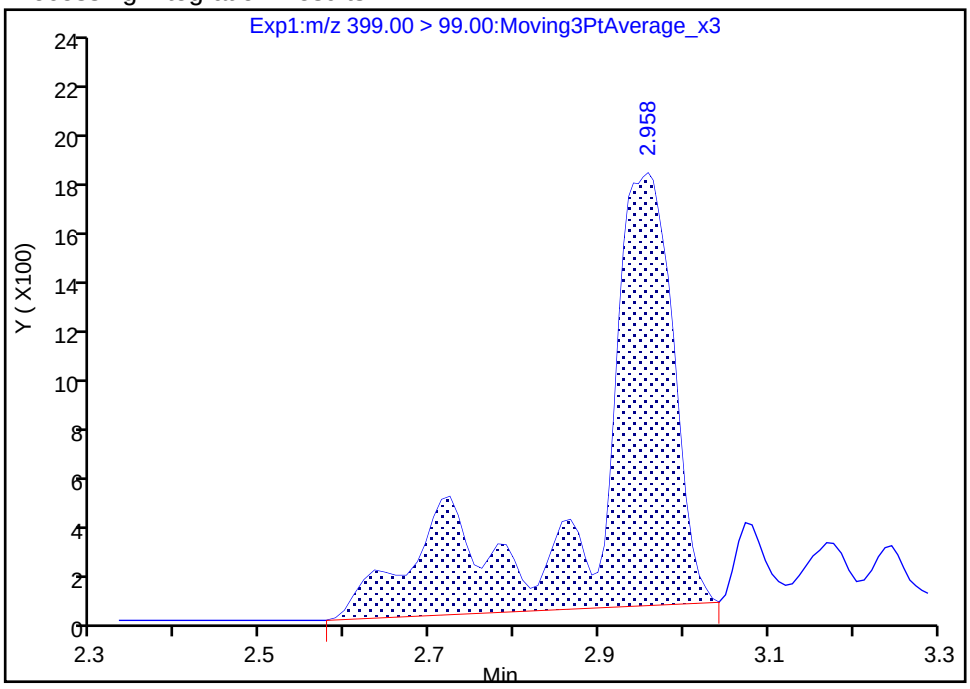
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

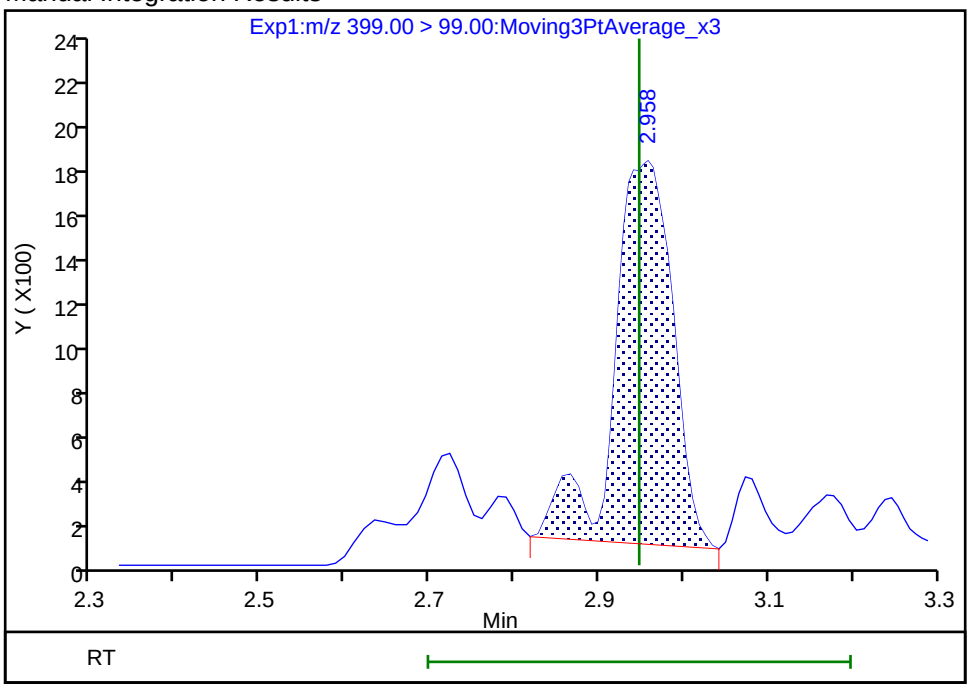
Processing Integration Results

RT: 2.96
Area: 11781
Amount: 0.012576
Amount Units: ng/ml



Manual Integration Results

RT: 2.96
Area: 8131
Amount: 0.009181
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:36

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

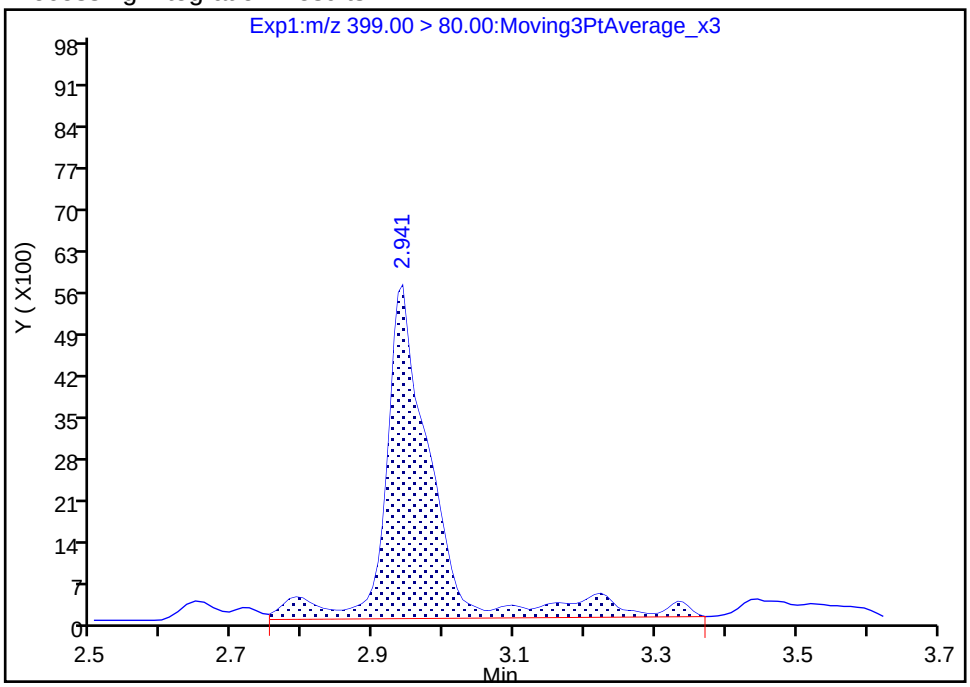
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

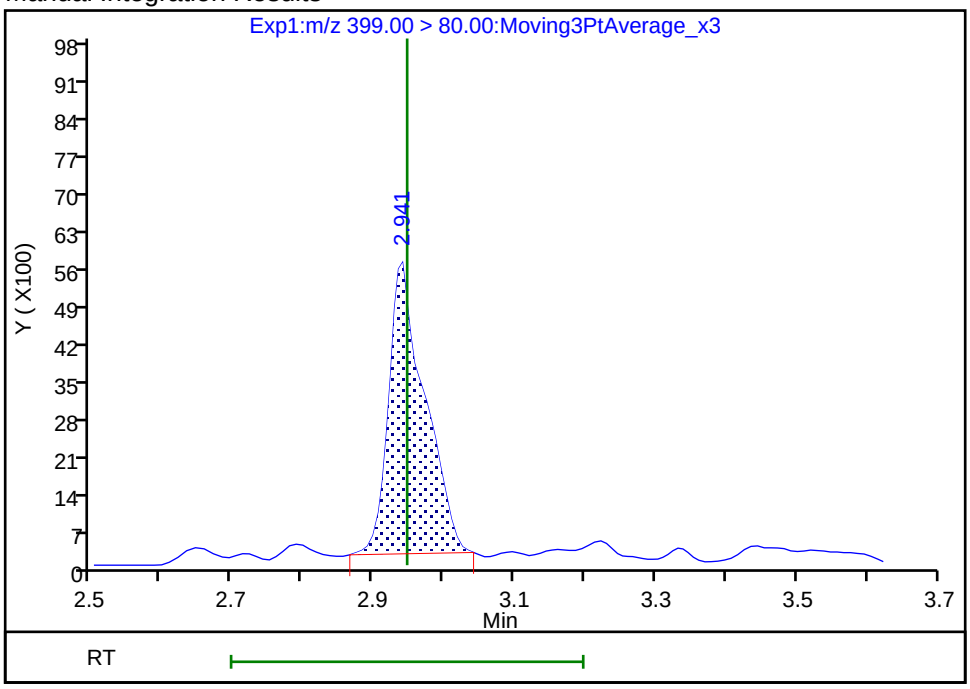
Processing Integration Results

RT: 2.94
Area: 26432
Amount: 0.012576
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 19296
Amount: 0.009181
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:53:41
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

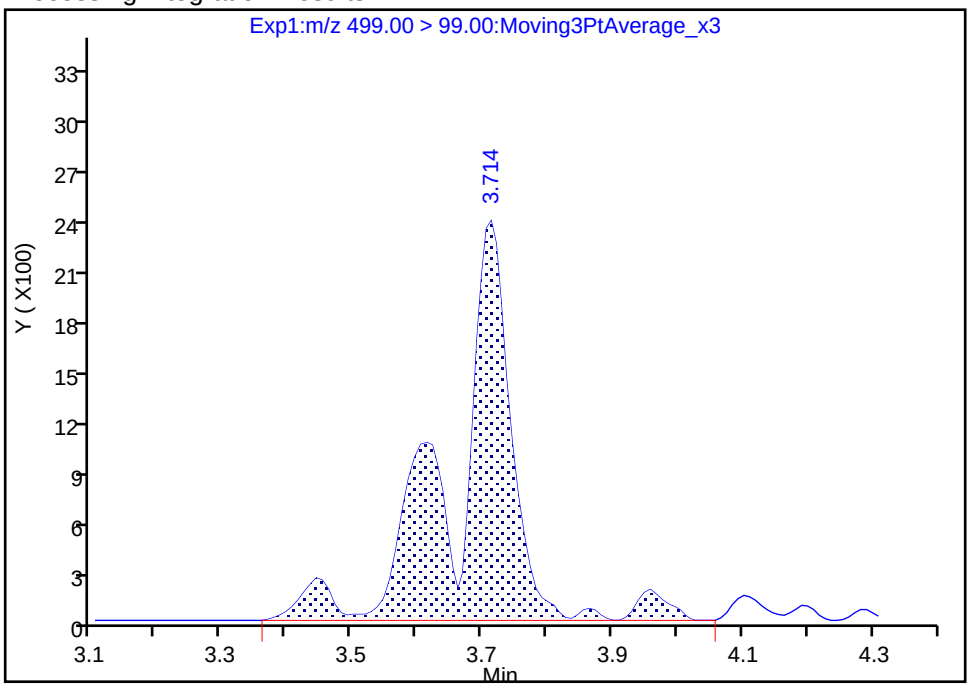
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

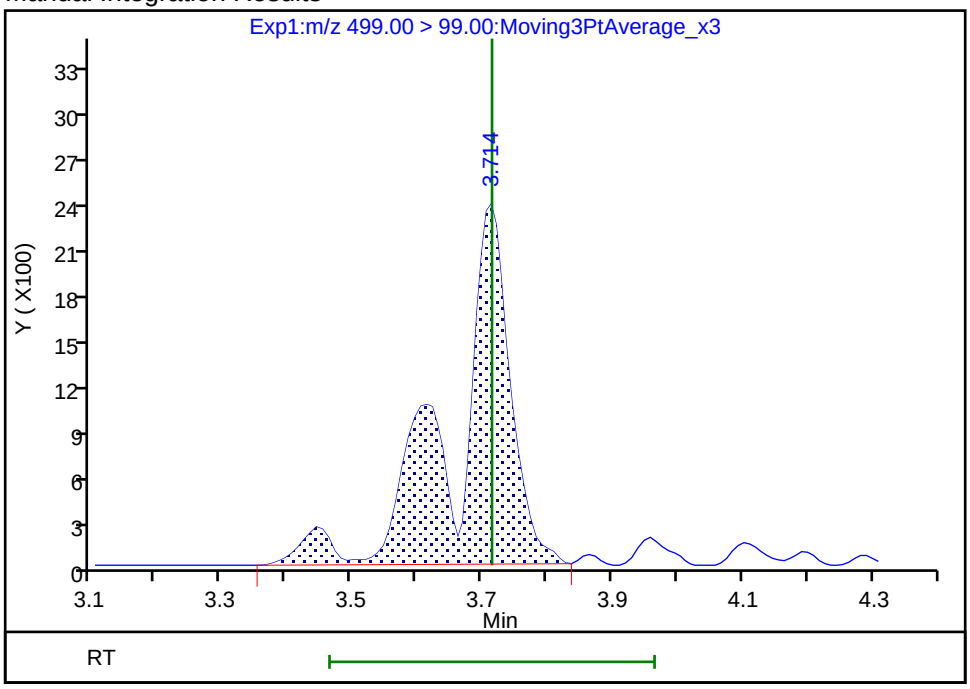
Processing Integration Results

RT: 3.71
Area: 15482
Amount: 0.033069
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 14594
Amount: 0.029775
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:54:09

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

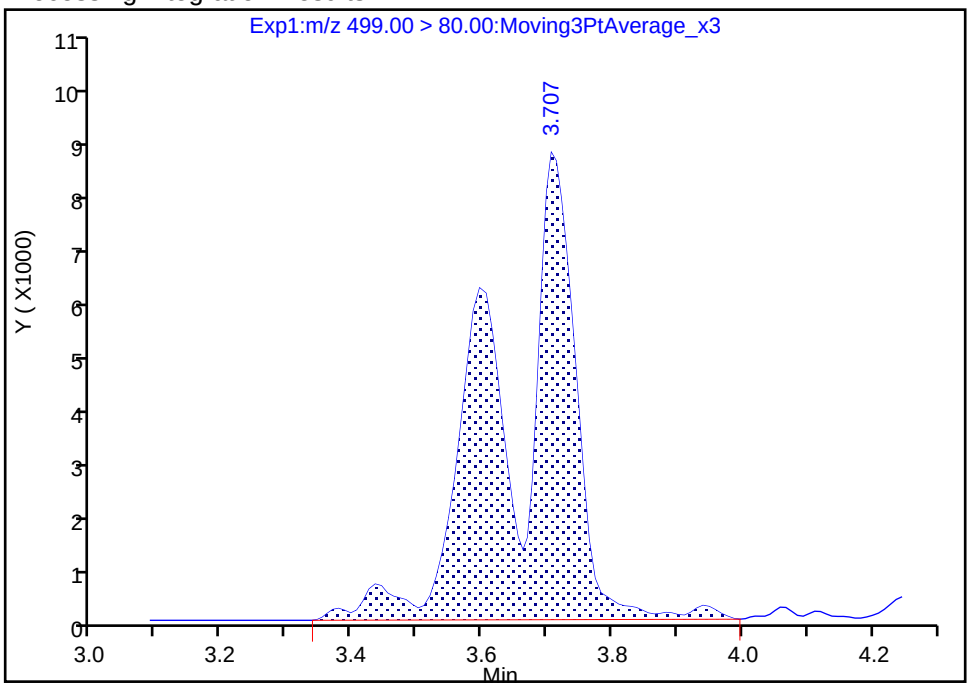
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._035.d				
Injection Date:	09-Oct-2019 03:16:16	Instrument ID:	A9		
Lims ID:	480-159547-A-40-B	Lab Sample ID:	320-159547-40		
Client ID:	GERNATT-TS-COMP 2				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	21
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

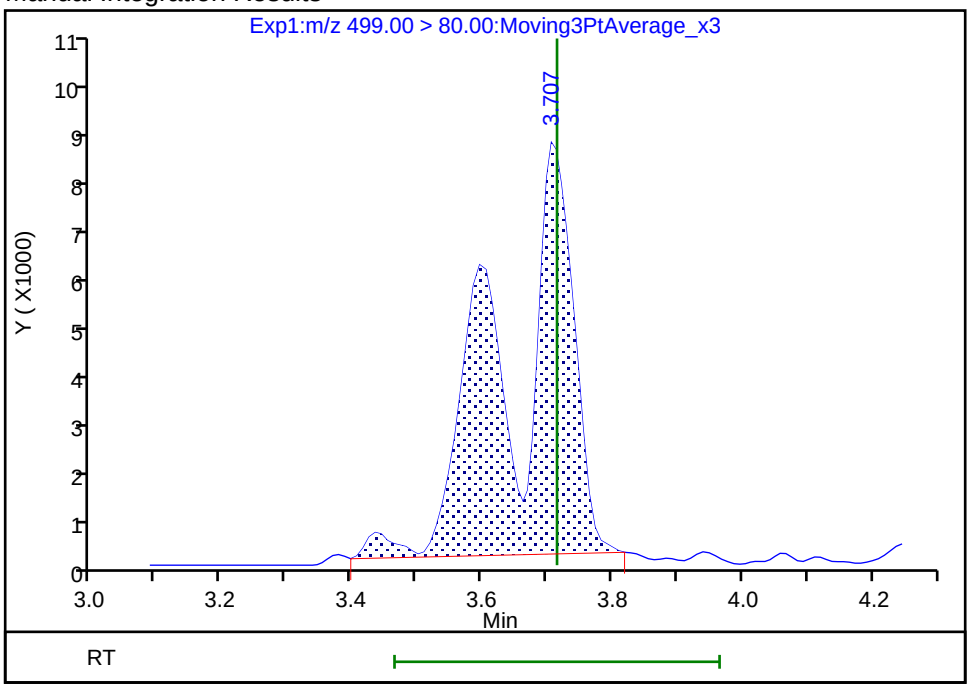
Processing Integration Results

RT: 3.71
Area: 65336
Amount: 0.033069
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 58828
Amount: 0.029775
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:54:19
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-326599/2	2019.09.26.ICAL_004.d
Level 2	IC 320-326599/3	2019.09.26.ICAL_005.d
Level 3	IC 320-326599/4	2019.09.26.ICAL_006.d
Level 4	IC 320-326599/5	2019.09.26.ICAL_007.d
Level 5	IC 320-326599/6	2019.09.26.ICAL_008.d
Level 6	IC 320-326599/7	2019.09.26.ICAL_009.d
Level 7	IC 320-326599/9	2019.09.26.ICAL_011.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8472 0.8754	0.8558 0.8529	0.8621	0.9118	0.8938	AveID		0.8713				2.7		35.0			
Perfluoropentanoic acid (PFPeA)	1.0786 1.0262	1.1084 0.9665	1.0932	1.0604	1.0649	AveID		1.0569				4.5		35.0			
Perfluorobutanesulfonic acid (PFBS)	1.6754 1.7233	1.6713 1.7375	1.6295	1.7107	1.7621	AveID		1.7014				2.7		35.0			
4:2 FTS	2.7658 2.9262	2.6817 2.5551	2.7771	2.7046	2.5948	AveID		2.7150				4.6		35.0			
Perfluorohexanoic acid (PFHxA)	1.0015 0.9155	0.9835 0.9132	0.9092	0.9390	0.9818	AveID		0.9491				4.1		35.0			
Perfluoropentanesulfonic acid (PFPeS)	1.3106 1.3650	1.3852 1.3546	1.3685	1.3787	1.3570	AveID		1.3599				1.8		50.0			
HFPO-DA (GenX)	3.0984 2.4996	2.9785 2.8567	2.5126	2.6213	2.7908	AveID		2.7654				8.4		35.0			
Perfluoroheptanoic acid (PFHpA)	1.0605 1.0366	1.1451 0.9937	0.9911	1.0196	1.0538	AveID		1.0429				5.0		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.5303 1.2004	1.4494 1.1901	1.2604	1.1340	1.1811	AveID		1.2780				11.8		35.0			
DONA	5.4400 4.9175	5.6248 3.8236	5.4737	5.6557	5.2852	AveID		5.1744				12.5		50.0			
6:2 FTS	2.0271 2.0692	2.1375 2.0202	2.0318	2.0093	1.9761	AveID		2.0388				2.5		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2079 1.2100	1.2044 1.1517	1.1831	1.1966	1.2142	AveID		1.1954				1.8		50.0			
Perfluorooctanoic acid (PFOA)	+++++ 0.9968	1.2000 0.9416	1.0425	1.0162	1.0416	AveID		1.0398				8.4		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.2364 1.0441	1.2684 1.0159	1.0298	1.0255	0.9968	AveID		1.0881				10.4		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0345 0.9737	1.0246 0.9257	0.9468	0.9789	0.9424	AveID		0.9752				4.3		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	2.5455 2.6284	2.5706 2.3267	2.5659	2.5625	2.5153	AveID		2.5307				3.8		50.0			
Perfluorooctanesulfonamide (FOSA)	1.1055 0.9865	0.9965 0.9733	0.9806	0.9774	0.9642	AveID		0.9977				4.9		35.0			
Perfluorononanesulfonic acid (PFNS)	0.8556 0.8511	0.8146 0.8110	0.8375	0.8316	0.8305	AveID		0.8331				2.0		50.0			
Perfluorodecanoic acid (PFDA)	1.0262 0.9579	1.0512 0.9231	0.9970	0.8659	0.8969	AveID		0.9598				7.2		35.0			
8:2 FTS	1.9101 1.8984	1.9780 1.8037	2.0167	2.0076	1.8052	AveID		1.9171				4.6		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.7025 0.8272	0.7720 0.8171	0.8038	0.8064	0.7895	AveID		0.7884				5.3		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7341 0.8226	0.8097 0.7809	0.7888	0.8022	0.7181	AveID		0.7795				5.0		50.0			
Perfluoroundecanoic acid (PFUnA)	0.9412 0.7862	0.9119 0.7961	0.8126	0.8325	0.7442	AveID		0.8321				8.5		35.0			
NMeFOSE	1.1362 1.0053	1.1871 1.0389	0.9366	1.0470	0.9834	AveID		1.0478				8.3		35.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7475 0.7562	0.7459 0.7790	0.7330	0.7745	0.7437	AveID		0.7543				2.2		35.0			
NMeFOSA	1.0434 0.9314	0.9783 0.9260	0.9775	0.9441	0.9408	AveID		0.9631				4.3		35.0			
F-53B Minor	4.8803 4.6276	5.3465 3.5449	5.0407	5.2571	4.8180	AveID		4.7879				12.6		50.0			
NEtFOSE	0.8582 1.0616	1.1531 1.1183	1.1421	1.0373	0.9752	AveID		1.0494				10.0		35.0			
NEtFOSA	0.9944 0.9809	0.9480 1.0083	1.0318	0.9843	0.9818	AveID		0.9899				2.6		35.0			
Perfluorododecanoic acid (PFDoA)	1.0440 0.9918	1.0200 0.8693	0.9253	0.9382	0.9222	AveID		0.9587				6.5		35.0			
10:2 FTS	1.2495 1.2699	1.2004 1.2561	1.3233	1.2481	1.1742	AveID		1.2459				3.9		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2645 0.3198	0.3166 0.3088	0.3051	0.3142	0.2798	AveID		0.3013				6.9		50.0			
Perfluorotridecanoic acid (PFTriA)	1.0859 0.9226	0.9240 0.8693	0.8492	0.9197	0.8541	AveID		0.9178				8.8		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1065 0.0935	0.0918 0.0913	0.0886	0.0874	0.1029	AveID		0.0946				7.7		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++++ 0.9985	1.4254 0.8963	0.9515	0.8601	0.8838	L1ID	0.0203	0.9155							0.9970		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.5931 0.7250	0.6274 0.6308	0.6547	0.4568	0.5621	AveID		0.6071				13.8		50.0			
13C4 PFBA	0.9134 0.8565	0.8311 0.8709	0.8326	0.8515	0.8148	Ave		0.8530				3.8		50.0			
13C5 PFPeA	0.8057 0.7629	0.7444 0.7827	0.7489	0.7578	0.7306	Ave		0.7618				3.3		50.0			
M2-4:2 FTS	0.1879 0.1541	0.1625 0.1642	0.1637	0.1661	0.1610	Ave		0.1656				6.3		50.0			
13C2 PFHxA	0.8870 0.8505	0.8503 0.8440	0.8514	0.8655	0.8112	Ave		0.8514				2.7		50.0			
13C3 HFPO-DA	0.0145 0.0194	0.0165 0.0189	0.0184	0.0200	0.0188	Ave		0.0181				10.6		50.0			
13C4 PFHpA	0.8262 0.7503	0.7642 0.7673	0.8021	0.8150	0.7321	Ave		0.7796				4.5		50.0			
18O2 PFHxS	0.5532 0.5253	0.5152 0.5235	0.5130	0.5269	0.5077	Ave		0.5235				2.8		50.0			
M2-6:2 FTS	0.2282 0.1775	0.1897 0.1781	0.2062	0.1988	0.1841	Ave		0.1946				9.3		50.0			
13C8 PFOA	0.7912 0.8096	0.7696 0.7810	0.7962	0.8080	0.7932	Ave		0.7927				1.8		50.0			
13C4 PFOA	0.9265 0.9044	0.9027 0.9089	0.9273	0.9359	0.8803	Ave		0.9123				2.1		50.0			
13C8 PFOS	0.2459 0.2312	0.2228 0.2317	0.2326	0.2303	0.2222	Ave		0.2310				3.4		50.0			
13C4 PFOS	0.4852 0.4429	0.4368 0.4689	0.4508	0.4526	0.4346	Ave		0.4531				4.0		50.0			
13C5 PFNA	0.7886 0.7896	0.8221 0.7946	0.8046	0.8157	0.7847	Ave		0.8000				1.8		50.0			
13C8 FOSA	0.6492 0.6303	0.6056 0.6552	0.6079	0.6069	0.5484	Ave		0.6148				5.8		50.0			
13C2 PFDA	0.8347 0.8312	0.8655 0.8285	0.8767	0.8852	0.8486	Ave		0.8529				2.7		50.0			
M2-8:2 FTS	0.2628 0.2180	0.2369 0.2175	0.2249	0.2331	0.2253	Ave		0.2312				6.8		50.0			
d3-NMeFOSAA	0.5972 0.5551	0.5633 0.5912	0.5566	0.5606	0.5289	Ave		0.5647				4.1		50.0			
d7-N-MeFOSE-M	0.1190 0.1446	0.1175 0.1471	0.1404	0.1274	0.1207	Ave		0.1309				9.7		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFUnA	0.7719 0.8304	0.8045 0.8250	0.8246	0.8030	0.7401	Ave		0.7999				4.1		50.0			
d5-NEtFOSAA	0.6308 0.5562	0.5631 0.5367	0.5835	0.5799	0.5095	Ave		0.5657				6.8		50.0			
d-N-MeFOSA-M	0.3551 0.3476	0.3294 0.3655	0.3224	0.3383	0.2886	Ave		0.3353				7.6		50.0			
d9-N-EtFOSE-M	0.1349 0.1400	0.1395 0.1560	0.1373	0.1374	0.1182	Ave		0.1376				8.0		50.0			
d-N-EtFOSA-M	0.3656 0.3623	0.3364 0.3779	0.3433	0.3469	0.3007	Ave		0.3476				7.2		50.0			
13C2 PFDoA	0.7827 0.8328	0.8160 0.8368	0.8778	0.8926	0.7885	Ave		0.8325				5.0		50.0			
13C2 PFTeDA	0.7920 0.7176	0.7425 0.7675	0.7387	0.7702	0.6145	Ave		0.7347				7.9		50.0			
13C2 PFHxDA	0.6202 0.5685	0.5692 0.6389	0.5874	0.6091	0.5217	Ave		0.5879				6.7		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-326599/2	2019.09.26.ICAL_004.d
Level 2	IC 320-326599/3	2019.09.26.ICAL_005.d
Level 3	IC 320-326599/4	2019.09.26.ICAL_006.d
Level 4	IC 320-326599/5	2019.09.26.ICAL_007.d
Level 5	IC 320-326599/6	2019.09.26.ICAL_008.d
Level 6	IC 320-326599/7	2019.09.26.ICAL_009.d
Level 7	IC 320-326599/9	2019.09.26.ICAL_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	58429 11658096	115205 20879587	554472	2189713	6178619	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	65610 12173212	133638 21263571	632478	2266282	6600907	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	61858 12442143	123295 22601823	570906	2247380	6709268	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	36640 6549716	65939 11012924	328076	1183132	3309831	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	67072 12107636	135466 21667472	597985	2291913	6757293	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	51344 10456649	108431 18696970	508767	1921871	5482526	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	3394 752206	7980 1519344	35693	147979	445169	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	66152 12094254	141740 21432002	614105	2343762	6545685	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	58163 8921901	110070 15936426	454578	1533534	4629377	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	187732 31899980	374908 47475526	1795862	6800162	18358352	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	33109 5414080	62256 9585631	306835	1067901	2926336	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	42125 7932871	81130 14451962	392285	1454011	4262505	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	+++++ 14017500	175464 24058841	746810	2682368	7778829	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	42034 6672790	83289 12426204	332841	1214718	3411052	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	61594 11954977	136435 20676053	588565	2251987	6273275	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid		AveID	86911 16869830	169516 28582765	832916	3048298	8644256	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	54187 9668245	97760 17925674	460489	1672913	4485981	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorononanesulfonic acid (PFNS)		AveID	30090 5626775	55336 10262657	280020	1019021	2939970	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	64673 12380871	147375 21497767	675209	2161949	6457212	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	36302 6165753	72707 10564172	335615	1264528	3305048	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	31673 7140351	70430 13579067	345584	1275096	3542465	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	25925 5461222	55226 9922667	264846	987050	2552785	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	54848 10152180	118831 18462740	517648	1885517	4672645	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSE		AveID	10209 2259531	22599 4296874	101547	376060	1006849	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	35600 6539422	68035 11751018	330388	1266666	3214608	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSA		AveID	27975 5034054	52203 9514728	243430	900676	2303539	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	168416 30019618	356360 44014288	1653797	6320914	16735613	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NEtFOSE		AveID	8740 2310529	26049 4904466	121124	402048	977644	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSA		AveID	27450 5526500	51654 10709301	273619	962939	2504454	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	61695 12842949	134817 20447629	627442	2362048	6168617	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	23896 4150422	44398 7402824	221596	791044	2163191	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	9381 2131806	21688 3940161	102863	388168	998876	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	64174 11947101	122124 20447728	575856	2315352	5713257	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	6371 1043485	11042 1969405	50590	189772	536232	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L1ID	+++++ 8825622	131433 16096657	431757	1477695	3912042	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	27770 6408239	57848 11329075	297113	784757	2487803	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	6896617 6659014	6730761 6119956	6431716	6003624	6912506	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	6082960 5931413	6028529 5500210	5785587	5342851	6198379	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-4:2 FTS	13PF OA	Ave	1324746 1119169	1229438 1077554	1181350	1093638	1275578	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	6697091 6612336	6886850 5931447	6577265	6102251	6882420	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	109539 150468	133960 132965	142056	141132	159514	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	6237791 5833503	6189022 5392227	6196482	5746610	6211427	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	3951034 3863083	3947325 3480084	3749329	3514628	4074620	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	1636745 1311029	1459333 1188705	1513367	1331474	1484004	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	5973836 6294331	6232919 5488738	6150735	5697465	6729224	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOA	13PF OA	Ave	6994813 7031040	7311141 6387573	7163664	6599001	7467920	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1856405 1797707	1804678 1628444	1796943	1623861	1885239	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3502245 3291747	3382179 3150214	3329647	3050565	3525179	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	5953974 6138970	6657891 5584037	6216076	5751252	6656956	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	4901633 4900303	4905015 4604427	4695943	4278888	4652320	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	6302405 6462306	7009738 5822168	6772428	6241611	7199094	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	1900485 1623951	1837856 1464204	1664149	1574668	1830821	2.40 2.40	2.40 2.40	2.40	2.40	2.40
d3-NMeFOSAA	13PF OA	Ave	4508770 4315815	4561823 4154424	4299595	3952868	4486970	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	4492467 5619130	4759132 5169811	5421232	4489891	5119473	12.5 12.5	12.5 12.5	12.5	12.5	12.5
13C2 PFUnA	13PF OA	Ave	5827759 6456262	6515743 5797631	6370487	5662018	6278793	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	4762808 4323830	4560362 3771379	4507564	4088628	4322323	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d-N-MeFOSA-M	13PF OA	Ave	2681076 2702309	2668111 2568734	2490403	2385068	2448435	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 326599

SDG No.:

Instrument ID: A13 GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/26/2019 21:21 Calibration End Date: 09/26/2019 22:27 Calibration ID: 47660

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d9-N-EtFOSE-M	13PF OA	Ave	5091804 5441298	5647527 5482210	5302906	4844749	5012709	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-EtFOSA-M	13PF OA	Ave	2760353 2816968	2724337 2655381	2651960	2445711	2550775	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	5909537 6474786	6608664 5880761	6780947	6293972	6689212	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	5979602 5579229	6013809 5393975	5706923	5430655	5213272	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	4682459 4419497	4610277 4489896	4537880	4295026	4426187	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L1ID = Linear 1/conc IsoDil

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 26-Sep-2019 21:21:10 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 1
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:30 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 10:17:54
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.201	2.205	-0.004	0.580	6896617	2.68		107	13805	
3 Perfluorobutanoic acid										M
212.90 > 169.00	2.209	2.209	0.0	1.003	58429	0.0243		97.2	20.2	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.556	2.559	-0.003	0.673	6082960	2.64		106	18789	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.568	2.562	0.006	1.004	65610	0.0255		102	16.1	M
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.590	2.593	-0.003	0.766	61858	0.0218	Target=1.87	98.5	12.0	
298.90 > 99.00	2.590	2.593	-0.003	0.766	34501		1.79(0.94-2.81)	98.5	8.4	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.908	2.910	-0.002	1.000	36640	0.0238		102	279	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.908	2.910	-0.002	0.766	1324746	2.65		113	1184	
D 10 13C2 PFHxA										
315.00 > 270.00	2.961	2.956	0.005	0.780	6697091	2.60		104	21560	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.961	2.956	0.005	1.000	67072	0.0264	Target=11.57	106	31.2	
313.00 > 119.00	2.951	2.956	-0.005	0.996	6400		10.48(5.78-17.35)	106	12.5	
11 Perfluoropentanesulfonic acid										M
349.00 > 80.00	2.972	2.971	0.001	0.879	51344	0.0226	Target=2.40	96.4	101	M
349.00 > 99.00	2.972	2.971	0.001	0.879	20266		2.53(1.20-3.60)	96.4	53.9	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.090	3.087	0.003	0.814	109539	2.01		80.3	1194	
13 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	3.090	3.089	0.001	1.000	3394	0.0280		112	15.5	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.381	3.382	-0.001	1.000	58163	0.0272	Target=2.98	120	85.9	M
399.00 > 99.00	3.381	3.382	-0.001	1.000	19474		2.99(1.49-4.47)	120	27.0	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.381	3.382	-0.001	1.000	66152	0.0254	Target=3.70	102	47.4	
363.00 > 169.00	3.381	3.382	-0.001	1.000	18126		3.65(1.85-5.54)	102	40.4	
D 17 13C4 PFHpA										
367.00 > 322.00	3.381	3.382	-0.001	0.890	6237791	2.65		106	52888	
D 15 18O2 PFHxS										
403.00 > 84.00	3.381	3.382	-0.001	0.890	3951034	2.50		106	54420	
18 DONA										
377.00 > 251.00	3.433	3.433	0.0	0.820	187732	0.0248	Target=2.81	105	491	
377.00 > 85.00	3.433	3.433	0.0	0.820	63593		2.95(1.41-4.22)	105	695	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.780	3.775	0.005	1.000	33109	0.0236		99.4	170	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.780	3.775	0.005	0.995	1636745	2.78		117	8259	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.789	3.789	0.0	0.905	42125	0.0240	Target=4.19	101	184	
449.00 > 99.00	3.789	3.789	0.0	0.905	10343		4.07(2.09-6.28)	101	42.7	
D 23 13C8 PFOA										
421.00 > 376.00	3.789	3.790	-0.001	0.998	5973836	2.50		99.8	75461	
D 25 13C4 PFOA										
417.00 > 372.00	3.797	3.797	0.0	1.000	6994813	2.54		102	61824	
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.797	3.798	-0.001	1.000	101571	0.0349	Target=2.68	140	39.2	M
413.00 > 169.00	3.797	3.798	-0.001	1.000	37566		2.70(1.34-4.02)	140	84.1	
* 24 13C2 PFOA										
415.00 > 370.00	3.797	3.798	-0.001		7550104	2.50			39392	
D 27 13C8 PFOS										
507.00 > 99.00	4.177	4.176	0.001	1.100	1856405	2.66		106	18911	
26 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.186	4.181	0.005	1.000	42034	0.0264	Target=4.19	114	65.4	M
499.00 > 99.00	4.186	4.181	0.005	1.000	10150		4.14(2.09-6.28)	114	25.2	
D 28 13C4 PFOS										
503.00 > 80.00	4.186	4.181	0.005	1.102	3502245	2.56		107	13565	
D 29 13C5 PFNA										
468.00 > 423.00	4.204	4.199	0.005	1.107	5953974	2.46		98.6	44617	
30 Perfluorononanoic acid										
463.00 > 419.00	4.204	4.199	0.005	1.000	61594	0.0265	Target=8.84	106	55.7	
463.00 > 169.00	4.195	4.199	-0.004	0.998	7347		8.38(4.42-13.26)	106	27.9	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.399	4.393	0.006	1.051	86911	0.0234		101	443	
D 33 13C8 FOSA										
506.00 > 78.00	4.461	4.460	0.001	1.175	4901633	2.64		106	19052	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.461	4.464	-0.003	1.000	54187	0.0277		111	283	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.542	4.544	-0.002	1.085	30090	0.0246	Target=2.27	103	131	
549.00 > 99.00	4.542	4.544	-0.002	1.085	14897		2.02(1.13-3.40)	103	84.7	
D 36 13C2 PFDA										
515.00 > 470.00	4.572	4.572	0.0	1.204	6302405	2.45		97.9	69331	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.572	4.572	0.0	1.000	64673	0.0267	Target=10.36	107	79.9	
513.00 > 169.00	4.572	4.572	0.0	1.000	5822		11.11(5.18-15.54)	107	18.2	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.572	4.574	-0.002	1.000	36302	0.0239		99.6	287	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.572	4.574	-0.002	1.204	1900485	2.72		114	7749	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.749	4.741	0.008	1.251	4508770	2.64		106	21244	
41 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.749	4.744	0.005	1.000	31673	0.0223		89.1	190	M
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.883	4.876	0.007	1.167	25925	0.0227	Target=2.70	94.2	104	
599.00 > 99.00	4.873	4.876	-0.003	1.164	11112		2.33(1.35-4.05)	94.2	93.3	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.894	4.897	-0.003	1.289	4492467	11.4		90.9	11773	
D 43 13C2 PFUnA										
565.00 > 520.00	4.914	4.906	0.008	1.294	5827759	2.41		96.5	28129	
42 Perfluoroundecanoic acid										M
563.00 > 519.00	4.914	4.907	0.007	1.000	54848	0.0283	Target=9.31	113	60.1	
563.00 > 169.00	4.914	4.907	0.007	1.000	5734		9.57(4.65-13.96)	113	15.8	M
47 2-(N-methylperfluoro-1-octanesulfo										M
616.00 > 59.00	4.904	4.909	-0.005	1.002	10209	0.0271		108	58.9	M
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.914	4.915	-0.001	1.294	4762808	2.79		112	18171	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.925	4.922	0.003	1.002	35600	0.0248		99.1	254	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.925	4.924	0.001	1.297	2681076	2.65		106	56.3	
50 NMeFOSA										
512.00 > 169.00	4.925	4.930	-0.005	1.000	27975	0.0271		108	98.2	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.054	5.054	0.0	1.207	168416	0.0240		102	780	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.072	5.068	0.004	1.336	5091804	12.3		98.0	13504	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.080	5.084	-0.004	1.002	8740	0.0204		81.8	69.4	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.098	5.101	-0.003	1.343	2760353	2.63		105	294	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.106	5.110	-0.004	1.002	27450	0.0251		100	61.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.219	5.217	0.002	1.374	5909537	2.35		94.0	57319	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.229	5.219	0.010	1.002	61695	0.0272	Target=8.07	109	34.8	
613.00 > 169.00	5.219	5.219	0.0	1.000	8306		7.43(4.03-12.10)	109	29.7	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.240	5.236	0.004	1.146	23896	0.0242		100	59.5	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.463	5.460	0.003	1.305	9381	0.0212	Target=0.52	87.8	44.1	
699.00 > 99.00	5.471	5.460	0.011	1.307	18461		0.51(0.26-0.77)	87.8	160	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.514	5.504	0.010	1.057	64174	0.0296	Target=6.35	118	34.9	
663.00 > 169.00	5.507	5.504	0.003	1.055	9582		6.70(3.18-9.53)	118	28.4	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.782	5.774	0.008	1.523	5979602	2.69		108	46937	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.782	5.775	0.007	1.000	6371	0.0282	Target=0.85	113	80.8	
713.00 > 219.00	5.775	5.775	0.0	0.999	7332		0.87(0.43-1.28)	113	194	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.315	6.305	0.010	1.663	4682459	2.64		105	19745	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.323	6.308	0.015	1.001	95766	0.0336	Target=7.95	135	12.0	
813.00 > 169.00	6.323	6.308	0.015	1.001	10650		8.99(3.98-11.93)	135	84.6	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.934	6.905	0.029	1.098	27770	0.0244	Target=8.96	97.7	9.9	
913.00 > 169.00	6.923	6.905	0.018	1.096	3269		8.49(4.48-13.45)	97.7	42.9	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00016 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:26:31 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d

Injection Date: 26-Sep-2019 21:21:10 Instrument ID: A13

Lims ID: IC L1 Full

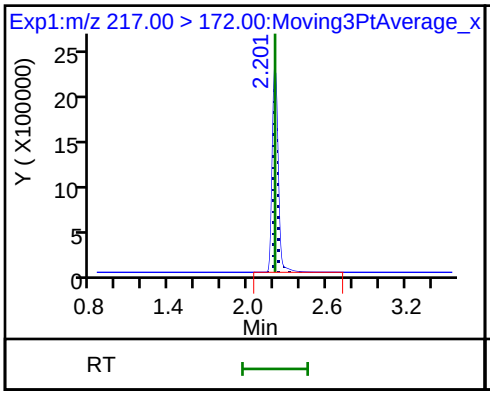
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2

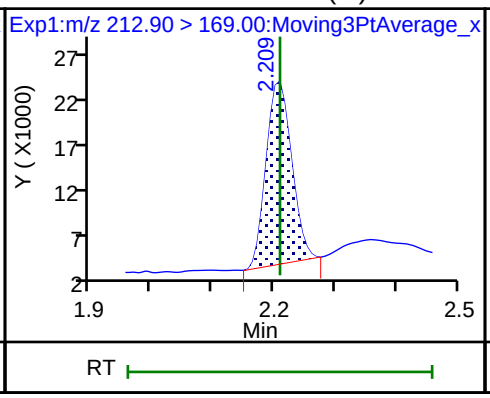
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

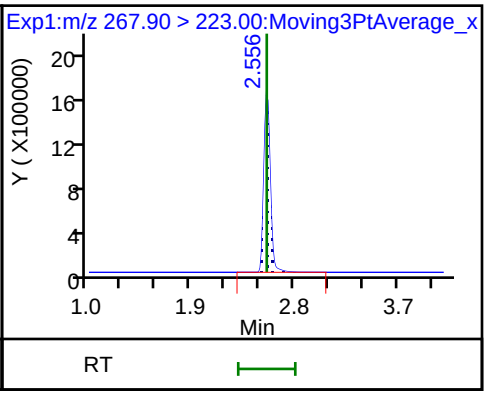
D 2 13C4 PFBA



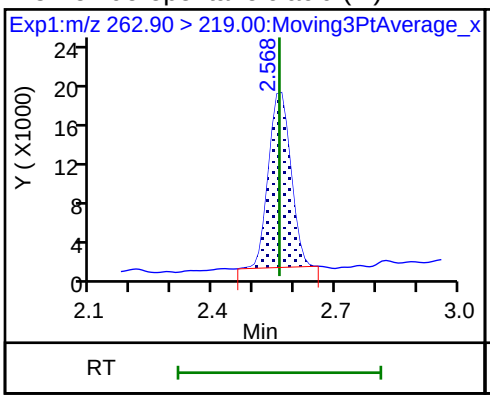
3 Perfluorobutanoic acid (M)



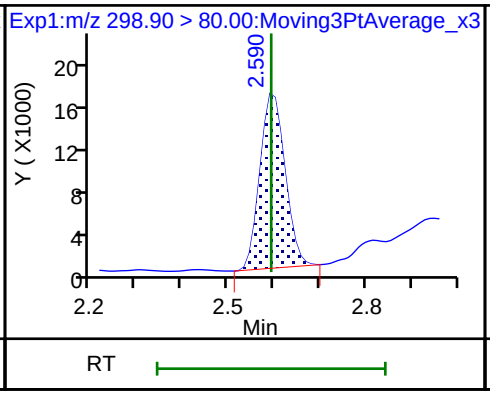
D 4 13C5 PFPeA



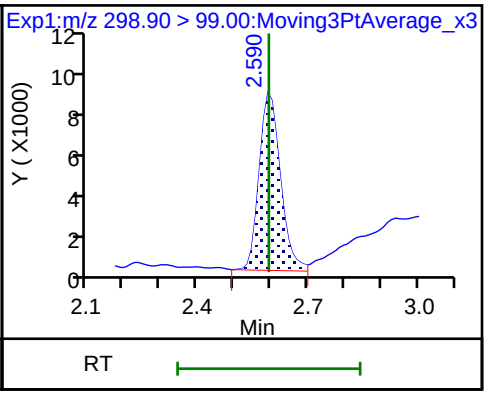
5 Perfluoropentanoic acid (M)



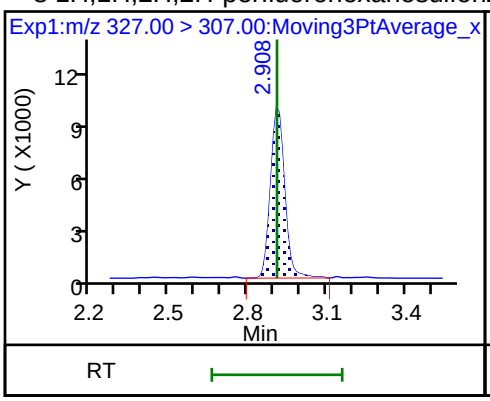
6 Perfluorobutanesulfonic acid



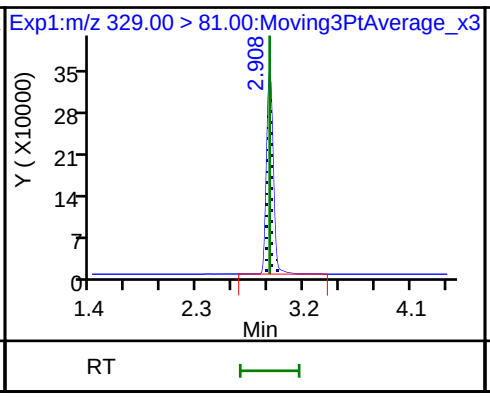
6 Perfluorobutanesulfonic acid



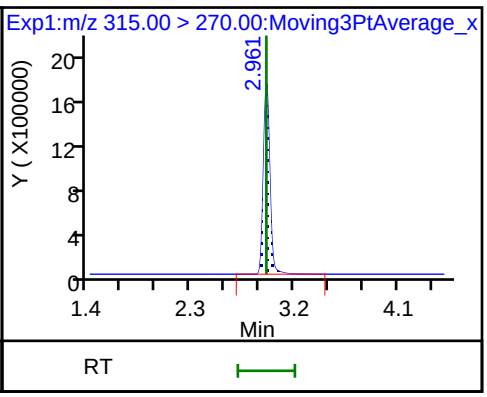
8 1H,1H,2H,2H-perfluorohexanesulfon



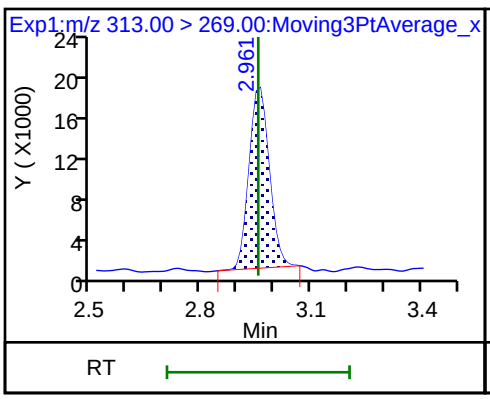
D 7 M2-4:2 FTS



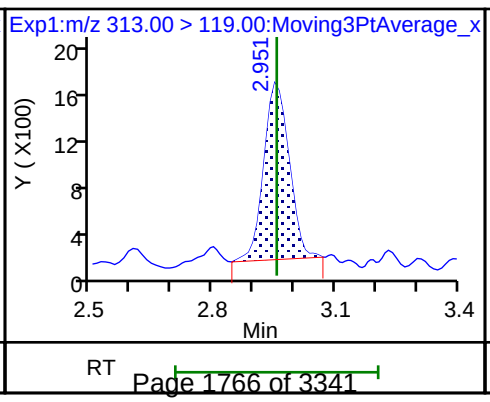
D 10 13C2 PFHxA



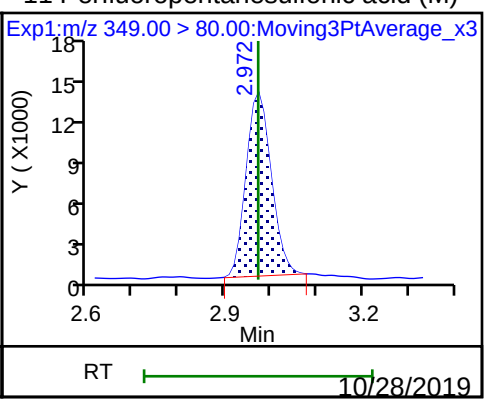
9 Perfluorohexanoic acid



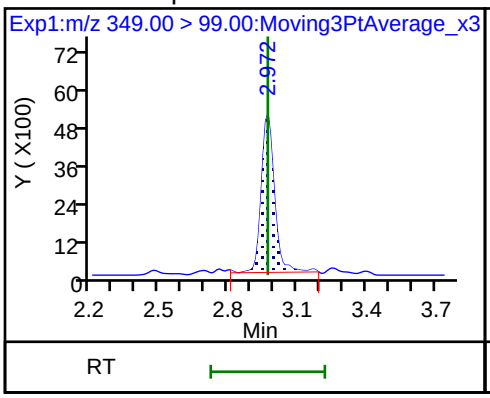
9 Perfluorohexanoic acid



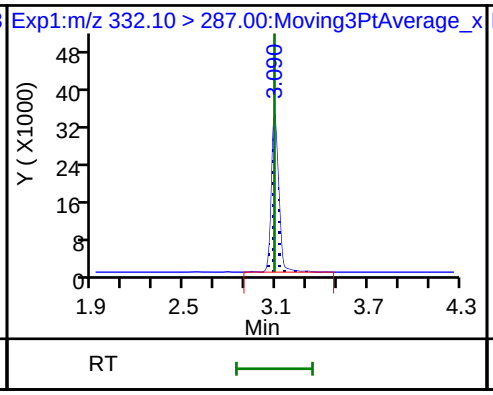
11 Perfluoropentanesulfonic acid (M)



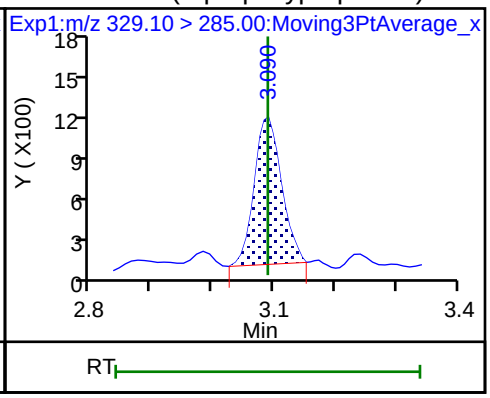
11 Perfluoropentanesulfonic acid



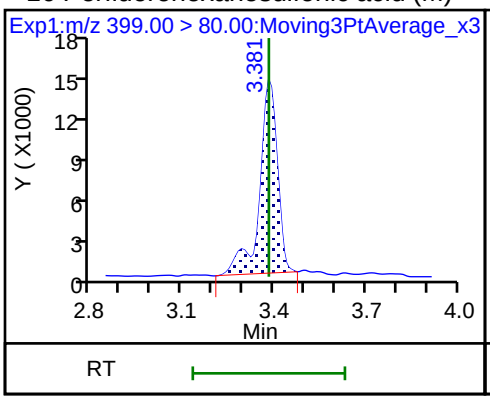
D 12 13C3 HFPO-DA



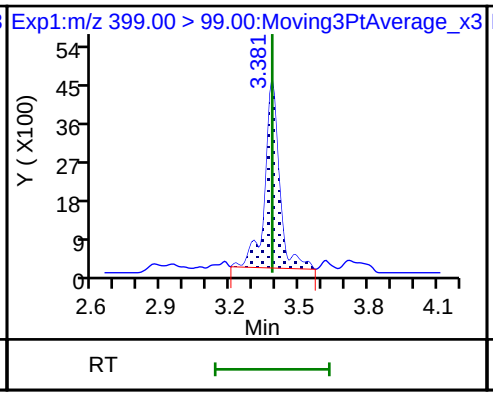
13 Perfluoro(2-propoxypropanoic) acid (M)



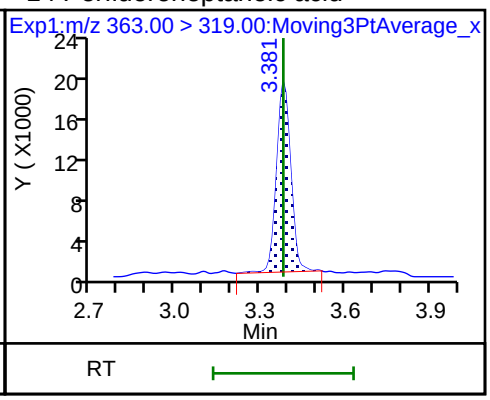
16 Perfluorohexanesulfonic acid (M)



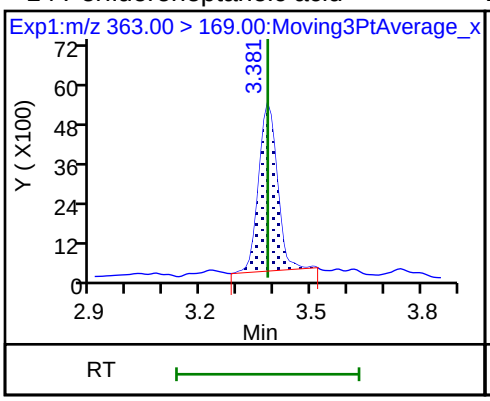
16 Perfluorohexanesulfonic acid



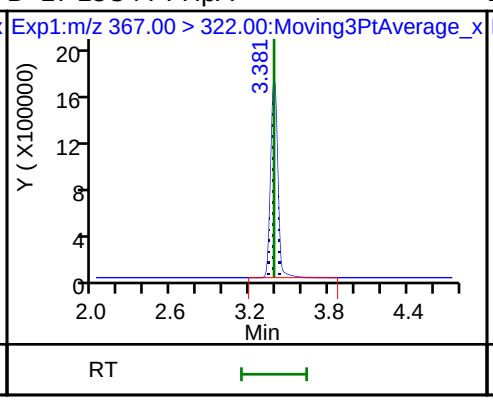
14 Perfluoroheptanoic acid



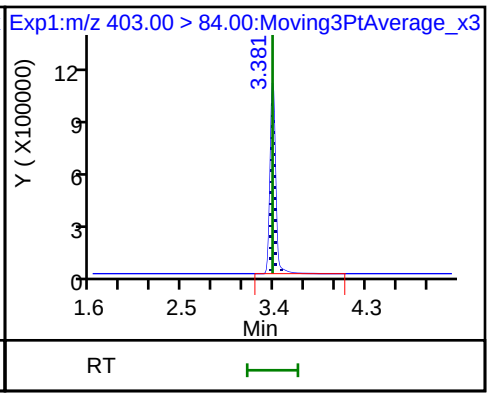
14 Perfluoroheptanoic acid



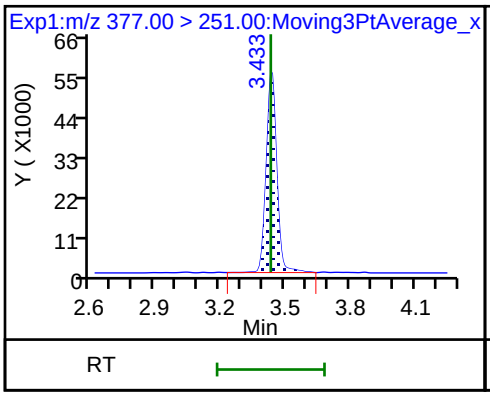
D 17 13C4 PFHpA



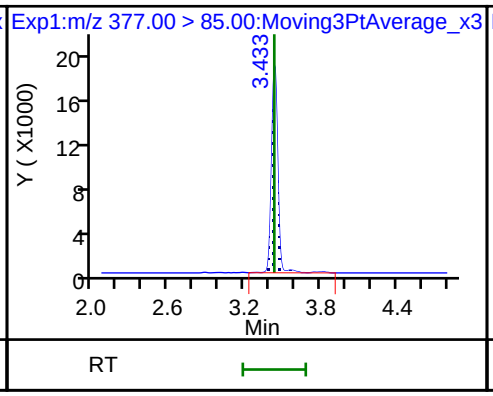
D 15 18O2 PFHxS



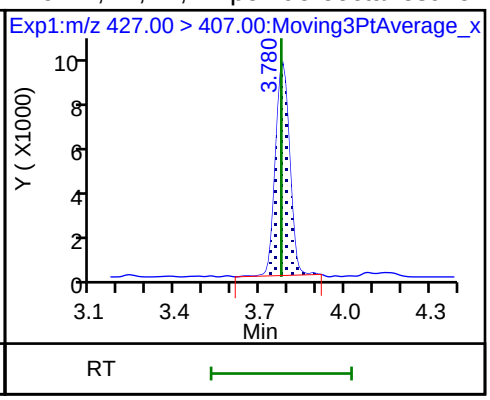
18 DONA



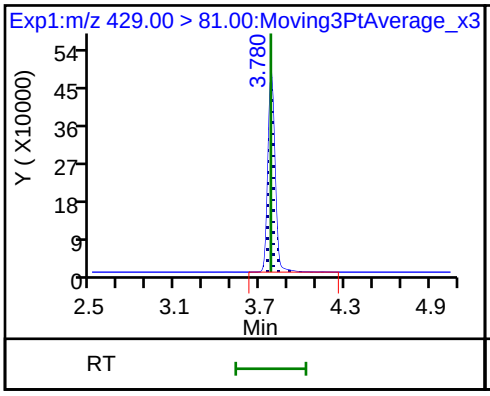
18 DONA



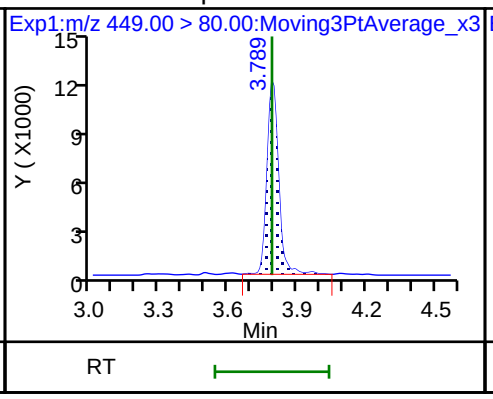
19 1H,1H,2H,2H-perfluorooctanesulfoni



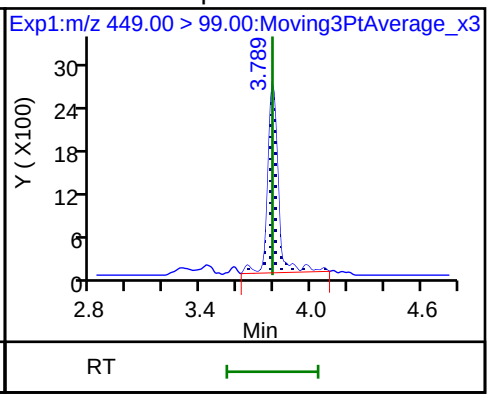
D 20 M2-6:2 FTS



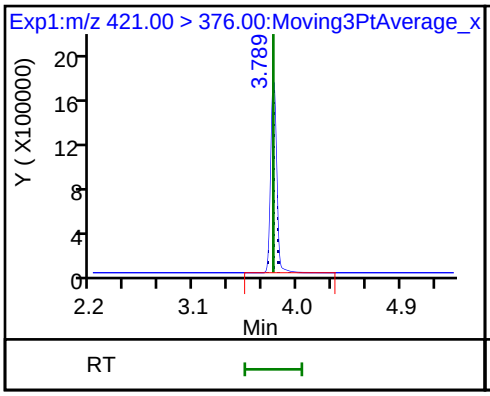
21 Perfluoroheptanesulfonic acid



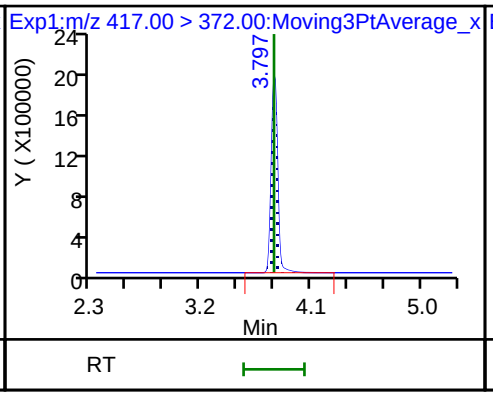
21 Perfluoroheptanesulfonic acid



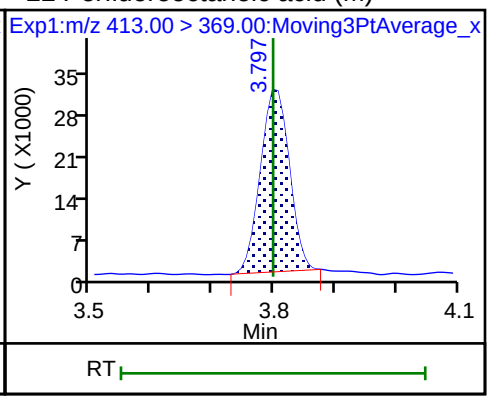
D 23 13C8 PFOA



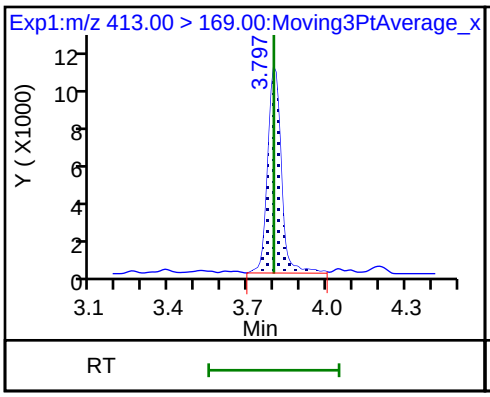
D 25 13C4 PFOA



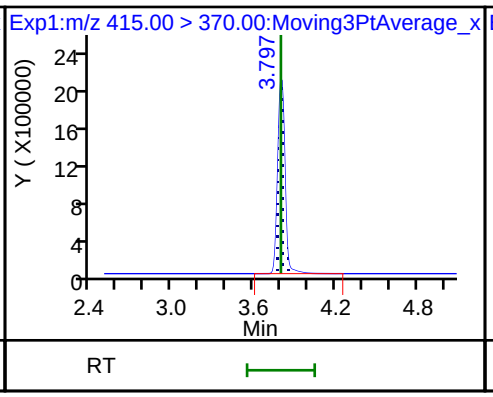
22 Perfluorooctanoic acid (M)



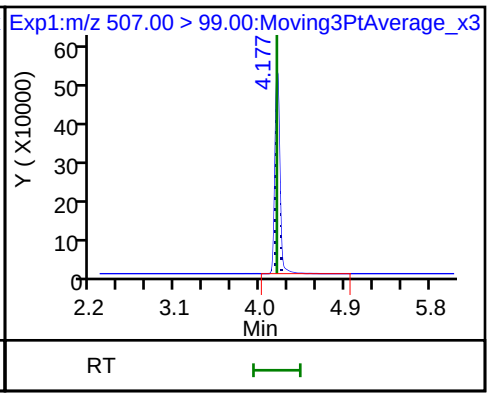
22 Perfluorooctanoic acid



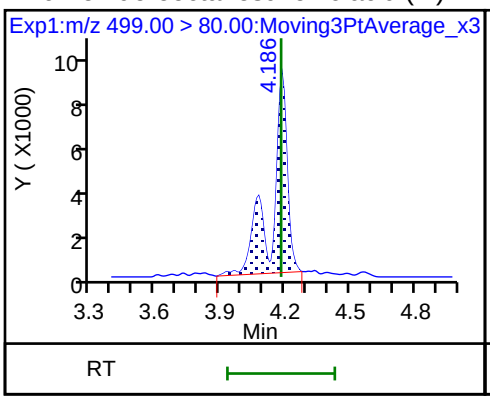
* 24 13C2 PFOA



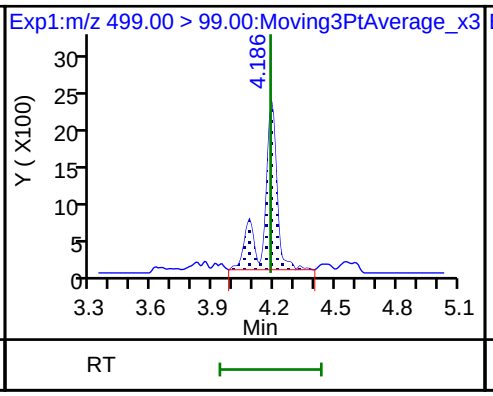
D 27 13C8 PFOS



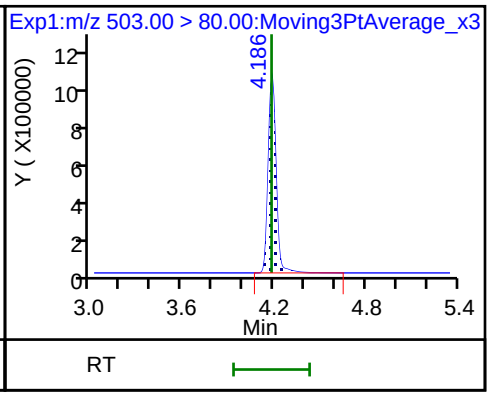
26 Perfluorooctanesulfonic acid (M)



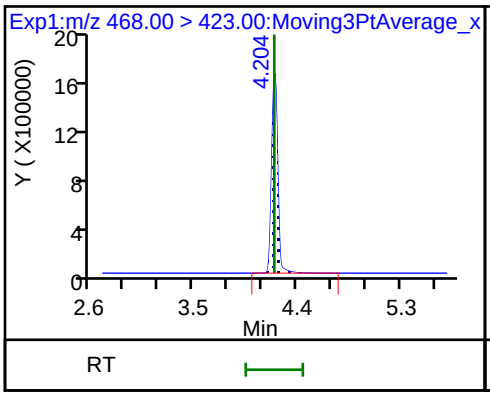
26 Perfluorooctanesulfonic acid



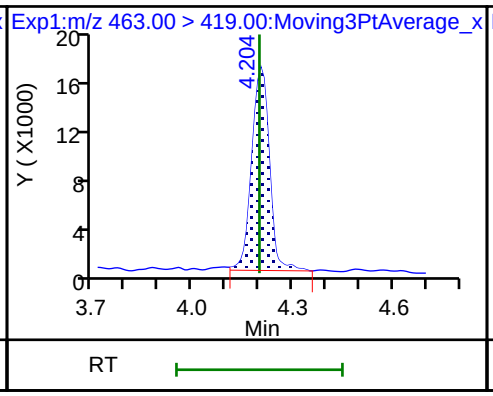
D 28 13C4 PFOS



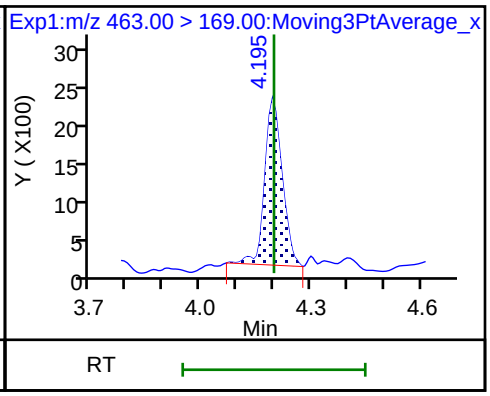
D 29 13C5 PFNA



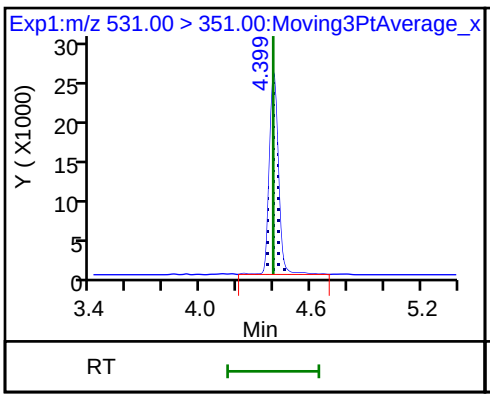
30 Perfluorononanoic acid



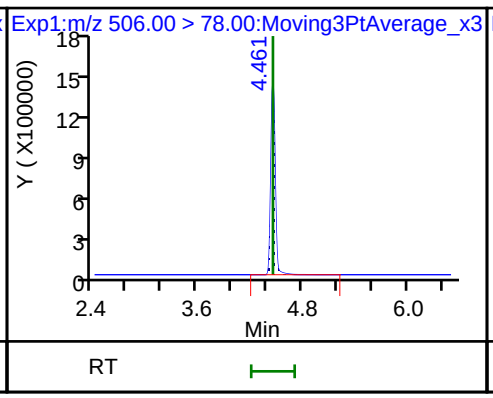
30 Perfluorononanoic acid



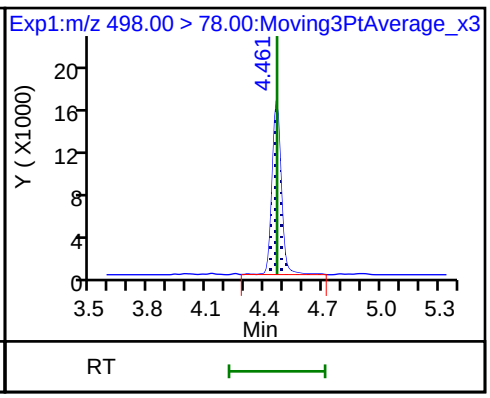
31 9-Chlorohexadecafluoro-3-oxanonanoic acid



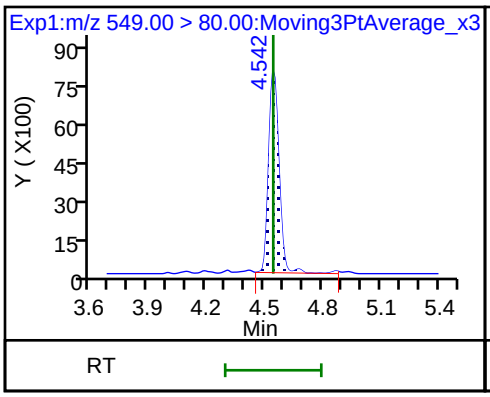
D 33 13C8 FOSA



32 Perfluorooctanesulfonamide



38 Perfluorononanesulfonic acid



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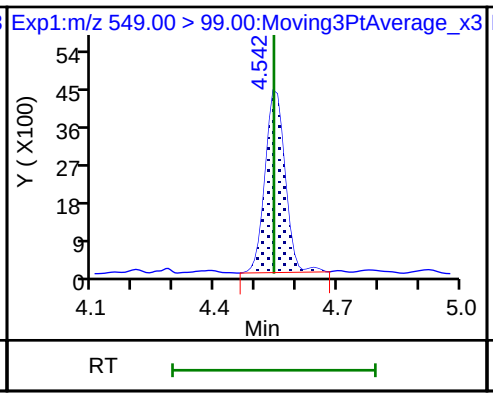
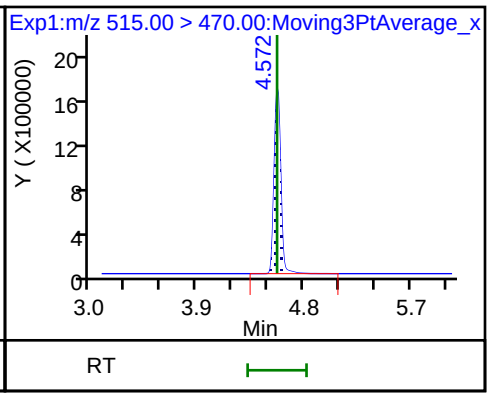
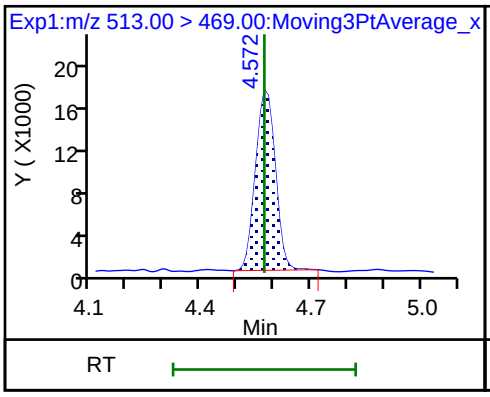


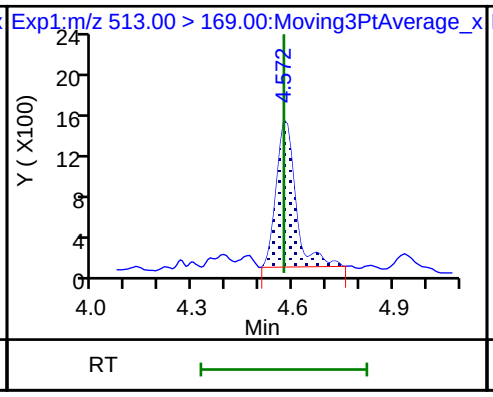
D 36 13C2 PFDA



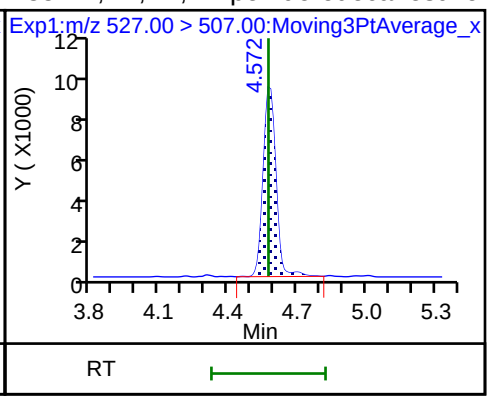
34 Perfluorodecanoic acid



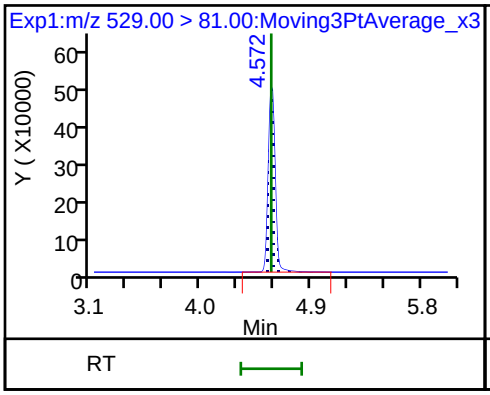
34 Perfluorodecanoic acid



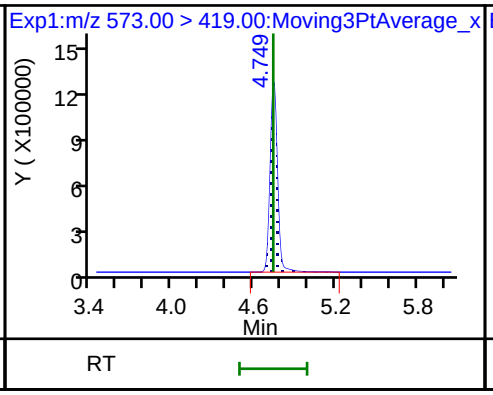
35 1H,1H,2H,2H-perfluorodecanesulfoni



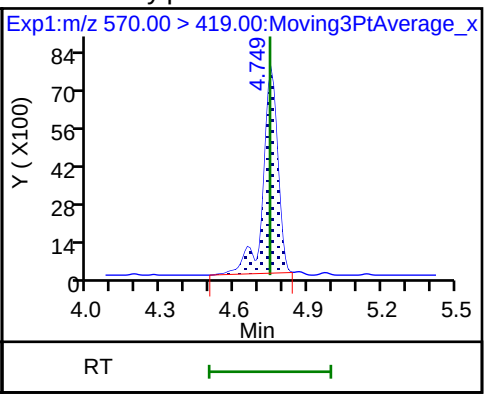
D 37 M2-8:2 FTS



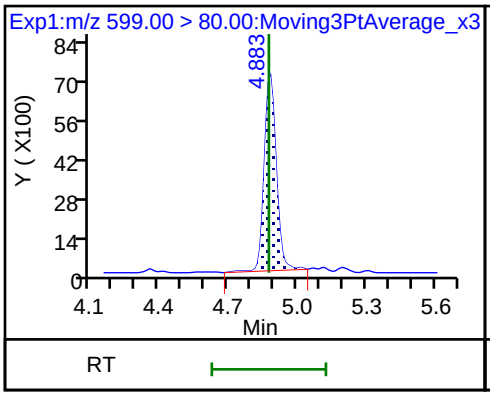
D 40 d3-NMeFOSAA



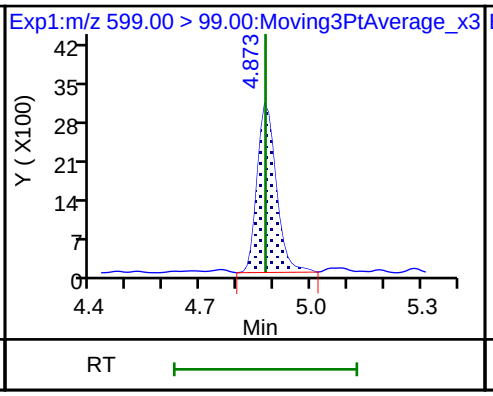
41 N-methylperfluorooctanesulfonamido (M)



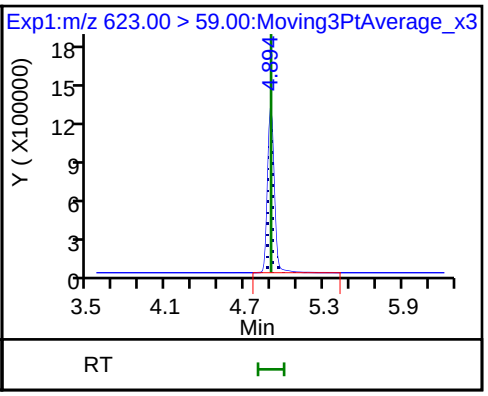
48 Perfluorodecanesulfonic acid



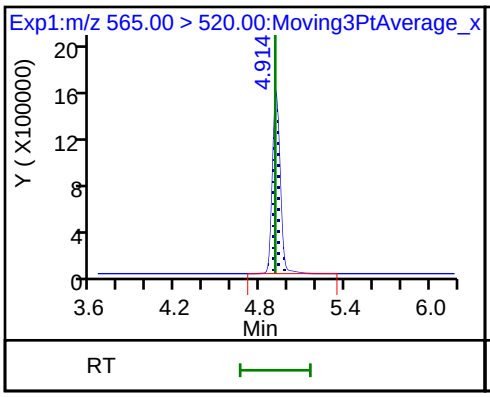
48 Perfluorodecanesulfonic acid



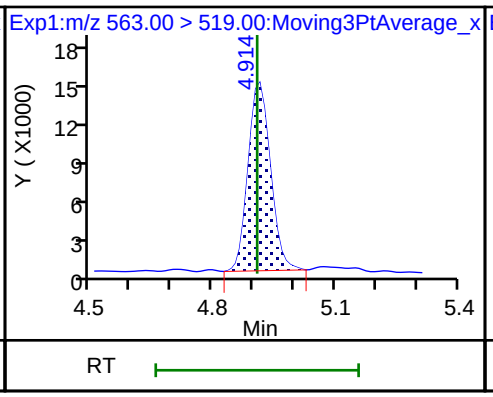
D 46 d7-N-MeFOSE-M



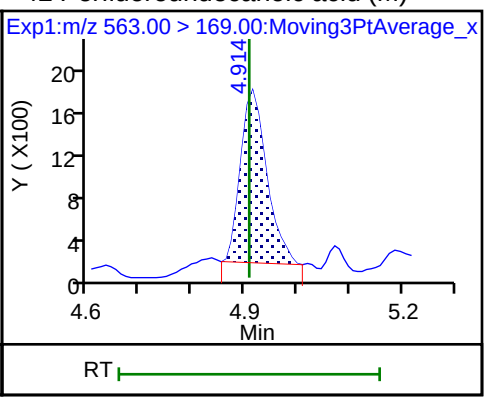
D 43 13C2 PFUnA



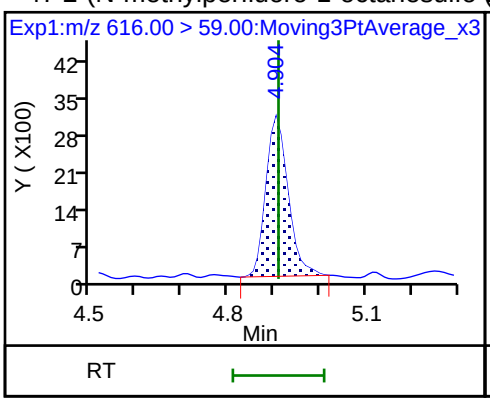
42 Perfluoroundecanoic acid



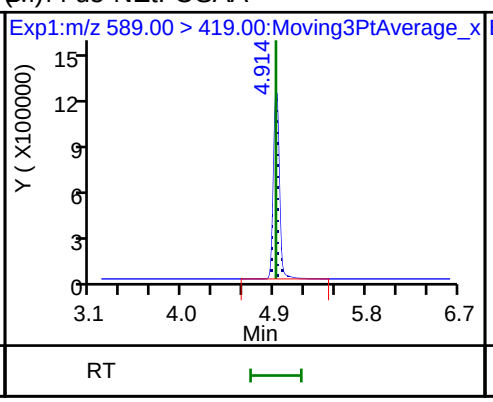
42 Perfluoroundecanoic acid (M)



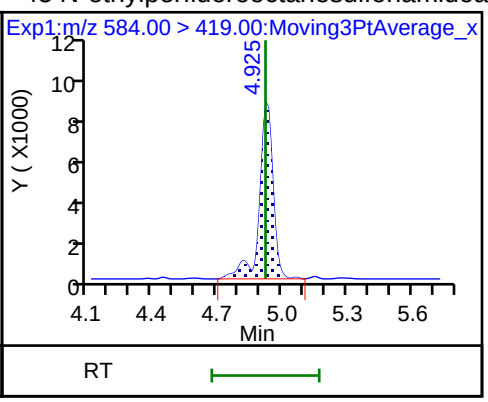
47 2-(N-methylperfluoro-1-octanesulfo (M)



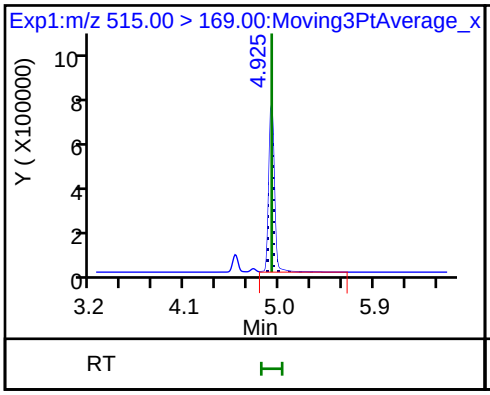
44 d5-NEtFOSAA



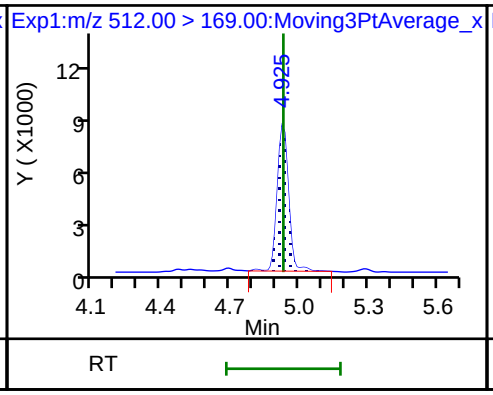
45 N-ethylperfluorooctanesulfonamidoa



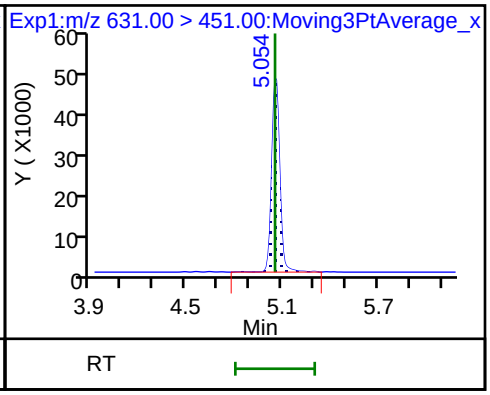
D 49 d-N-MeFOSA-M



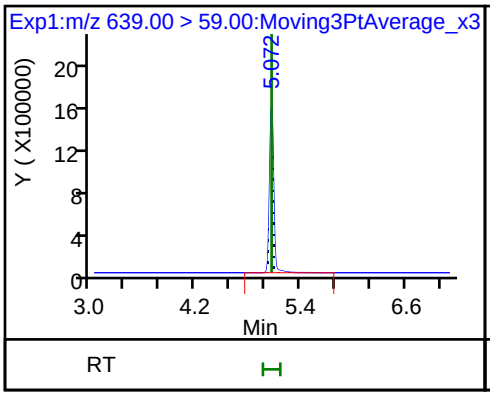
50 NMeFOSA



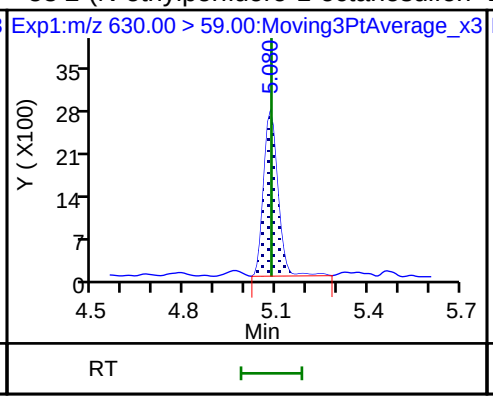
51 11-Chloroeicosafluoro-3-oxaundecan



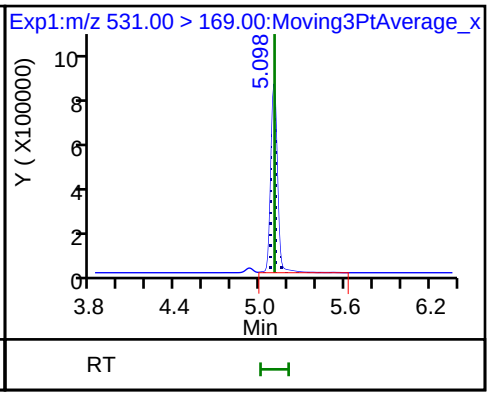
D 52 d9-N-EtFOSE-M



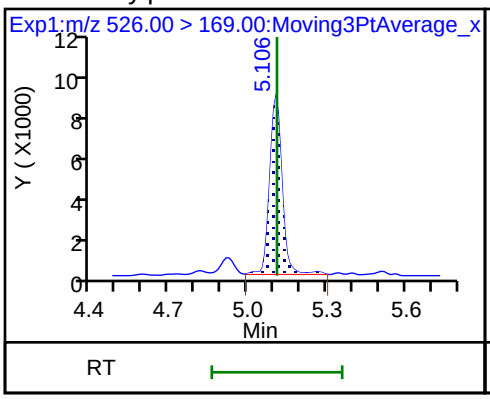
53 2-(N-ethylperfluoro-1-octanesulfon



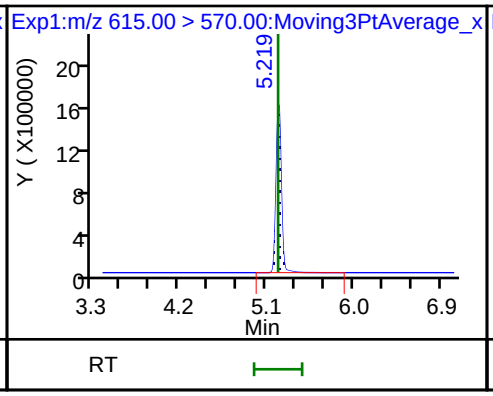
D 55 d-N-EtFOSA-M



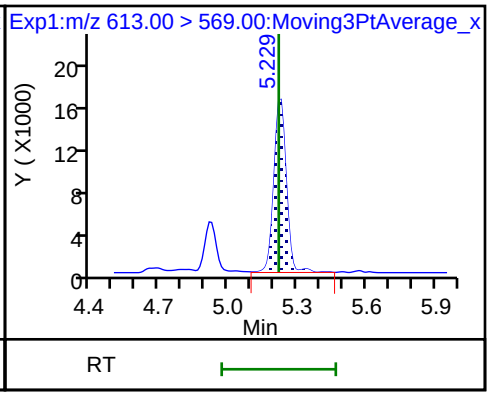
54 N-ethylperfluoro-1-octanesulfonami



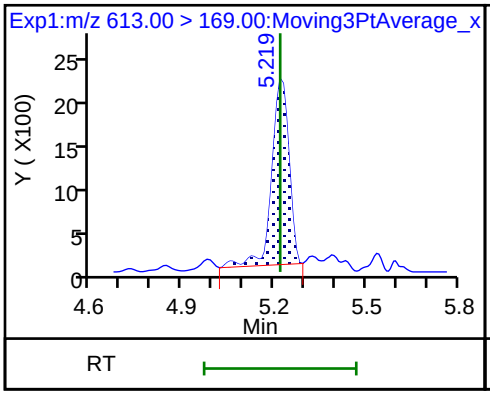
D 57 13C2 PFDoA



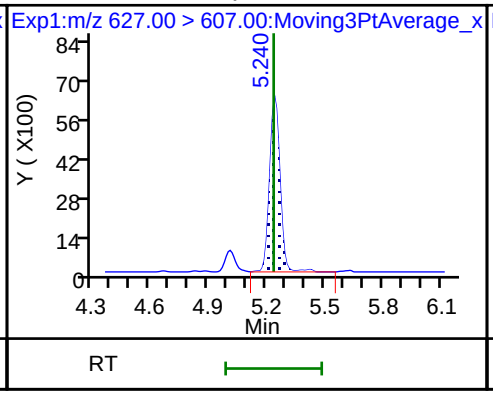
56 Perfluorododecanoic acid



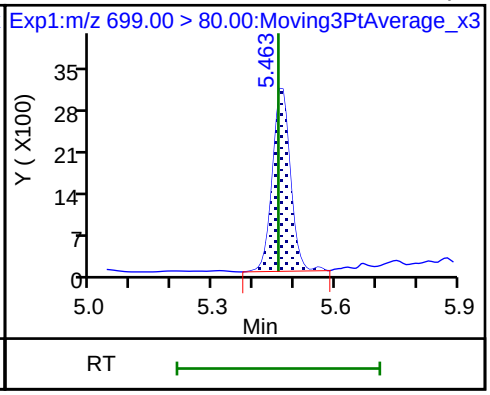
56 Perfluorododecanoic acid



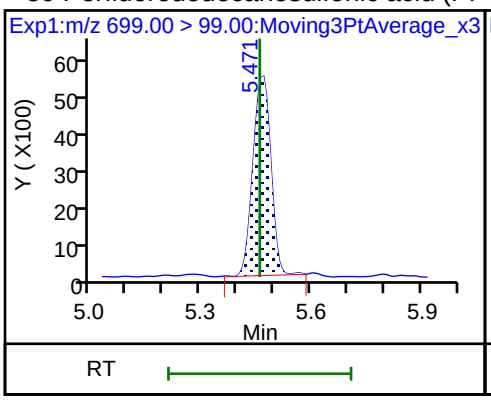
58 1H,1H,2H,2H-perfluorododecanesulfo



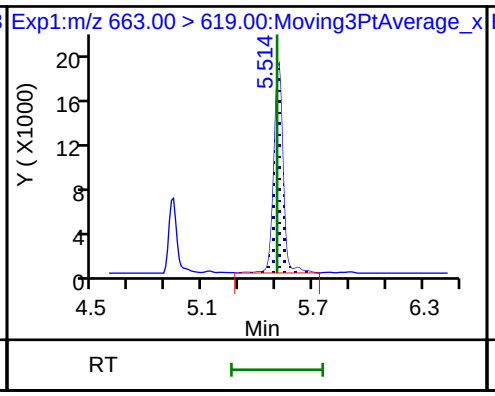
59 Perfluorododecanesulfonic acid (PF



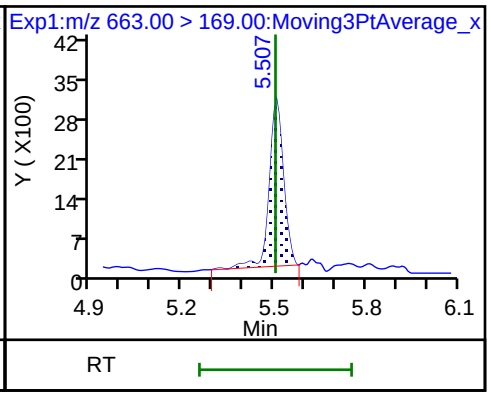
59 Perfluorododecanesulfonic acid (PF



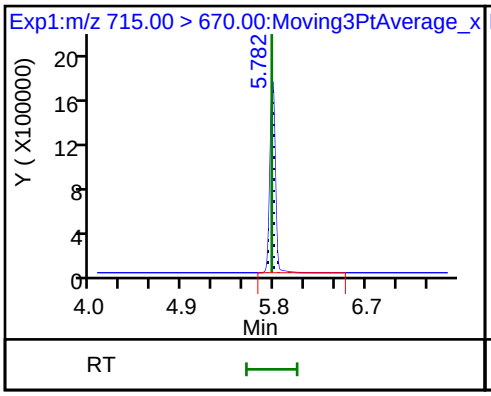
60 Perfluorotridecanoic acid



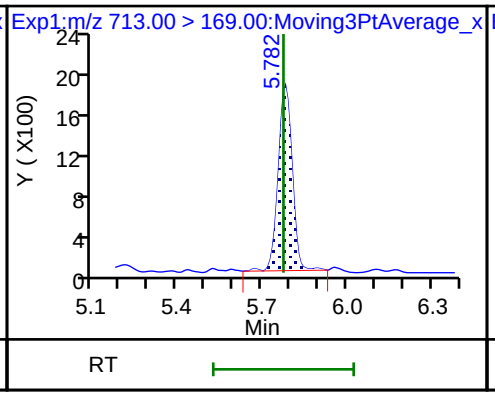
60 Perfluorotridecanoic acid



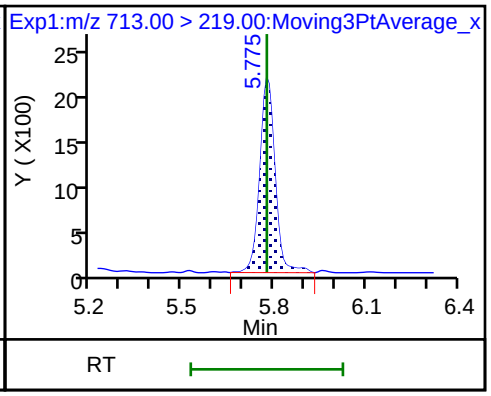
D 61 13C2 PFTeDA



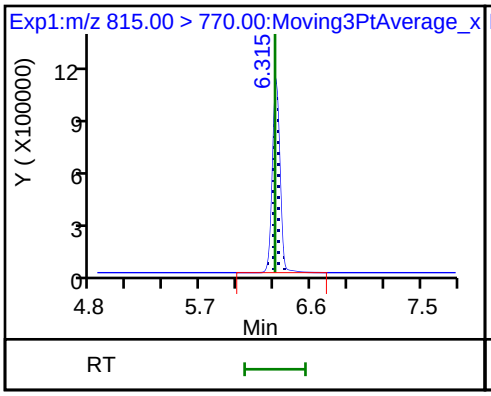
62 Perfluorotetradecanoic acid



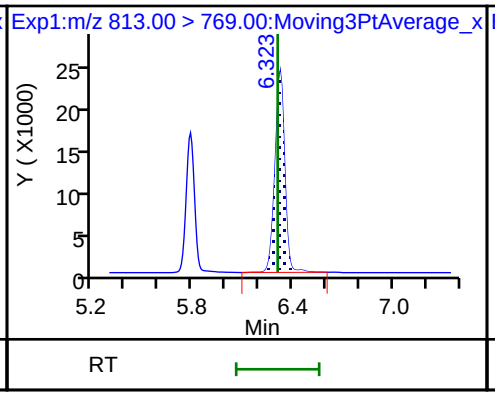
62 Perfluorotetradecanoic acid



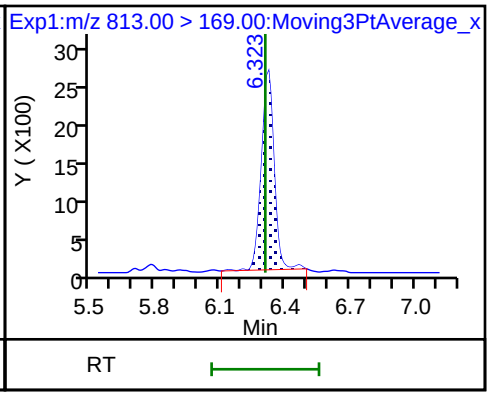
D 63 13C2 PFHxDA



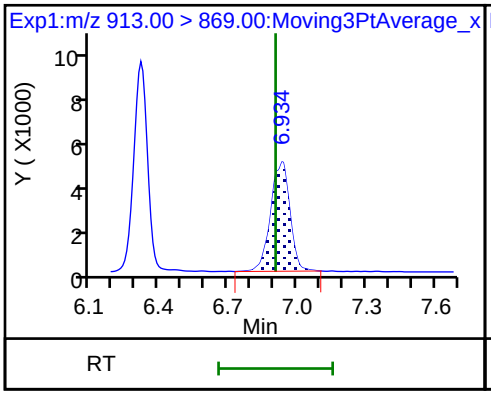
64 Perfluorohexadecanoic acid



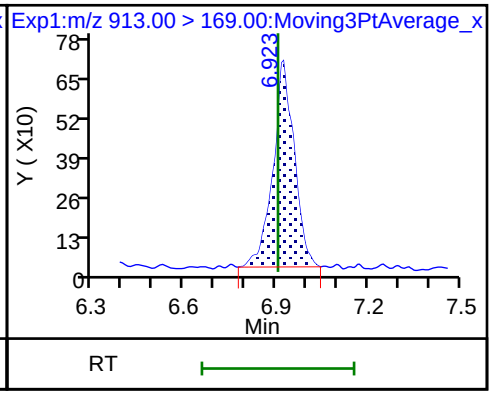
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

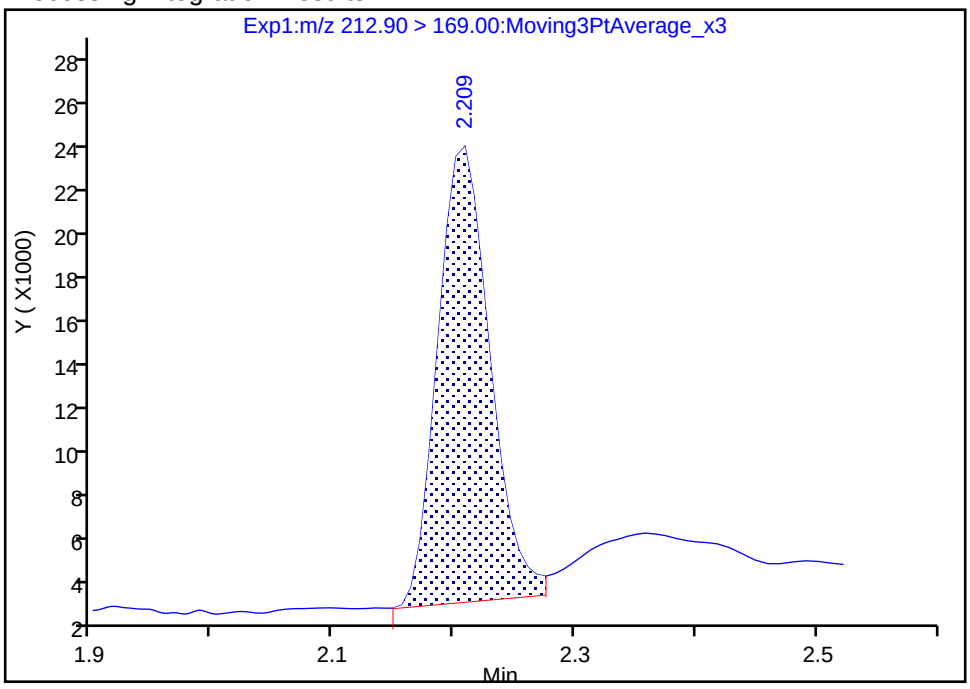
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d
Injection Date: 26-Sep-2019 21:21:10 Instrument ID: A13
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

3 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

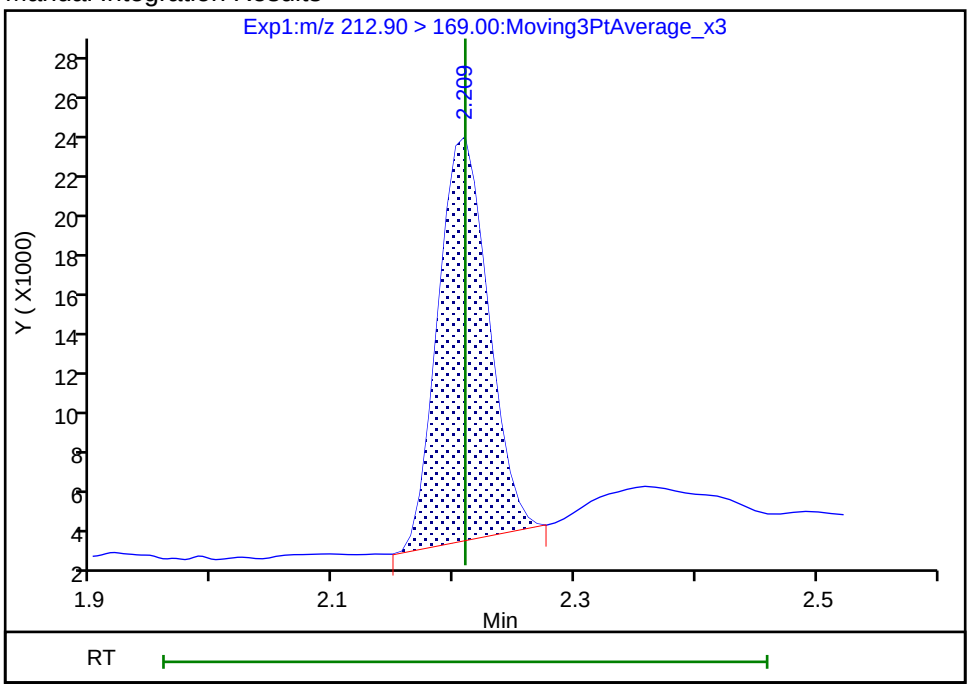
Processing Integration Results

RT: 2.21
Area: 61741
Amount: 0.025127
Amount Units: ng/ml



Manual Integration Results

RT: 2.21
Area: 58429
Amount: 0.024309
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:23:01
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

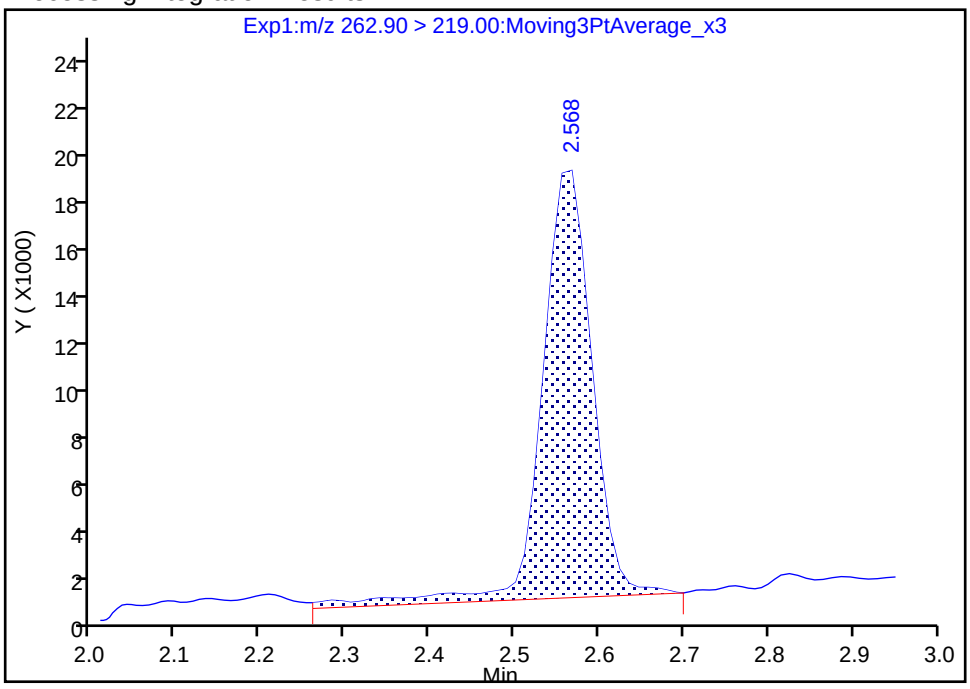
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d
Injection Date: 26-Sep-2019 21:21:10 Instrument ID: A13
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

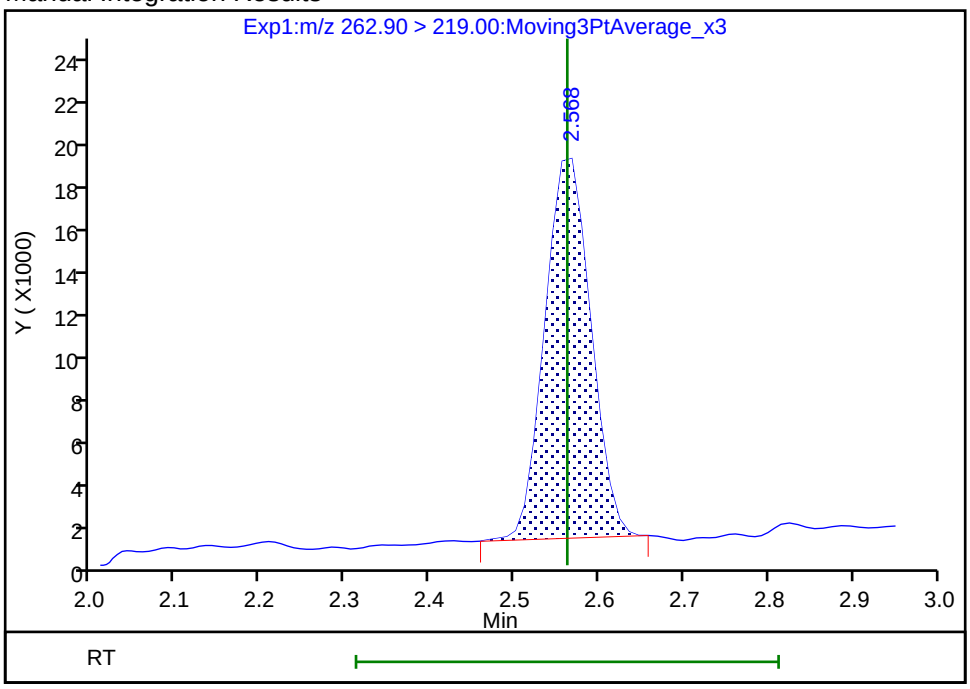
Processing Integration Results

RT: 2.57
Area: 73058
Amount: 0.027947
Amount Units: ng/ml



Manual Integration Results

RT: 2.57
Area: 65610
Amount: 0.025513
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:23:10
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

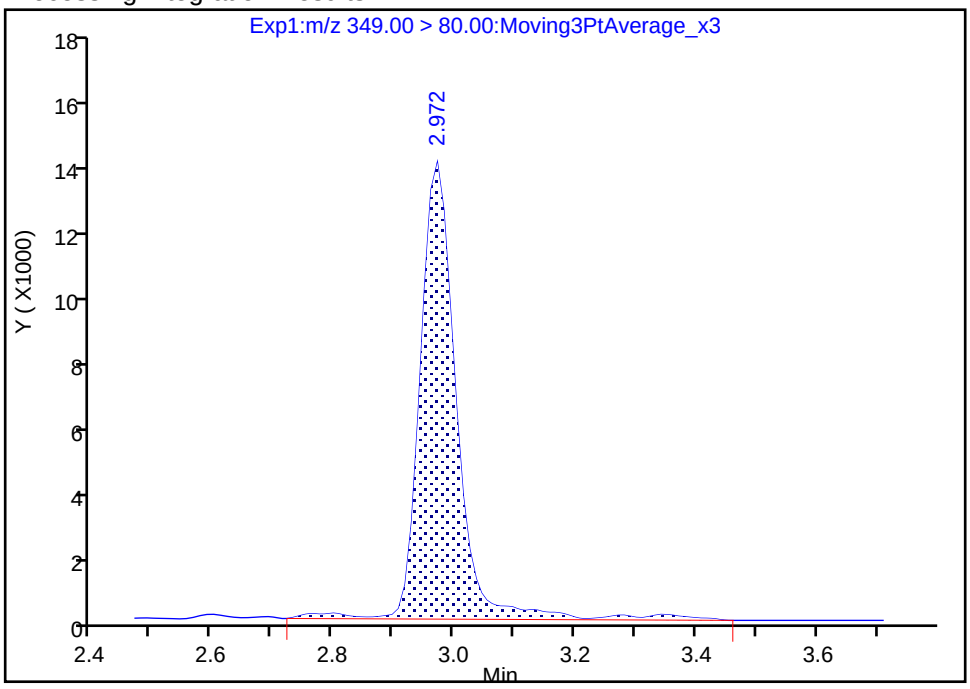
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

11 Perfluoropentanesulfonic acid, CAS: 2706-91-4

Signal: 1

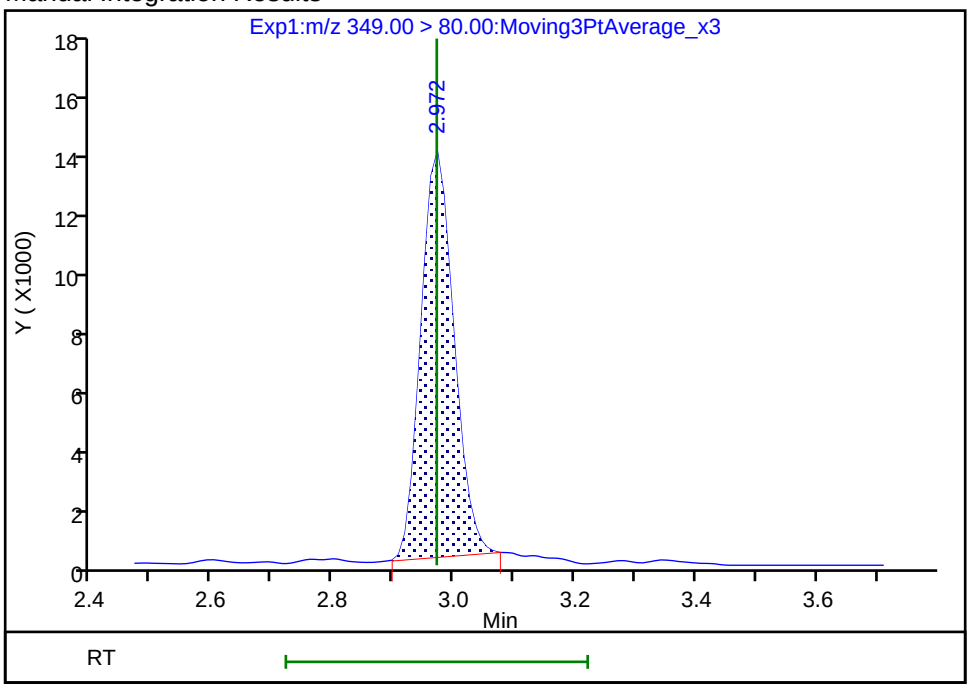
Processing Integration Results

RT: 2.97
Area: 58241
Amount: 0.025169
Amount Units: ng/ml



Manual Integration Results

RT: 2.97
Area: 51344
Amount: 0.022599
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:24:07

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

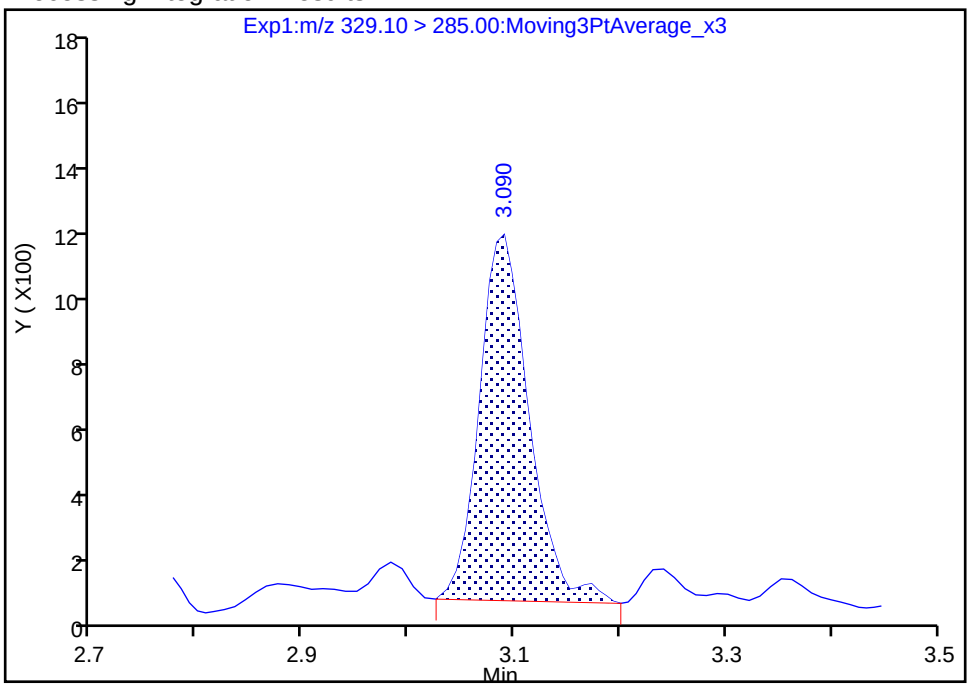
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

13 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

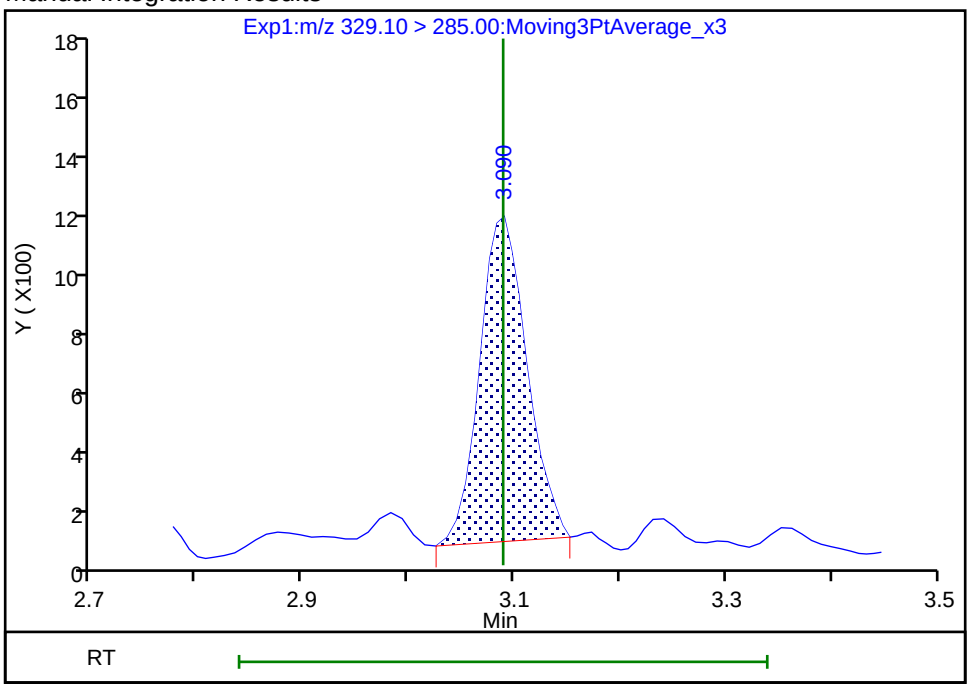
Processing Integration Results

RT: 3.09
Area: 3642
Amount: 0.029710
Amount Units: ng/ml



Manual Integration Results

RT: 3.09
Area: 3394
Amount: 0.028011
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:25:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

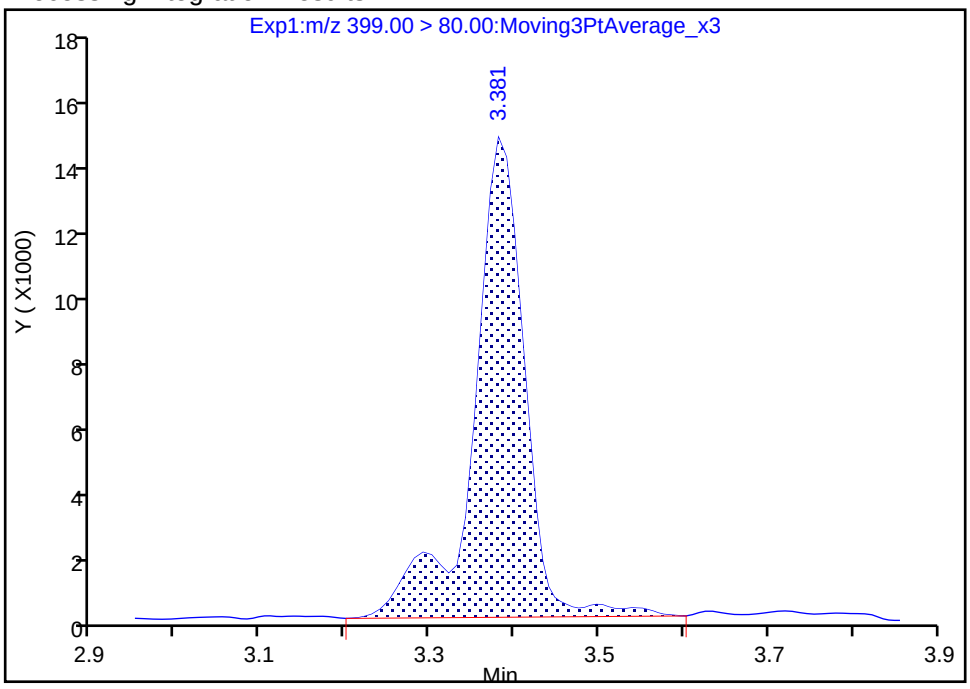
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

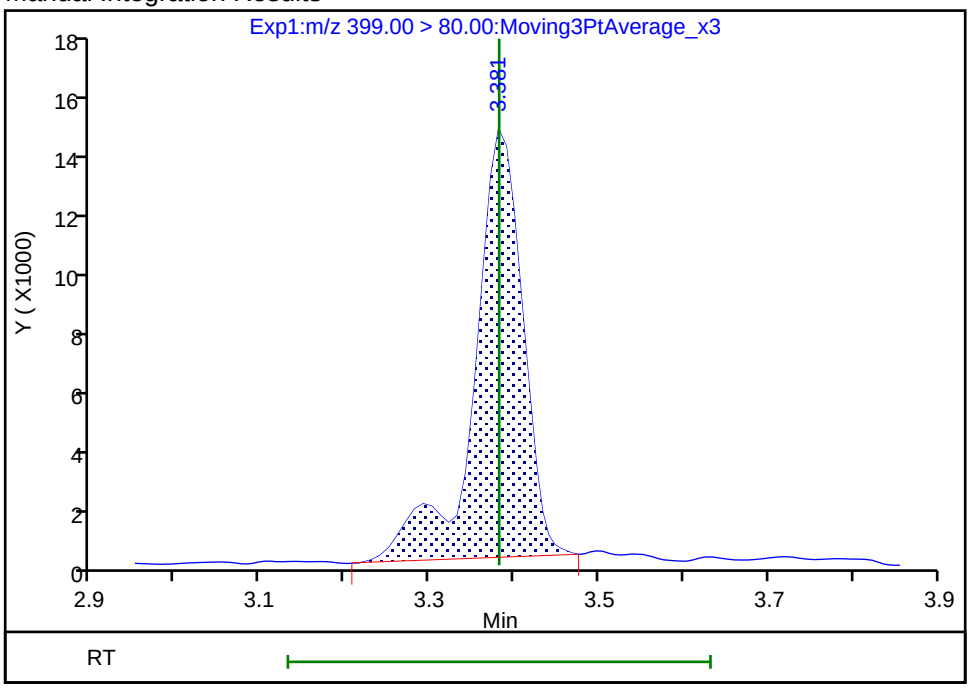
Processing Integration Results

RT: 3.38
Area: 61945
Amount: 0.029242
Amount Units: ng/ml



Manual Integration Results

RT: 3.38
Area: 58163
Amount: 0.027243
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:26:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

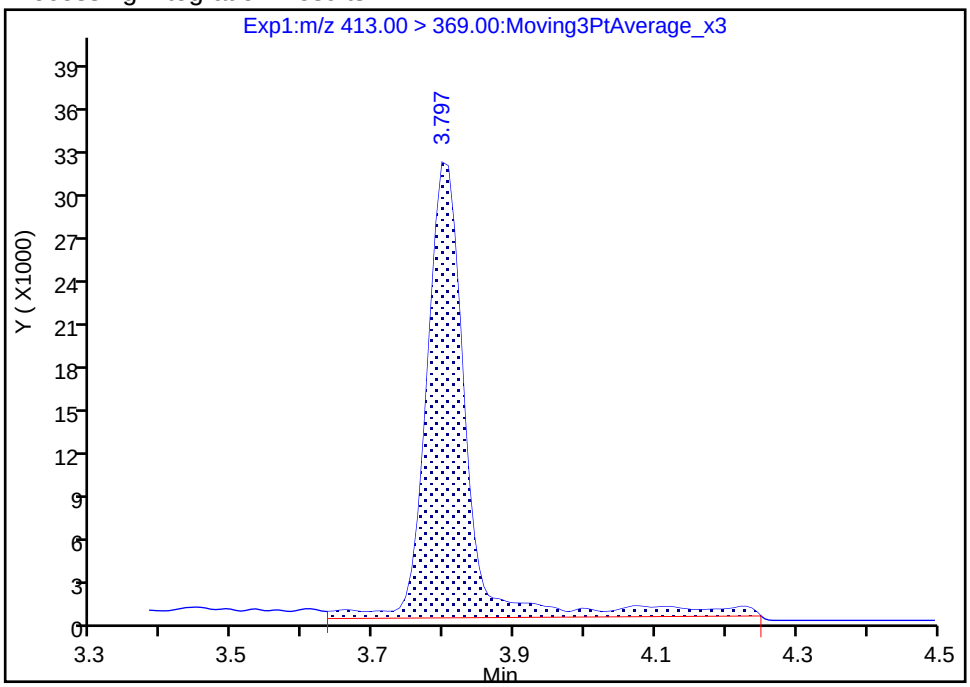
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d
Injection Date: 26-Sep-2019 21:21:10 Instrument ID: A13
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

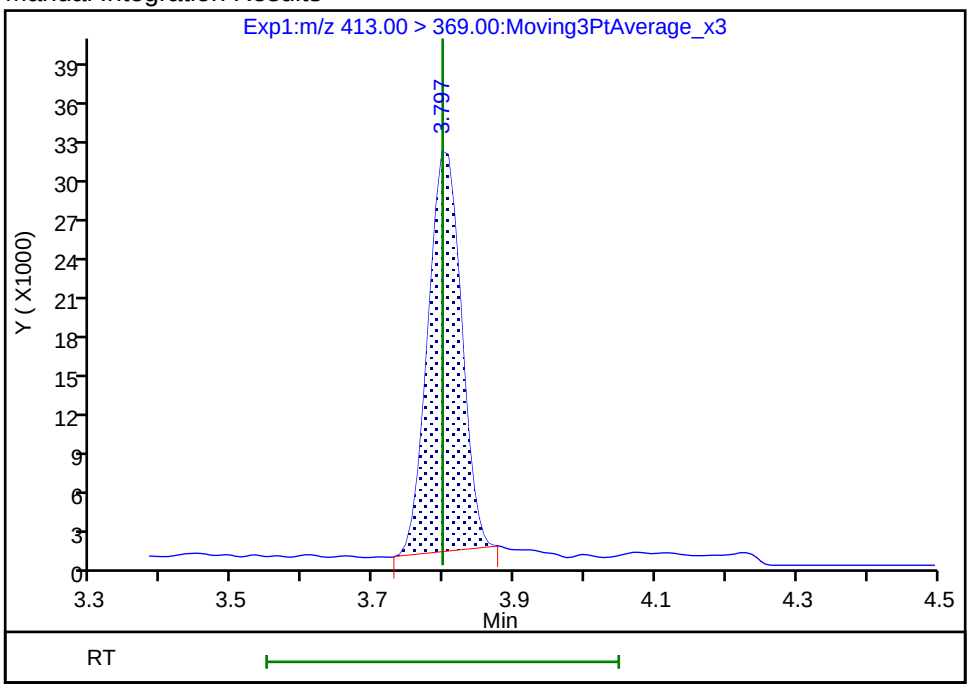
Processing Integration Results

RT: 3.80
Area: 126488
Amount: 0.039325
Amount Units: ng/ml



Manual Integration Results

RT: 3.80
Area: 101571
Amount: 0.034913
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:23:52
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

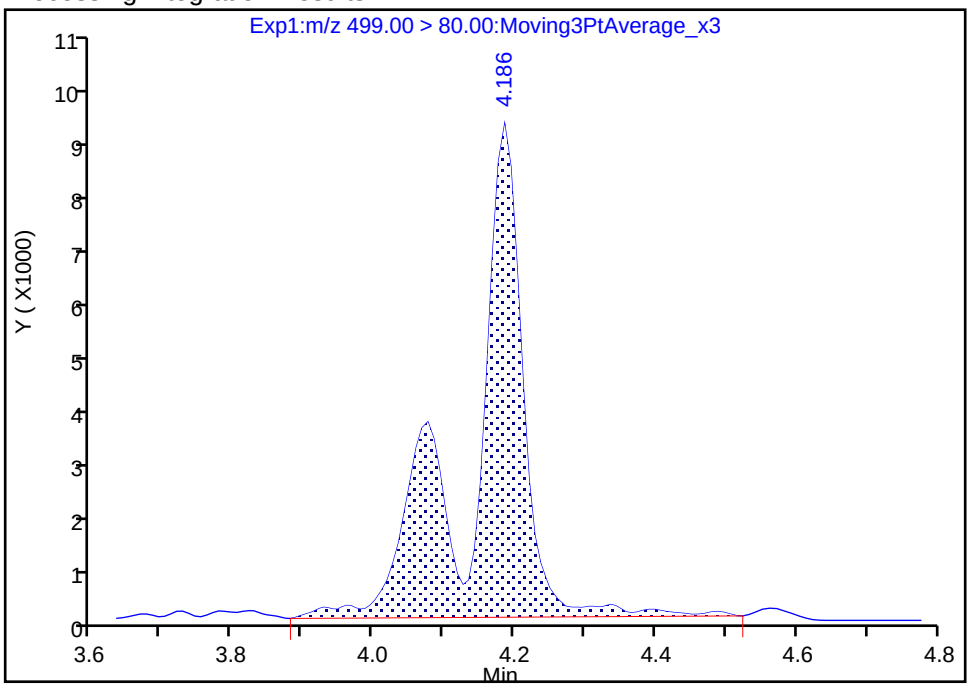
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

26 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

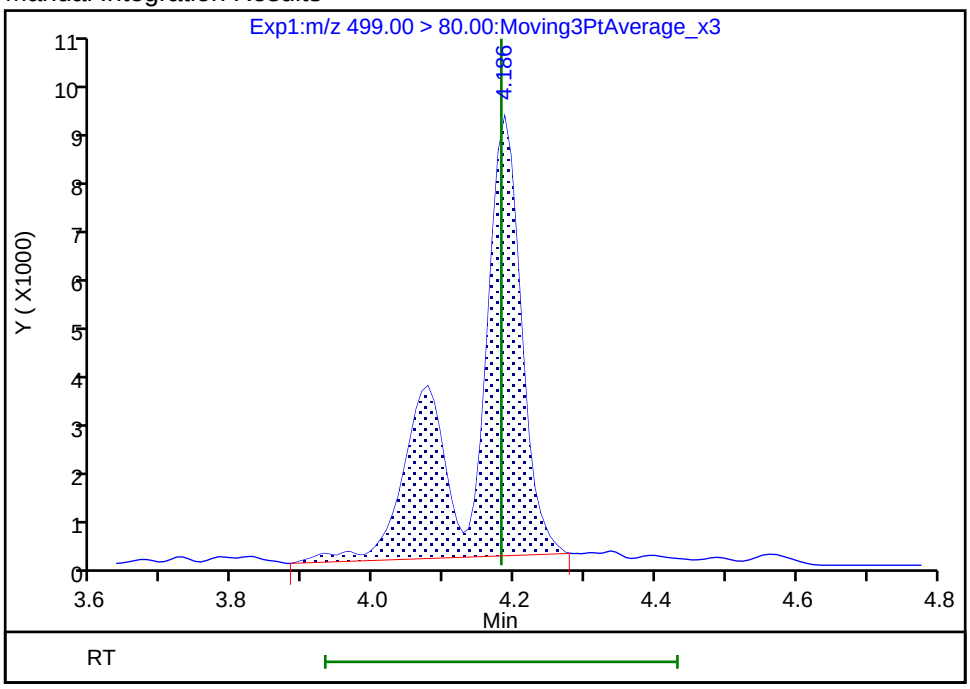
Processing Integration Results

RT: 4.19
Area: 45527
Amount: 0.028172
Amount Units: ng/ml



Manual Integration Results

RT: 4.19
Area: 42034
Amount: 0.026361
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:26:37

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

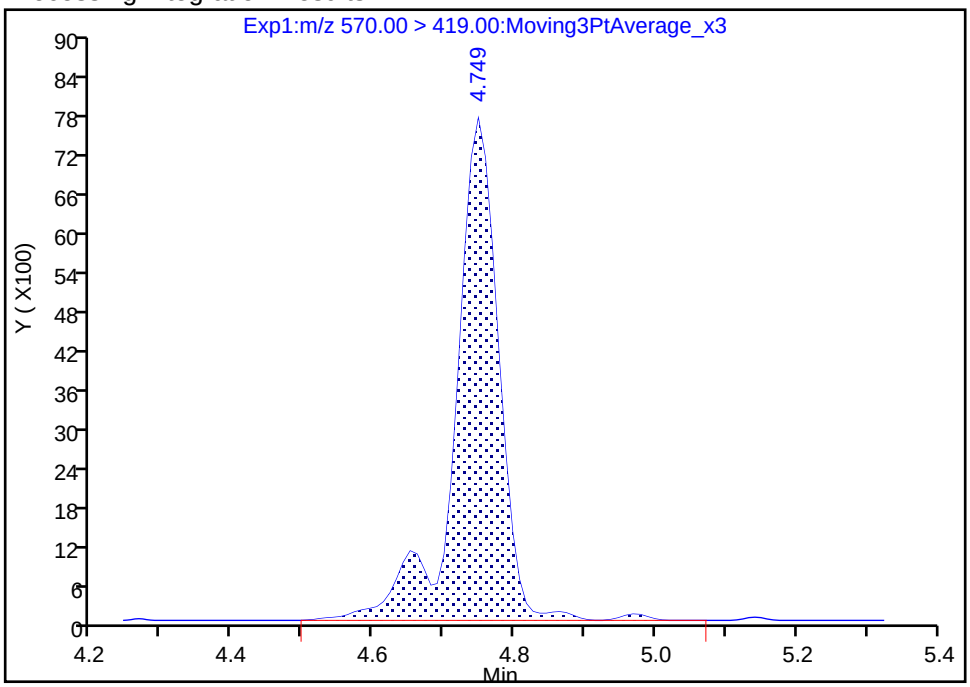
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

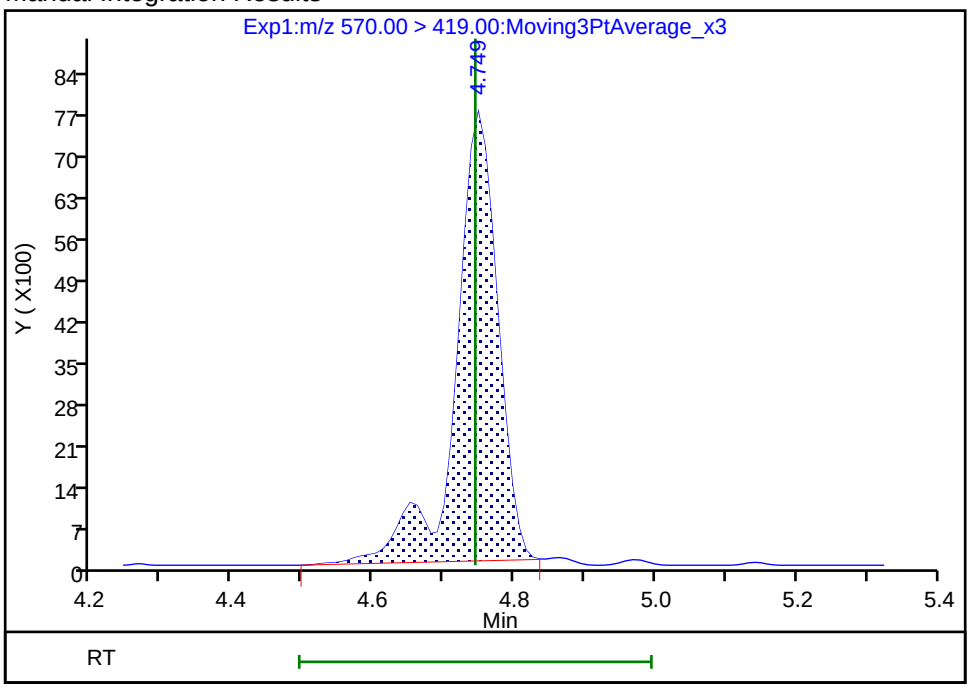
Processing Integration Results

RT: 4.75
Area: 33310
Amount: 0.023275
Amount Units: ng/ml



Manual Integration Results

RT: 4.75
Area: 31673
Amount: 0.022277
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:50:31
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

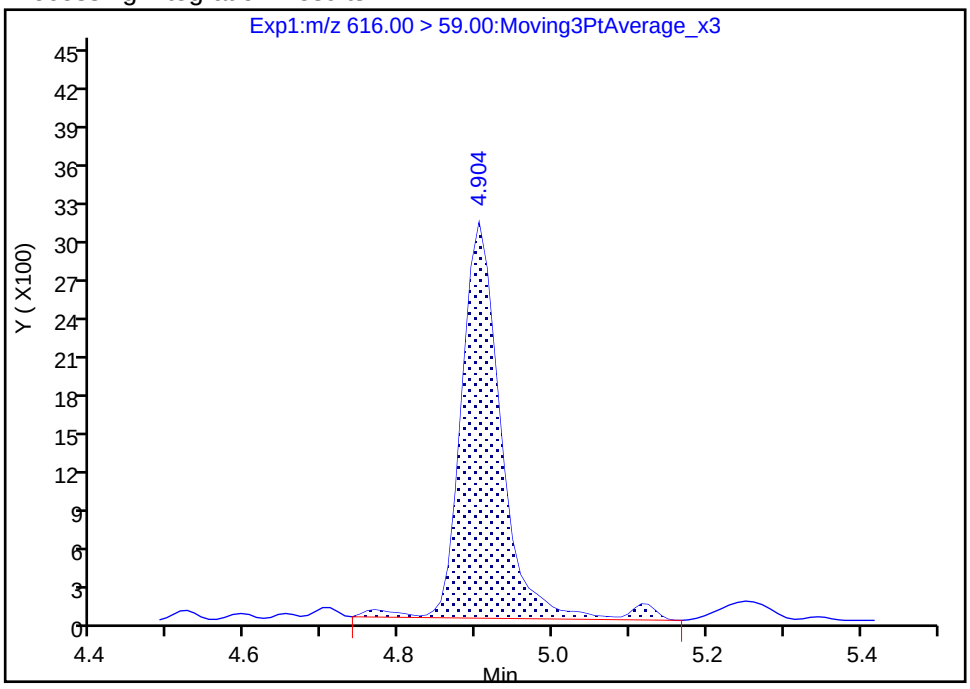
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

47 2-(N-methylperfluoro-1-octanesulfonamido) et, CAS: 24448-09-7

Signal: 1

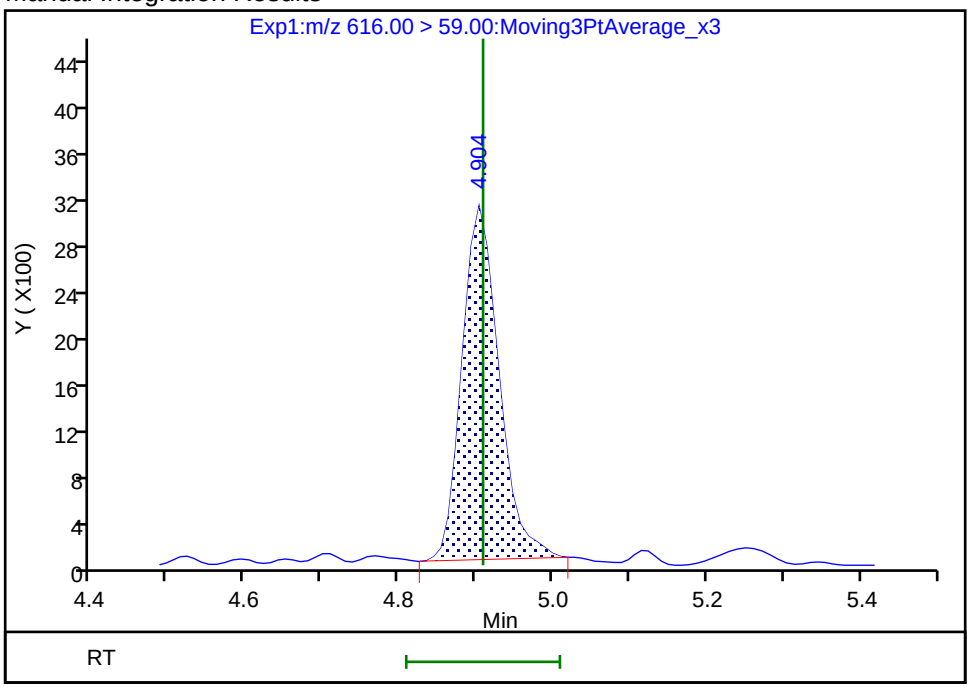
Processing Integration Results

RT: 4.90
Area: 11211
Amount: 0.029325
Amount Units: ng/ml



Manual Integration Results

RT: 4.90
Area: 10209
Amount: 0.027110
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:27:20
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

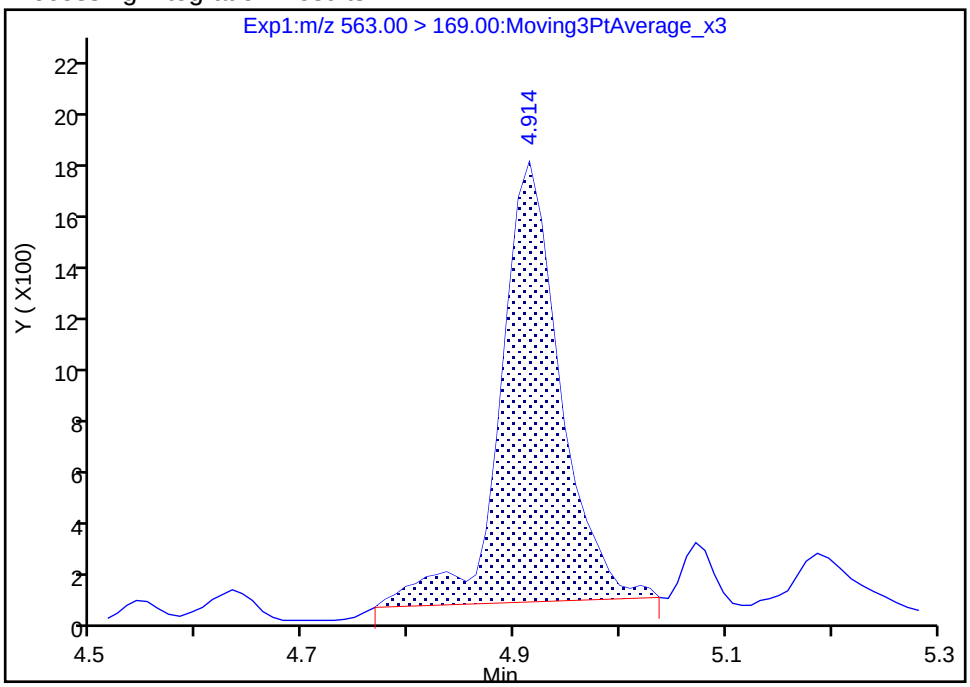
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_004.d				
Injection Date:	26-Sep-2019 21:21:10	Instrument ID:	A13		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

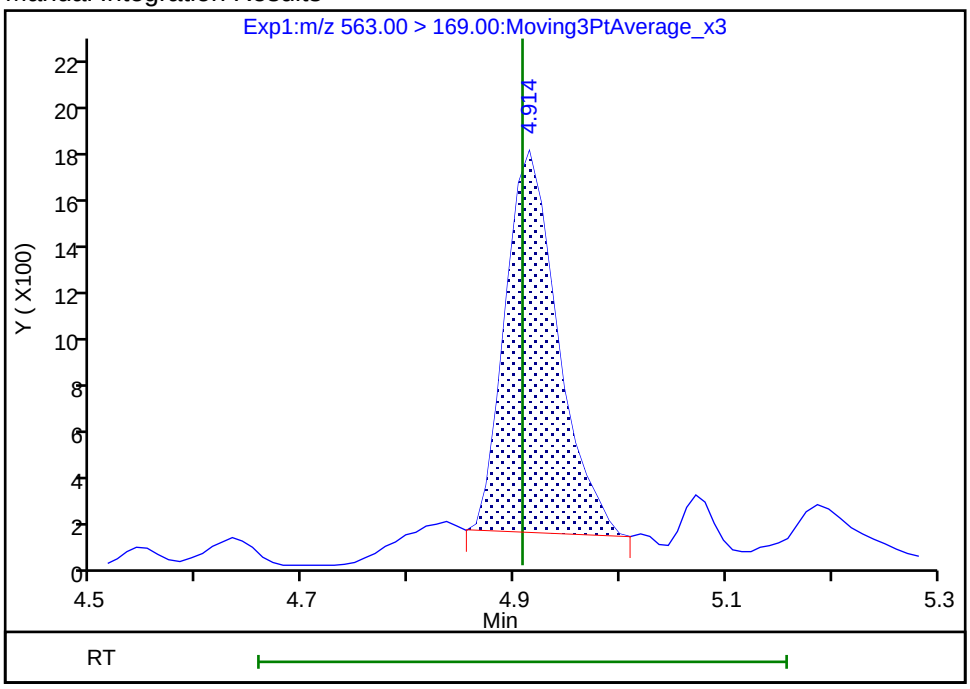
Processing Integration Results

RT: 4.91
Area: 6821
Amount: 0.028276
Amount Units: ng/ml



Manual Integration Results

RT: 4.91
Area: 5734
Amount: 0.028276
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 10:27:04

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_005.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 26-Sep-2019 21:30:47 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 2
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:36 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 11:53:00
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.204	2.205	-0.001	0.580	6730761	2.44		97.4	17828	
3 Perfluorobutanoic acid										M
212.90 > 169.00	2.211	2.209	0.002	1.003	115205	0.0491		98.2	42.0	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.562	2.559	0.003	0.674	6028529	2.44		97.7	26276	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.562	2.562	0.0	1.000	133638	0.0524		105	34.2	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.596	2.593	0.003	0.766	123295	0.0434	Target=1.87	98.2	23.7	M
298.90 > 99.00	2.596	2.593	0.003	0.766	62462		1.97(0.94-2.81)	98.2	17.8	M
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.916	2.910	0.006	1.000	65939	0.0461		98.8	550	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.916	2.910	0.006	0.767	1229438	2.29		98.1	1036	
D 10 13C2 PFHxA										
315.00 > 270.00	2.959	2.956	0.003	0.778	6886850	2.50		99.9	40640	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.959	2.956	0.003	1.000	135466	0.0518	Target=11.57	104	57.1	
313.00 > 119.00	2.959	2.956	0.003	1.000	10385		13.04(5.78-17.35)	104	20.3	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.970	2.971	-0.001	0.877	108431	0.0478	Target=2.40	102	301	
349.00 > 99.00	2.970	2.971	-0.001	0.877	45755		2.37(1.20-3.60)	102	155	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.088	3.087	0.001	0.812	133960	2.29		91.5	2460	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.088	3.089	-0.001	1.000	7980	0.0539		108	26.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 15 18O2 PFHxS										
403.00 > 84.00	3.386	3.382	0.004	0.891	3947325	2.33		98.4	72500	
D 17 13C4 PFHpA										
367.00 > 322.00	3.386	3.382	0.004	0.891	6189022	2.45		98.0	42583	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.386	3.382	0.004	1.000	110070	0.0516	Target=2.98	113	341	
399.00 > 99.00	3.386	3.382	0.004	1.000	34577		3.18(1.49-4.47)	113	51.0	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.386	3.382	0.004	1.000	141740	0.0549	Target=3.70	110	96.7	
363.00 > 169.00	3.386	3.382	0.004	1.000	34411		4.12(1.85-5.54)	110	62.1	
18 DONA										
377.00 > 251.00	3.436	3.433	0.003	0.821	374908	0.0512	Target=2.81	109	1007	
377.00 > 85.00	3.436	3.433	0.003	0.821	122069		3.07(1.41-4.22)	109	936	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.777	3.775	0.002	1.000	62256	0.0497		105	569	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.777	3.775	0.002	0.993	1459333	2.31		97.4	6554	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.794	3.789	0.005	0.907	81130	0.0480	Target=4.19	101	345	
449.00 > 99.00	3.794	3.789	0.005	0.907	19669		4.12(2.09-6.28)	101	111	
D 23 13C8 PFOA										
421.00 > 376.00	3.794	3.790	0.004	0.998	6232919	2.43		97.1	52302	
D 25 13C4 PFOA										
417.00 > 372.00	3.802	3.797	0.005	1.000	7311141	2.47		99.0	49262	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.802	3.798	0.004	1.000	175464	0.0577	Target=2.68	115	69.5	
413.00 > 169.00	3.802	3.798	0.004	1.000	69050		2.54(1.34-4.02)	115	138	
* 24 13C2 PFOA										
415.00 > 370.00	3.802	3.798	0.004		8099028	2.50			50904	
D 27 13C8 PFOS										
507.00 > 99.00	4.176	4.176	0.0	1.098	1804678	2.41		96.5	10235	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.185	4.181	0.004	1.000	83289	0.0541	Target=4.19	117	178	
499.00 > 99.00	4.185	4.181	0.004	1.000	19825		4.20(2.09-6.28)	117	43.0	
D 28 13C4 PFOS										
503.00 > 80.00	4.185	4.181	0.004	1.101	3382179	2.30		96.4	12953	
30 Perfluorononanoic acid										
463.00 > 419.00	4.202	4.199	0.003	1.000	136435	0.0525	Target=8.84	105	110	
463.00 > 169.00	4.202	4.199	0.003	1.000	16221		8.41(4.42-13.26)	105	75.0	
D 29 13C5 PFNA										
468.00 > 423.00	4.202	4.199	0.003	1.105	6657891	2.57		103	64146	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.398	4.393	0.005	1.051	169516	0.0473		102	600	
D 33 13C8 FOSA										
506.00 > 78.00	4.459	4.460	-0.001	1.173	4905015	2.46		98.5	30289	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.468	4.464	0.004	1.002	97760	0.0499		99.9	780	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.550	4.544	0.006	1.087	55336	0.0469	Target=2.27	97.8	267	
549.00 > 99.00	4.550	4.544	0.006	1.087	26663		2.08(1.13-3.40)	97.8	137	
D 36 13C2 PFDA										
515.00 > 470.00	4.580	4.572	0.008	1.205	7009738	2.54		101	85950	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.580	4.572	0.008	1.000	147375	0.0548	Target=10.36	110	206	
513.00 > 169.00	4.580	4.572	0.008	1.000	12630		11.67(5.18-15.54)	110	37.9	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.580	4.574	0.006	1.000	72707	0.0494		103	682	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.580	4.574	0.006	1.205	1837856	2.45		102	13468	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.745	4.741	0.004	1.248	4561823	2.49		99.7	17637	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.755	4.744	0.011	1.002	70430	0.0490		97.9	720	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.879	4.876	0.003	1.166	55226	0.0501	Target=2.70	104	360	
599.00 > 99.00	4.879	4.876	0.003	1.166	20159		2.74(1.35-4.05)	104	116	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.889	4.897	-0.008	1.286	4759132	11.2		89.8	14862	
D 43 13C2 PFUnA										
565.00 > 520.00	4.910	4.906	0.004	1.291	6515743	2.51		101	41482	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.910	4.907	0.003	1.000	118831	0.0548	Target=9.31	110	152	
563.00 > 169.00	4.910	4.907	0.003	1.000	11603		10.24(4.65-13.96)	110	31.7	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.910	4.909	0.001	1.004	22599	0.0567		113	106	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.920	4.915	0.005	1.294	4560362	2.49		99.5	15293	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.931	4.922	0.009	1.002	68035	0.0494		98.9	441	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.920	4.924	-0.004	1.294	2668111	2.46		98.3	56.2	
50 NMeFOSA										
512.00 > 169.00	4.931	4.930	0.001	1.002	52203	0.0508		102	195	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.058	5.054	0.004	1.209	356360	0.0526		112	2566	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.068	-0.002	1.332	5647527	12.7		101	27184	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.084	5.084	0.0	1.003	26049	0.0549		110	178	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.101	5.101	0.0	1.342	2724337	2.42		96.8	280	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.110	5.110	0.0	1.002	51654	0.0479		95.8	104	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.222	5.217	0.005	1.373	6608664	2.45		98.0	52076	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.222	5.219	0.003	1.000	134817	0.0532	Target=8.07	106	83.7	
613.00 > 169.00	5.222	5.219	0.003	1.000	17524		7.69(4.03-12.10)	106	58.3	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.243	5.236	0.007	1.145	44398	0.0464		96.3	158	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.466	5.460	0.006	1.306	21688	0.0509	Target=0.52	105	87.6	
699.00 > 99.00	5.466	5.460	0.006	1.306	40609		0.53(0.26-0.77)	105	421	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.510	5.504	0.006	1.055	122124	0.0503	Target=6.35	101	113	
663.00 > 169.00	5.510	5.504	0.006	1.055	20448		5.97(3.18-9.53)	101	74.0	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.781	5.774	0.007	1.520	6013809	2.53		101	40521	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.781	5.775	0.006	1.000	11042	0.0485	Target=0.85	97.1	108	
713.00 > 219.00	5.781	5.775	0.006	1.000	14201		0.78(0.43-1.28)	97.1	310	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.322	6.305	0.017	1.663	4610277	2.42		96.8	17071	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.313	6.308	0.005	0.999	131433	0.0556	Target=7.95	111	11.4	
813.00 > 169.00	6.313	6.308	0.005	0.999	17315		7.59(3.98-11.93)	111	108	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.927	6.905	0.022	1.096	57848	0.0517	Target=8.96	103	19.1	
913.00 > 169.00	6.911	6.905	0.006	1.093	6204		9.32(4.48-13.45)	103	62.2	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00016 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:26:37 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_005.d

Injection Date: 26-Sep-2019 21:30:47 Instrument ID: A13

Lims ID: IC L2 Full

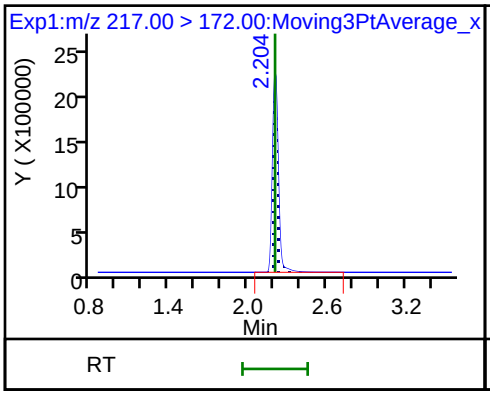
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 3

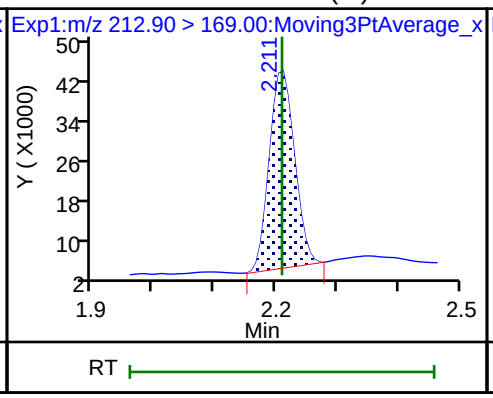
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

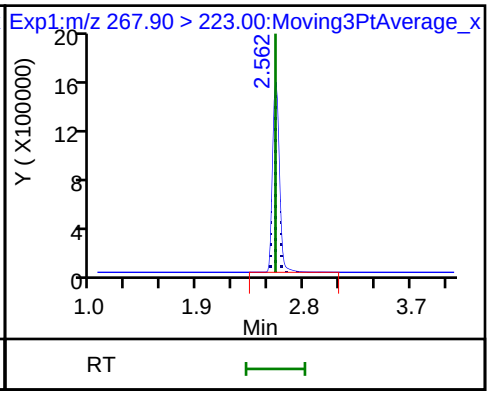
D 2 13C4 PFBA



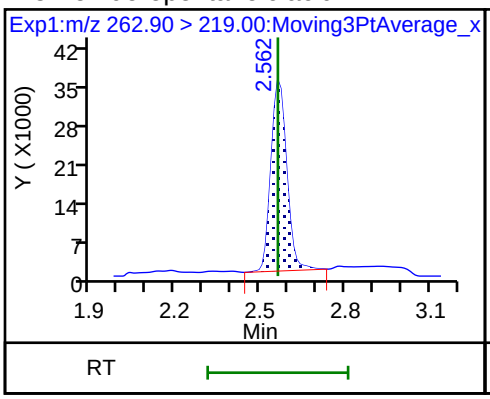
3 Perfluorobutanoic acid (M)



D 4 13C5 PFPeA



5 Perfluoropentanoic acid



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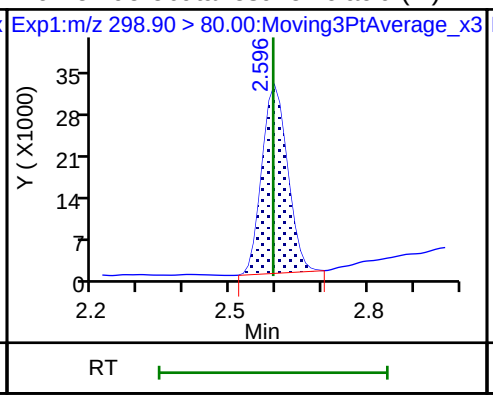
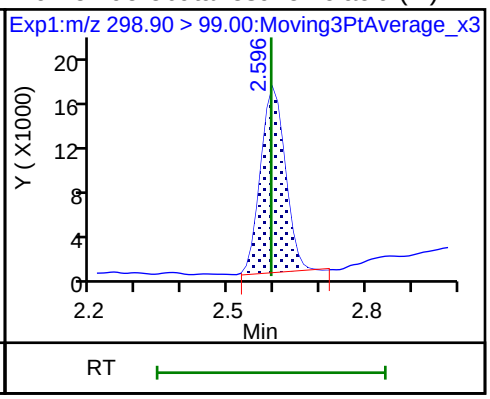
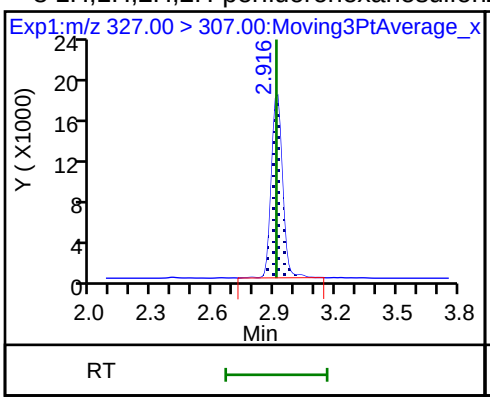


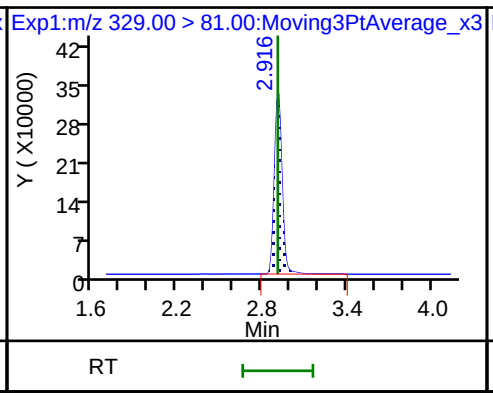
6 Perfluorobutanesulfonic acid (M)



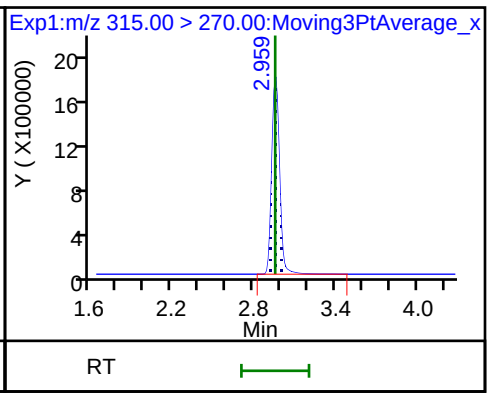
8 1H,1H,2H,2H-perfluorohexanesulfon



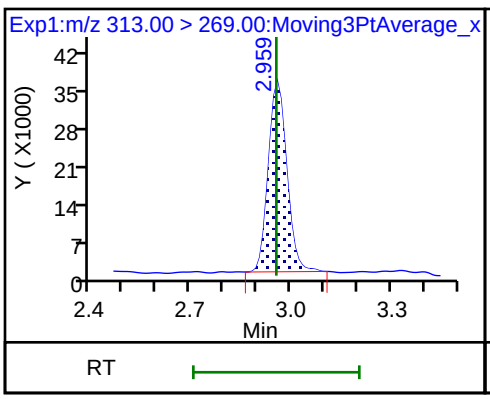
D 7 M2-4:2 FTS



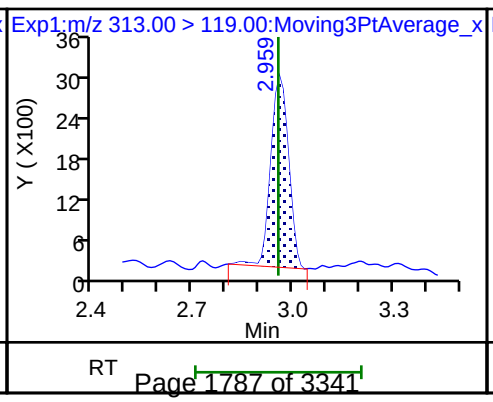
D 10 13C2 PFHxA



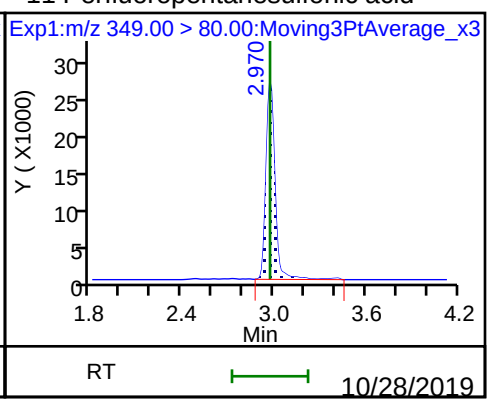
9 Perfluorohexanoic acid



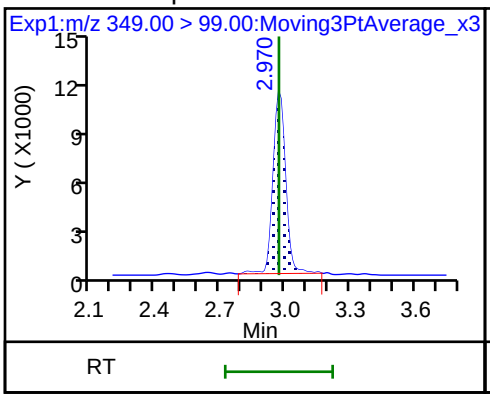
9 Perfluorohexanoic acid



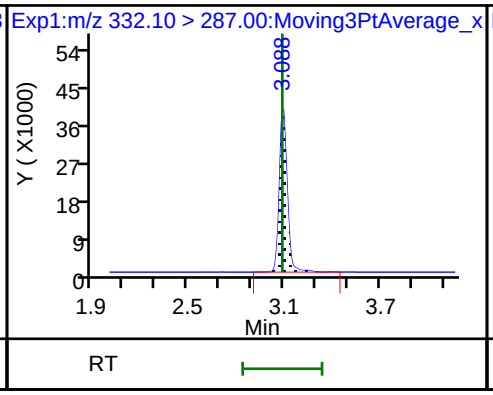
11 Perfluoropentanesulfonic acid



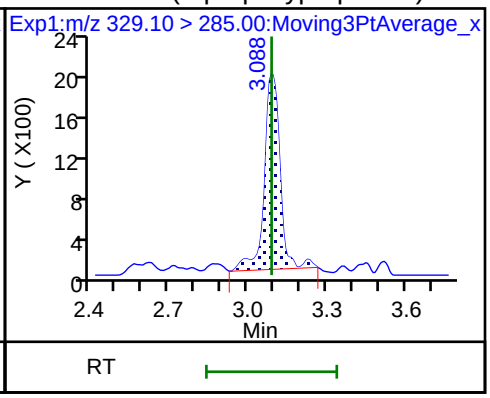
11 Perfluoropentanesulfonic acid



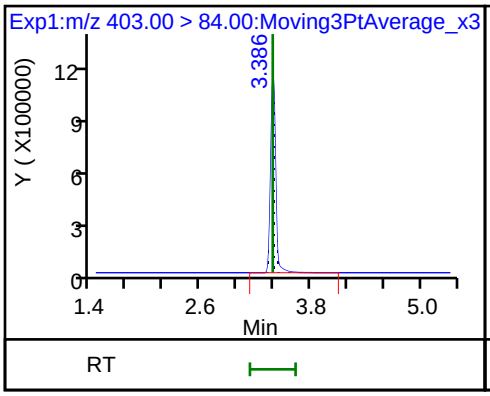
D 12 13C3 HFPO-DA



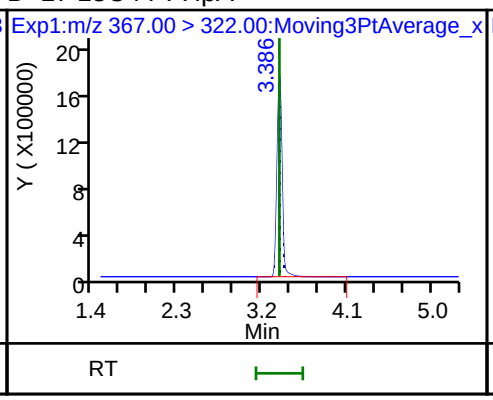
13 Perfluoro(2-propoxypropanoic) acid



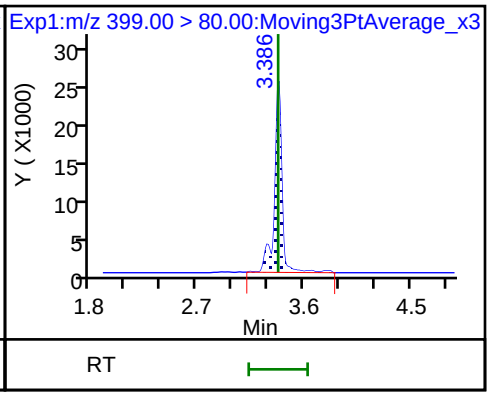
D 15 18O2 PFHxS



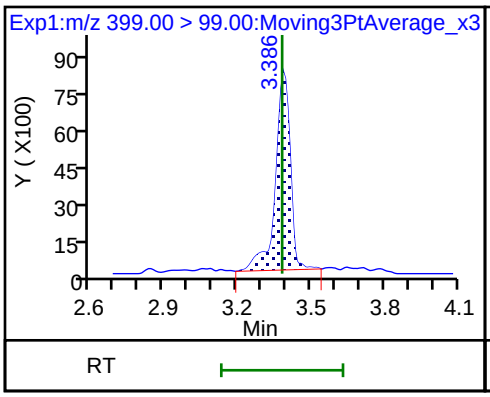
D 17 13C4 PFHpA



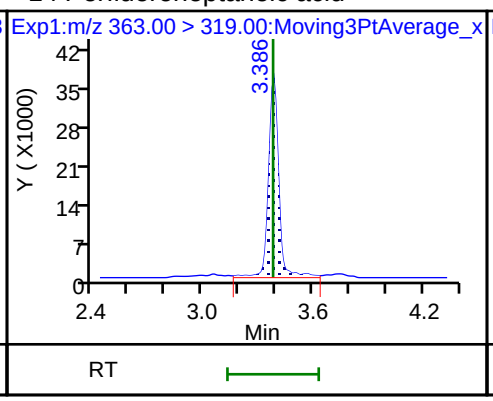
16 Perfluorohexanesulfonic acid



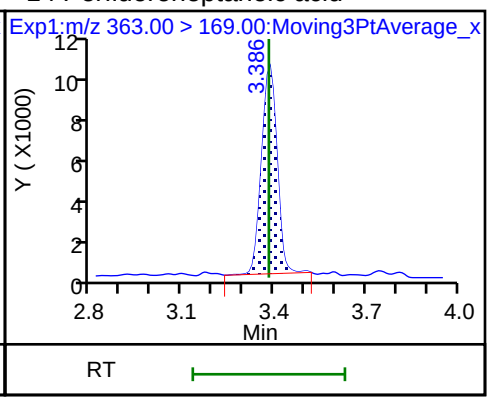
16 Perfluorohexanesulfonic acid



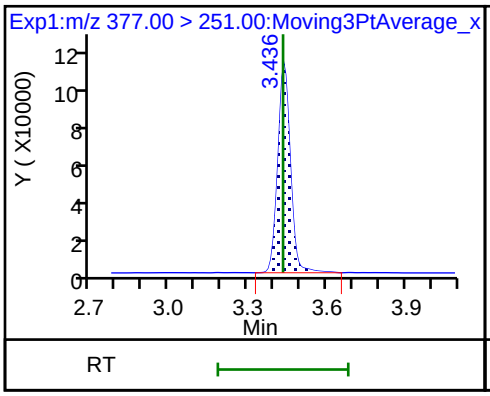
14 Perfluoroheptanoic acid



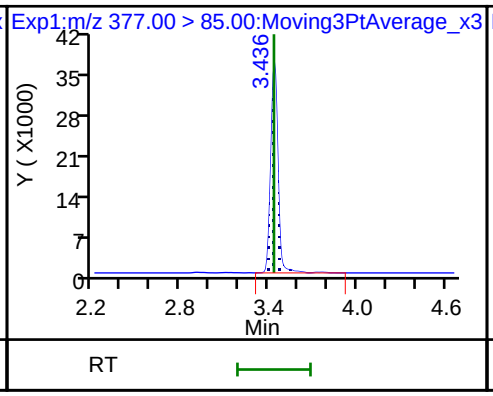
14 Perfluoroheptanoic acid



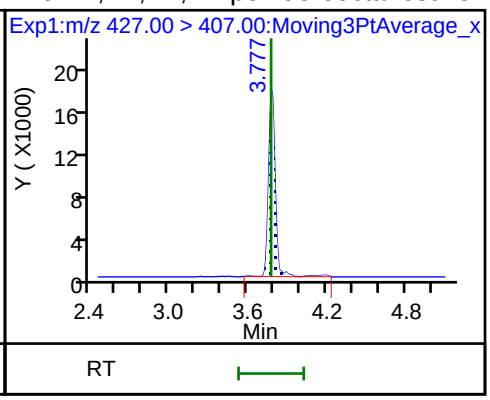
18 DONA



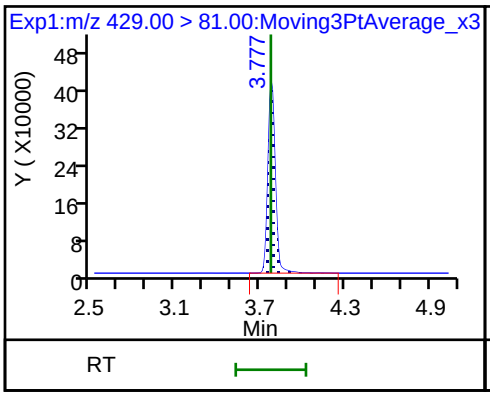
18 DONA



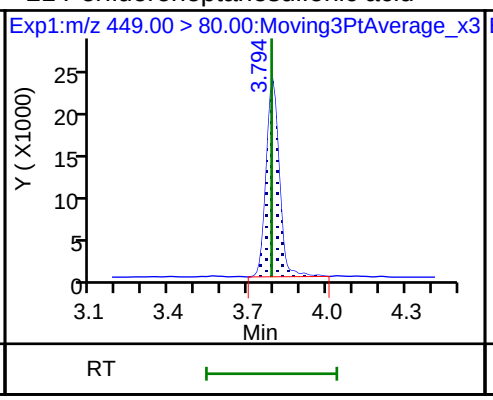
19 1H,1H,2H,2H-perfluorooctanesulfoni



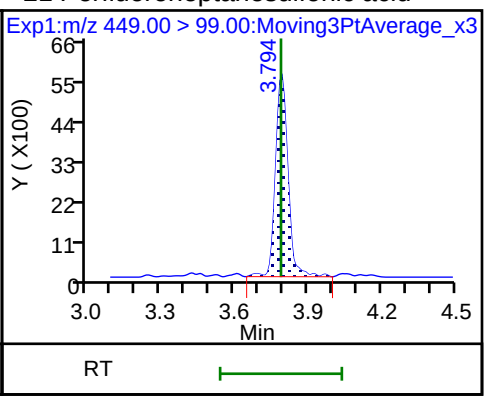
D 20 M2-6:2 FTS



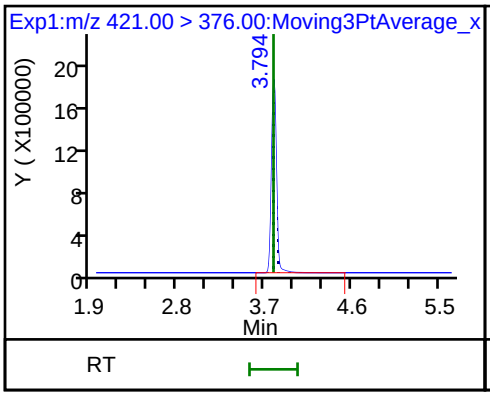
21 Perfluoroheptanesulfonic acid



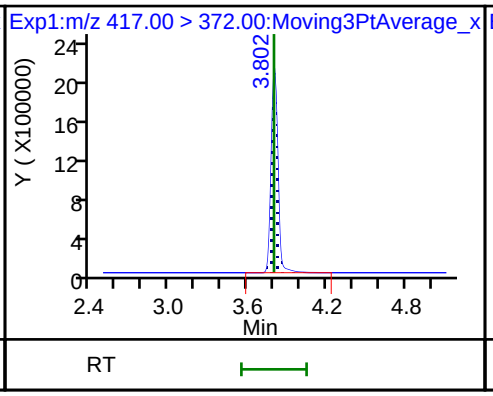
21 Perfluoroheptanesulfonic acid



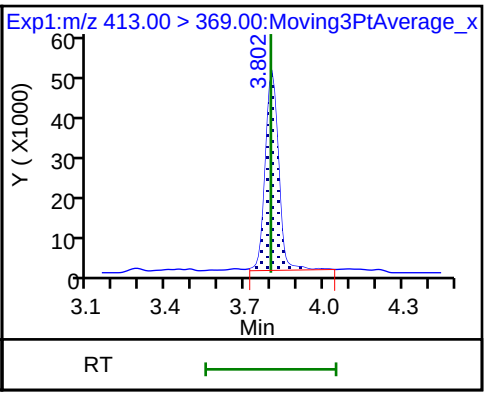
D 23 13C8 PFOA



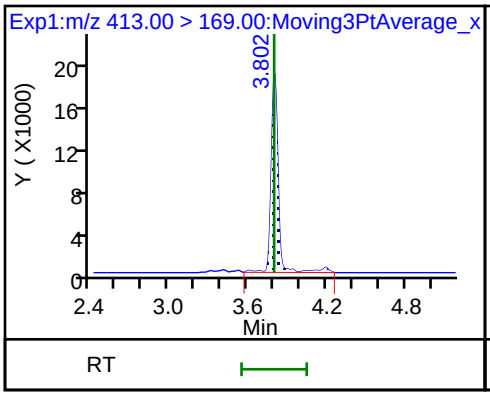
D 25 13C4 PFOA



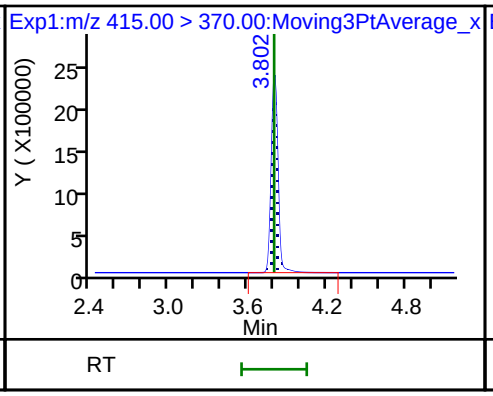
22 Perfluorooctanoic acid



22 Perfluorooctanoic acid



* 24 13C2 PFOA



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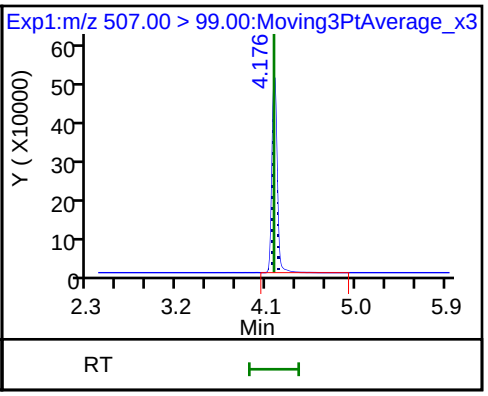
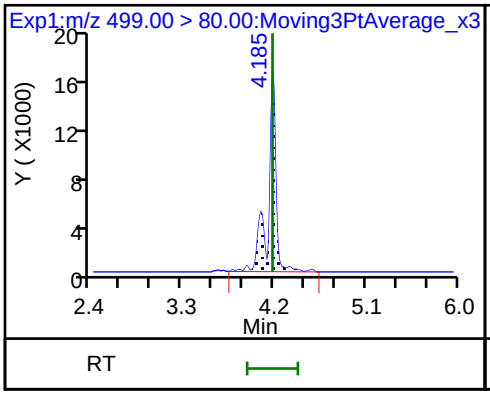
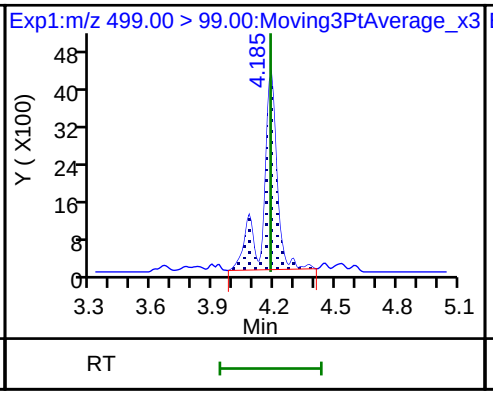


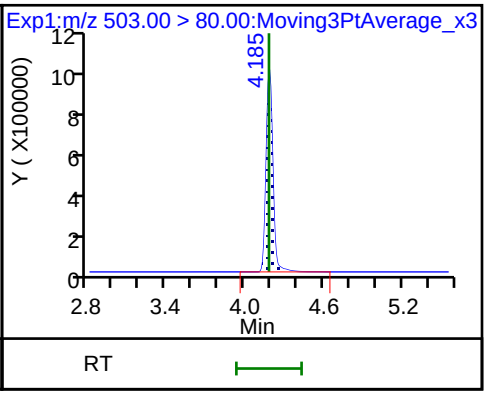
26 Perfluorooctanesulfonic acid



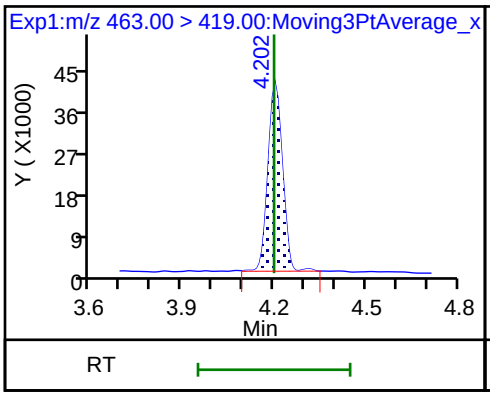
26 Perfluorooctanesulfonic acid



D 28 13C4 PFOS



30 Perfluorononanoic acid



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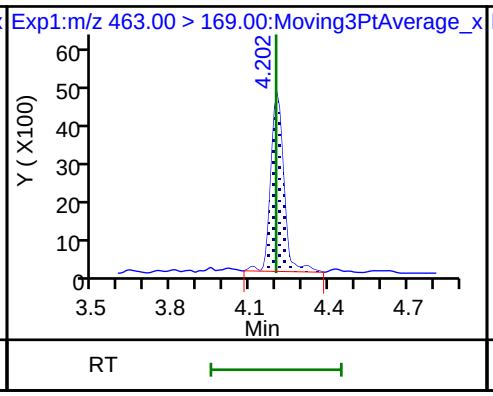
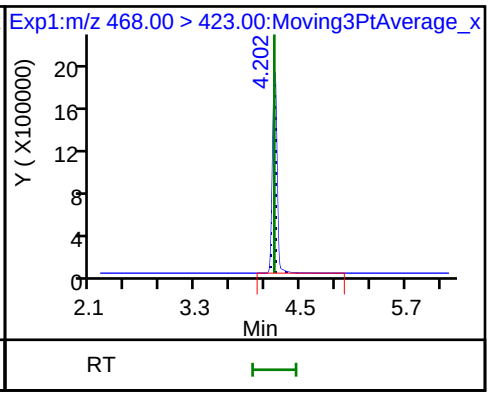
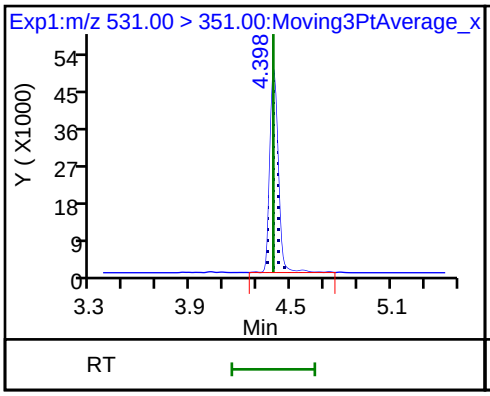


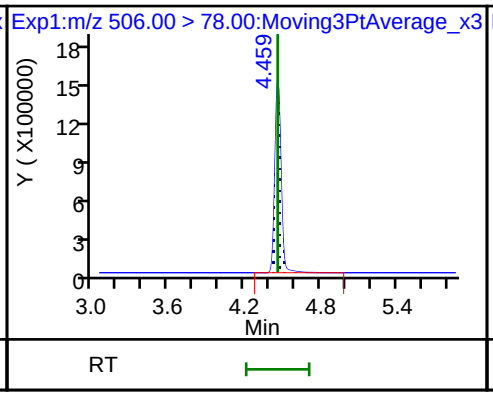
D 29 13C5 PFNA



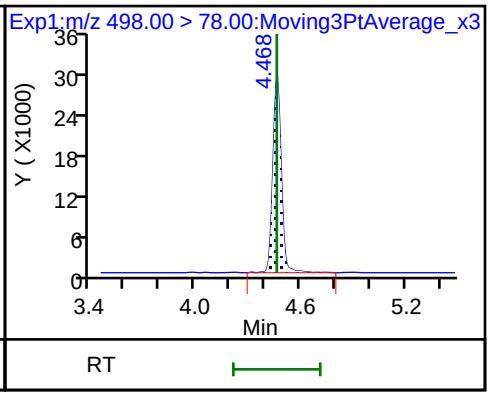
31 9-Chlorohexadecafluoro-3-oxanonane



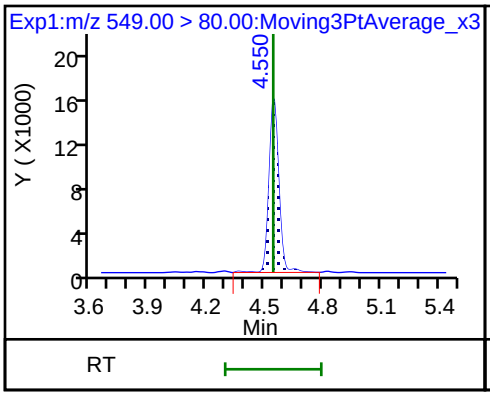
D 33 13C8 FOSA



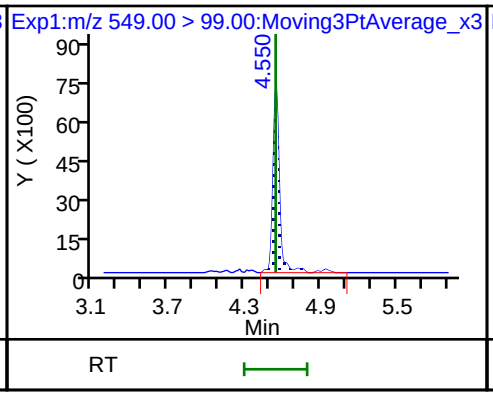
32 Perfluorooctanesulfonamide



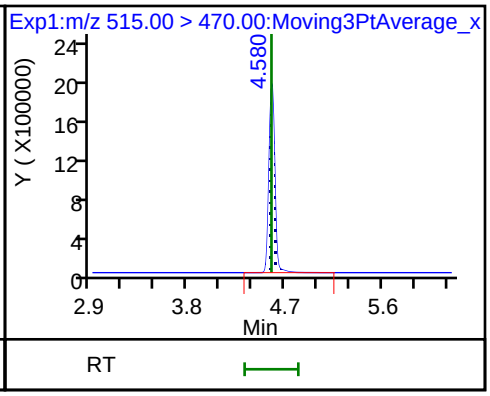
38 Perfluorononanesulfonic acid



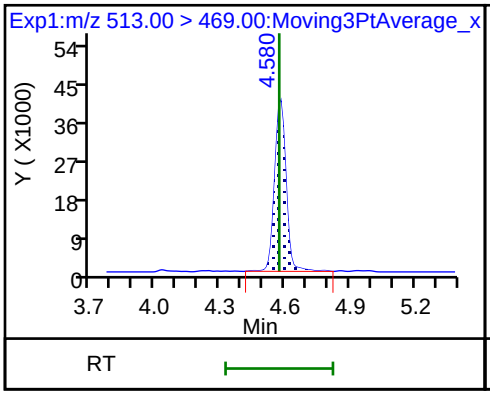
38 Perfluorononanesulfonic acid



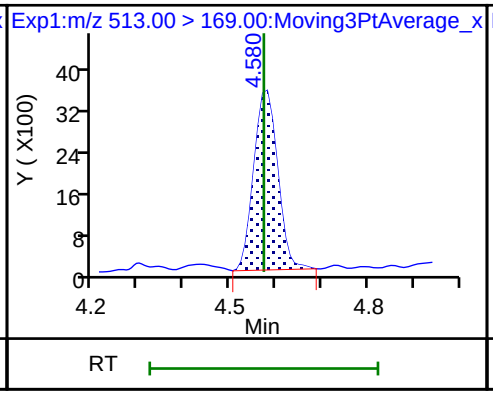
D 36 13C2 PFDA



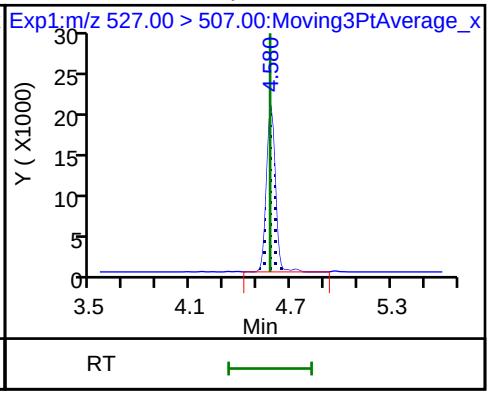
34 Perfluorodecanoic acid



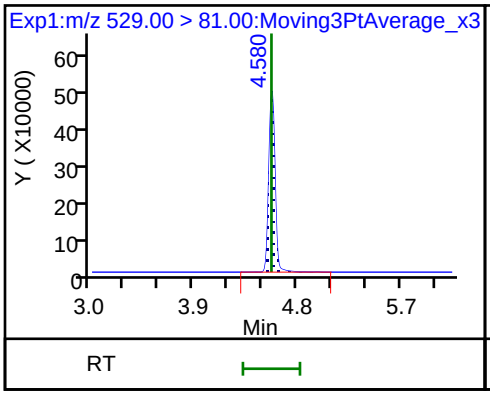
34 Perfluorodecanoic acid



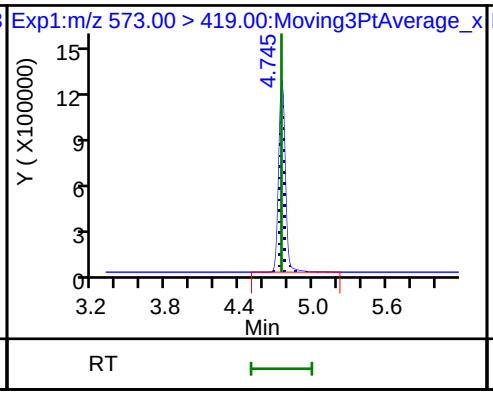
35 1H,1H,2H,2H-perfluorodecanesulfoni



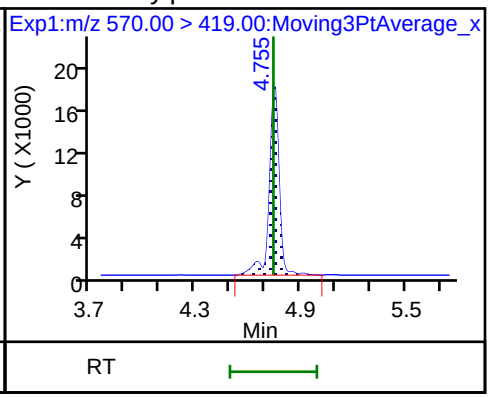
D 37 M2-8:2 FTS



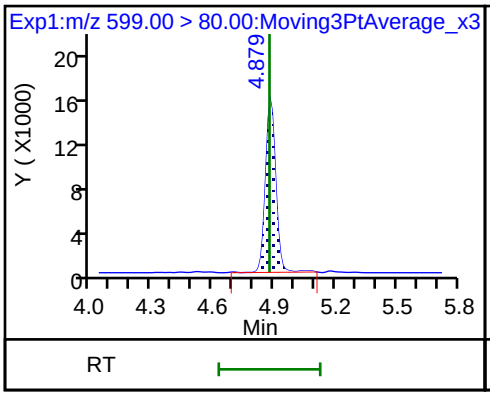
D 40 d3-NMeFOSAA



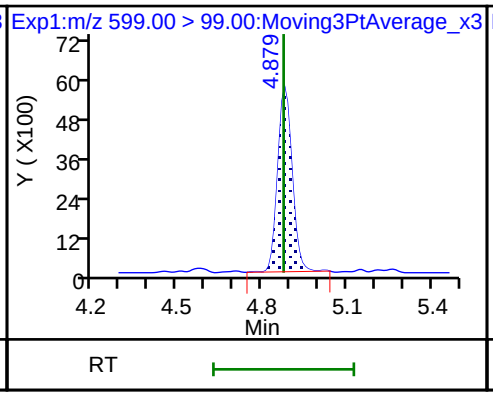
41 N-methylperfluorooctanesulfonamido



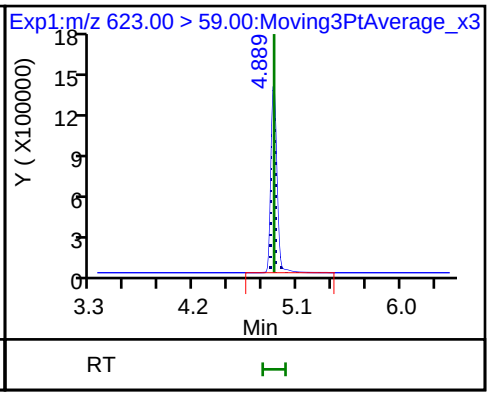
48 Perfluorodecanesulfonic acid



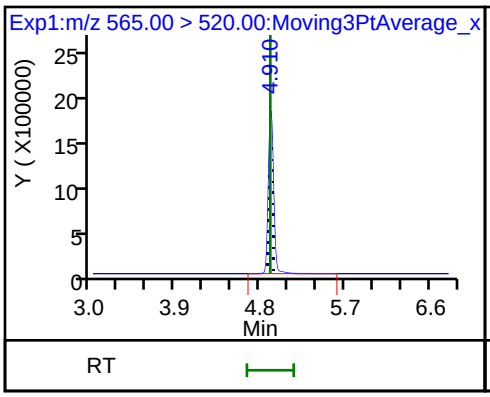
48 Perfluorodecanesulfonic acid



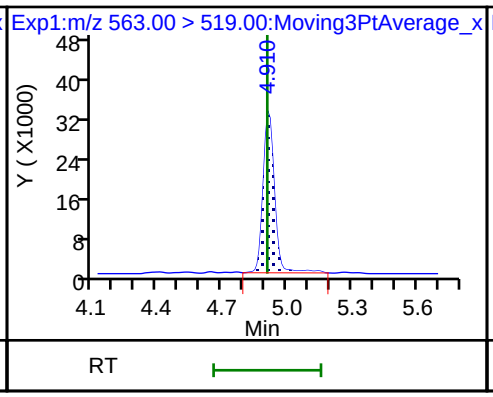
D 46 d7-N-MeFOSE-M



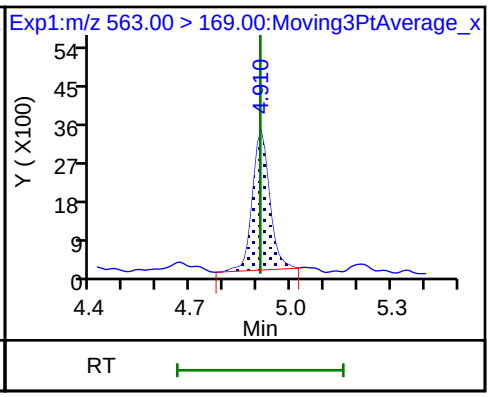
D 43 13C2 PFUnA



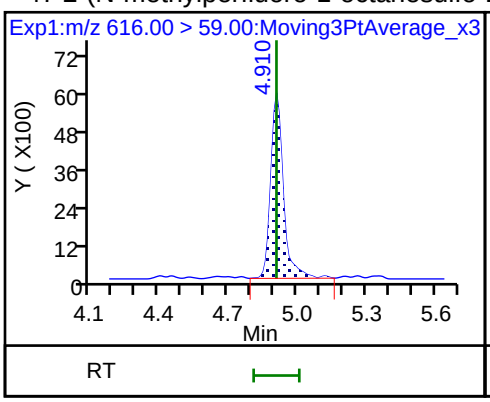
42 Perfluoroundecanoic acid



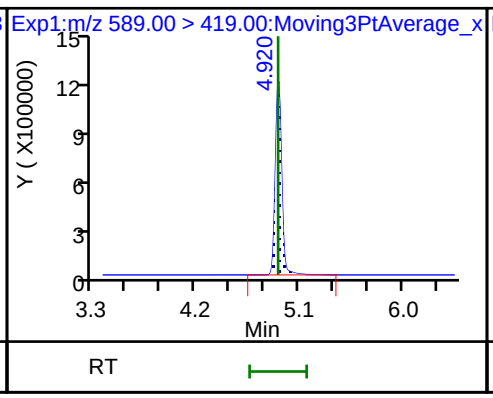
42 Perfluoroundecanoic acid



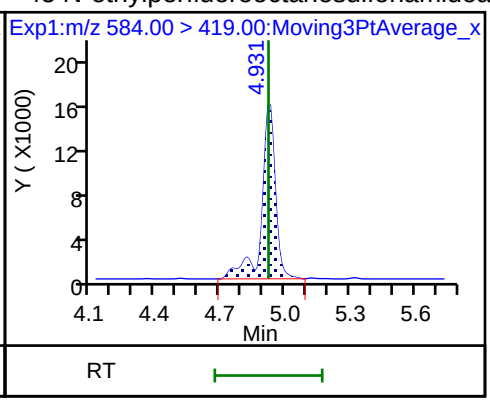
47 2-(N-methylperfluoro-1-octanesulfo



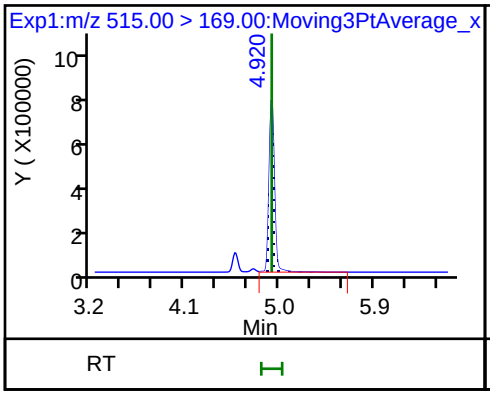
D 44 d5-NEtFOSAA



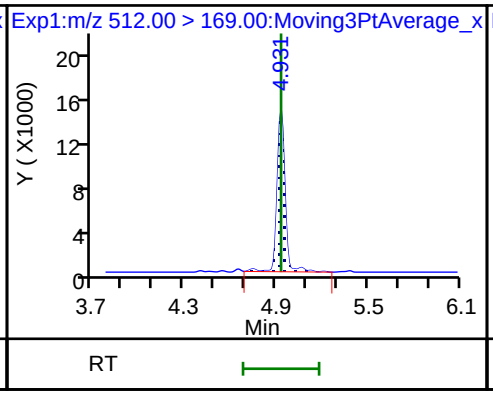
45 N-ethylperfluorooctanesulfonamidoa



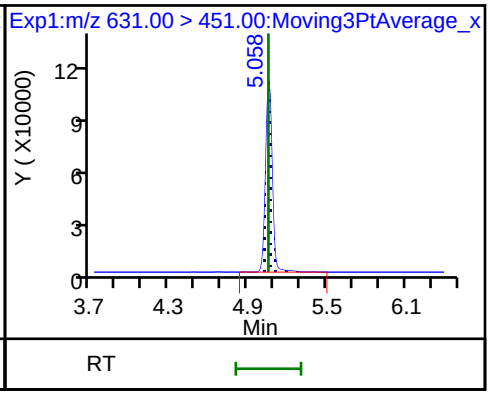
D 49 d-N-MeFOSA-M



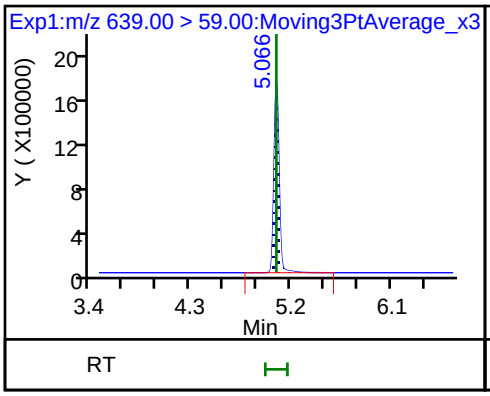
50 NMeFOSA



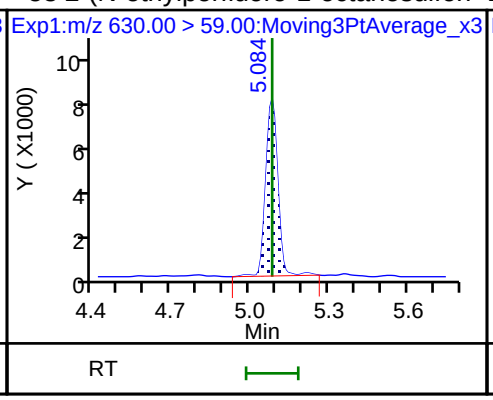
51 11-Chloroeicosafluoro-3-oxaundecan



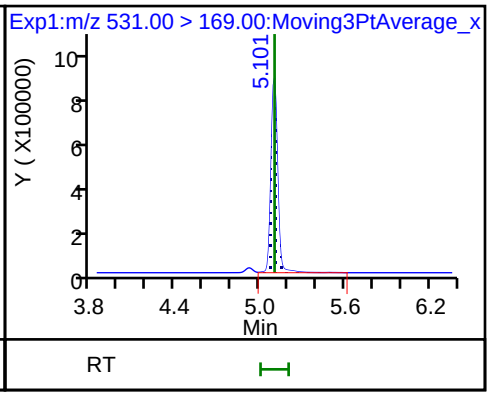
D 52 d9-N-EtFOSE-M



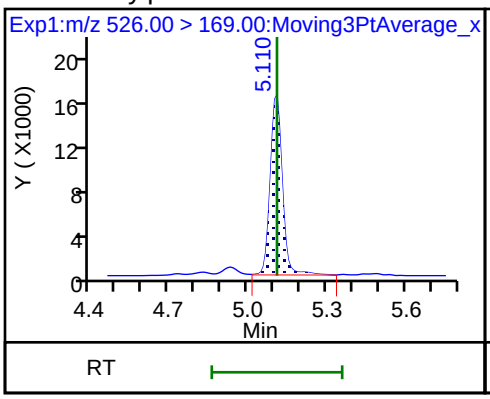
53 2-(N-ethylperfluoro-1-octanesulfon



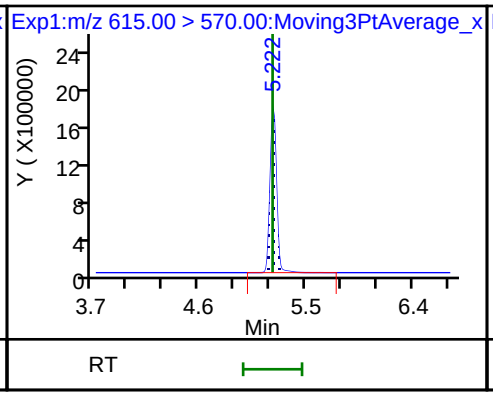
D 55 d-N-EtFOSA-M



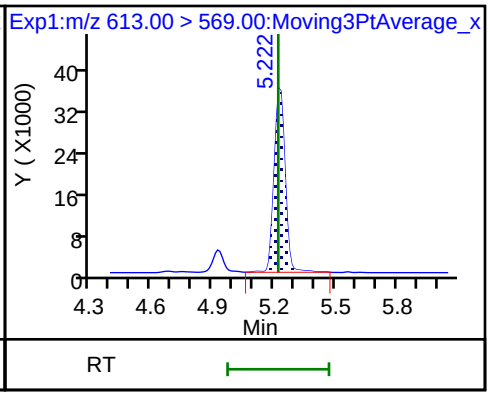
54 N-ethylperfluoro-1-octanesulfonami



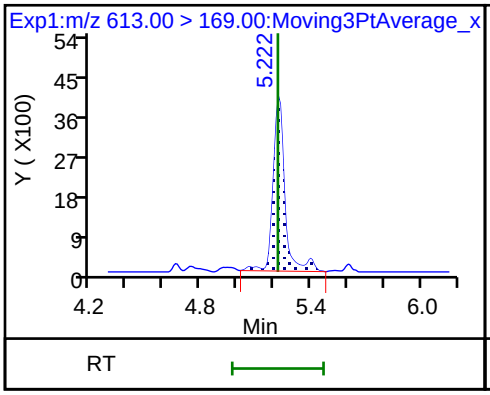
D 57 13C2 PFDoA



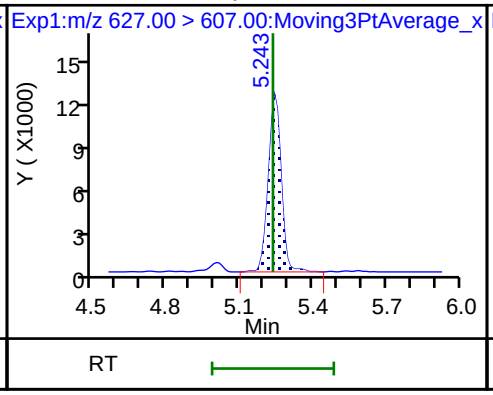
56 Perfluorododecanoic acid



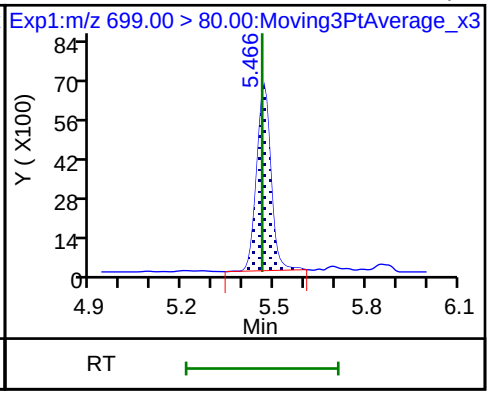
56 Perfluorododecanoic acid



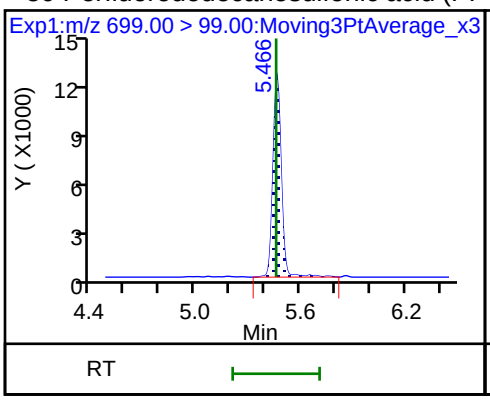
58 1H,1H,2H,2H-perfluorododecanesulfo



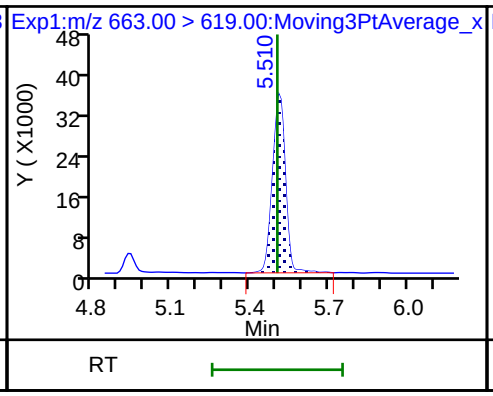
59 Perfluorododecanesulfonic acid (PF



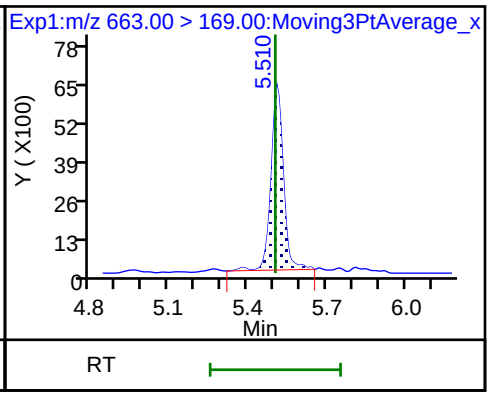
59 Perfluorododecanesulfonic acid (PF



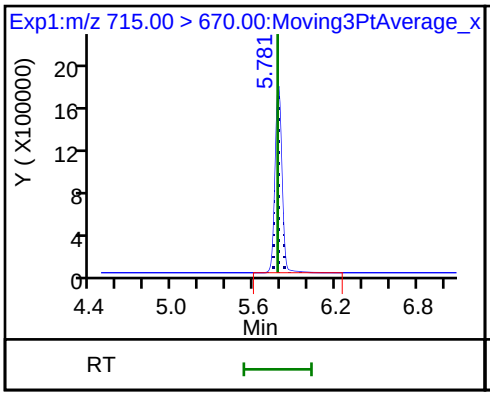
60 Perfluorotridecanoic acid



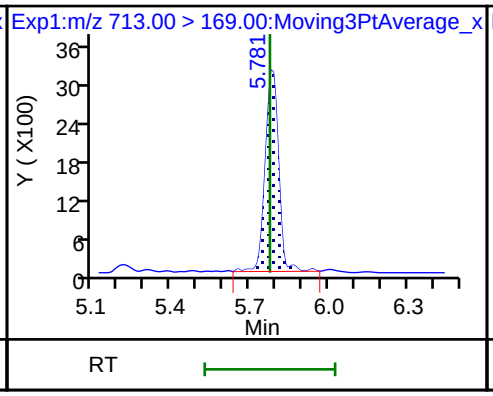
60 Perfluorotridecanoic acid



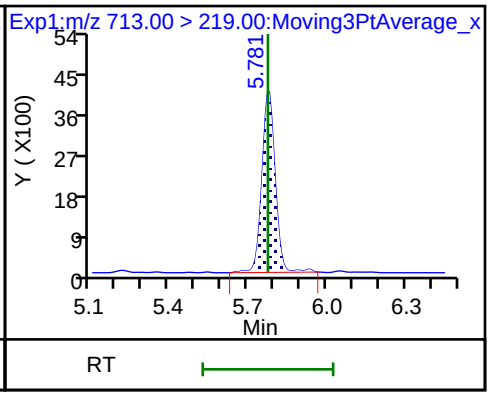
D 61 13C2 PFTeDA



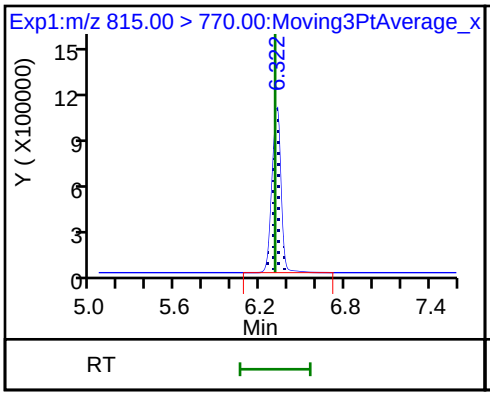
62 Perfluorotetradecanoic acid



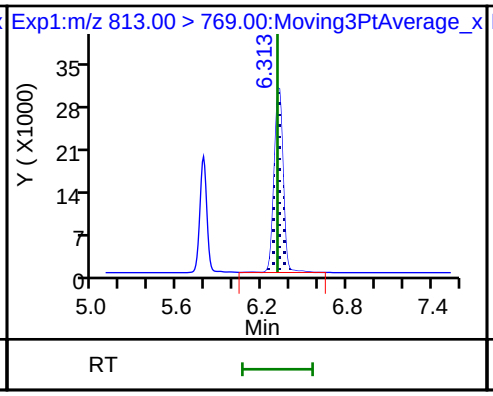
62 Perfluorotetradecanoic acid



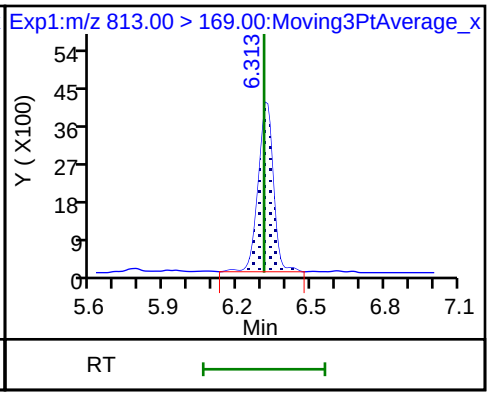
D 63 13C2 PFHxDA



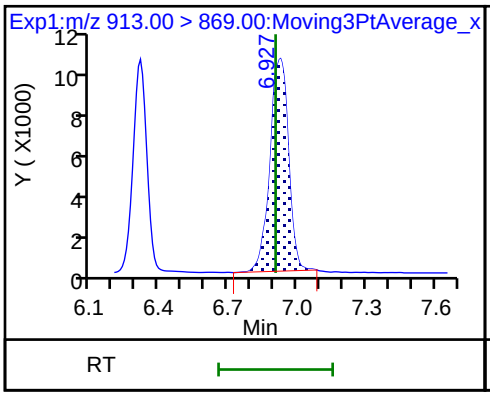
64 Perfluorohexadecanoic acid



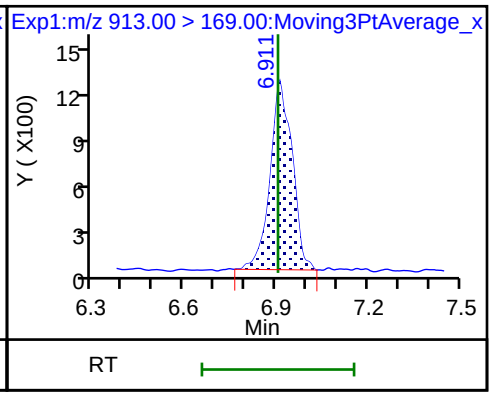
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

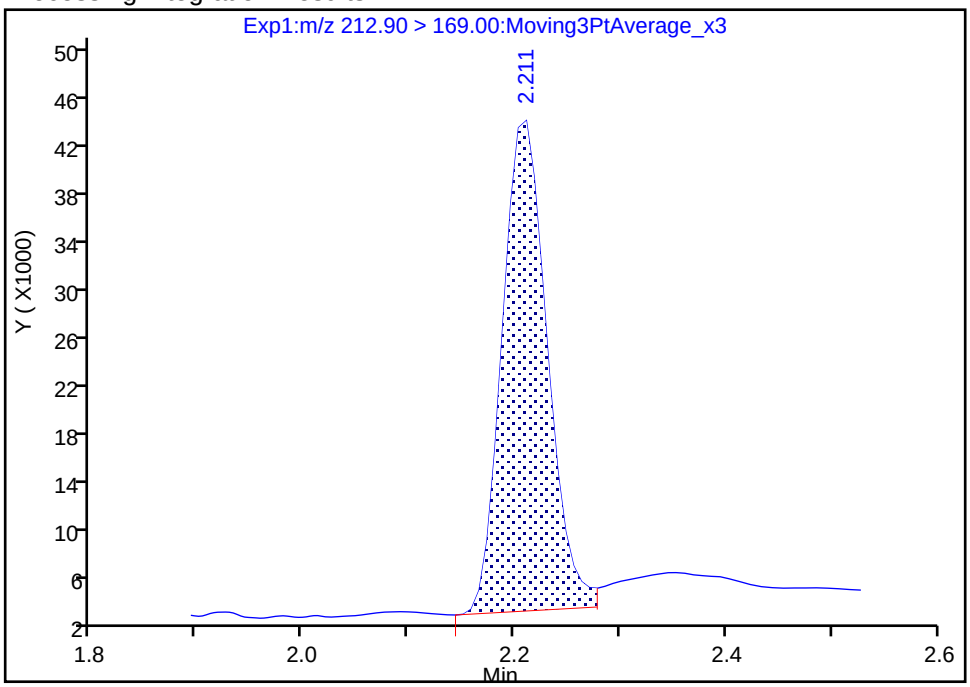
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_005.d				
Injection Date:	26-Sep-2019 21:30:47	Instrument ID:	A13		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

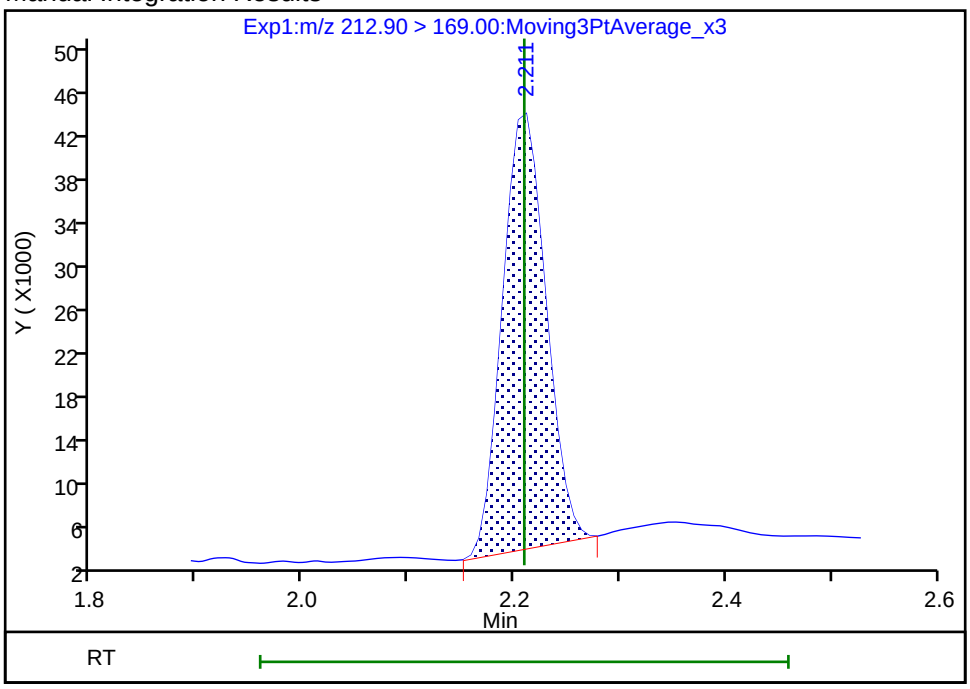
Processing Integration Results

RT: 2.21
Area: 120979
Amount: 0.050841
Amount Units: ng/ml



Manual Integration Results

RT: 2.21
Area: 115205
Amount: 0.049111
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:51:58

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

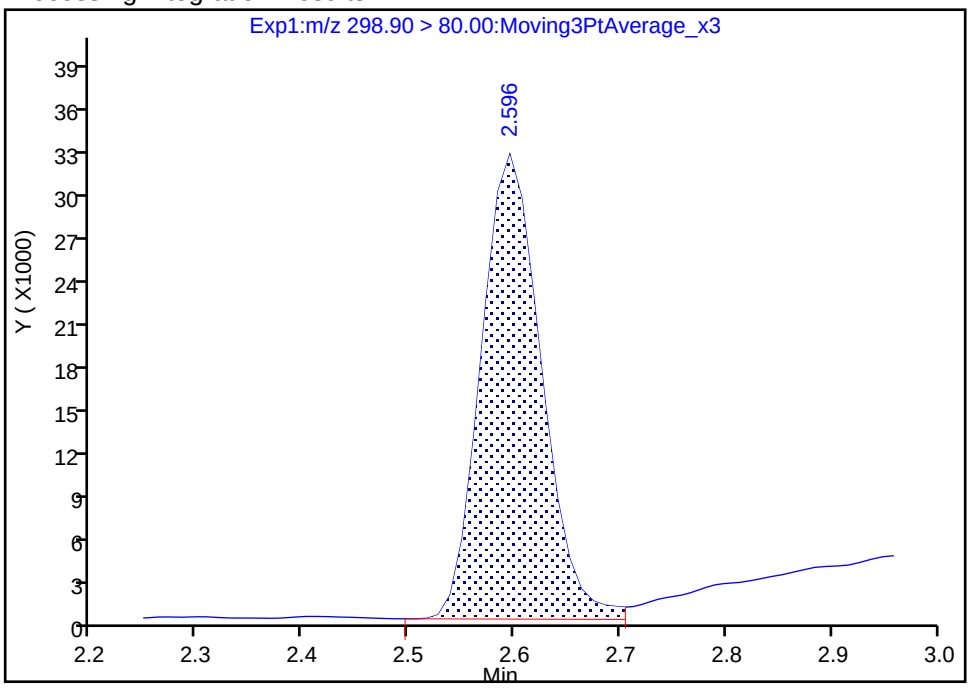
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_005.d				
Injection Date:	26-Sep-2019 21:30:47	Instrument ID:	A13		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

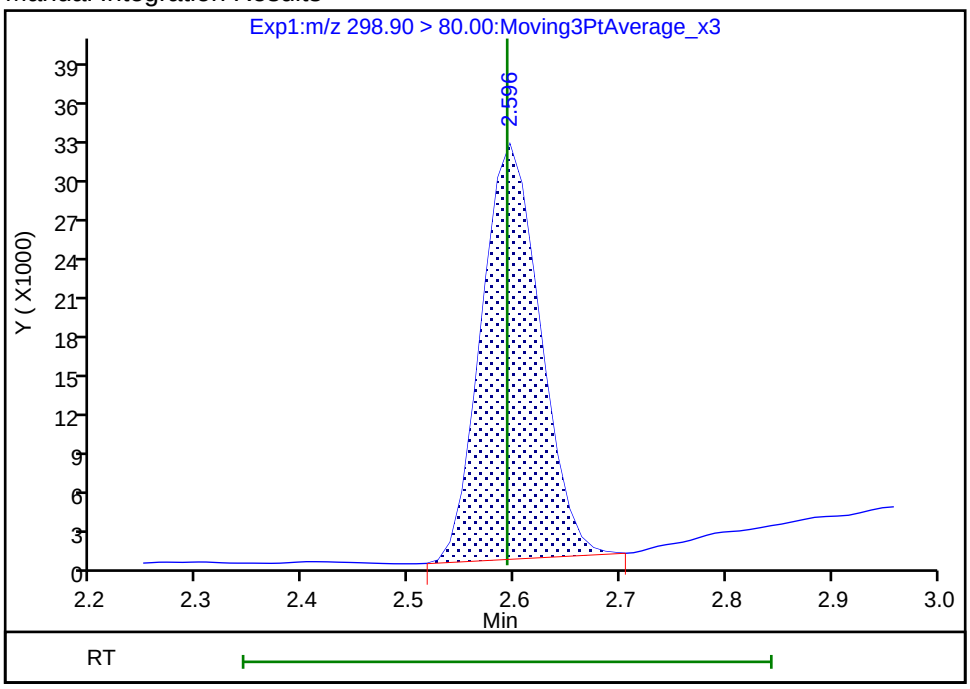
Processing Integration Results

RT: 2.60
Area: 128209
Amount: 0.044447
Amount Units: ng/ml



Manual Integration Results

RT: 2.60
Area: 123295
Amount: 0.043418
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:52:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

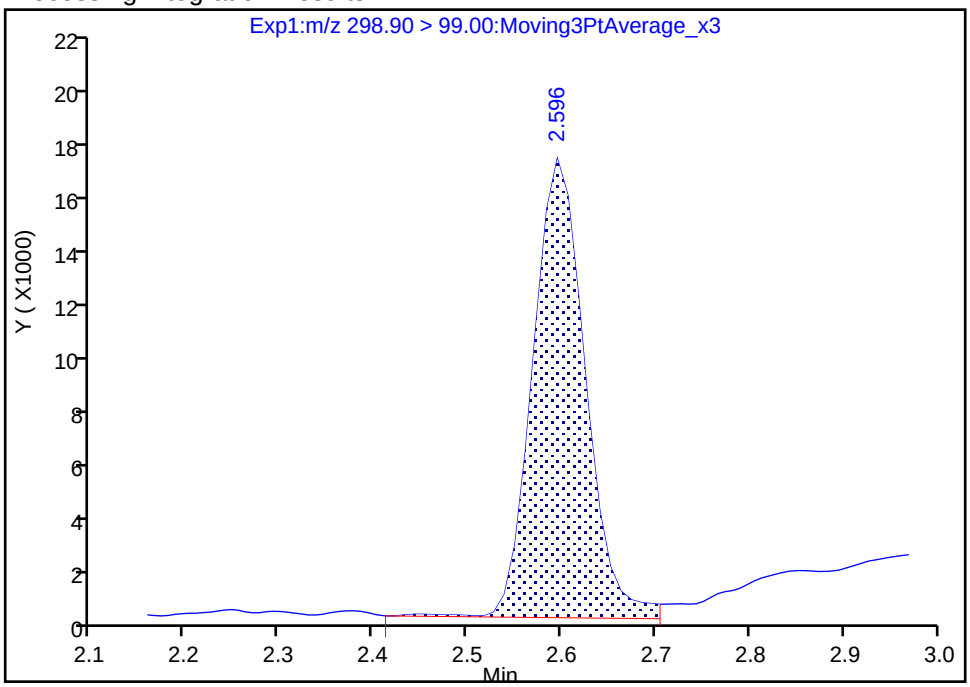
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_005.d
Injection Date: 26-Sep-2019 21:30:47 Instrument ID: A13
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

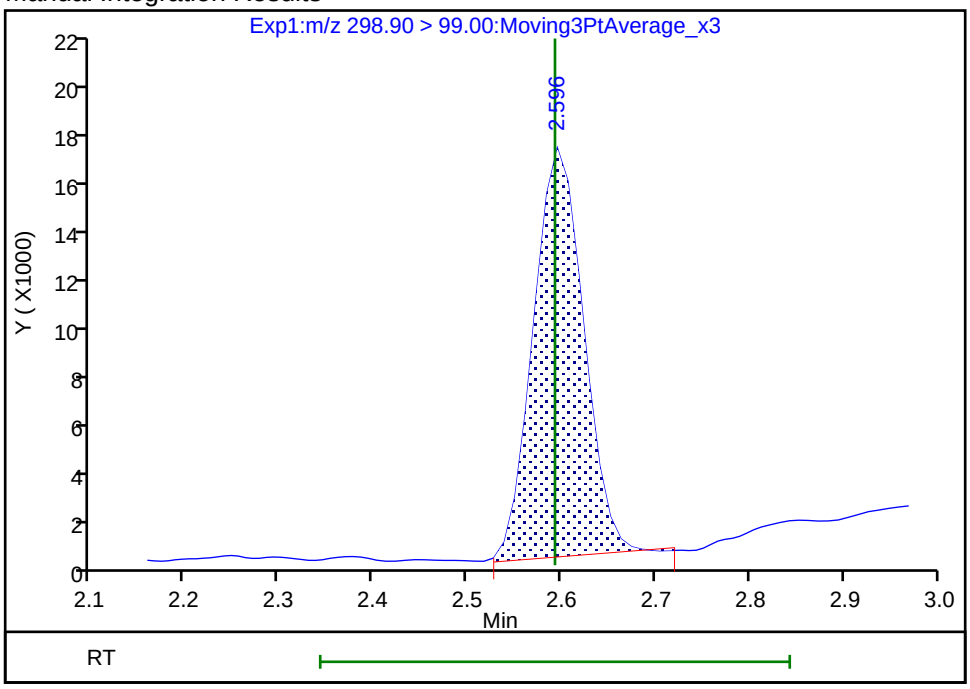
Processing Integration Results

RT: 2.60
Area: 66238
Amount: 0.044447
Amount Units: ng/ml



Manual Integration Results

RT: 2.60
Area: 62462
Amount: 0.043418
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:52:15
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 26-Sep-2019 21:40:18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 3
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:41 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 11:55:57
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.209	2.205	0.004	0.580	6431716	2.44		97.6	15971	
3 Perfluorobutanoic acid										M
212.90 > 169.00	2.216	2.209	0.007	1.003	554472	0.2474		98.9	193	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.568	2.559	0.009	0.675	5785587	2.46		98.3	19647	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.568	2.562	0.006	1.000	632478	0.2586		103	165	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.601	2.593	0.008	0.767	570906	0.2117	Target=1.87	95.8	97.1	M
298.90 > 99.00	2.601	2.593	0.008	0.767	307100		1.86(0.94-2.81)	95.8	78.8	M
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.918	2.910	0.008	1.000	328076	0.2388		102	3903	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.918	2.910	0.008	0.767	1181350	2.31		98.8	935	
D 10 13C2 PFHxA										
315.00 > 270.00	2.961	2.956	0.005	0.778	6577265	2.50		100	26463	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.961	2.956	0.005	1.000	597985	0.2395	Target=11.57	95.8	226	
313.00 > 119.00	2.961	2.956	0.005	1.000	55086		10.86(5.78-17.35)	95.8	96.3	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.972	2.971	0.001	0.876	508767	0.2360	Target=2.40	101	1309	
349.00 > 99.00	2.972	2.971	0.001	0.876	218181		2.33(1.20-3.60)	101	653	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.097	3.087	0.010	0.814	142056	2.54		102	1882	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.097	3.089	0.008	1.000	35693	0.2271		90.9	138	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.391	3.382	0.009	1.000	614105	0.2376	Target=3.70	95.0	417	
363.00 > 169.00	3.391	3.382	0.009	1.000	169901		3.61(1.85-5.54)	95.0	358	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.391	3.382	0.009	1.000	454578	0.2244	Target=2.98	98.6	508	M
399.00 > 99.00	3.391	3.382	0.009	1.000	149769		3.04(1.49-4.47)	98.6	219	
D 15 18O2 PFHxS										
403.00 > 84.00	3.391	3.382	0.009	0.891	3749329	2.32		98.0	44601	
D 17 13C4 PFHpA										
367.00 > 322.00	3.391	3.382	0.009	0.891	6196482	2.57		103	114894	
18 DONA										
377.00 > 251.00	3.441	3.433	0.008	0.822	1795862	0.2491	Target=2.81	106	4354	
377.00 > 85.00	3.441	3.433	0.008	0.822	605354		2.97(1.41-4.22)	106	6934	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.781	3.775	0.006	1.000	306835	0.2362		99.7	2729	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.781	3.775	0.006	0.993	1513367	2.52		106	7034	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.798	3.789	0.009	0.907	392285	0.2355	Target=4.19	99.0	2073	
449.00 > 99.00	3.798	3.789	0.009	0.907	95082		4.13(2.09-6.28)	99.0	414	
D 23 13C8 PFOA										
421.00 > 376.00	3.798	3.790	0.008	0.998	6150735	2.51		100	81680	
D 25 13C4 PFOA										
417.00 > 372.00	3.807	3.797	0.009	1.000	7163664	2.54		102	38451	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.807	3.798	0.008	1.000	746810	0.2506	Target=2.68	100	267	
413.00 > 169.00	3.807	3.798	0.008	1.000	277211		2.69(1.34-4.02)	100	703	
* 24 13C2 PFOA										
415.00 > 370.00	3.807	3.798	0.008		7725243	2.50			54648	
D 27 13C8 PFOS										
507.00 > 99.00	4.186	4.176	0.010	1.100	1796943	2.52		101	14358	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.186	4.181	0.005	1.000	332841	0.2196	Target=4.19	94.6	548	
499.00 > 99.00	4.186	4.181	0.005	1.000	81461		4.09(2.09-6.28)	94.6	297	
D 28 13C4 PFOS										
503.00 > 80.00	4.186	4.181	0.005	1.100	3329647	2.38		99.5	16384	
D 29 13C5 PFNA										
468.00 > 423.00	4.204	4.199	0.005	1.104	6216076	2.51		101	54712	
30 Perfluorononanoic acid										
463.00 > 419.00	4.204	4.199	0.005	1.000	588565	0.2427	Target=8.84	97.1	387	
463.00 > 169.00	4.204	4.199	0.005	1.000	63891		9.21(4.42-13.26)	97.1	209	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.399	4.393	0.006	1.051	832916	0.2362		101	3635	
D 33 13C8 FOSA										
506.00 > 78.00	4.470	4.460	0.010	1.174	4695943	2.47		98.9	29169	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.470	4.464	0.006	1.000	460489	0.2457		98.3	2506	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.552	4.544	0.008	1.088	280020	0.2413	Target=2.27	101	1383	
549.00 > 99.00	4.552	4.544	0.008	1.088	110272		2.54(1.13-3.40)	101	525	
D 36 13C2 PFDA										
515.00 > 470.00	4.583	4.572	0.011	1.204	6772428	2.57		103	76747	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.583	4.572	0.011	1.000	675209	0.2597	Target=10.36	104	811	
513.00 > 169.00	4.583	4.572	0.011	1.000	66962		10.08(5.18-15.54)	104	133	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.583	4.574	0.009	1.000	335615	0.2519		105	1531	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.583	4.574	0.009	1.204	1664149	2.33		97.3	6532	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.749	4.741	0.008	1.248	4299595	2.46		98.6	13600	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.749	4.744	0.005	1.000	345584	0.2549		102	4169	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.884	4.876	0.008	1.167	264846	0.2439	Target=2.70	101	1976	
599.00 > 99.00	4.884	4.876	0.008	1.167	97836		2.71(1.35-4.05)	101	854	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.904	4.897	0.007	1.288	5421232	13.4		107	10944	
D 43 13C2 PFUnA										
565.00 > 520.00	4.914	4.906	0.008	1.291	6370487	2.58		103	57849	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.914	4.907	0.007	1.000	517648	0.2441	Target=9.31	97.7	649	
563.00 > 169.00	4.914	4.907	0.007	1.000	55171		9.38(4.65-13.96)	97.7	164	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.914	4.909	0.005	1.002	101547	0.2235		89.4	512	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.925	4.915	0.010	1.294	4507564	2.58		103	13129	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.925	4.922	0.003	1.000	330388	0.2429		97.2	3557	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.925	4.924	0.001	1.294	2490403	2.40		96.2	53.6	
50 NMeFOSA										
512.00 > 169.00	4.937	4.930	0.007	1.002	243430	0.2537		101	374	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.063	5.054	0.009	1.210	1653797	0.2479		105	8779	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.072	5.068	0.004	1.332	5302906	12.5		99.8	10805	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.089	5.084	0.005	1.003	121124	0.2721		109	832	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.107	5.101	0.006	1.342	2651960	2.47		98.8	377	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.115	5.110	0.005	1.002	273619	0.2606		104	243	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.230	5.217	0.013	1.374	6780947	2.64		105	61983	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.230	5.219	0.011	1.000	627442	0.2413	Target=8.07	96.5	250	
613.00 > 169.00	5.230	5.219	0.011	1.000	80406		7.80(4.03-12.10)	96.5	321	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.240	5.236	0.004	1.143	221596	0.2560		106	725	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.471	5.460	0.011	1.307	102863	0.2451	Target=0.52	101	439	
699.00 > 99.00	5.471	5.460	0.011	1.307	204471		0.50(0.26-0.77)	101	1943	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.508	5.504	0.004	1.053	575856	0.2313	Target=6.35	92.5	230	
663.00 > 169.00	5.515	5.504	0.011	1.054	88768		6.49(3.18-9.53)	92.5	241	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.783	5.774	0.009	1.519	5706923	2.51		101	37603	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.783	5.775	0.008	1.000	50590	0.2343	Target=0.85	93.7	490	
713.00 > 219.00	5.783	5.775	0.008	1.000	64839		0.78(0.43-1.28)	93.7	1880	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.311	6.305	0.006	1.658	4537880	2.50		99.9	17300	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.320	6.308	0.012	1.001	431757	0.2376	Target=7.95	95.0	36.6	
813.00 > 169.00	6.311	6.308	0.003	1.000	50300		8.58(3.98-11.93)	95.0	248	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.920	6.905	0.015	1.096	297113	0.2696	Target=8.96	108	89.9	
913.00 > 169.00	6.920	6.905	0.015	1.096	31779		9.35(4.48-13.45)	108	277	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00015 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:26:43 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d

Injection Date: 26-Sep-2019 21:40:18 Instrument ID: A13

Lims ID: IC L3 Full

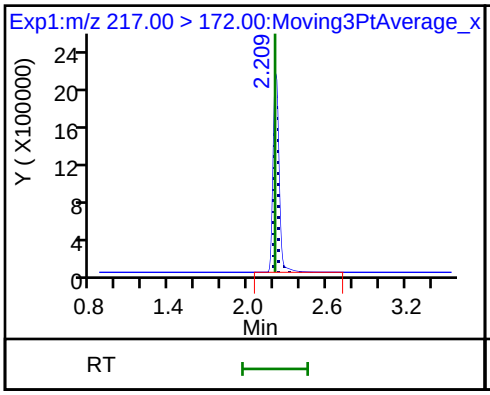
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4

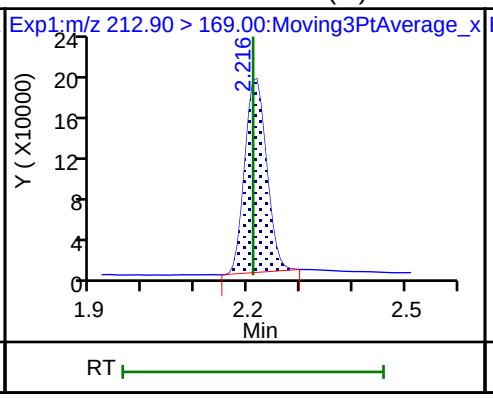
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

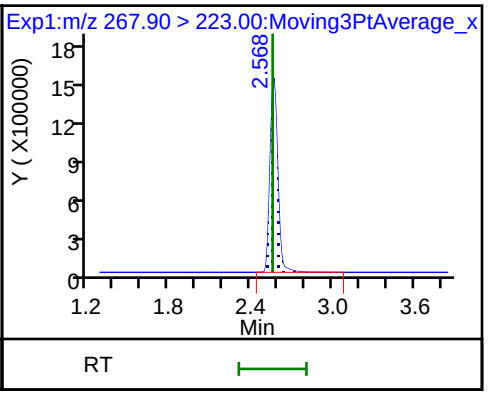
D 2 13C4 PFBA



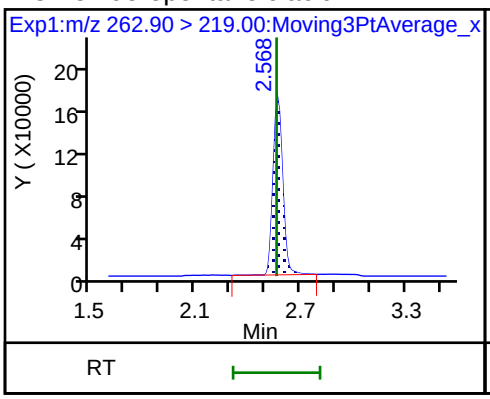
3 Perfluorobutanoic acid (M)



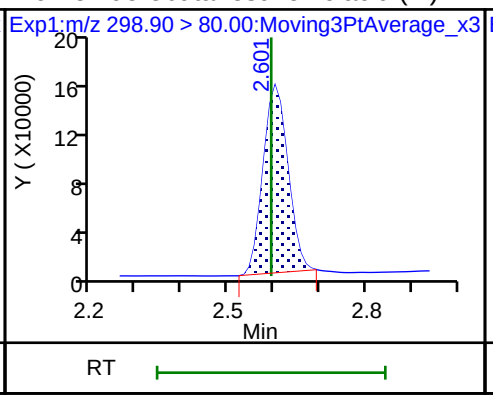
D 4 13C5 PFPeA



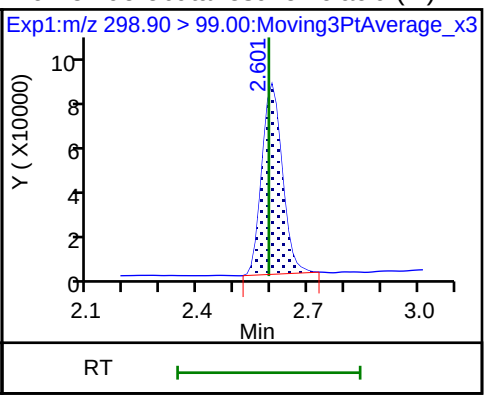
5 Perfluoropentanoic acid



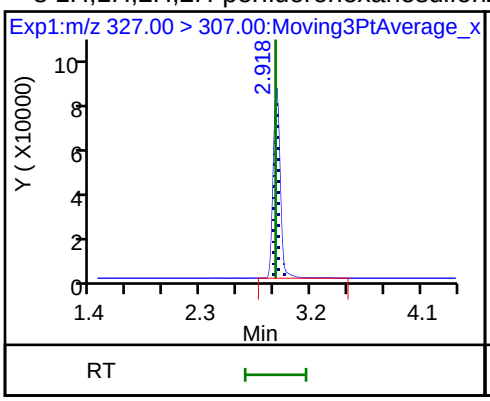
6 Perfluorobutanesulfonic acid (M)



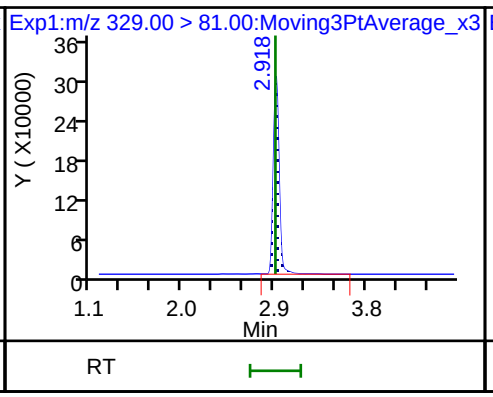
6 Perfluorobutanesulfonic acid (M)



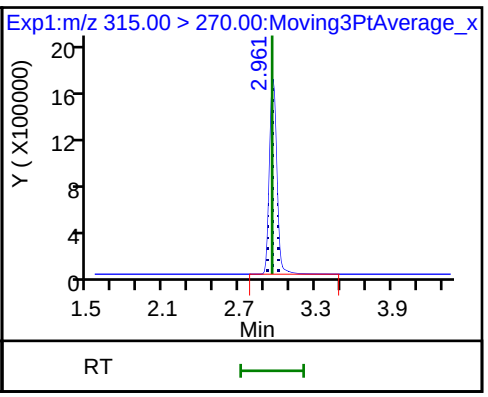
8 1H,1H,2H,2H-perfluorohexanesulfon



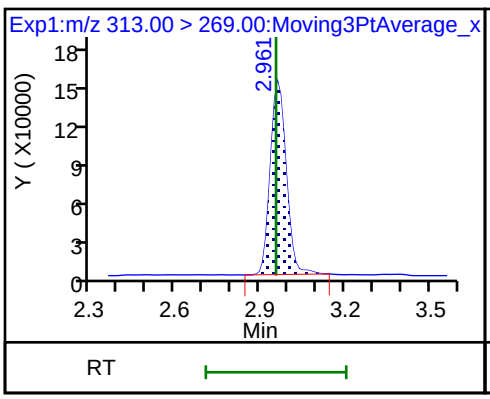
D 7 M2-4:2 FTS



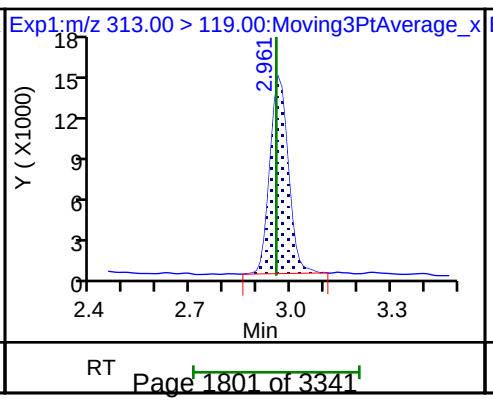
D 10 13C2 PFHxA



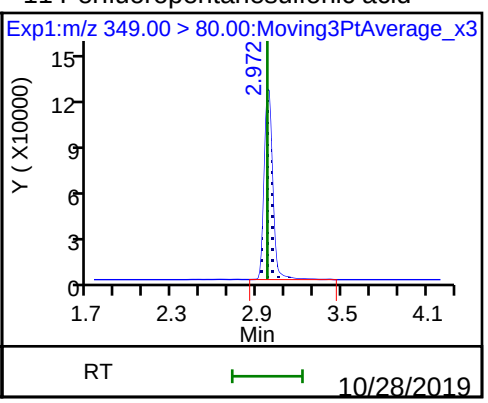
9 Perfluorohexanoic acid



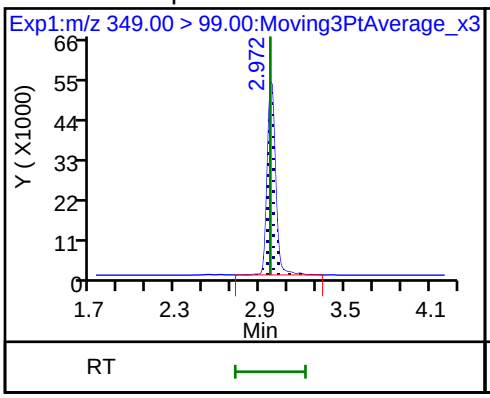
9 Perfluorohexanoic acid



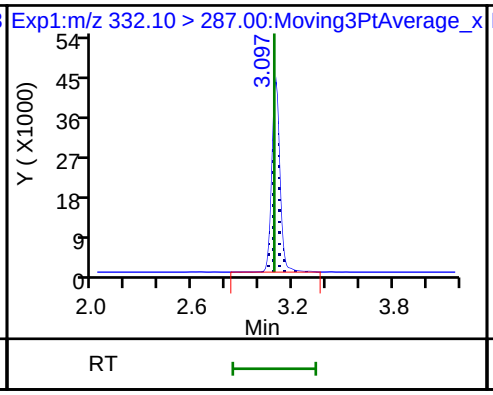
11 Perfluoropentanesulfonic acid



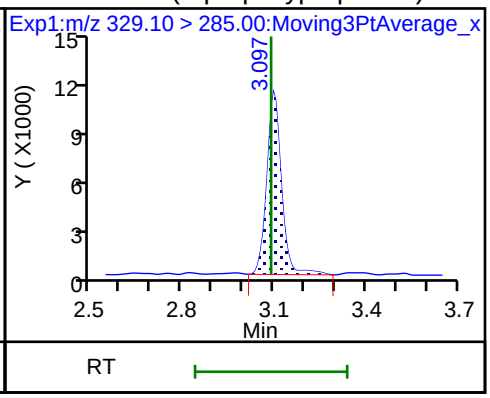
11 Perfluoropentanesulfonic acid



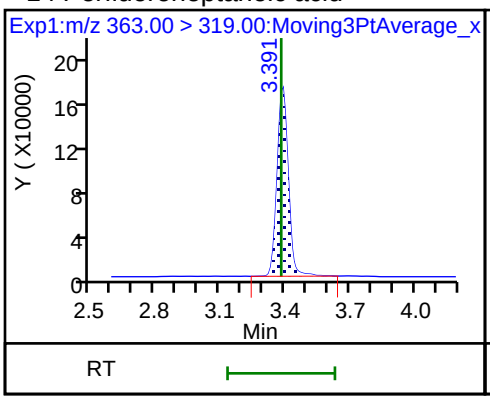
D 12 13C3 HFPO-DA



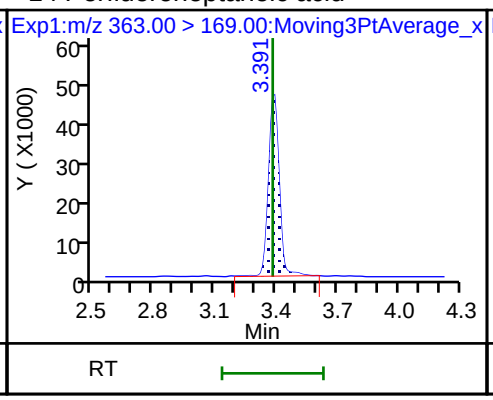
13 Perfluoro(2-propoxypropanoic) acid



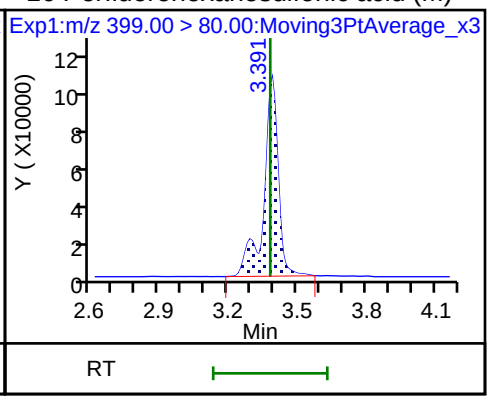
14 Perfluoroheptanoic acid



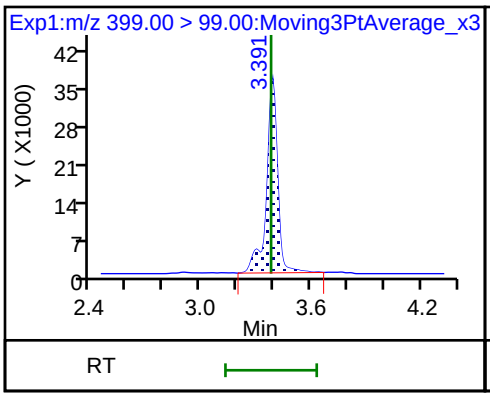
14 Perfluoroheptanoic acid



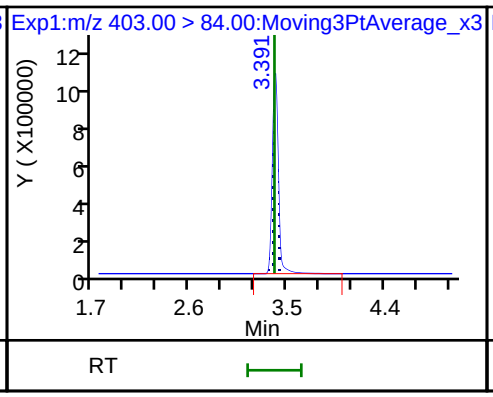
16 Perfluorohexanesulfonic acid (M)



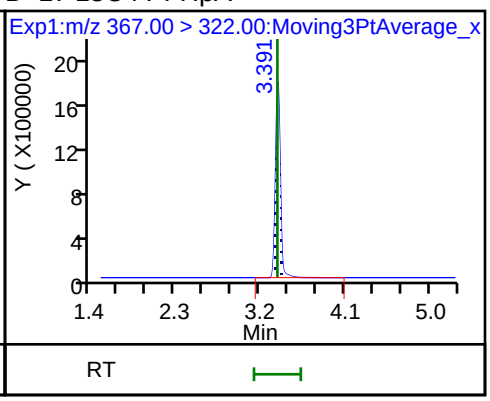
16 Perfluorohexanesulfonic acid



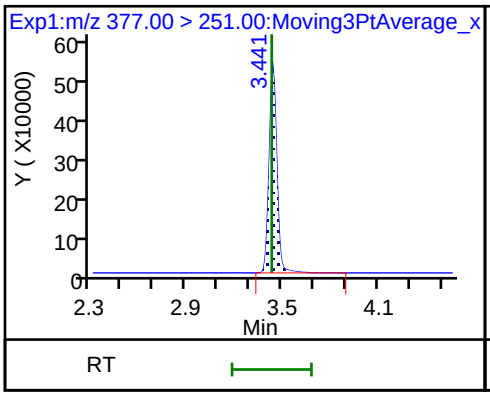
D 15 18O2 PFHxS



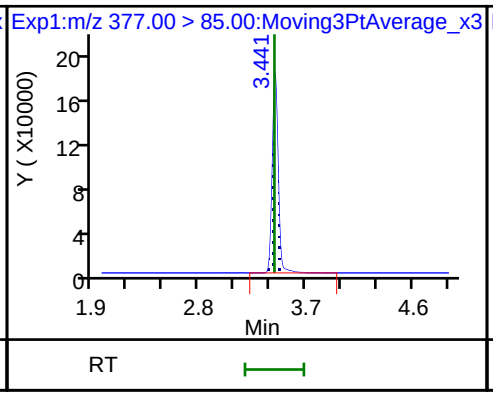
D 17 13C4 PFHpA



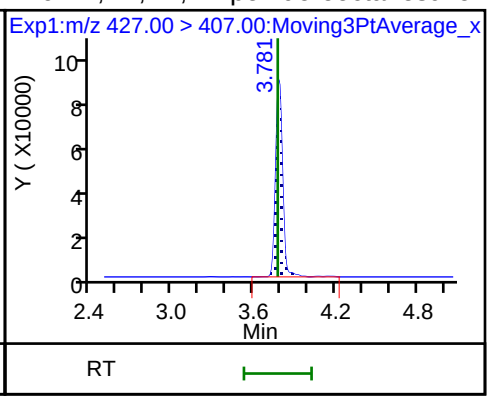
18 DONA



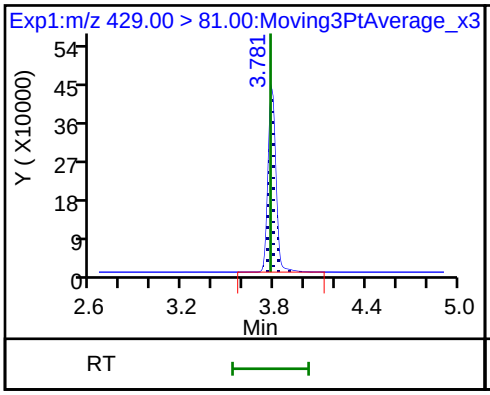
18 DONA



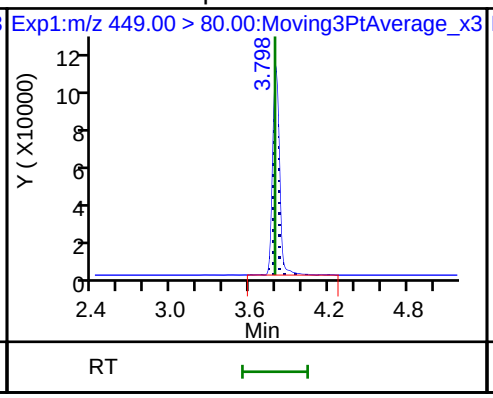
19 1H,1H,2H,2H-perfluorooctanesulfoni



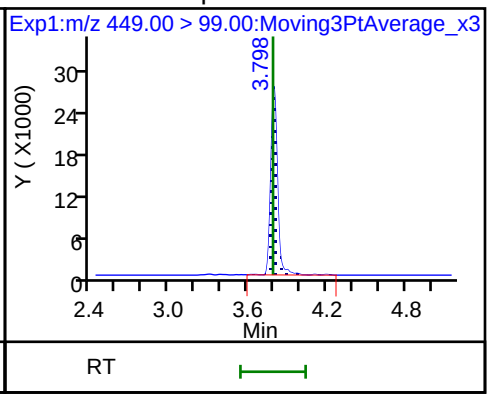
D 20 M2-6:2 FTS



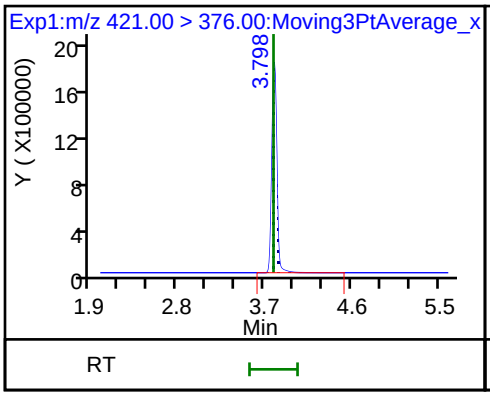
21 Perfluoroheptanesulfonic acid



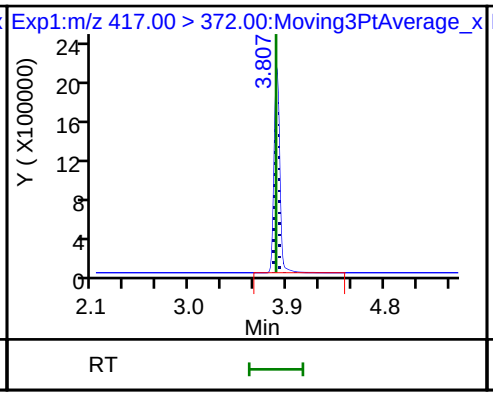
21 Perfluoroheptanesulfonic acid



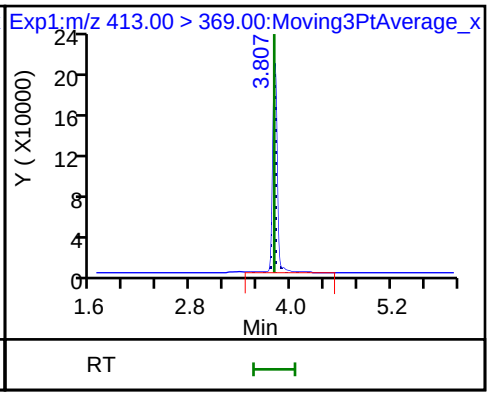
D 23 13C8 PFOA



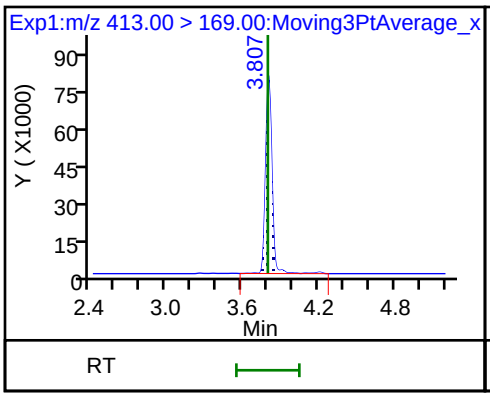
D 25 13C4 PFOA



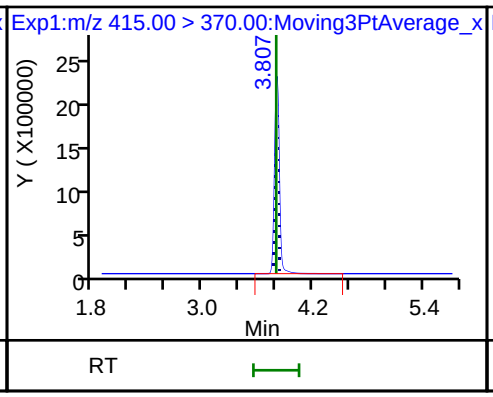
22 Perfluorooctanoic acid



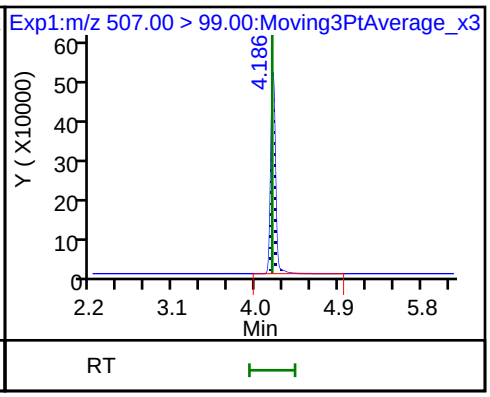
22 Perfluorooctanoic acid



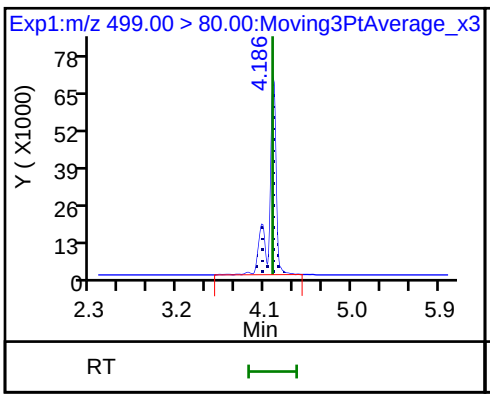
* 24 13C2 PFOA



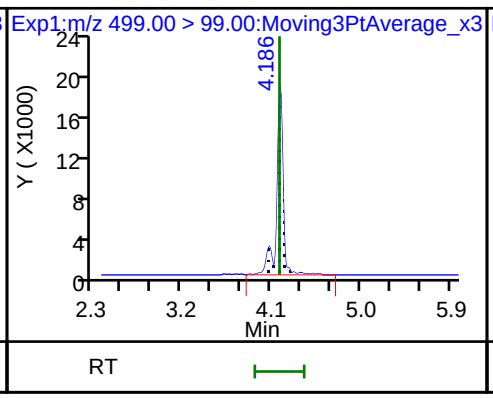
D 27 13C8 PFOS



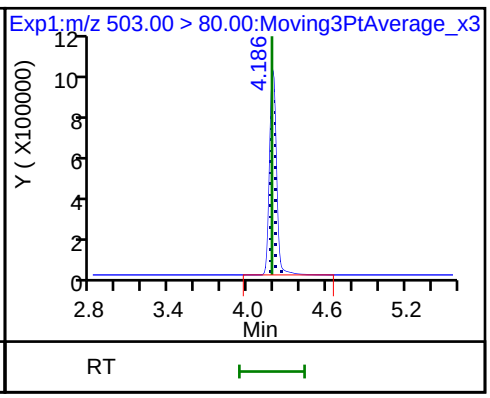
26 Perfluorooctanesulfonic acid



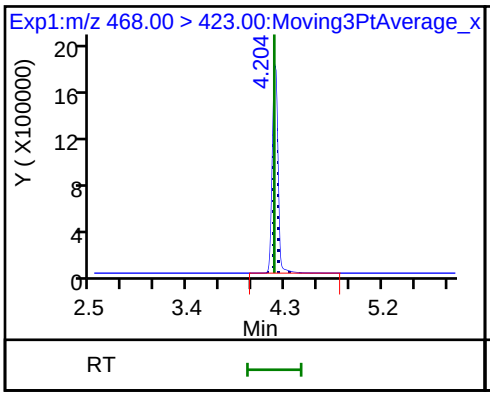
26 Perfluorooctanesulfonic acid



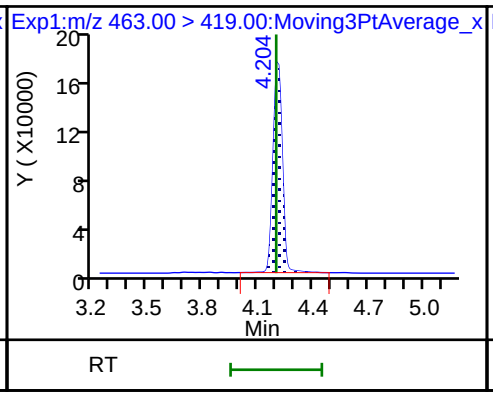
D 28 13C4 PFOS



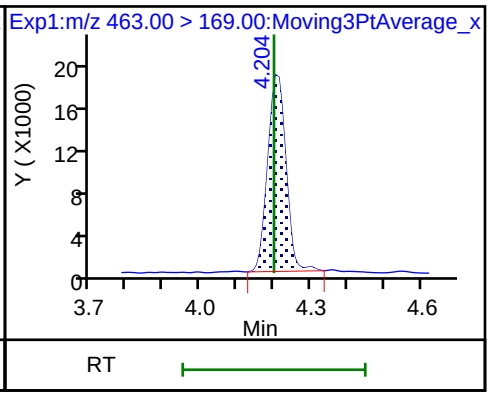
D 29 13C5 PFNA



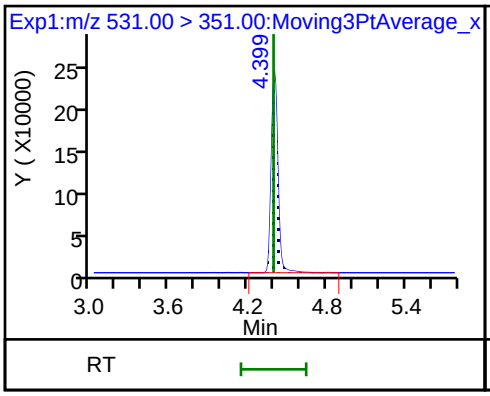
30 Perfluorononanoic acid



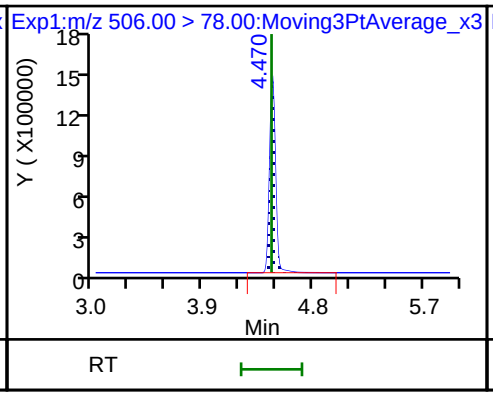
30 Perfluorononanoic acid



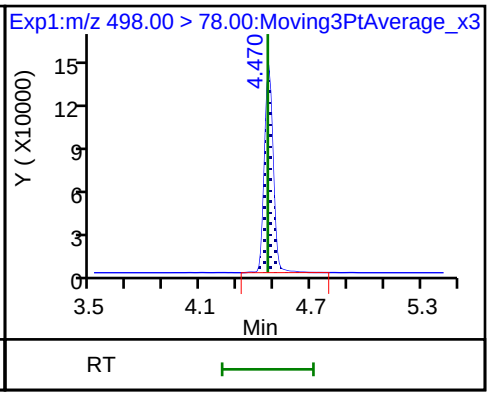
31 9-Chlorohexadecafluoro-3-oxanonanoic acid



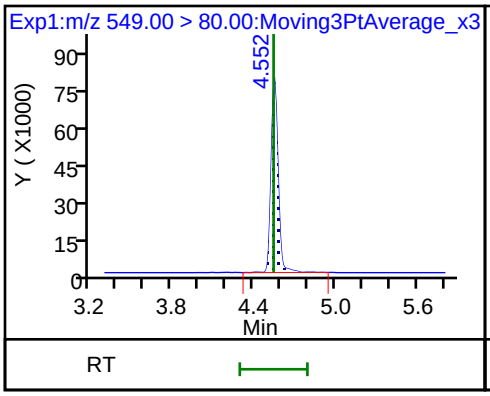
D 33 13C8 FOSA



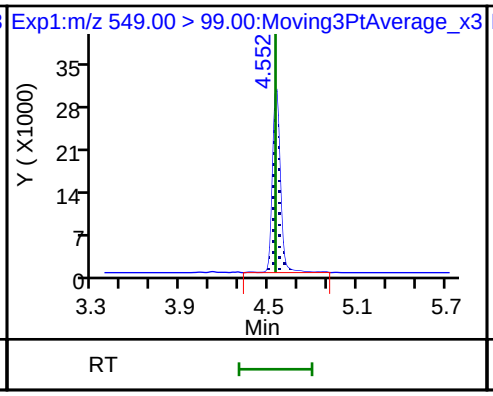
32 Perfluorooctanesulfonamide



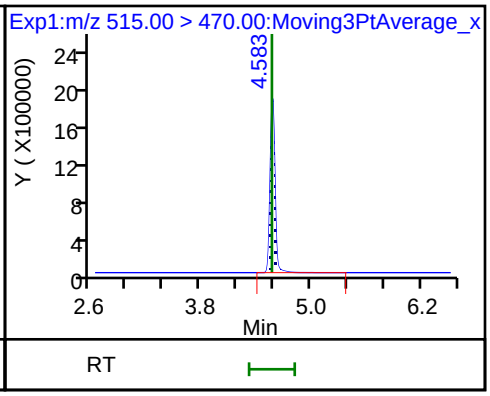
38 Perfluorononanesulfonic acid



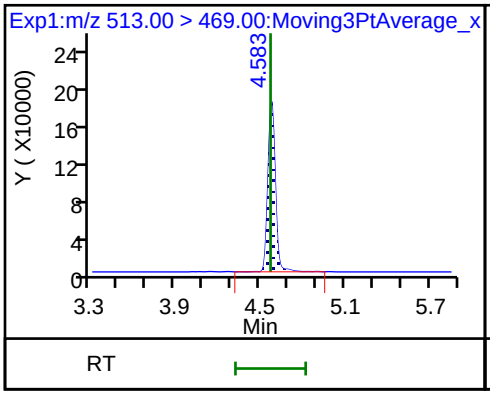
38 Perfluorononanesulfonic acid



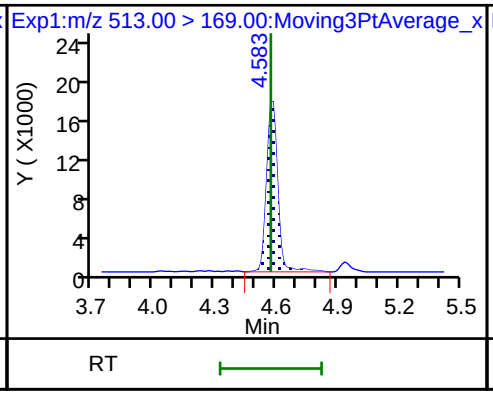
D 36 13C2 PFDA



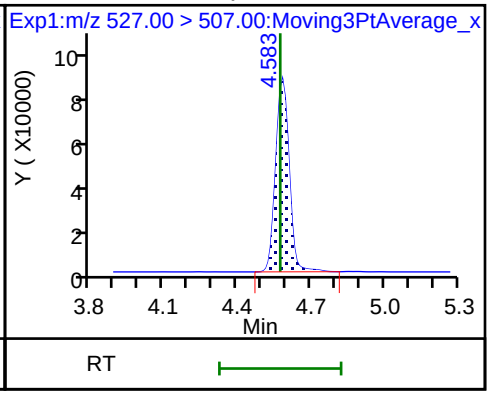
34 Perfluorodecanoic acid



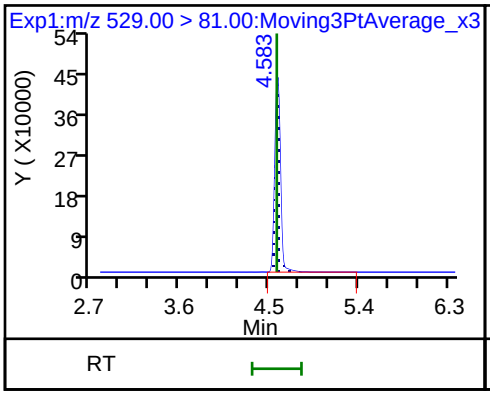
34 Perfluorodecanoic acid



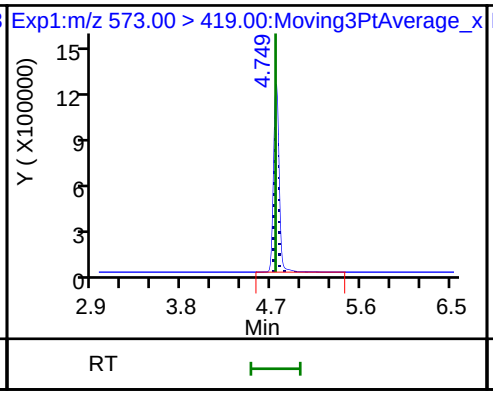
35 1H,1H,2H,2H-perfluorodecanesulfoni



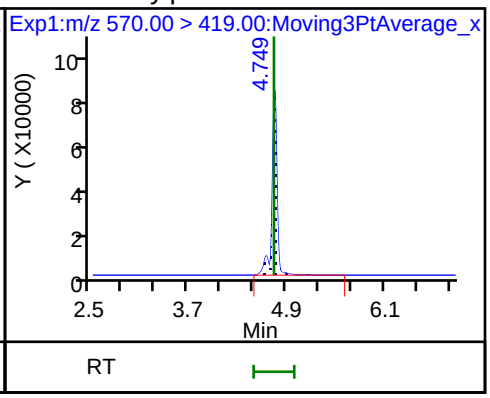
D 37 M2-8:2 FTS



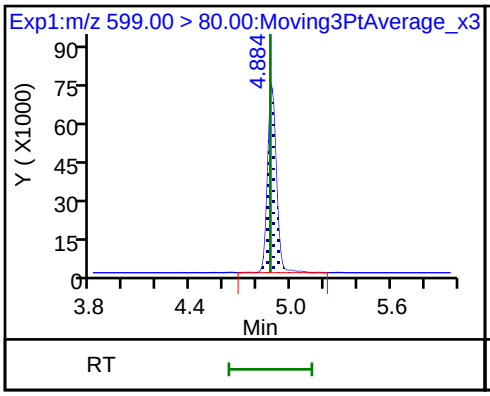
D 40 d3-NMeFOSAA



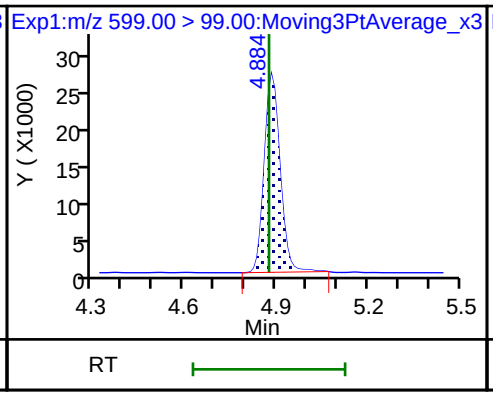
41 N-methylperfluorooctanesulfonamido



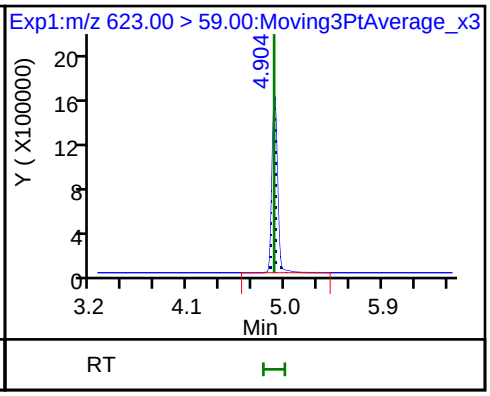
48 Perfluorodecanesulfonic acid



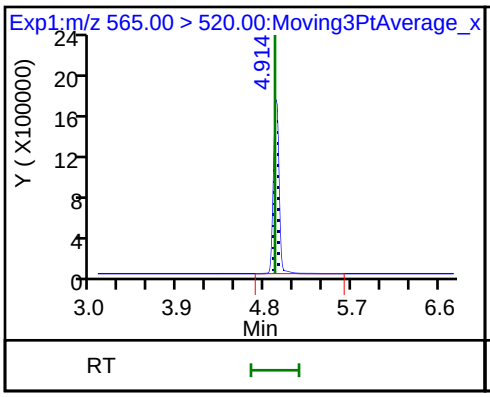
48 Perfluorodecanesulfonic acid



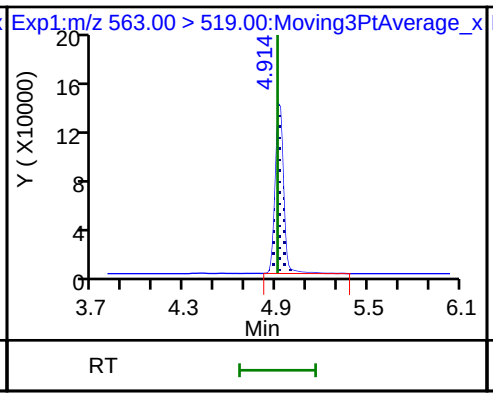
D 46 d7-N-MeFOSE-M



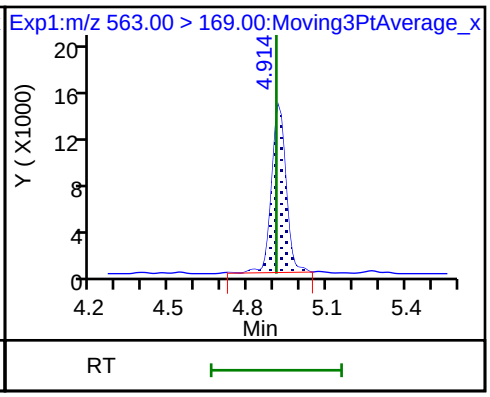
D 43 13C2 PFUnA



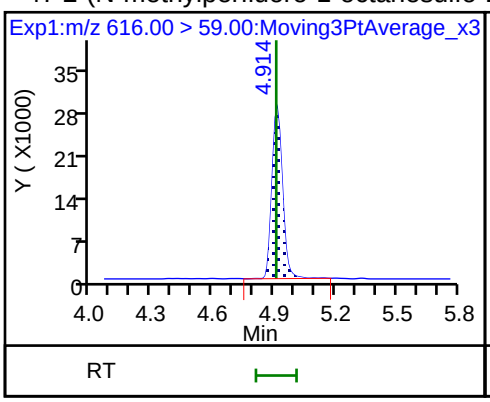
42 Perfluoroundecanoic acid



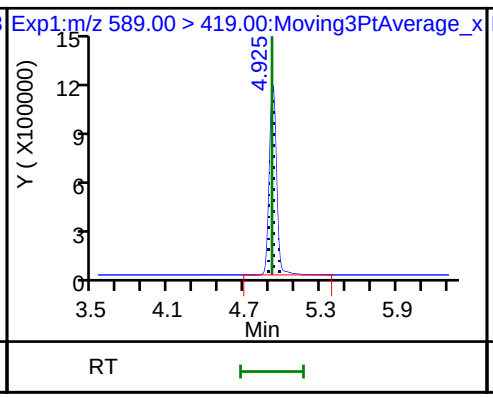
42 Perfluoroundecanoic acid



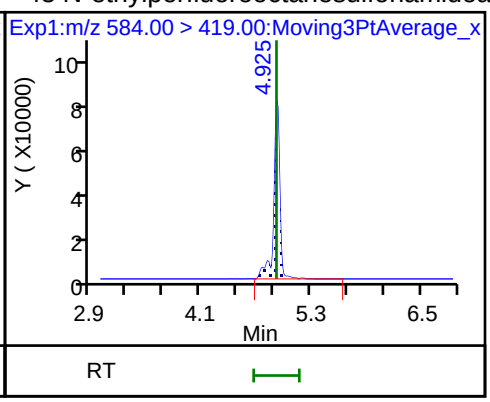
47 2-(N-methylperfluoro-1-octanesulfo



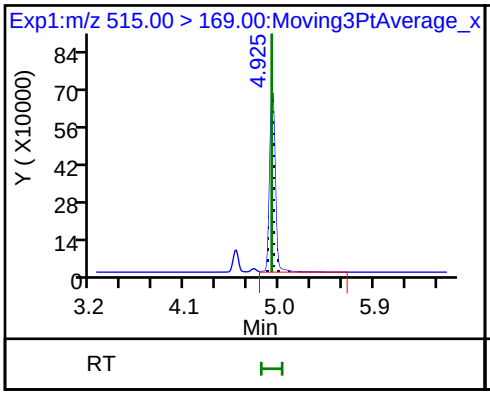
D 44 d5-NEtFOSAA



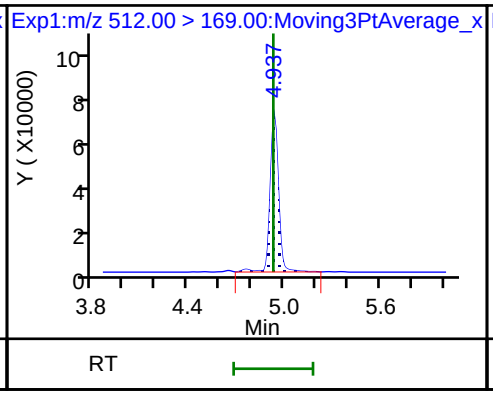
45 N-ethylperfluorooctanesulfonamidoa



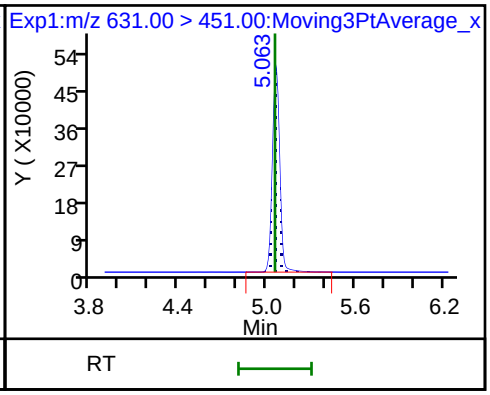
D 49 d-N-MeFOSA-M



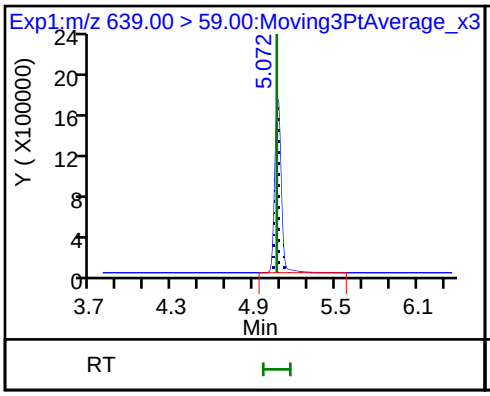
50 NMeFOSA



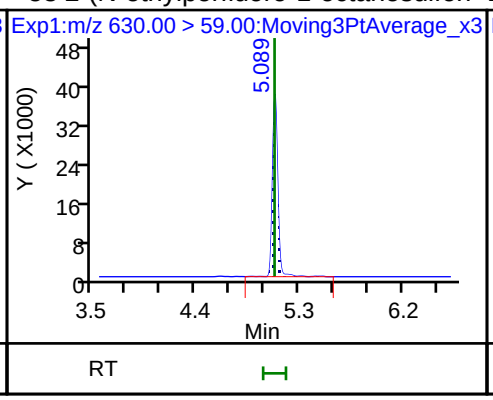
51 11-Chloroeicosafluoro-3-oxaundecan



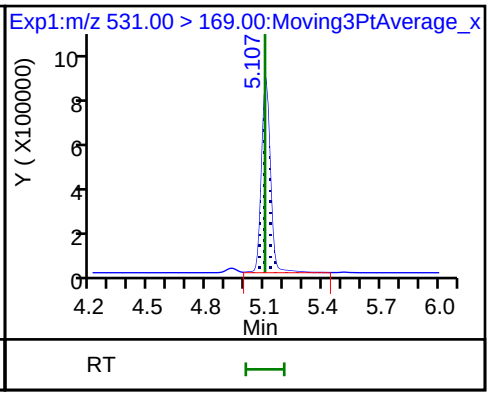
D 52 d9-N-EtFOSE-M



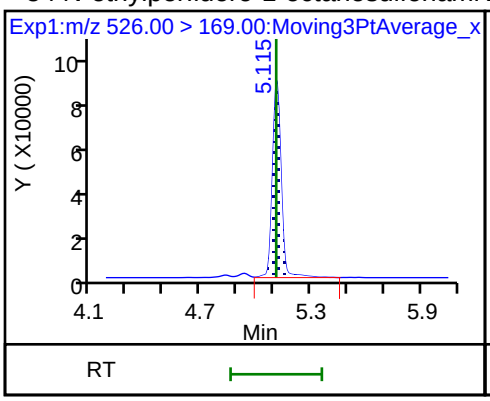
53 2-(N-ethylperfluoro-1-octanesulfon



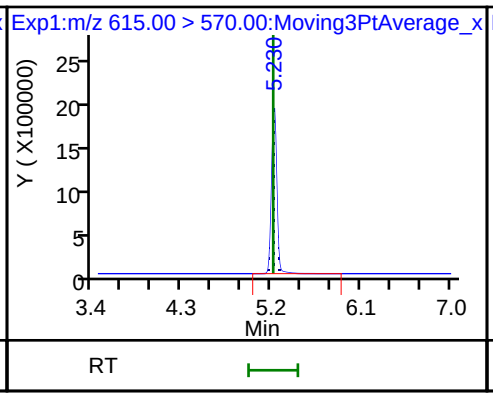
D 55 d-N-EtFOSA-M



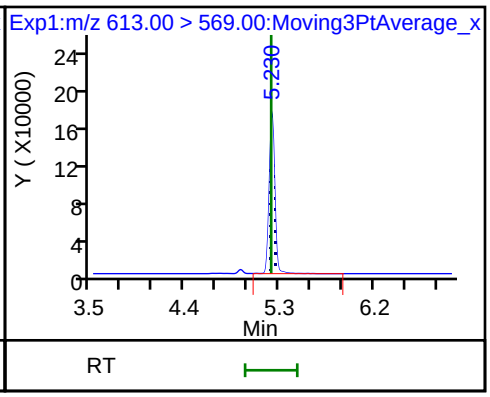
54 N-ethylperfluoro-1-octanesulfonami



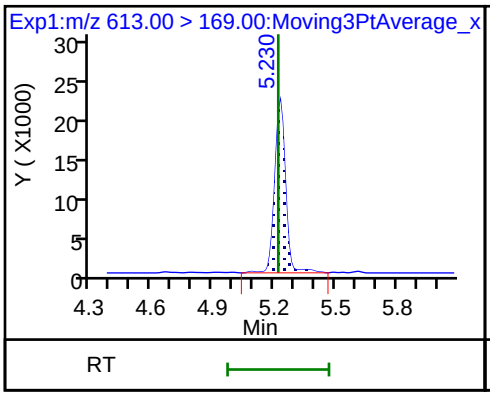
D 57 13C2 PFDoA



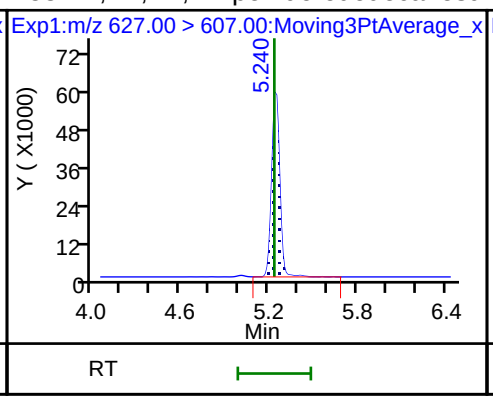
56 Perfluorododecanoic acid



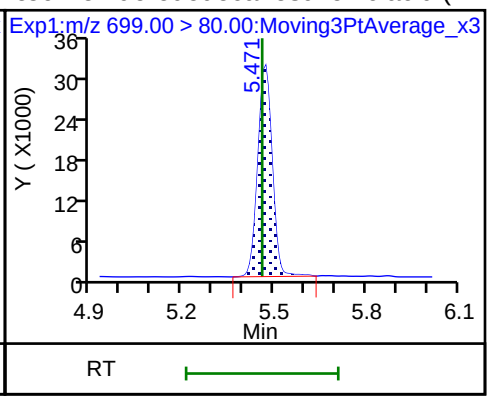
56 Perfluorododecanoic acid



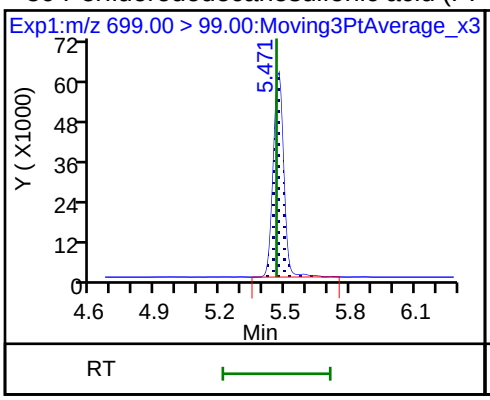
58 1H,1H,2H,2H-perfluorododecanesulfo



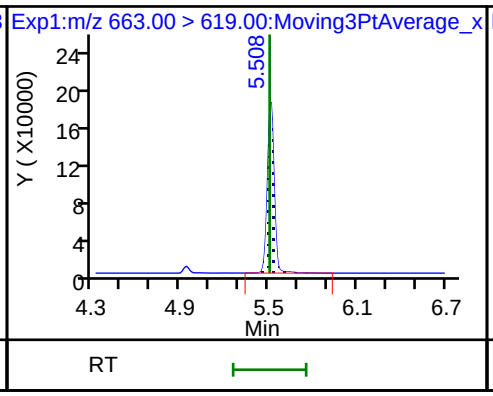
59 Perfluorododecanesulfonic acid (PF



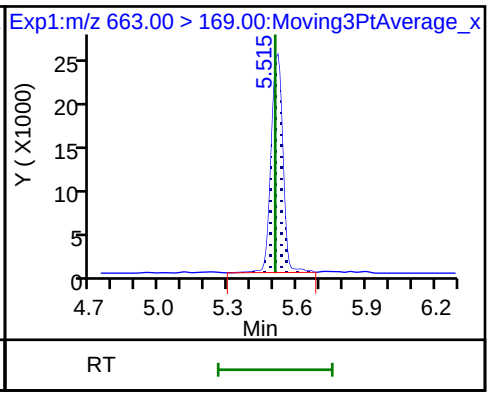
59 Perfluorododecanesulfonic acid (PF



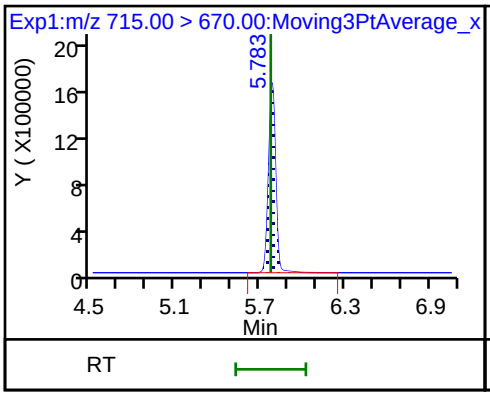
60 Perfluorotridecanoic acid



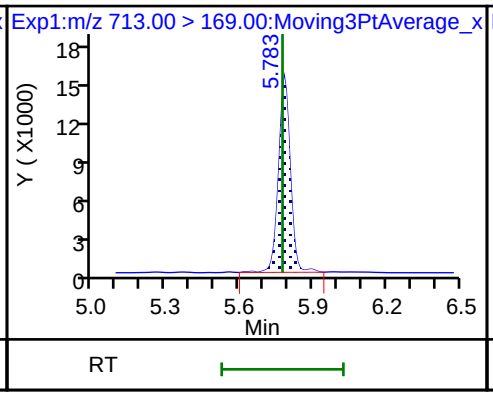
60 Perfluorotridecanoic acid



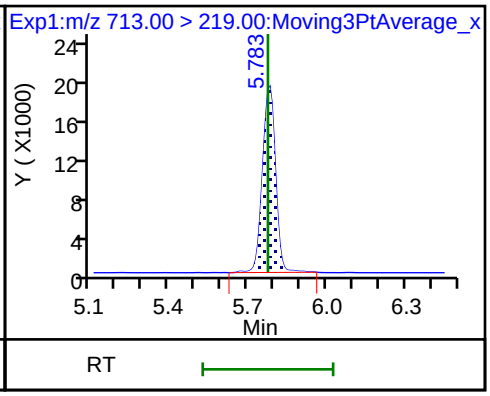
D 61 13C2 PFTeDA



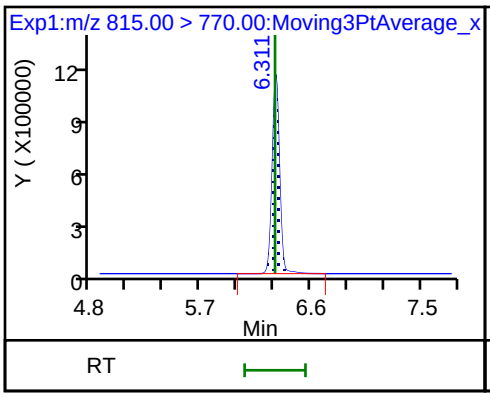
62 Perfluorotetradecanoic acid



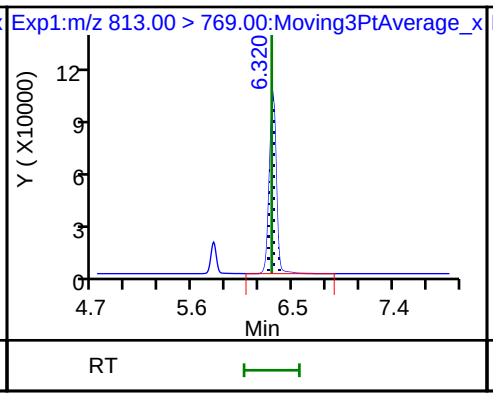
62 Perfluorotetradecanoic acid



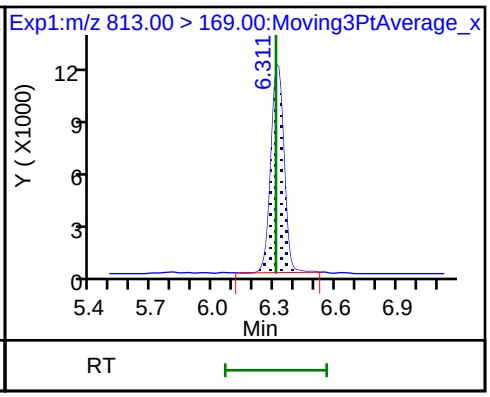
D 63 13C2 PFHxDA



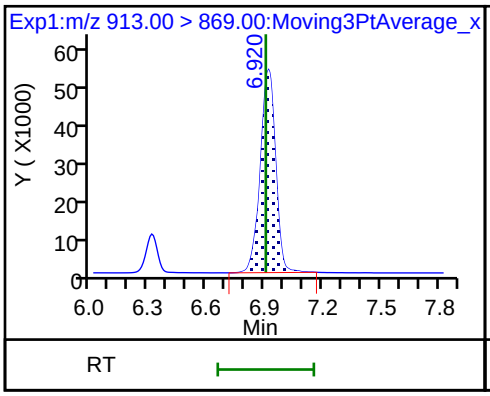
64 Perfluorohexadecanoic acid



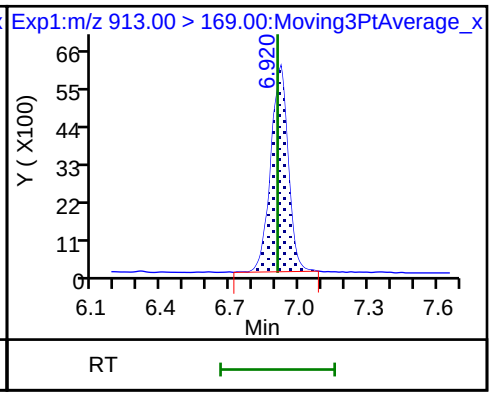
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

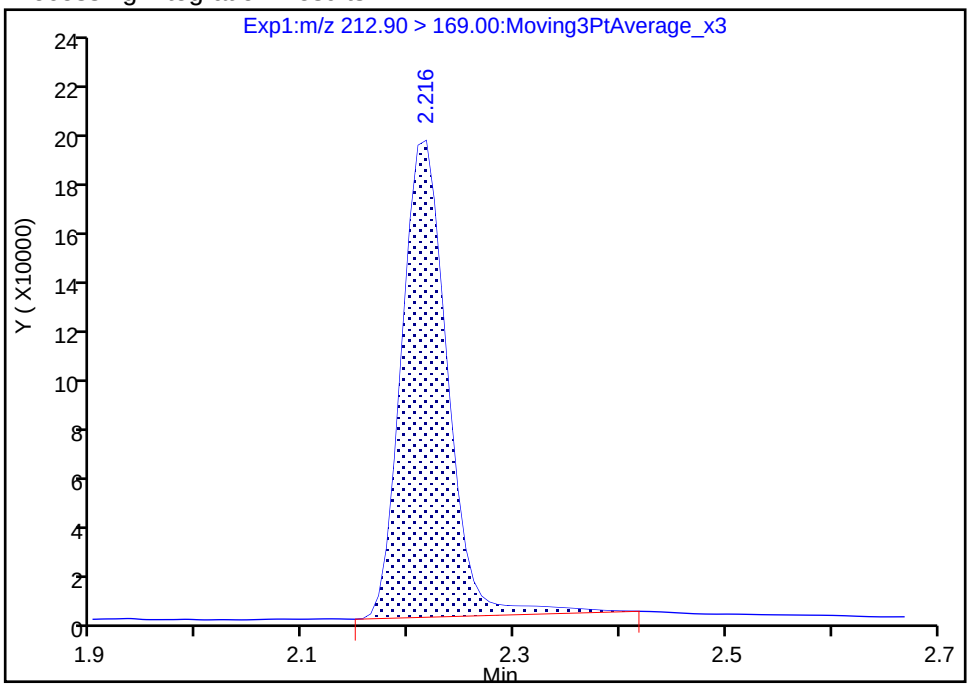
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d				
Injection Date:	26-Sep-2019 21:40:18	Instrument ID:	A13		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

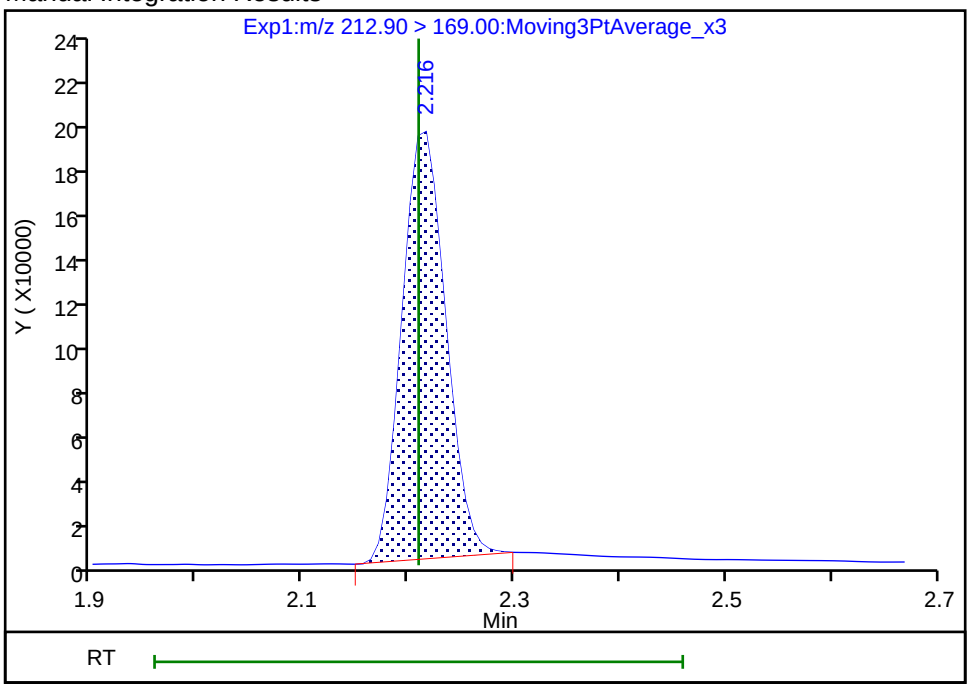
Processing Integration Results

RT: 2.22
Area: 583335
Amount: 0.258334
Amount Units: ng/ml



Manual Integration Results

RT: 2.22
Area: 554472
Amount: 0.247359
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:53:50
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

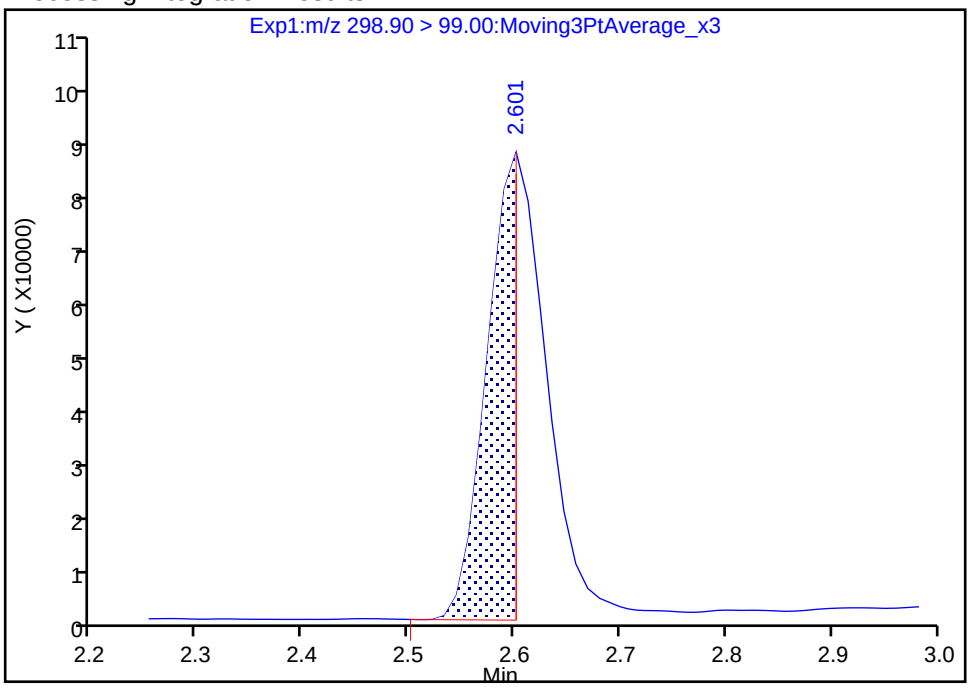
Data File:	\\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d				
Injection Date:	26-Sep-2019 21:40:18	Instrument ID:	A13		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

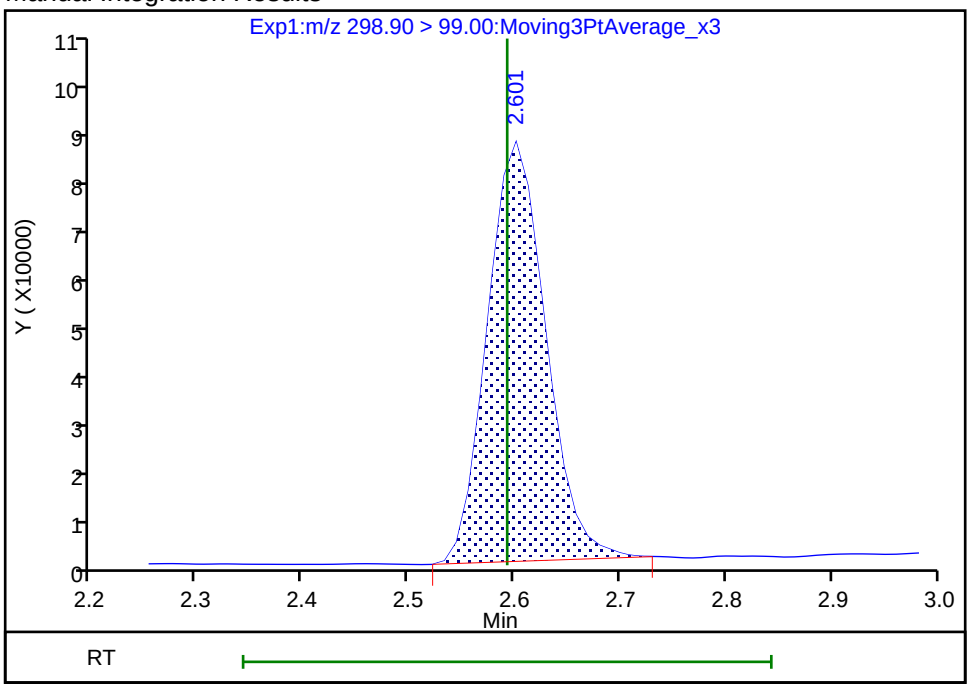
Processing Integration Results

RT: 2.60
Area: 150285
Amount: 0.225106
Amount Units: ng/ml



Manual Integration Results

RT: 2.60
Area: 307100
Amount: 0.211658
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:54:02

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

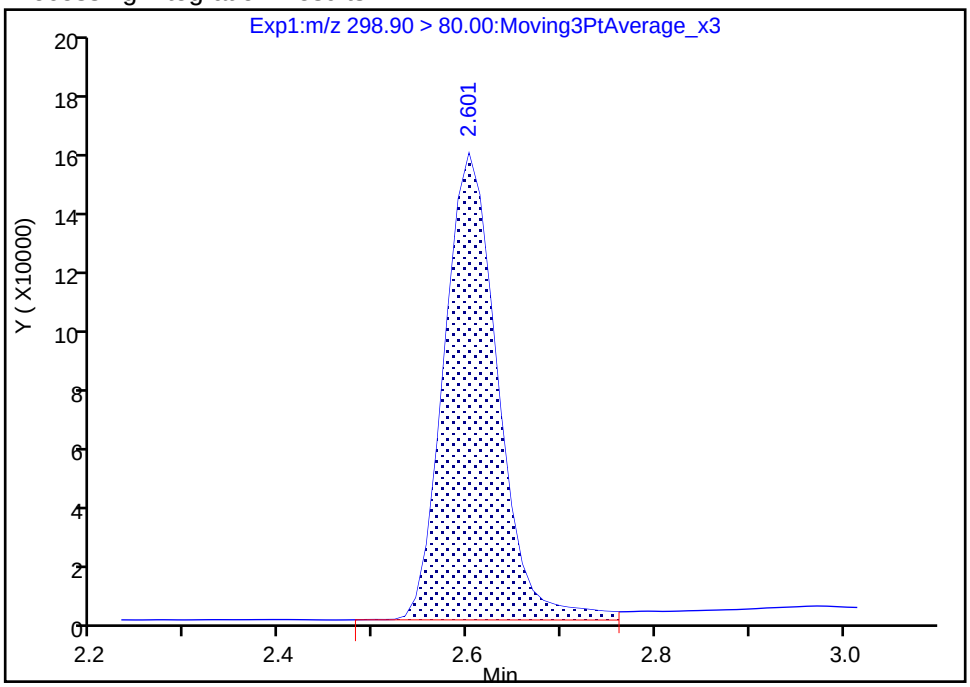
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d
Injection Date: 26-Sep-2019 21:40:18 Instrument ID: A13
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

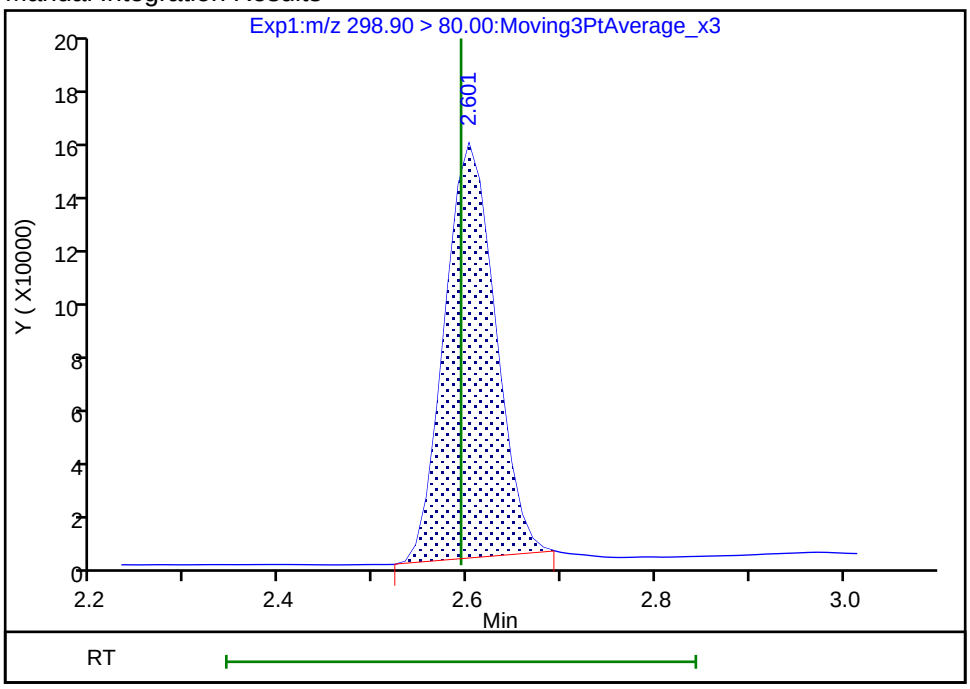
Processing Integration Results

RT: 2.60
Area: 613359
Amount: 0.225106
Amount Units: ng/ml



Manual Integration Results

RT: 2.60
Area: 570906
Amount: 0.211658
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:54:10
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

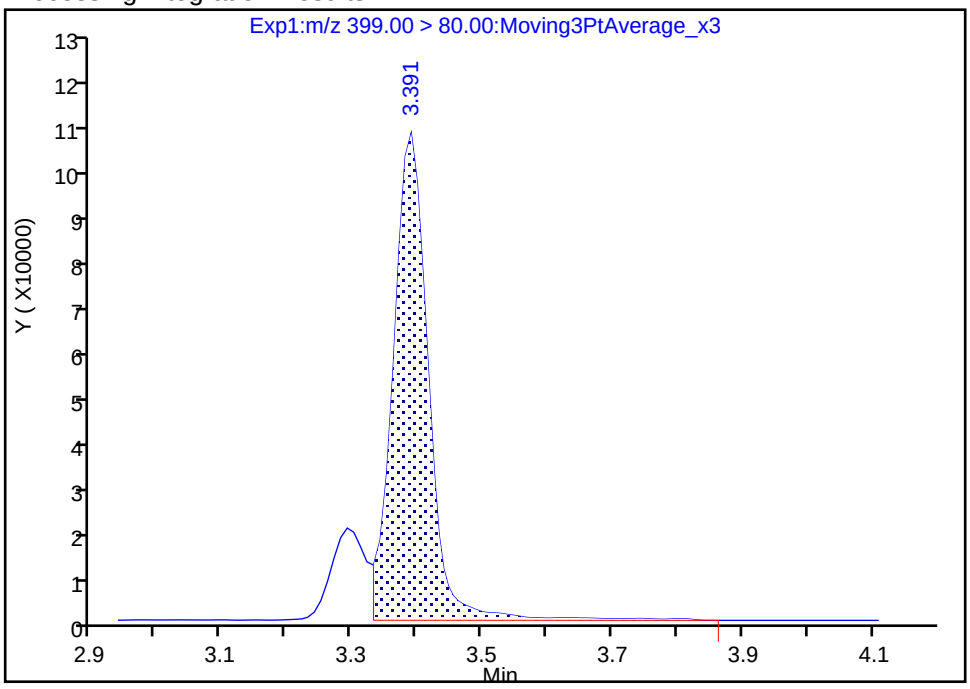
Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_006.d
Injection Date: 26-Sep-2019 21:40:18 Instrument ID: A13
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

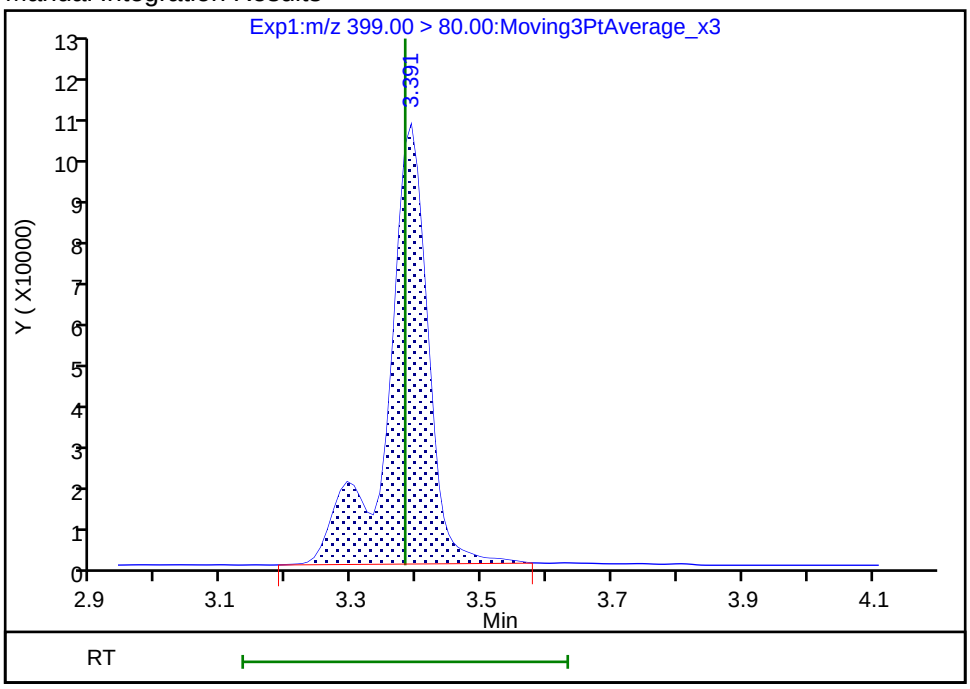
Processing Integration Results

RT: 3.39
Area: 393534
Amount: 0.197987
Amount Units: ng/ml



Manual Integration Results

RT: 3.39
Area: 454578
Amount: 0.224371
Amount Units: ng/ml



Reviewer: phomsophat, 27-Sep-2019 11:55:19
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_007.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 26-Sep-2019 21:49:50 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:48 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 11:57:45
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.208	2.205	0.003	0.582	6003624	2.50		99.8	15086	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.208	2.209	-0.001	1.000	2189713	1.05		105	967	
D 4 13C5 PFPeA										
267.90 > 223.00	2.567	2.559	0.008	0.677	5342851	2.49		99.5	17317	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.567	2.562	0.005	1.000	2266282	1.00		100	796	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.590	2.593	-0.003	0.766	2247380	0.8888	Target=1.87	101	449	
298.90 > 99.00	2.590	2.593	-0.003	0.766	1247649		1.80(0.94-2.81)	101	676	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.907	2.910	-0.003	1.000	1183132	0.9304		99.6	9846	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.907	2.910	-0.003	0.766	1093638	2.34		100	855	
D 10 13C2 PFHxA										
315.00 > 270.00	2.961	2.956	0.005	0.780	6102251	2.54		102	38002	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.961	2.956	0.005	1.000	2291913	0.9893	Target=11.57	98.9	897	
313.00 > 119.00	2.950	2.956	-0.006	0.996	192975		11.88(5.78-17.35)	98.9	309	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.972	2.971	0.001	0.880	1921871	0.9509	Target=2.40	101	5265	
349.00 > 99.00	2.972	2.971	0.001	0.880	789655		2.43(1.20-3.60)	101	2192	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.097	3.087	0.010	0.816	141132	2.77		111	3565	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.090	3.089	0.001	0.998	147979	0.9479		94.8	525	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFHpA										
367.00 > 322.00	3.379	3.382	-0.003	0.890	5746610	2.61		105	37264	
D 15 18O2 PFHxS										
403.00 > 84.00	3.379	3.382	-0.003	0.890	3514628	2.38		101	85975	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.379	3.382	-0.003	1.000	2343762	0.9777	Target=3.70	97.8	1863	
363.00 > 169.00	3.379	3.382	-0.003	1.000	623056		3.76(1.85-5.54)	97.8	1180	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.379	3.382	-0.003	1.000	1533534	0.8075	Target=2.98	88.7	659	
399.00 > 99.00	3.379	3.382	-0.003	1.000	531954		2.88(1.49-4.47)	88.7	880	
18 DONA										
377.00 > 251.00	3.431	3.433	-0.002	0.820	6800162	1.03	Target=2.81	109	23013	
377.00 > 85.00	3.431	3.433	-0.002	0.820	2249006		3.02(1.41-4.22)	109	15032	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.778	3.775	0.003	1.000	1067901	0.9343		98.6	12023	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.778	3.775	0.003	0.995	1331474	2.43		102	7081	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.786	3.789	-0.003	0.906	1454011	0.9529	Target=4.19	100	4477	
449.00 > 99.00	3.786	3.789	-0.003	0.906	337800		4.30(2.09-6.28)	100	1411	
D 23 13C8 PFOA										
421.00 > 376.00	3.795	3.790	0.005	1.000	5697465	2.55		102	34374	
D 25 13C4 PFOA										
417.00 > 372.00	3.795	3.797	-0.002	1.000	6599001	2.56		103	60474	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.795	3.798	-0.003	1.000	2682368	0.9773	Target=2.68	97.7	914	
413.00 > 169.00	3.795	3.798	-0.003	1.000	934602		2.87(1.34-4.02)	97.7	2171	
* 24 13C2 PFOA										
415.00 > 370.00	3.795	3.798	-0.003		7050901	2.50			42384	
D 27 13C8 PFOS										
507.00 > 99.00	4.181	4.176	0.005	1.102	1623861	2.49		99.7	13106	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.181	4.181	0.0	1.000	1214718	0.8746	Target=4.19	94.2	2265	
499.00 > 99.00	4.181	4.181	0.0	1.000	290944		4.18(2.09-6.28)	94.2	949	
D 28 13C4 PFOS										
503.00 > 80.00	4.181	4.181	0.0	1.102	3050565	2.39		99.9	10115	
30 Perfluorononanoic acid										
463.00 > 419.00	4.199	4.199	0.0	1.000	2251987	1.00	Target=8.84	100	1596	
463.00 > 169.00	4.199	4.199	0.0	1.000	243229		9.26(4.42-13.26)	100	817	
D 29 13C5 PFNA										
468.00 > 423.00	4.199	4.199	0.0	1.107	5751252	2.55		102	49877	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.395	4.393	0.002	1.051	3048298	0.9437		101	14658	
D 33 13C8 FOSA										
506.00 > 78.00	4.457	4.460	-0.003	1.174	4278888	2.47		98.7	30417	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.465	4.464	0.001	1.002	1672913	0.9797		98.0	8916	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.547	4.544	0.003	1.087	1019021	0.9583	Target=2.27	99.8	4909	
549.00 > 99.00	4.538	4.544	-0.006	1.085	436766		2.33(1.13-3.40)	99.8	2503	
D 36 13C2 PFDA										
515.00 > 470.00	4.567	4.572	-0.005	1.204	6241611	2.59		104	42616	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.567	4.572	-0.005	1.000	2161949	0.9023	Target=10.36	90.2	2644	
513.00 > 169.00	4.567	4.572	-0.005	1.000	234407		9.22(5.18-15.54)	90.2	220	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.577	4.574	0.003	1.000	1264528	1.00		105	10752	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.577	4.574	0.003	1.206	1574668	2.41		101	14759	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.744	4.741	0.003	1.250	3952868	2.48		99.3	14525	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.744	4.744	0.0	1.000	1275096	1.02		102	11174	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.878	4.876	0.002	1.166	987050	0.99	Target=2.70	103	5019	
599.00 > 99.00	4.878	4.876	0.002	1.166	355258		2.78(1.35-4.05)	103	2614	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.898	4.897	0.001	1.291	4489891	12.2		97.3	12593	
D 43 13C2 PFUnA										
565.00 > 520.00	4.908	4.906	0.002	1.293	5662018	2.51		100	49961	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.908	4.907	0.001	1.000	1885517	1.00	Target=9.31	100	2476	
563.00 > 169.00	4.908	4.907	0.001	1.000	207957		9.07(4.65-13.96)	100	363	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.908	4.909	-0.001	1.002	376060	1.00		99.9	1239	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.919	4.915	0.004	1.296	4088628	2.56		103	11712	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.919	4.922	-0.003	1.000	1266666	1.03		103	13776	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.930	4.924	0.006	1.299	2385068	2.52		101	53.5	
50 NMeFOSA										
512.00 > 169.00	4.930	4.930	0.0	1.000	900676	0.9803		98.0	276	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.057	5.054	0.003	1.209	6320914	1.03		110	71451	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.068	-0.002	1.335	4844749	12.5		99.9	11984	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.084	-0.001	1.003	402048	0.9885		98.9	2441	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.100	5.101	-0.001	1.344	2445711	2.49		99.8	301	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.109	5.110	-0.001	1.002	962939	0.99		99.4	253	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.221	5.217	0.004	1.376	6293972	2.68		107	42723	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.221	5.219	0.002	1.000	2362048	0.9787	Target=8.07	97.9	816	
613.00 > 169.00	5.221	5.219	0.002	1.000	276473		8.54(4.03-12.10)	97.9	938	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.231	5.236	-0.005	1.143	791044	0.9657		100	3034	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.458	5.460	-0.002	1.305	388168	1.01	Target=0.52	104	5540	
699.00 > 99.00	5.458	5.460	-0.002	1.305	744730		0.52(0.26-0.77)	104	5314	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.502	5.504	-0.002	1.054	2315352	1.00	Target=6.35	100	1661	
663.00 > 169.00	5.502	5.504	-0.002	1.054	347077		6.67(3.18-9.53)	100	1157	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.776	5.774	0.002	1.522	5430655	2.62		105	47377	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.776	5.775	0.001	1.000	189772	0.9237	Target=0.85	92.4	1798	
713.00 > 219.00	5.769	5.775	-0.006	0.999	227292		0.83(0.43-1.28)	92.4	2644	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.303	6.305	-0.002	1.661	4295026	2.59		104	16850	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.303	6.308	-0.005	1.000	1477695	0.9173	Target=7.95	91.7	132	
813.00 > 169.00	6.303	6.308	-0.005	1.000	185205		7.98(3.98-11.93)	91.7	1076	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.904	6.905	-0.001	1.095	784757	0.7524	Target=8.96	75.2	201	
913.00 > 169.00	6.910	6.905	0.005	1.096	89924		8.73(4.48-13.45)	75.2	597	

Reagents:

LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:26:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_007.d

Injection Date: 26-Sep-2019 21:49:50 Instrument ID: A13

Lims ID: IC L4 Full

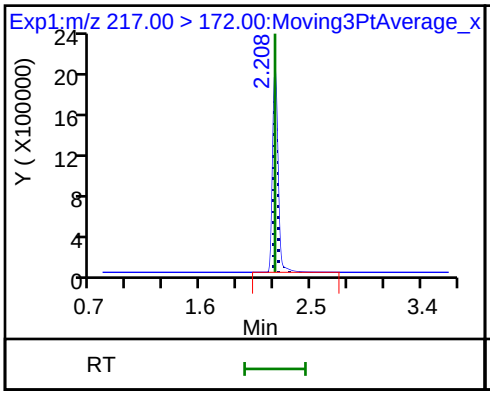
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5

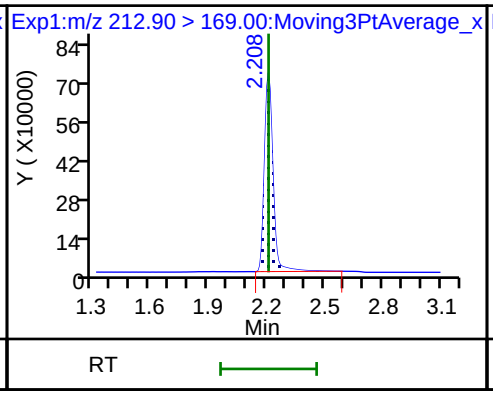
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

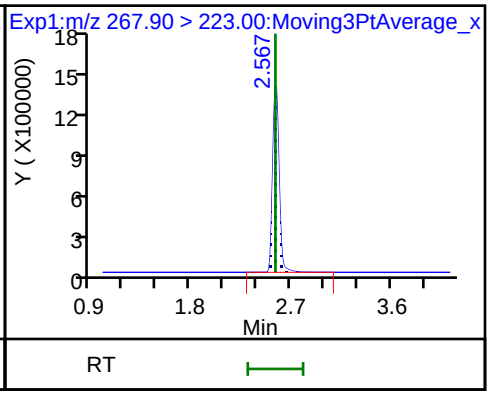
D 2 13C4 PFBA



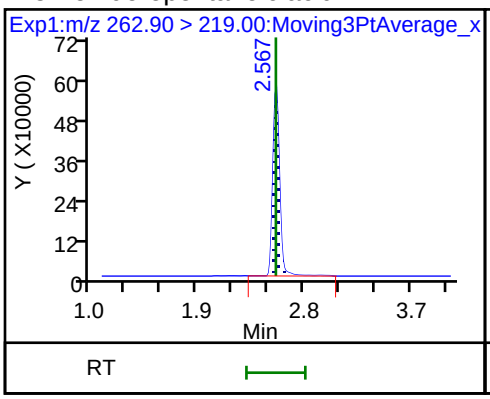
3 Perfluorobutanoic acid



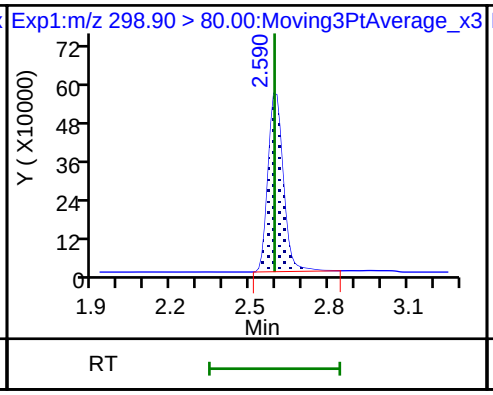
D 4 13C5 PFPeA



5 Perfluoropentanoic acid



6 Perfluorobutanesulfonic acid



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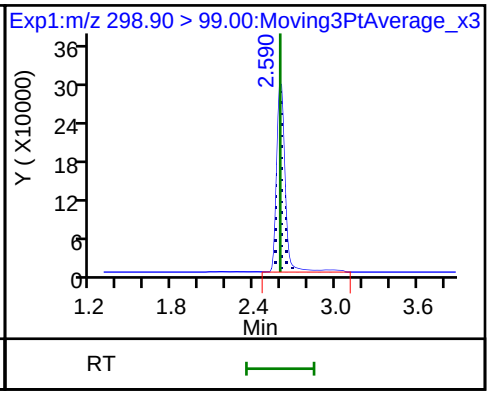
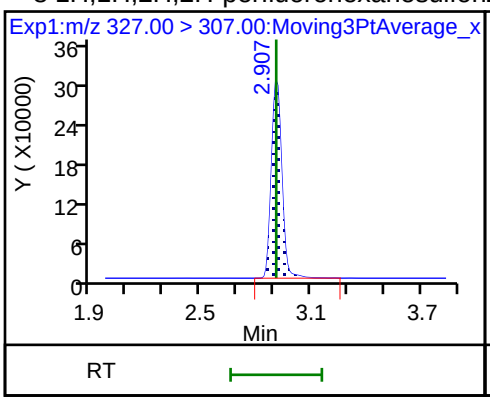
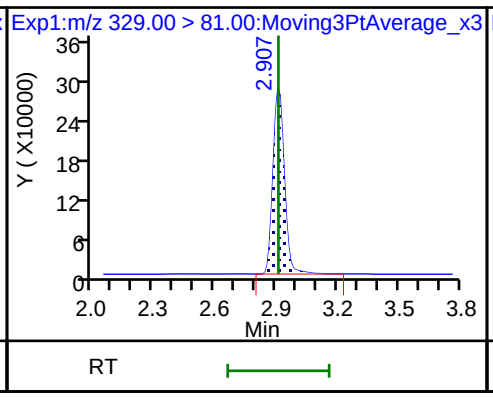


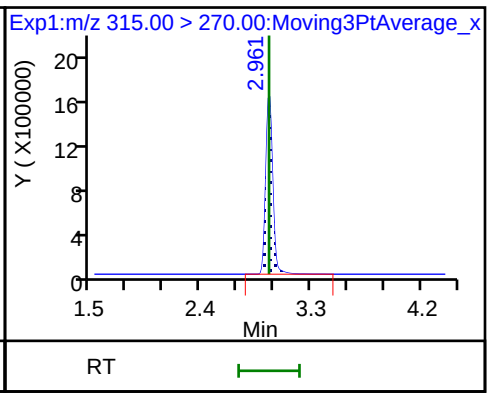
8 1H,1H,2H,2H-perfluorohexanesulfon



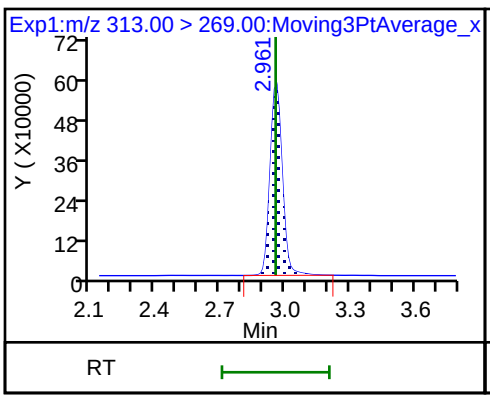
D 7 M2-4:2 FTS



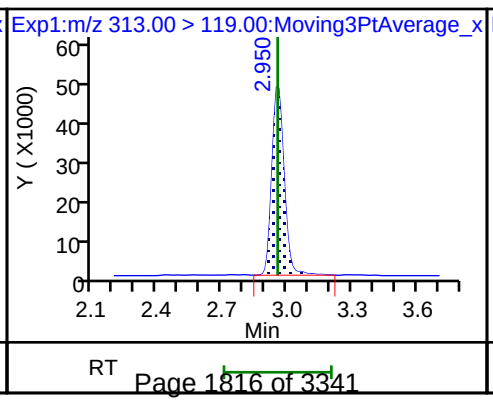
D 10 13C2 PFHxA



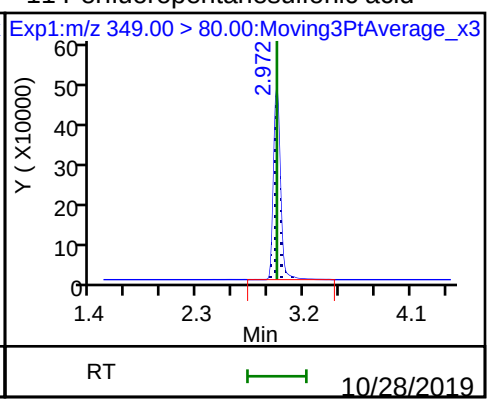
9 Perfluorohexanoic acid



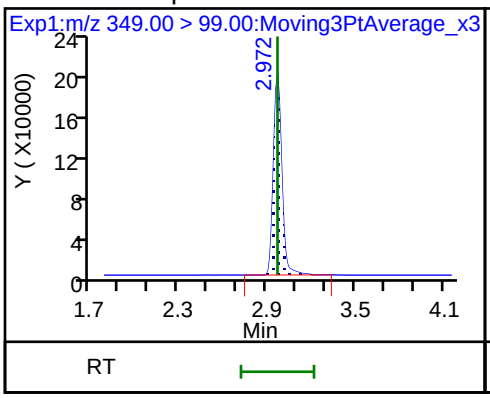
9 Perfluorohexanoic acid



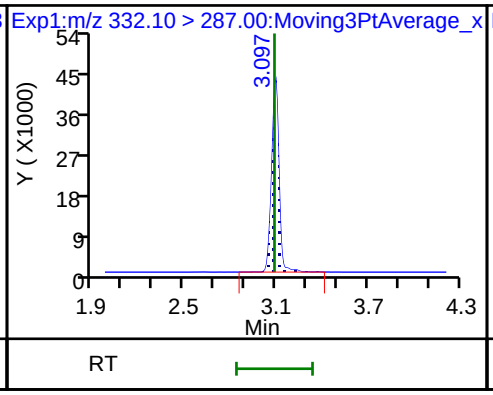
11 Perfluoropentanesulfonic acid



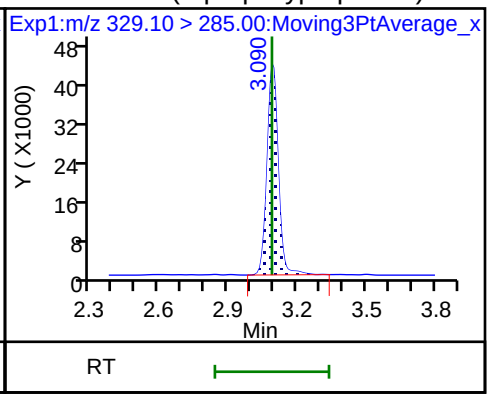
11 Perfluoropentanesulfonic acid



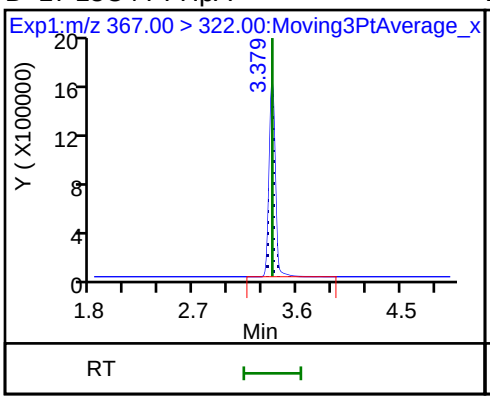
D 12 13C3 HFPO-DA



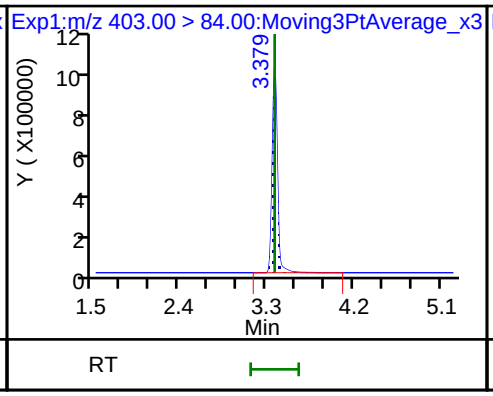
13 Perfluoro(2-propoxypropanoic) acid



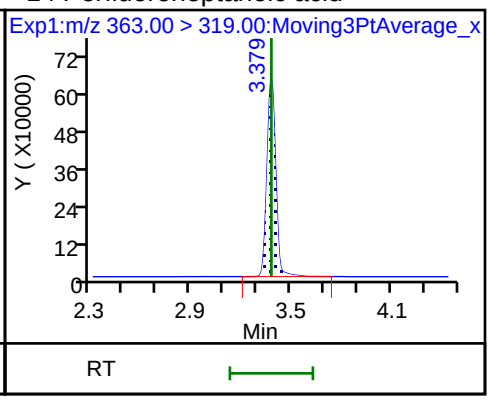
D 17 13C4 PFHpA



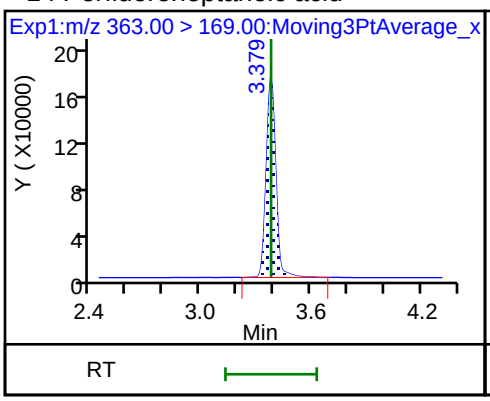
D 15 18O2 PFHxS



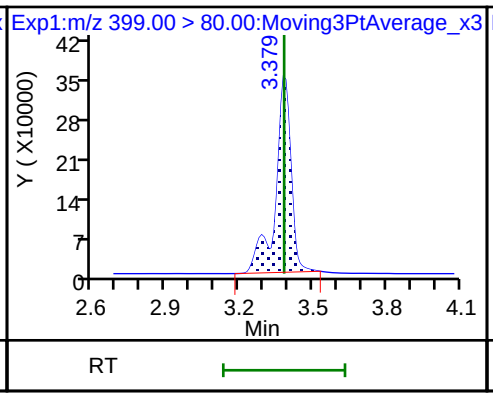
14 Perfluoroheptanoic acid



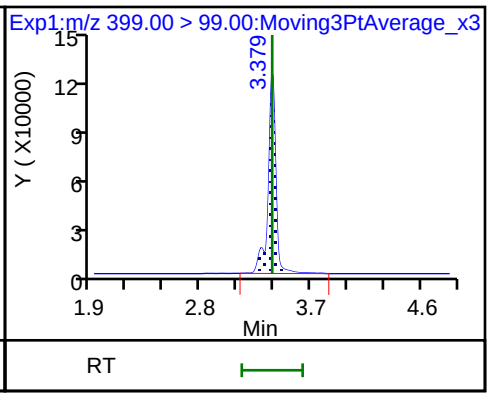
14 Perfluoroheptanoic acid



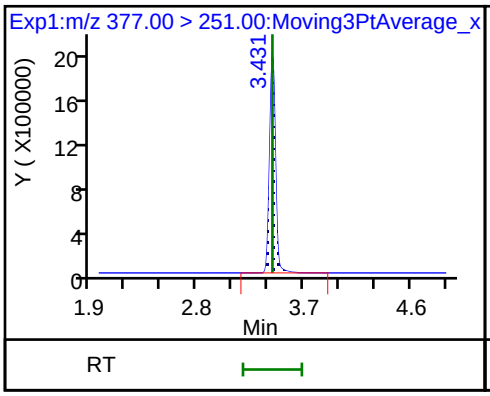
16 Perfluorohexanesulfonic acid



16 Perfluorohexanesulfonic acid



18 DONA



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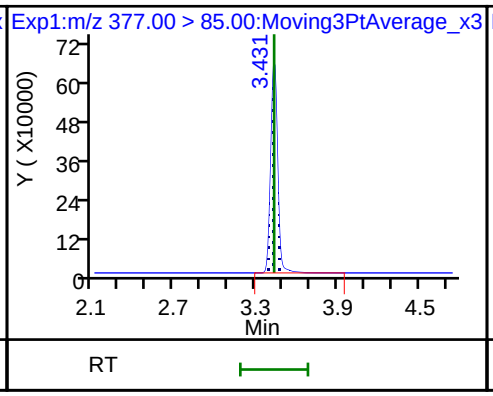
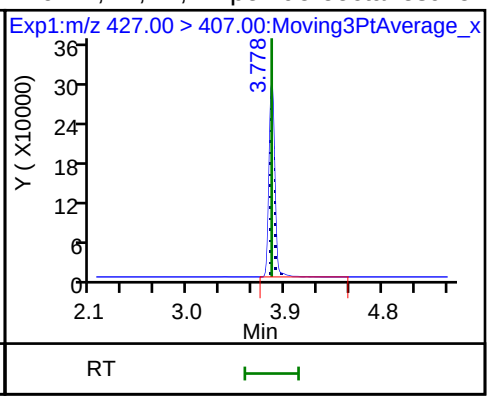
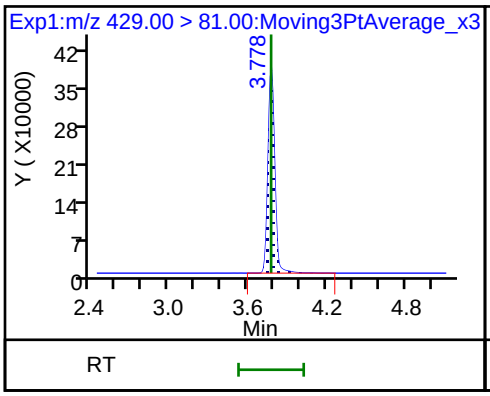


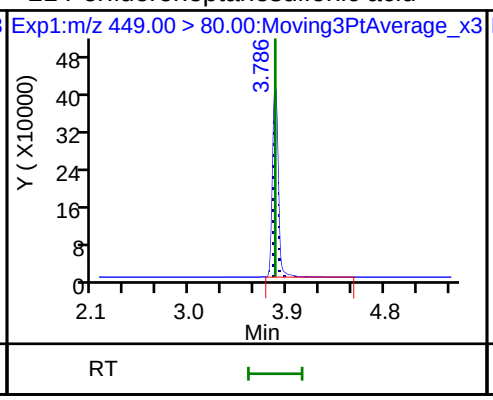
19 1H,1H,2H,2H-perfluorooctanesulfoni



D 20 M2-6:2 FTS



21 Perfluoroheptanesulfonic acid



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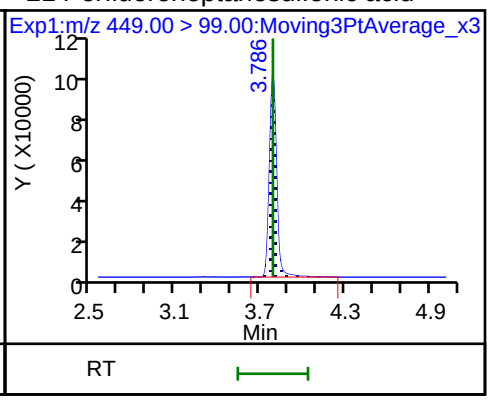
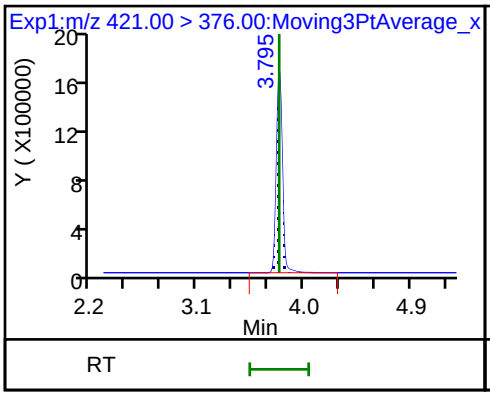
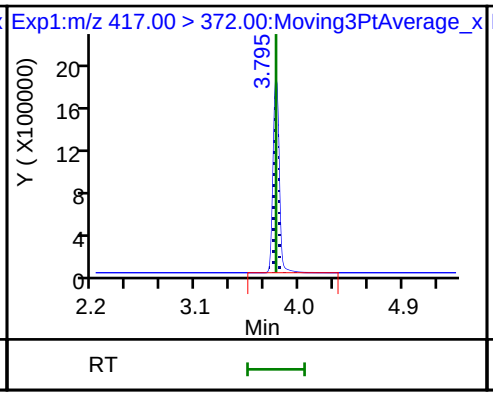


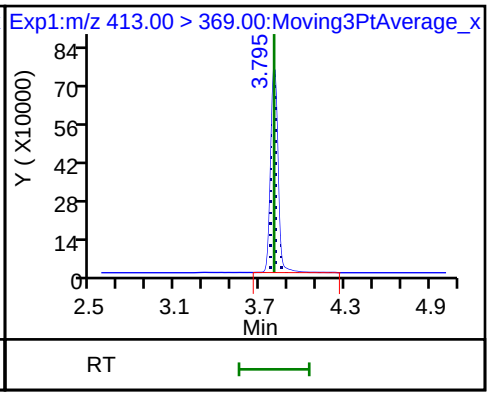
D 23 13C8 PFOA



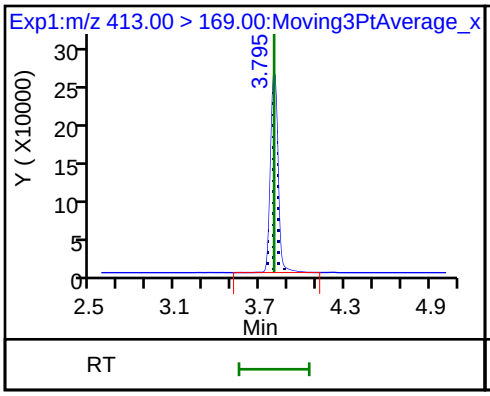
D 25 13C4 PFOA



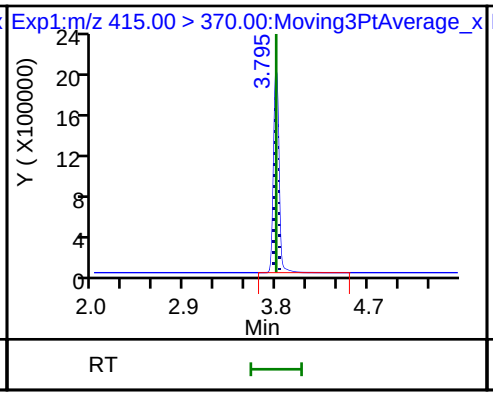
22 Perfluorooctanoic acid



22 Perfluorooctanoic acid



* 24 13C2 PFOA



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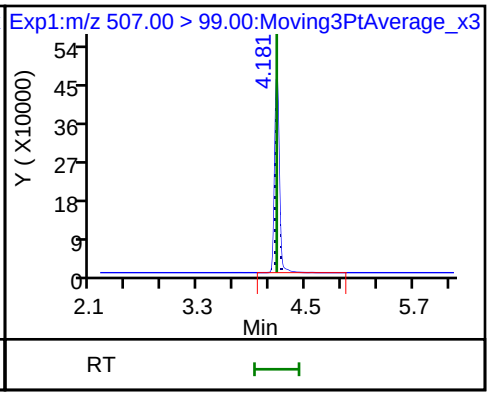
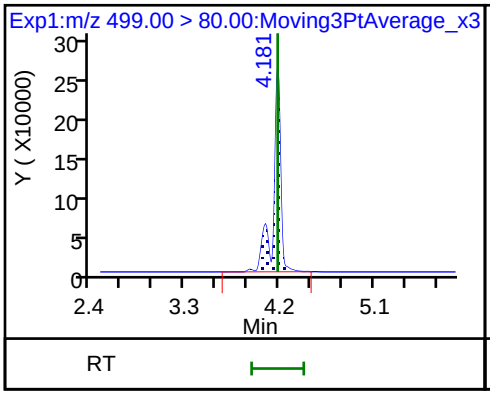
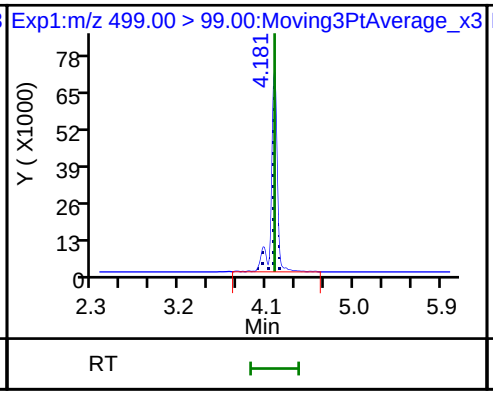


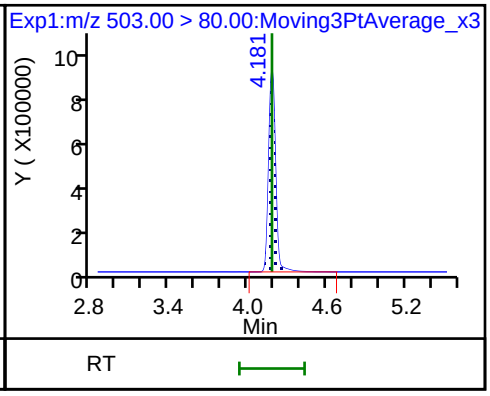
26 Perfluorooctanesulfonic acid



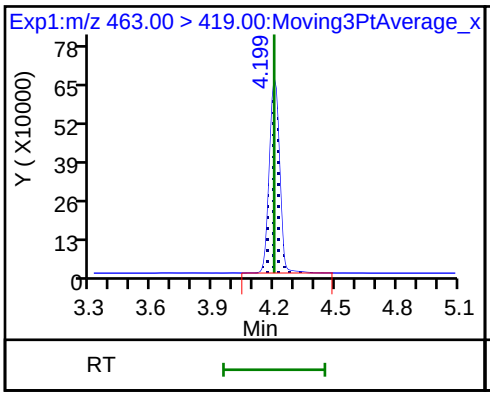
26 Perfluorooctanesulfonic acid



D 28 13C4 PFOS



30 Perfluorononanoic acid



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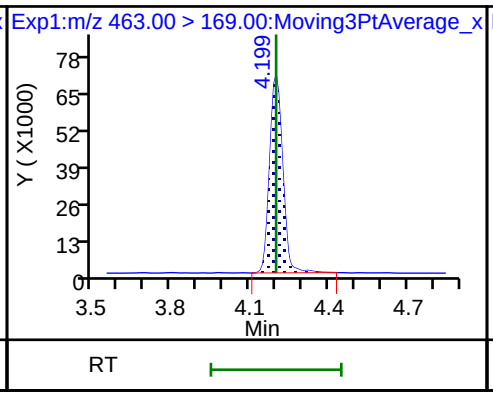

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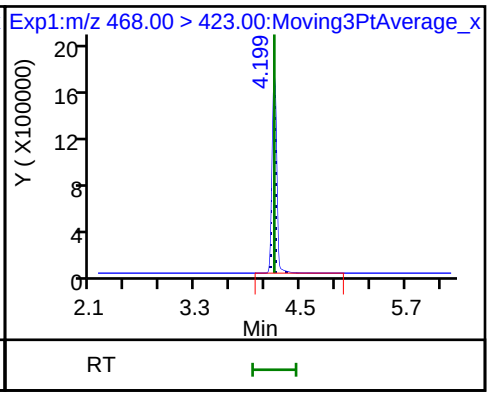
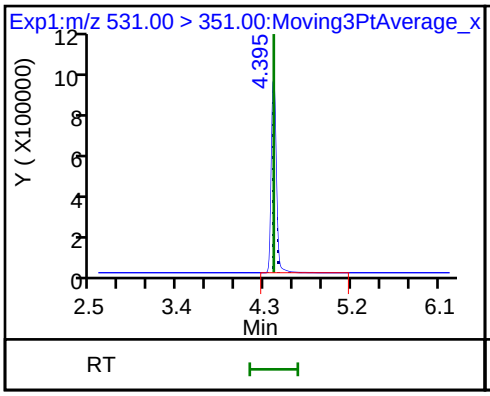
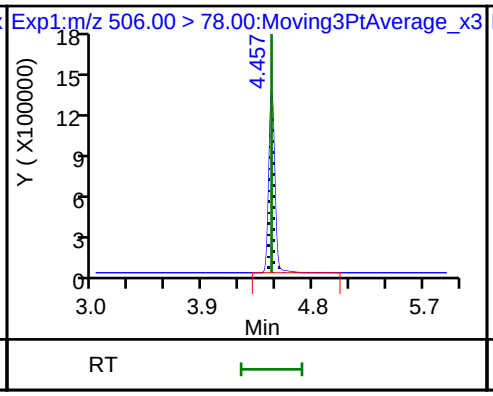


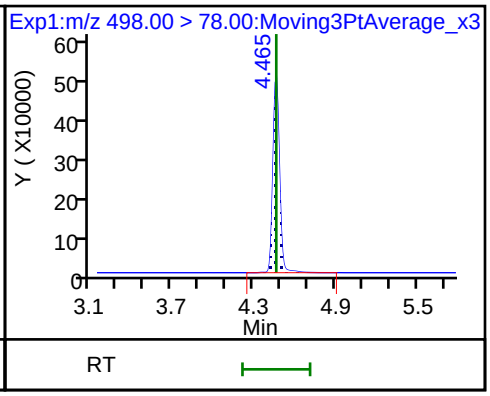
31 9-Chlorohexadecafluoro-3-oxanonane



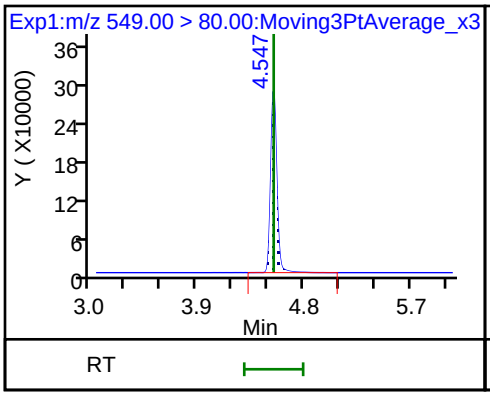
D 33 13C8 FOSA



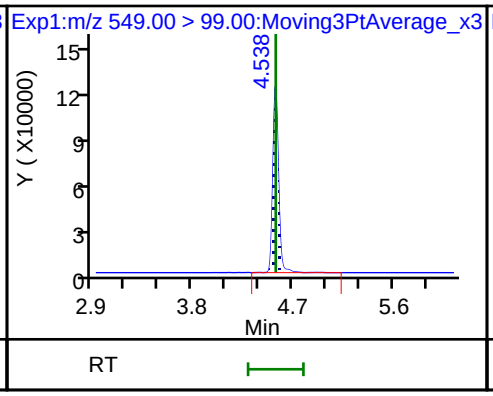
32 Perfluorooctanesulfonamide



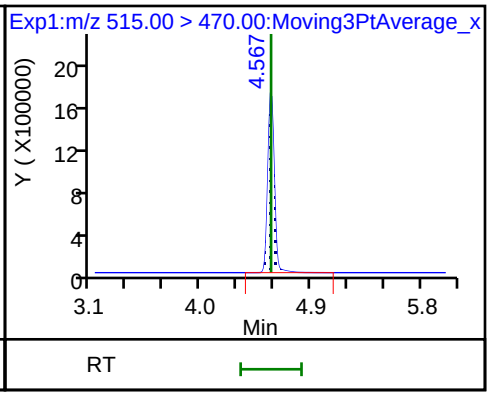
38 Perfluorononanesulfonic acid



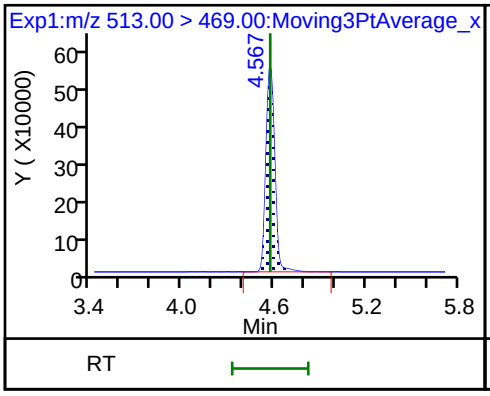
38 Perfluorononanesulfonic acid



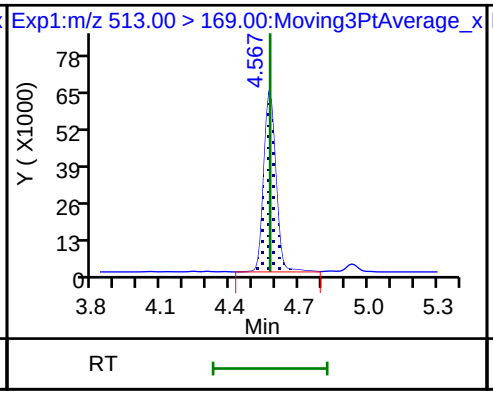
D 36 13C2 PFDA



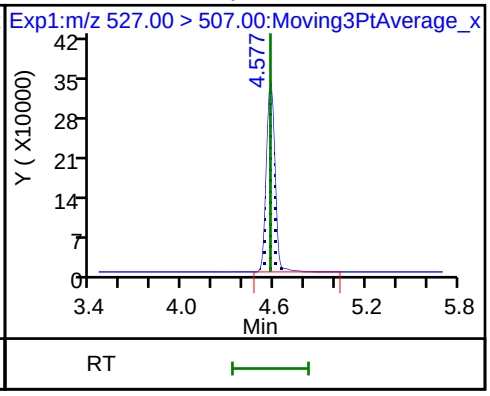
34 Perfluorodecanoic acid



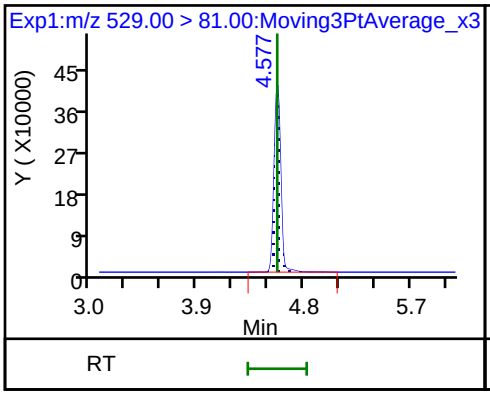
34 Perfluorodecanoic acid



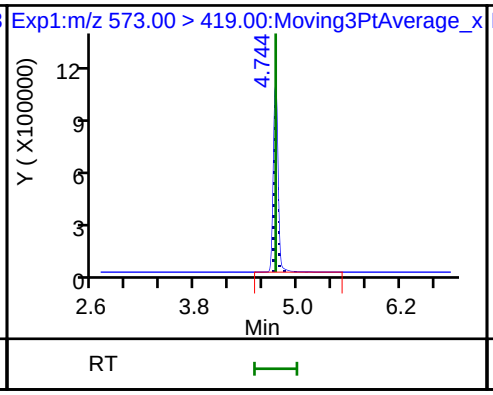
35 1H,1H,2H,2H-perfluorodecanesulfoni



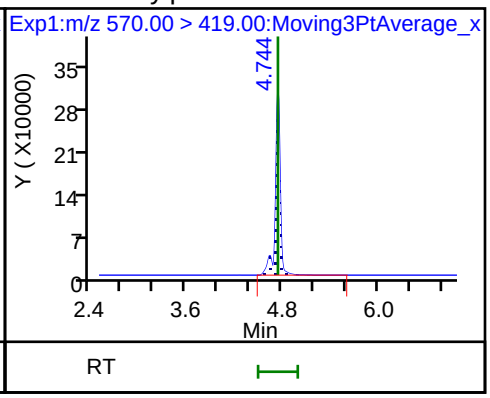
D 37 M2-8:2 FTS



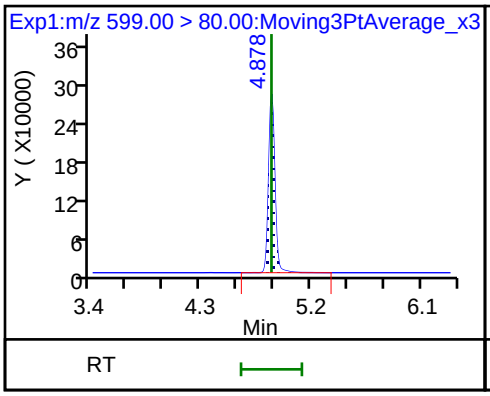
D 40 d3-NMeFOSAA



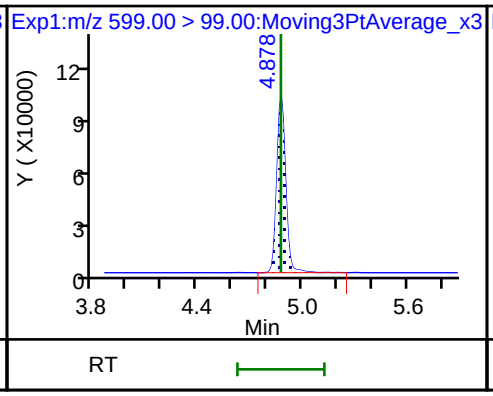
41 N-methylperfluorooctanesulfonamido



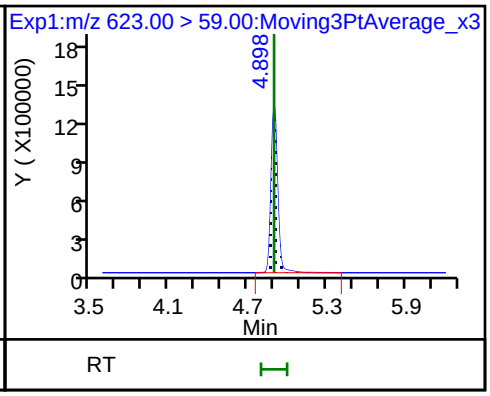
48 Perfluorodecanesulfonic acid



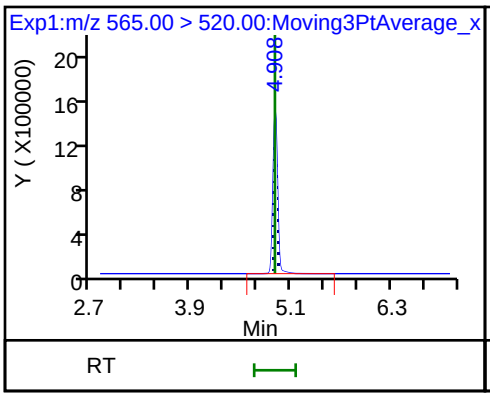
48 Perfluorodecanesulfonic acid



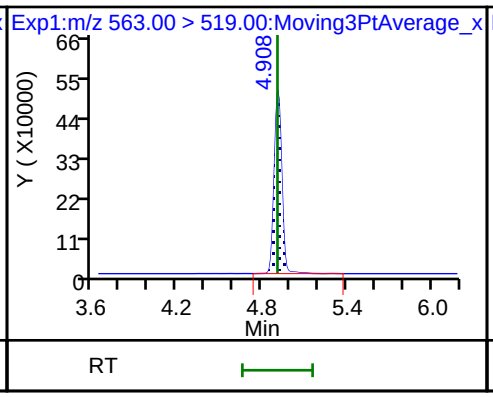
D 46 d7-N-MeFOSE-M



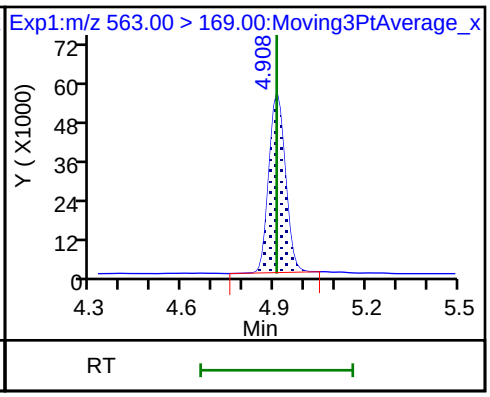
D 43 13C2 PFUnA



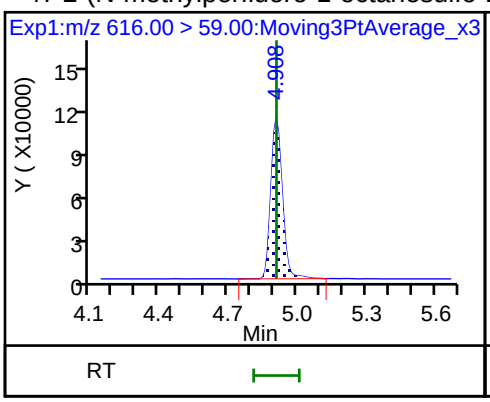
42 Perfluoroundecanoic acid



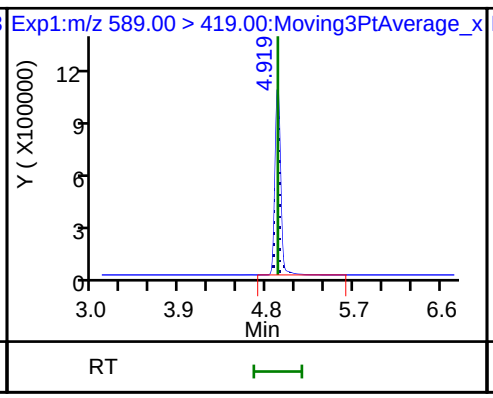
42 Perfluoroundecanoic acid



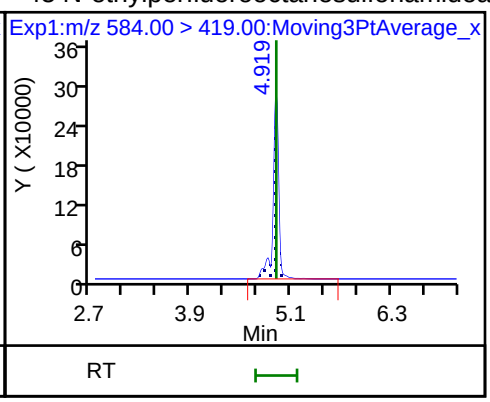
47 2-(N-methylperfluoro-1-octanesulfo



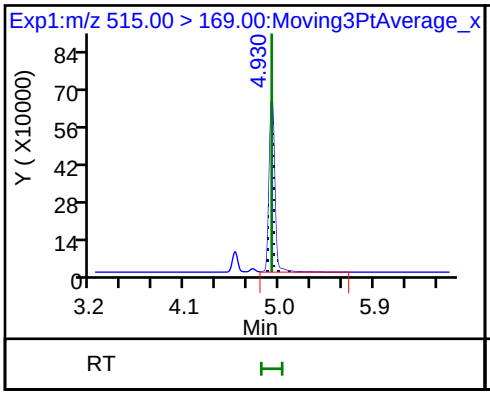
D 44 d5-NEtFOSAA



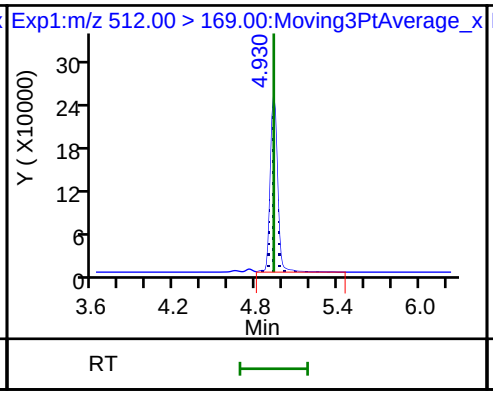
45 N-ethylperfluorooctanesulfonamidoa



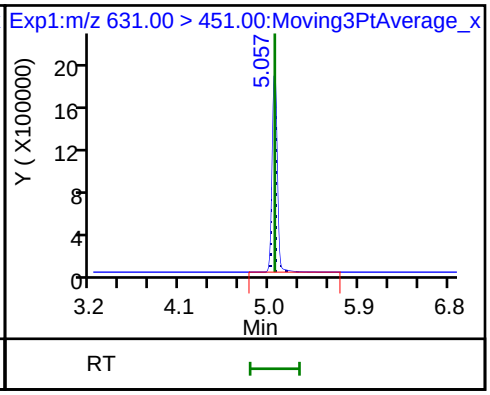
D 49 d-N-MeFOSA-M



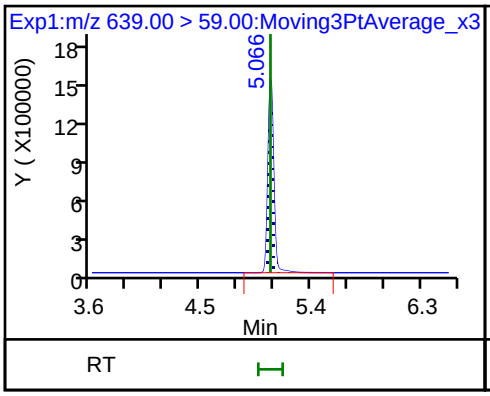
50 NMeFOSA



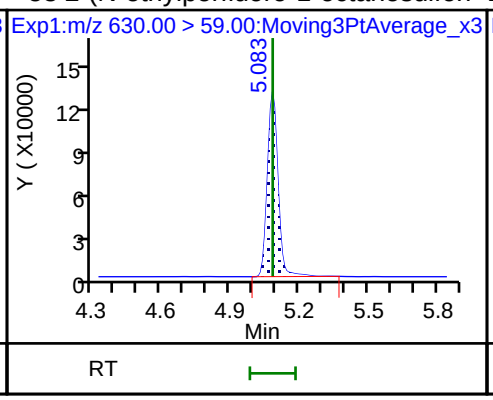
51 11-Chloroeicosafluoro-3-oxaundecan



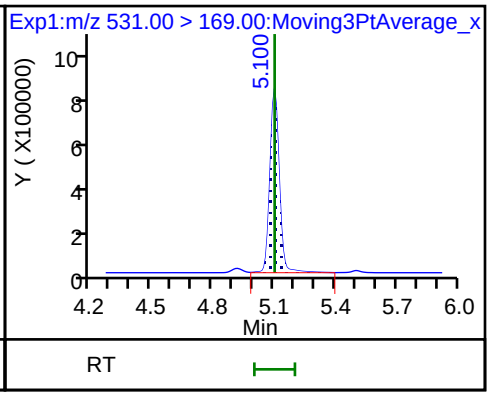
D 52 d9-N-EtFOSE-M



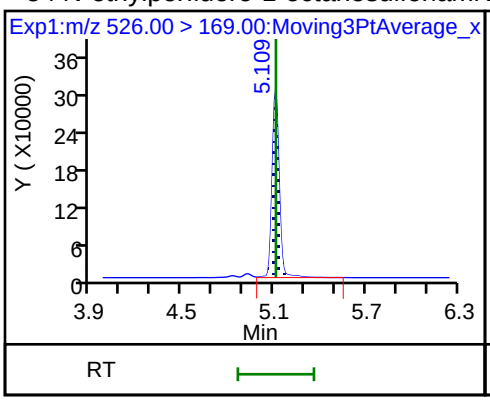
53 2-(N-ethylperfluoro-1-octanesulfon



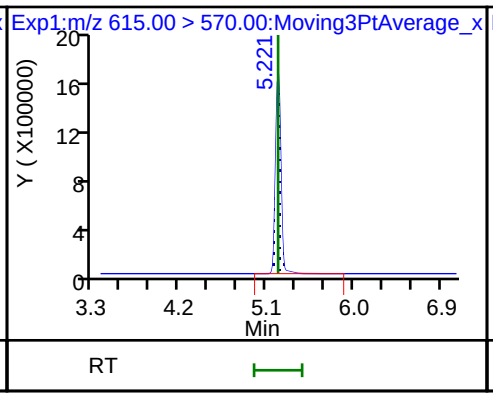
D 55 d-N-EtFOSA-M



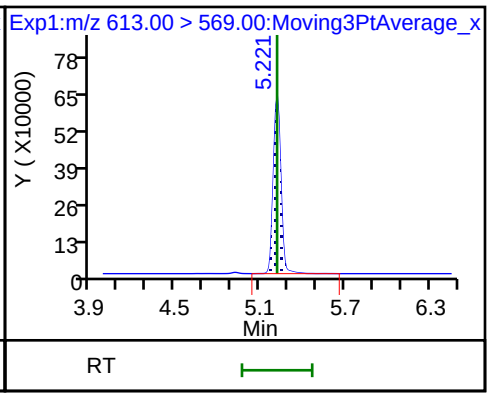
54 N-ethylperfluoro-1-octanesulfonami



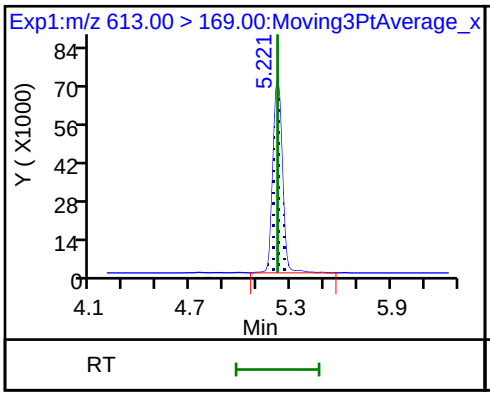
D 57 13C2 PFDoA



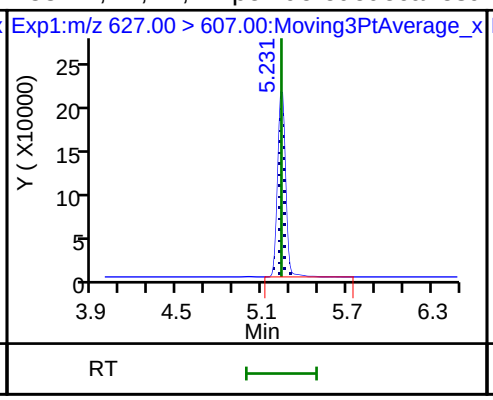
56 Perfluorododecanoic acid



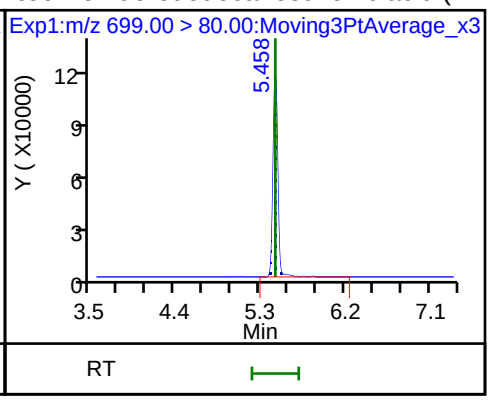
56 Perfluorododecanoic acid



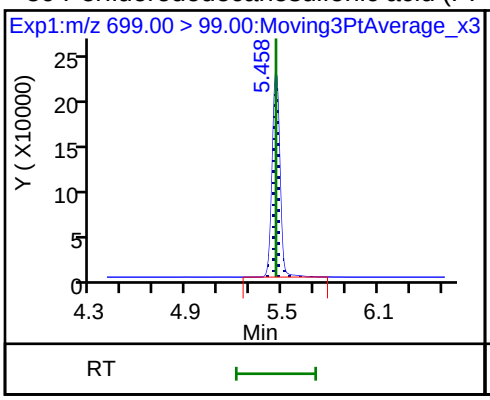
58 1H,1H,2H,2H-perfluorododecanesulfo



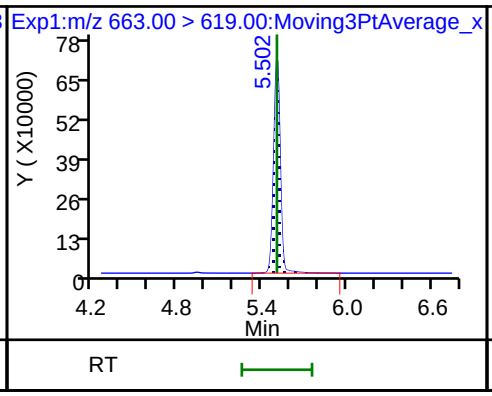
59 Perfluorododecanesulfonic acid (PF



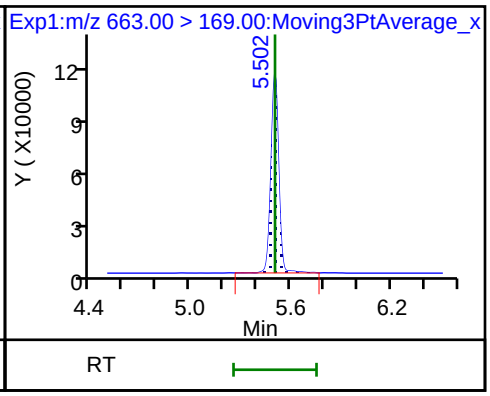
59 Perfluorododecanesulfonic acid (PF



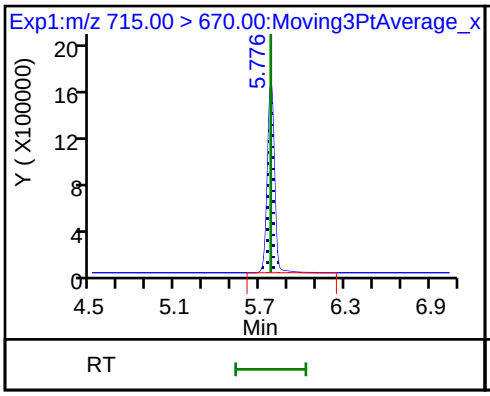
60 Perfluorotridecanoic acid



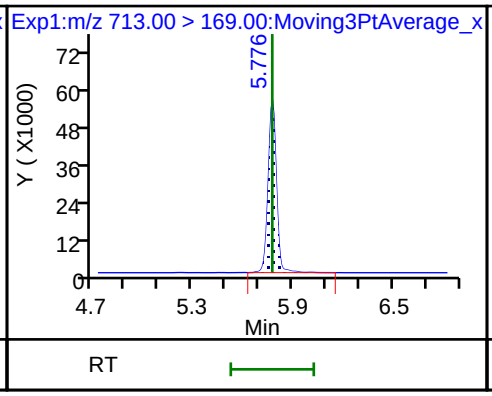
60 Perfluorotridecanoic acid



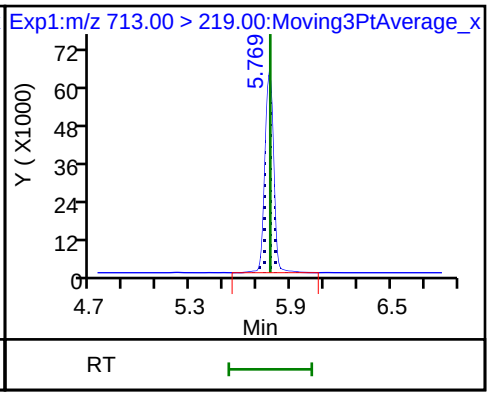
D 61 13C2 PFTeDA



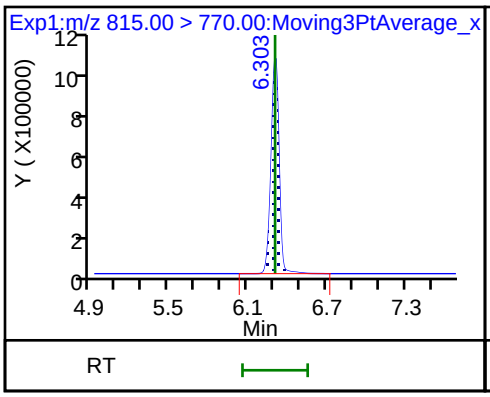
62 Perfluorotetradecanoic acid



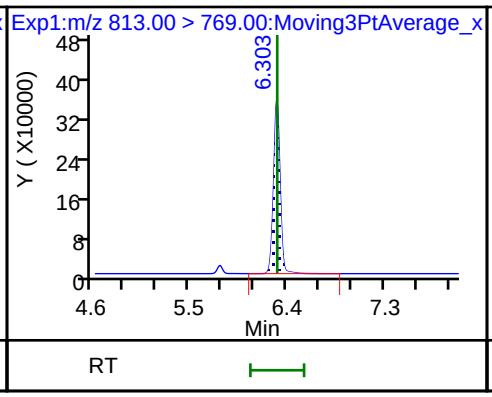
62 Perfluorotetradecanoic acid



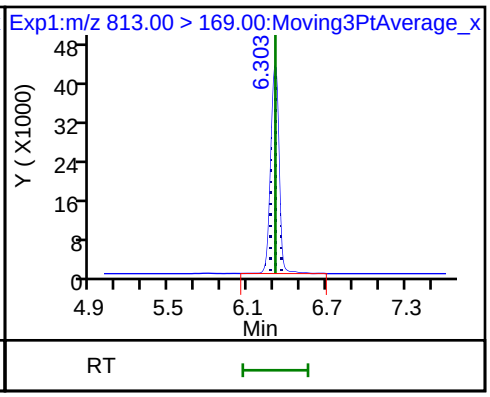
D 63 13C2 PFHxDA



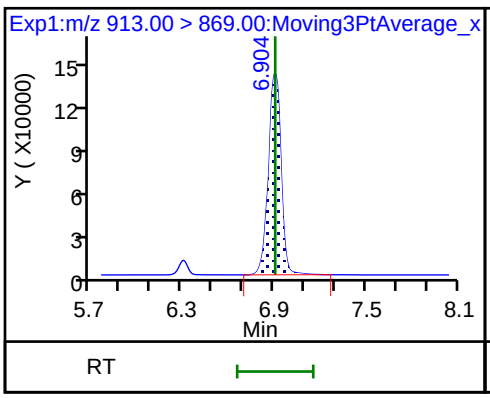
64 Perfluorohexadecanoic acid



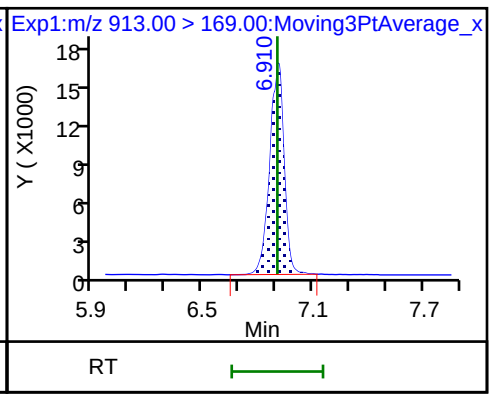
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_008.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 26-Sep-2019 21:59:20 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:53 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 11:58:51
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.200	2.205	-0.005	0.580	6912506	2.39		95.5	17916	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.208	2.209	-0.001	1.003	6178619	2.56		103	2676	
D 4 13C5 PFPeA										
267.90 > 223.00	2.555	2.559	-0.004	0.673	6198379	2.40		95.9	14838	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.555	2.562	-0.007	1.000	6600907	2.52		101	2170	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.589	2.593	-0.004	0.766	6709268	2.29	Target=1.87	104	1957	
298.90 > 99.00	2.589	2.593	-0.004	0.766	3529955		1.90(0.94-2.81)	104	2127	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.907	2.910	-0.003	1.000	3309831	2.23		95.6	32009	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.907	2.910	-0.003	0.766	1275578	2.27		97.2	1083	
D 10 13C2 PFHxA										
315.00 > 270.00	2.950	2.956	-0.006	0.777	6882420	2.38		95.3	56120	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.950	2.956	-0.006	1.000	6757293	2.59	Target=11.57	103	2673	
313.00 > 119.00	2.950	2.956	-0.006	1.000	546627		12.36(5.78-17.35)	103	837	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.971	2.971	0.0	0.879	5482526	2.34	Target=2.40	99.8	19446	
349.00 > 99.00	2.971	2.971	0.0	0.879	2285344		2.40(1.20-3.60)	99.8	8311	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.082	3.087	-0.005	0.812	159514	2.60		104	2169	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.089	3.089	0.0	1.002	445169	2.52		101	1640	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.379	3.382	-0.003	1.000	4629377	2.10	Target=2.98	92.4	16085	
399.00 > 99.00	3.379	3.382	-0.003	1.000	1533295		3.02(1.49-4.47)	92.4	2266	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.379	3.382	-0.003	1.000	6545685	2.53	Target=3.70	101	4798	
363.00 > 169.00	3.379	3.382	-0.003	1.000	1741596		3.76(1.85-5.54)	101	4373	
D 17 13C4 PFHpA										
367.00 > 322.00	3.379	3.382	-0.003	0.890	6211427	2.35		93.9	58094	
D 15 18O2 PFHxS										
403.00 > 84.00	3.379	3.382	-0.003	0.890	4074620	2.29		97.0	84063	
18 DONA										
377.00 > 251.00	3.431	3.433	-0.002	0.820	18358352	2.41	Target=2.81	102	42202	
377.00 > 85.00	3.431	3.433	-0.002	0.820	6447235		2.85(1.41-4.22)	102	37630	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.769	3.775	-0.006	1.000	2926336	2.30		96.9	31694	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.769	3.775	-0.006	0.993	1484004	2.25		94.6	5674	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.787	3.789	-0.002	0.906	4262505	2.42	Target=4.19	102	17205	
449.00 > 99.00	3.787	3.789	-0.002	0.906	1001455		4.26(2.09-6.28)	102	4484	
D 23 13C8 PFOA										
421.00 > 376.00	3.787	3.790	-0.003	0.998	6729224	2.50		100	45005	
D 25 13C4 PFOA										
417.00 > 372.00	3.795	3.797	-0.002	1.000	7467920	2.41		96.5	72560	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.795	3.798	-0.003	1.000	7778829	2.50	Target=2.68	100	3346	
413.00 > 169.00	3.795	3.798	-0.003	1.000	2788456		2.79(1.34-4.02)	100	8187	
* 24 13C2 PFOA										
415.00 > 370.00	3.795	3.798	-0.003		8483830	2.50			88471	
D 27 13C8 PFOS										
507.00 > 99.00	4.173	4.176	-0.003	1.100	1885239	2.41		96.2	8090	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.182	4.181	0.001	1.000	3411052	2.13	Target=4.19	91.6	387	
499.00 > 99.00	4.182	4.181	0.001	1.000	813304		4.19(2.09-6.28)	91.6	3427	
D 28 13C4 PFOS										
503.00 > 80.00	4.182	4.181	0.001	1.102	3525179	2.29		95.9	11949	
D 29 13C5 PFNA										
468.00 > 423.00	4.199	4.199	0.0	1.107	6656956	2.45		98.1	37076	
30 Perfluorononanoic acid										
463.00 > 419.00	4.199	4.199	0.0	1.000	6273275	2.42	Target=8.84	96.6	4003	
463.00 > 169.00	4.199	4.199	0.0	1.000	714882		8.78(4.42-13.26)	96.6	3134	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.387	4.393	-0.006	1.049	8644256	2.32		99.4	37935	
D 33 13C8 FOSA										
506.00 > 78.00	4.457	4.460	-0.003	1.174	4652320	2.23		89.2	23349	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.457	4.464	-0.007	1.000	4485981	2.42		96.6	34782	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.538	4.544	-0.006	1.085	2939970	2.39	Target=2.27	99.7	15032	
549.00 > 99.00	4.538	4.544	-0.006	1.085	1242963		2.37(1.13-3.40)	99.7	5528	
D 36 13C2 PFDA										
515.00 > 470.00	4.567	4.572	-0.005	1.203	7199094	2.49		99.5	82552	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.567	4.572	-0.005	1.000	6457212	2.34	Target=10.36	93.5	7047	
513.00 > 169.00	4.567	4.572	-0.005	1.000	602319		10.72(5.18-15.54)	93.5	291	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.567	4.574	-0.007	1.000	3305048	2.26		94.2	22957	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.567	4.574	-0.007	1.203	1830821	2.33		97.4	8062	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.734	4.741	-0.007	1.247	4486970	2.34		93.7	8012	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.744	4.744	0.0	1.002	3542465	2.50		100	47108	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.868	4.876	-0.008	1.164	2552785	2.22	Target=2.70	92.1	13008	
599.00 > 99.00	4.868	4.876	-0.008	1.164	936107		2.73(1.35-4.05)	92.1	5105	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.898	4.897	0.001	1.291	5119473	11.5		92.2	14870	
D 43 13C2 PFUnA										
565.00 > 520.00	4.898	4.906	-0.008	1.291	6278793	2.31		92.5	37579	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.909	4.907	0.002	1.002	4672645	2.24	Target=9.31	89.4	5000	
563.00 > 169.00	4.909	4.907	0.002	1.002	547851		8.53(4.65-13.96)	89.4	906	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.909	4.909	0.0	1.002	1006849	2.35		93.9	7445	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.909	4.915	-0.006	1.293	4322323	2.25		90.1	11380	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.919	4.922	-0.003	1.002	3214608	2.47		98.6	32163	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.919	4.924	-0.005	1.296	2448435	2.15		86.1	49.0	
50 NMeFOSA										
512.00 > 169.00	4.930	4.930	0.0	1.002	2303539	2.44		97.7	217	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.048	5.054	-0.006	1.207	16735613	2.37		101	84523	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.068	-0.002	1.335	5012709	10.7		85.9	24610	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.084	-0.001	1.003	977644	2.32		92.9	6387	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.101	5.101	0.0	1.344	2550775	2.16		86.5	199	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.109	5.110	-0.001	1.002	2504454	2.48		99.2	196	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.210	5.217	-0.007	1.373	6689212	2.37		94.7	11760	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.210	5.219	-0.009	1.000	6168617	2.40	Target=8.07	96.2	2491	
613.00 > 169.00	5.210	5.219	-0.009	1.000	763650		8.08(4.03-12.10)	96.2	2168	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.232	5.236	-0.004	1.145	2163191	2.27		94.2	4633	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.458	5.460	-0.002	1.305	998876	2.25	Target=0.52	92.9	10482	
699.00 > 99.00	5.458	5.460	-0.002	1.305	1953512		0.51(0.26-0.77)	92.9	15674	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.502	5.504	-0.002	1.056	5713257	2.33	Target=6.35	93.1	4505	
663.00 > 169.00	5.502	5.504	-0.002	1.056	887813		6.44(3.18-9.53)	93.1	1467	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.769	5.774	-0.005	1.520	5213272	2.09		83.6	51993	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.769	5.775	-0.006	1.000	536232	2.72	Target=0.85	109	4371	
713.00 > 219.00	5.761	5.775	-0.014	0.999	560015		0.96(0.43-1.28)	109	9771	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.295	6.305	-0.010	1.659	4426187	2.22		88.7	17676	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.303	6.308	-0.005	1.001	3912042	2.39	Target=7.95	95.7	367	
813.00 > 169.00	6.303	6.308	-0.005	1.001	513406		7.62(3.98-11.93)	95.7	2566	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.894	6.905	-0.011	1.095	2487803	2.31	Target=8.96	92.6	563	
913.00 > 169.00	6.905	6.905	0.0	1.097	283942		8.76(4.48-13.45)	92.6	1618	

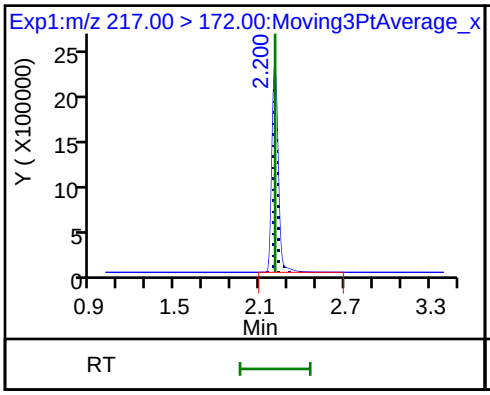
Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

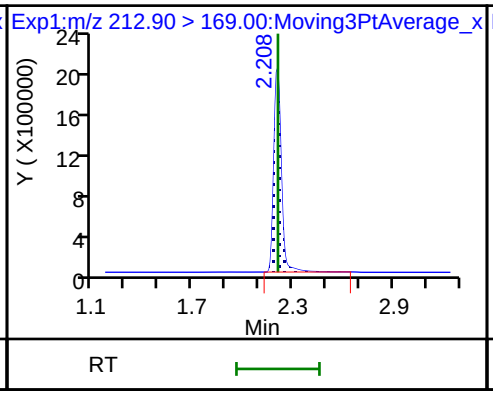
Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_008.d
Injection Date: 26-Sep-2019 21:59:20 Instrument ID: A13
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL

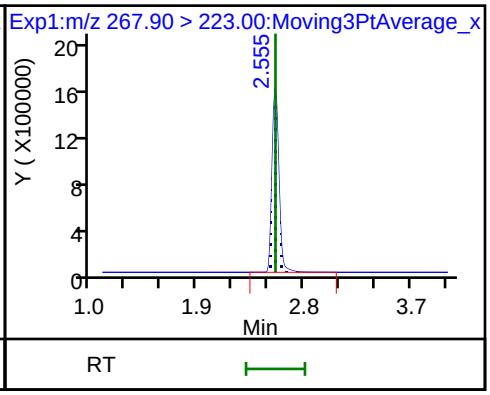
D 2 13C4 PFBA



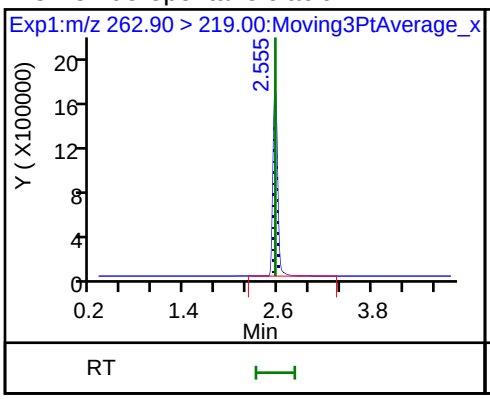
3 Perfluorobutanoic acid



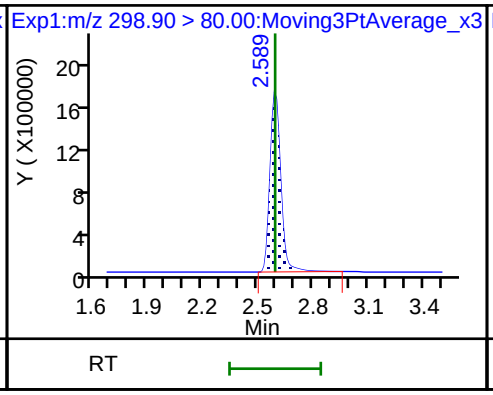
D 4 13C5 PFPeA



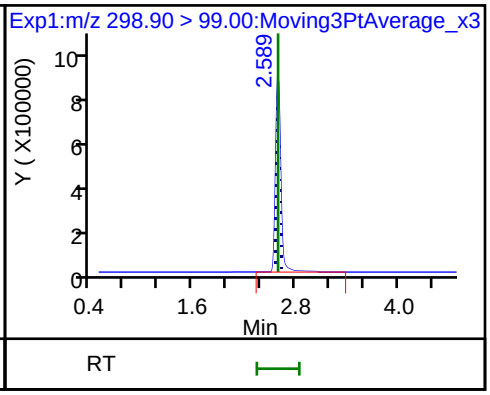
5 Perfluoropentanoic acid



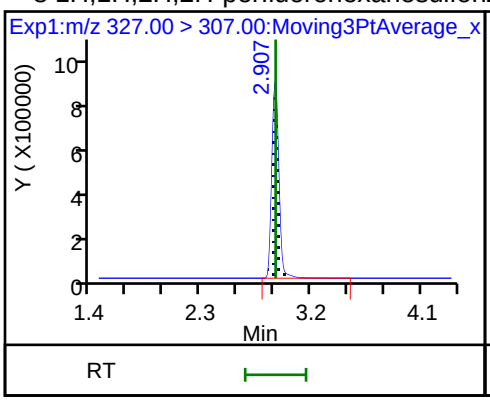
6 Perfluorobutanesulfonic acid



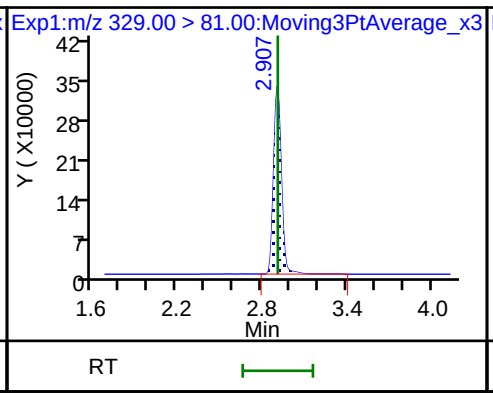
6 Perfluorobutanesulfonic acid



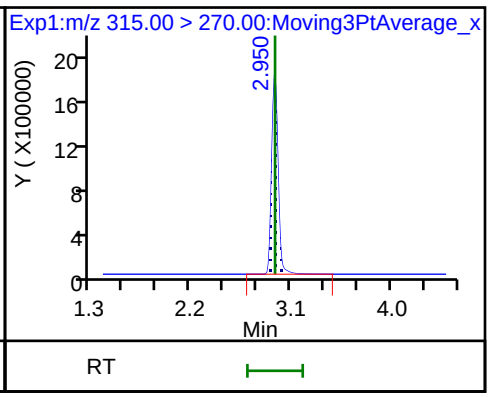
8 1H,1H,2H,2H-perfluorohexanesulfon



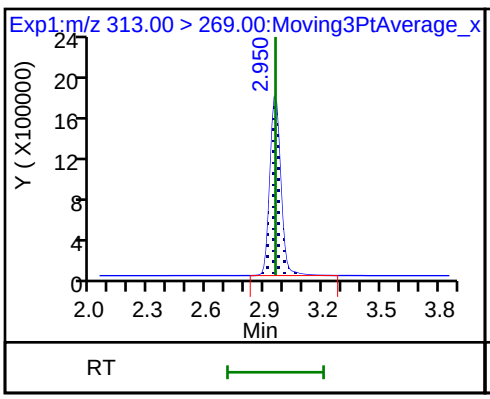
D 7 M2-4:2 FTS



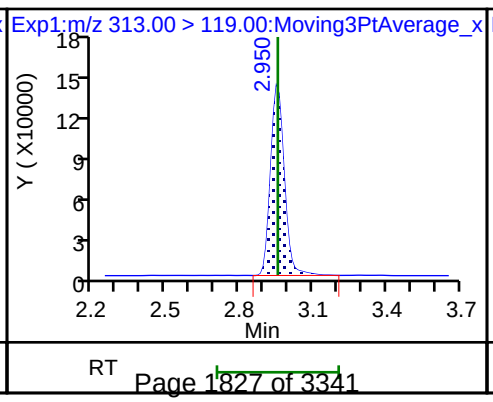
D 10 13C2 PFHxA



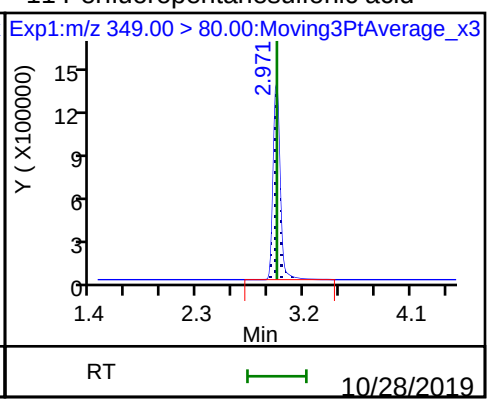
9 Perfluorohexanoic acid



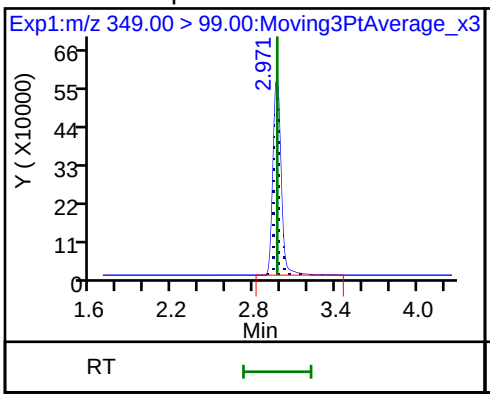
9 Perfluorohexanoic acid



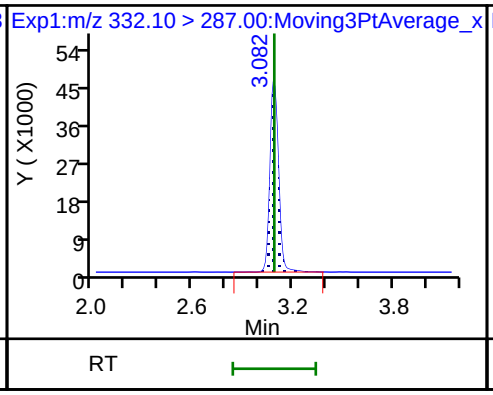
11 Perfluoropentanesulfonic acid



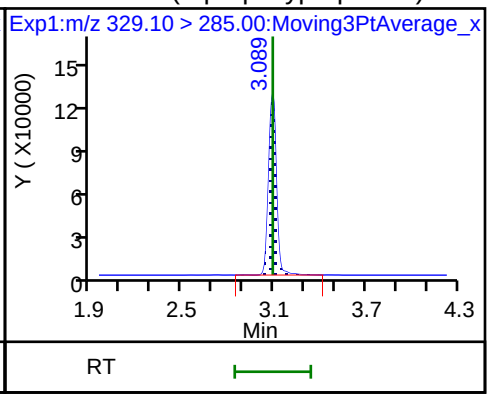
11 Perfluoropentanesulfonic acid



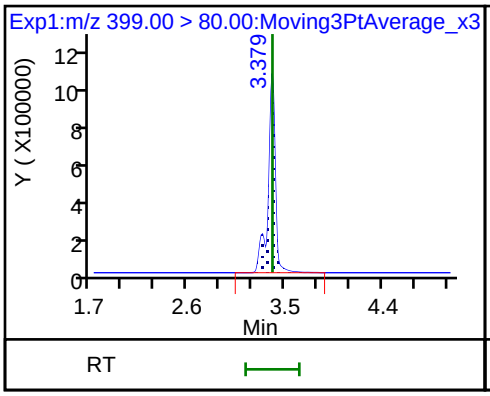
D 12 13C3 HFPO-DA



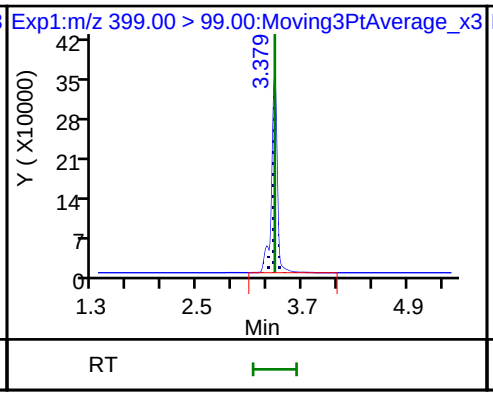
13 Perfluoro(2-propoxypropanoic) acid



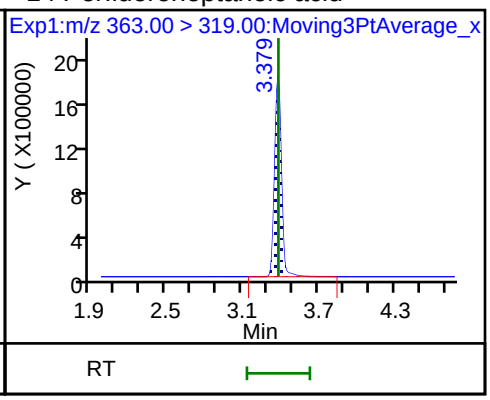
16 Perfluorohexanesulfonic acid



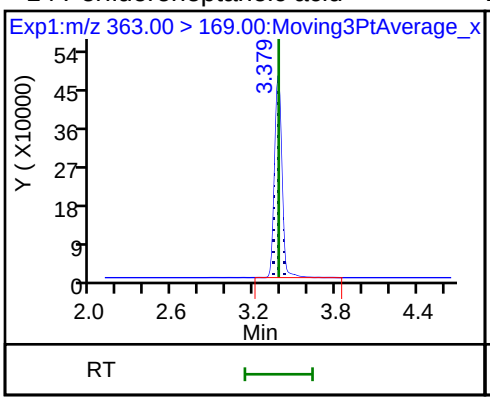
16 Perfluorohexanesulfonic acid



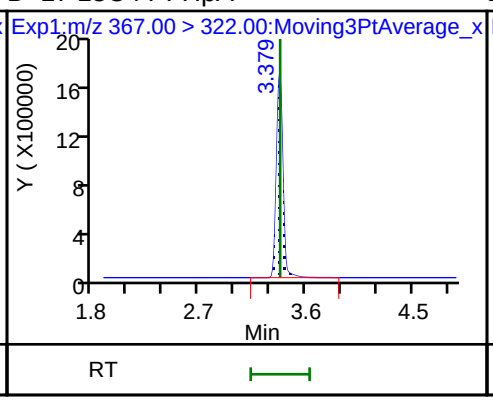
14 Perfluoroheptanoic acid



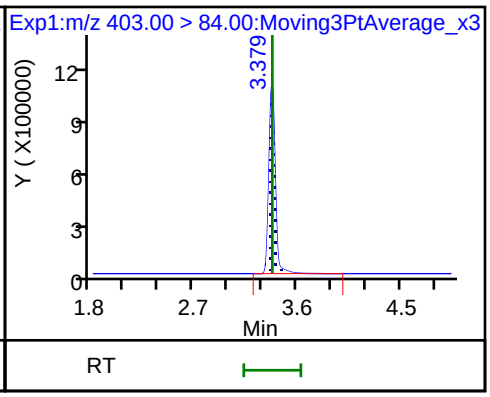
14 Perfluoroheptanoic acid



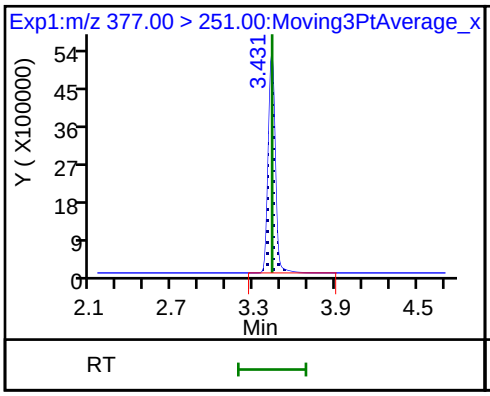
D 17 13C4 PFHpA



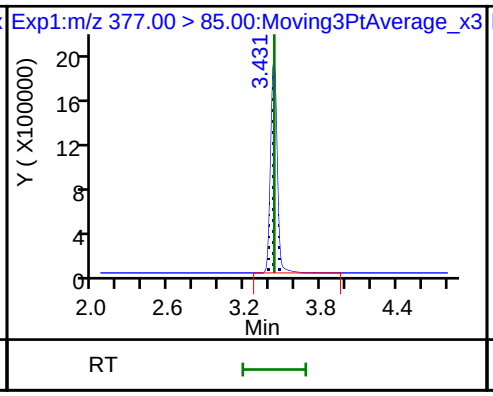
D 15 18O2 PFHxS



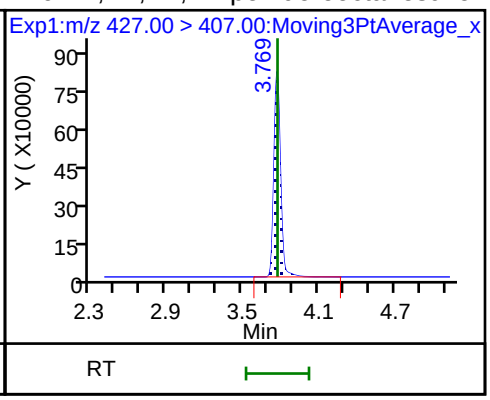
18 DONA



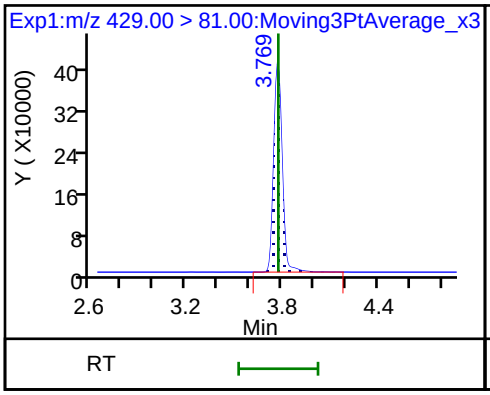
18 DONA



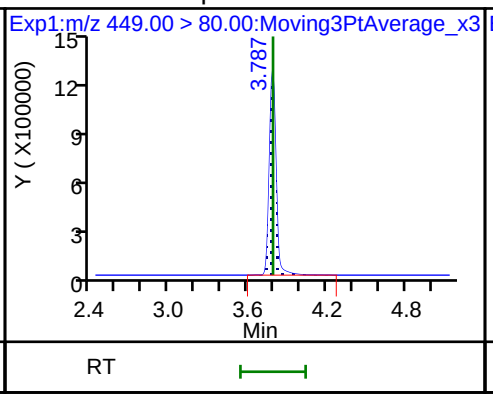
19 1H,1H,2H,2H-perfluorooctanesulfoni



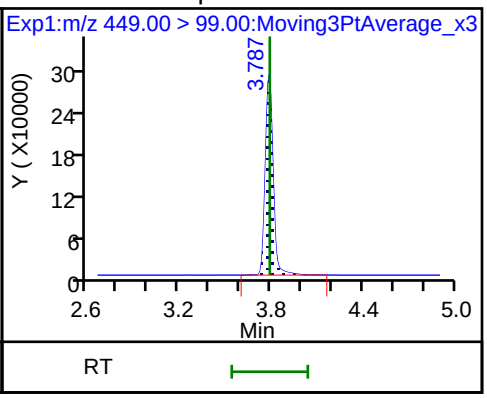
D 20 M2-6:2 FTS



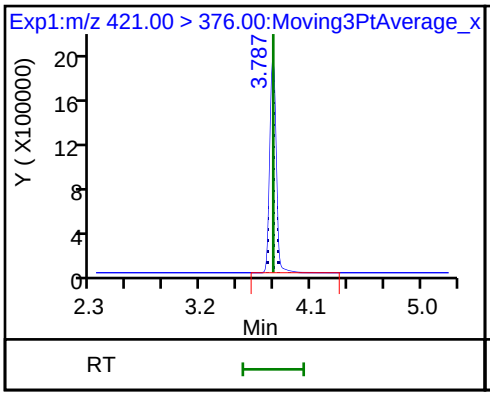
21 Perfluoroheptanesulfonic acid



21 Perfluoroheptanesulfonic acid



D 23 13C8 PFOA



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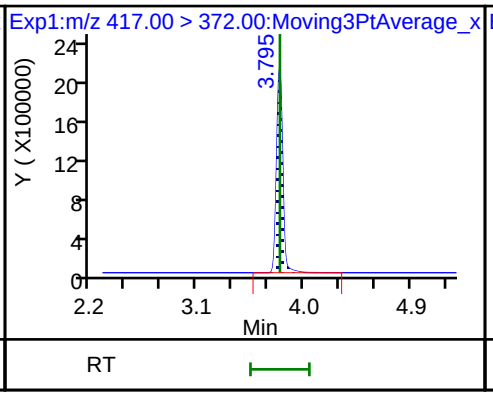
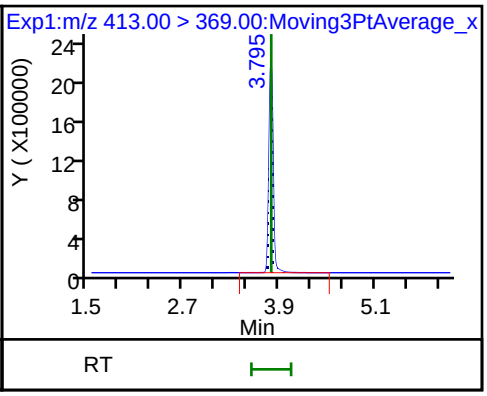
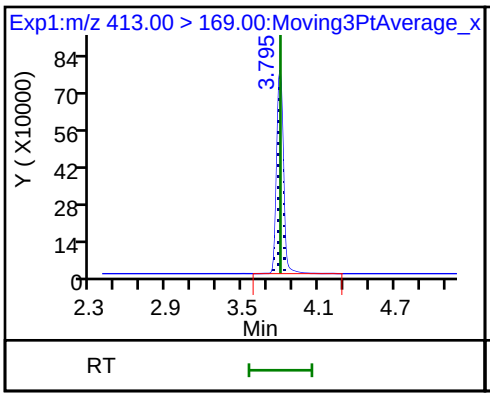


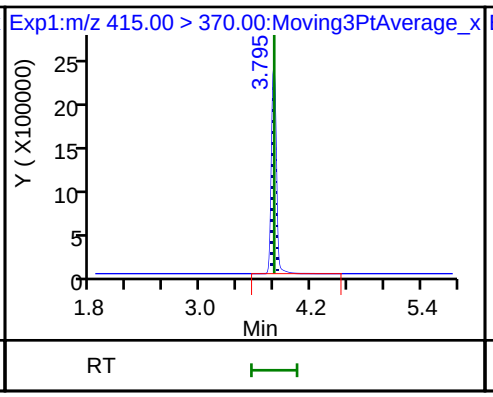
22 Perfluorooctanoic acid



22 Perfluorooctanoic acid



* 24 13C2 PFOA



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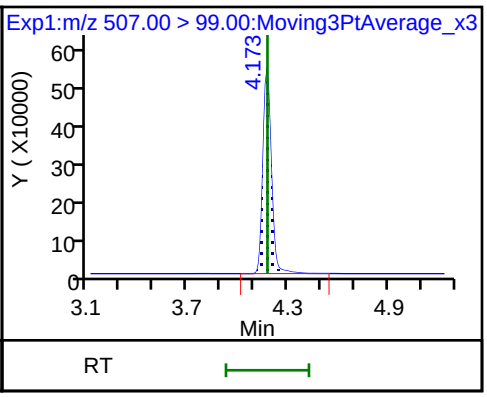
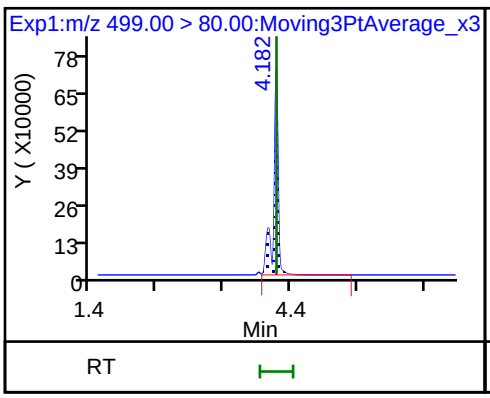
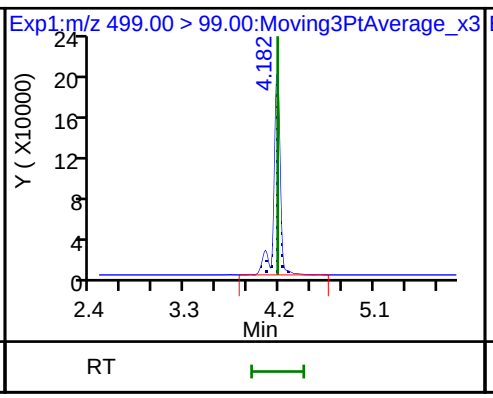


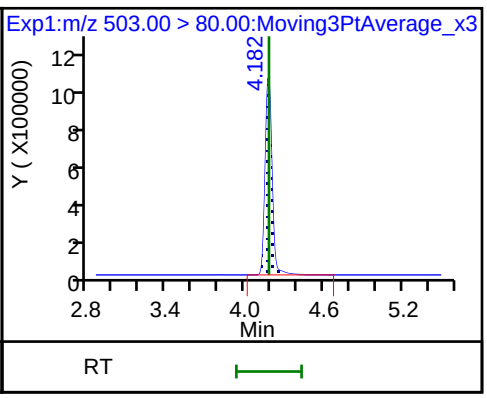
26 Perfluorooctanesulfonic acid



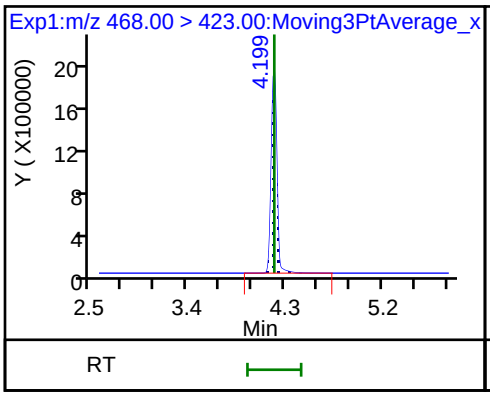
26 Perfluorooctanesulfonic acid



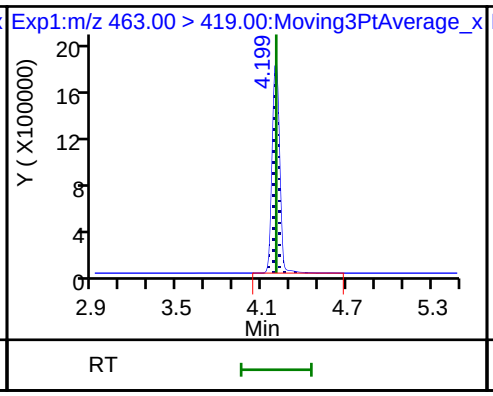
D 28 13C4 PFOS



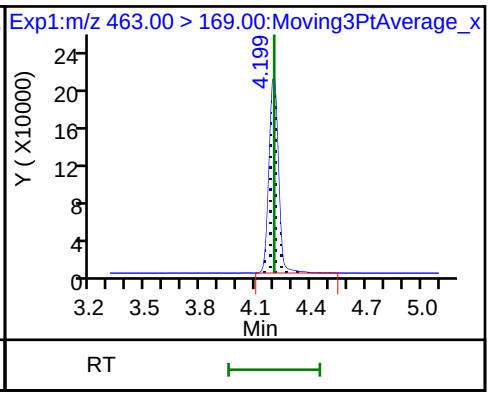
D 29 13C5 PFNA



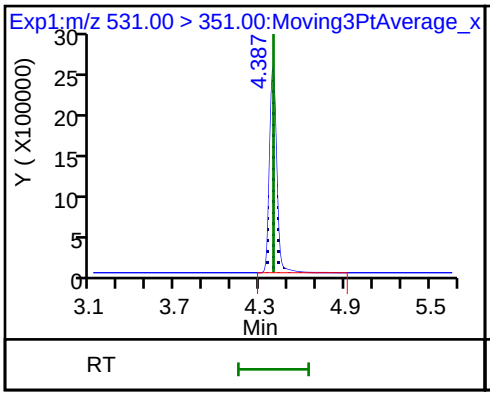
30 Perfluorononanoic acid



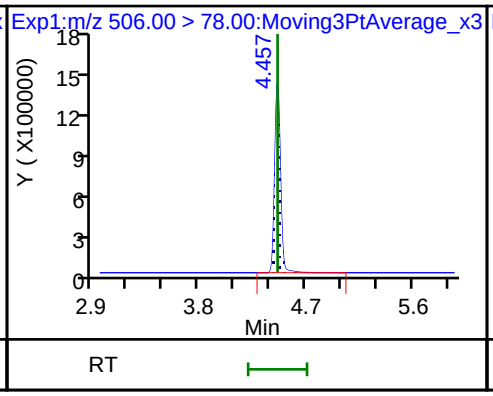
30 Perfluorononanoic acid



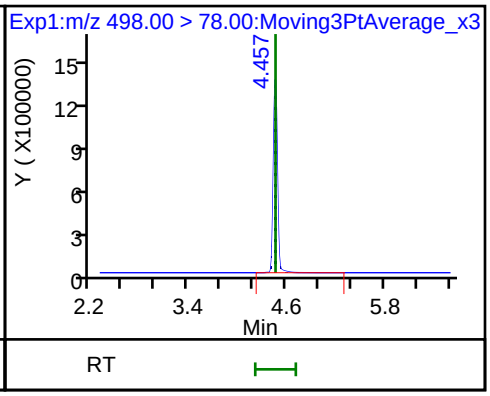
31 9-Chlorohexadecafluoro-3-oxanonanoic acid



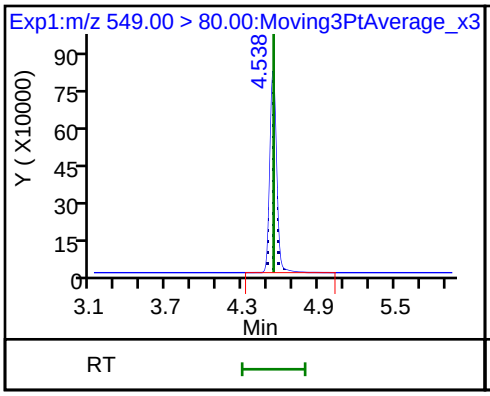
D 33 13C8 FOSA



32 Perfluorooctanesulfonamide



38 Perfluorononanesulfonic acid



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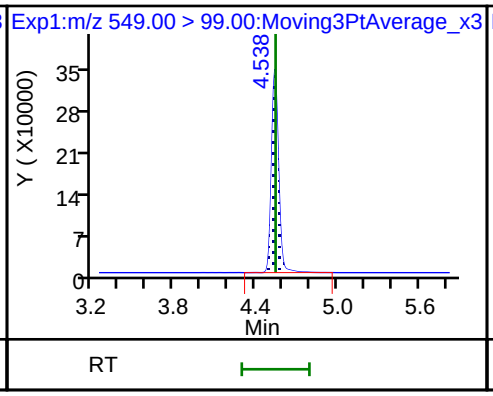
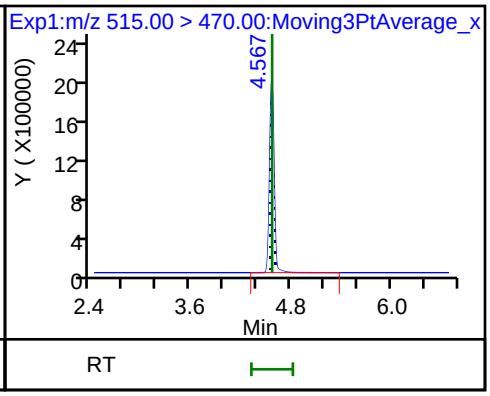
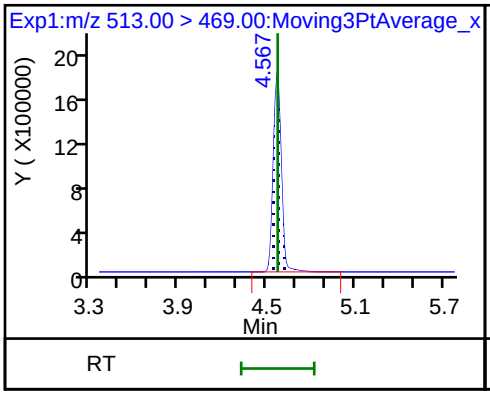


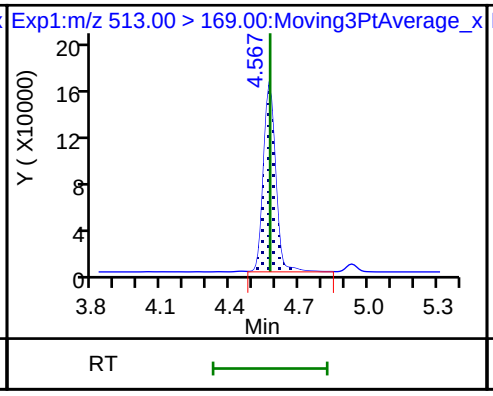
D 36 13C2 PFDA



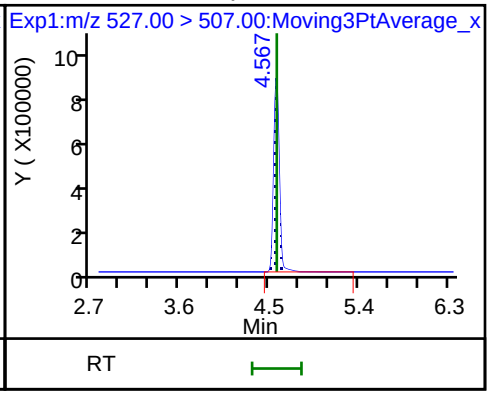
34 Perfluorodecanoic acid



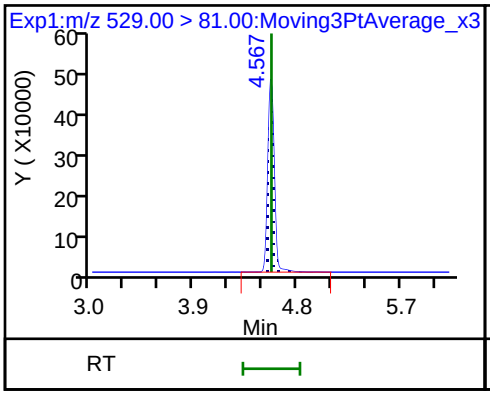
34 Perfluorodecanoic acid



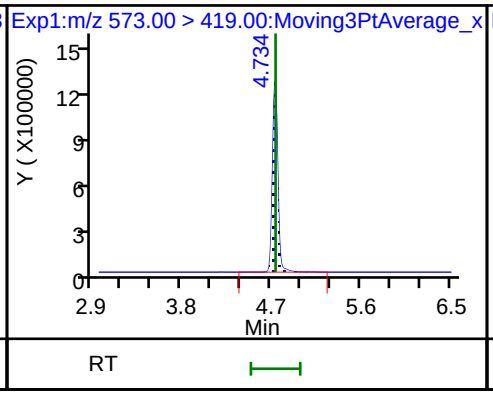
35 1H,1H,2H,2H-perfluorodecanesulfoni



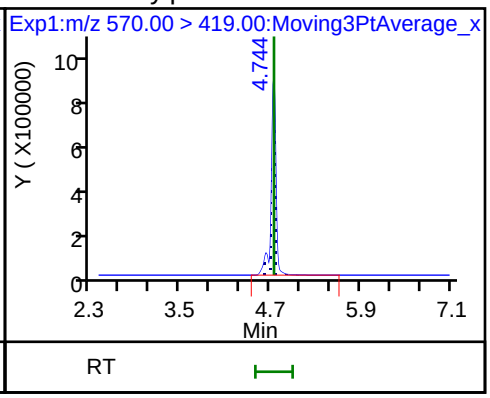
D 37 M2-8:2 FTS



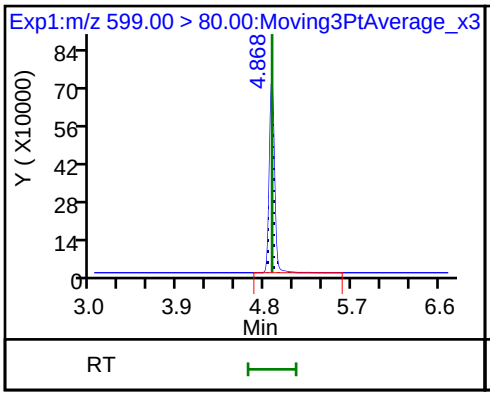
D 40 d3-NMeFOSAA



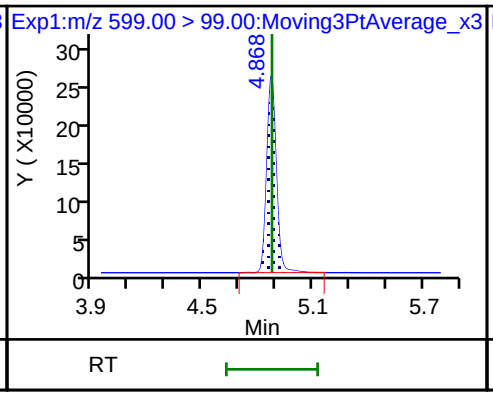
41 N-methylperfluorooctanesulfonamido



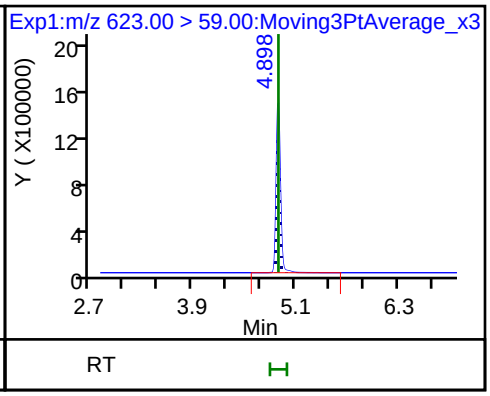
48 Perfluorodecanesulfonic acid



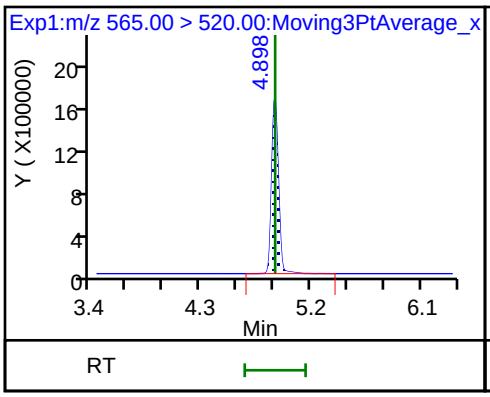
48 Perfluorodecanesulfonic acid



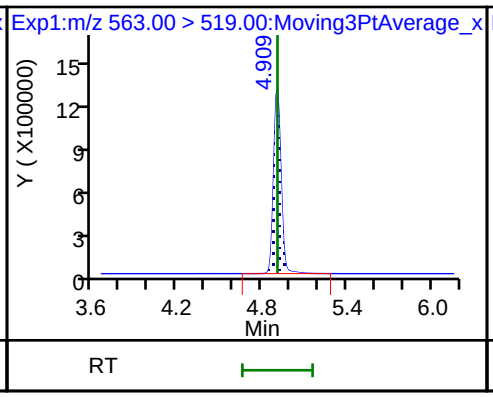
D 46 d7-N-MeFOSE-M



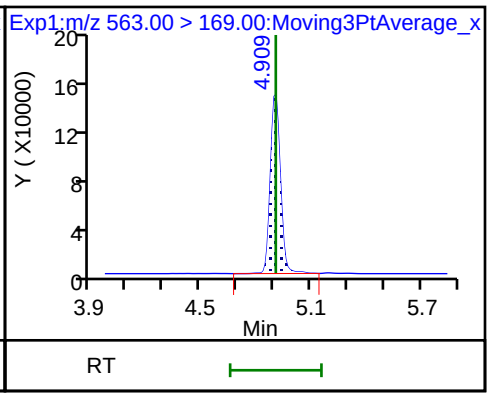
D 43 13C2 PFUnA



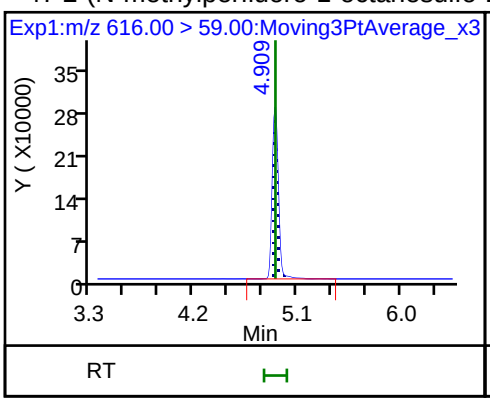
42 Perfluoroundecanoic acid



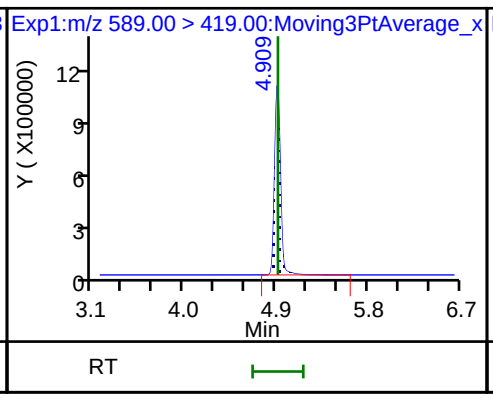
42 Perfluoroundecanoic acid



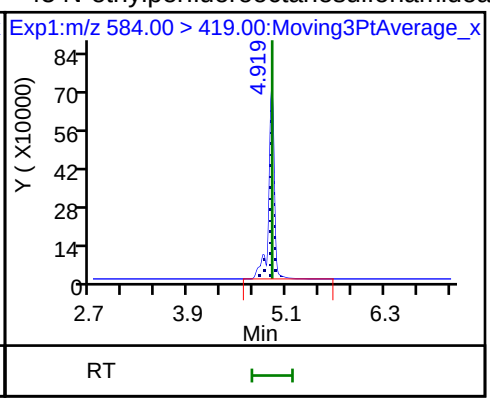
47 2-(N-methylperfluoro-1-octanesulfo



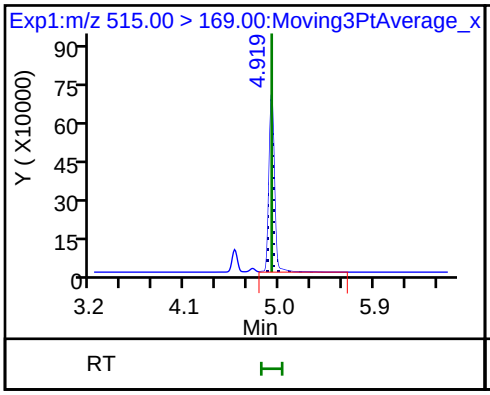
D 44 d5-NEtFOSAA



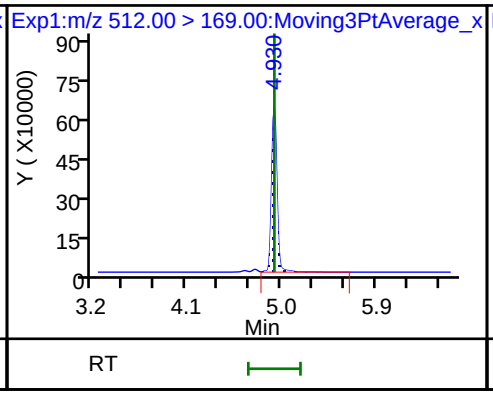
45 N-ethylperfluorooctanesulfonamidoa



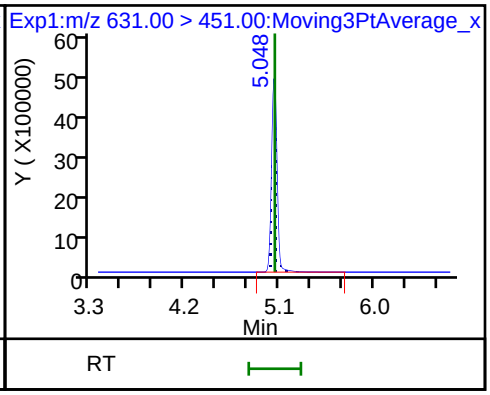
D 49 d-N-MeFOSA-M



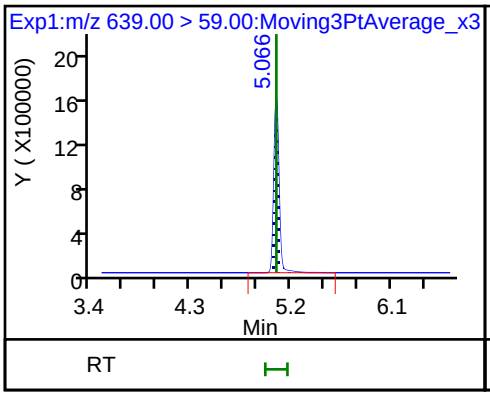
50 NMeFOSA



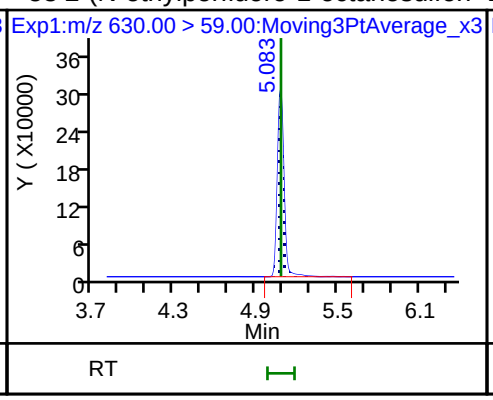
51 11-Chloroeicosafluoro-3-oxaundecan



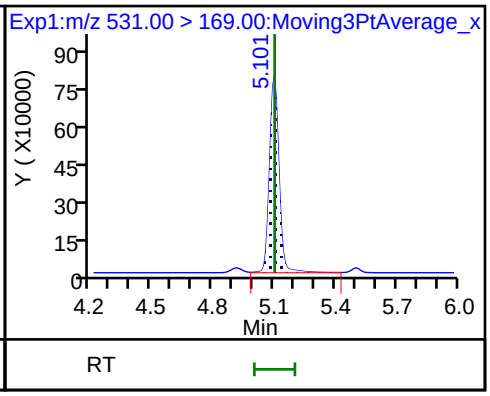
D 52 d9-N-EtFOSE-M



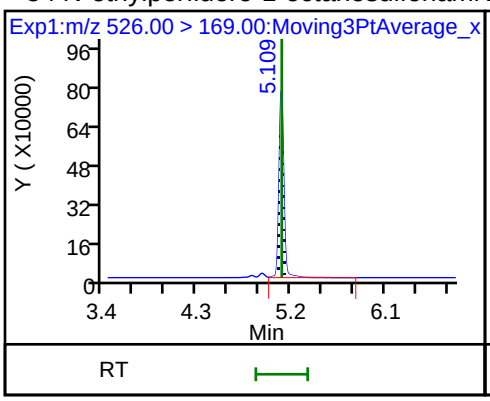
53 2-(N-ethylperfluoro-1-octanesulfon



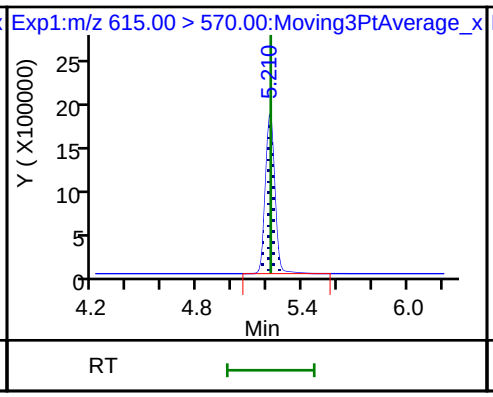
D 55 d-N-EtFOSA-M



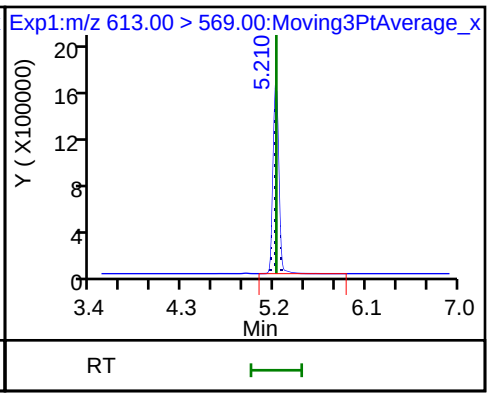
54 N-ethylperfluoro-1-octanesulfonami



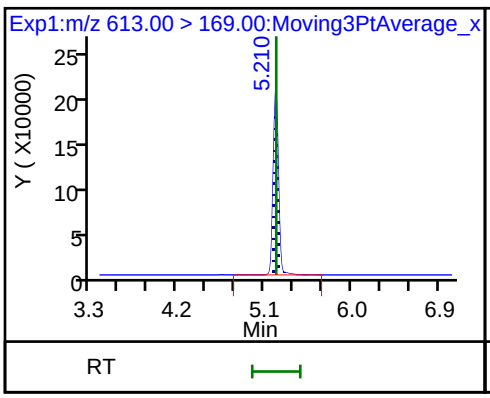
D 57 13C2 PFDoA



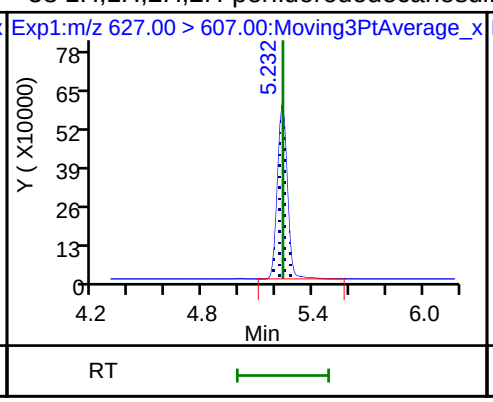
56 Perfluorododecanoic acid



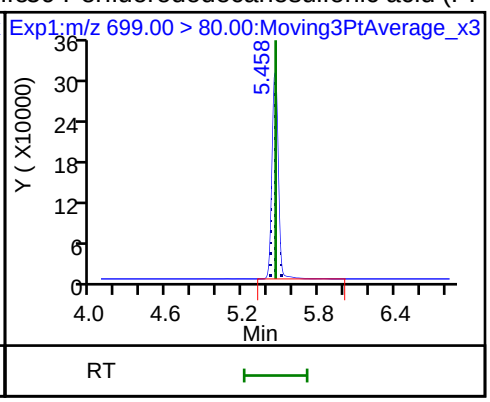
56 Perfluorododecanoic acid



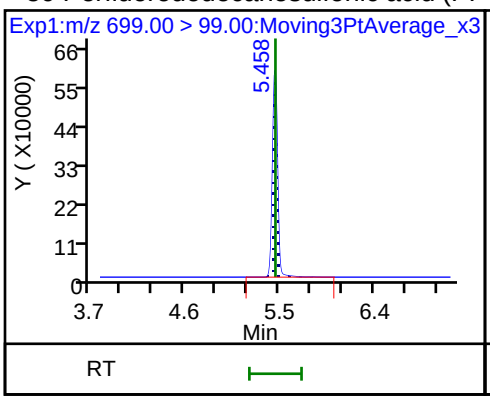
58 1H,1H,2H,2H-perfluorododecanesulfo



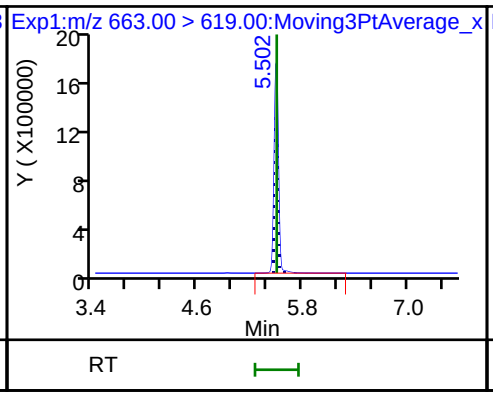
59 Perfluorododecanesulfonic acid (PF



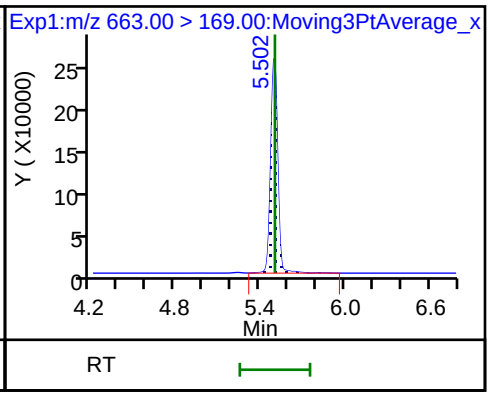
59 Perfluorododecanesulfonic acid (PF



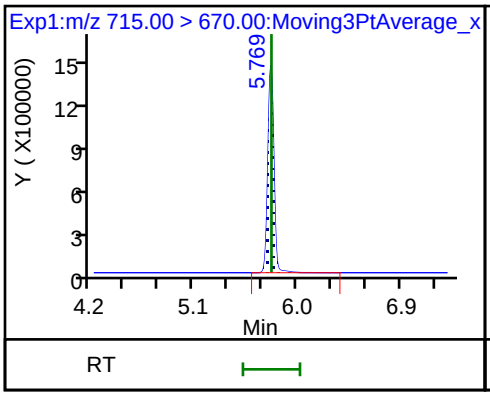
60 Perfluorotridecanoic acid



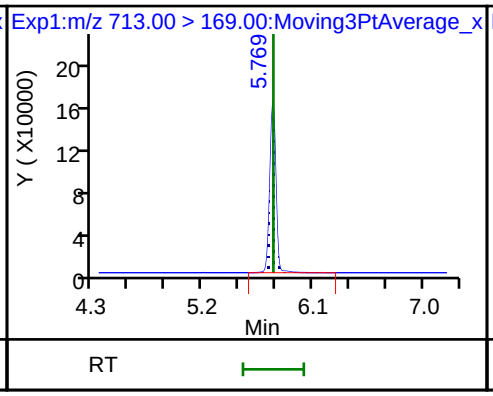
60 Perfluorotridecanoic acid



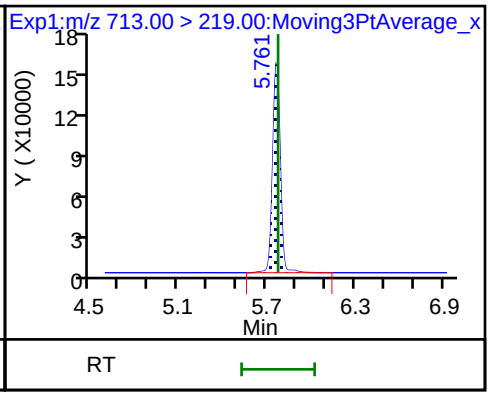
D 61 13C2 PFTeDA



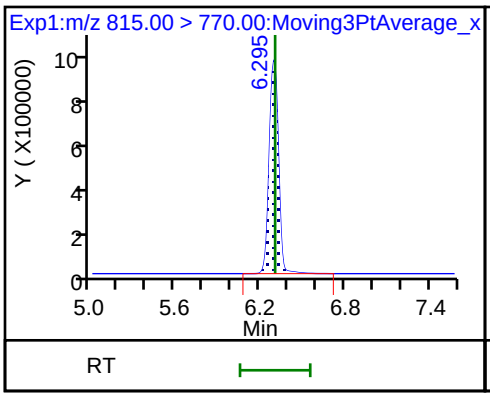
62 Perfluorotetradecanoic acid



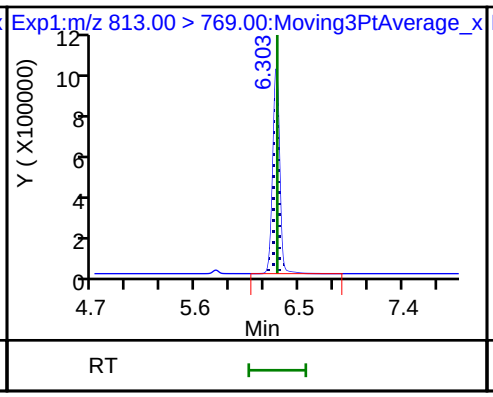
62 Perfluorotetradecanoic acid



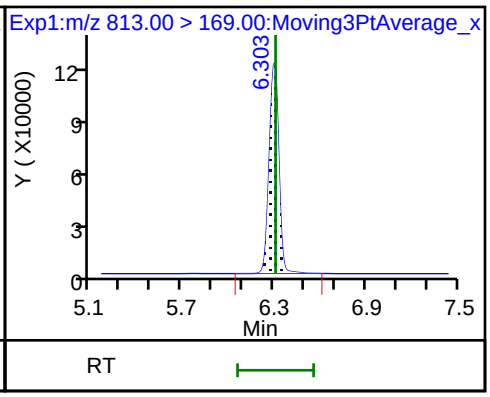
D 63 13C2 PFHxDA



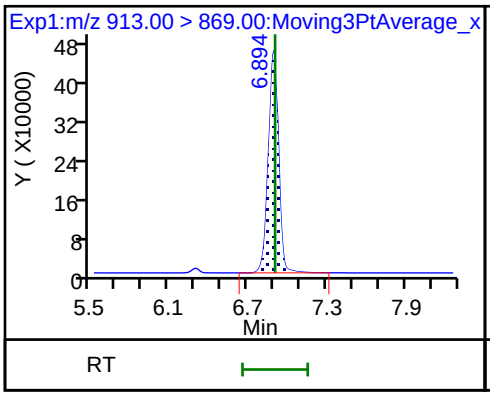
64 Perfluorohexadecanoic acid



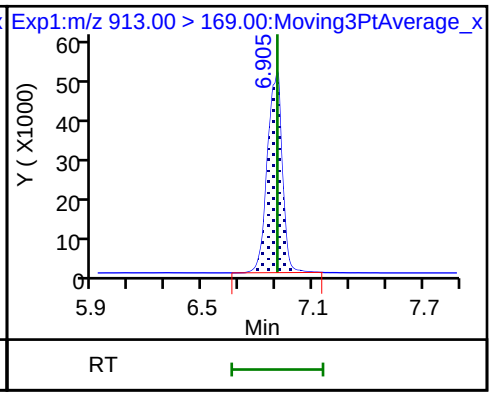
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_009.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 26-Sep-2019 22:08:50 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 6
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:26:59 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 10:17:31
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.204	2.205	-0.001	0.581	6659014	2.51		100	17427	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.204	2.209	-0.005	1.000	11658096	5.02		100	4779	
D 4 13C5 PFPeA										
267.90 > 223.00	2.551	2.559	-0.009	0.672	5931413	2.50		100	21312	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.562	2.562	0.0	1.004	12173212	4.85		97.1	4550	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.596	2.593	0.003	0.769	12442143	4.48	Target=1.87	101	8848	
298.90 > 99.00	2.584	2.593	-0.009	0.765	6572101		1.89(0.94-2.81)	101	3533	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.906	2.910	-0.004	1.000	6549716	5.03		108	80025	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.906	2.910	-0.004	0.766	1119169	2.17		93.1	989	
D 10 13C2 PFHxA										
315.00 > 270.00	2.948	2.956	-0.008	0.777	6612336	2.50		99.9	28443	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.948	2.956	-0.008	1.000	12107636	4.82	Target=11.57	96.5	4004	
313.00 > 119.00	2.948	2.956	-0.008	1.000	1074330		11.27(5.78-17.35)	96.5	1550	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.970	2.971	-0.001	0.879	10456649	4.71	Target=2.40	100	41317	
349.00 > 99.00	2.970	2.971	-0.001	0.879	4317993		2.42(1.20-3.60)	100	16127	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.081	3.087	-0.006	0.812	150468	2.68		107	2234	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.081	3.089	-0.008	1.000	752206	4.52		90.4	2740	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 15 18O2 PFHxS										
403.00 > 84.00	3.377	3.382	-0.005	0.890	3863083	2.37		100	52175	
D 17 13C4 PFHpA										
367.00 > 322.00	3.377	3.382	-0.005	0.890	5833503	2.41		96.2	40393	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.377	3.382	-0.005	1.000	8921901	4.27	Target=2.98	93.9	39251	
399.00 > 99.00	3.377	3.382	-0.005	1.000	3050768		2.92(1.49-4.47)	93.9	5020	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.377	3.382	-0.005	1.000	12094254	4.97	Target=3.70	99.4	8874	
363.00 > 169.00	3.377	3.382	-0.005	1.000	3455909		3.50(1.85-5.54)	99.4	5097	
18 DONA										
377.00 > 251.00	3.429	3.433	-0.004	0.821	31899980	4.48	Target=2.81	95.0	79342	
377.00 > 85.00	3.429	3.433	-0.004	0.821	12121491		2.63(1.41-4.22)	95.0	68724	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.768	3.775	-0.007	1.000	5414080	4.81		101	45589	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.768	3.775	-0.007	0.993	1311029	2.17		91.2	6662	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.785	3.789	-0.004	0.906	7932871	4.82	Target=4.19	101	27063	
449.00 > 99.00	3.785	3.789	-0.004	0.906	1885880		4.21(2.09-6.28)	101	4043	
D 23 13C8 PFOA										
421.00 > 376.00	3.785	3.790	-0.005	0.998	6294331	2.55		102	45892	
D 25 13C4 PFOA										
417.00 > 372.00	3.794	3.797	-0.003	1.000	7031040	2.48		99.1	57673	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.794	3.798	-0.004	1.000	14017500	4.79	Target=2.68	95.9	5158	
413.00 > 169.00	3.794	3.798	-0.004	1.000	5324554		2.63(1.34-4.02)	95.9	11923	
* 24 13C2 PFOA										
415.00 > 370.00	3.794	3.798	-0.004		7774512	2.50			123241	
D 27 13C8 PFOS										
507.00 > 99.00	4.167	4.176	-0.009	1.098	1797707	2.50		100	8928	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.176	4.181	-0.005	1.000	6672790	4.45	Target=4.19	96.0	412	
499.00 > 99.00	4.176	4.181	-0.005	1.000	1543765		4.32(2.09-6.28)	96.0	3914	
D 28 13C4 PFOS										
503.00 > 80.00	4.176	4.181	-0.005	1.101	3291747	2.34		97.7	7922	
30 Perfluorononanoic acid										
463.00 > 419.00	4.194	4.199	-0.005	1.000	11954977	4.99	Target=8.84	99.8	7288	
463.00 > 169.00	4.194	4.199	-0.005	1.000	1270426		9.41(4.42-13.26)	99.8	5558	
D 29 13C5 PFNA										
468.00 > 423.00	4.194	4.199	-0.005	1.105	6138970	2.47		98.7	49510	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.389	4.393	-0.004	1.051	16869830	4.84		104	59352	
D 33 13C8 FOSA										
506.00 > 78.00	4.459	4.460	-0.001	1.175	4900303	2.56		103	35213	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.459	4.464	-0.005	1.000	9668245	4.94		98.9	63008	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.540	4.544	-0.004	1.087	5626775	4.90	Target=2.27	102	10764	
549.00 > 99.00	4.540	4.544	-0.004	1.087	2501996		2.25(1.13-3.40)	102	14014	
D 36 13C2 PFDA										
515.00 > 470.00	4.570	4.572	-0.002	1.204	6462306	2.44		97.5	37706	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.570	4.572	-0.002	1.000	12380871	4.99	Target=10.36	99.8	12416	
513.00 > 169.00	4.570	4.572	-0.002	1.000	1217338		10.17(5.18-15.54)	99.8	296	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.570	4.574	-0.004	1.000	6165753	4.74		99.0	59898	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.570	4.574	-0.004	1.204	1623951	2.26		94.3	10296	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.735	4.741	-0.006	1.248	4315815	2.46		98.3	7511	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.735	4.744	-0.009	1.000	7140351	5.25		105	39621	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.869	4.876	-0.007	1.166	5461222	5.09	Target=2.70	106	46713	
599.00 > 99.00	4.869	4.876	-0.007	1.166	1939558		2.82(1.35-4.05)	106	8444	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.899	4.897	0.002	1.291	5619130	13.8		110	16469	
D 43 13C2 PFUnA										
565.00 > 520.00	4.899	4.906	-0.007	1.291	6456262	2.60		104	19584	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.899	4.907	-0.008	1.000	10152180	4.72	Target=9.31	94.5	16361	
563.00 > 169.00	4.899	4.907	-0.008	1.000	1131023		8.98(4.65-13.96)	94.5	4283	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.910	4.909	0.001	1.002	2259531	4.80		95.9	19281	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.910	4.915	-0.005	1.294	4323830	2.46		98.3	21009	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.920	4.922	-0.002	1.002	6539422	5.01		100	29852	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.920	4.924	-0.004	1.297	2702309	2.59		104	59.6	
50 NMeFOSA										
512.00 > 169.00	4.931	4.930	0.001	1.002	5034054	4.84		96.7	278	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.049	5.054	-0.005	1.209	30019618	4.55		96.7	108718	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.068	-0.002	1.335	5441298	12.7		102	19697	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.084	5.084	0.0	1.003	2310529	5.06		101	13547	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.101	5.101	0.0	1.344	2816968	2.61		104	140	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.110	5.110	0.0	1.002	5526500	4.95		99.1	224	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.211	5.217	-0.006	1.373	6474786	2.50		100	52989	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.211	5.219	-0.008	1.000	12842949	5.17	Target=8.07	103	5365	
613.00 > 169.00	5.211	5.219	-0.008	1.000	1470607		8.73(4.03-12.10)	103	8052	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.232	5.236	-0.004	1.145	4150422	4.91		102	111520	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.451	5.460	-0.009	1.305	2131806	5.14	Target=0.52	106	9727	
699.00 > 99.00	5.451	5.460	-0.009	1.305	4205673		0.51(0.26-0.77)	106	29995	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.495	5.504	-0.009	1.055	11947101	5.03	Target=6.35	101	9704	
663.00 > 169.00	5.495	5.504	-0.009	1.055	1842327		6.48(3.18-9.53)	101	6740	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.765	5.774	-0.009	1.520	5579229	2.44		97.7	40580	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.773	5.775	-0.002	1.001	1043485	4.94	Target=0.85	98.9	5716	
713.00 > 219.00	5.765	5.775	-0.010	1.000	1225983		0.85(0.43-1.28)	98.9	15928	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.295	6.305	-0.010	1.659	4419497	2.42		96.7	18338	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.295	6.308	-0.013	1.000	8825622	5.43	Target=7.95	109	763	
813.00 > 169.00	6.295	6.308	-0.013	1.000	1047745		8.42(3.98-11.93)	109	4398	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.895	6.905	-0.010	1.095	6408239	5.97	Target=8.96	119	1080	
913.00 > 169.00	6.889	6.905	-0.016	1.094	695556		9.21(4.48-13.45)	119	3044	

Reagents:

LCPFC_LL6_00016 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:27:00 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_009.d

Injection Date: 26-Sep-2019 22:08:50 Instrument ID: A13

Lims ID: IC L6 Full

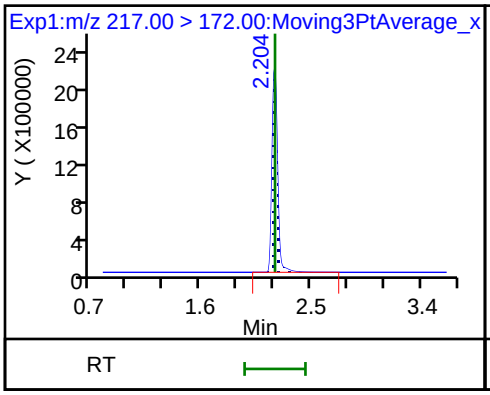
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 7

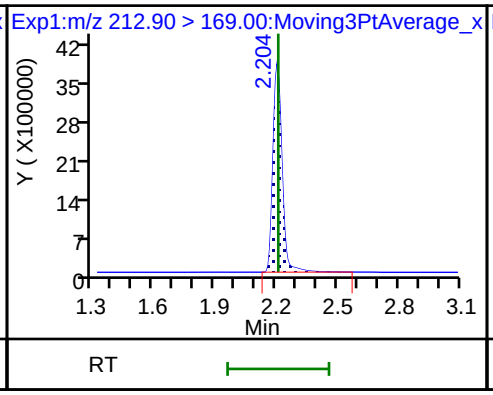
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

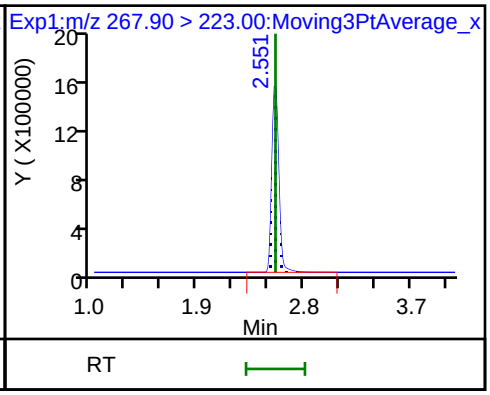
D 2 13C4 PFBA



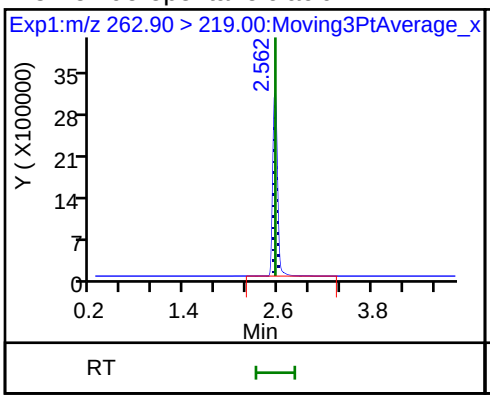
3 Perfluorobutanoic acid



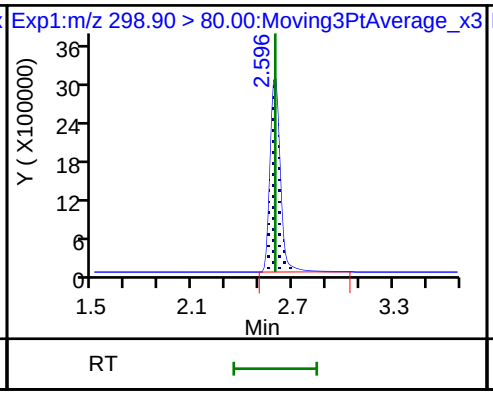
D 4 13C5 PFPeA



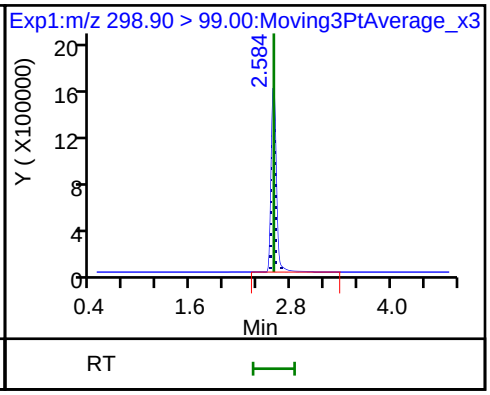
5 Perfluoropentanoic acid



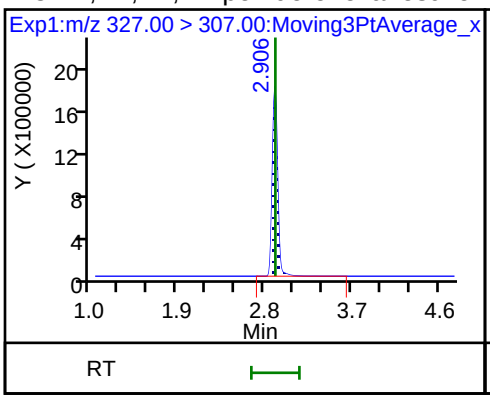
6 Perfluorobutanesulfonic acid



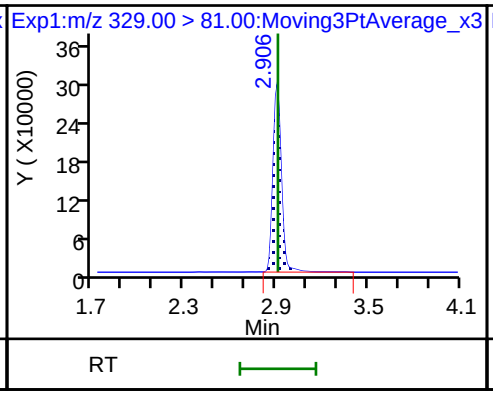
6 Perfluorobutanesulfonic acid



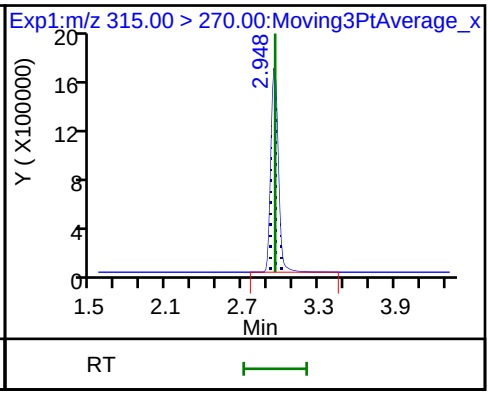
8 1H,1H,2H,2H-perfluorohexanesulfon



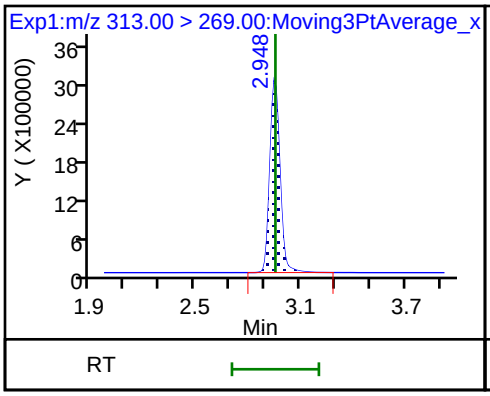
D 7 M2-4:2 FTS



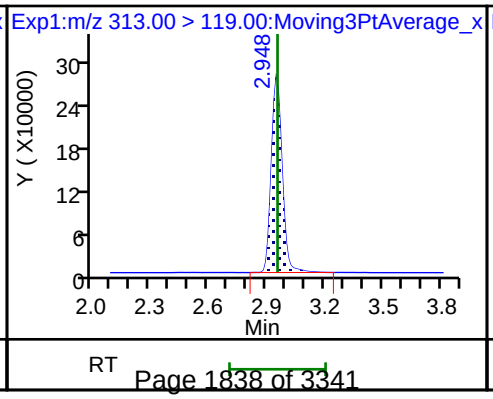
D 10 13C2 PFHxA



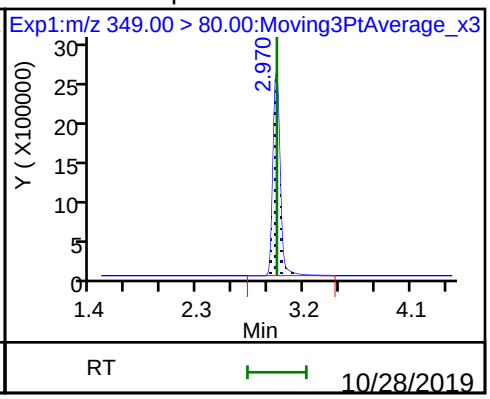
9 Perfluorohexanoic acid



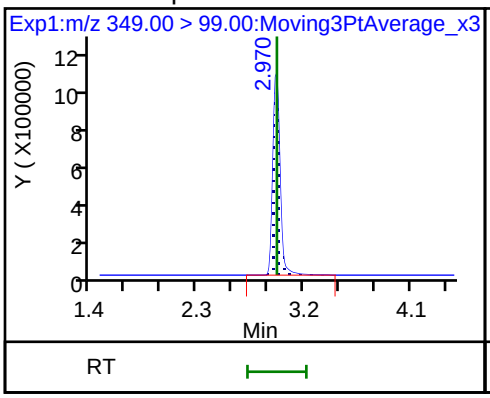
9 Perfluorohexanoic acid



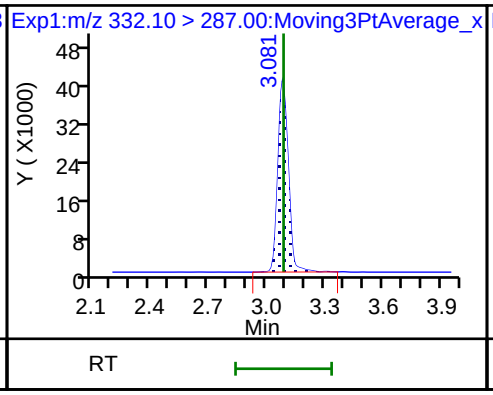
11 Perfluoropentanesulfonic acid



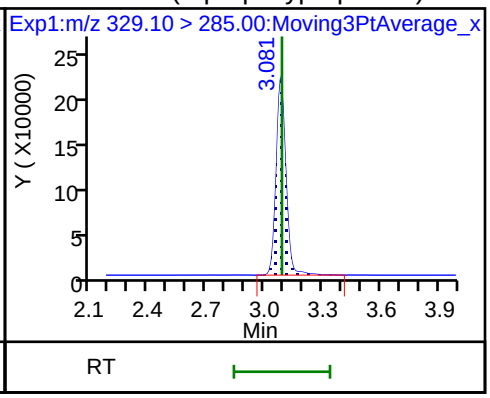
11 Perfluoropentanesulfonic acid



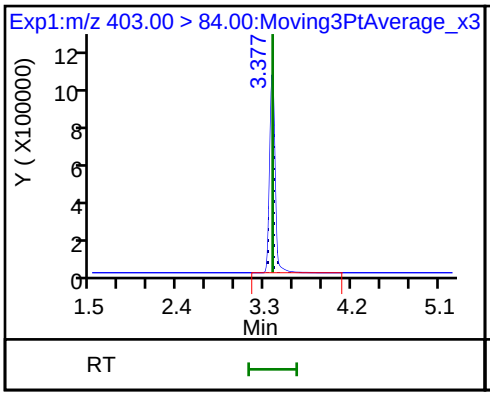
D 12 13C3 HFPO-DA



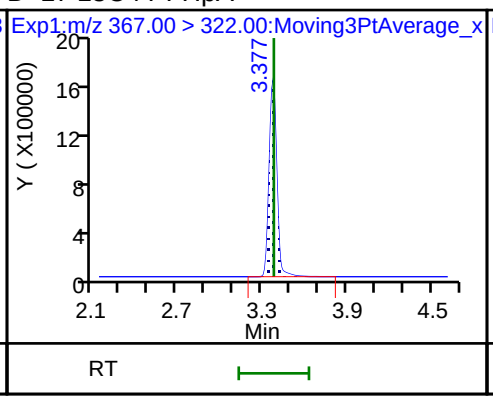
13 Perfluoro(2-propoxypropanoic) acid



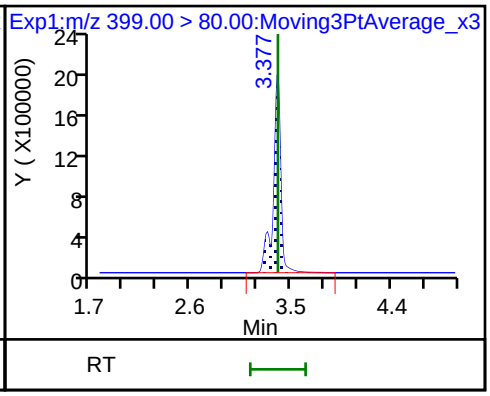
D 15 18O2 PFHxS



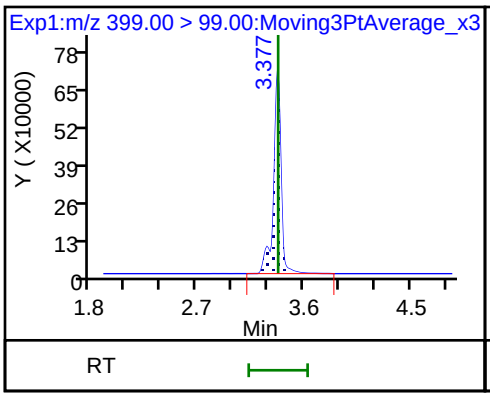
D 17 13C4 PFHpA



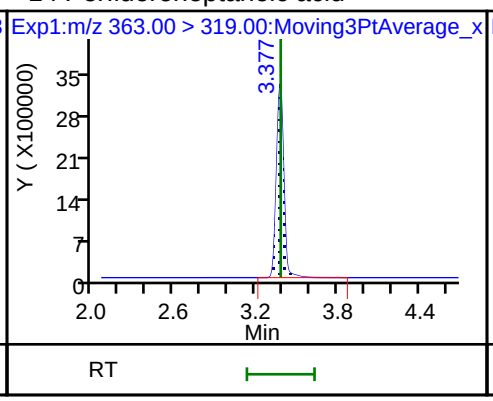
16 Perfluorohexanesulfonic acid



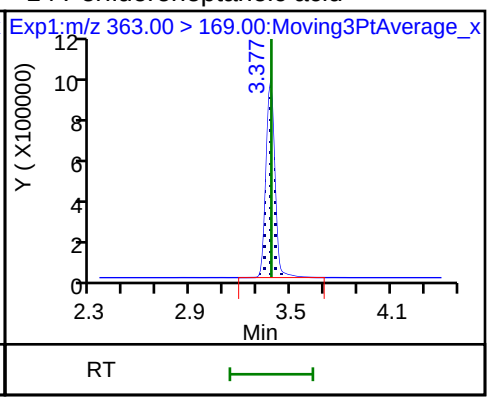
16 Perfluorohexanesulfonic acid



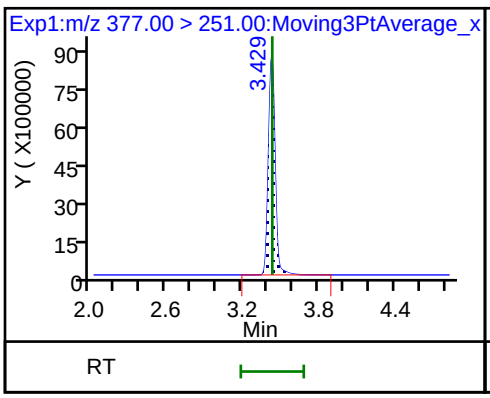
14 Perfluoroheptanoic acid



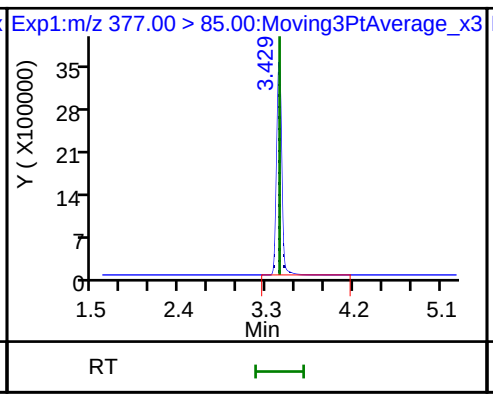
14 Perfluoroheptanoic acid



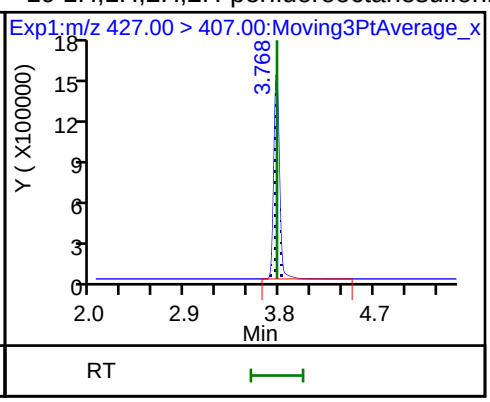
18 DONA



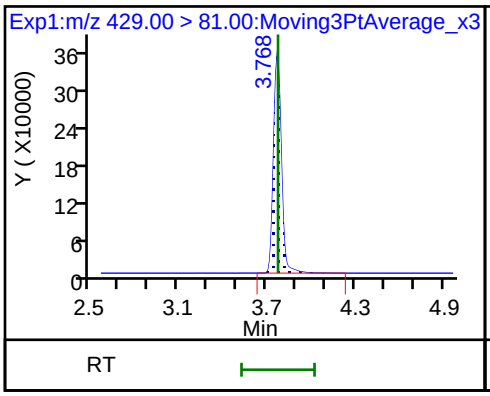
18 DONA



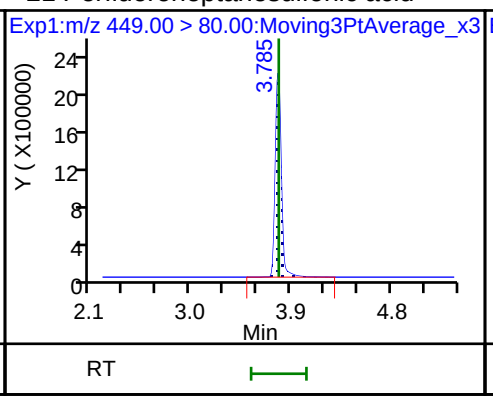
19 1H,1H,2H,2H-perfluorooctanesulfoni



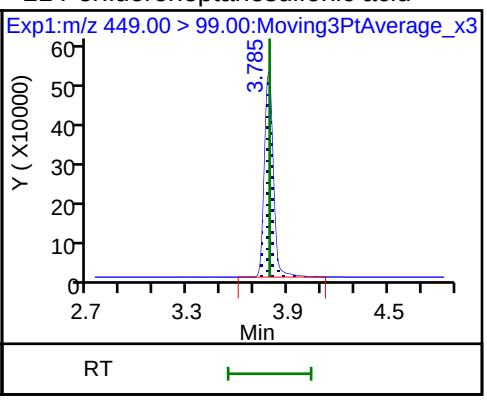
D 20 M2-6:2 FTS



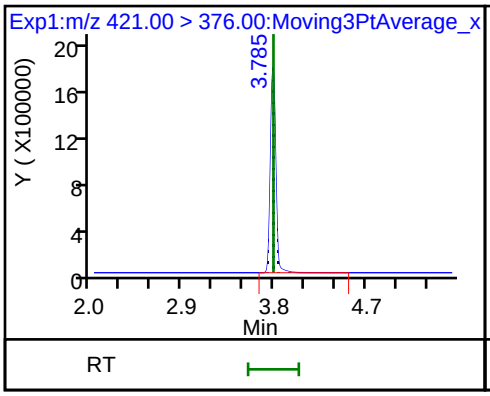
21 Perfluoroheptanesulfonic acid



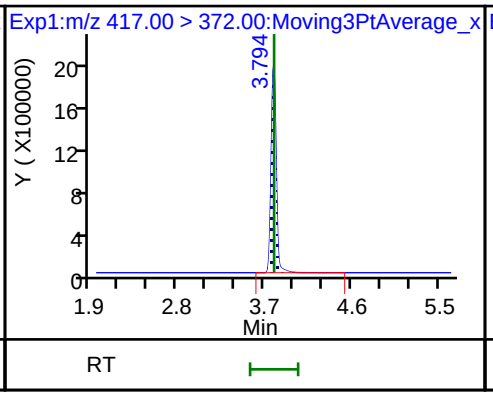
21 Perfluoroheptanesulfonic acid



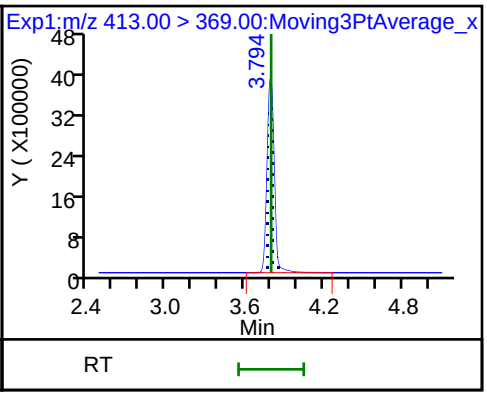
D 23 13C8 PFOA



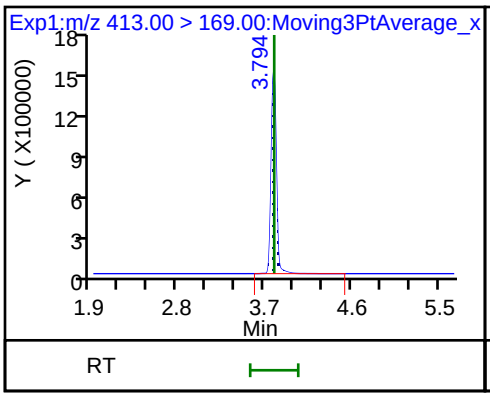
D 25 13C4 PFOA



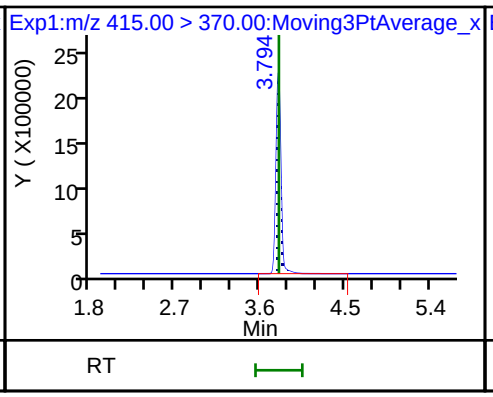
22 Perfluorooctanoic acid



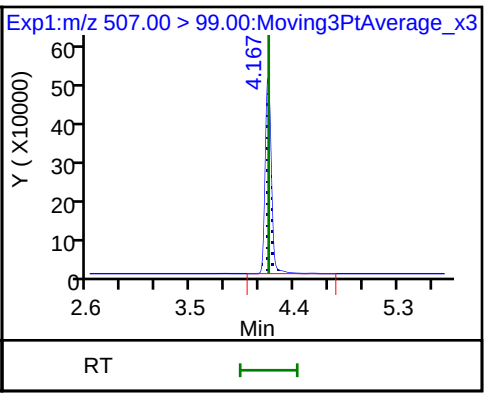
22 Perfluorooctanoic acid



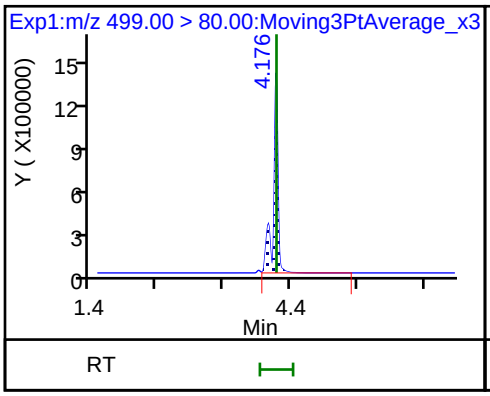
* 24 13C2 PFOA



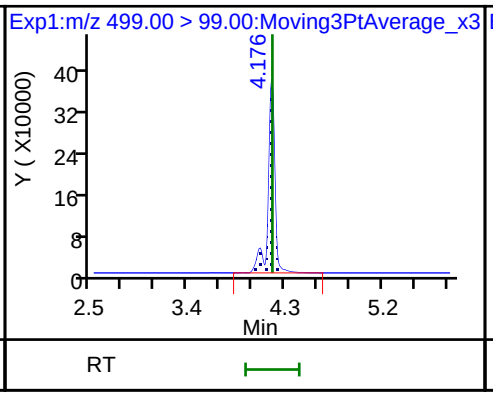
D 27 13C8 PFOS



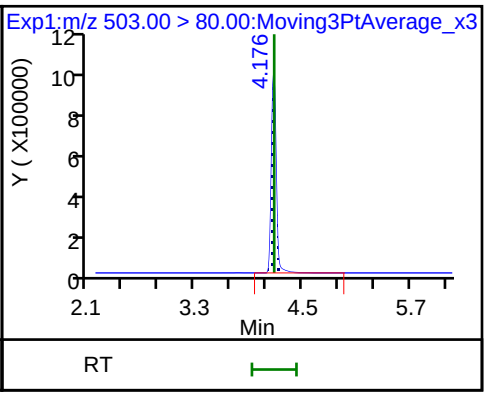
26 Perfluorooctanesulfonic acid



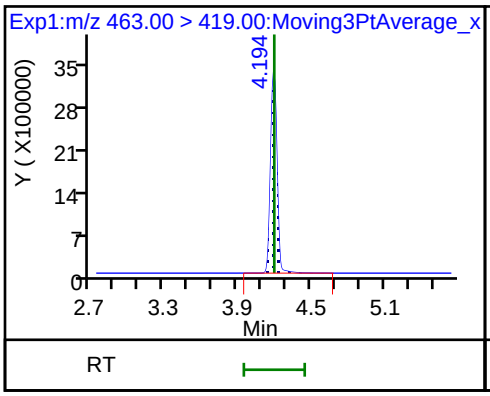
26 Perfluorooctanesulfonic acid



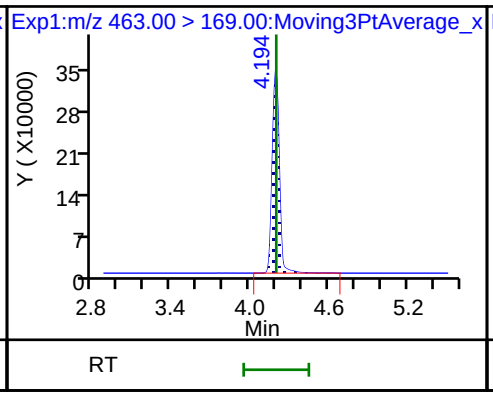
D 28 13C4 PFOS



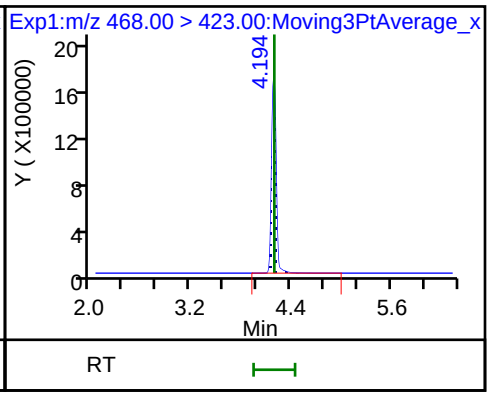
30 Perfluorononanoic acid



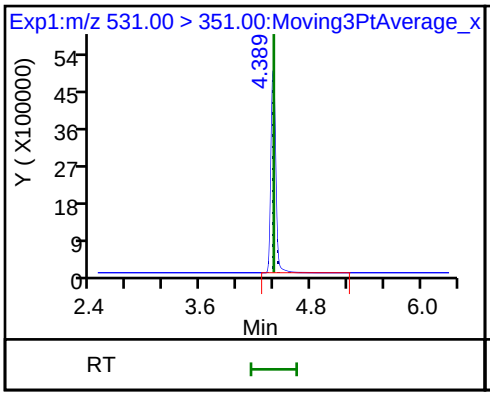
30 Perfluorononanoic acid



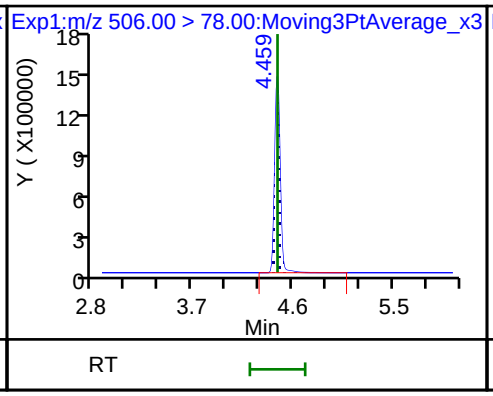
D 29 13C5 PFNA



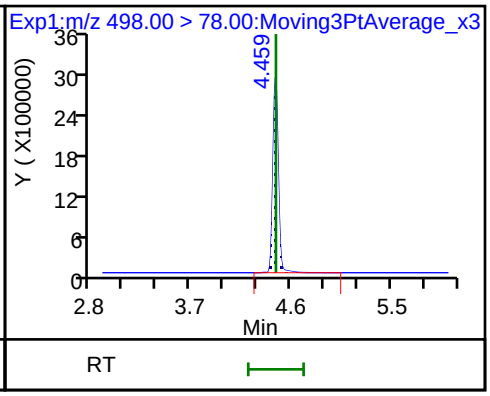
31 9-Chlorohexadecafluoro-3-oxanonane



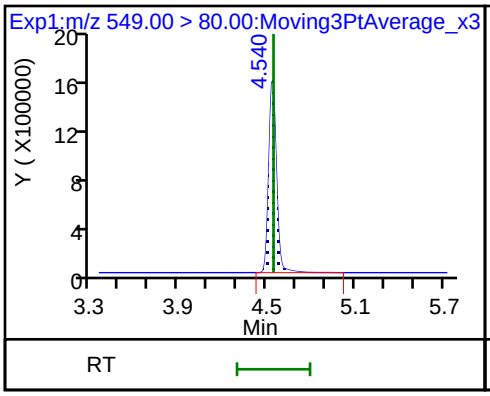
D 33 13C8 FOSA



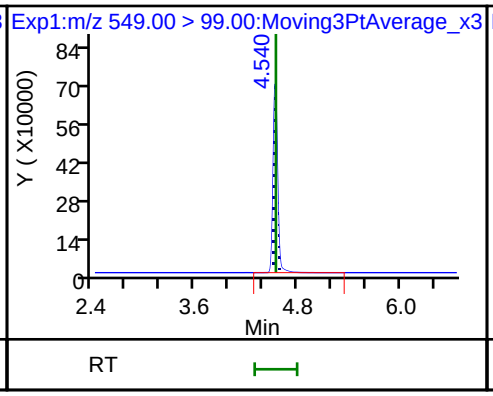
32 Perfluorooctanesulfonamide



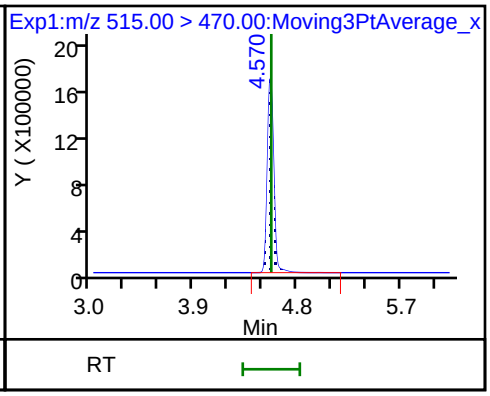
38 Perfluorononanesulfonic acid



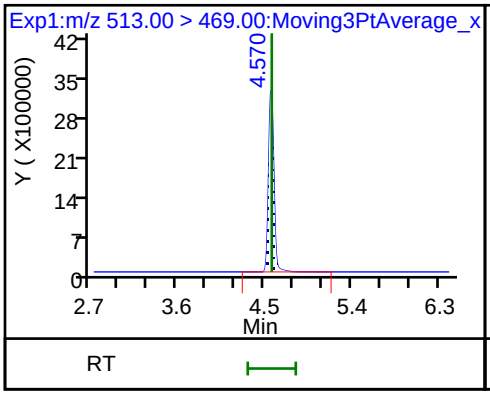
38 Perfluorononanesulfonic acid



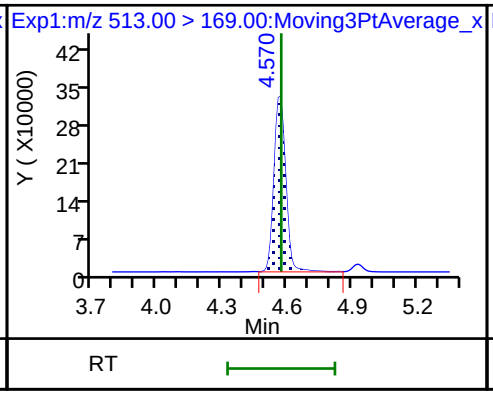
D 36 13C2 PFDA



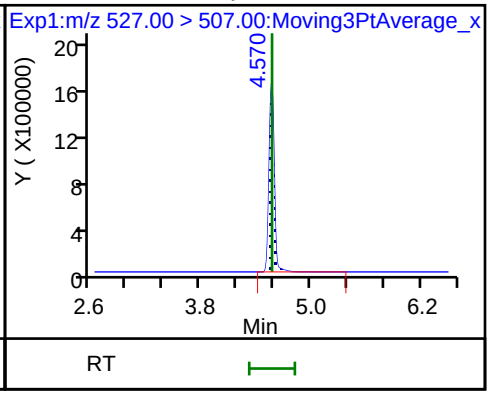
34 Perfluorodecanoic acid



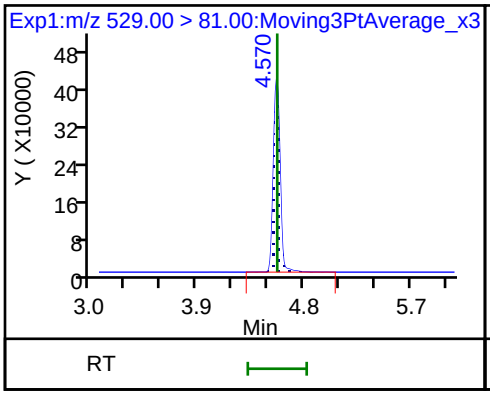
34 Perfluorodecanoic acid



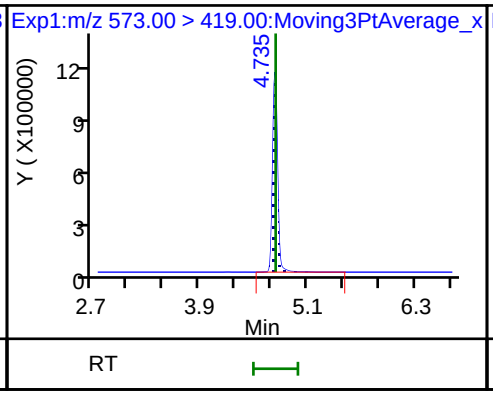
35 1H,1H,2H,2H-perfluorodecanesulfoni



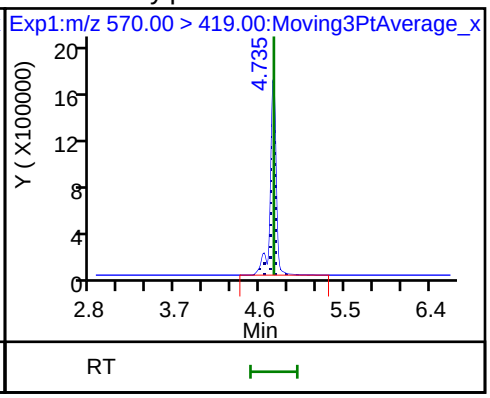
D 37 M2-8:2 FTS



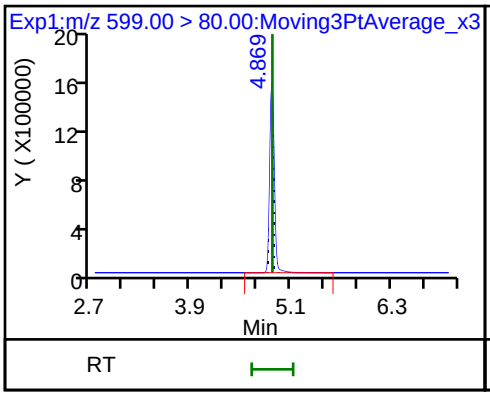
D 40 d3-NMeFOSAA



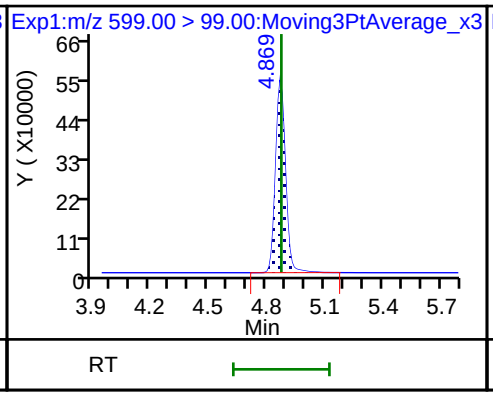
41 N-methylperfluorooctanesulfonamido



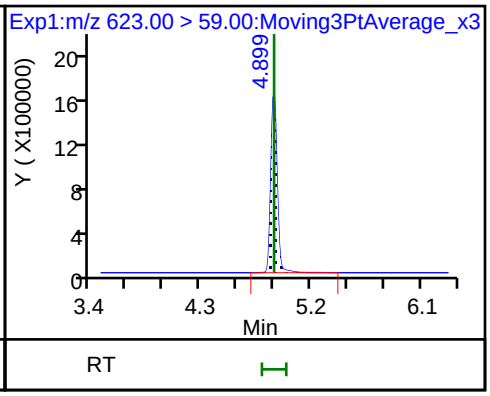
48 Perfluorodecanesulfonic acid



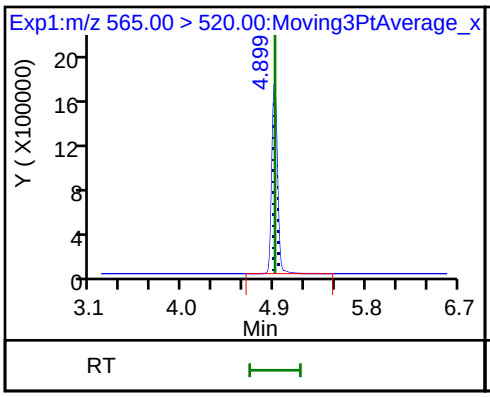
48 Perfluorodecanesulfonic acid



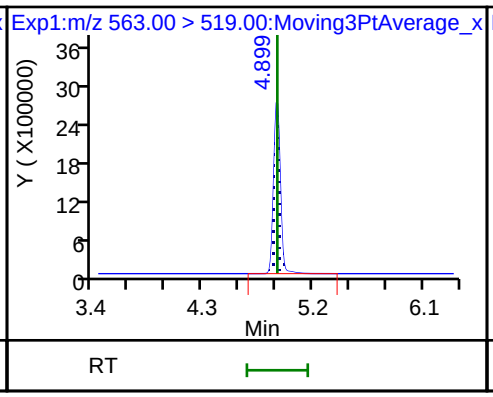
D 46 d7-N-MeFOSE-M



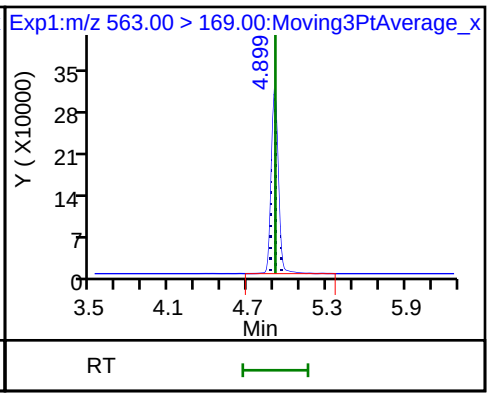
D 43 13C2 PFUnA



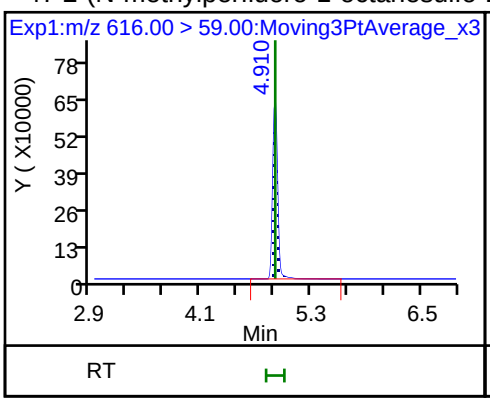
42 Perfluoroundecanoic acid



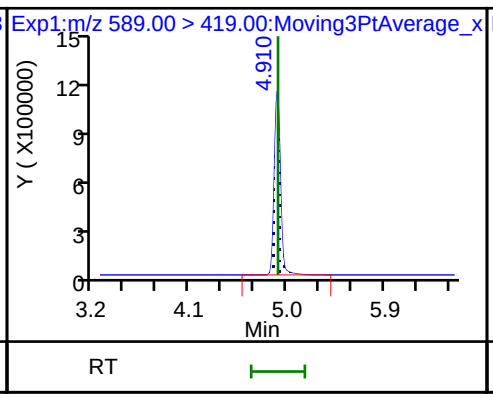
42 Perfluoroundecanoic acid



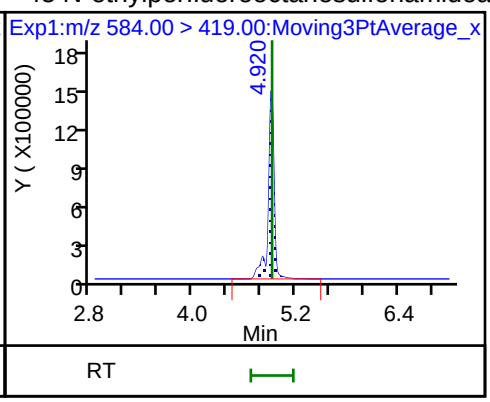
47 2-(N-methylperfluoro-1-octanesulfo



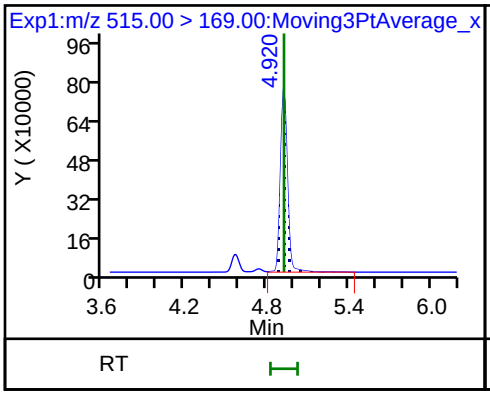
D 44 d5-NEtFOSAA



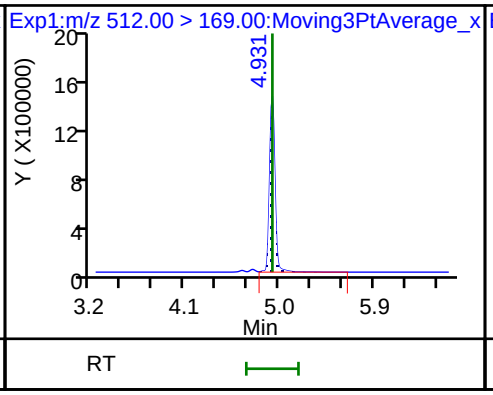
45 N-ethylperfluorooctanesulfonamidoa



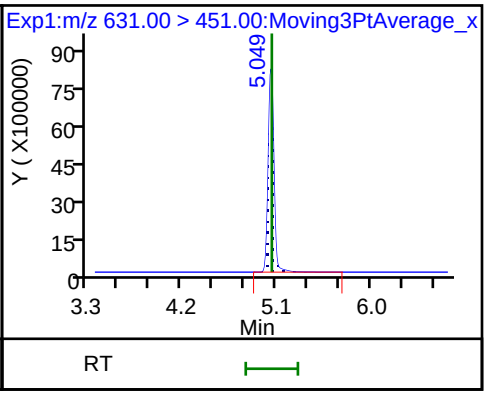
D 49 d-N-MeFOSA-M



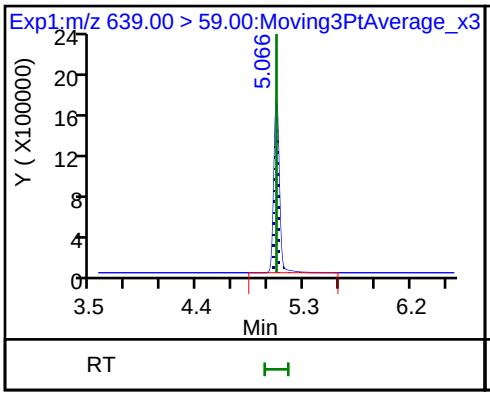
50 NMeFOSA



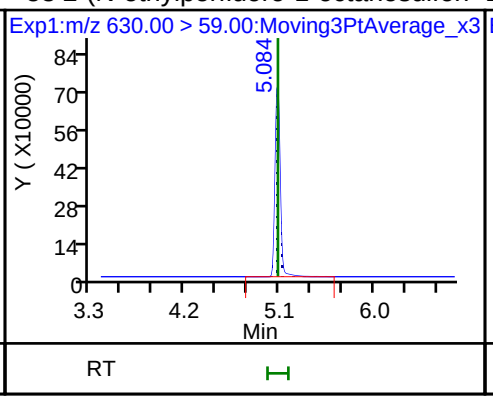
51 11-Chloroeicosafluoro-3-oxaundecan



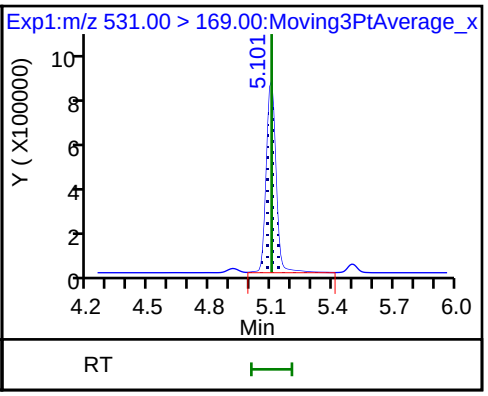
D 52 d9-N-EtFOSE-M



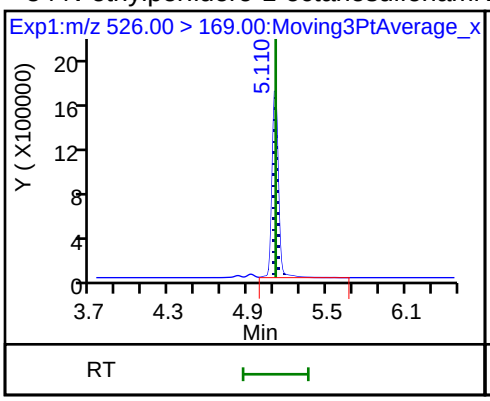
53 2-(N-ethylperfluoro-1-octanesulfon



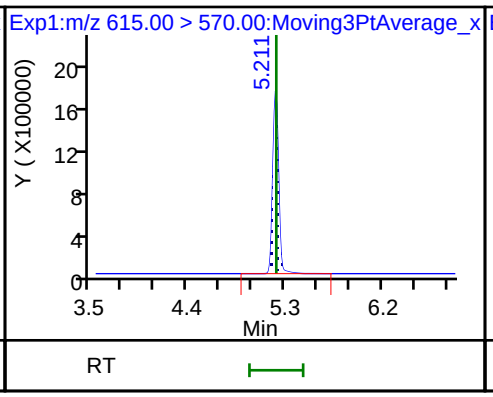
D 55 d-N-EtFOSA-M



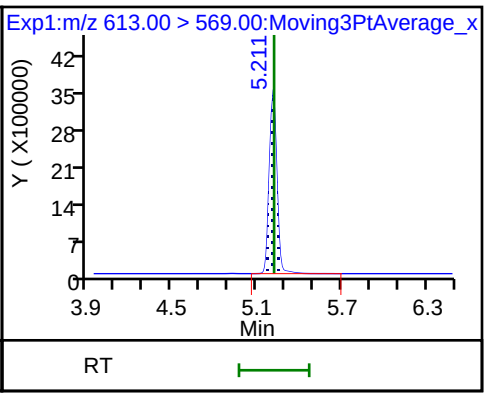
54 N-ethylperfluoro-1-octanesulfonami



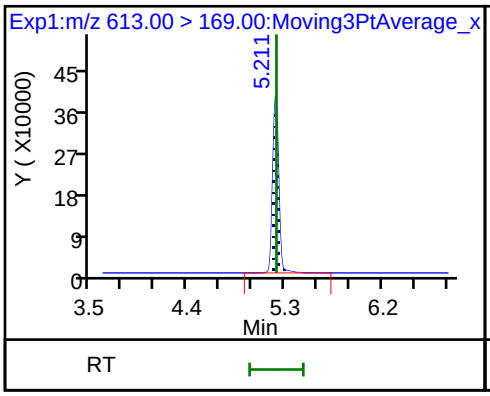
D 57 13C2 PFDoA



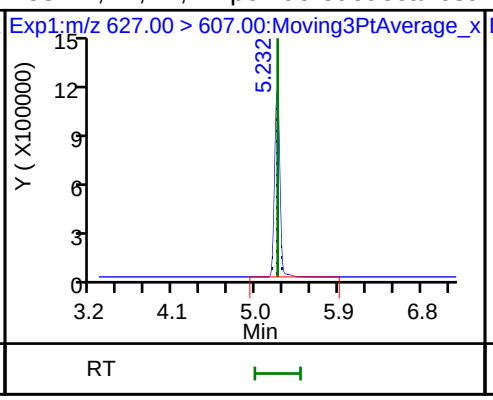
56 Perfluorododecanoic acid



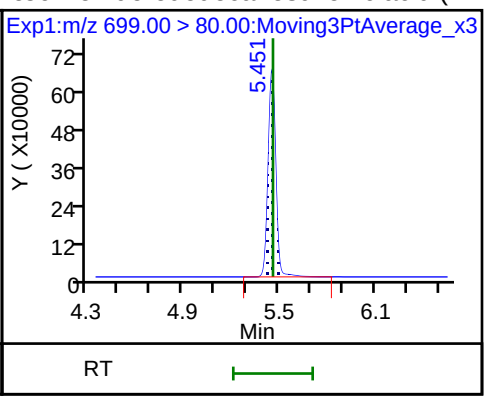
56 Perfluorododecanoic acid



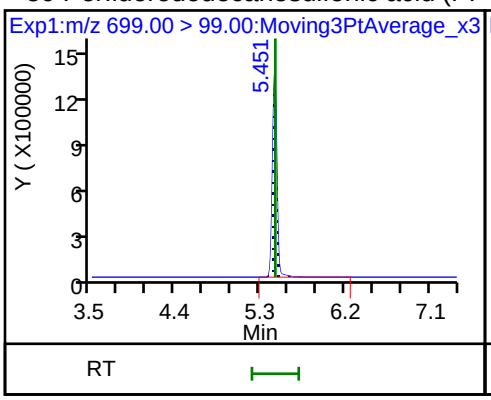
58 1H,1H,2H,2H-perfluorododecanesulfo



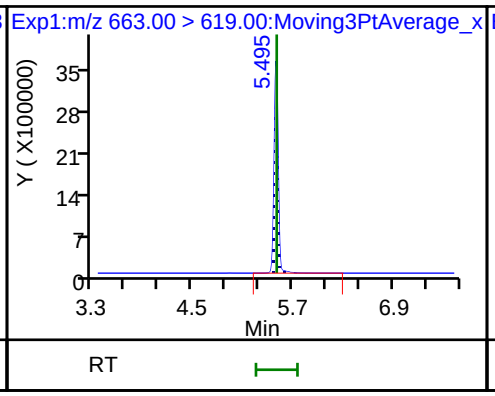
59 Perfluorododecanesulfonic acid (PF



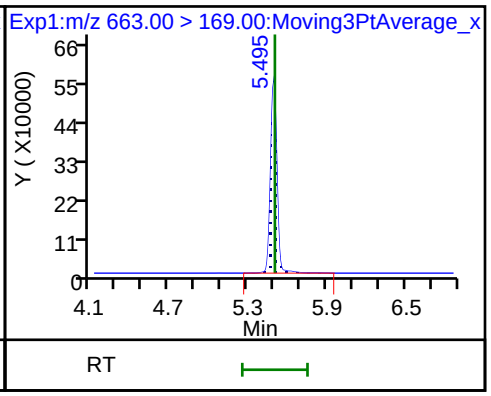
59 Perfluorododecanesulfonic acid (PF



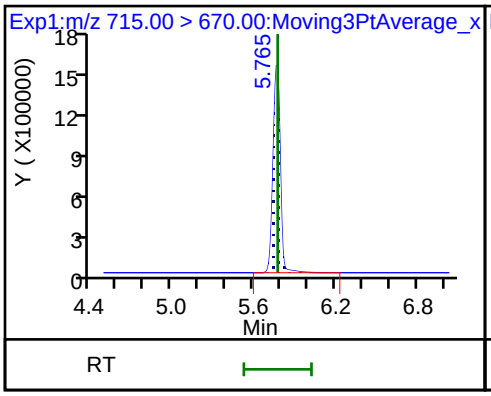
60 Perfluorotridecanoic acid



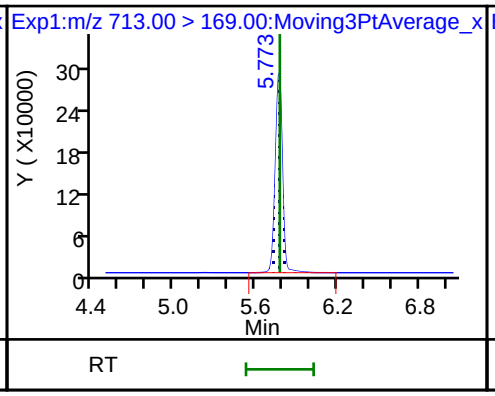
60 Perfluorotridecanoic acid



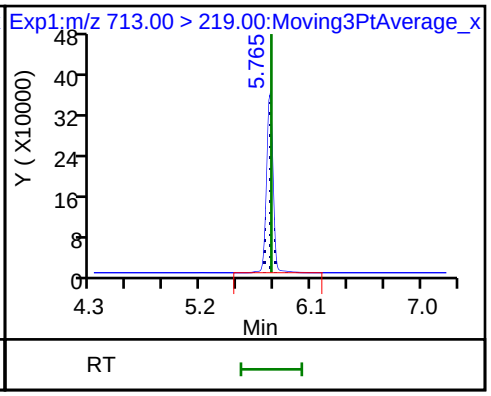
D 61 13C2 PFTeDA



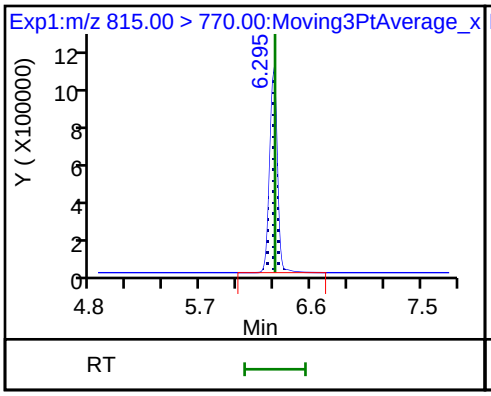
62 Perfluorotetradecanoic acid



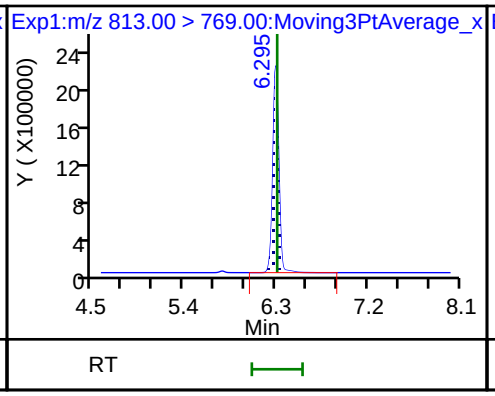
62 Perfluorotetradecanoic acid



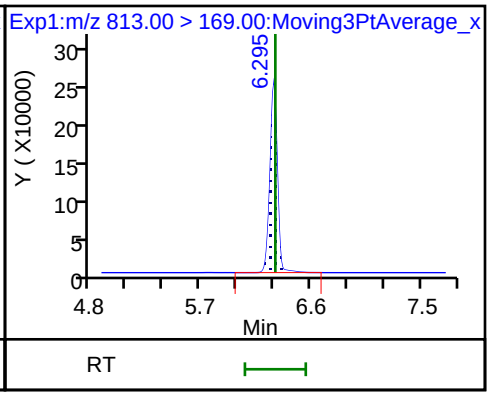
D 63 13C2 PFHxDA



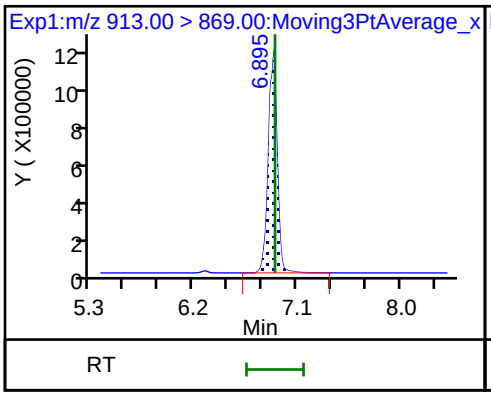
64 Perfluorohexadecanoic acid



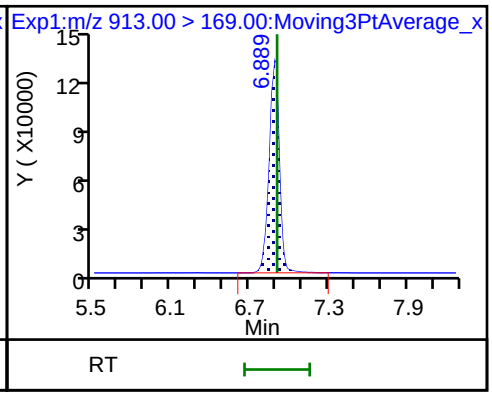
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 26-Sep-2019 22:27:54 ALS Bottle#: 7 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD 7
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:27:10 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 12:23:13
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.208	2.205	0.003	0.582	6119956	2.55		102	17248	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.208	2.209	-0.001	1.000	20879587	9.79		97.9	8727	
D 4 13C5 PFPeA										
267.90 > 223.00	2.555	2.559	-0.004	0.673	5500210	2.57		103	19097	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.555	2.562	-0.007	1.000	21263571	9.14		91.4	7156	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.589	2.593	-0.004	0.766	22601823	9.03	Target=1.87	102	27734	
298.90 > 99.00	2.589	2.593	-0.004	0.766	12093021		1.87(0.94-2.81)	102	7019	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.907	2.910	-0.003	1.000	11012924	8.79		94.1	102997	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.907	2.910	-0.003	0.766	1077554	2.31		99.1	905	
D 10 13C2 PFHxA										
315.00 > 270.00	2.949	2.956	-0.007	0.777	5931447	2.48		99.1	30603	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.949	2.956	-0.007	1.000	21667472	9.62	Target=11.57	96.2	6696	
313.00 > 119.00	2.949	2.956	-0.007	1.000	1953086		11.09(5.78-17.35)	96.2	3024	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.971	2.971	0.0	0.879	18696970	9.34	Target=2.40	99.6	57021	
349.00 > 99.00	2.971	2.971	0.0	0.879	8120321		2.30(1.20-3.60)	99.6	20351	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.075	3.087	-0.012	0.810	132965	2.62		105	1579	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.089	3.089	0.0	1.004	1519344	10.3		103	5854	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.379	3.382	-0.003	1.000	21432002	9.53	Target=3.70	95.3	15438	
363.00 > 169.00	3.379	3.382	-0.003	1.000	6185748		3.46(1.85-5.54)	95.3	12110	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.379	3.382	-0.003	1.000	15936426	8.47	Target=2.98	93.1	44363	
399.00 > 99.00	3.379	3.382	-0.003	1.000	5627010		2.83(1.49-4.47)	93.1	7024	
D 15 18O2 PFHxS										
403.00 > 84.00	3.379	3.382	-0.003	0.890	3480084	2.36		100.0	44087	
D 17 13C4 PFHpA										
367.00 > 322.00	3.379	3.382	-0.003	0.890	5392227	2.46		98.4	46932	
18 DONA										
377.00 > 251.00	3.431	3.433	-0.002	0.822	47475526	6.96	Target=2.81	73.9	113048	
377.00 > 85.00	3.431	3.433	-0.002	0.822	21720212		2.19(1.41-4.22)	73.9	219138	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.769	3.775	-0.006	1.000	9585631	9.39		99.1	106796	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.769	3.775	-0.006	0.993	1188705	2.17		91.5	6491	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.786	3.789	-0.003	0.907	14451962	9.17	Target=4.19	96.3	67265	
449.00 > 99.00	3.786	3.789	-0.003	0.907	3431865		4.21(2.09-6.28)	96.3	11757	
D 23 13C8 PFOA										
421.00 > 376.00	3.786	3.790	-0.004	0.998	5488738	2.46		98.5	42709	
D 25 13C4 PFOA										
417.00 > 372.00	3.786	3.797	-0.011	0.998	6387573	2.49		99.6	80246	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.795	3.798	-0.003	1.002	24058841	9.06	Target=2.68	90.6	9422	
413.00 > 169.00	3.795	3.798	-0.003	1.002	9481009		2.54(1.34-4.02)	90.6	22330	
* 24 13C2 PFOA										
415.00 > 370.00	3.795	3.798	-0.003		7027533	2.50			63859	
D 27 13C8 PFOS										
507.00 > 99.00	4.173	4.176	-0.003	1.100	1628444	2.51		100	6747	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.173	4.181	-0.008	1.000	12426204	8.66	Target=4.19	93.4	380	
499.00 > 99.00	4.173	4.181	-0.008	1.000	2974543		4.18(2.09-6.28)	93.4	13200	
D 28 13C4 PFOS										
503.00 > 80.00	4.173	4.181	-0.008	1.100	3150214	2.47		103	6134	
D 29 13C5 PFNA										
468.00 > 423.00	4.190	4.199	-0.009	1.104	5584037	2.48		99.3	54747	
30 Perfluorononanoic acid										
463.00 > 419.00	4.190	4.199	-0.009	1.000	20676053	9.49	Target=8.84	94.9	14256	
463.00 > 169.00	4.199	4.199	0.0	1.002	2448418		8.44(4.42-13.26)	94.9	10780	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.387	4.393	-0.006	1.051	28582765	8.57		91.9	109519	
D 33 13C8 FOSA										
506.00 > 78.00	4.457	4.460	-0.003	1.174	4604427	2.66		107	46042	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.465	4.464	0.001	1.002	17925674	9.76		97.6	89209	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.538	4.544	-0.006	1.088	10262657	9.35	Target=2.27	97.3	11596	
549.00 > 99.00	4.538	4.544	-0.006	1.088	4474149		2.29(1.13-3.40)	97.3	37907	
D 36 13C2 PFDA										
515.00 > 470.00	4.567	4.572	-0.005	1.203	5822168	2.43		97.1	40905	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.567	4.572	-0.005	1.000	21497767	9.62	Target=10.36	96.2	26584	
513.00 > 169.00	4.567	4.572	-0.005	1.000	2247249		9.57(5.18-15.54)	96.2	273	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.567	4.574	-0.007	1.000	10564172	9.01		94.1	73660	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.567	4.574	-0.007	1.203	1464204	2.25		94.1	5164	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.734	4.741	-0.007	1.247	4154424	2.62		105	3737	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.734	4.744	-0.010	1.000	13579067	10.4		104	95452	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.868	4.876	-0.008	1.167	9922667	9.66	Target=2.70	100	66193	
599.00 > 99.00	4.868	4.876	-0.008	1.167	3537768		2.80(1.35-4.05)	100	28297	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.898	4.897	0.001	1.291	5169811	14.0		112	15755	
D 43 13C2 PFUnA										
565.00 > 520.00	4.898	4.906	-0.008	1.291	5797631	2.58		103	34250	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.898	4.907	-0.009	1.000	18462740	9.57	Target=9.31	95.7	19096	
563.00 > 169.00	4.898	4.907	-0.009	1.000	1969789		9.37(4.65-13.96)	95.7	6057	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.908	4.909	-0.001	1.002	4296874	9.92		99.2	35348	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.908	4.915	-0.007	1.293	3771379	2.37		94.9	11065	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.919	4.922	-0.003	1.002	11751018	10.3		103	48423	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.930	4.924	0.006	1.299	2568734	2.73		109	59.8	
50 NMeFOSA										
512.00 > 169.00	4.930	4.930	0.0	1.000	9514728	9.62		96.2	276	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.048	5.054	-0.006	1.210	44014288	6.97		74.0	187148	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.065	5.068	-0.003	1.335	5482210	14.2		113	16445	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.084	-0.001	1.003	4904466	10.7		107	39369	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.100	5.101	-0.001	1.344	2655381	2.72		109	85.9	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.109	5.110	-0.001	1.002	10709301	10.2		102	243	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.210	5.217	-0.007	1.373	5880761	2.51		101	53276	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.210	5.219	-0.009	1.000	20447629	9.07	Target=8.07	90.7	8215	
613.00 > 169.00	5.210	5.219	-0.009	1.000	2494844		8.20(4.03-12.10)	90.7	9908	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.231	5.236	-0.005	1.145	7402824	9.72		101	20958	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.450	5.460	-0.010	1.306	3940161	9.92	Target=0.52	103	92498	
699.00 > 99.00	5.450	5.460	-0.010	1.306	7540191		0.52(0.26-0.77)	103	57598	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.494	5.504	-0.010	1.055	20447728	9.47	Target=6.35	94.7	18956	
663.00 > 169.00	5.494	5.504	-0.010	1.055	3566206		5.73(3.18-9.53)	94.7	14844	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.761	5.774	-0.013	1.518	5393975	2.61		104	36680	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.761	5.775	-0.014	1.000	1969405	9.65	Target=0.85	96.5	11320	
713.00 > 219.00	5.761	5.775	-0.014	1.000	2182120		0.90(0.43-1.28)	96.5	22195	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.294	6.305	-0.011	1.659	4489896	2.72		109	18029	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.294	6.308	-0.014	1.000	16096657	9.77	Target=7.95	97.7	1566	
813.00 > 169.00	6.286	6.308	-0.022	0.999	2143476		7.51(3.98-11.93)	97.7	7479	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.862	6.905	-0.043	1.090	11329075	10.4	Target=8.96	104	1897	
913.00 > 169.00	6.878	6.905	-0.027	1.093	1275825		8.88(4.48-13.45)	104	3798	

Reagents:

LCPFC_LL7_00015 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:27:11 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Injection Date: 26-Sep-2019 22:27:54 Instrument ID: A13

Lims ID: IC L7 Full

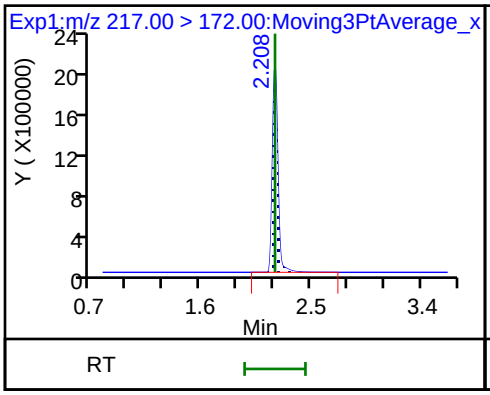
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 9

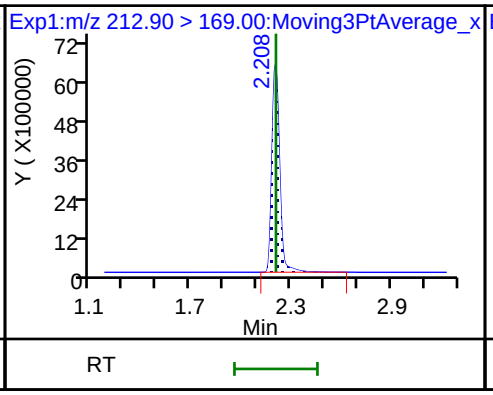
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

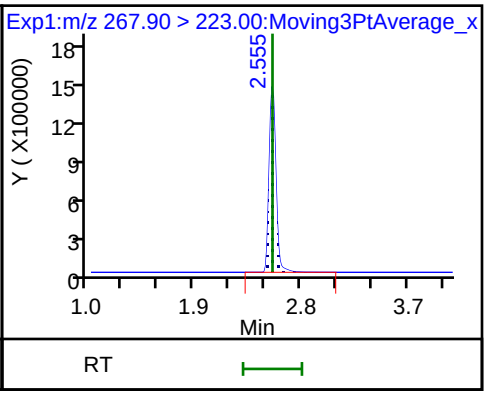
D 2 13C4 PFBA



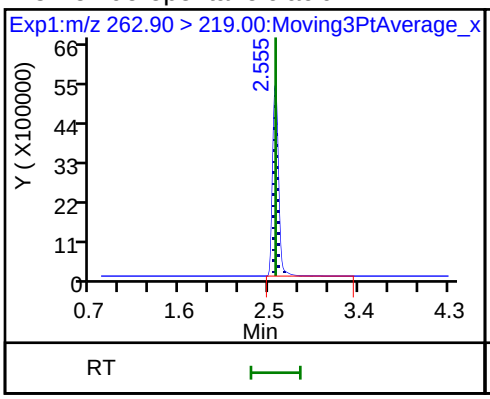
3 Perfluorobutanoic acid



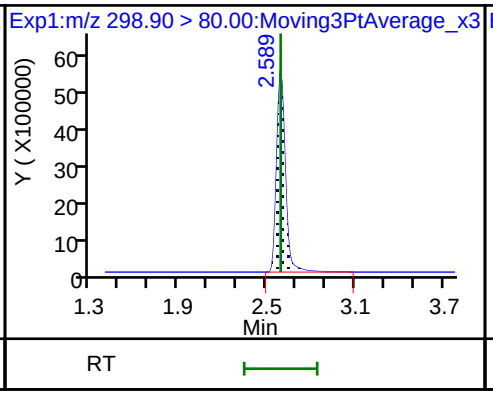
D 4 13C5 PFPeA



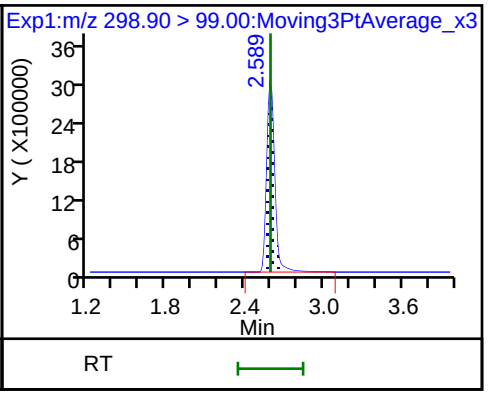
5 Perfluoropentanoic acid



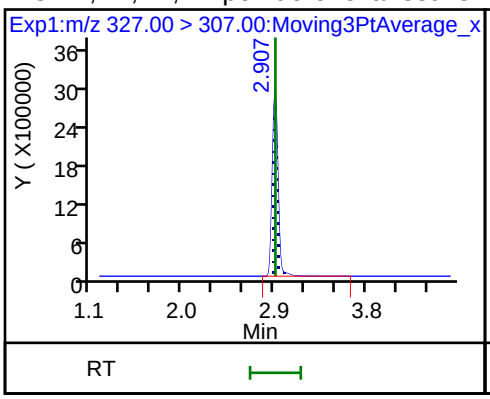
6 Perfluorobutanesulfonic acid



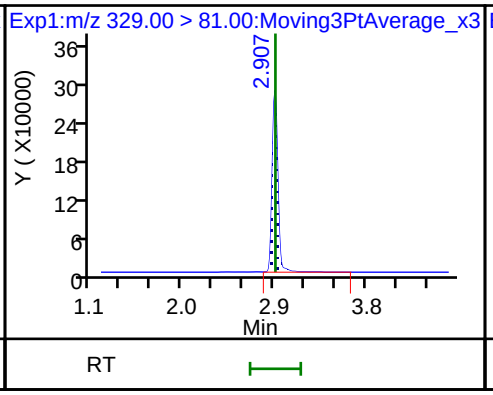
6 Perfluorobutanesulfonic acid



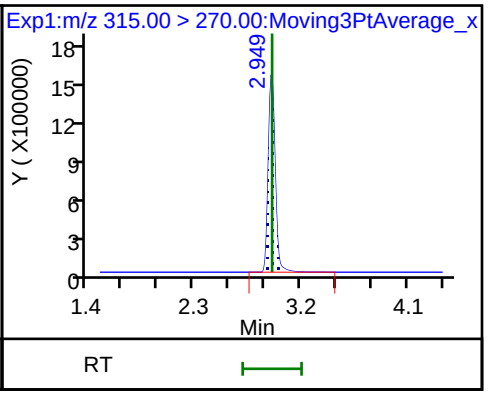
8 1H,1H,2H,2H-perfluorohexanesulfon



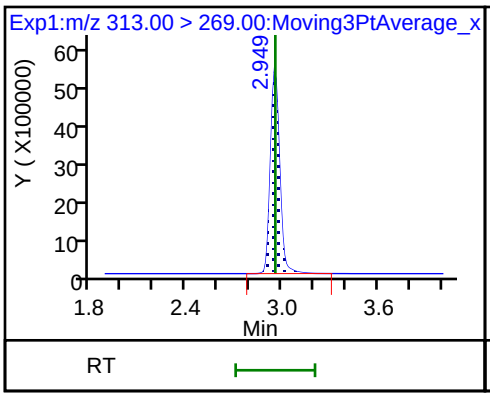
D 7 M2-4:2 FTS



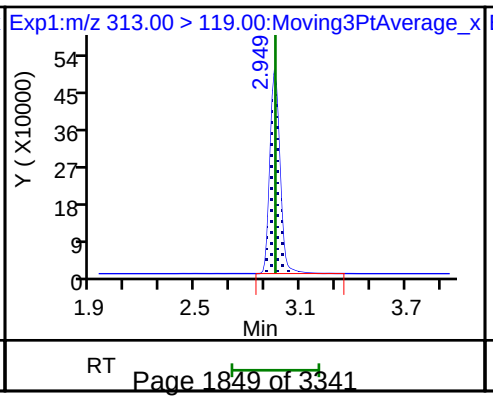
D 10 13C2 PFHxA



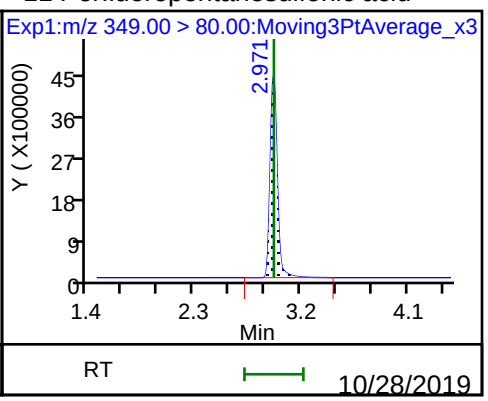
9 Perfluorohexanoic acid



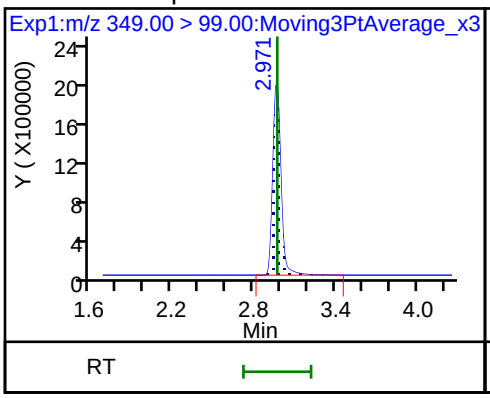
9 Perfluorohexanoic acid



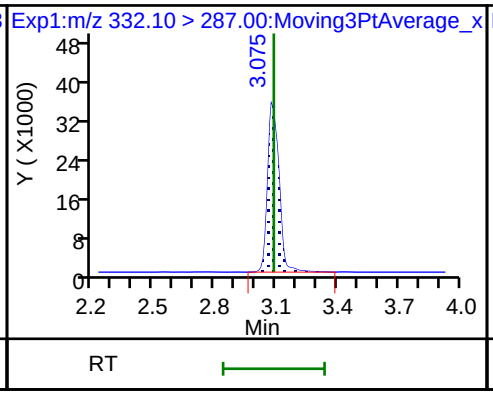
11 Perfluoropentanesulfonic acid



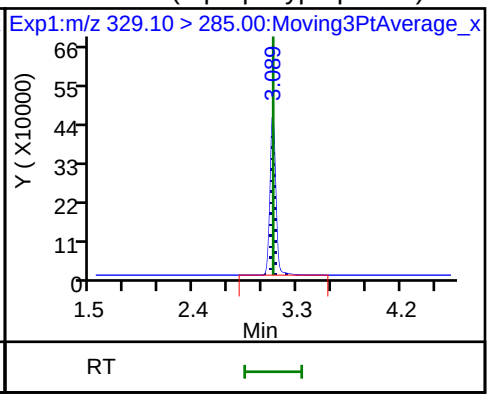
11 Perfluoropentanesulfonic acid



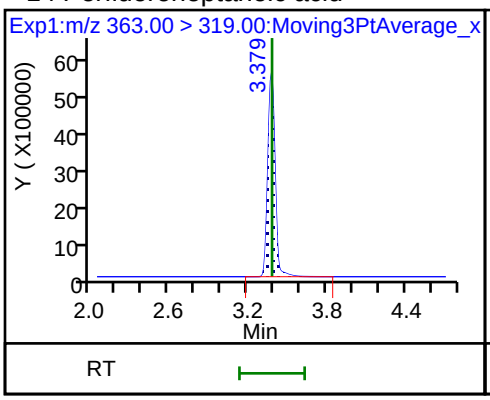
D 12 13C3 HFPO-DA



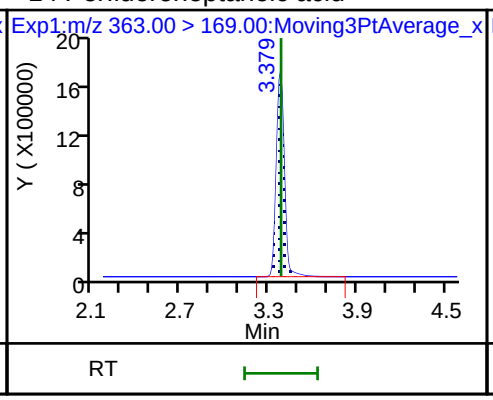
13 Perfluoro(2-propoxypropanoic) acid



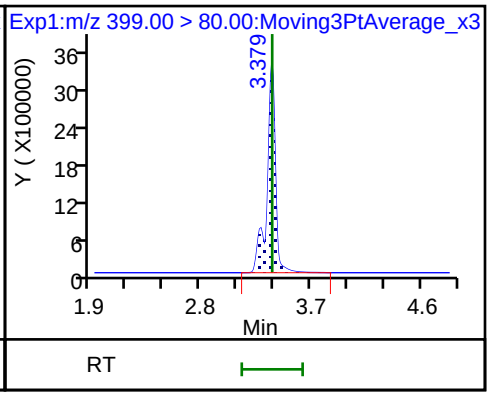
14 Perfluoroheptanoic acid



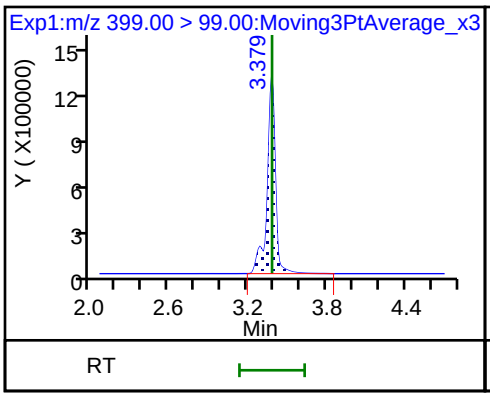
14 Perfluoroheptanoic acid



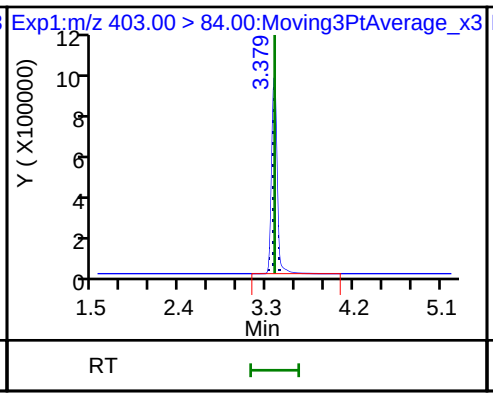
16 Perfluorohexanesulfonic acid



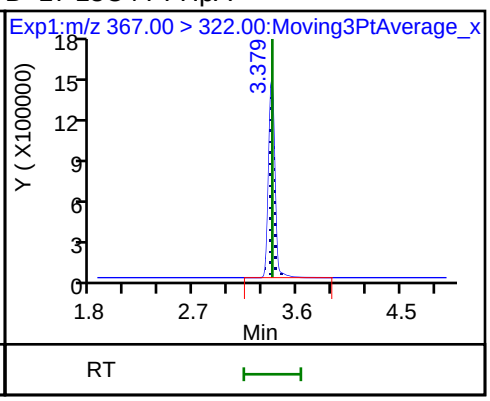
16 Perfluorohexanesulfonic acid



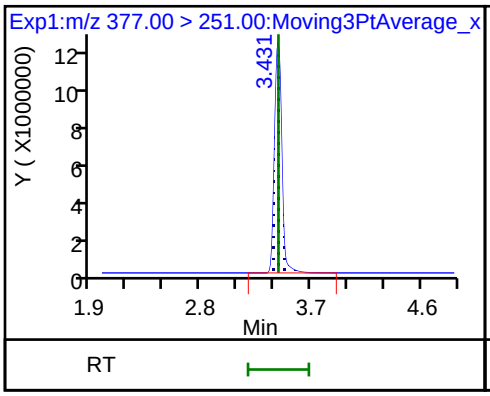
D 15 18O2 PFHxS



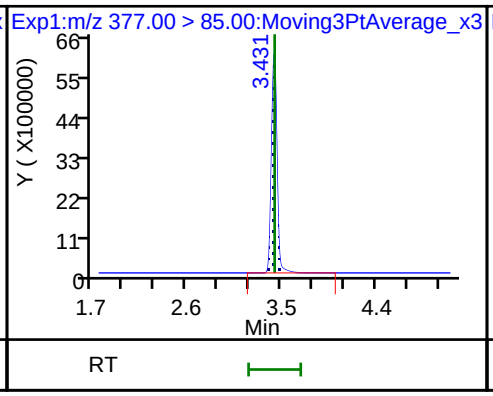
D 17 13C4 PFHpA



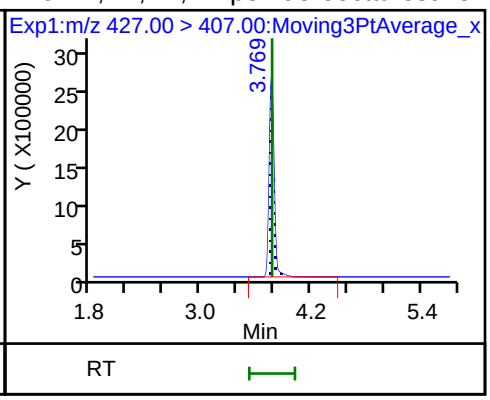
18 DONA



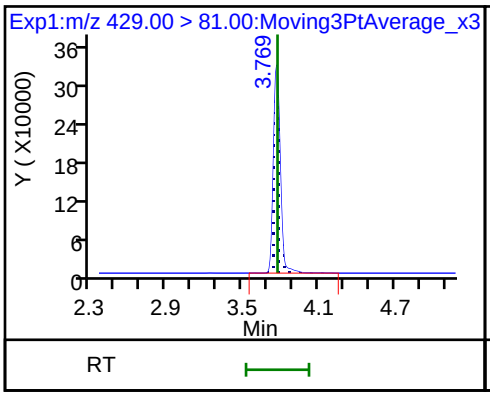
18 DONA



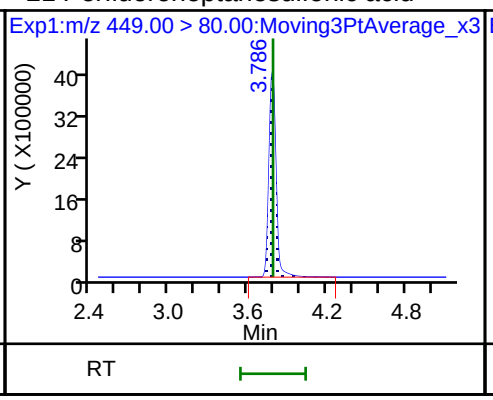
19 1H,1H,2H,2H-perfluorooctanesulfoni



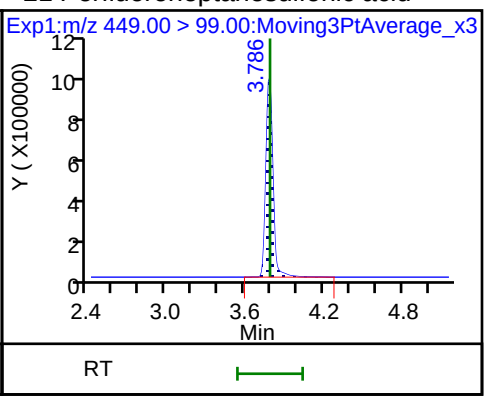
D 20 M2-6:2 FTS



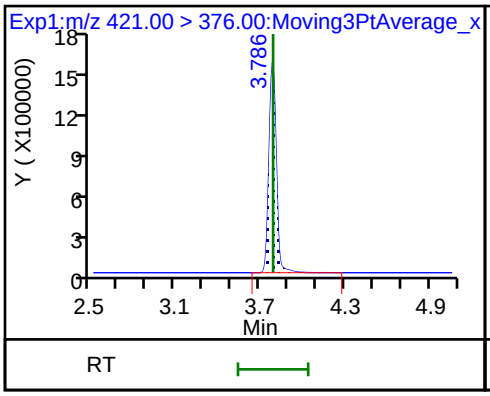
21 Perfluoroheptanesulfonic acid



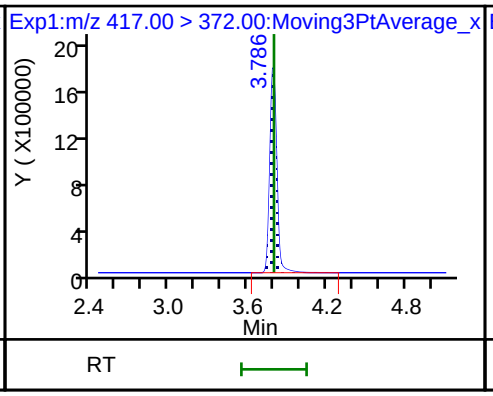
21 Perfluoroheptanesulfonic acid



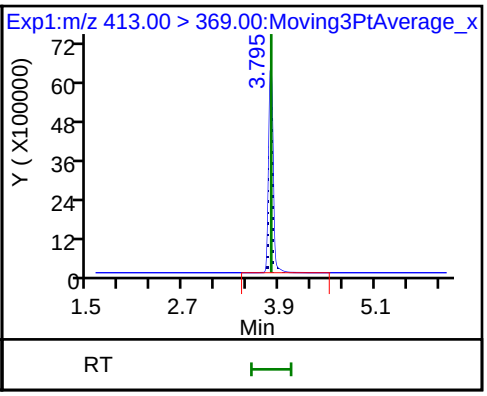
D 23 13C8 PFOA



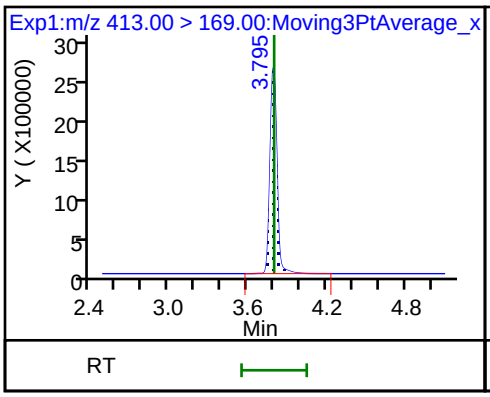
D 25 13C4 PFOA



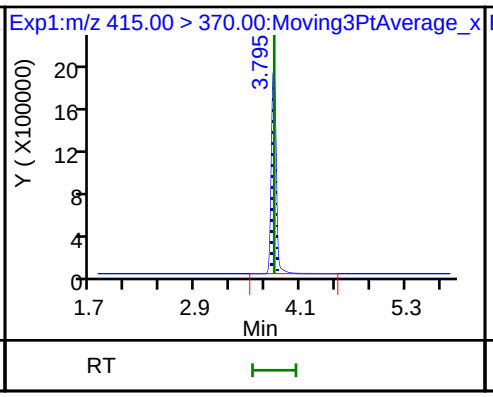
22 Perfluorooctanoic acid



22 Perfluorooctanoic acid



* 24 13C2 PFOA



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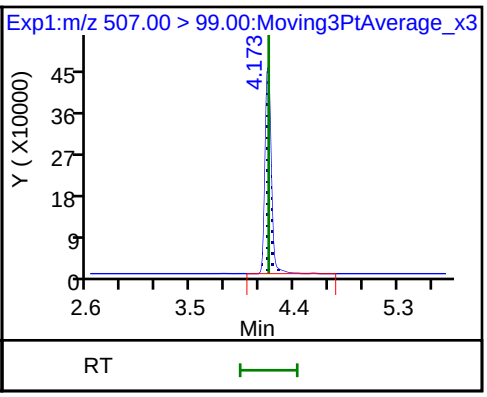
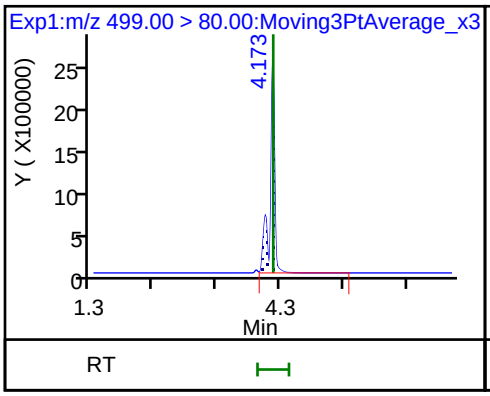
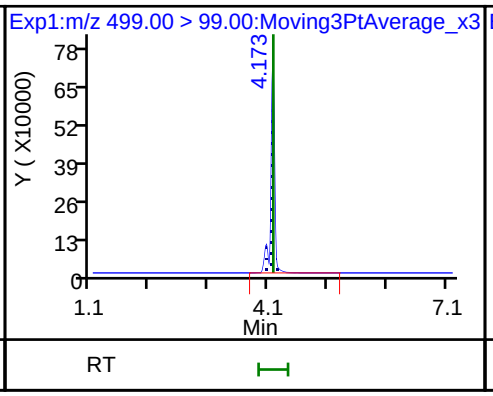


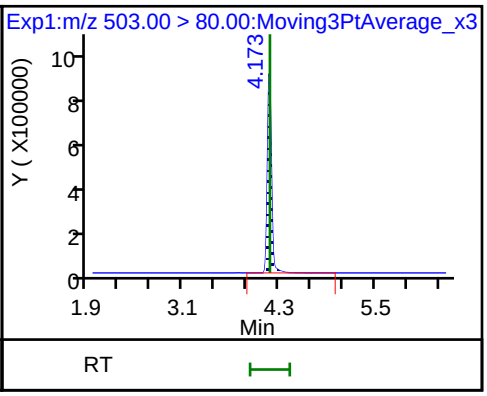
26 Perfluorooctanesulfonic acid



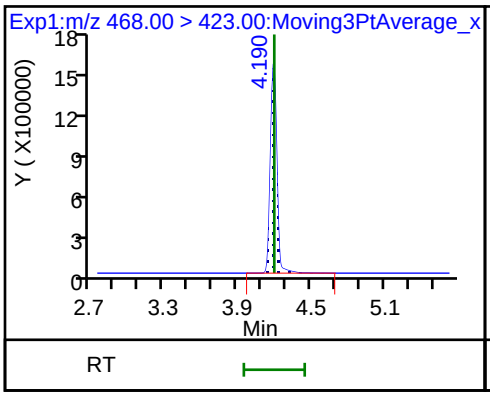
26 Perfluorooctanesulfonic acid



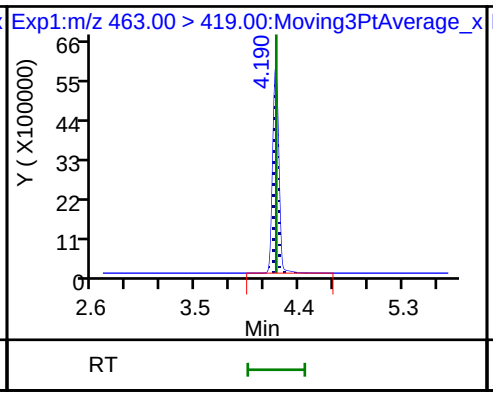
D 28 13C4 PFOS



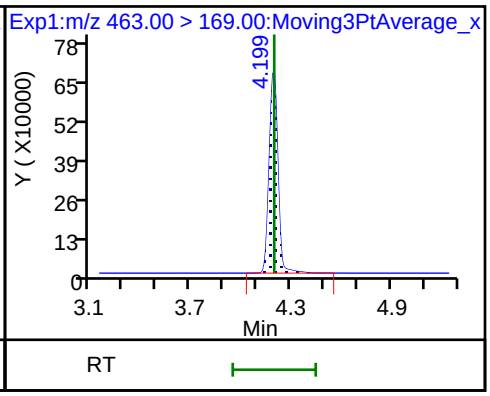
D 29 13C5 PFNA



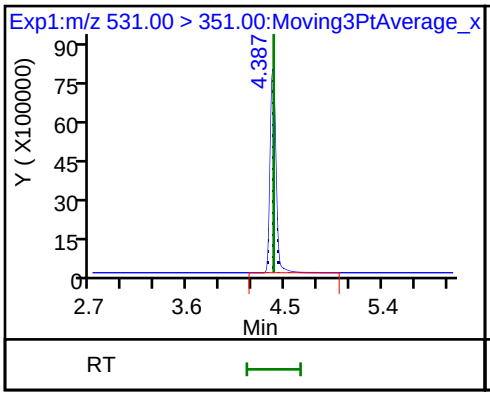
30 Perfluorononanoic acid



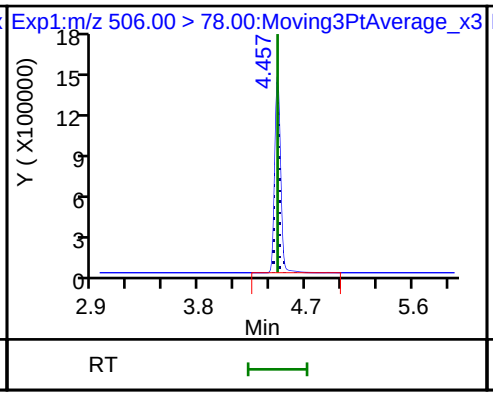
30 Perfluorononanoic acid



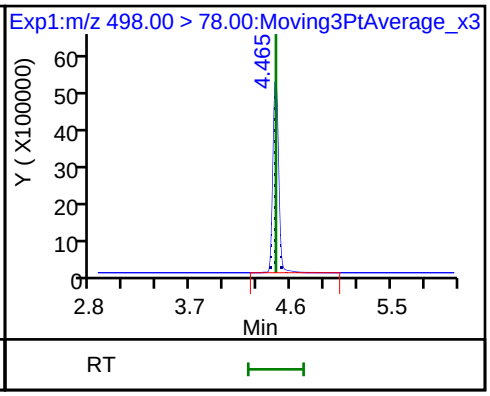
31 9-Chlorohexadecafluoro-3-oxanonane



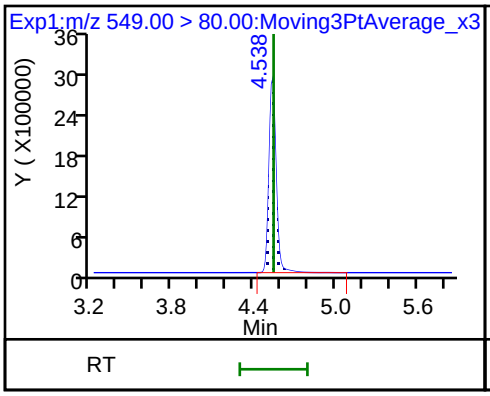
D 33 13C8 FOSA



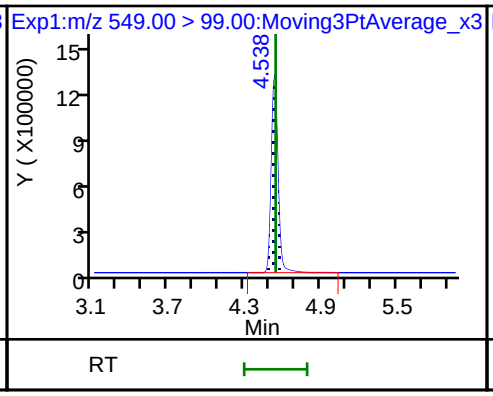
32 Perfluorooctanesulfonamide



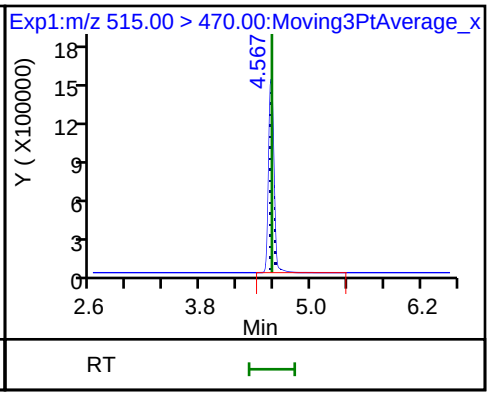
38 Perfluorononanesulfonic acid



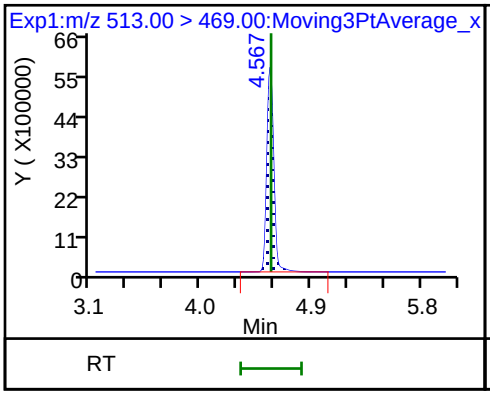
38 Perfluorononanesulfonic acid



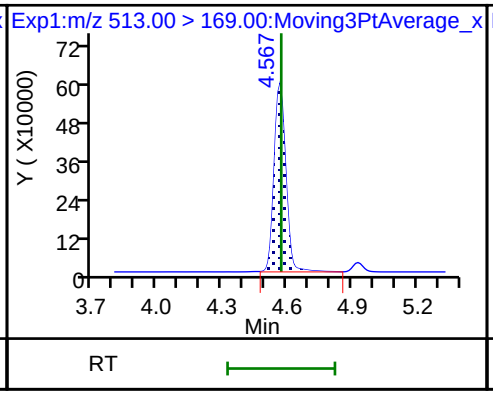
D 36 13C2 PFDA



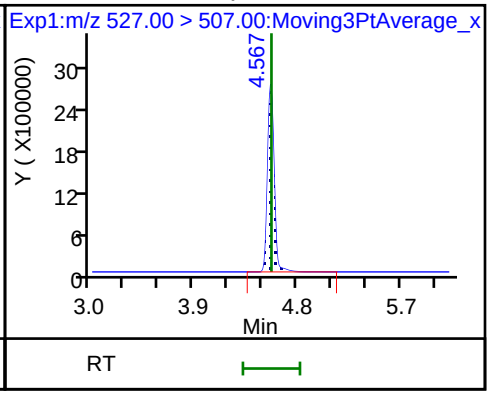
34 Perfluorodecanoic acid



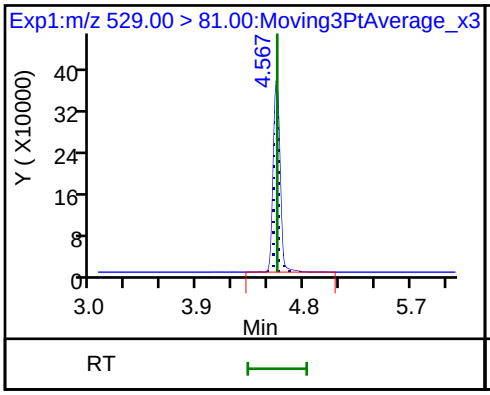
34 Perfluorodecanoic acid



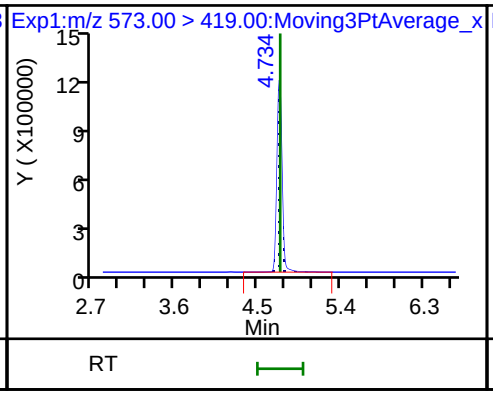
35 1H,1H,2H,2H-perfluorodecanesulfoni



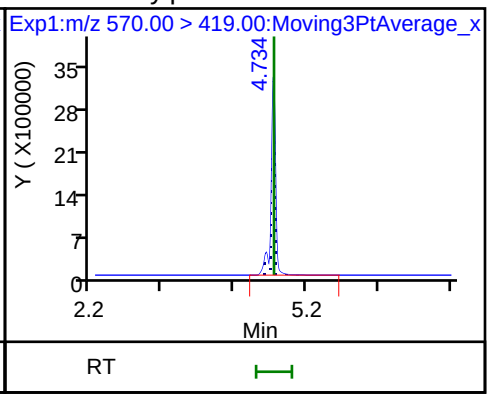
D 37 M2-8:2 FTS



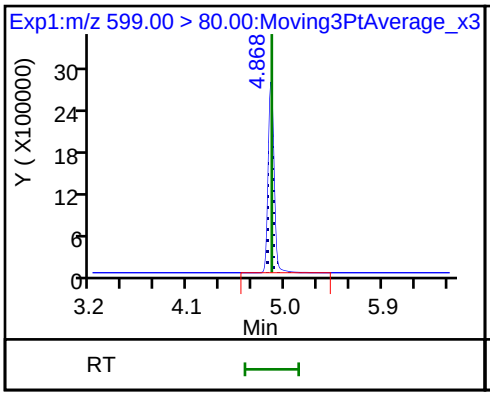
D 40 d3-NMeFOSAA



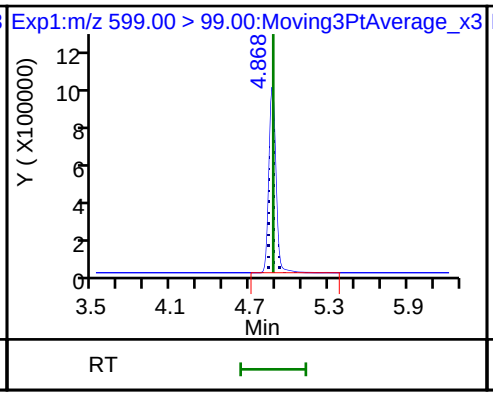
41 N-methylperfluorooctanesulfonamido



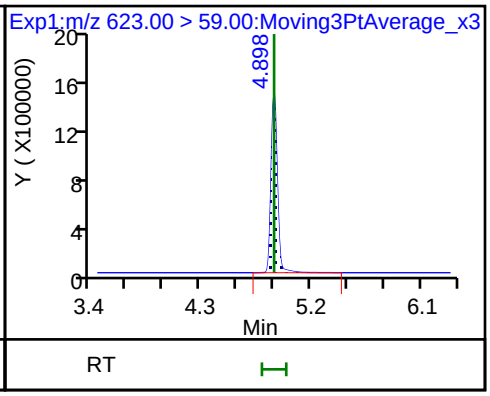
48 Perfluorodecanesulfonic acid



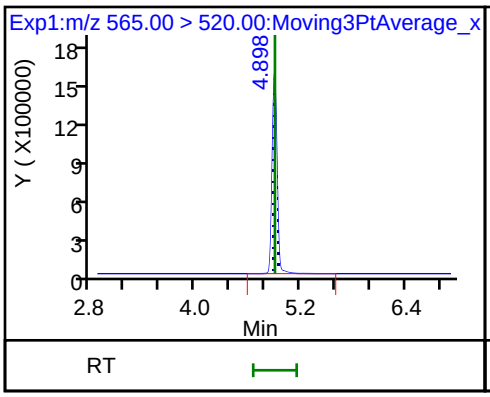
48 Perfluorodecanesulfonic acid



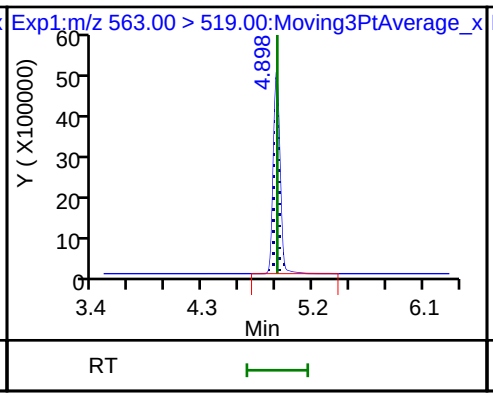
D 46 d7-N-MeFOSE-M



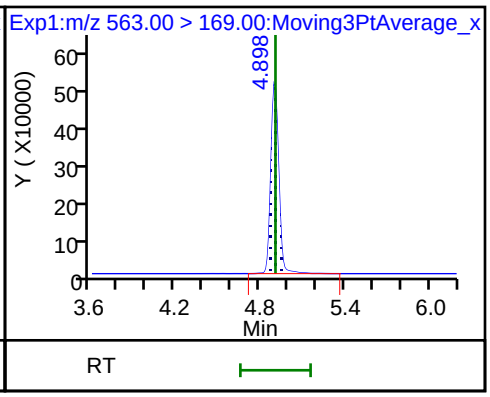
D 43 13C2 PFUnA



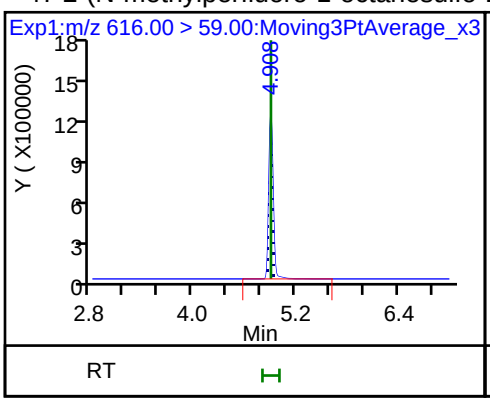
42 Perfluoroundecanoic acid



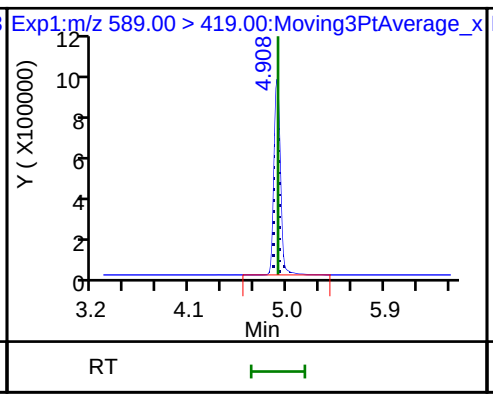
42 Perfluoroundecanoic acid



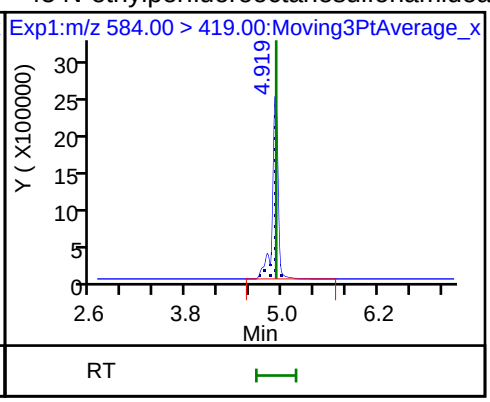
47 2-(N-methylperfluoro-1-octanesulfo



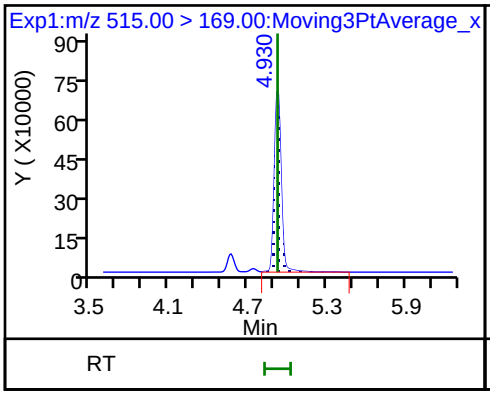
D 44 d5-NEtFOSAA



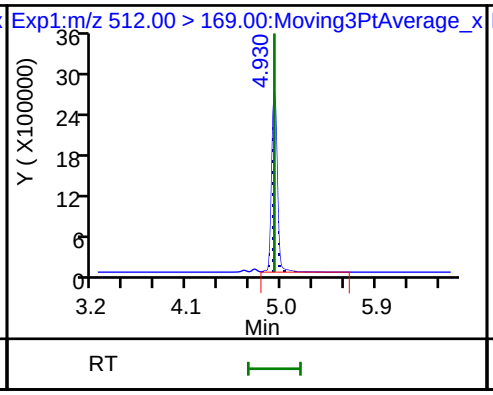
45 N-ethylperfluorooctanesulfonamidoa



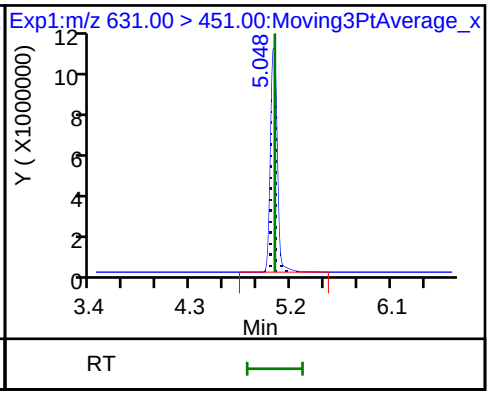
D 49 d-N-MeFOSA-M



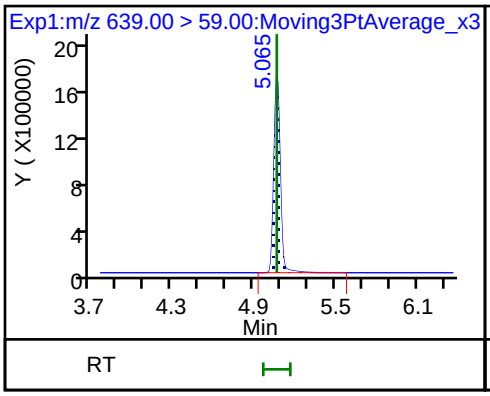
50 NMeFOSA



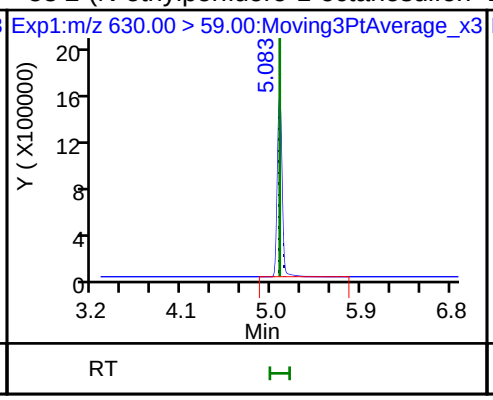
51 11-Chloroeicosafluoro-3-oxaundecan



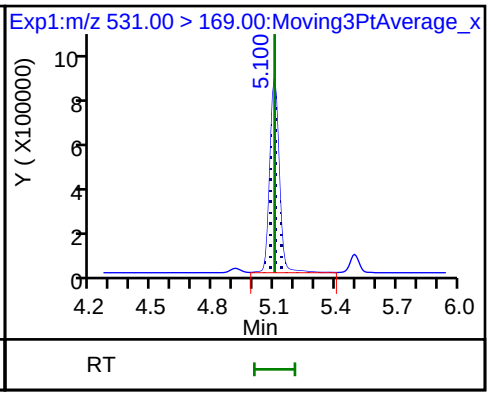
D 52 d9-N-EtFOSE-M



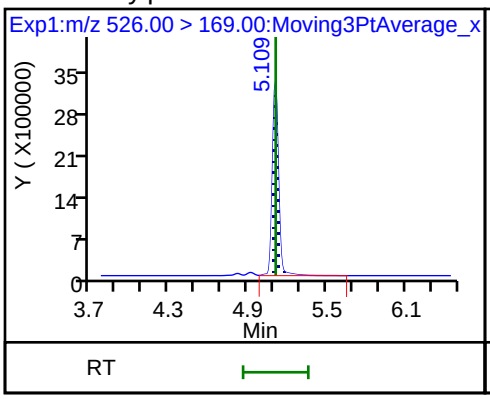
53 2-(N-ethylperfluoro-1-octanesulfon



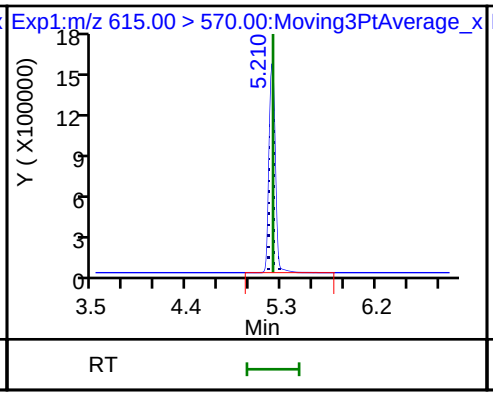
D 55 d-N-EtFOSA-M



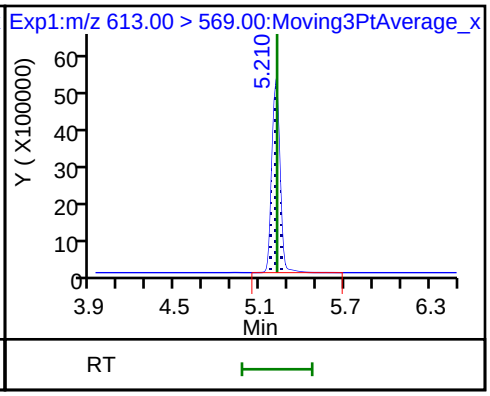
54 N-ethylperfluoro-1-octanesulfonami



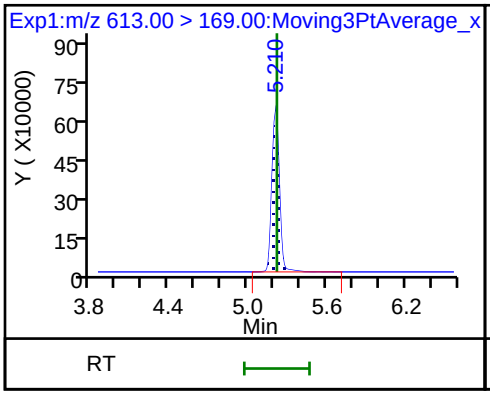
D 57 13C2 PFDoA



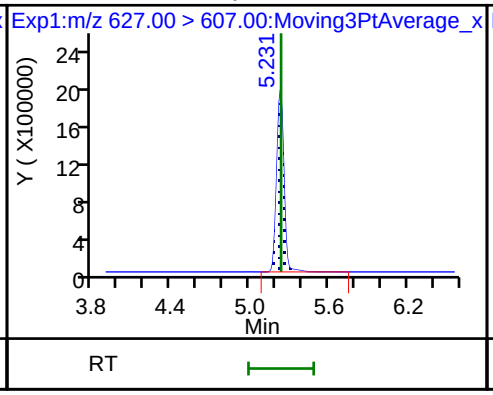
56 Perfluorododecanoic acid



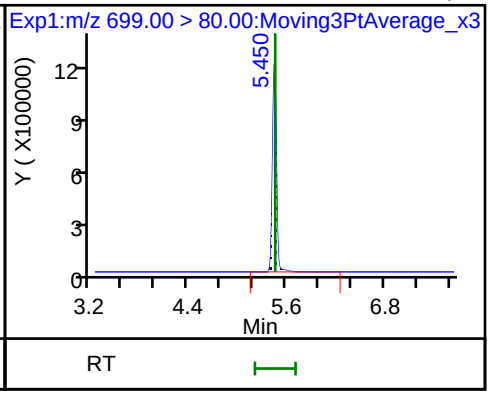
56 Perfluorododecanoic acid



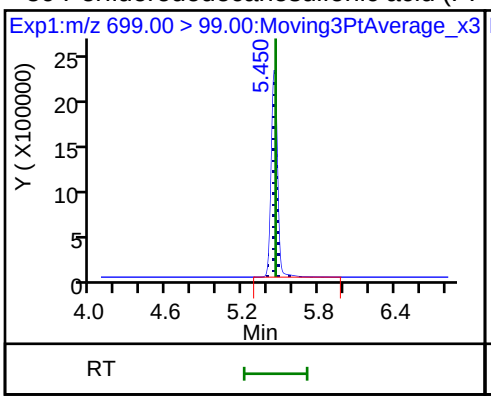
58 1H,1H,2H,2H-perfluorododecanesulfo



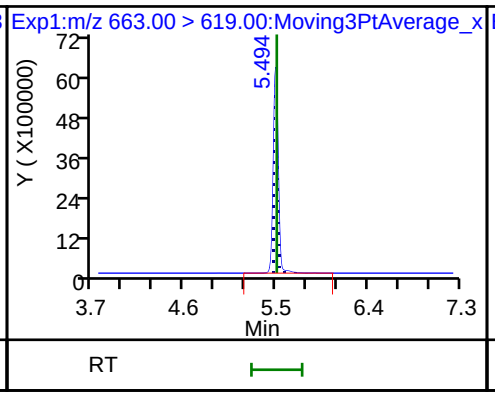
59 Perfluorododecanesulfonic acid (PF



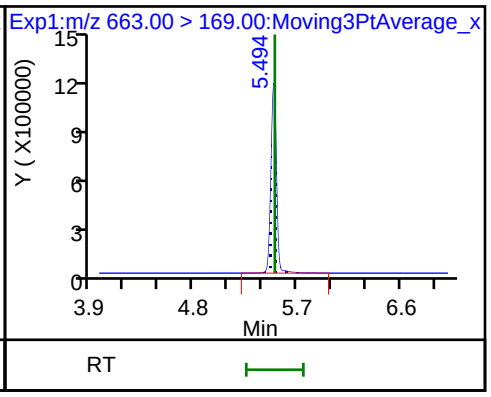
59 Perfluorododecanesulfonic acid (PF



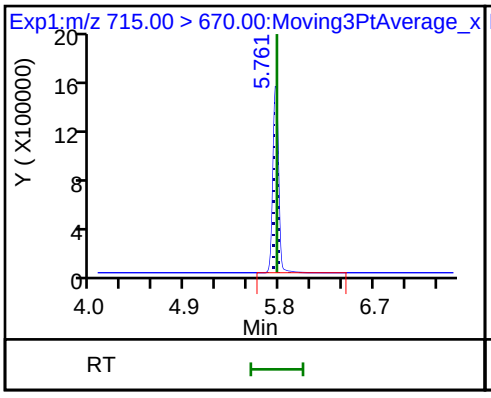
60 Perfluorotridecanoic acid



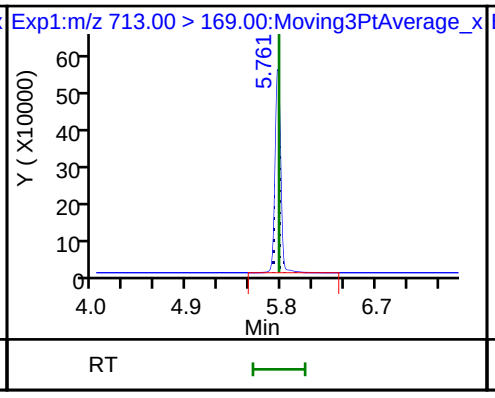
60 Perfluorotridecanoic acid



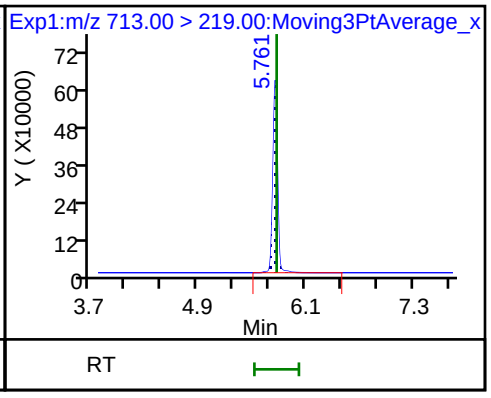
D 61 13C2 PFTeDA



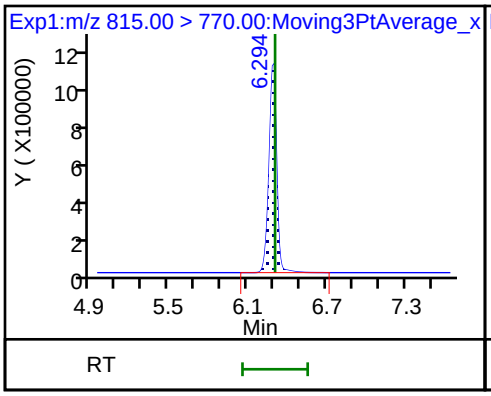
62 Perfluorotetradecanoic acid



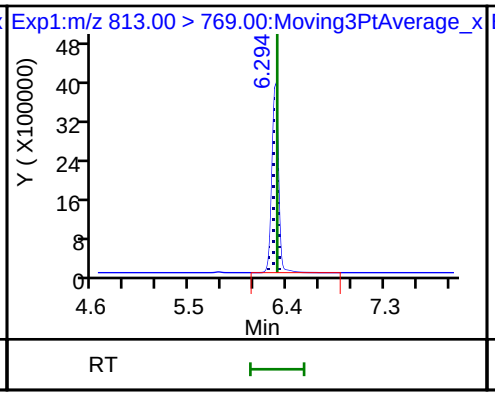
62 Perfluorotetradecanoic acid



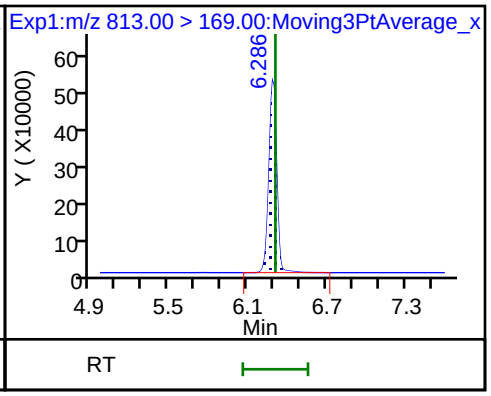
D 63 13C2 PFHxDA



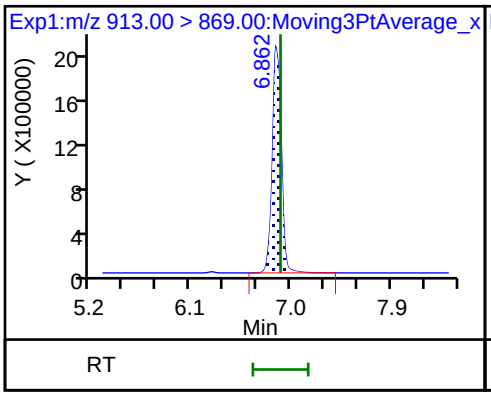
64 Perfluorohexadecanoic acid



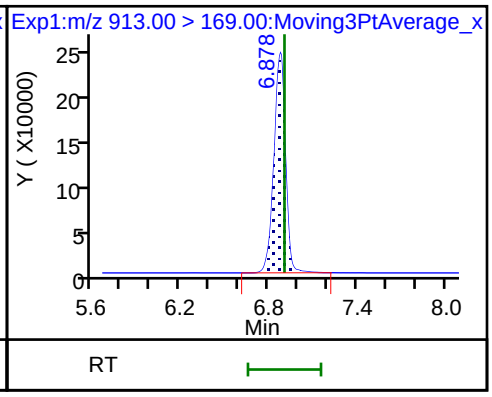
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-328725/2	2019.10.05.ICALAAA_002.d
Level 2	IC 320-328725/3	2019.10.05.ICALAAA_003.d
Level 3	IC 320-328725/4	2019.10.05.ICALAAA_004.d
Level 4	IC 320-328725/5	2019.10.05.ICALAAA_005.d
Level 5	IC 320-328725/6	2019.10.05.ICALAAA_006.d
Level 6	IC 320-328725/7	2019.10.05.ICALAAA_007.d
Level 7	IC 320-328725/9	2019.10.05.ICALAAA_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8800 0.8238	0.8470 0.7656	0.8830	0.8744	0.8732	AveID		0.8496				5.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.1380 0.9715	1.0523 0.9157	1.0322	1.0593	1.0017	AveID		1.0244				6.9		35.0			
Perfluorobutanesulfonic acid (PFBS)	1.8736 1.6928	1.6432 1.5257	1.7429	1.7339	1.6535	AveID		1.6951				6.3		35.0			
4:2 FTS	+++++ 2.5219	2.6416 2.4770	2.4729	2.6084	2.6570	AveID		2.5631				3.2		35.0			
Perfluorohexanoic acid (PFHxA)	1.0777 0.9194	0.9572 0.8426	0.8661	0.9297	0.9091	AveID		0.9288				8.2		35.0			
Perfluoropentanesulfonic acid (PFPeS)	0.8921 0.9342	0.8675 0.8902	0.8778	0.8592	0.8893	AveID		0.8872				2.7		50.0			
HFPO-DA (GenX)	1.5402 1.5200	1.4283 1.5959	1.4901	1.4724	1.5600	AveID		1.5153				3.7		35.0			
Perfluoroheptanoic acid (PFHpA)	1.2207 1.0398	1.2078 0.9605	1.1366	1.1283	1.1680	AveID		1.1231				8.3		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4648 1.2080	1.3110 1.1473	1.1540	1.1261	1.1518	AveID		1.2233				10.1		35.0			
DONA	2.6246 2.5391	2.7057 2.0915	2.6883	2.7700	2.6528	AveID		2.5817				8.8		50.0			
6:2 FTS	2.3022 2.3452	2.3838 2.2718	2.3162	2.4232	2.2615	AveID		2.3291				2.5		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.0951 1.0306	0.9459 0.9144	0.9319	0.9951	1.0107	AveID		0.9891				6.4		50.0			
Perfluorooctanoic acid (PFOA)	1.3837 1.0002	1.3929 0.8726	1.1157	1.0822	1.0668	AveID		1.1306				17.1		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.3146 1.0698	1.1409 0.9888	0.9890	0.9976	1.0137	AveID		1.0735				11.2		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0215 1.0133	1.1030 0.9250	1.0460	1.0632	1.0386	AveID		1.0301				5.3		35.0			
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.6754 0.8005	0.6687 0.7468	0.6537	0.6932	0.7194	AveID		0.7082				7.3		50.0			
Perfluorononanesulfonic acid (PFNS)	0.6534 0.6601	0.5631 0.5955	0.5504	0.6130	0.6291	AveID		0.6092				6.9		50.0			
Perfluorodecanoic acid (PFDA)	1.0054 0.8904	1.0617 0.7777	0.9755	0.9938	0.9498	AveID		0.9506				9.7		35.0			
8:2 FTS	2.0994 2.2323	2.0950 2.1548	2.3036	2.3377	2.2789	AveID		2.2145				4.5		35.0			
Perfluorooctanesulfonamide (FOSA)	2.7920 2.5894	2.8414 2.5498	2.8655	2.8520	2.7394	AveID		2.7471				4.7		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.8698 0.8341	0.8073 0.8141	0.7853	0.7933	0.8291	AveID		0.8190				3.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7863 0.8504	0.7815 0.7797	0.7863	0.8577	0.8534	AveID		0.8136				4.6		50.0			
Perfluoroundecanoic acid (PFUnA)	0.8916 0.7702	0.7975 0.7161	0.7997	0.7633	0.7682	AveID		0.7866				6.9		35.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7943 0.8284	0.8315 0.8004	0.7831	0.8001	0.7466	AveID		0.7978				3.6		35.0			
F-53B Minor	1.8537 1.8507	1.9312 1.5186	1.9388	1.9913	2.0078	AveID		1.8703				8.9		50.0			
NMeFOSE	0.9433 1.0534	1.1300 1.0960	1.0346	1.0213	1.0150	AveID		1.0419				5.8		35.0			
NMeFOSA	0.8741 0.9167	0.8183 0.8890	0.8745	0.8452	0.8882	AveID		0.8723				3.7		35.0			
Perfluorododecanoic acid (PFDoA)	1.1506 0.9070	1.0929 0.8137	1.0835	1.1257	1.0406	AveID		1.0306				12.1		35.0			
10:2 FTS	1.5123 1.7490	1.6058 1.7905	1.7882	1.7862	1.7036	AveID		1.7051				6.3		50.0			
NEtFOSE	1.0635 1.0875	1.0709 1.0759	0.9683	1.0281	1.0840	AveID		1.0540				4.0		35.0			
NEtFOSA	0.9407 1.0371	0.9614 1.0318	1.0188	1.0546	0.9893	AveID		1.0048				4.2		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.0879 0.0873	0.0734 0.0855	0.0782	0.0875	0.0846	AveID		0.0835				6.7		50.0			
Perfluorotridecanoic acid (PFTriA)	0.7148 0.5827	0.6735 0.5647	0.6701	0.6637	0.6425	AveID		0.6446				8.3		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1309 0.1467	0.1459 0.1479	0.1523	0.1282	0.1370	AveID		0.1413				6.5		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8173 0.8506	1.4396 0.7695	0.9928	0.9174	0.9134	L2ID	0.0248	0.8675							0.9940		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.7485 0.7228	0.7692 0.6414	0.7305	0.7020	0.7360	AveID		0.7215				5.7		50.0			
13C4 PFBA	0.7138 0.7556	0.7247 0.7507	0.7260	0.7413	0.7476	Ave		0.7371				2.1		50.0			
13C5 PFPeA	0.5965 0.6427	0.6261 0.6309	0.6029	0.5940	0.6243	Ave		0.6168				3.1		50.0			
M2-4:2 FTS	0.1193 0.1100	0.1224 0.1184	0.1266	0.1146	0.1126	Ave		0.1177				4.9		50.0			
13C2 PFHxA	0.6968 0.7016	0.7174 0.7143	0.7253	0.6998	0.7181	Ave		0.7105				1.5		50.0			
13C3 HFPO-DA	0.1192 0.1282	0.1229 0.1252	0.1212	0.1267	0.1220	Ave		0.1236				2.6		50.0			
13C4 PFHpA	0.7999 0.8412	0.8176 0.8186	0.7965	0.8167	0.8003	Ave		0.8130				1.9		50.0			
18O2 PFHxS	0.5137 0.5206	0.5234 0.5326	0.5101	0.5270	0.5292	Ave		0.5224				1.6		50.0			
M2-6:2 FTS	0.1233 0.1031	0.1200 0.0999	0.1144	0.1159	0.1170	Ave		0.1134				7.6		50.0			
13C8 PFOA	0.8950 0.8692	0.8891 0.8886	0.8682	0.8886	0.9201	Ave		0.8884				2.0		50.0			
13C4 PFOA	0.9414 0.9468	0.9191 0.9515	0.9379	0.9295	0.9340	Ave		0.9372				1.2		50.0			
13C8 PFOS	0.1318 0.1313	0.1348 0.1309	0.1297	0.1309	0.1333	Ave		0.1318				1.3		50.0			
13C4 PFOS	0.6083 0.5902	0.6213 0.6247	0.6077	0.5963	0.5952	Ave		0.6062				2.2		50.0			
13C5 PFNA	0.8437 0.8341	0.8600 0.8068	0.8356	0.8308	0.8302	Ave		0.8344				1.9		50.0			
13C2 PFDA	0.9258 0.9509	0.9341 0.9432	0.9412	0.9369	0.9599	Ave		0.9417				1.2		50.0			
M2-8:2 FTS	0.1120 0.1052	0.1103 0.0983	0.1097	0.1057	0.1053	Ave		0.1066				4.3		50.0			
13C8 FOSA	0.3114 0.3215	0.3153 0.3092	0.3002	0.3079	0.3232	Ave		0.3127				2.6		50.0			
d3-NMeFOSAA	0.4259 0.4498	0.4450 0.4382	0.4245	0.4657	0.4598	Ave		0.4441				3.6		50.0			
13C2 PFUnA	0.7998 0.7900	0.8227 0.7875	0.7951	0.8237	0.8054	Ave		0.8035				1.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d5-NEtFOSAA	0.3760 0.3650	0.3840 0.3677	0.3816	0.3924	0.4060	Ave		0.3818				3.7		50.0			
d7-N-MeFOSE-M	0.1992 0.2096	0.2047 0.2075	0.2000	0.2036	0.2069	Ave		0.2045				1.9		50.0			
d-N-MeFOSA-M	0.2173 0.2311	0.2135 0.2365	0.2174	0.2225	0.2250	Ave		0.2233				3.7		50.0			
13C2 PFDoA	0.8618 0.9370	0.8947 0.8966	0.8617	0.8559	0.8844	Ave		0.8846				3.2		50.0			
d9-N-EtFOSE-M	0.2024 0.2180	0.2148 0.2175	0.2096	0.2115	0.2156	Ave		0.2128				2.6		50.0			
d-N-EtFOSA-M	0.2070 0.2202	0.2157 0.2263	0.2085	0.2086	0.2197	Ave		0.2151				3.4		50.0			
13C2 PFTeDA	0.6256 0.6299	0.6285 0.6295	0.5936	0.6374	0.6459	Ave		0.6272				2.6		50.0			
13C2 PFHxDA	0.6688 0.7235	0.6624 0.7281	0.6674	0.6901	0.6851	Ave		0.6893				3.9		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-328725/2	2019.10.05.ICALAAA_002.d
Level 2	IC 320-328725/3	2019.10.05.ICALAAA_003.d
Level 3	IC 320-328725/4	2019.10.05.ICALAAA_004.d
Level 4	IC 320-328725/5	2019.10.05.ICALAAA_005.d
Level 5	IC 320-328725/6	2019.10.05.ICALAAA_006.d
Level 6	IC 320-328725/7	2019.10.05.ICALAAA_007.d
Level 7	IC 320-328725/9	2019.10.05.ICALAAA_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)	13PF OA	AveID	53067 9978156	102597 17886175	535747	2154398	5336965	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)	13PF OA	AveID	57345 10008342	110129 17978413	520037	2091694	5112132	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)	13PF OA	AveID	71877 12486974	127082 22357919	656824	2684679	6322747	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS	13PF OA	AveID	+++++ 4153822	50493 8521819	244358	928269	2283370	+++++ 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)	13PF OA	AveID	63441 10338485	114780 18731134	524967	2162469	5336442	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)	13PF OA	AveID	36314 7311823	71188 13841139	351006	1411701	3608445	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)	13PF OA	AveID	15509 3122871	29329 6217101	150971	620011	1555414	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)	13PF OA	AveID	82489 14020719	165052 24469776	756564	3062828	7641469	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)	13PF OA	AveID	57847 9172567	104368 17306713	447681	1794895	4533955	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA	13PF OA	AveID	127050 22624818	264698 38304555	1286042	5171965	12158222	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS	13PF OA	AveID	22725 3674780	45330 6697984	209949	885204	2050974	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)	13PF OA	AveID	53575 9281041	93521 16924511	450561	1877737	4681168	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)	13PF OA	AveID	110054 15178193	213968 25839554	874460	3343818	8145187	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)	13PF OA	AveID	62692 9391167	109955 17840172	466112	1835006	4576677	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)	13PF OA	AveID	72808 13546796	158555 23224755	730410	2935957	7048443	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	13PFOA	AveID	32346 7057132	64728 13531556	309386	1280556	3261960	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)	13PFOA	AveID	32233 5994271	56140 11115033	268352	1166323	2938477	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)	13PFOA	AveID	78640 13571138	165765 22827875	767295	3094766	7452940	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS	13PFOA	AveID	19035 3606364	37015 6312594	202255	786829	1878787	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorooctanesulfonamide (FOSA)	13PFOA	AveID	73450 13343046	149720 24533018	718967	2919040	7236875	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	13PFOA	AveID	31295 6013564	60039 11101962	278608	1227876	3116739	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)	13PFOA	AveID	38954 7754560	78240 14613634	384949	1638871	4002514	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)	13PFOA	AveID	60244 9752335	109660 17551214	531361	2089872	5057291	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	13PFOA	AveID	25228 4846651	53371 9157895	249760	1043417	2477954	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor	13PFOA	AveID	89735 16490535	188924 27811511	927478	3717997	9201776	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NMeFOSE	13PFOA	AveID	15872 3538359	38661 7076395	172886	691224	1716843	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSA		AveID	16044 3394885	29201 6544231	158885	625224	1633454	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)	13PFOA	AveID	83777 13621637	163439 22703989	780294	3202560	7522749	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS	13PFOA	AveID	13798 2843341	28550 5278185	157988	604969	1413290	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
NEtFOSE	13PFOA	AveID	18186 3799395	38444 7282336	169603	722880	1910679	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSA	13PFOA	AveID	16450 3659635	34661 7266135	177501	731377	1776813	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)	13PFOA	AveID	4374 799266	7377 1608646	38434	167885	398380	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)	13PFOA	AveID	52044 8750670	100714 15756282	482595	1888160	4644922	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)	13PFOA	AveID	6919 1481465	15331 2898256	75541	271624	723612	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)	13PFOA	L2ID	102676 9864559	159390 17435777	553754	2104225	5115298	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)	13PFOA	AveID	42289 8382157	85160 14533198	407448	1610096	4122009	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	6030590 6055882	6056473 5840919	6067192	6159803	6111831	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	5039060 5150979	5232577 4908508	5037989	4936369	5103257	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-4:2 FTS	13PF OA	Ave	941224 823566	955726 860112	988138	889687	859369	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	5886585 5622540	5995745 5557663	6061306	5814847	5869939	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	1006945 1027232	1026716 973901	1013175	1052710	997088	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	6757516 6741751	6832535 6369189	6656640	6786543	6542108	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	4105349 3946921	4138068 3920448	4032793	4142437	4092089	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	989202 785135	952803 738647	908341	915182	908828	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	7561454 6965890	7430697 6913785	7255300	7384345	7521202	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOA	13PF OA	Ave	7953591 7587695	7680821 7403196	7837836	7724289	7635319	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1113548 1052522	1126961 1018428	1084214	1088042	1089425	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	4912672 4521521	4964118 4646561	4854963	4737178	4651232	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	7127624 6684442	7187274 6277242	6982748	6903599	6786292	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	7821533 7620451	7806334 7338608	7865438	7785477	7847175	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	906705 807780	883418 732390	877999	841467	824438	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C8 FOSA	13PF OA	Ave	2630726 2576509	2634643 2405348	2509036	2558734	2641759	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	3597954 3604778	3718673 3409196	3547861	3869718	3759020	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	6756680 6331425	6875483 6127321	6644665	6844959	6583620	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	3176307 2925321	3209199 2860515	3189358	3260359	3318814	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	8413102 8397419	8553331 8071050	8354966	8460401	8457560	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-MeFOSA-M	13PF OA	Ave	1835587 1851772	1784278 1840313	1816763	1849318	1839028	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1 Analy Batch No.: 328725

SDG No.:

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2019 18:03 Calibration End Date: 10/05/2019 19:10 Calibration ID: 47751

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFDoA	13PF OA	Ave	7280930 7509180	7477137 6975840	7201333	7112308	7229580	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d9-N-EtFOSE-M	13PF OA	Ave	8550068 8734288	8974435 8461100	8757552	8788670	8813227	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-EtFOSA-M	13PF OA	Ave	1748618 1764417	1802631 1760478	1742177	1733757	1796039	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	5285411 5048305	5252431 4897646	4960678	5296810	5280170	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	5650004 5798351	5535738 5664982	5577648	5734303	5600565	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 05-Oct-2019 18:03:51 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD1
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:41:47 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 07-Oct-2019 12:41:47
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.901	1.903	-0.002	0.569	6030590	2.42		96.8	5892	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.901	1.906	-0.005	1.000	53067	0.0259		104	11.1	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.661	5039060	2.42		96.7	4150	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.206	2.207	-0.001	1.000	57345	0.0278		111	16.3	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.233	2.236	-0.003	0.758	71877	0.0244	Target=2.62	111	6.6	M
298.90 > 99.00	2.233	2.236	-0.003	0.758	25874		2.78(1.31-3.93)	111	5.3	M
D 7 M2-4:2 FTS										
329.00 > 81.00	2.525	2.519	0.006	0.757	941224	2.37		101	1492	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.525	2.521	0.004	1.000	31528	0.0305		131	293	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.559	-0.002	0.766	5886585	2.45		98.1	2424	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.559	-0.002	1.000	63441	0.0290	Target=14.83	116	18.6	
313.00 > 119.00	2.557	2.559	-0.002	1.000	3613		17.56(7.41-22.24)	116	3.3	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.577	-0.009	0.872	36314	0.0236	Target=1.98	101	69.6	
349.00 > 99.00	2.568	2.577	-0.009	0.872	21203		1.71(0.99-2.97)	101	74.0	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.687	2.686	0.001	1.000	15509	0.0254		102	22.4	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.687	2.686	0.001	0.805	1006945	2.41		96.4	1818	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.942	-0.002	0.881	6757516	2.46		98.4	4177	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.946	2.944	0.002	1.002	82489	0.0272	Target=4.24	109	29.7	
363.00 > 169.00	2.940	2.944	-0.004	1.000	17408		4.74(2.12-6.36)	109	13.8	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.946	2.947	-0.001	0.883	4105349	2.33		98.3	5840	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.952	2.948	0.004	1.002	57847	0.0272	Target=3.27	120	88.7	M
399.00 > 99.00	2.946	2.948	-0.002	1.000	19216		3.01(1.64-4.91)	120	32.5	M
18 DONA										
377.00 > 251.00	2.993	2.995	-0.002	0.806	127050	0.0239	Target=2.25	102	374	
377.00 > 85.00	2.993	2.995	-0.002	0.806	52061		2.44(1.12-3.37)	102	214	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.319	-0.003	0.994	989202	2.58		109	2673	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.324	3.320	0.004	1.002	22725	0.0234		98.8	57.3	
D 21 13C8 PFOA										
421.00 > 376.00	3.338	3.340	-0.002	1.000	7561454	2.52		101	5884	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.340	-0.002	0.899	53575	0.0264	Target=3.58	111	179	
449.00 > 99.00	3.338	3.340	-0.002	0.899	16236		3.30(1.79-5.37)	111	23.0	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.341	-0.003	1.000	7953591	2.51		100	3883	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.342	-0.004		8448242	2.50			4875	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.345	3.344	0.001	1.002	110054	0.0306	Target=2.79	122	35.0	
413.00 > 169.00	3.338	3.344	-0.006	1.000	44180		2.49(1.40-4.19)	122	81.6	
D 26 13C8 PFOS										
507.00 > 99.00	3.712	3.710	0.002	1.112	1113548	2.50		100.0	1540	
D 27 13C4 PFOS										
503.00 > 80.00	3.712	3.714	-0.002	1.112	4912672	2.40		100	2598	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.712	3.714	-0.002	1.000	62692	0.0284	Target=3.83	122	93.8	M
499.00 > 99.00	3.712	3.714	-0.002	1.000	20063		3.12(1.92-5.75)	122	51.7	M
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.117	7127624	2.53		101	4686	
29 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.729	-0.002	1.000	72808	0.0248	Target=5.58	99.2	65.8	
463.00 > 169.00	3.727	3.729	-0.002	1.000	14321		5.08(2.79-8.37)	99.2	21.7	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.918	3.922	-0.004	1.056	32346	0.0222		95.4	170	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.056	4.057	-0.001	1.093	32233	0.0257	Target=4.51	107	122	
549.00 > 99.00	4.056	4.057	-0.001	1.093	9350		3.45(2.25-6.76)	107	54.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.082	4.084	-0.002	1.000	78640	0.0264	Target=15.45	106	78.7	M
513.00 > 169.00	4.074	4.084	-0.010	0.998	5185		15.17(7.73-23.18)	106	14.0	M
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.084	-0.002	1.223	906705	2.52		105	1799	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.084	-0.002	1.223	7821533	2.46		98.3	4021	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.084	-0.002	1.000	19035	0.0227		94.8	175	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.113	-0.004	1.231	2630726	2.49		99.6	2632	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.118	4.117	0.001	1.002	73450	0.0254		102	244	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.241	0.002	1.271	3597954	2.40		95.9	2602	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.243	4.246	-0.003	1.000	31295	0.0266		106	4.9	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.374	4.375	-0.001	1.178	38954	0.0233	Target=4.64	96.6	128	
599.00 > 99.00	4.374	4.375	-0.001	1.178	9248		4.21(2.32-6.96)	96.6	40.4	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.398	0.002	1.318	6756680	2.49		99.5	3138	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.399	0.001	1.000	60244	0.0283	Target=9.27	113	126	
563.00 > 169.00	4.383	4.399	-0.016	0.996	6838		8.81(4.63-13.90)	113	34.4	
D 44 d5-NEtFOSAA										M
589.00 > 419.00	4.400	4.404	-0.004	1.318	3176307	2.46		98.5	1842	M
45 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	4.409	4.409	0.0	1.002	25228	0.0249		99.6	110	M
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.537	4.537	0.0	1.222	89735	0.0233		99.1	595	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.581	4.580	0.001		8413102	12.2		97.4	2433	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.590	4.590	0.0	1.002	15872	0.0226		90.5	41.2	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.599	4.602	-0.003		1835587	2.43		97.3	269	
49 NMeFOSA										
512.00 > 169.00	4.608	4.607	0.001	1.002	16044	0.0251		100	87.1	
D 55 13C2 PFDoA										
615.00 > 570.00	4.684	4.680	0.004	1.403	7280930	2.44		97.4	5056	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.684	4.681	0.003	1.000	83777	0.0279	Target=9.58	112	92.4	
613.00 > 169.00	4.684	4.681	0.003	1.000	7874		10.64(4.79-14.36)	112	39.3	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.702	4.699	0.003	1.152	13798	0.0214		88.7	57.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.748	4.752	-0.004		8550068	11.9		95.1	3926	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.763	4.763	0.0	1.003	18186	0.0252		101	10.5	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.779	4.779	0.0		1748618	2.41		96.2	1336	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.794	4.786	0.008	1.003	16450	0.0234		93.6	54.5	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.902	4.904	-0.002	1.321	4374	0.0255	Target=0.64	105	30.8	
699.00 > 99.00	4.902	4.904	-0.002	1.321	7109		0.62(0.32-0.96)	105	48.9	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.935	4.935	0.0	1.054	52044	0.0277	Target=5.94	111	217	
663.00 > 169.00	4.935	4.935	0.0	1.054	8313		6.26(2.97-8.91)	111	54.1	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.169	5.169	0.0	1.000	6919	0.0232	Target=1.42	92.7	65.3	
713.00 > 219.00	5.177	5.169	0.008	1.002	4957		1.40(0.71-2.13)	92.7	62.4	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.169	5.170	-0.001	1.549	5285411	2.49		99.7	5490	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.577	5.579	-0.002	1.671	5650004	2.43		97.0	7617	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.577	5.581	-0.004	1.000	102676	0.0238	Target=6.39	95.2	126	
813.00 > 169.00	5.577	5.581	-0.004	1.000	16345		6.28(3.19-9.58)	95.2	104	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.942	5.945	-0.003	1.066	42289	0.0259	Target=6.02	104	71.4	
913.00 > 169.00	5.942	5.945	-0.003	1.066	6354		6.66(3.01-9.03)	104	91.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00016 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:41:48 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d

Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9

Lims ID: IC L1 Full

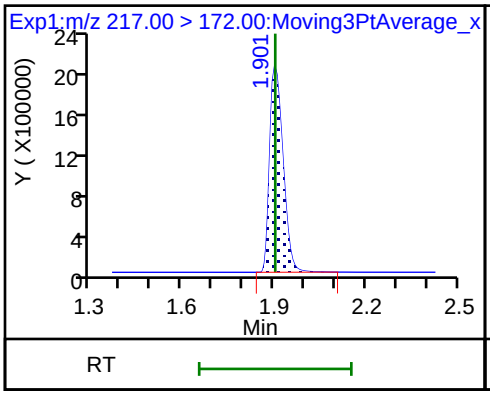
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2

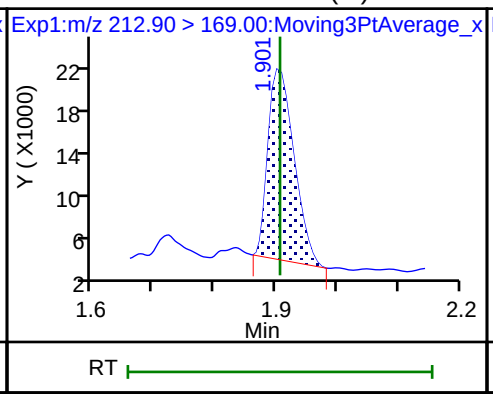
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

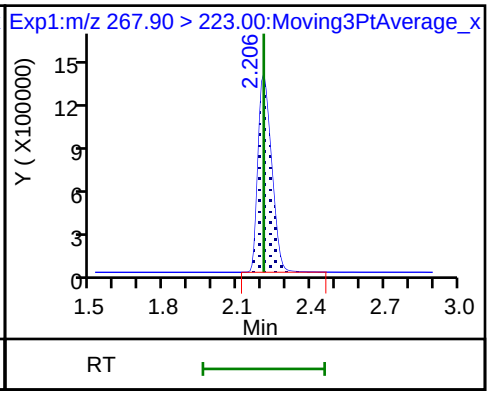
D 1 13C4 PFBA



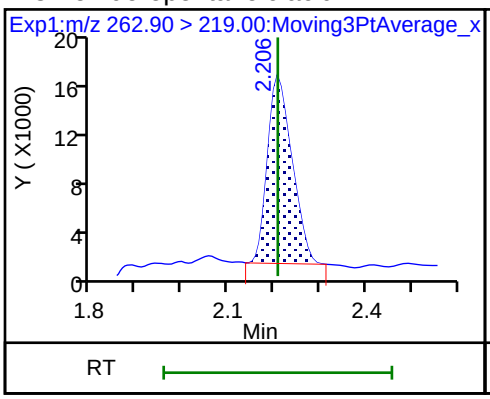
2 Perfluorobutanoic acid (M)



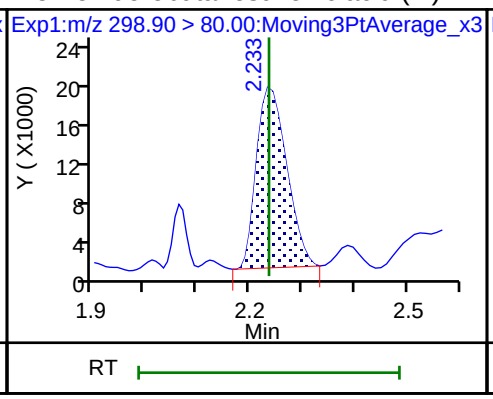
D 4 13C5 PFPeA



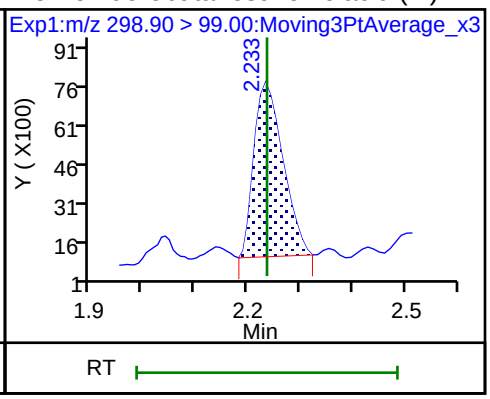
3 Perfluoropentanoic acid



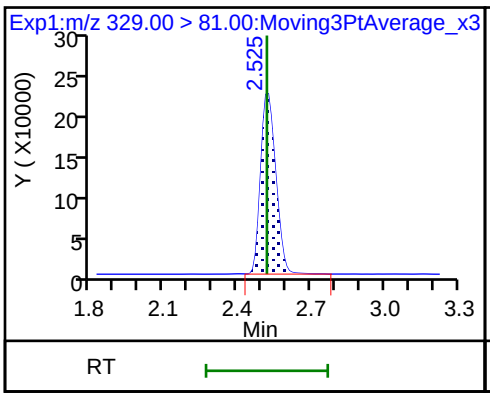
5 Perfluorobutanesulfonic acid (M)



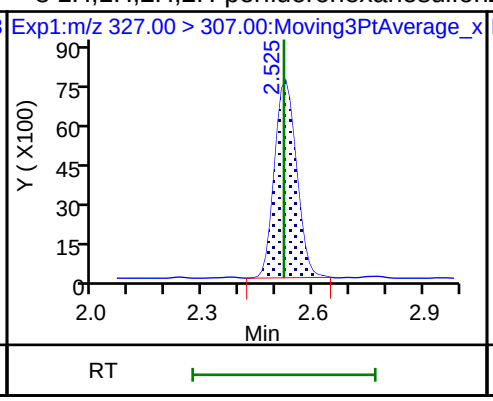
5 Perfluorobutanesulfonic acid (M)



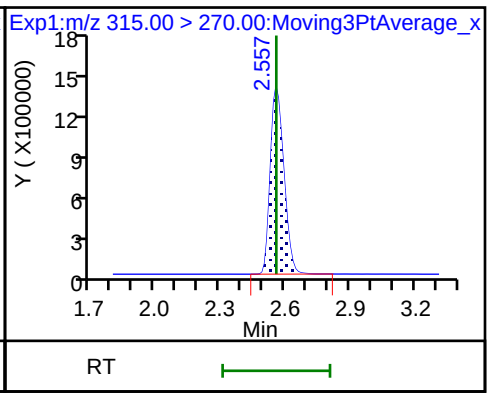
D 7 M2-4:2 FTS



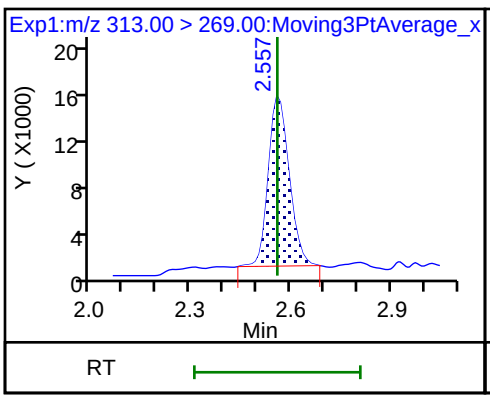
8 1H,1H,2H,2H-perfluorohexanesulfon



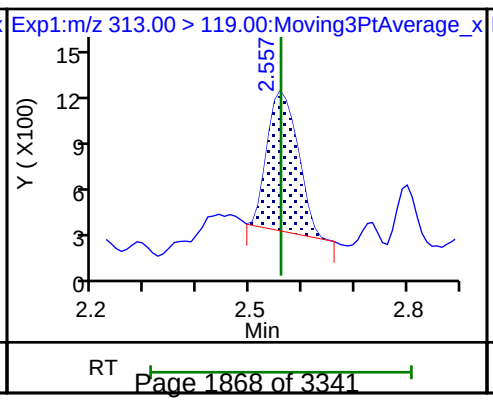
D 9 13C2 PFHxA



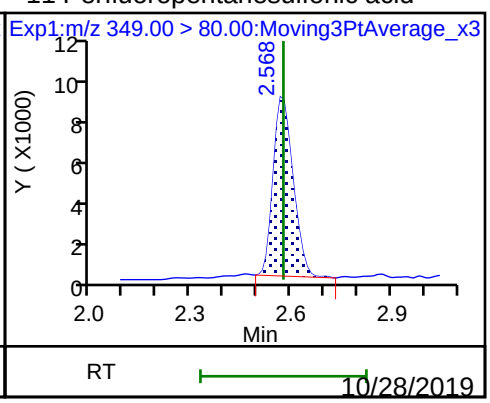
10 Perfluorohexanoic acid



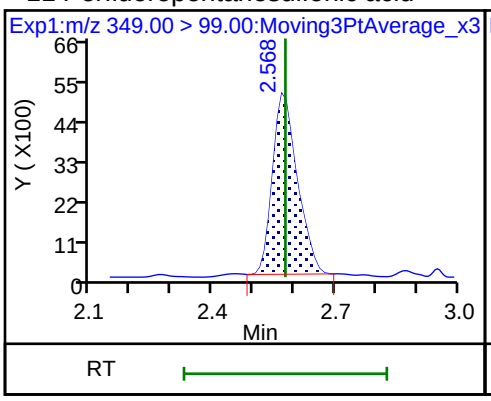
10 Perfluorohexanoic acid



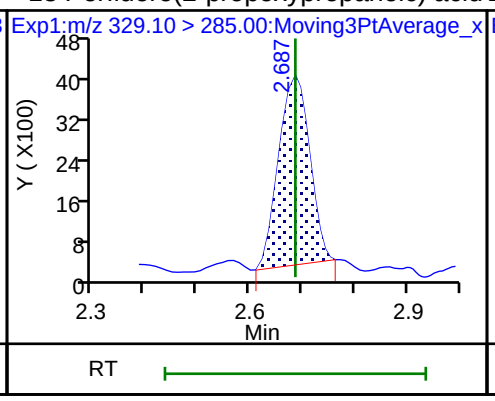
11 Perfluoropentanesulfonic acid



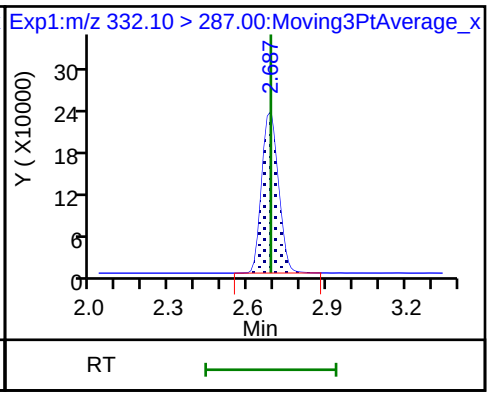
11 Perfluoropentanesulfonic acid



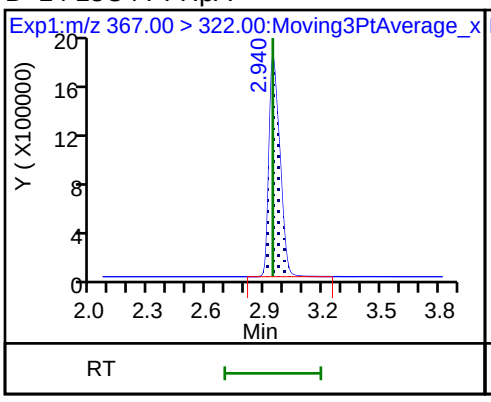
13 Perfluoro(2-propoxypropanoic) acid



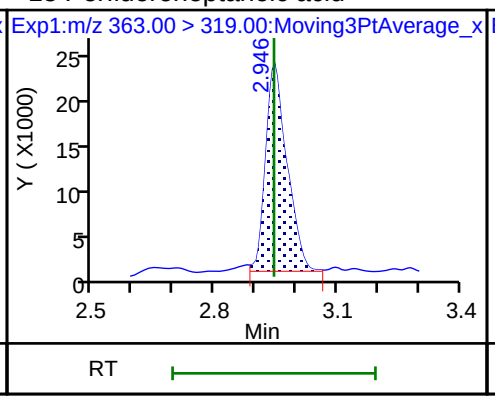
D 12 13C3 HFPO-DA



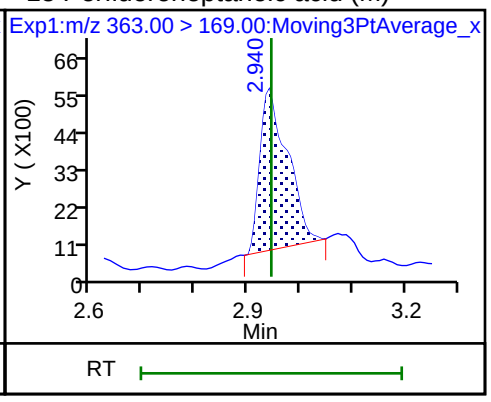
D 14 13C4 PFHpA



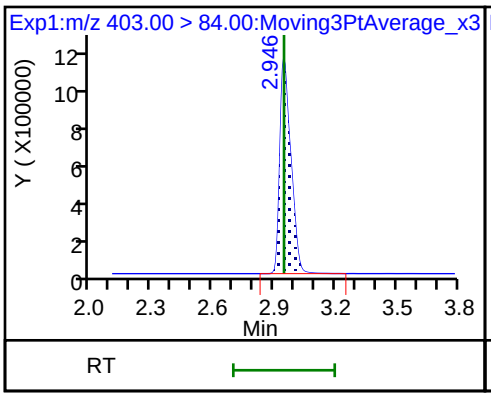
15 Perfluoroheptanoic acid



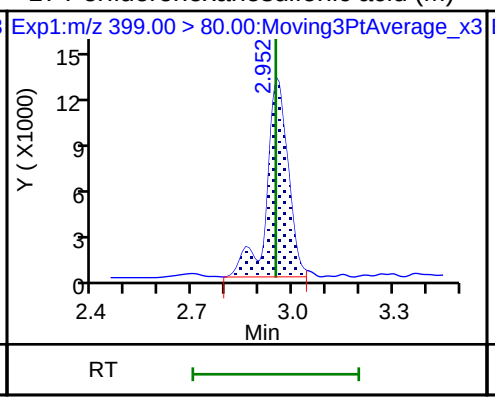
15 Perfluoroheptanoic acid (M)



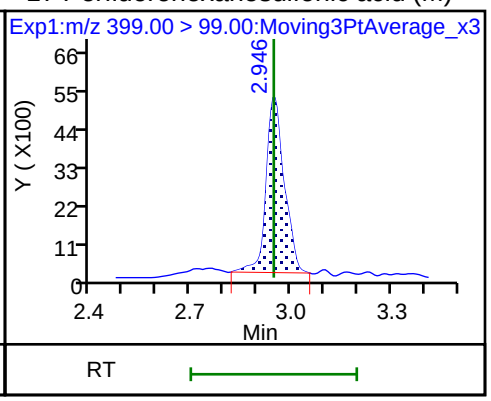
D 16 18O2 PFHxS



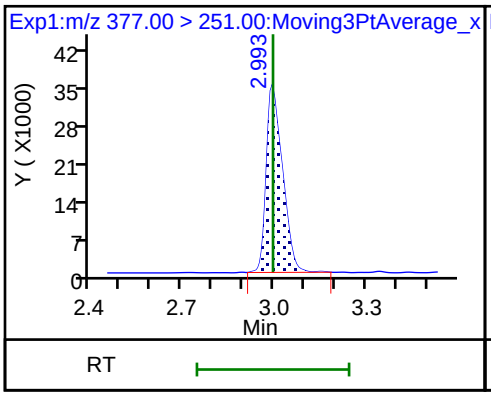
17 Perfluorohexanesulfonic acid (M)



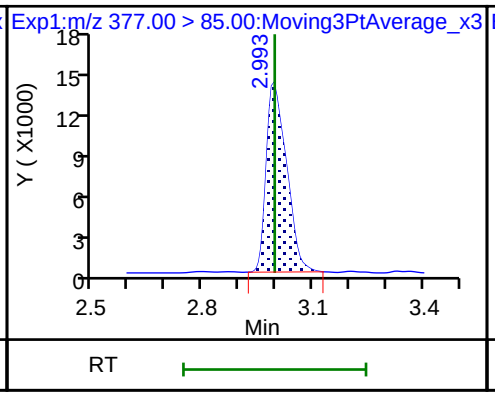
17 Perfluorohexanesulfonic acid (M)



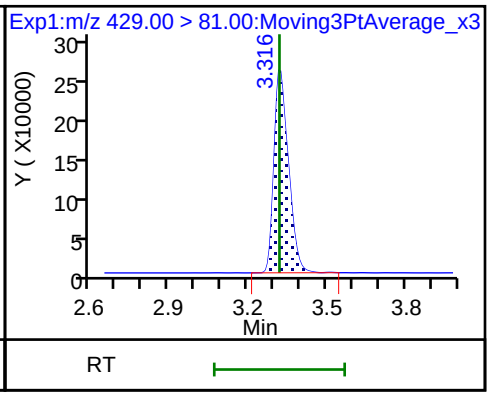
18 DONA



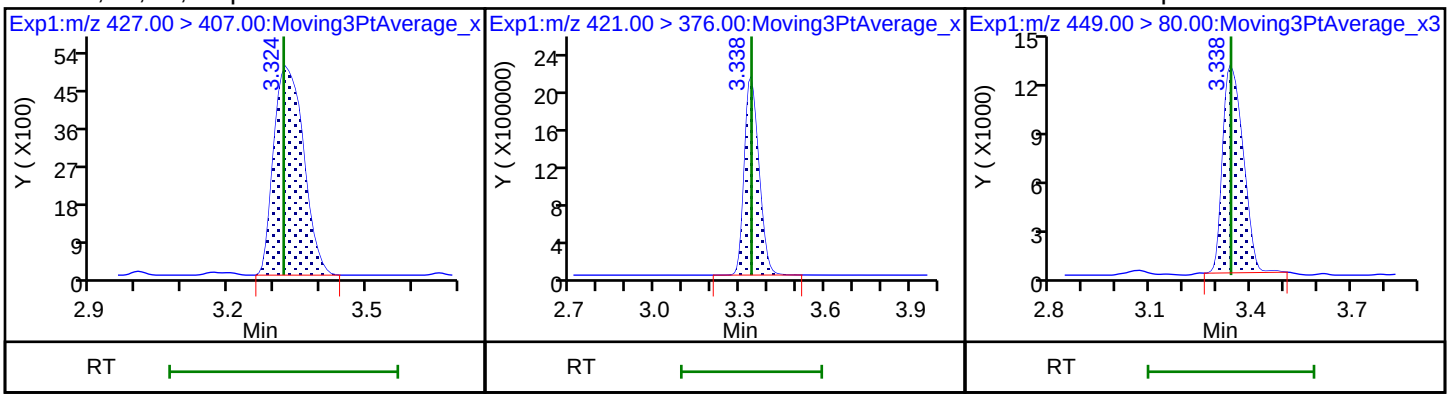
18 DONA



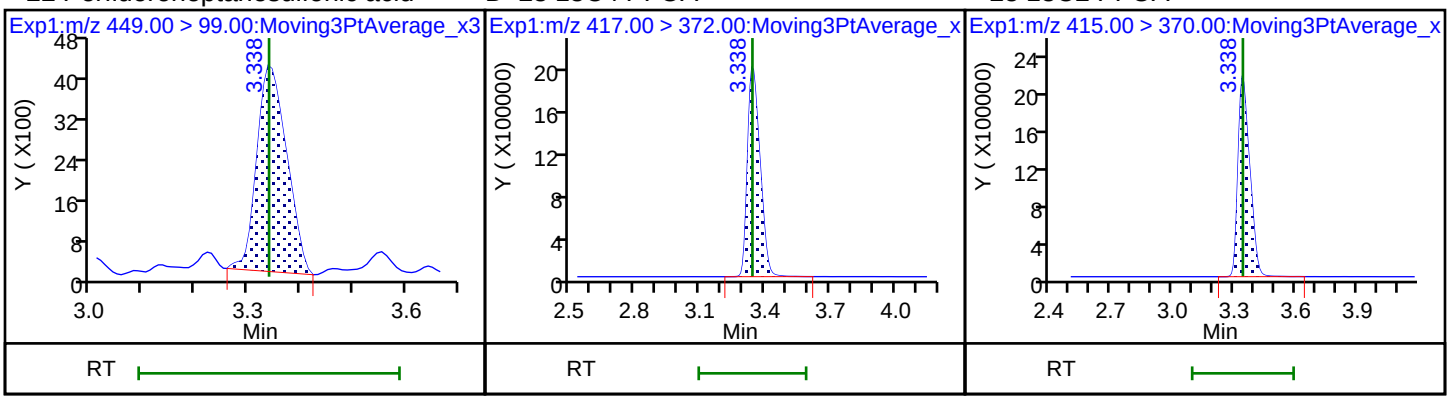
D 20 M2-6:2 FTS



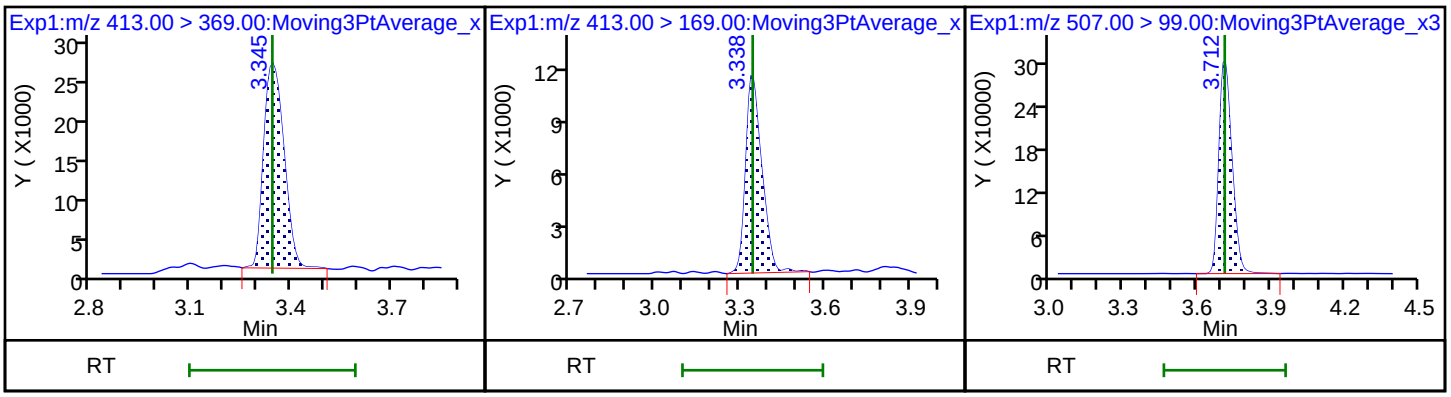
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



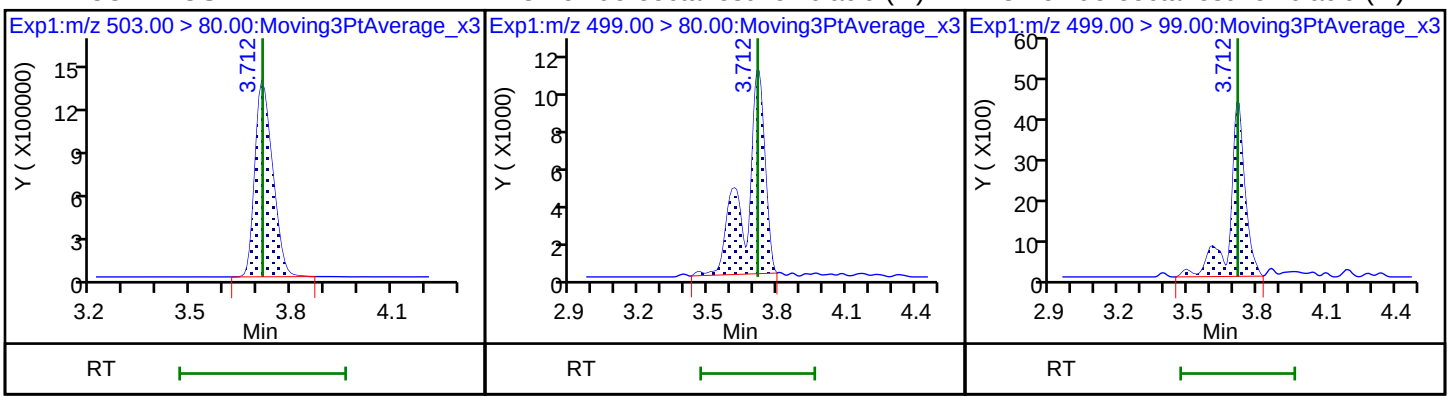
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



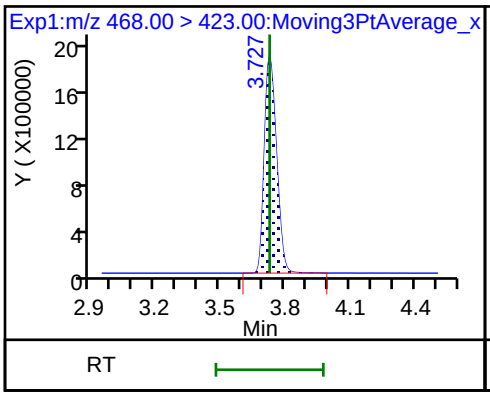
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



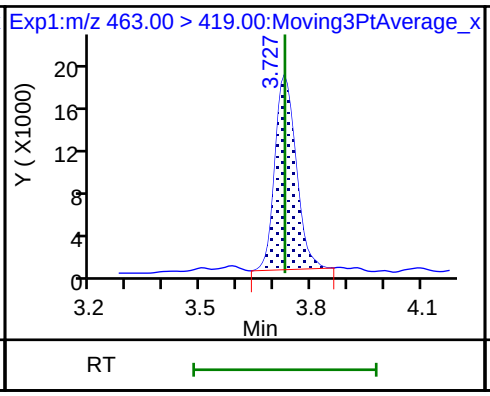
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid (M)



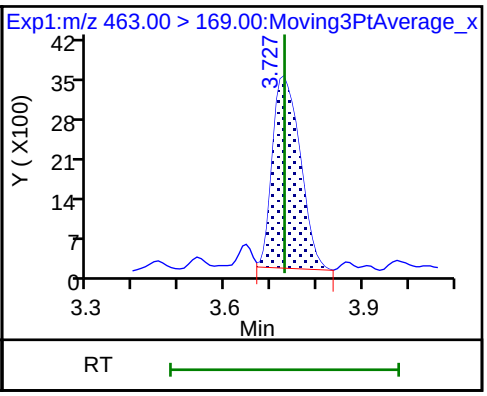
D 30 13C5 PFNA



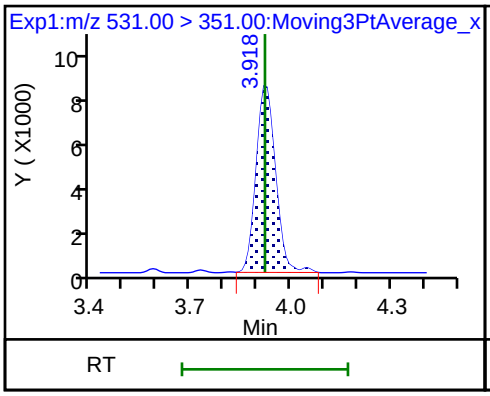
29 Perfluorononanoic acid



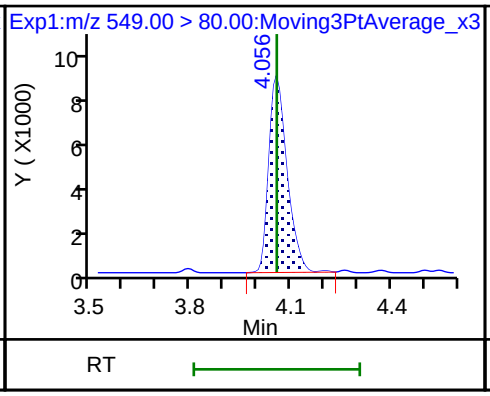
29 Perfluorononanoic acid



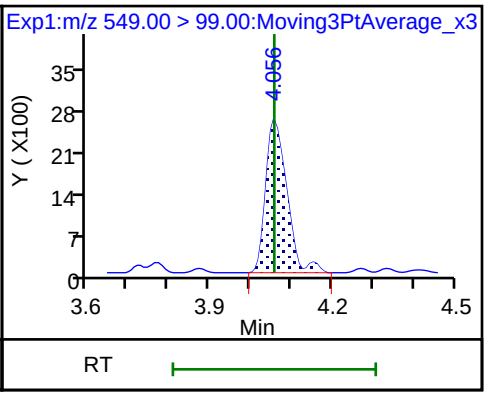
31 9-Chlorohexadecafluoro-3-oxanonane



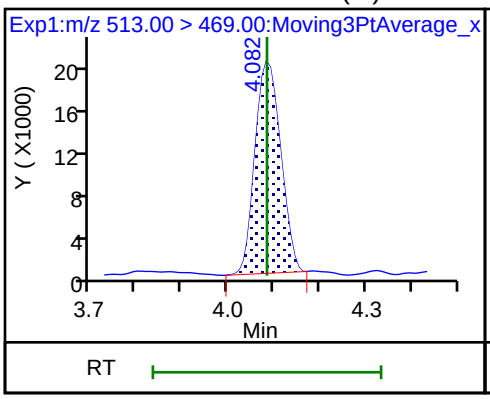
34 Perfluorononanesulfonic acid



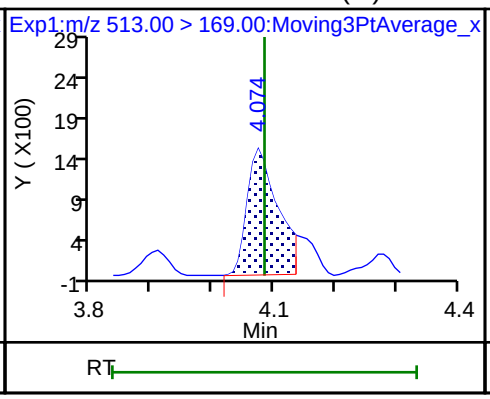
34 Perfluorononanesulfonic acid



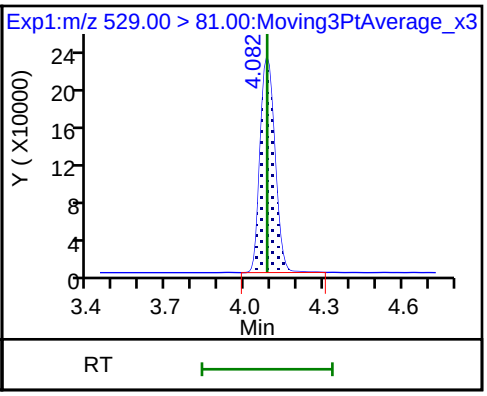
37 Perfluorodecanoic acid (M)



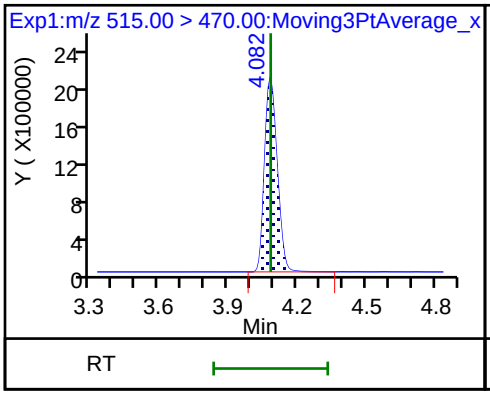
37 Perfluorodecanoic acid (M)



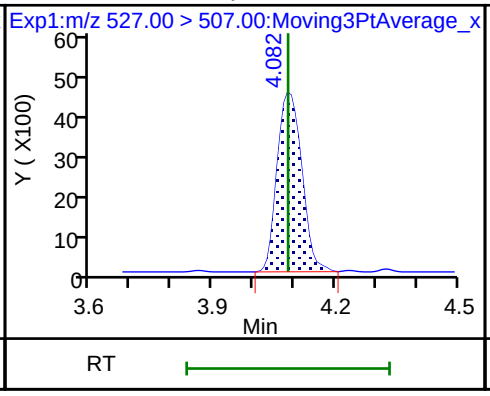
D 35 M2-8:2 FTS



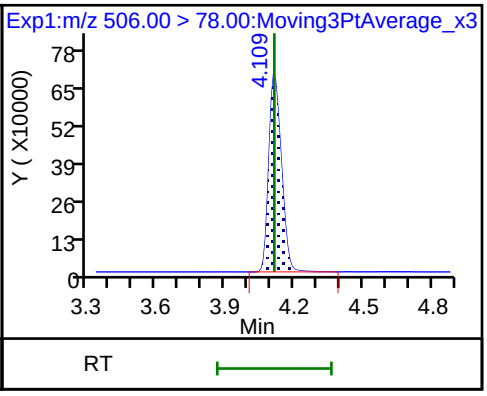
D 36 13C2 PFDA



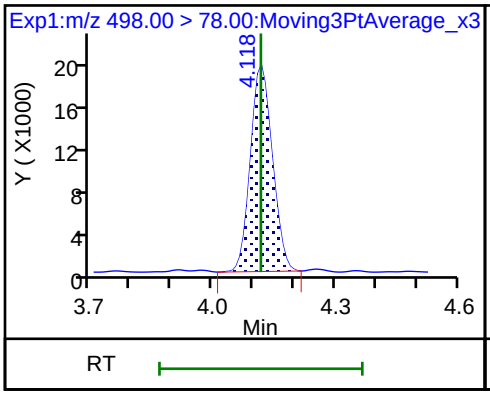
38 1H,1H,2H,2H-perfluorodecanesulfonic



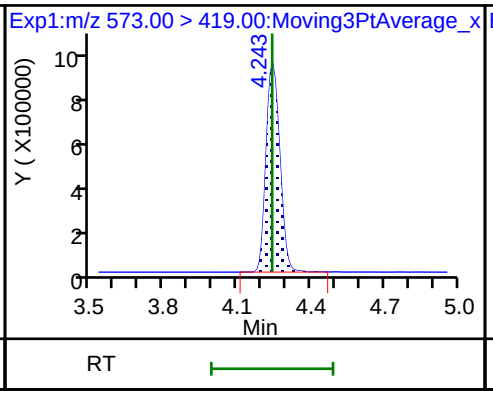
D 32 13C8 FOSA



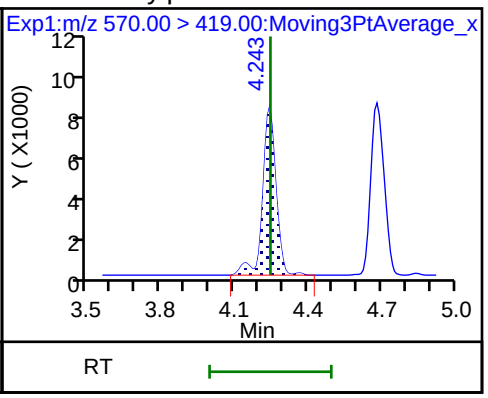
33 Perfluorooctanesulfonamide



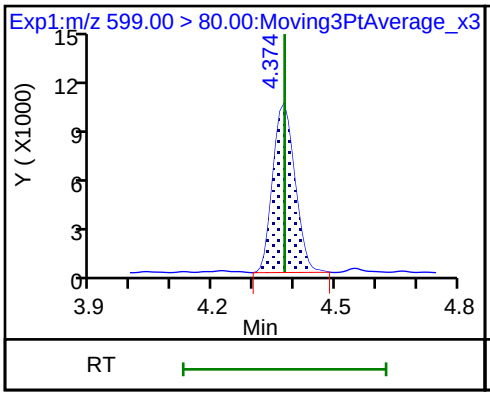
D 39 d3-NMeFOSAA



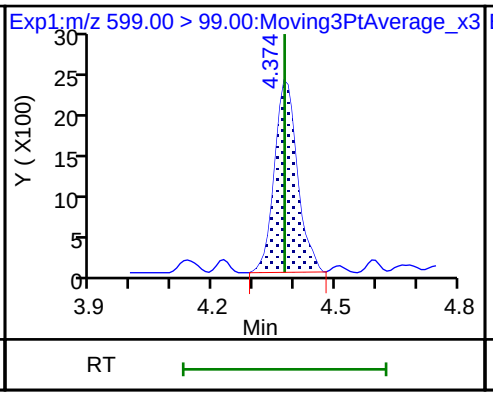
40 N-methylperfluorooctanesulfonamido



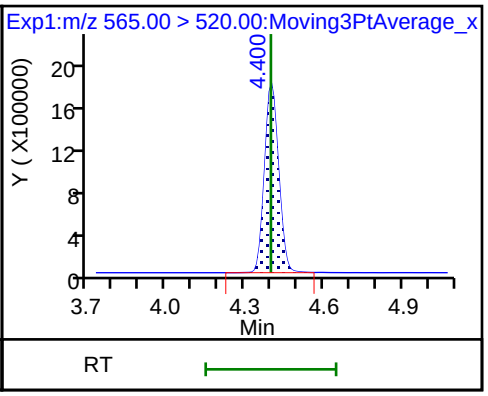
41 Perfluorodecanesulfonic acid



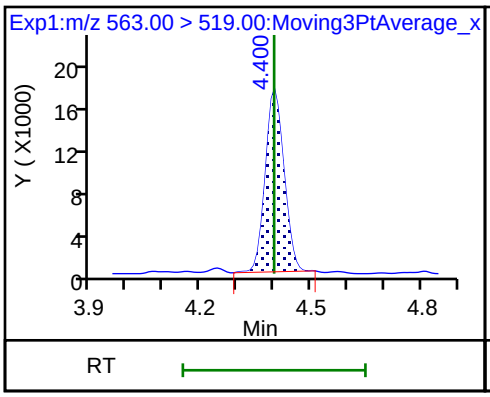
41 Perfluorodecanesulfonic acid



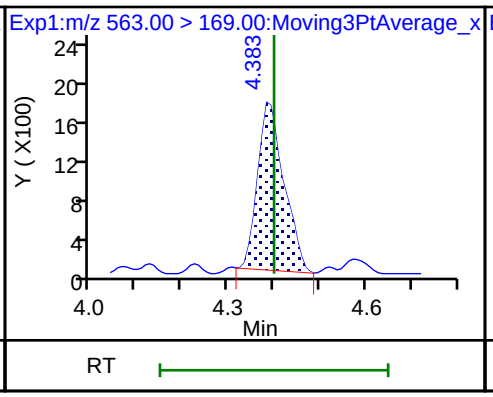
D 42 13C2 PFUnA



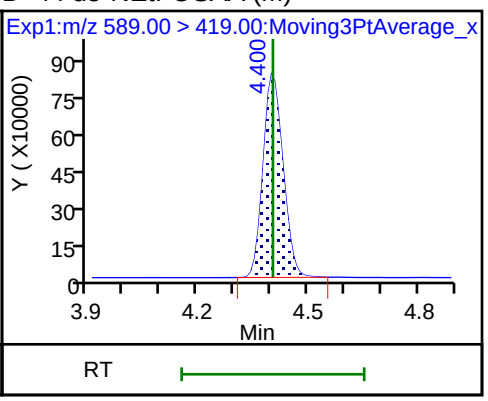
43 Perfluoroundecanoic acid



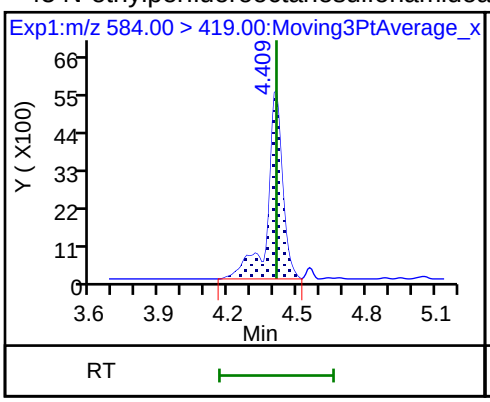
43 Perfluoroundecanoic acid



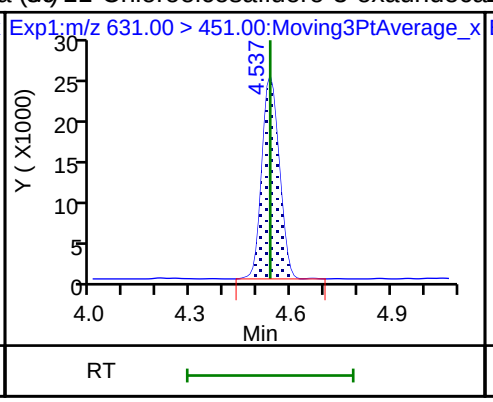
D 44 d5-NEtFOSAA (M)



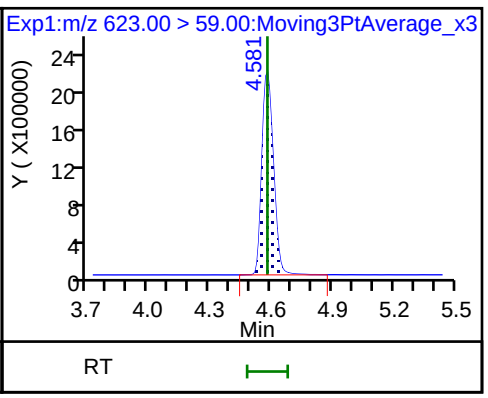
45 N-ethylperfluorooctanesulfonamidoa (M)



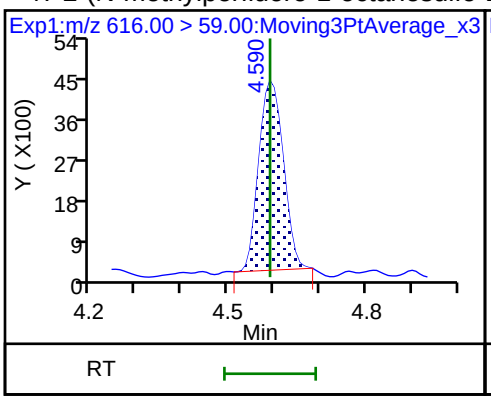
50 11-Chloroeicosafluoro-3-oxaundecan



D 46 d7-N-MeFOSE-M



47 2-(N-methylperfluoro-1-octanesulfo



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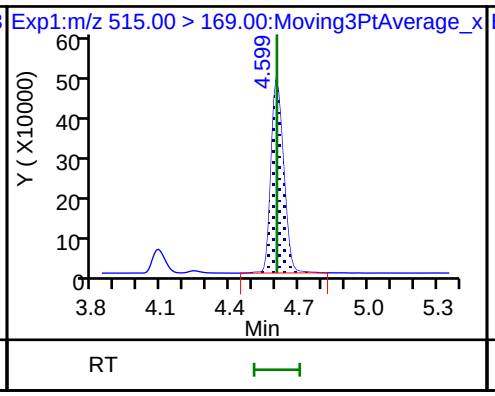
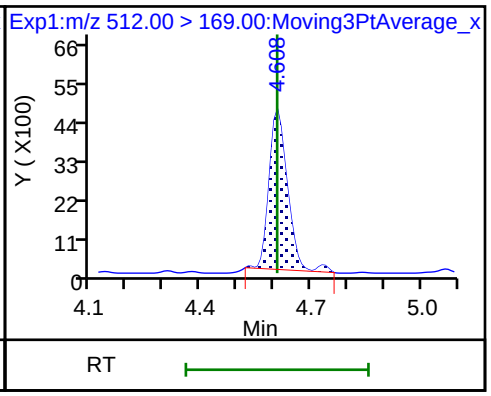
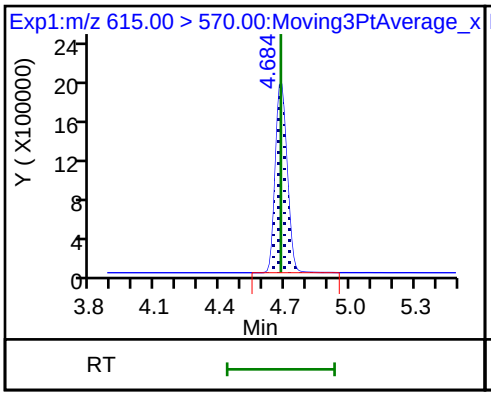


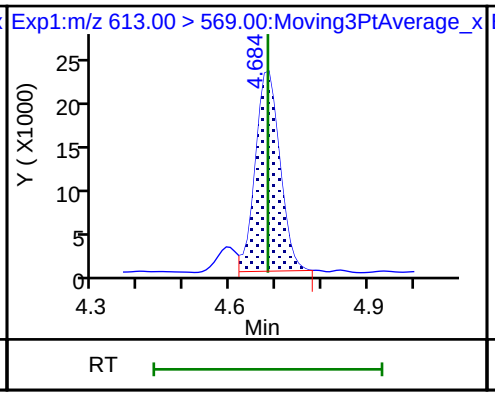
49 NMeFOSA



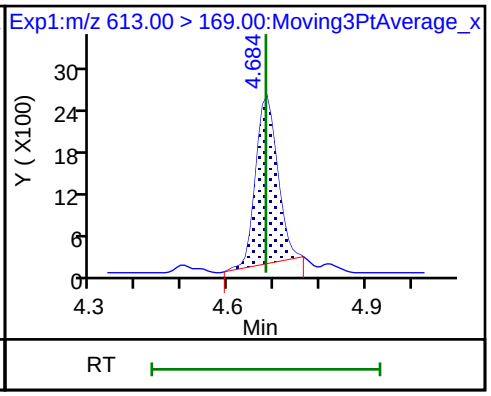
D 55 13C2 PFDoA



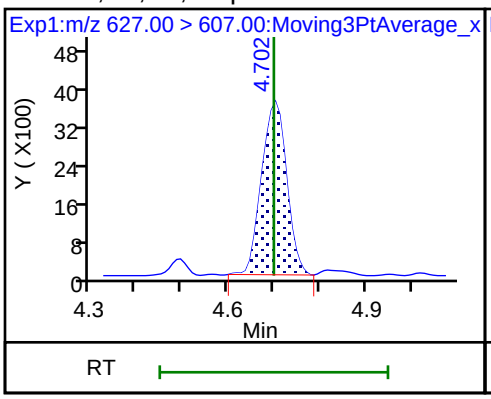
56 Perfluorododecanoic acid



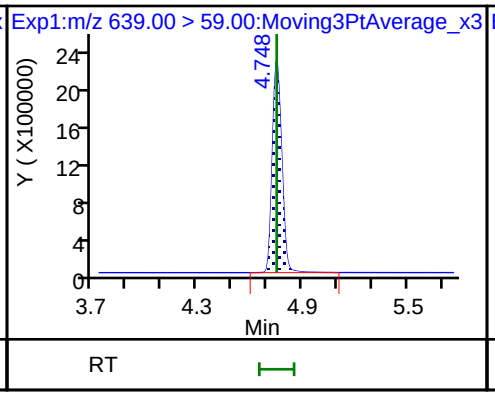
56 Perfluorododecanoic acid



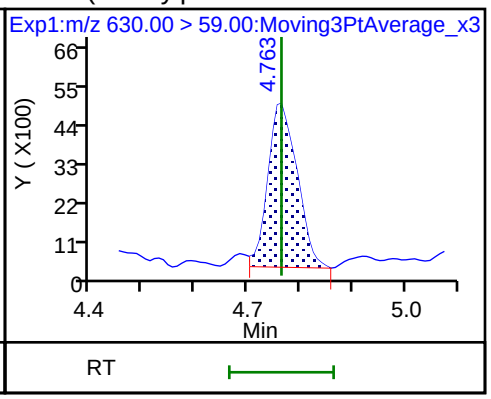
57 1H,1H,2H,2H-perfluorododecanesulfo



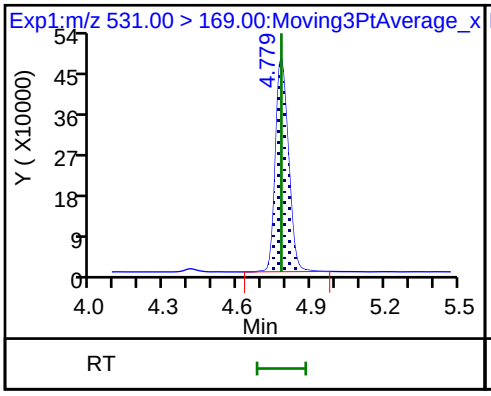
D 51 d9-N-EtFOSE-M



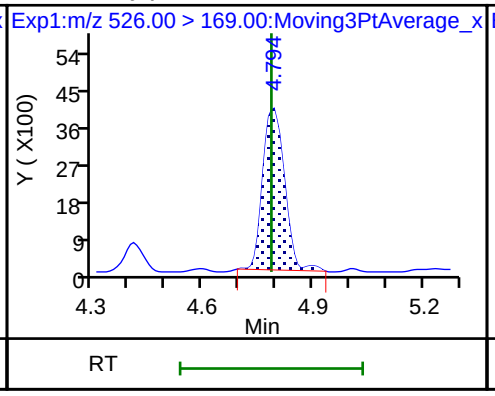
52 2-(N-ethylperfluoro-1-octanesulfon



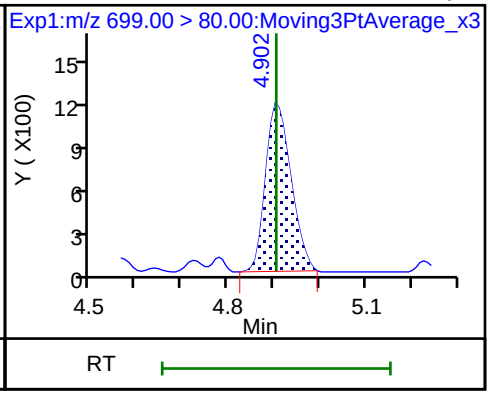
D 53 d-N-EtFOSA-M



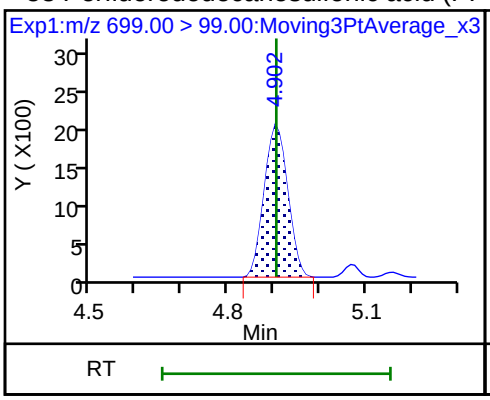
54 N-ethylperfluoro-1-octanesulfonami



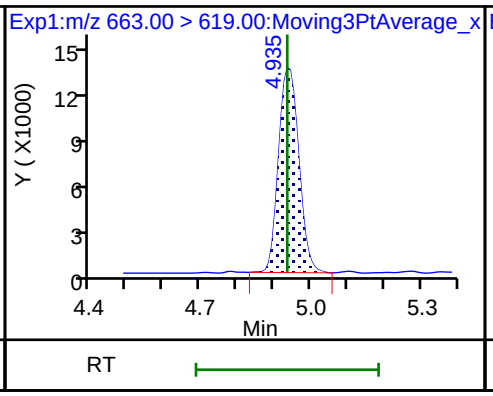
58 Perfluorododecanesulfonic acid (PF



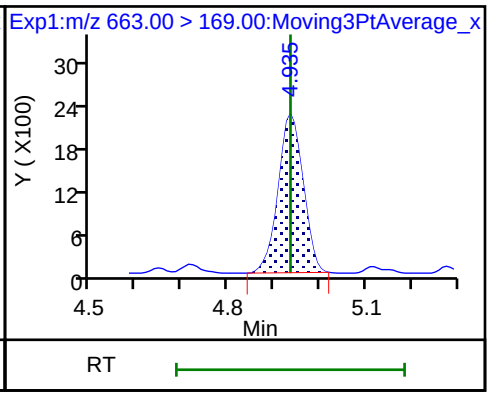
58 Perfluorododecanesulfonic acid (PF



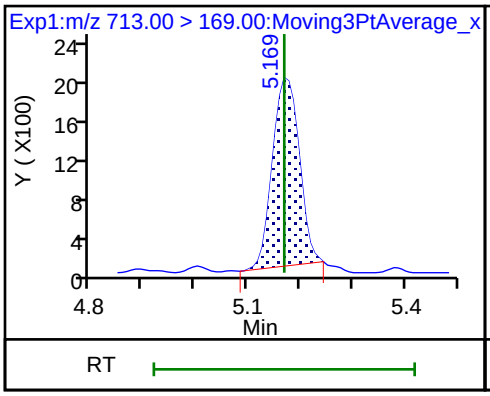
59 Perfluorotridecanoic acid



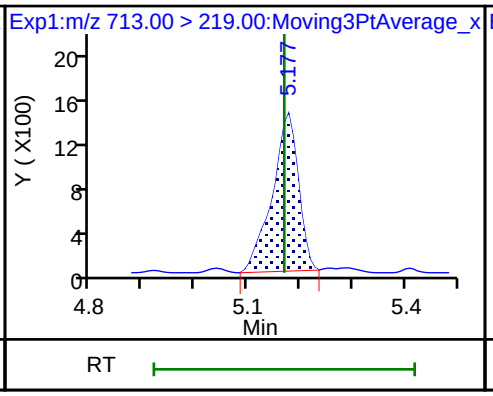
59 Perfluorotridecanoic acid



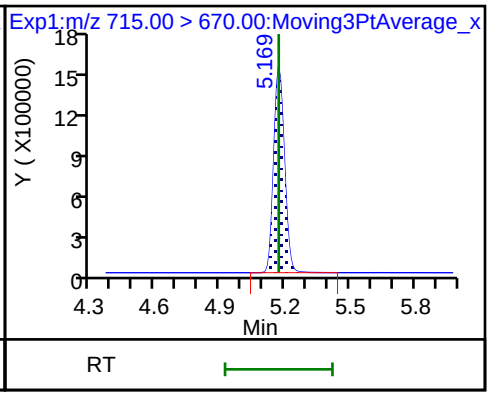
61 Perfluorotetradecanoic acid



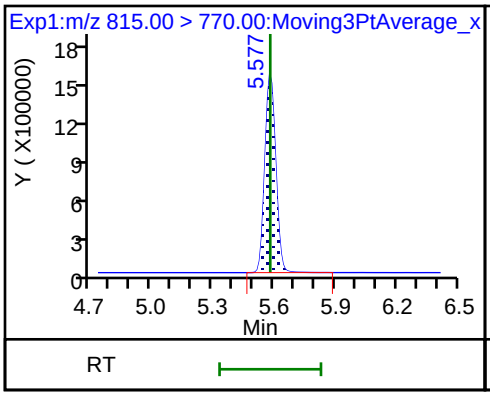
61 Perfluorotetradecanoic acid



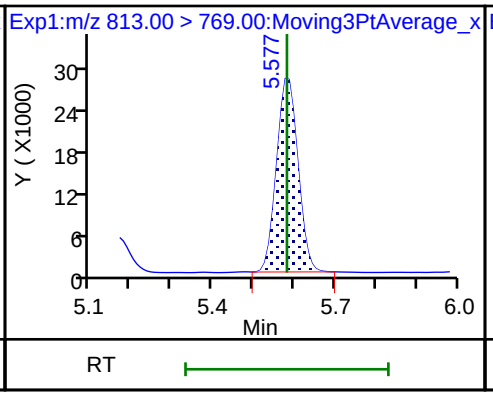
D 60 13C2 PFTeDA



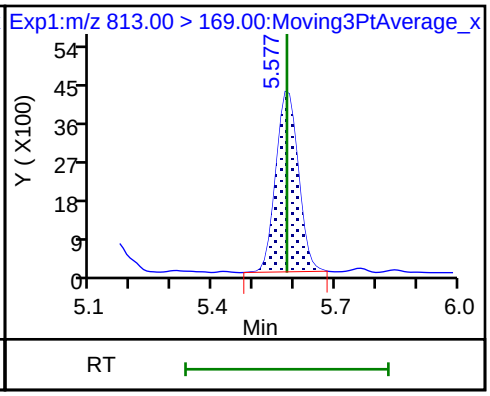
D 62 13C2 PFHxDA



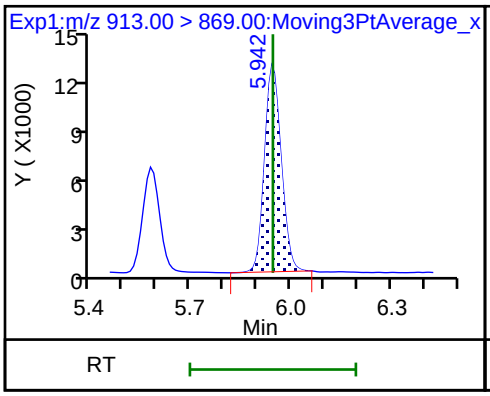
63 Perfluorohexadecanoic acid



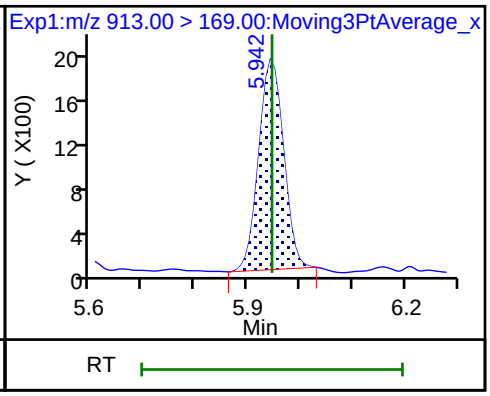
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

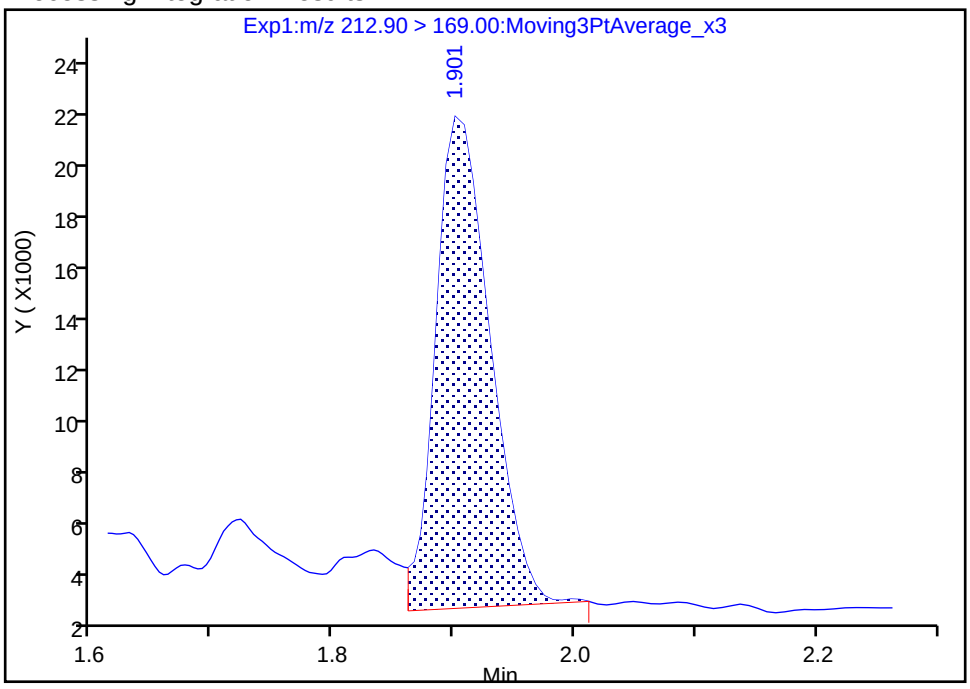
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

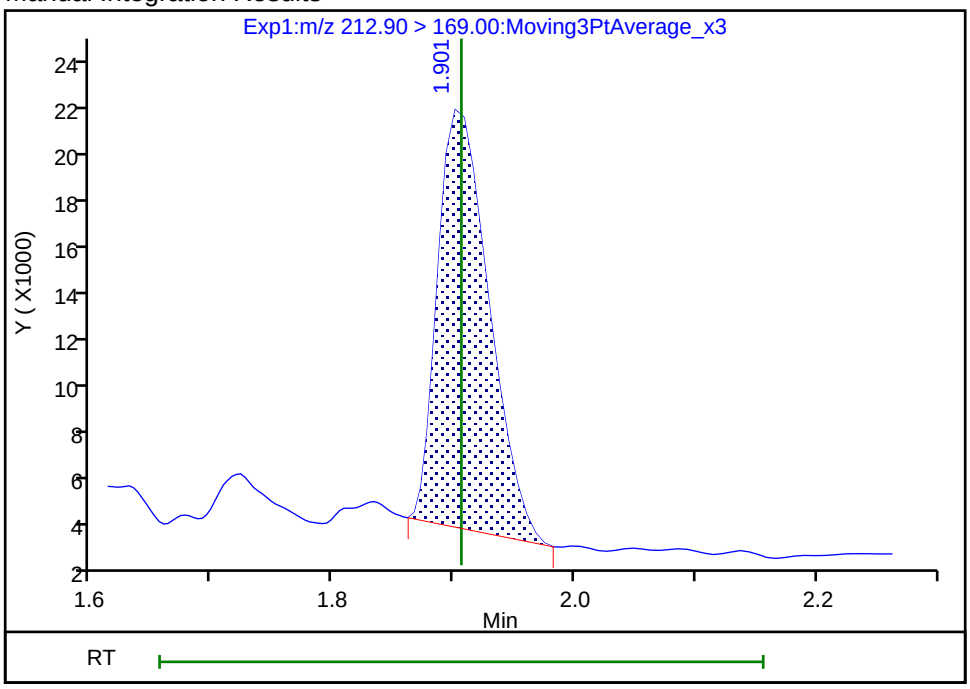
Processing Integration Results

RT: 1.90
Area: 59674
Amount: 0.028592
Amount Units: ng/ml



Manual Integration Results

RT: 1.90
Area: 53067
Amount: 0.025894
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:16:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

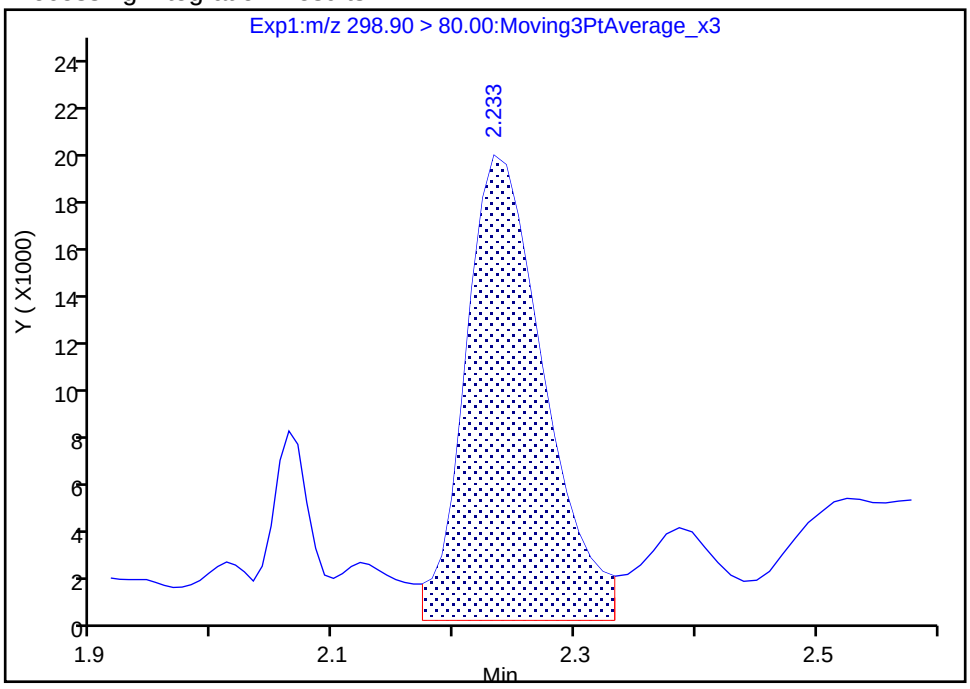
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

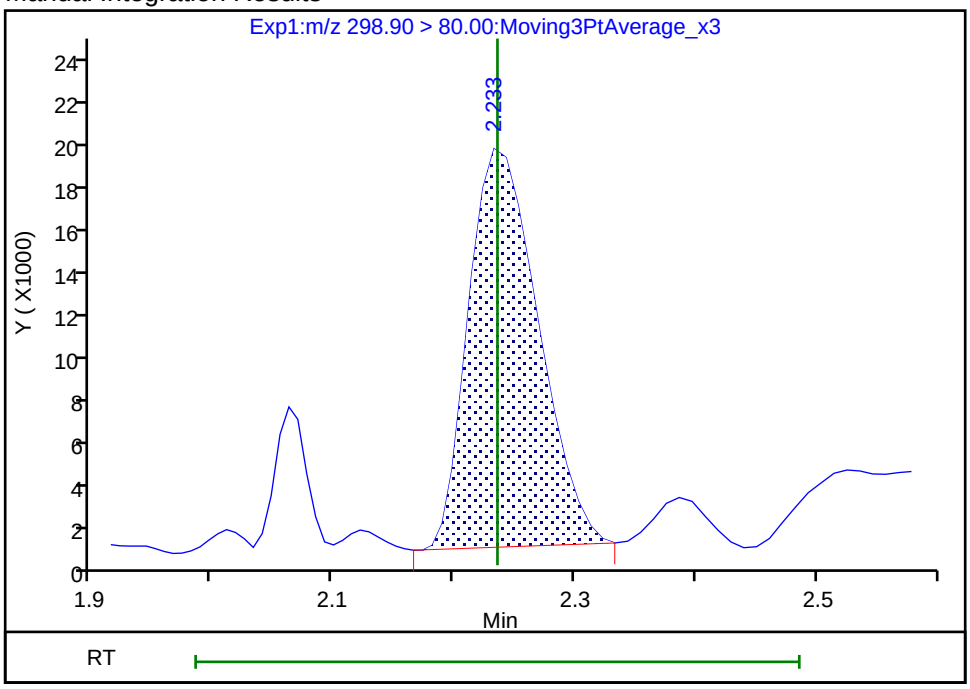
Processing Integration Results

RT: 2.23
Area: 88143
Amount: 0.028813
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 71877
Amount: 0.024427
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:17:09
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

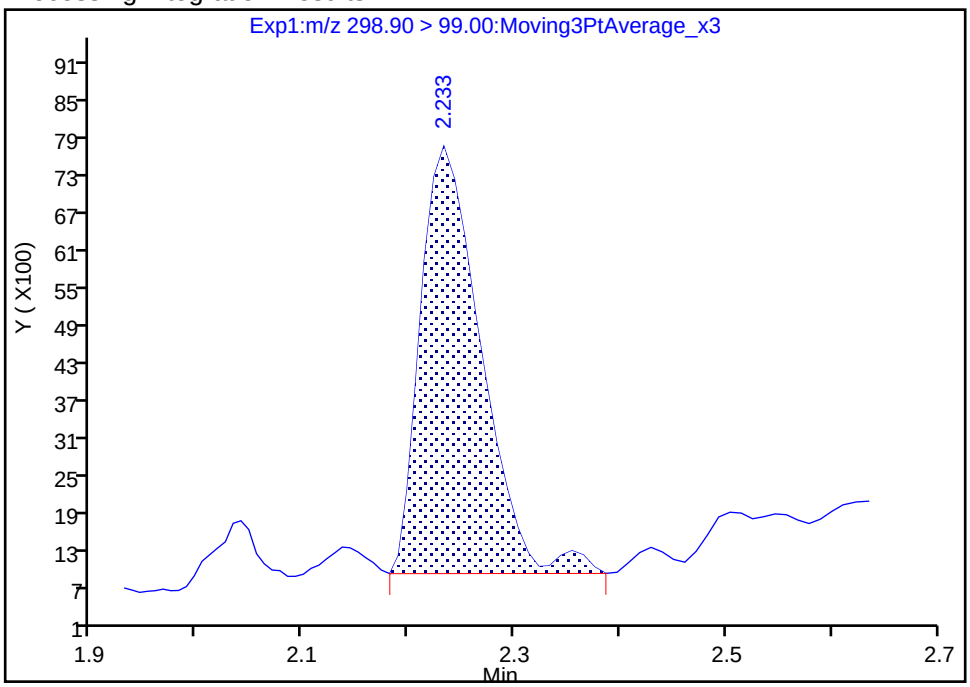
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

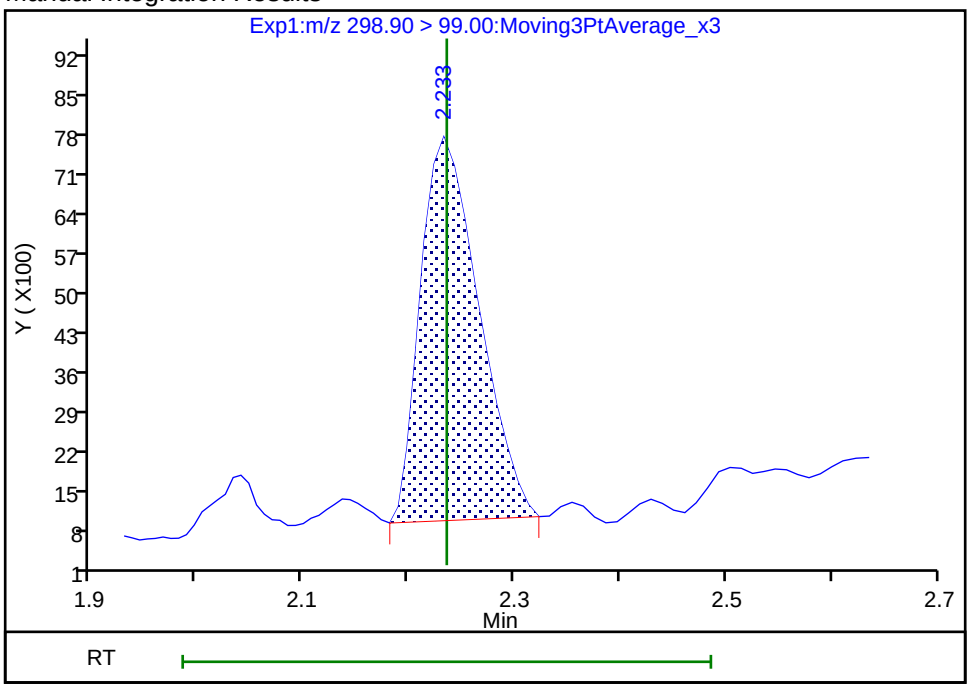
Processing Integration Results

RT: 2.23
Area: 27116
Amount: 0.028813
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 25874
Amount: 0.024427
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:17:32
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

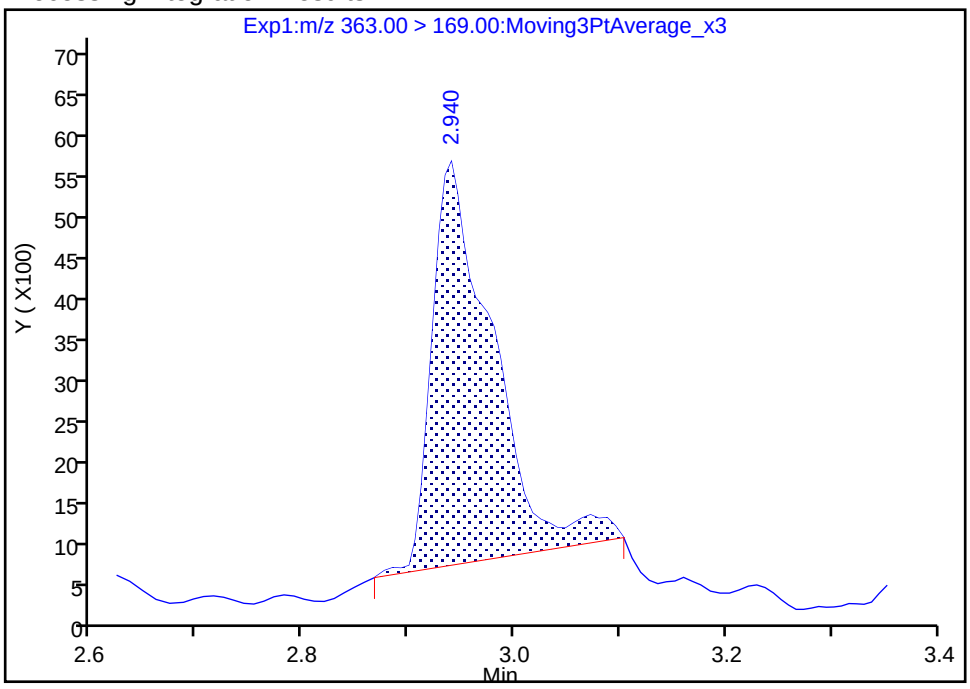
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d				
Injection Date:	05-Oct-2019 18:03:51	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

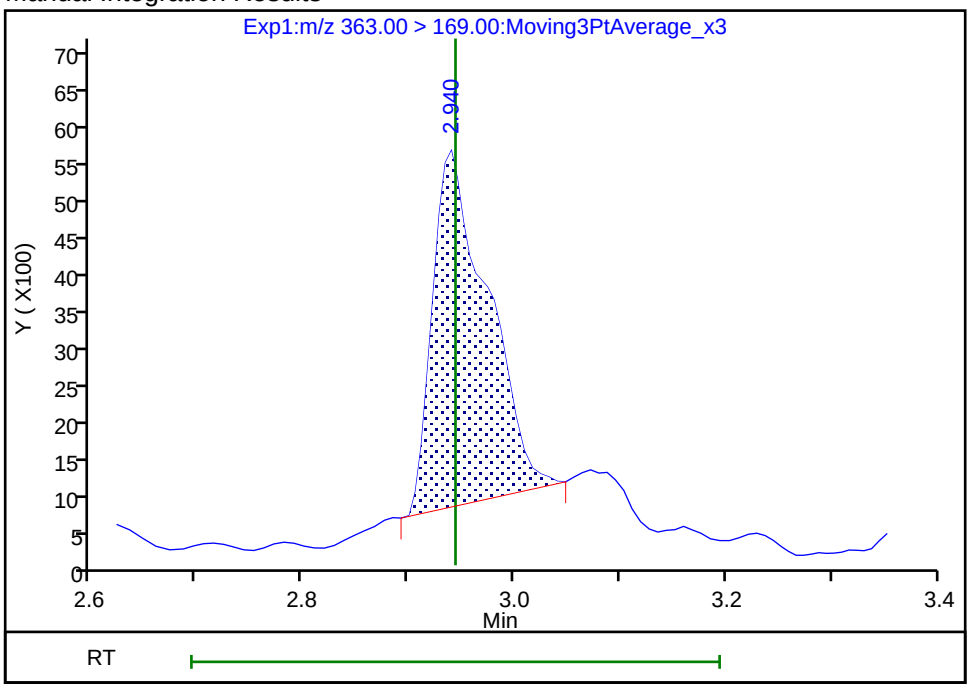
Processing Integration Results

RT: 2.94
Area: 19706
Amount: 0.027172
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 17408
Amount: 0.027172
Amount Units: ng/ml



Reviewer: montgomeryj, 07-Oct-2019 12:18:38

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

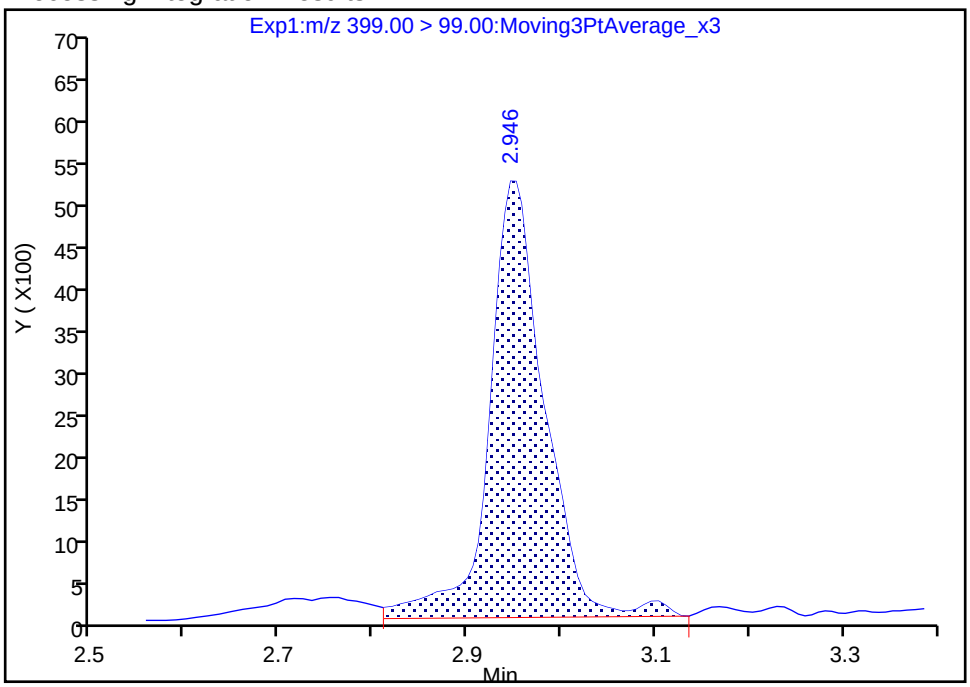
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d				
Injection Date:	05-Oct-2019 18:03:51	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

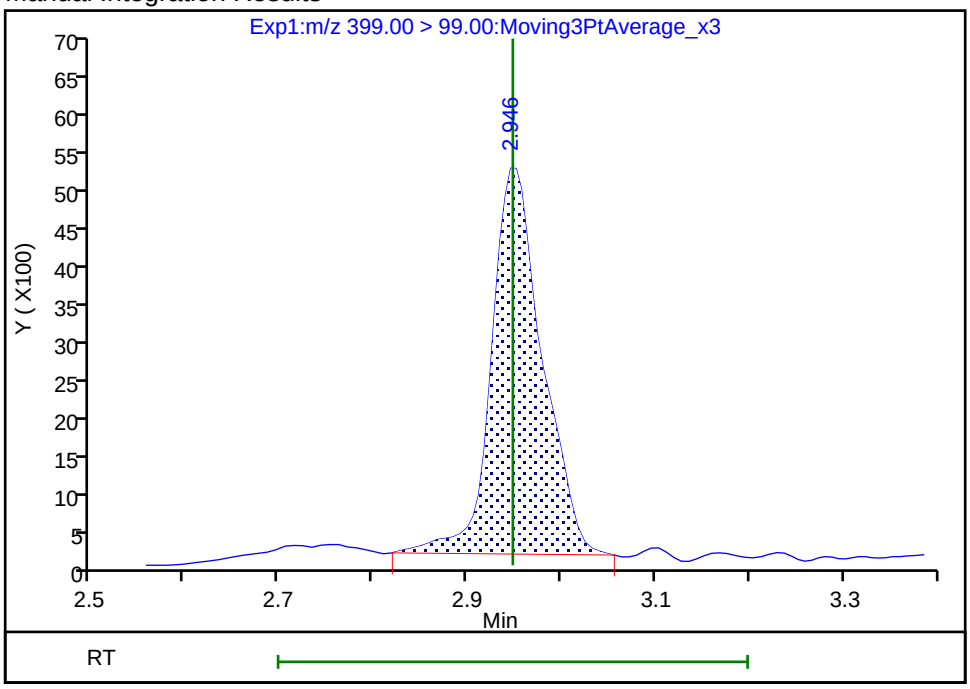
Processing Integration Results

RT: 2.95
Area: 21400
Amount: 0.028297
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 19216
Amount: 0.027242
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:21:20

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

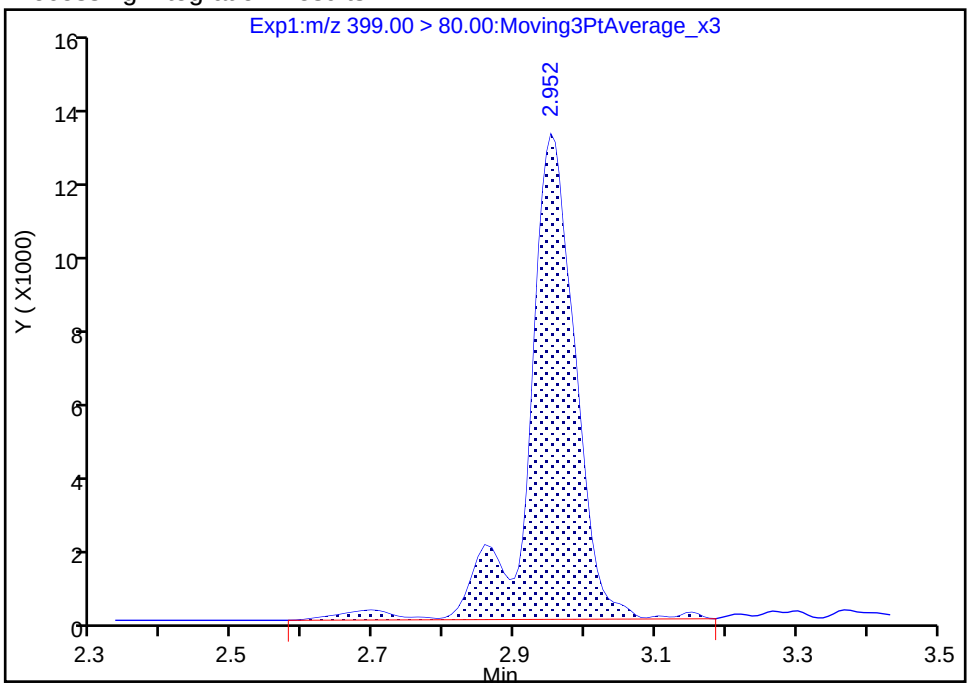
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

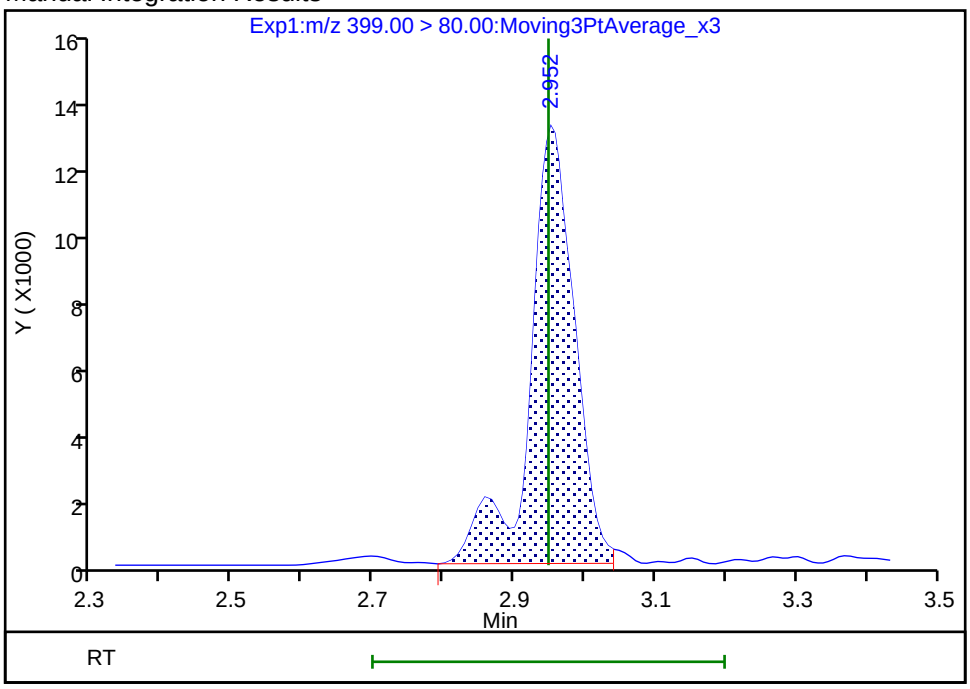
Processing Integration Results

RT: 2.95
Area: 60813
Amount: 0.028297
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 57847
Amount: 0.027242
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:21:34
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

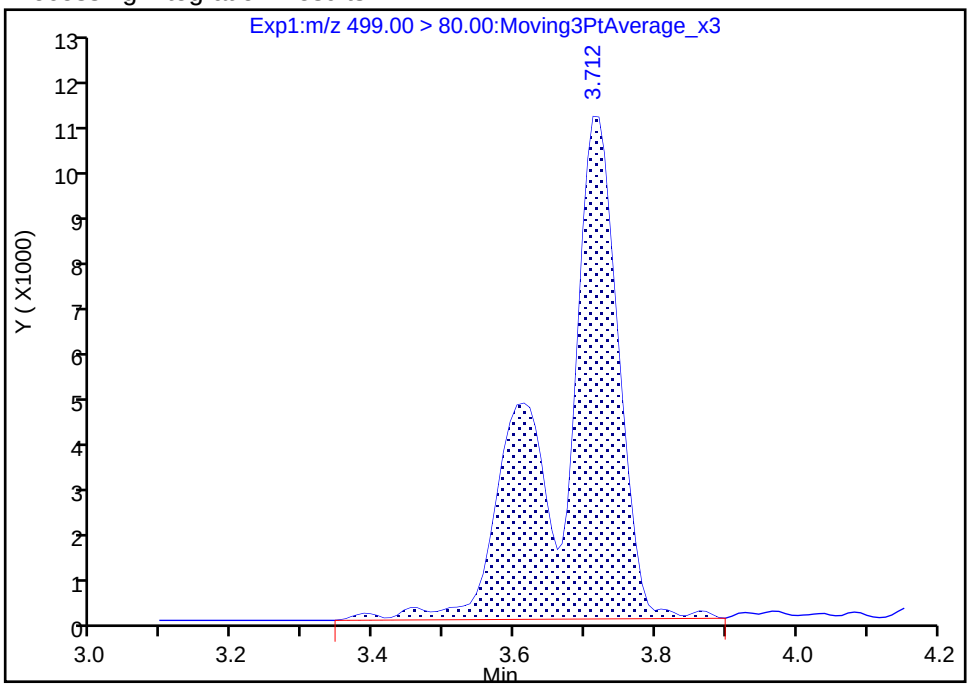
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d				
Injection Date:	05-Oct-2019 18:03:51	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

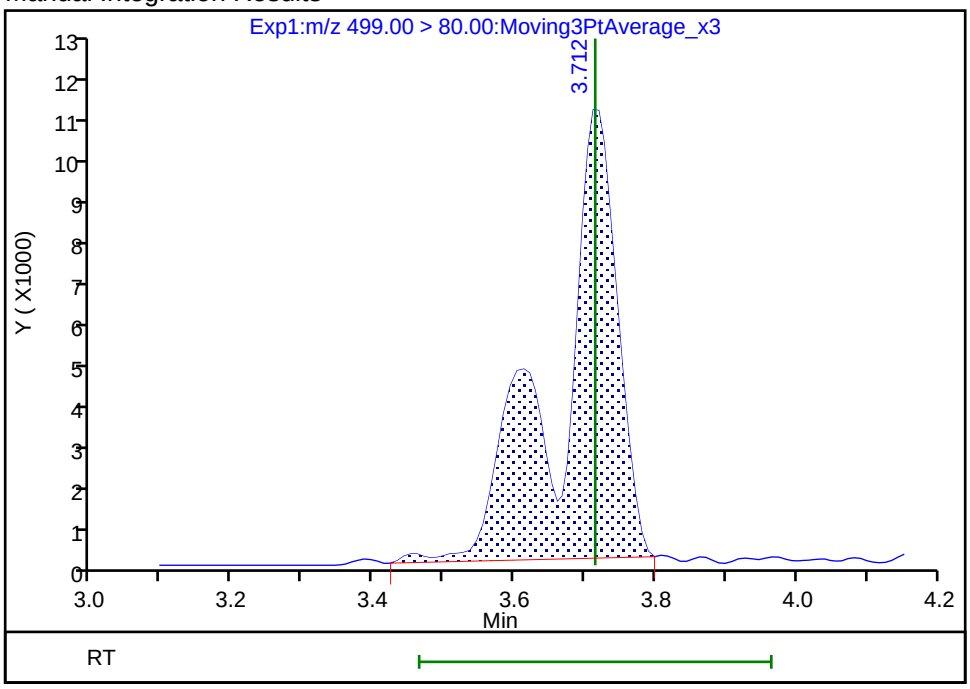
Processing Integration Results

RT: 3.71
Area: 66044
Amount: 0.029444
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 62692
Amount: 0.028411
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:23:11

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

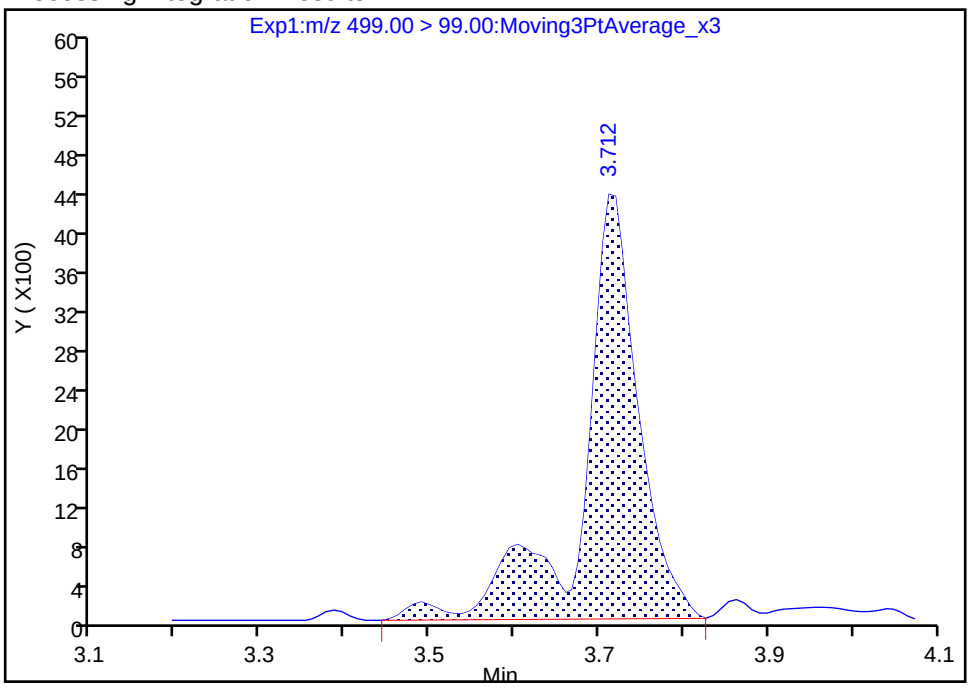
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d				
Injection Date:	05-Oct-2019 18:03:51	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	10	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

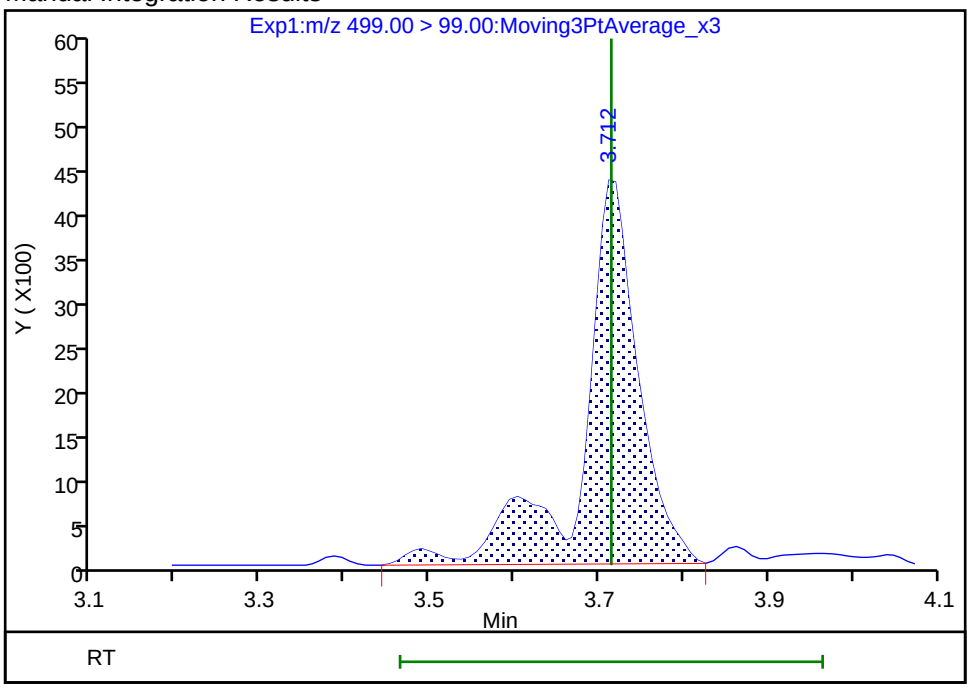
Processing Integration Results

RT: 3.71
Area: 20063
Amount: 0.029444
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 20063
Amount: 0.028411
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:23:21
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

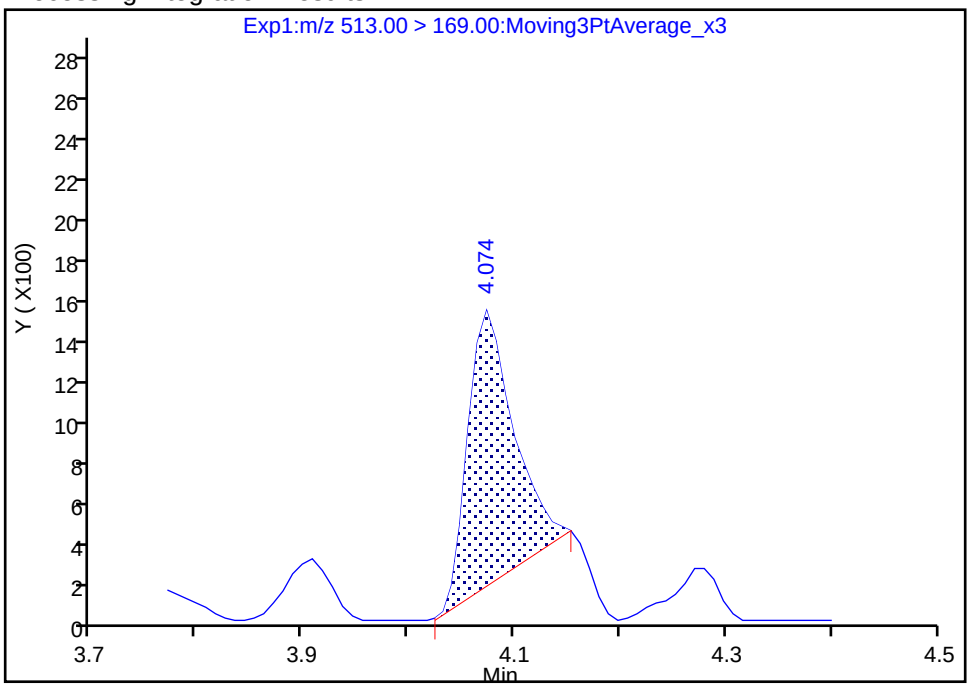
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 2

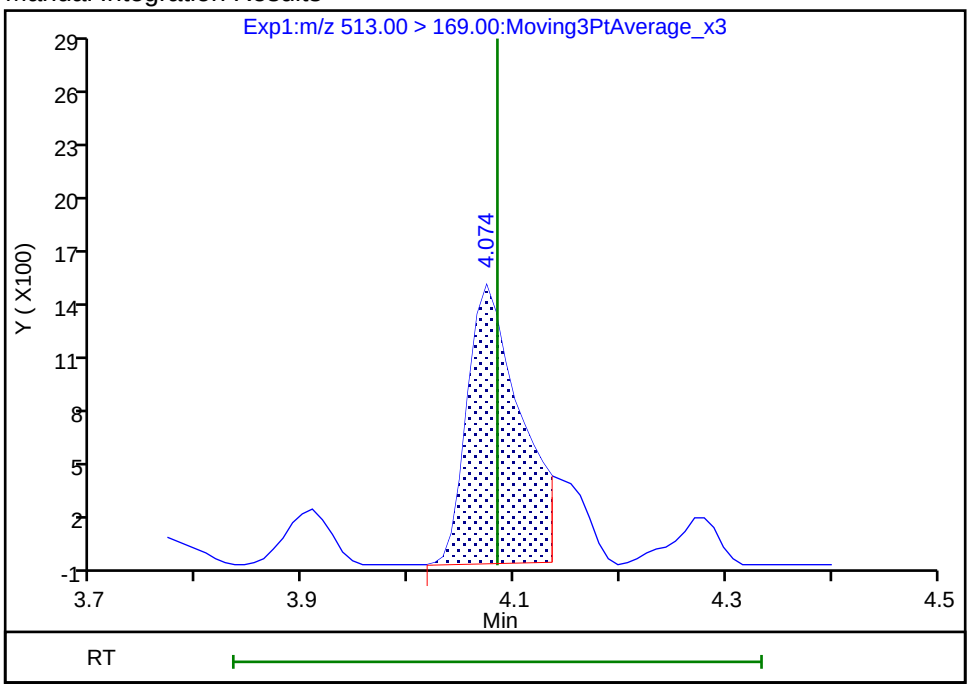
Processing Integration Results

RT: 4.07
Area: 4027
Amount: 0.027319
Amount Units: ng/ml



Manual Integration Results

RT: 4.07
Area: 5185
Amount: 0.026441
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:23:44
Audit Action: Manually Integrated Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

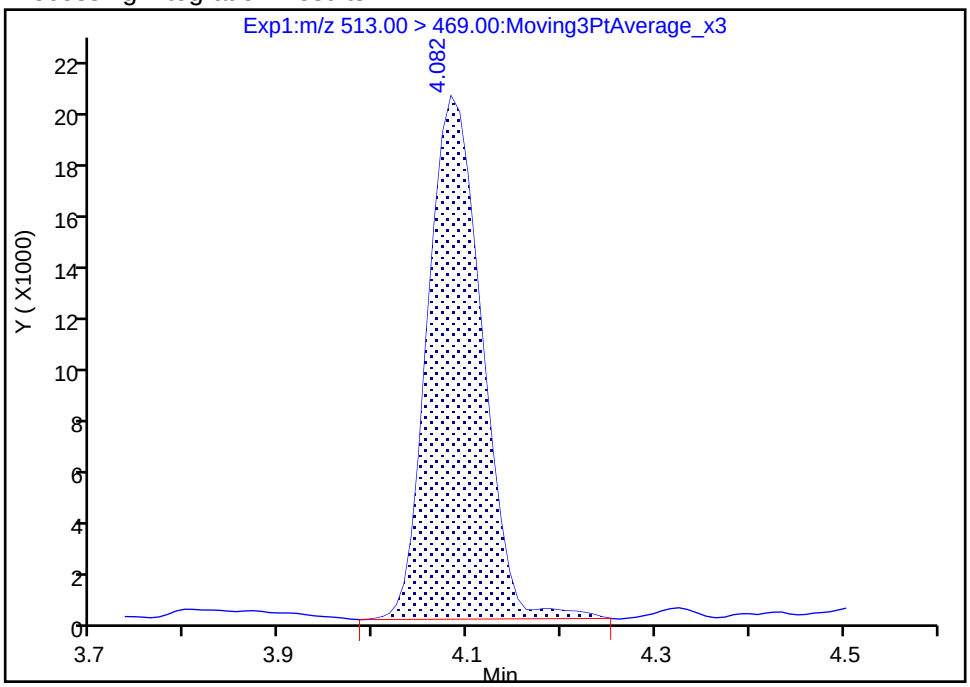
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

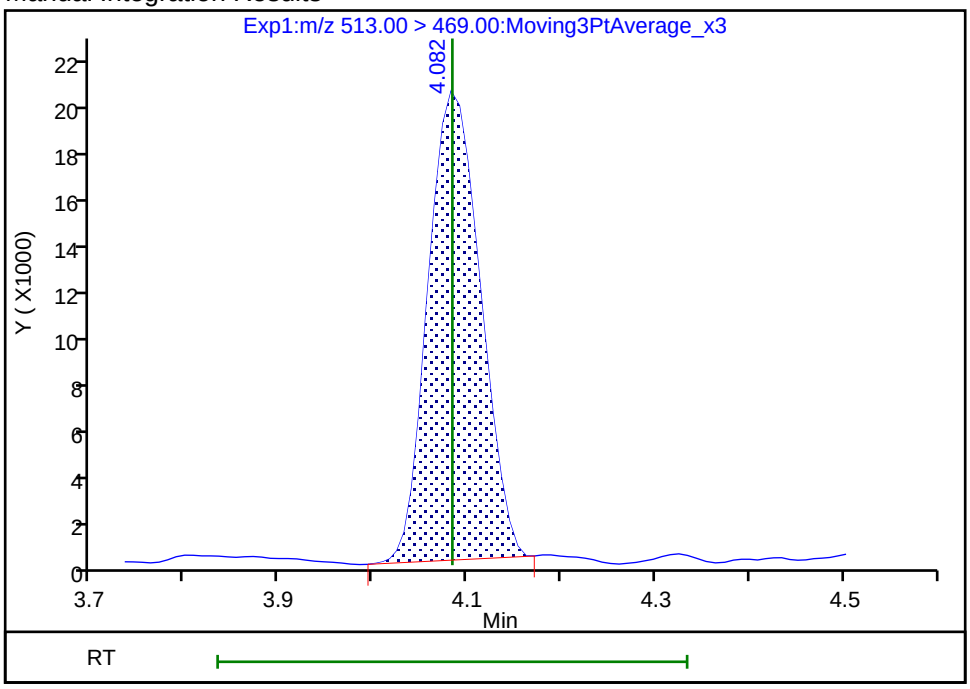
Processing Integration Results

RT: 4.08
Area: 81734
Amount: 0.027319
Amount Units: ng/ml



Manual Integration Results

RT: 4.08
Area: 78640
Amount: 0.026441
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:24:12
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

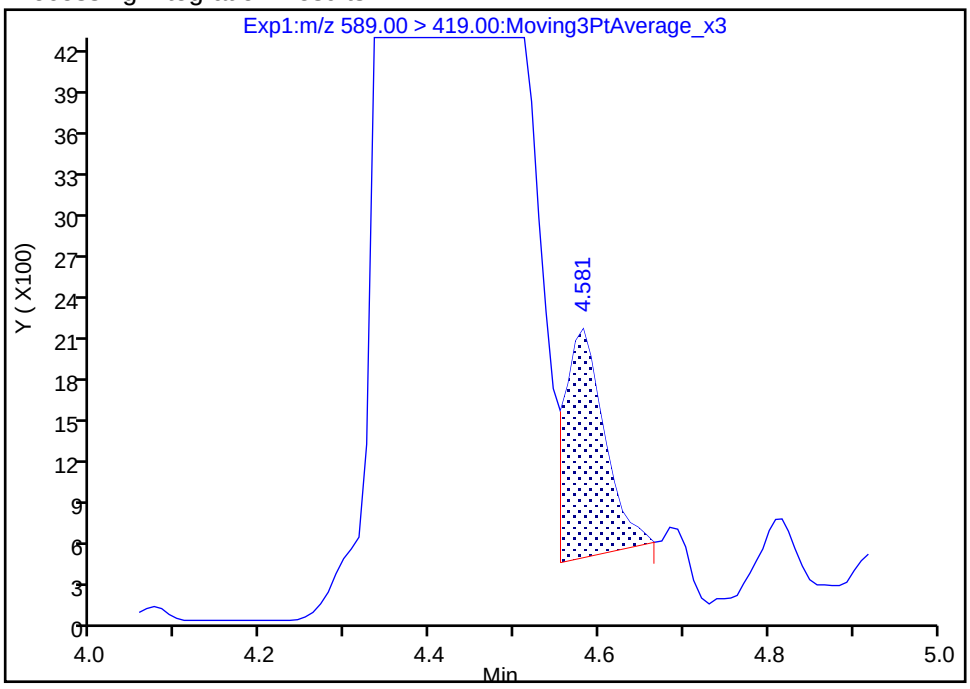
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

D 44 d5-NEtFOSAA, CAS: STL02117

Signal: 1

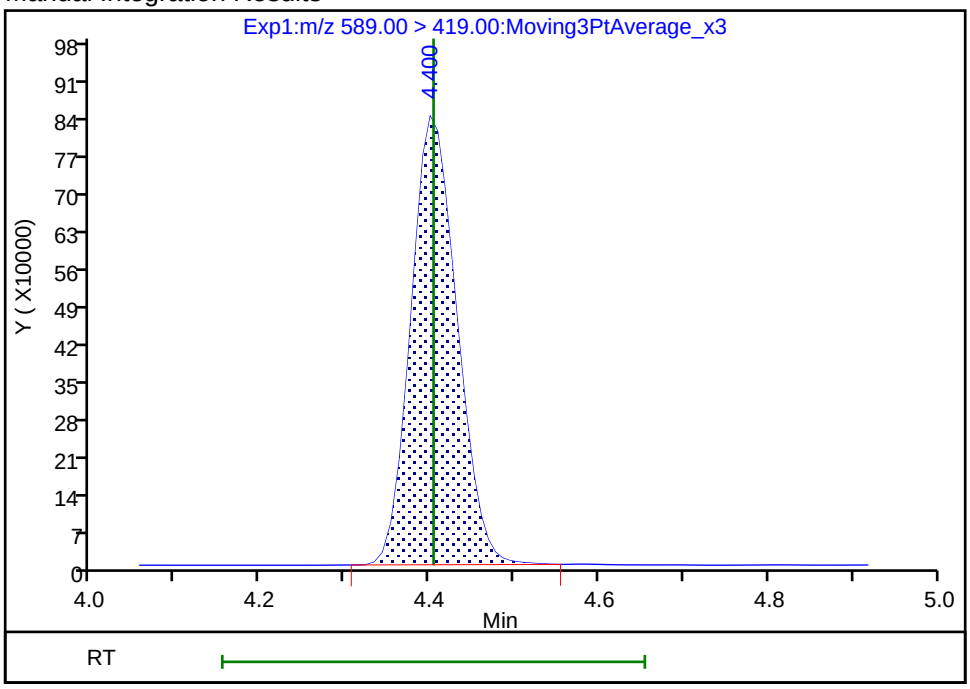
Processing Integration Results

RT: 4.58
Area: 5233
Amount: 0.004719
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 3176307
Amount: 2.461817
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:16:23
Audit Action: Manually Integrated Audit Reason: Wrong peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

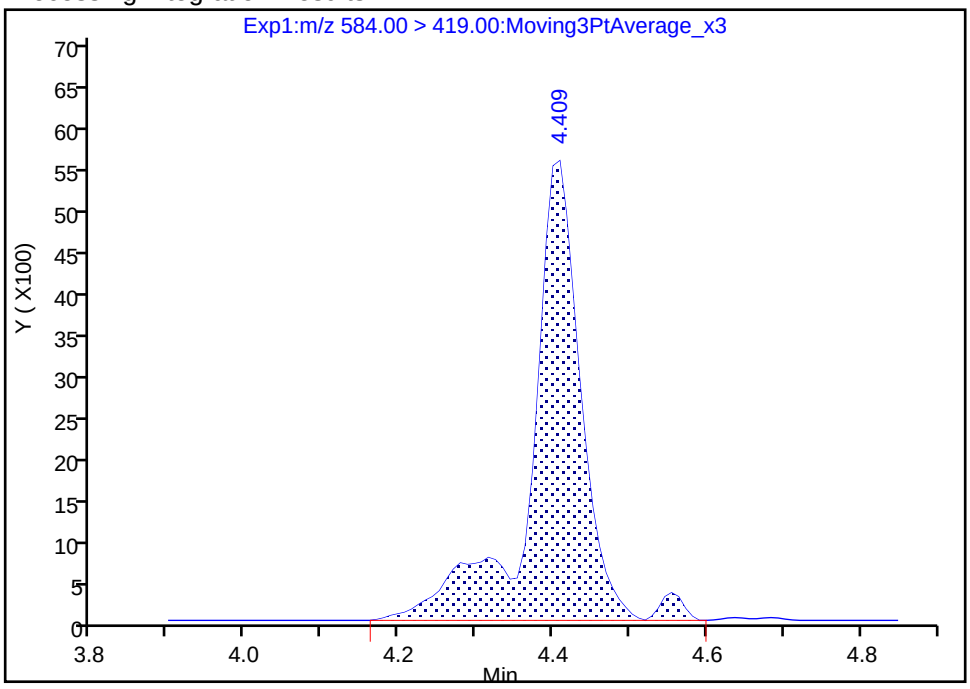
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_002.d
Injection Date: 05-Oct-2019 18:03:51 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

45 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

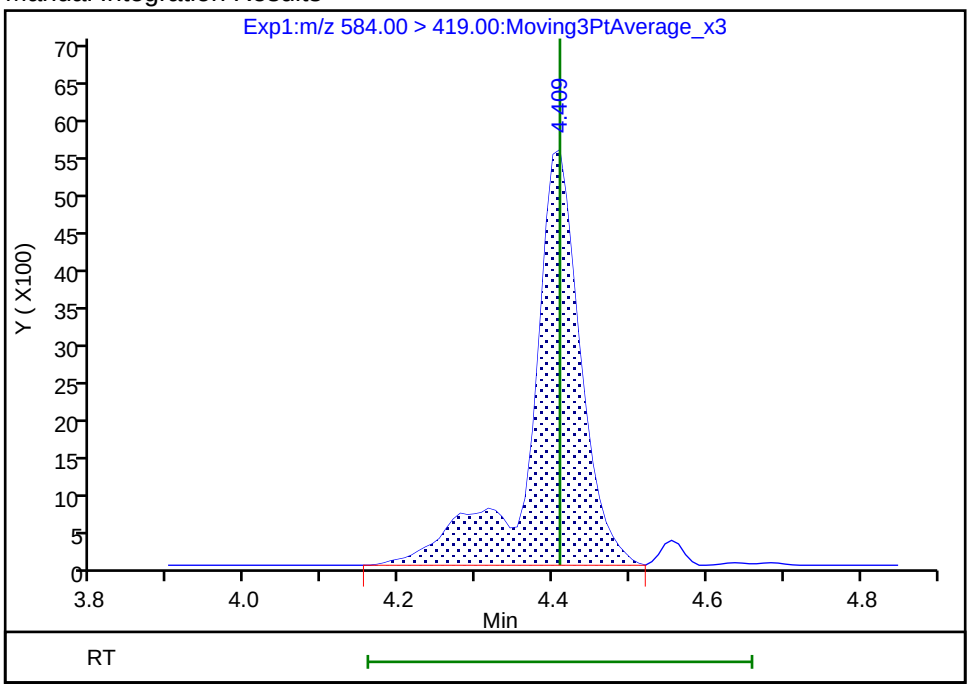
Processing Integration Results

RT: 4.41
Area: 25911
Amount: 0.025359
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 25228
Amount: 0.024890
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:24:40
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 05-Oct-2019 18:13:25 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD2
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:21:48 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:27:47
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.908	1.903	0.005	0.570	6056473	2.46		98.3	6082	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.908	1.906	0.002	1.000	102597	0.0498		99.7	20.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.660	5232577	2.54		102	3381	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.214	2.207	0.007	1.004	110129	0.0514		103	30.5	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.243	2.236	0.007	0.760	127082	0.0428	Target=2.62	96.9	10.5	M
298.90 > 99.00	2.243	2.236	0.007	0.760	50371		2.52(1.31-3.93)	96.9	10.3	M
D 7 M2-4:2 FTS										
329.00 > 81.00	2.525	2.519	0.006	0.755	955726	2.43		104	1325	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.525	2.521	0.004	1.000	50493	0.0481		103	334	
D 9 13C2 PFHxA										
315.00 > 270.00	2.568	2.559	0.009	0.768	5995745	2.52		101	2716	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.568	2.559	0.009	1.000	114780	0.0515	Target=14.83	103	35.7	
313.00 > 119.00	2.568	2.559	0.009	1.000	9227		12.44(7.41-22.24)	103	10.5	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.577	0.001	0.874	71188	0.0459	Target=1.98	97.8	143	
349.00 > 99.00	2.578	2.577	0.001	0.874	35137		2.03(0.99-2.97)	97.8	140	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.686	0.0	1.000	29329	0.0471		94.3	47.1	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.803	1026716	2.48		99.4	2149	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.946	2.942	0.004	0.881	6832535	2.51		101	3042	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.951	2.944	0.007	1.002	165052	0.0538	Target=4.24	108	62.7	
363.00 > 169.00	2.951	2.944	0.007	1.002	39249		4.21(2.12-6.36)	108	40.8	
D 16 18O2 PFHxS										
403.00 > 84.00	2.951	2.947	0.004	0.882	4138068	2.37		100	3640	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.951	2.948	0.003	1.000	104368	0.0488	Target=3.27	107	172	M
399.00 > 99.00	2.951	2.948	0.003	1.000	28770		3.63(1.64-4.91)	107	58.8	M
18 DONA										
377.00 > 251.00	3.001	2.995	0.006	0.807	264698	0.0494	Target=2.25	105	537	
377.00 > 85.00	2.993	2.995	-0.002	0.805	109405		2.42(1.12-3.37)	105	388	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.323	3.319	0.004	0.994	952803	2.51		106	2483	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.323	3.320	0.003	1.000	45330	0.0485		102	143	
D 21 13C8 PFOA										
421.00 > 376.00	3.344	3.340	0.004	1.000	7430697	2.50		100	7464	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.344	3.340	0.004	0.899	93521	0.0455	Target=3.58	95.6	345	
449.00 > 99.00	3.344	3.340	0.004	0.899	28629		3.27(1.79-5.37)	95.6	35.5	
D 23 13C4 PFOA										
417.00 > 372.00	3.344	3.341	0.003	1.000	7680821	2.45		98.1	4706	
* 25 13C2 PFOA										
415.00 > 370.00	3.344	3.342	0.002		8357240	2.50			2620	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.344	3.344	0.0	1.000	213968	0.0616	Target=2.79	123	81.0	
413.00 > 169.00	3.344	3.344	0.0	1.000	68624		3.12(1.40-4.19)	123	95.1	
D 26 13C8 PFOS										
507.00 > 99.00	3.712	3.710	0.002	1.110	1126961	2.56		102	1252	
D 27 13C4 PFOS										
503.00 > 80.00	3.719	3.714	0.005	1.112	4964118	2.45		102	3571	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.719	3.714	0.005	1.000	109955	0.0493	Target=3.83	106	149	M
499.00 > 99.00	3.719	3.714	0.005	1.000	24115		4.56(1.92-5.75)	106	94.4	M
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.114	7187274	2.58		103	3730	
29 Perfluorononanoic acid										
463.00 > 419.00	3.735	3.729	0.006	1.002	158555	0.0535	Target=5.58	107	135	
463.00 > 169.00	3.735	3.729	0.006	1.002	26062		6.08(2.79-8.37)	107	49.0	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.927	3.922	0.005	1.056	64728	0.0440		94.4	237	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.064	4.057	0.007	1.093	56140	0.0444	Target=4.51	92.4	240	
549.00 > 99.00	4.056	4.057	-0.001	1.090	9779		5.74(2.25-6.76)	92.4	29.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.082	4.084	-0.002	0.998	165765	0.0558	Target=15.45	112	217	
513.00 > 169.00	4.082	4.084	-0.002	0.998	9263		17.90(7.73-23.18)	112	43.1	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.091	4.084	0.007	1.223	883418	2.48		103	1409	
D 36 13C2 PFDA										
515.00 > 470.00	4.091	4.084	0.007	1.223	7806334	2.48		99.2	4068	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.091	4.084	0.007	1.000	37015	0.0453		94.6	207	
D 32 13C8 FOSA										
506.00 > 78.00	4.118	4.113	0.005	1.231	2634643	2.52		101	2553	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.118	4.117	0.001	1.000	149720	0.0517		103	436	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.241	0.002	1.269	3718673	2.50		100	2379	
40 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.252	4.246	0.006	1.002	60039	0.0493		98.6	10.2	M
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.383	4.375	0.008	1.178	78240	0.0463	Target=4.64	96.1	283	
599.00 > 99.00	4.383	4.375	0.008	1.178	15691		4.99(2.32-6.96)	96.1	75.6	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.398	0.002	1.316	6875483	2.56		102	4906	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.408	4.399	0.009	1.002	109660	0.0507	Target=9.27	101	209	
563.00 > 169.00	4.400	4.399	0.001	1.000	11955		9.17(4.63-13.90)	101	42.0	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.408	4.404	0.004	1.318	3209199	2.51		101	3052	
45 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	4.408	4.409	-0.001	1.000	53371	0.0521		104	180	M
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.537	4.537	0.0	1.220	188924	0.0486		103	696	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.581	4.580	0.001		8553331	12.5		100	2617	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.590	4.590	0.0	1.002	38661	0.0542		108	96.0	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.608	4.602	0.006		1784278	2.39		95.6	253	
49 NMeFOSA										
512.00 > 169.00	4.608	4.607	0.001	1.000	29201	0.0469		93.8	161	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.680	0.003	1.400	7477137	2.53		101	4165	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.683	4.681	0.002	1.000	163439	0.0530	Target=9.58	106	153	
613.00 > 169.00	4.683	4.681	0.002	1.000	15839		10.32(4.79-14.36)	106	68.2	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.702	4.699	0.003	1.149	28550	0.0454		94.2	95.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.756	4.752	0.004		8974435	12.6		101	5144	
52 2-(N-ethylperfluoro-1-octanesulfon										M
630.00 > 59.00	4.763	4.763	0.0	1.002	38444	0.0508		102	26.9	M
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.778	4.779	-0.001		1802631	2.51		100	1603	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.786	4.786	0.0	1.002	34661	0.0478		95.7	128	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.902	4.904	-0.002	1.318	7377	0.0425	Target=0.64	87.9	53.3	
699.00 > 99.00	4.902	4.904	-0.002	1.318	11846		0.62(0.32-0.96)	87.9	98.8	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.935	4.935	0.0	1.054	100714	0.0522	Target=5.94	104	517	
663.00 > 169.00	4.943	4.935	0.008	1.056	15317		6.58(2.97-8.91)	104	71.0	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.169	5.169	0.0	0.998	15331	0.0516	Target=1.42	103	106	
713.00 > 219.00	5.177	5.169	0.008	1.000	10829		1.42(0.71-2.13)	103	81.1	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.177	5.170	0.007	1.548	5252431	2.51		100	4717	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.586	5.579	0.007	1.670	5535738	2.40		96.1	6646	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.586	5.581	0.005	1.000	159390	0.0544	Target=6.39	109	167	
813.00 > 169.00	5.586	5.581	0.005	1.000	23770		6.71(3.19-9.58)	109	170	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.950	5.945	0.005	1.065	85160	0.0533	Target=6.02	107	119	
913.00 > 169.00	5.950	5.945	0.005	1.065	14139		6.02(3.01-9.03)	107	199	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00016 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:21:49 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d

Injection Date: 05-Oct-2019 18:13:25 Instrument ID: A9

Lims ID: IC L2 Full

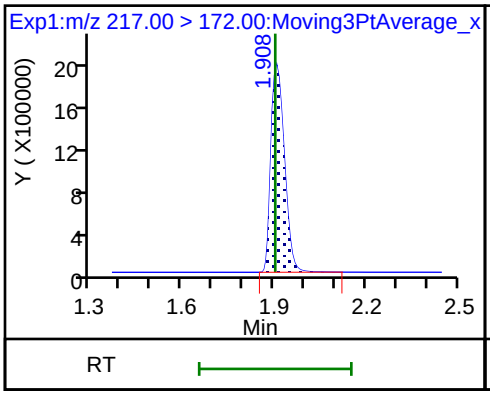
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3

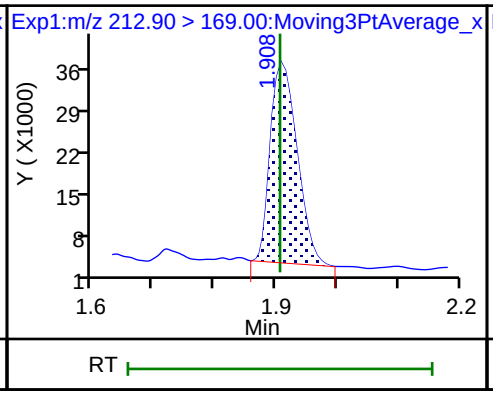
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

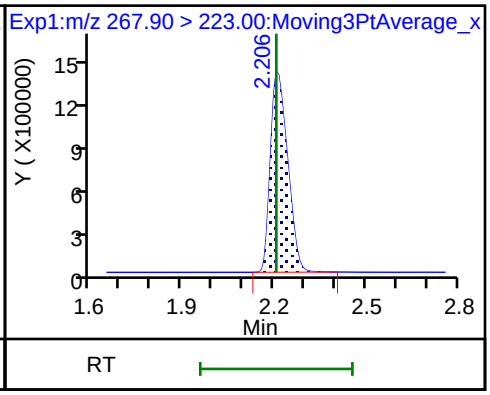
D 1 13C4 PFBA



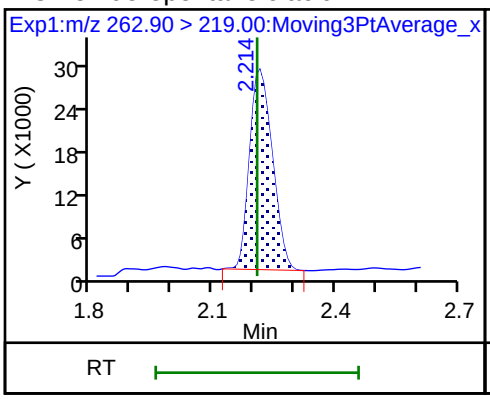
2 Perfluorobutanoic acid



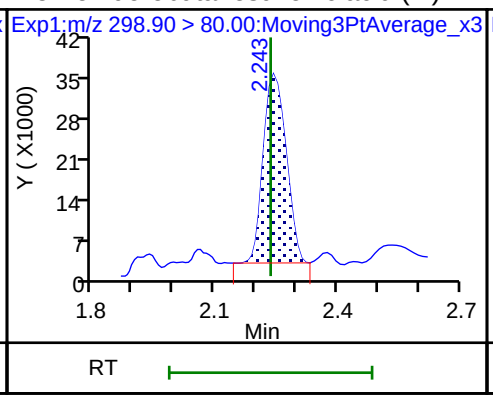
D 4 13C5 PFPeA



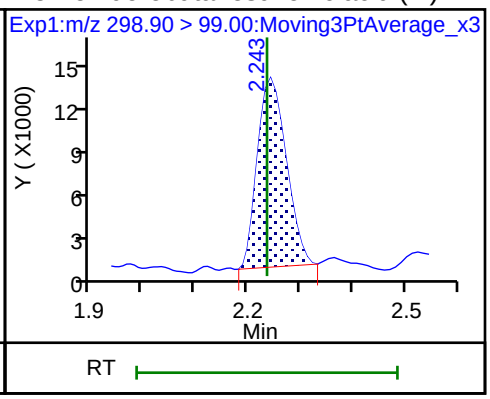
3 Perfluoropentanoic acid



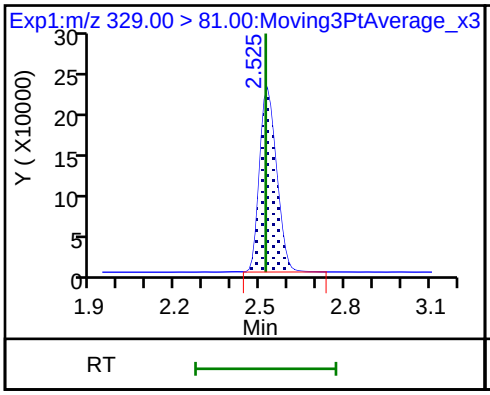
5 Perfluorobutanesulfonic acid (M)



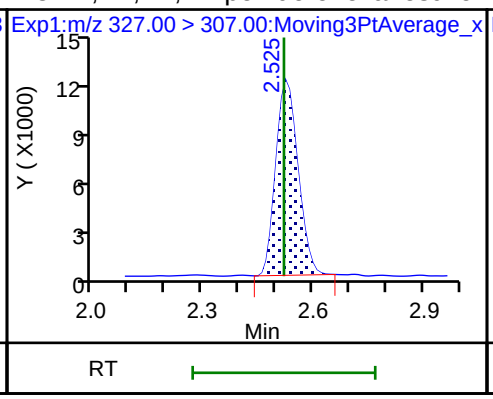
5 Perfluorobutanesulfonic acid (M)



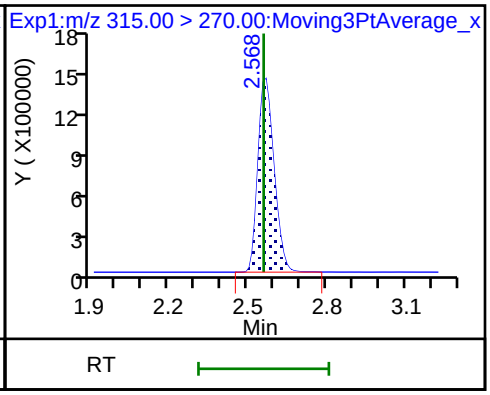
D 7 M2-4:2 FTS



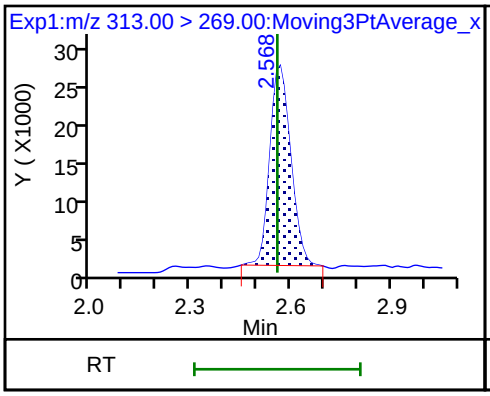
8 1H,1H,2H,2H-perfluorohexanesulfon



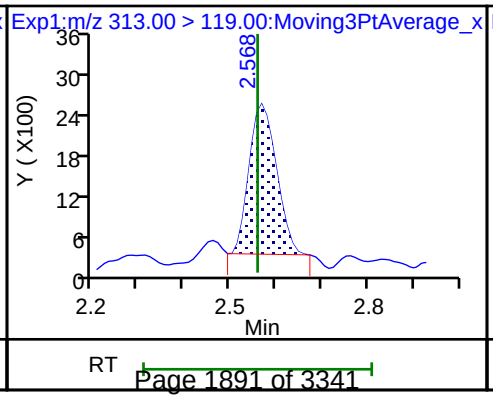
D 9 13C2 PFHxA



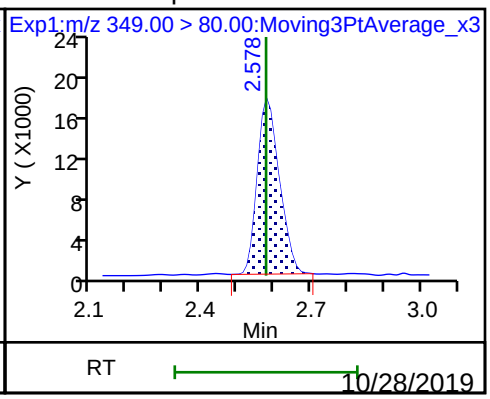
10 Perfluorohexanoic acid



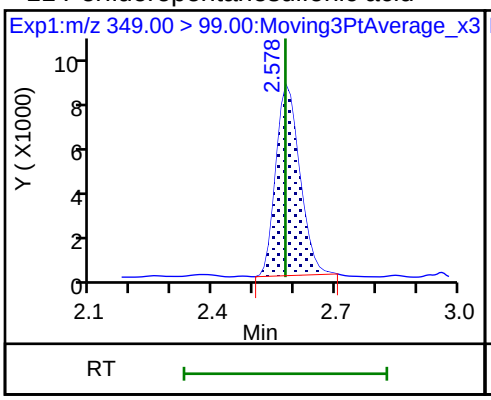
10 Perfluorohexanoic acid



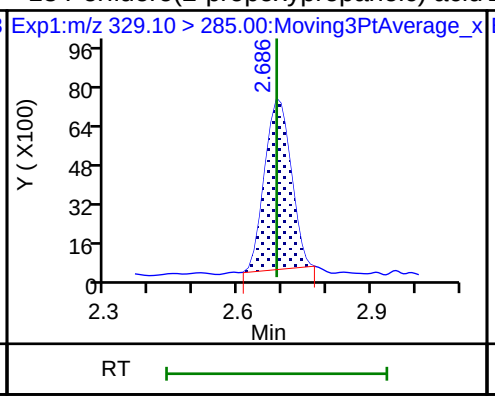
11 Perfluoropentanesulfonic acid



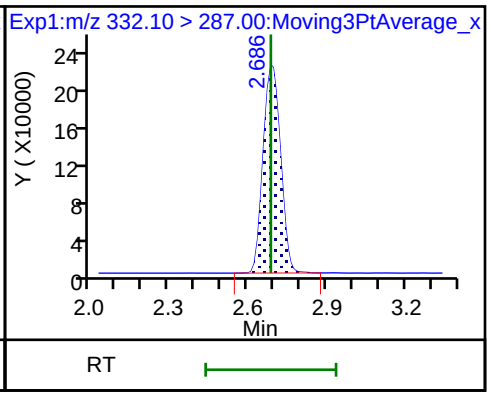
11 Perfluoropentanesulfonic acid



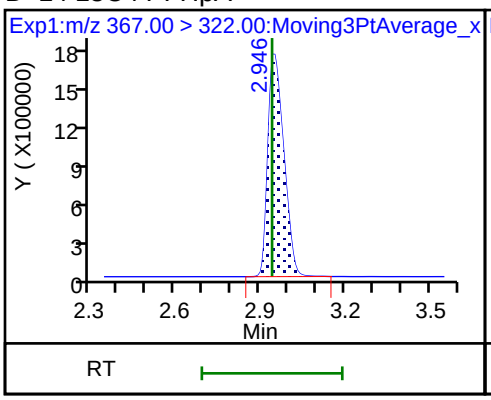
13 Perfluoro(2-propoxypropanoic) acid



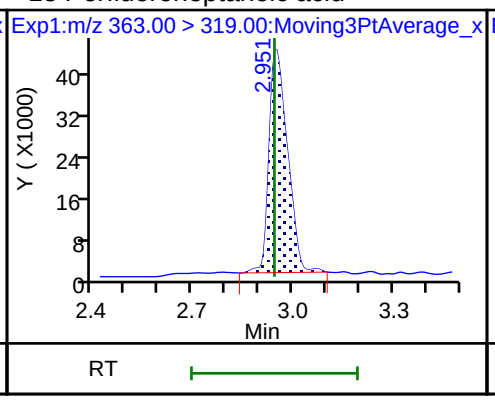
D 12 13C3 HFPO-DA



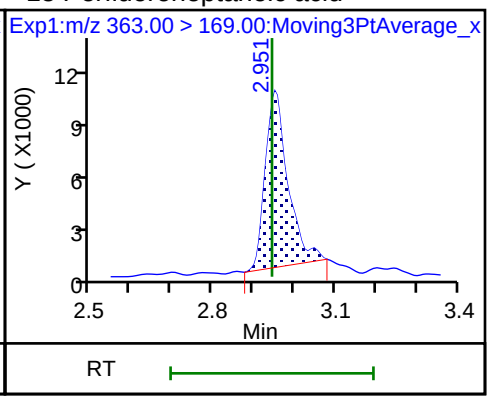
D 14 13C4 PFHpA



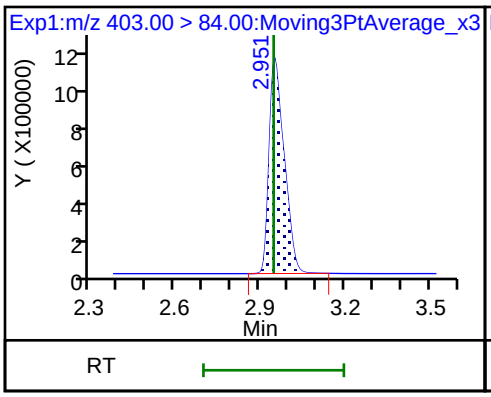
15 Perfluoroheptanoic acid



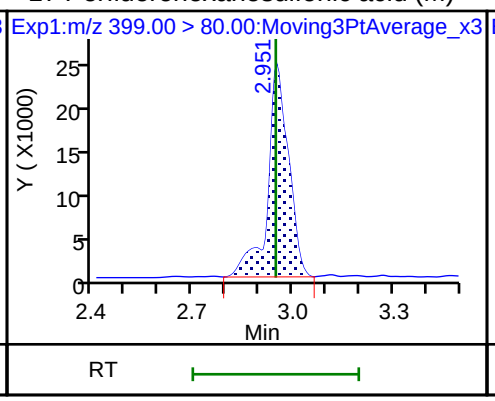
15 Perfluoroheptanoic acid



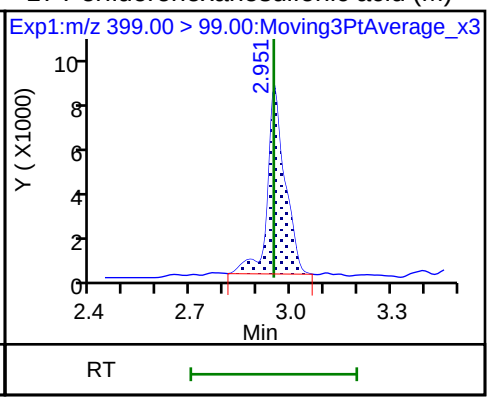
D 16 18O2 PFHxS



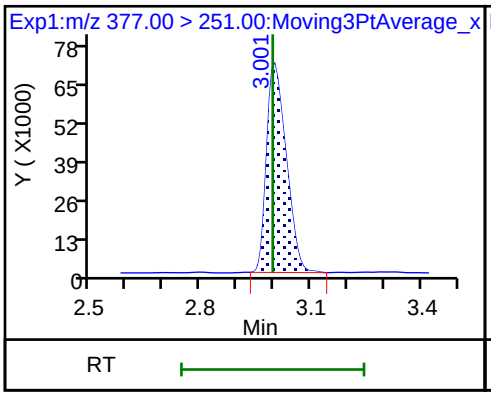
17 Perfluorohexanesulfonic acid (M)



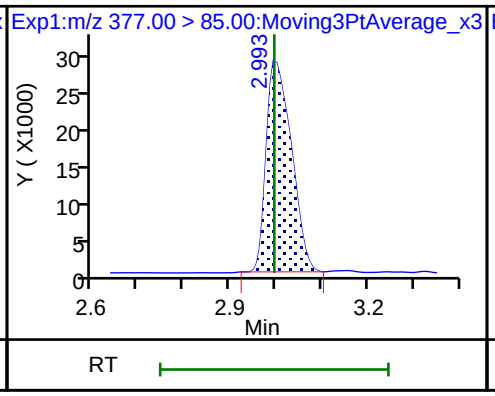
17 Perfluorohexanesulfonic acid (M)



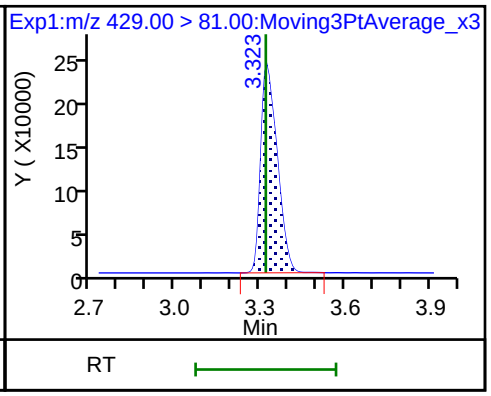
18 DONA



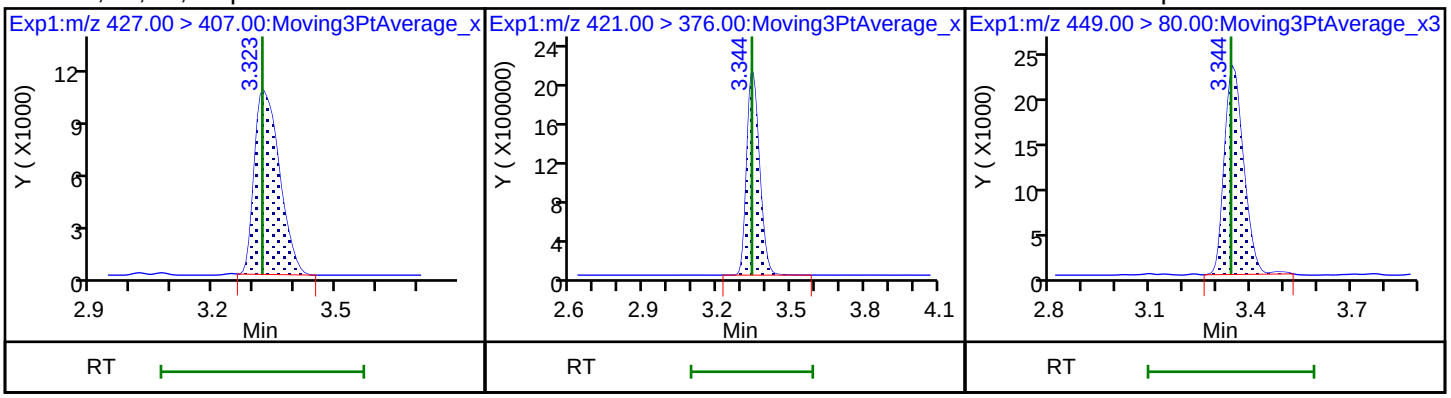
18 DONA



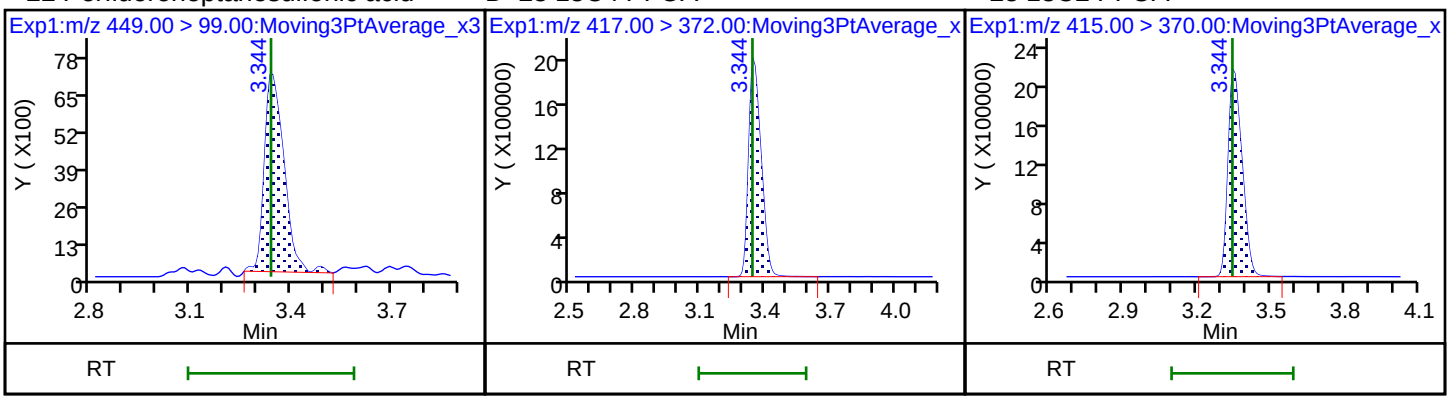
D 20 M2-6:2 FTS



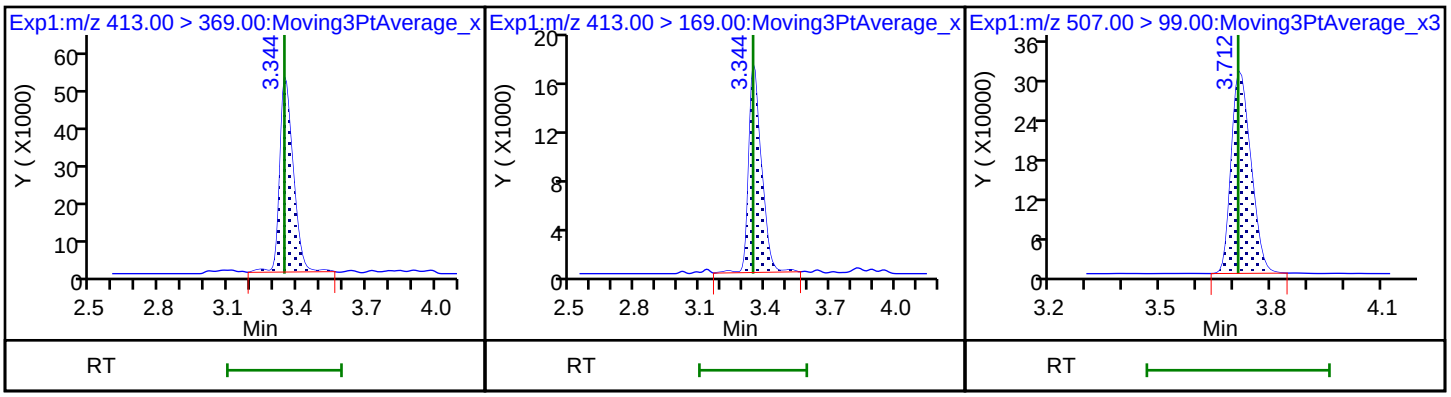
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



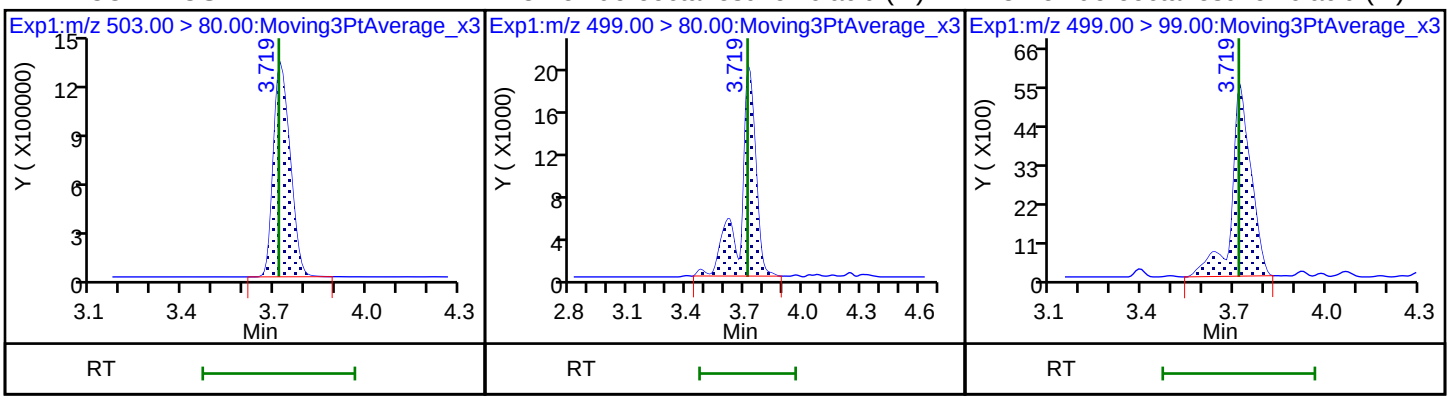
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



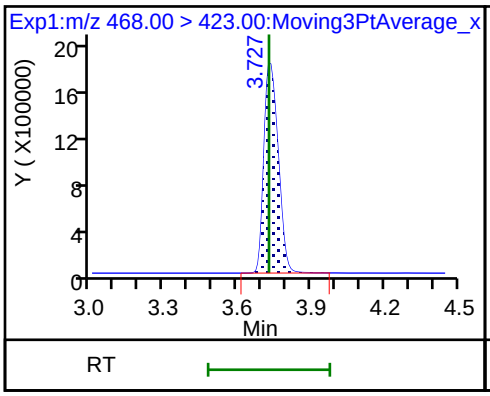
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



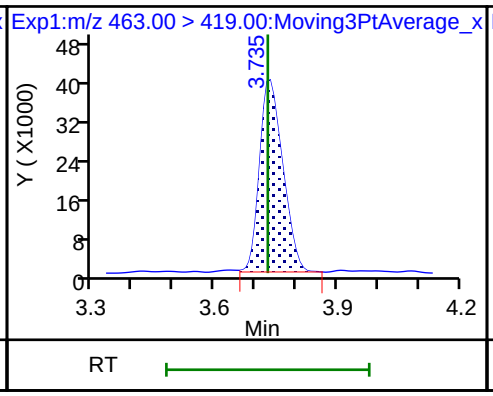
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid (M)



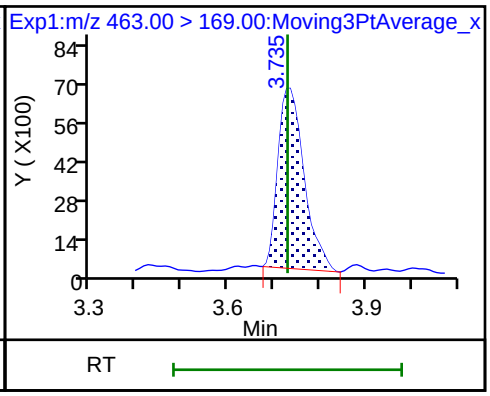
D 30 13C5 PFNA



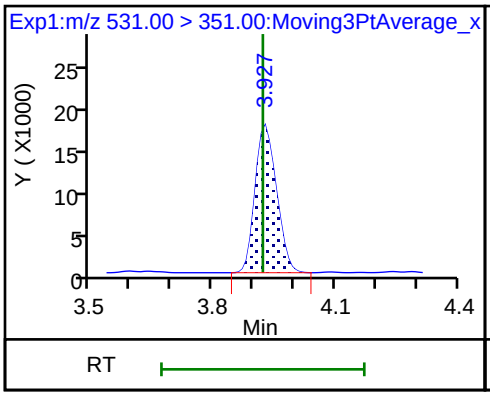
29 Perfluorononanoic acid



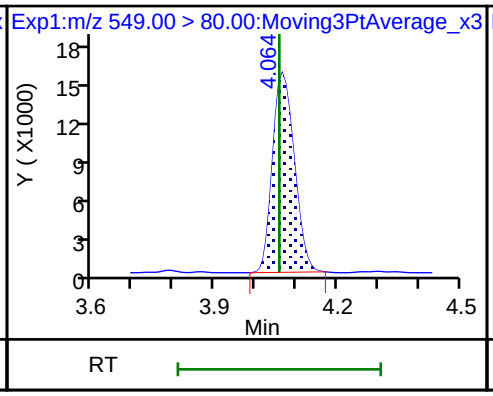
29 Perfluorononanoic acid



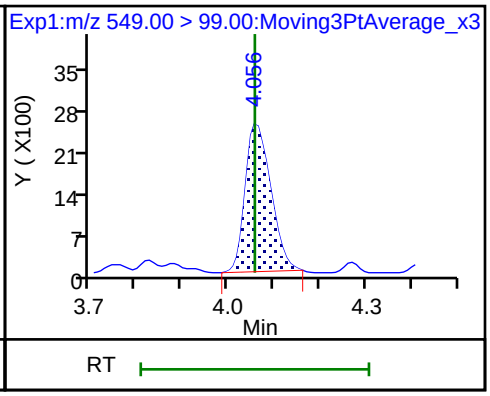
31 9-Chlorohexadecafluoro-3-oxanonane



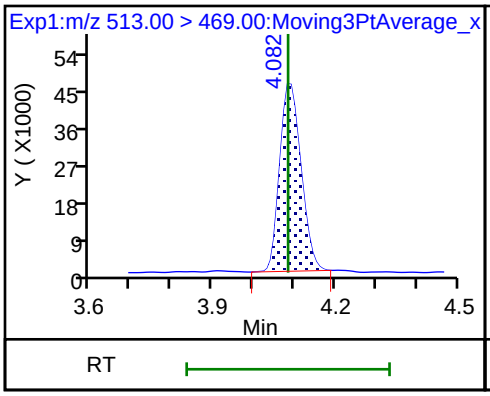
34 Perfluorononanesulfonic acid



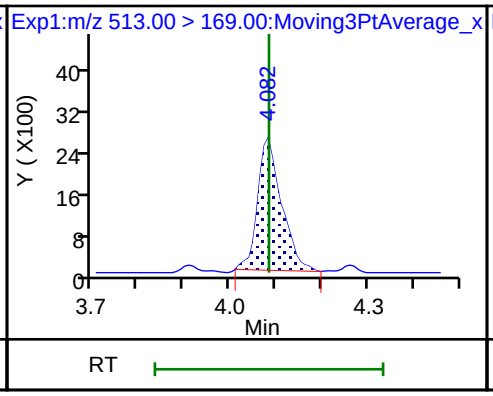
34 Perfluorononanesulfonic acid



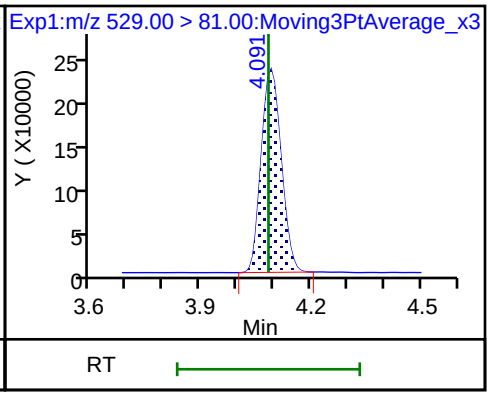
37 Perfluorodecanoic acid



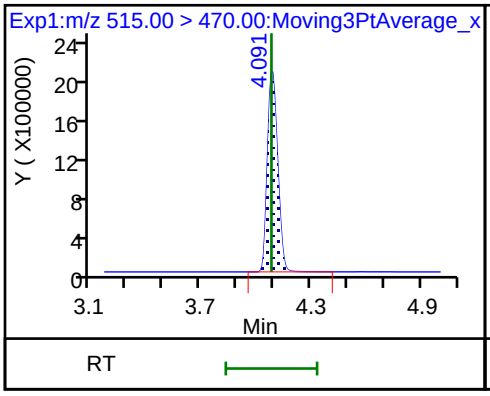
37 Perfluorodecanoic acid



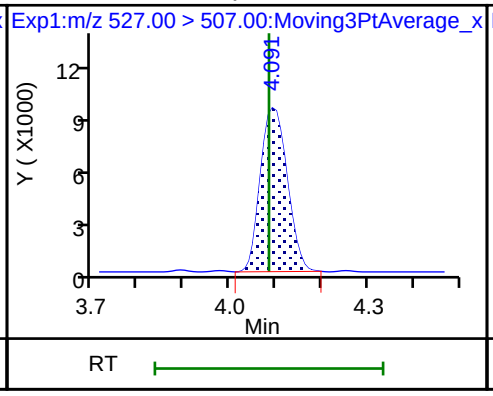
D 35 M2-8:2 FTS



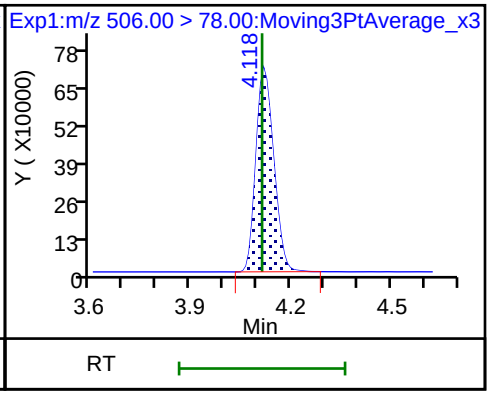
D 36 13C2 PFDA



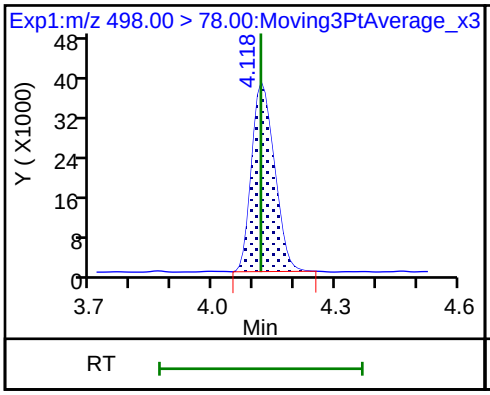
38 1H,1H,2H,2H-perfluorodecanesulfonic



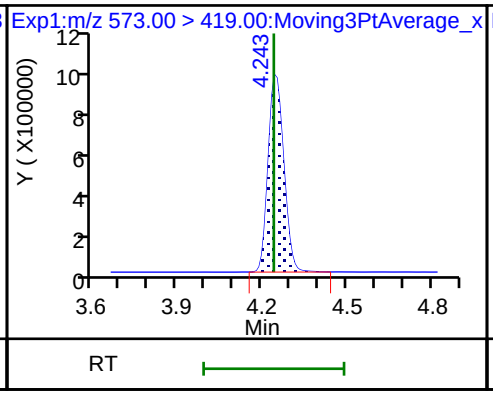
D 32 13C8 FOSA



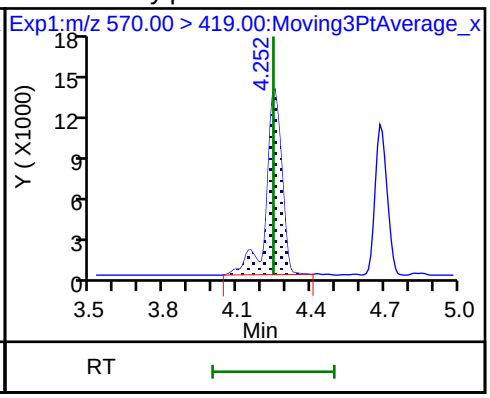
33 Perfluorooctanesulfonamide



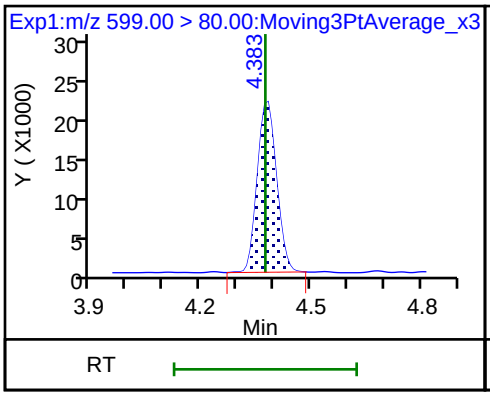
D 39 d3-NMeFOSAA



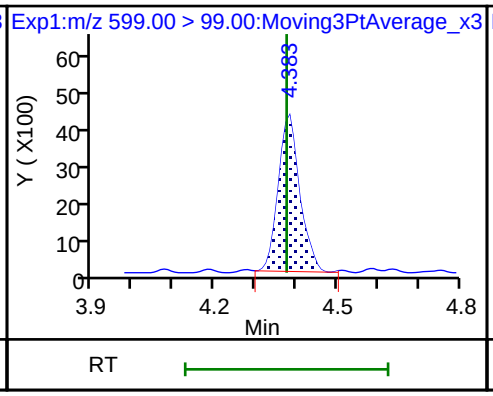
40 N-methylperfluorooctanesulfonamido (M)



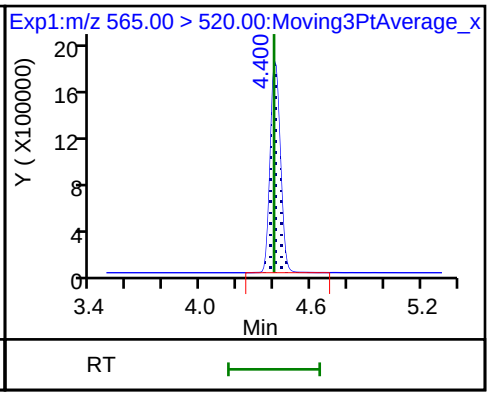
41 Perfluorodecanesulfonic acid



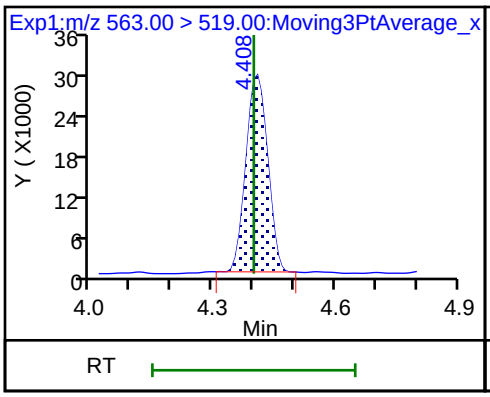
41 Perfluorodecanesulfonic acid



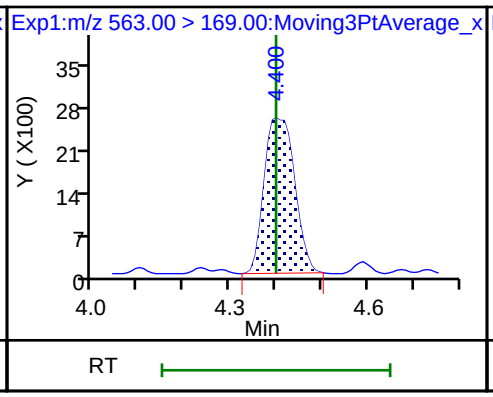
D 42 13C2 PFUnA



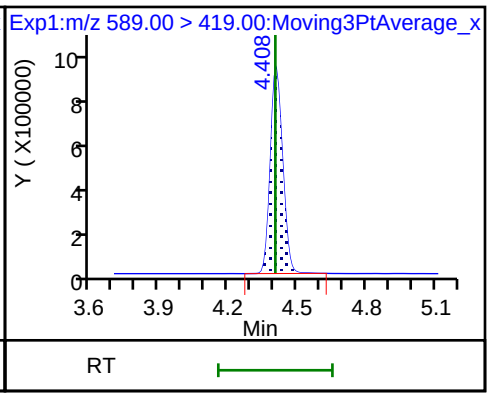
43 Perfluoroundecanoic acid



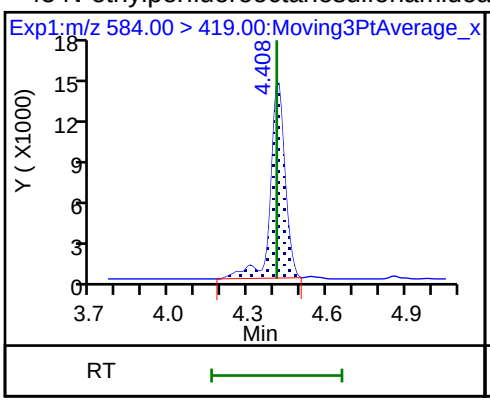
43 Perfluoroundecanoic acid



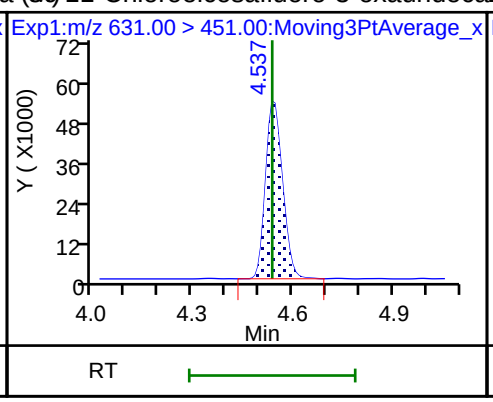
D 44 d5-NEtFOSAA



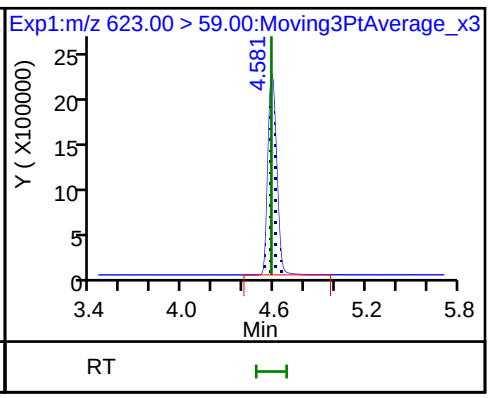
45 N-ethylperfluorooctanesulfonamidoa (M)



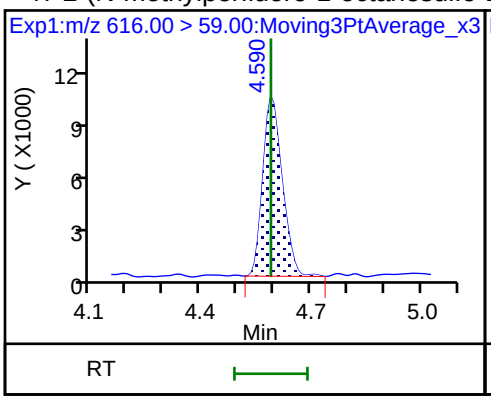
50 11-Chloroeicosafluoro-3-oxaundecan



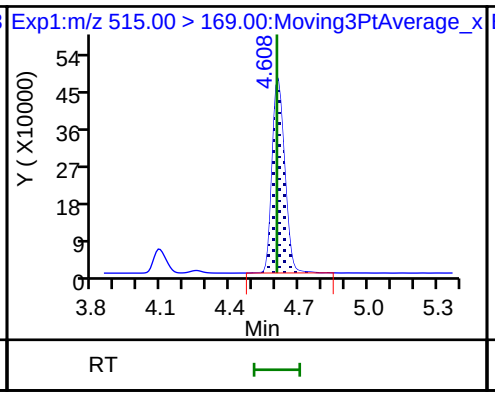
D 46 d7-N-MeFOSE-M



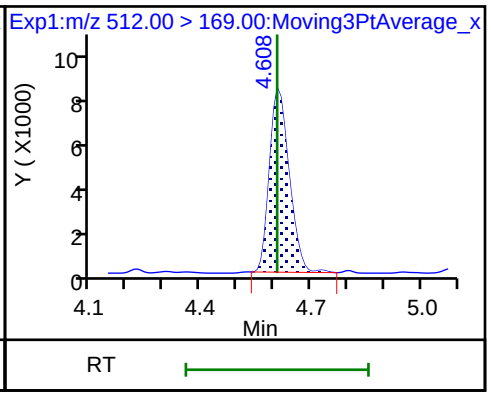
47 2-(N-methylperfluoro-1-octanesulfo



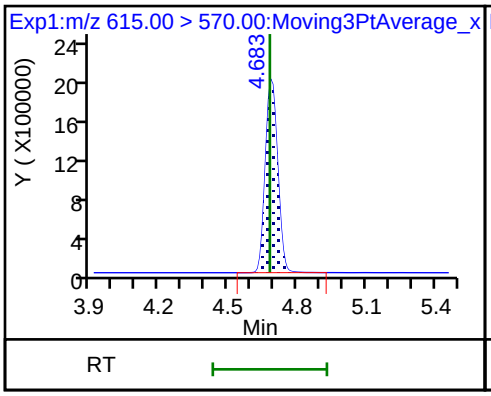
D 48 d-N-MeFOSA-M



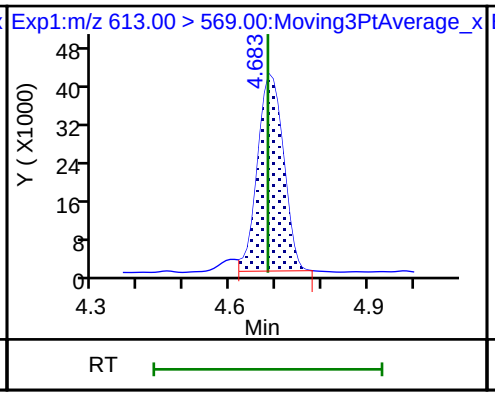
49 NMeFOSA



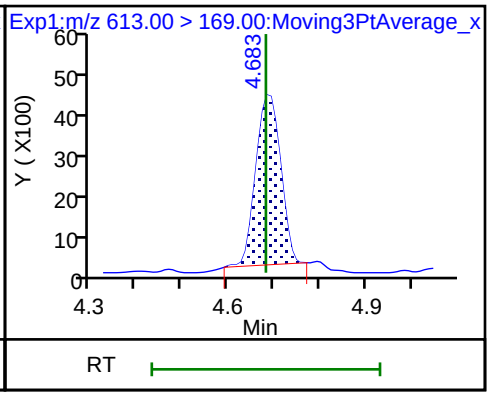
D 55 13C2 PFDoA



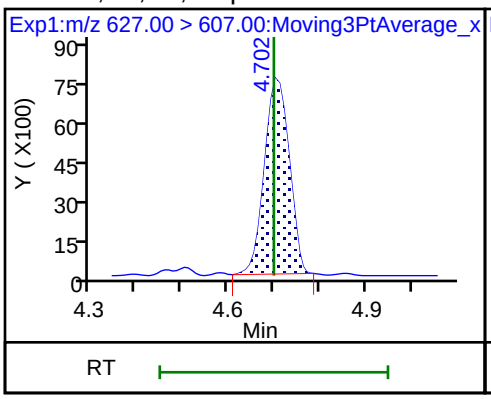
56 Perfluorododecanoic acid



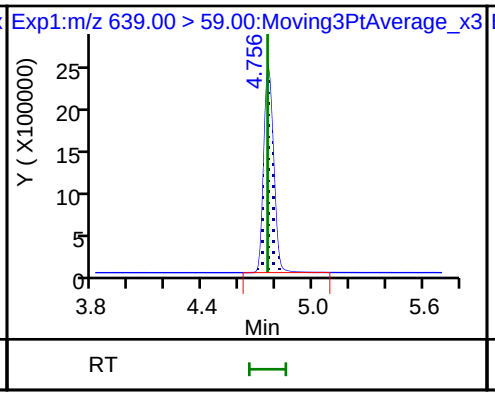
56 Perfluorododecanoic acid



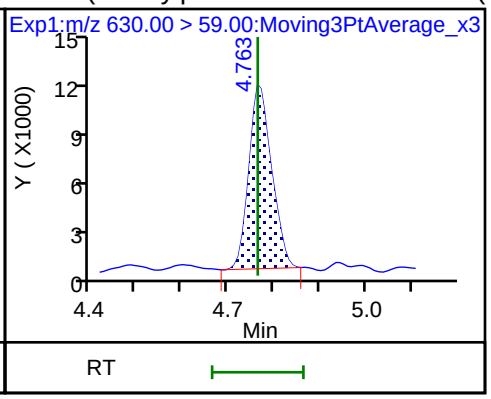
57 1H,1H,2H,2H-perfluorododecanesulfo



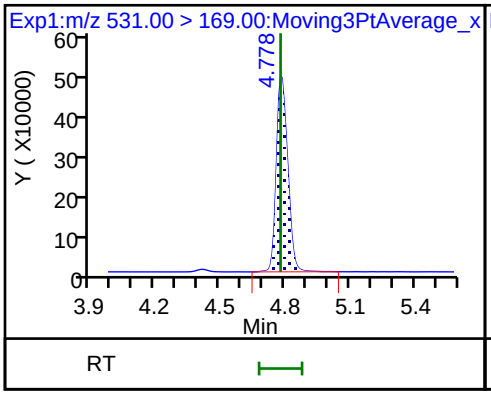
D 51 d9-N-EtFOSE-M



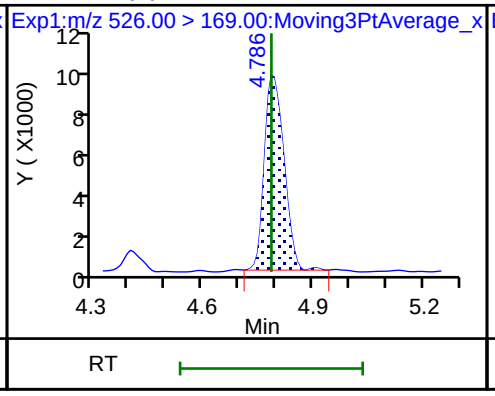
52 2-(N-ethylperfluoro-1-octanesulfon (M)



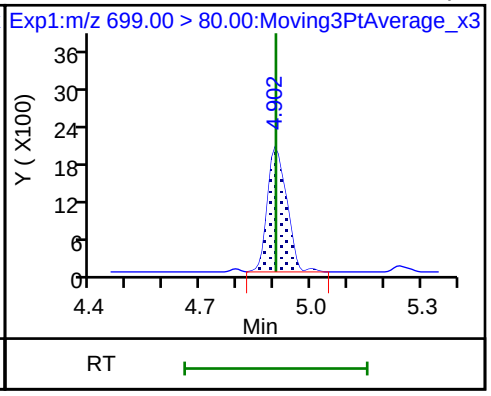
D 53 d-N-EtFOSA-M



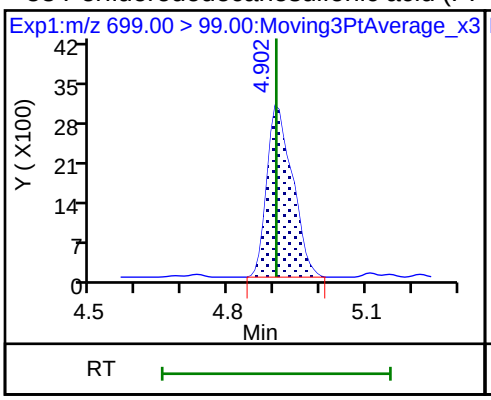
54 N-ethylperfluoro-1-octanesulfonami



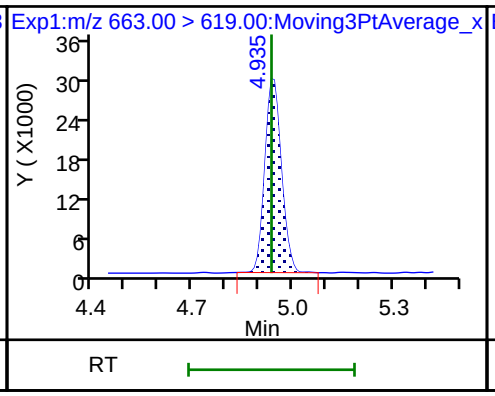
58 Perfluorododecanesulfonic acid (PF



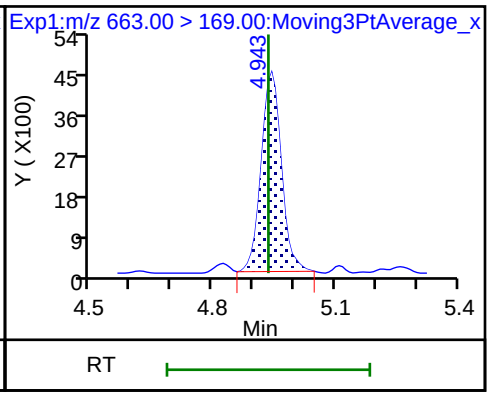
58 Perfluorododecanesulfonic acid (PF



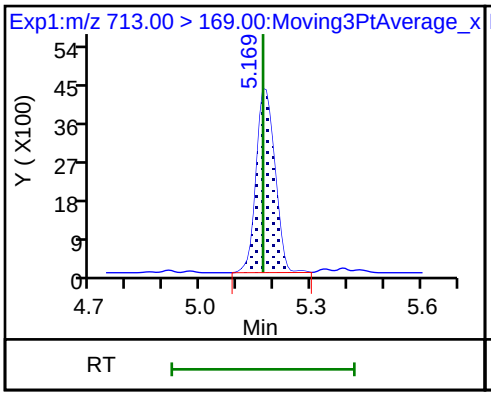
59 Perfluorotridecanoic acid



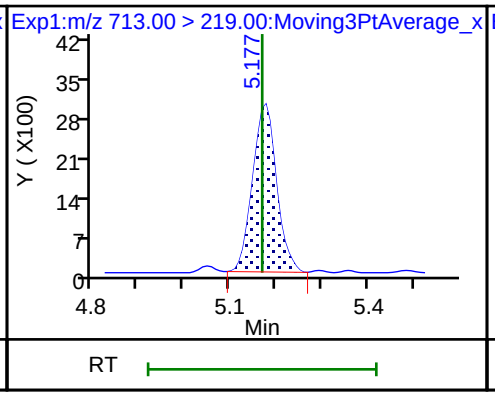
59 Perfluorotridecanoic acid



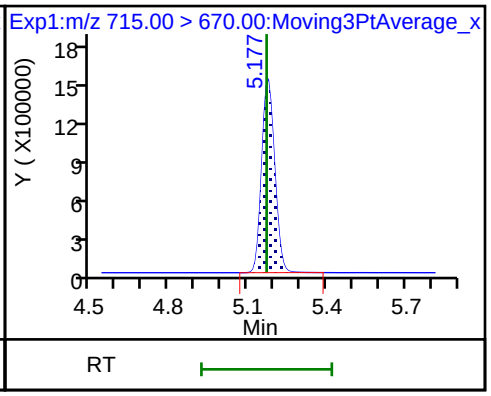
61 Perfluorotetradecanoic acid



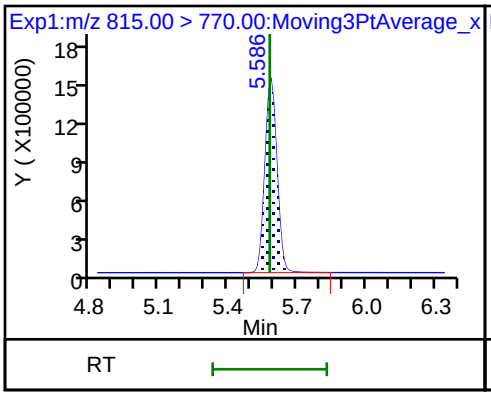
61 Perfluorotetradecanoic acid



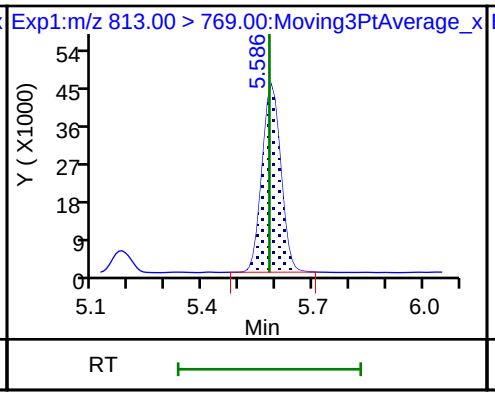
D 60 13C2 PFTeDA



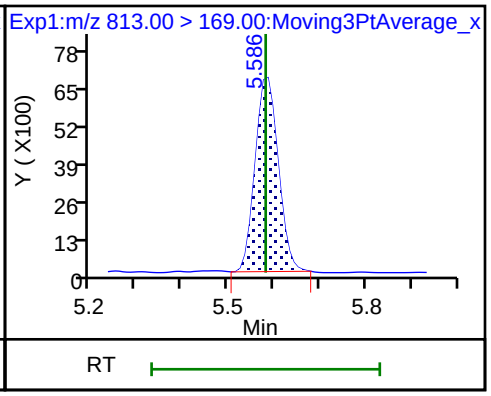
D 62 13C2 PFHxDA



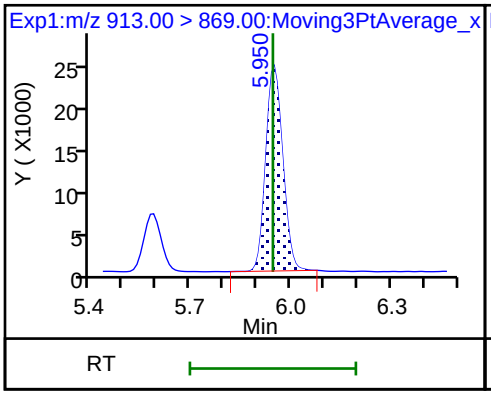
63 Perfluorohexadecanoic acid



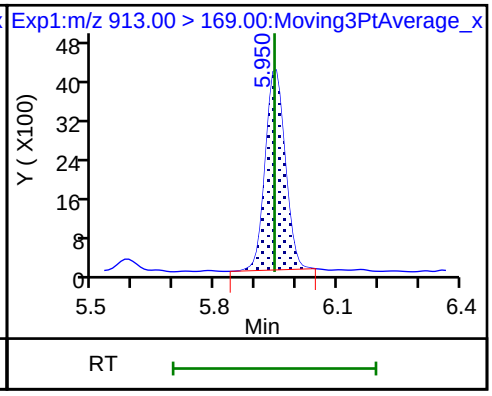
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

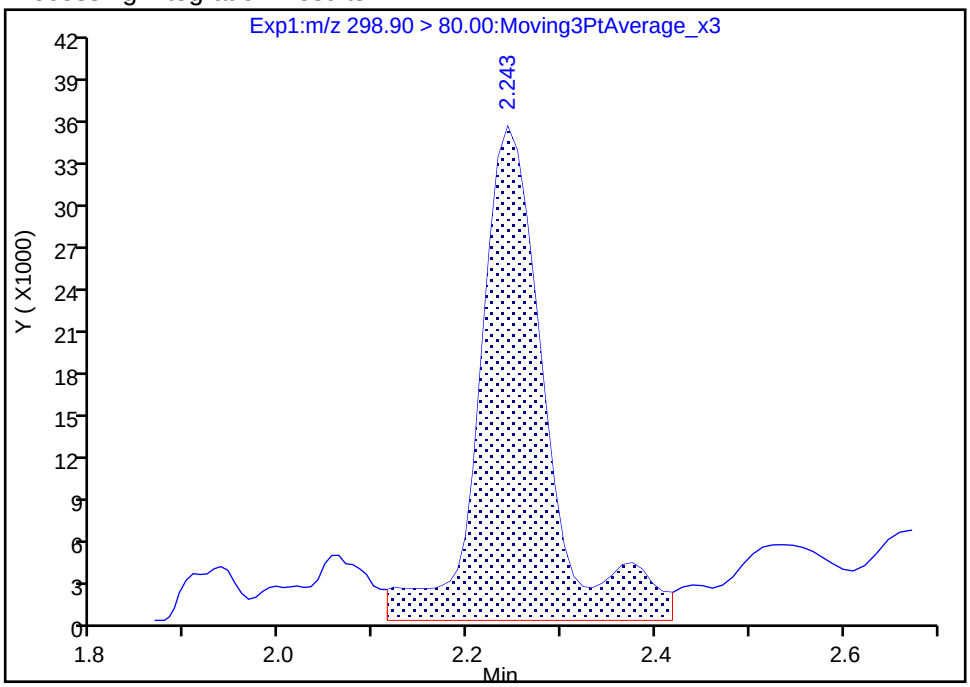
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d
Injection Date: 05-Oct-2019 18:13:25 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

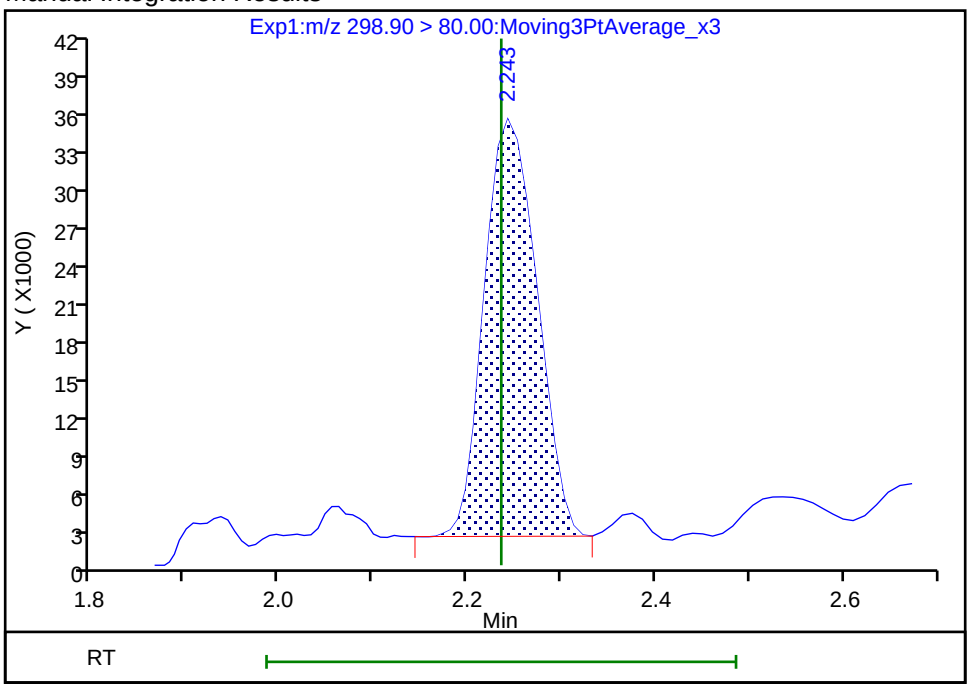
Processing Integration Results

RT: 2.24
Area: 172075
Amount: 0.055805
Amount Units: ng/ml



Manual Integration Results

RT: 2.24
Area: 127082
Amount: 0.042847
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:25:52
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

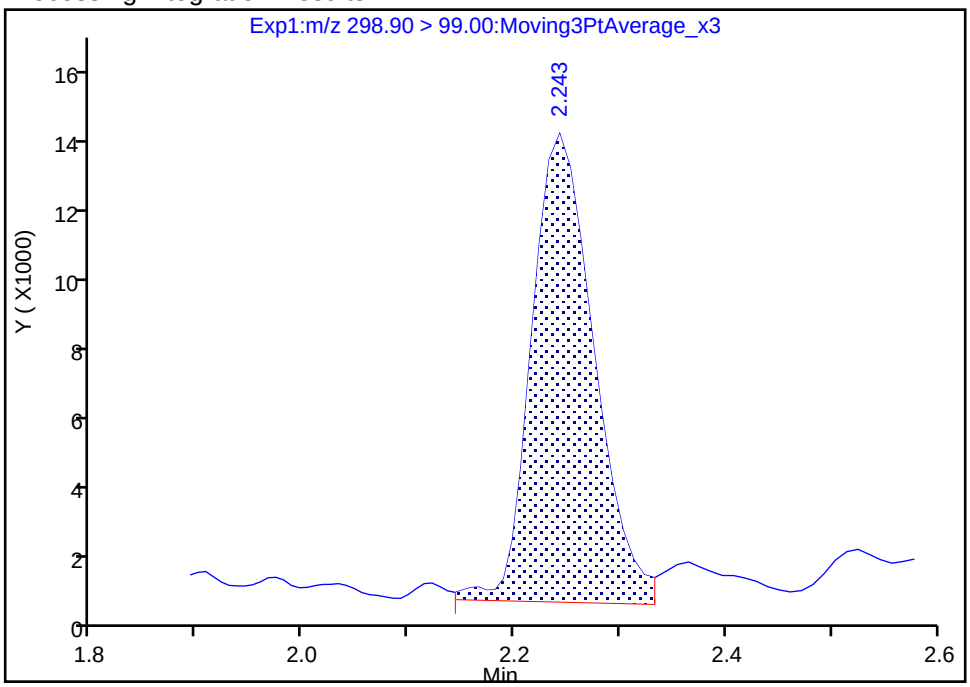
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

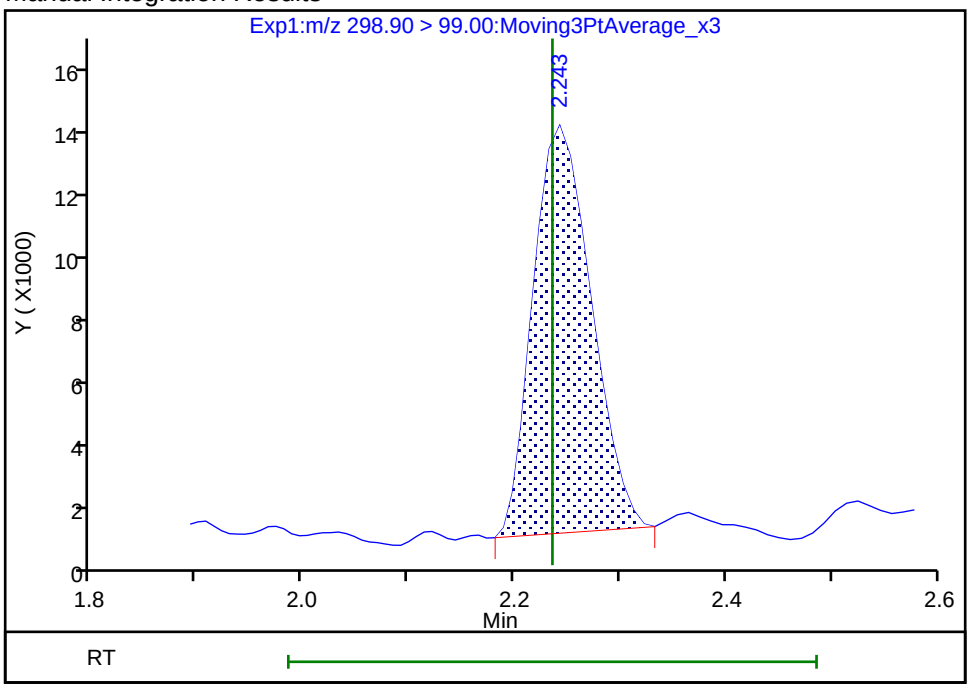
Processing Integration Results

RT: 2.24
Area: 56044
Amount: 0.055805
Amount Units: ng/ml



Manual Integration Results

RT: 2.24
Area: 50371
Amount: 0.042847
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:25:57
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

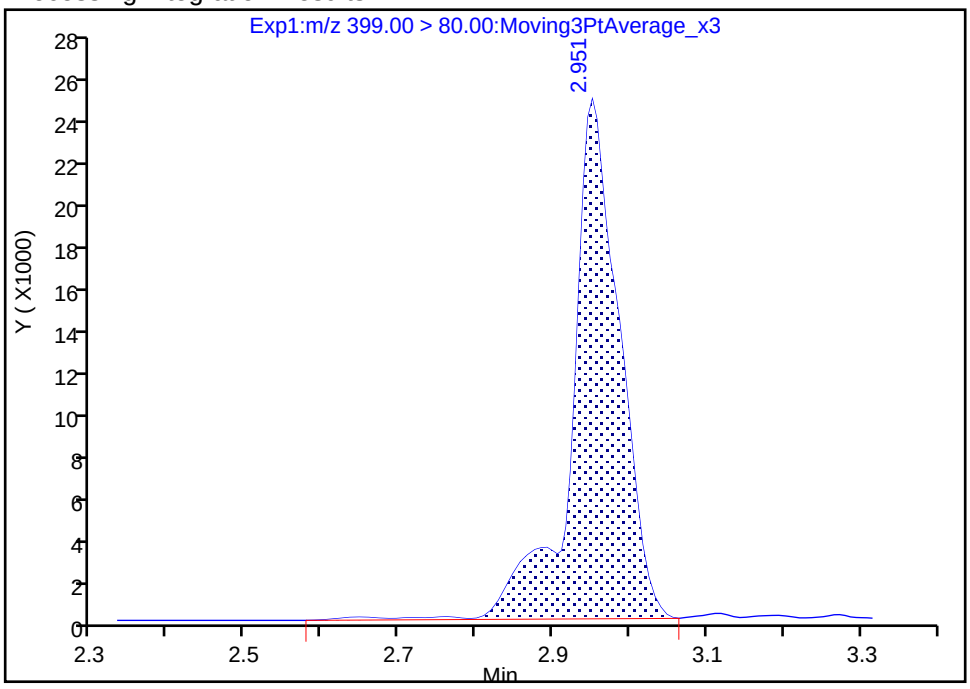
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d
Injection Date: 05-Oct-2019 18:13:25 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

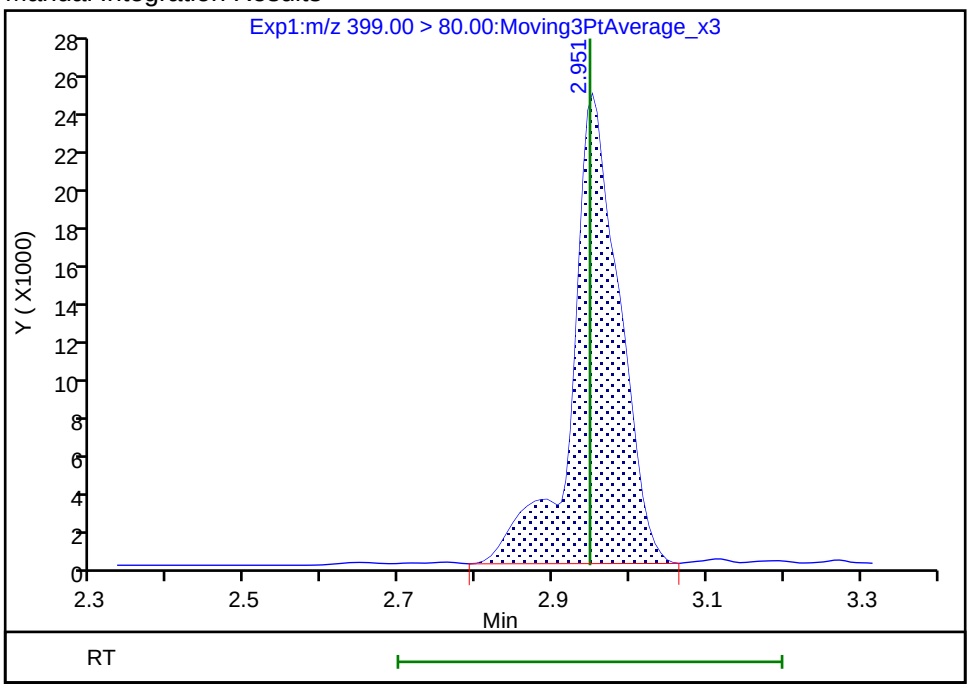
Processing Integration Results

RT: 2.95
Area: 105635
Amount: 0.049191
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 104368
Amount: 0.048761
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:26:14
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

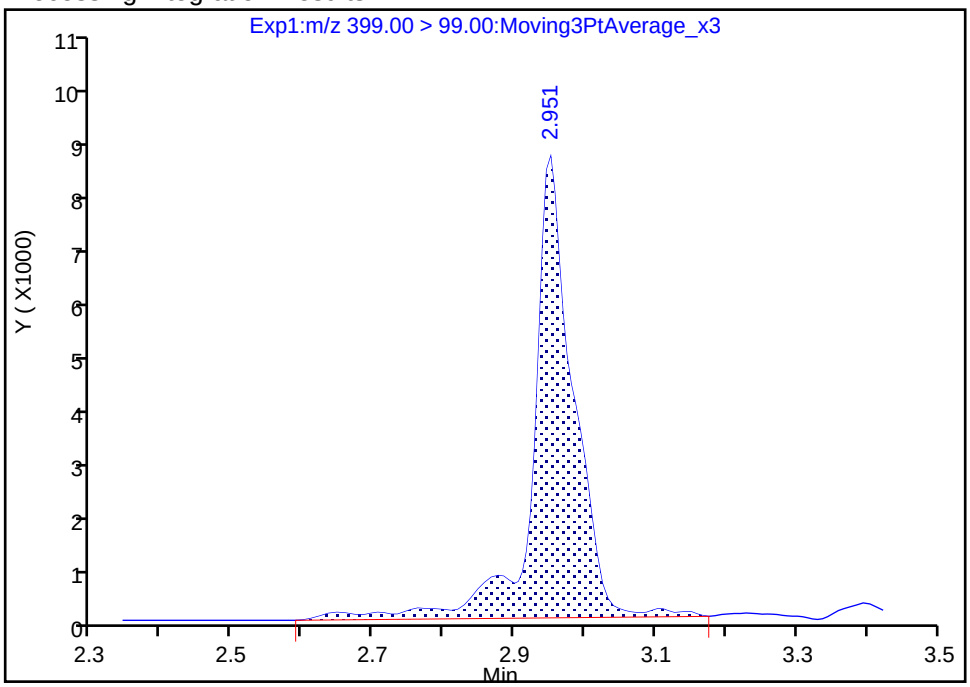
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

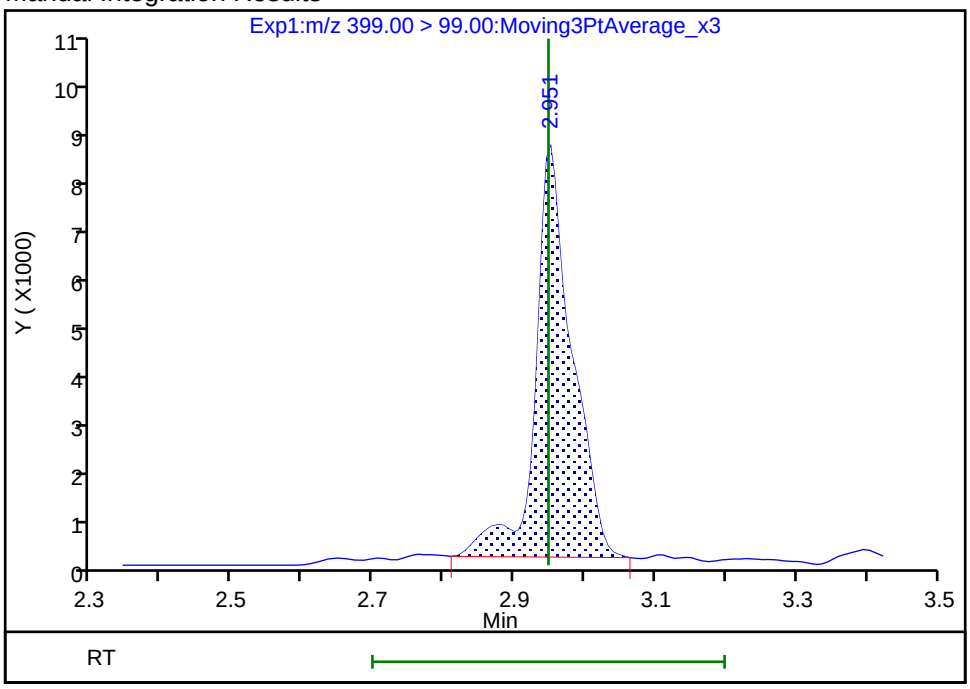
Processing Integration Results

RT: 2.95
Area: 32572
Amount: 0.049191
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 28770
Amount: 0.048761
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:26:19

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

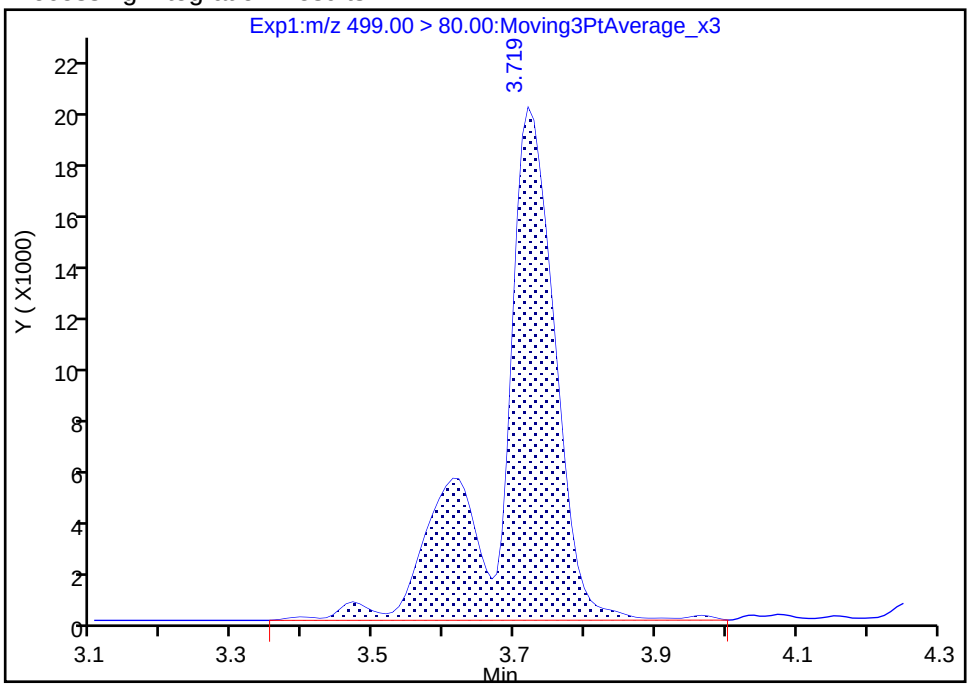
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

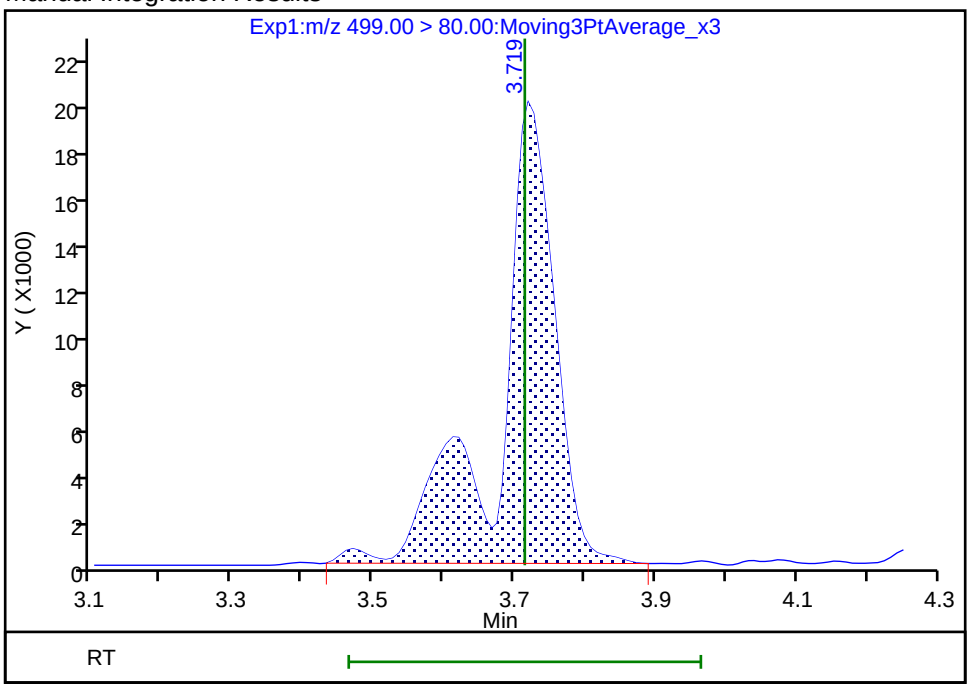
Processing Integration Results

RT: 3.72
Area: 113023
Amount: 0.050329
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 109955
Amount: 0.049314
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:26:47

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

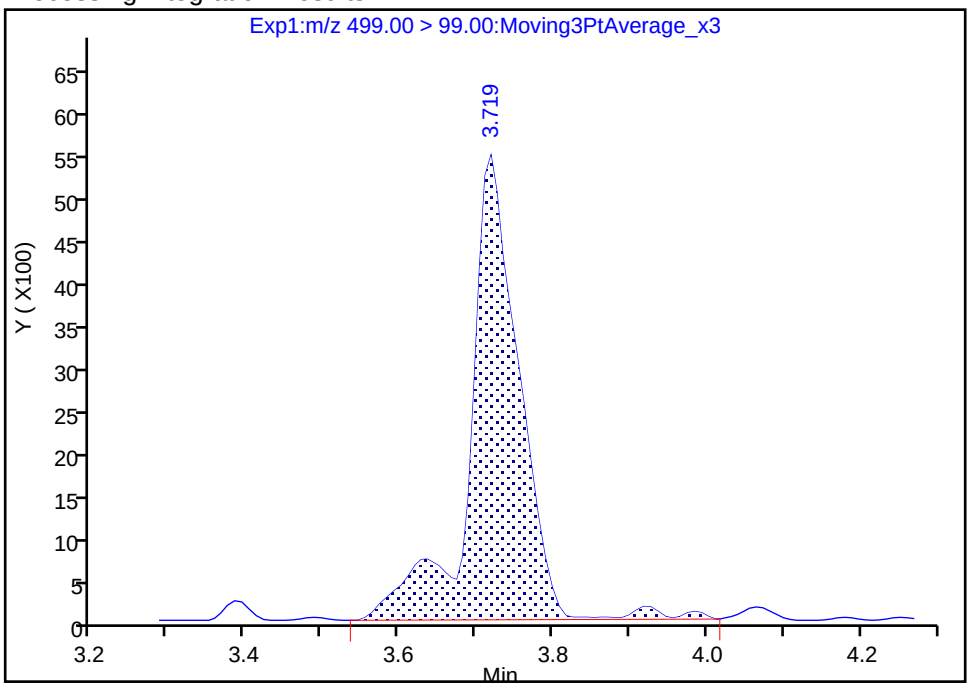
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d
Injection Date: 05-Oct-2019 18:13:25 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

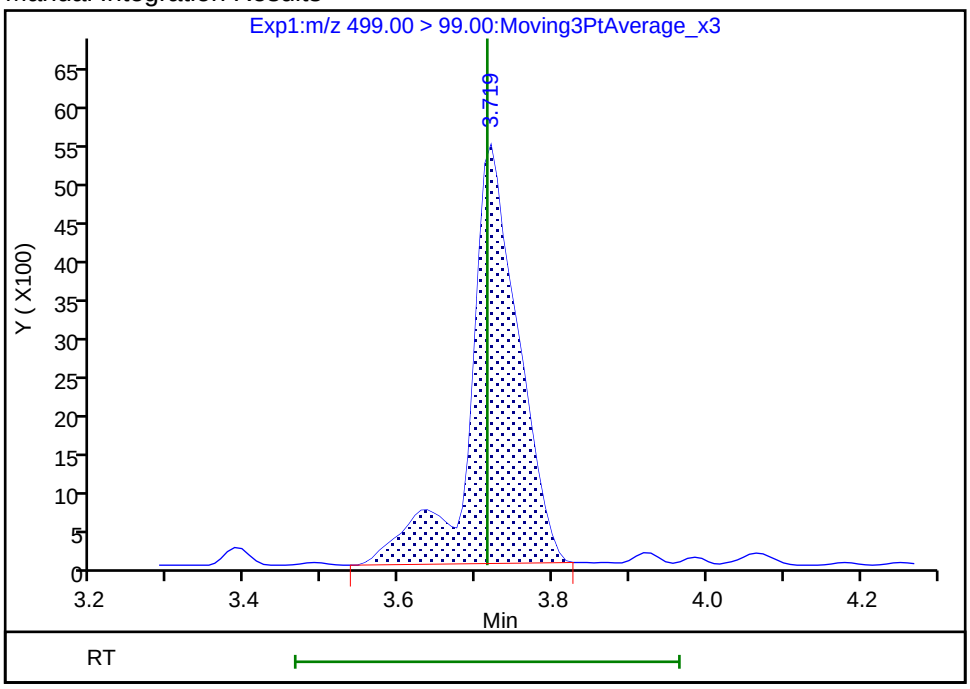
Processing Integration Results

RT: 3.72
Area: 24939
Amount: 0.050329
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 24115
Amount: 0.049314
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:26:51
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

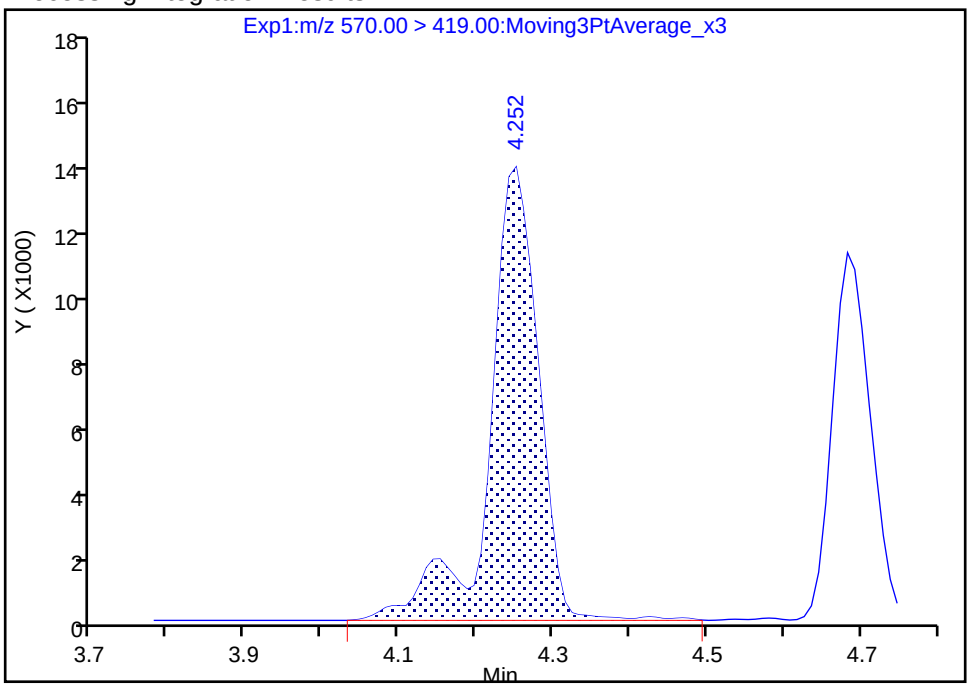
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

40 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

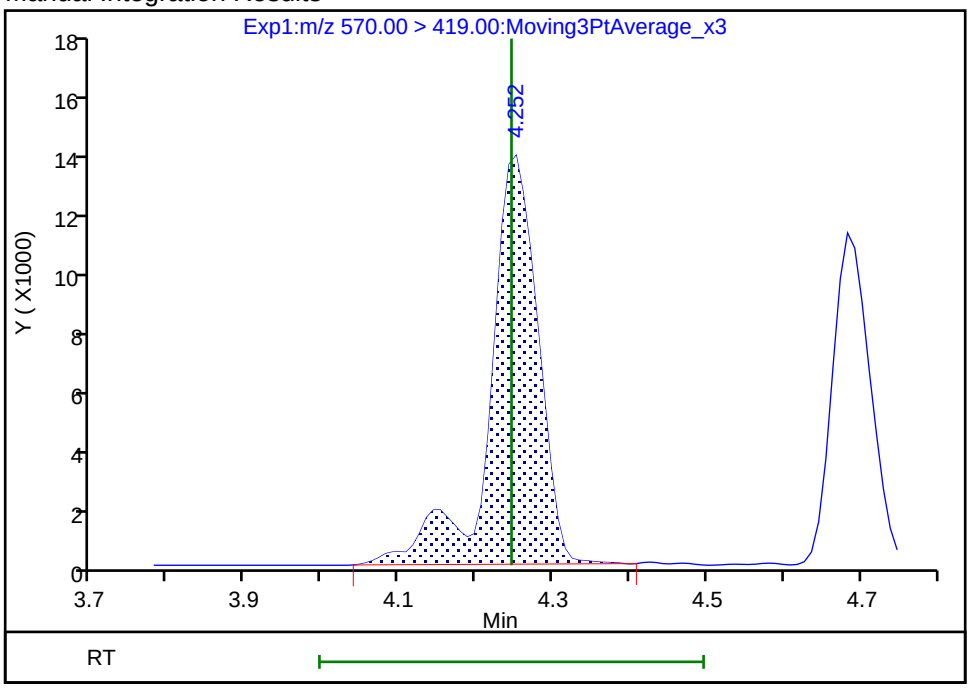
Processing Integration Results

RT: 4.25
Area: 61087
Amount: 0.050021
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 60039
Amount: 0.049284
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:27:05

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

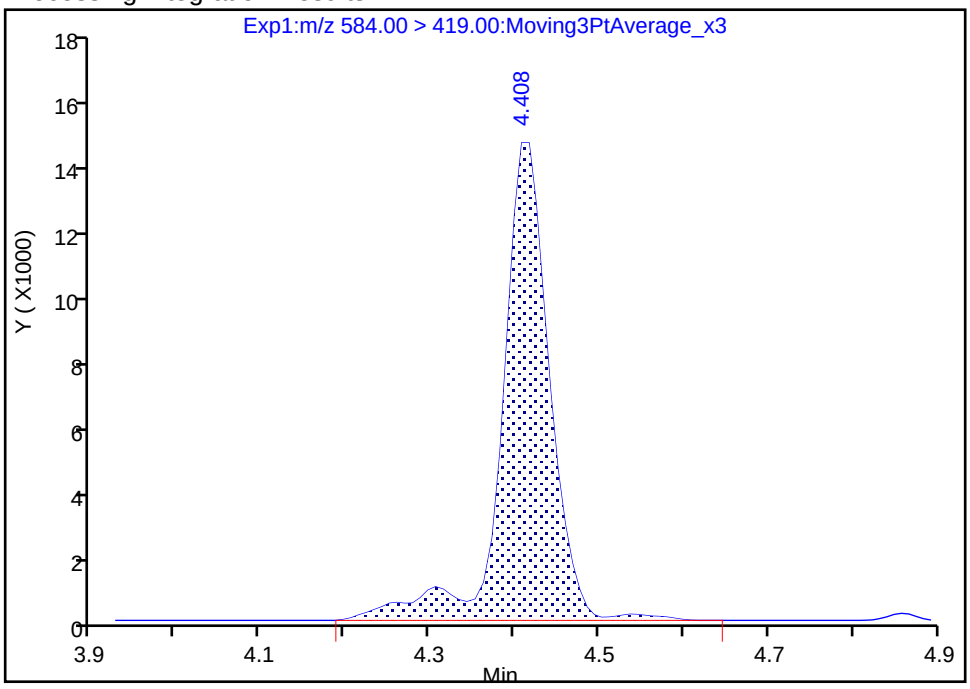
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

45 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

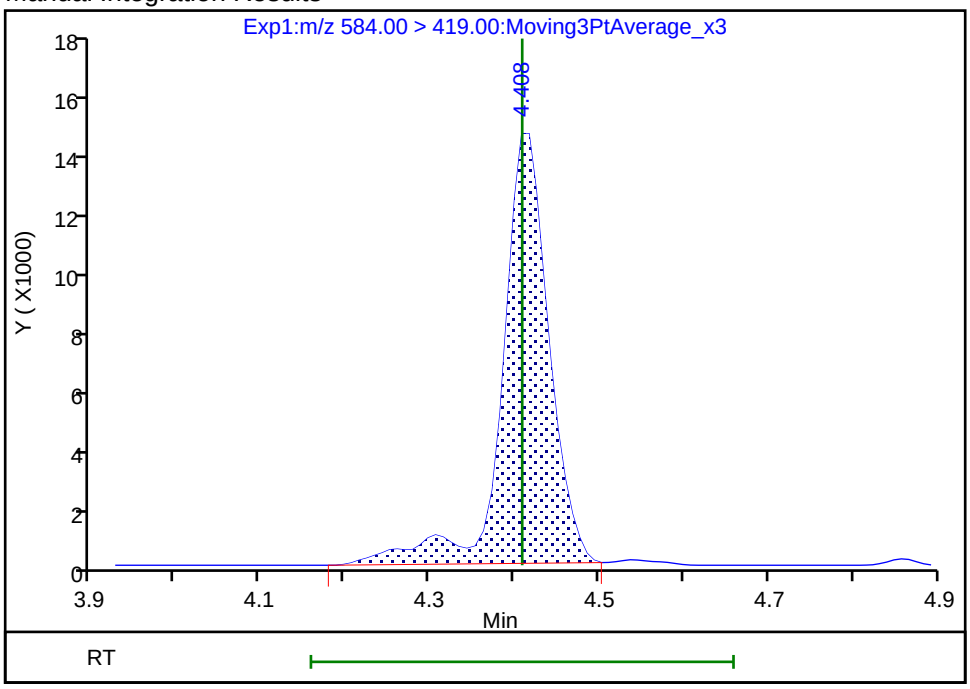
Processing Integration Results

RT: 4.41
Area: 54884
Amount: 0.053368
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 53371
Amount: 0.052116
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:27:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

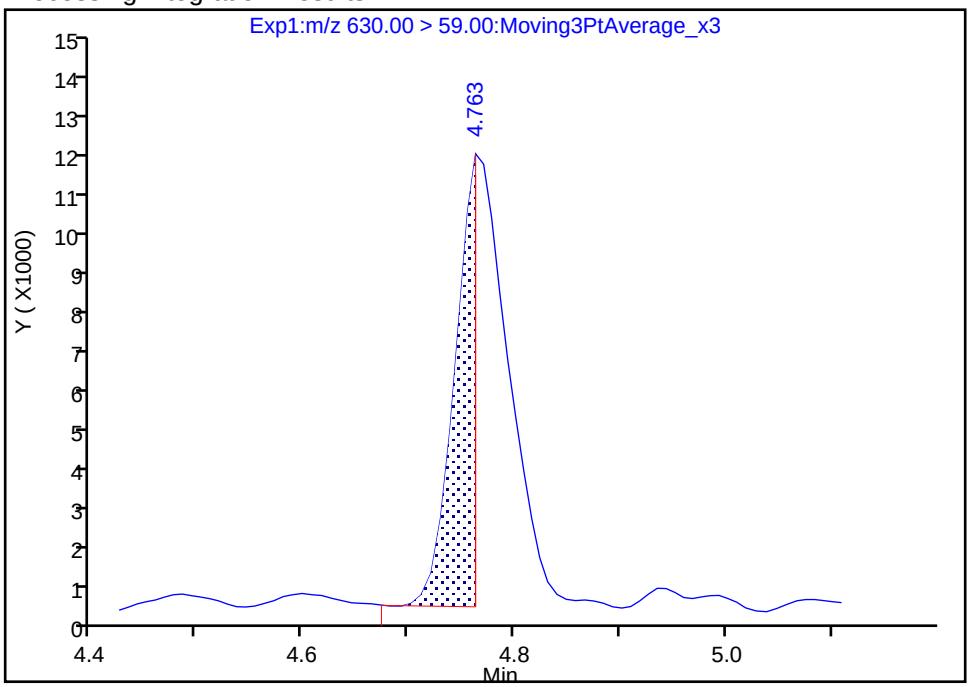
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_003.d				
Injection Date:	05-Oct-2019 18:13:25	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

52 2-(N-ethylperfluoro-1-octanesulfonamido) eth, CAS: 1691-99-2

Signal: 1

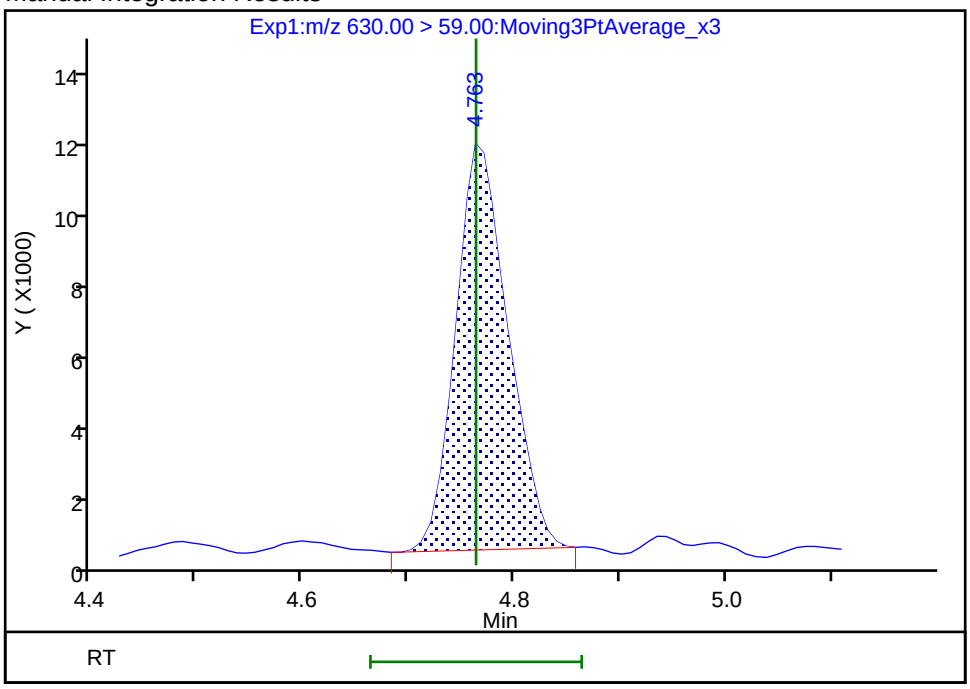
Processing Integration Results

RT: 4.76
Area: 14968
Amount: 0.021703
Amount Units: ng/ml



Manual Integration Results

RT: 4.76
Area: 38444
Amount: 0.050802
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:27:35

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_004.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 05-Oct-2019 18:23:02 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD3
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:20:57 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:29:19
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.900	1.903	-0.003	0.569	6067192	2.46		98.5	6630	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.907	1.906	0.001	1.004	535747	0.2598		104	109	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.206	-0.001	0.660	5037989	2.44		97.7	3658	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.205	2.207	-0.002	1.000	520037	0.2519		101	152	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.232	2.236	-0.004	0.757	656824	0.2272	Target=2.62	103	48.4	
298.90 > 99.00	2.232	2.236	-0.004	0.757	241101		2.72(1.31-3.93)	103	52.4	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.513	2.519	-0.006	0.753	988138	2.51		108	1336	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.524	2.521	0.003	1.004	244358	0.2253		96.5	1657	
D 9 13C2 PFHxA										
315.00 > 270.00	2.556	2.559	-0.003	0.766	6061306	2.55		102	3035	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.556	2.559	-0.003	1.000	524967	0.2331	Target=14.83	93.2	162	
313.00 > 119.00	2.556	2.559	-0.003	1.000	35956		14.60(7.41-22.24)	93.2	35.1	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.577	0.001	0.875	351006	0.2320	Target=1.98	98.9	764	
349.00 > 99.00	2.578	2.577	0.001	0.875	166709		2.11(0.99-2.97)	98.9	451	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.685	2.686	-0.001	1.000	150971	0.2458		98.3	201	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.685	2.686	-0.001	0.804	1013175	2.45		98.1	2775	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.942	-0.001	0.881	6656640	2.45		98.0	3373	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.941	2.944	-0.003	1.000	756564	0.2530	Target=4.24	101	254	
363.00 > 169.00	2.947	2.944	0.003	1.002	176066		4.30(2.12-6.36)	101	195	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.947	0.0	0.882	4032793	2.31		97.7	3440	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.947	2.948	-0.001	1.000	447681	0.2146	Target=3.27	94.3	682	M
399.00 > 99.00	2.947	2.948	-0.001	1.000	136963		3.27(1.64-4.91)	94.3	258	M
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	1286042	0.2452	Target=2.25	104	1720	
377.00 > 85.00	2.995	2.995	0.0	0.806	547334		2.35(1.12-3.37)	104	1263	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.319	0.006	0.996	908341	2.40		101	2015	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.320	0.005	1.000	209949	0.2357		99.4	638	
D 21 13C8 PFOA										
421.00 > 376.00	3.339	3.340	-0.001	1.000	7255300	2.44		97.7	7121	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.339	3.340	-0.001	0.899	450561	0.2242	Target=3.58	94.2	1004	
449.00 > 99.00	3.339	3.340	-0.001	0.899	120014		3.75(1.79-5.37)	94.2	138	
D 23 13C4 PFOA										
417.00 > 372.00	3.339	3.341	-0.002	1.000	7837836	2.50		100	5148	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.342	-0.003		8356914	2.50			3205	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.339	3.344	-0.005	1.000	874460	0.2467	Target=2.79	98.7	276	
413.00 > 169.00	3.339	3.344	-0.005	1.000	307418		2.84(1.40-4.19)	98.7	494	
D 26 13C8 PFOS										
507.00 > 99.00	3.707	3.710	-0.003	1.110	1084214	2.46		98.4	2302	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.112	4854963	2.40		100	4229	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.714	3.714	0.0	1.000	466112	0.2137	Target=3.83	92.1	455	M
499.00 > 99.00	3.714	3.714	0.0	1.000	124638		3.74(1.92-5.75)	92.1	634	
D 30 13C5 PFNA										
468.00 > 423.00	3.729	3.728	0.001	1.117	6982748	2.50		100	3831	
29 Perfluorononanoic acid										
463.00 > 419.00	3.729	3.729	0.0	1.000	730410	0.2539	Target=5.58	102	792	
463.00 > 169.00	3.722	3.729	-0.007	0.998	122256		5.97(2.79-8.37)	102	258	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.921	3.922	-0.001	1.056	309386	0.2150		92.3	1297	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.058	4.057	0.001	1.093	268352	0.2168	Target=4.51	90.3	1001	
549.00 > 99.00	4.058	4.057	0.001	1.093	56771		4.73(2.25-6.76)	90.3	188	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.085	4.084	0.001	1.000	767295	0.2566	Target=15.45	103	734	
513.00 > 169.00	4.085	4.084	0.001	1.000	48836		15.71(7.73-23.18)	103	118	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.085	4.084	0.001	1.223	877999	2.46		103	3069	
D 36 13C2 PFDA										
515.00 > 470.00	4.085	4.084	0.001	1.223	7865438	2.50		99.9	4567	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.085	4.084	0.001	1.000	202255	0.2491		104	628	
D 32 13C8 FOSA										
506.00 > 78.00	4.112	4.113	-0.001	1.231	2509036	2.40		96.0	2605	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.112	4.117	-0.005	1.000	718967	0.2608		104	1049	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.237	4.241	-0.004	1.269	3547861	2.39		95.6	2575	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.246	4.246	0.0	1.002	278608	0.2397		95.9	51.9	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.377	4.375	0.002	1.178	384949	0.2329	Target=4.64	96.6	1333	
599.00 > 99.00	4.367	4.375	-0.008	1.176	79040		4.87(2.32-6.96)	96.6	330	
D 42 13C2 PFUnA										
565.00 > 520.00	4.394	4.398	-0.004	1.316	6644665	2.47		99.0	3610	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.394	4.399	-0.005	1.000	531361	0.2541	Target=9.27	102	1112	
563.00 > 169.00	4.403	4.399	0.004	1.002	57590		9.23(4.63-13.90)	102	386	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.403	4.404	-0.001	1.319	3189358	2.50		100.0	3213	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.412	4.409	0.003	1.002	249760	0.2454		98.2	775	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.540	4.537	0.003	1.222	927478	0.2441		104	2687	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.575	4.580	-0.005		8354966	12.2		97.8	2056	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.593	4.590	0.003	1.004	172886	0.2482		99.3	375	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.602	4.602	0.0		1816763	2.43		97.3	263	
49 NMeFOSA										
512.00 > 169.00	4.602	4.607	-0.005	1.000	158885	0.2506		100	630	
D 55 13C2 PFDoA										
615.00 > 570.00	4.678	4.680	-0.002	1.401	7201333	2.44		97.4	3657	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.678	4.681	-0.003	1.000	780294	0.2628	Target=9.58	105	1187	
613.00 > 169.00	4.678	4.681	-0.003	1.000	71485		10.92(4.79-14.36)	105	329	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.696	4.699	-0.003	1.150	157988	0.2527		105	507	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.750	4.752	-0.002		8757552	12.3		98.5	4702	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.765	4.763	0.002	1.003	169603	0.2297		91.9	112	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.780	4.779	0.001		1742177	2.42		96.9	1506	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.780	4.786	-0.006	1.000	177501	0.2535		101	455	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.904	4.904	0.0	1.320	38434	0.2266	Target=0.64	93.7	299	
699.00 > 99.00	4.904	4.904	0.0	1.320	61797		0.62(0.32-0.96)	93.7	310	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.937	4.935	0.002	1.056	482595	0.2599	Target=5.94	104	1797	
663.00 > 169.00	4.937	4.935	0.002	1.056	75968		6.35(2.97-8.91)	104	676	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.171	5.169	0.002	1.000	75541	0.2694	Target=1.42	108	607	
713.00 > 219.00	5.162	5.169	-0.007	0.998	52827		1.43(0.71-2.13)	108	652	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.171	5.170	0.001	1.549	4960678	2.37		94.6	4176	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.579	5.579	0.0	1.671	5577648	2.42		96.8	7238	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.579	5.581	-0.002	1.000	553754	0.2576	Target=6.39	103	495	
813.00 > 169.00	5.579	5.581	-0.002	1.000	83537		6.63(3.19-9.58)	103	424	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.944	5.945	-0.001	1.065	407448	0.2531	Target=6.02	101	521	
913.00 > 169.00	5.944	5.945	-0.001	1.065	64935		6.27(3.01-9.03)	101	746	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00015 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:20:58 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_004.d

Injection Date: 05-Oct-2019 18:23:02 Instrument ID: A9

Lims ID: IC L3 Full

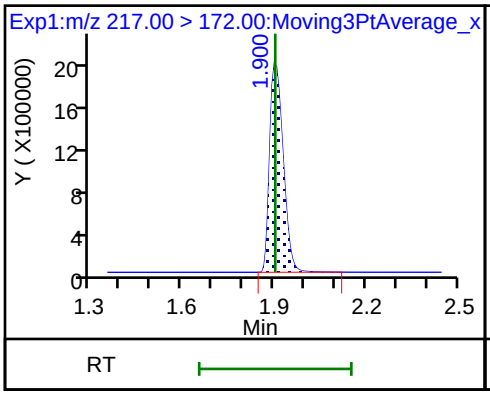
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 4

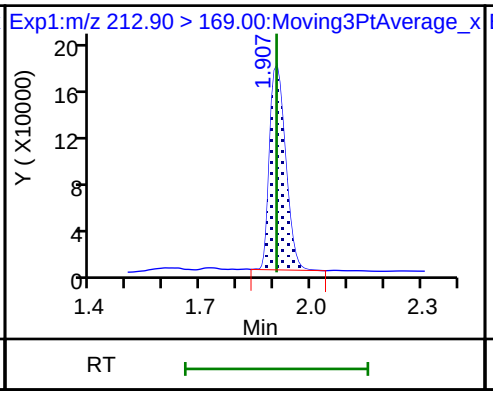
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

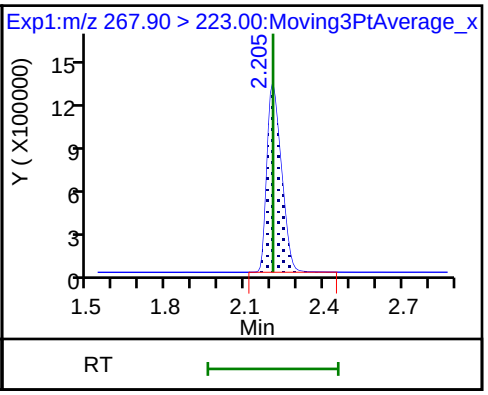
D 1 13C4 PFBA



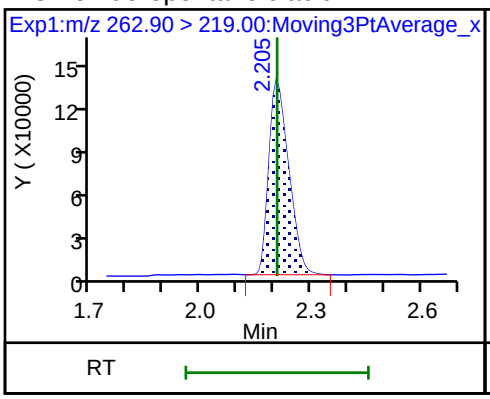
2 Perfluorobutanoic acid



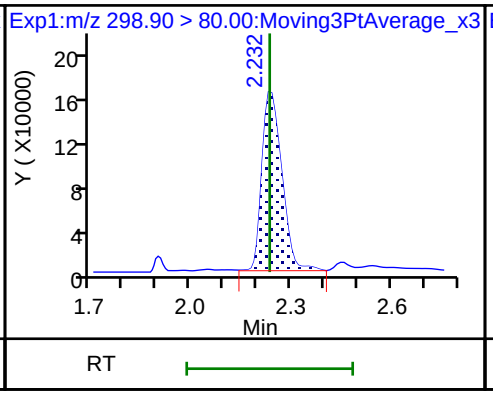
D 4 13C5 PFPeA



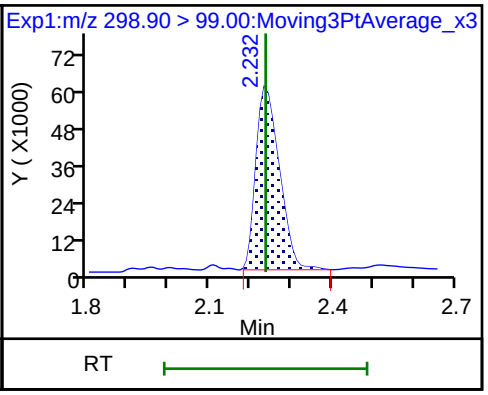
3 Perfluoropentanoic acid



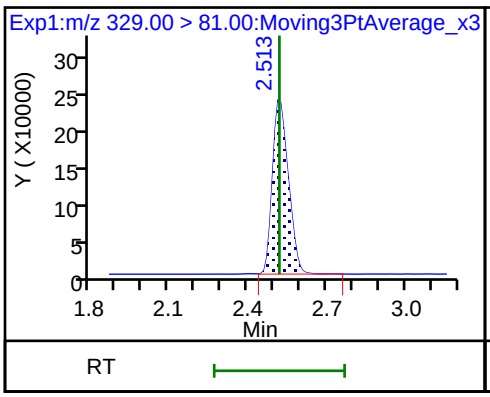
5 Perfluorobutanesulfonic acid



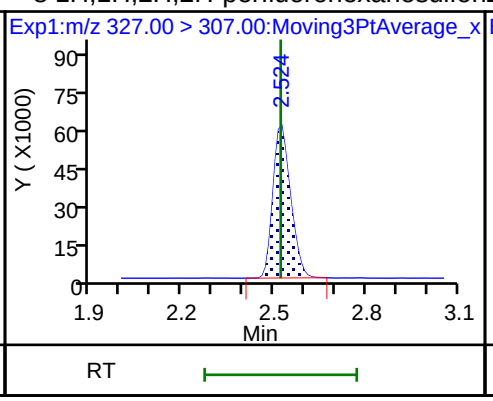
5 Perfluorobutanesulfonic acid



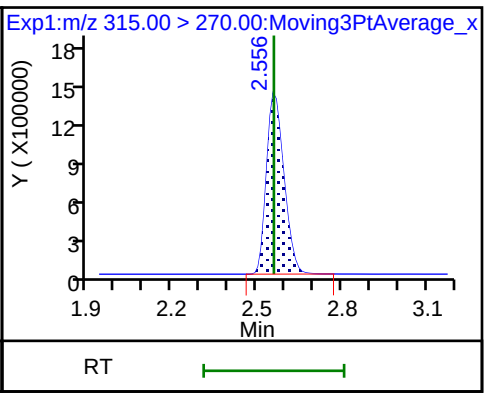
D 7 M2-4:2 FTS



8 1H,1H,2H,2H-perfluorohexanesulfon



D 9 13C2 PFHxA



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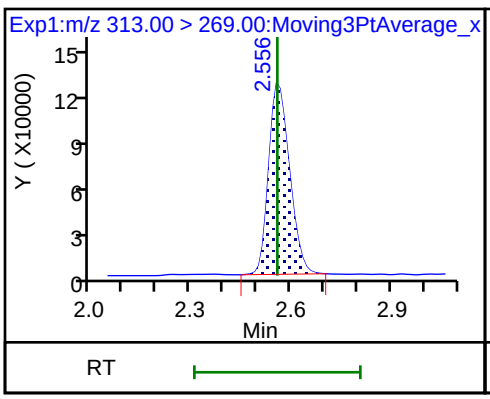
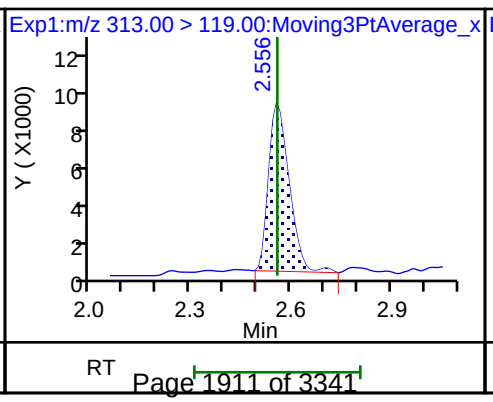
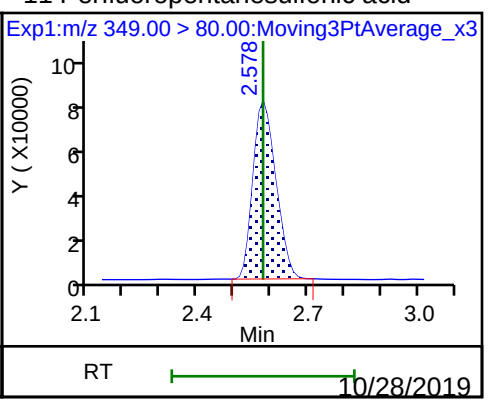


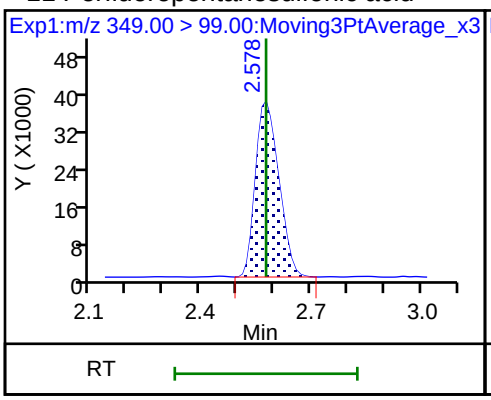
10 Perfluorohexanoic acid



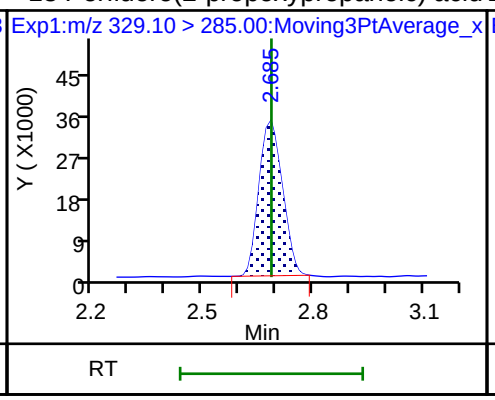
11 Perfluoropentanesulfonic acid



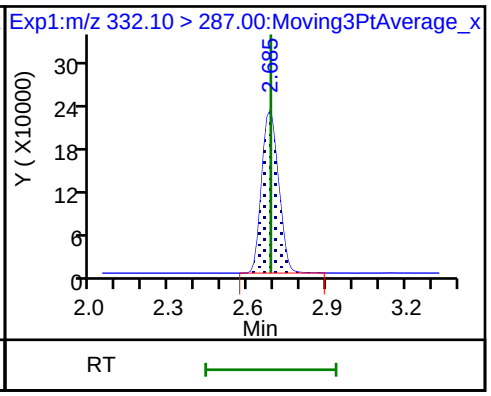
11 Perfluoropentanesulfonic acid



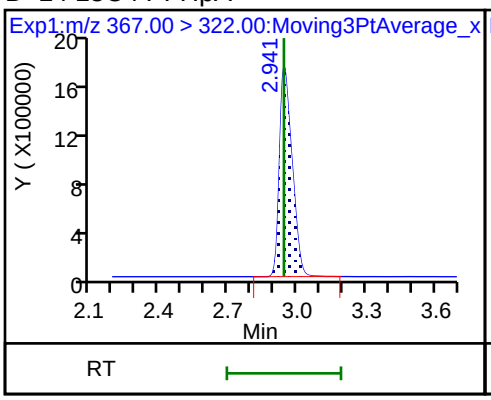
13 Perfluoro(2-propoxypropanoic) acid



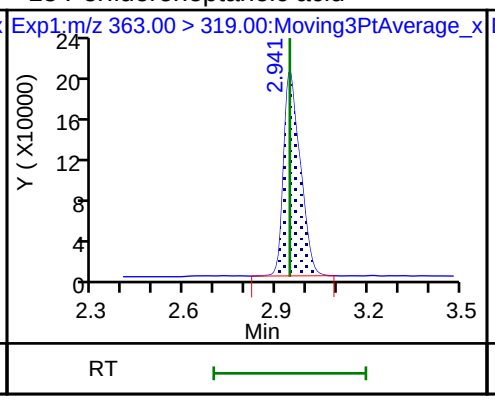
D 12 13C3 HFPO-DA



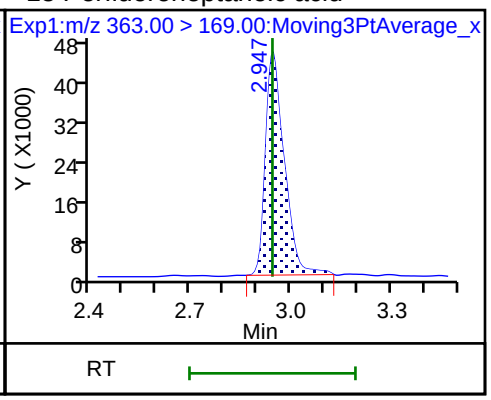
D 14 13C4 PFHpA



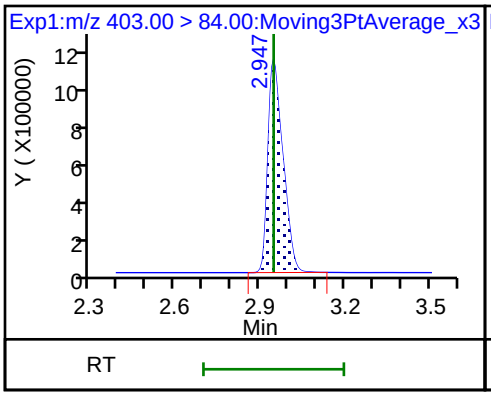
15 Perfluoroheptanoic acid



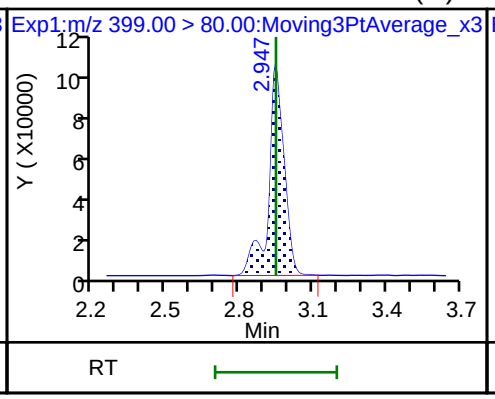
15 Perfluoroheptanoic acid



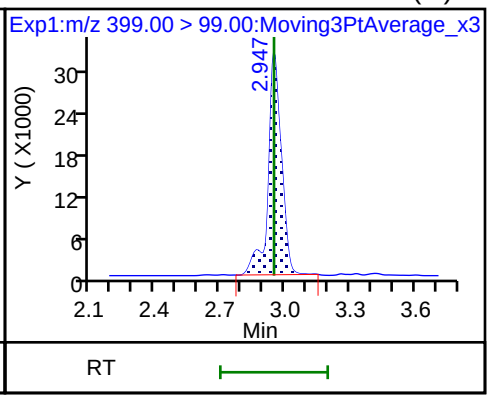
D 16 18O2 PFHxS



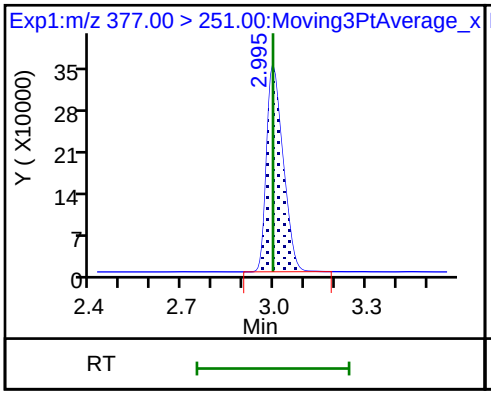
17 Perfluorohexanesulfonic acid (M)



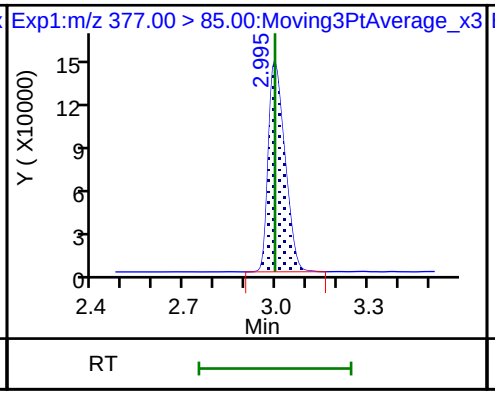
17 Perfluorohexanesulfonic acid (M)



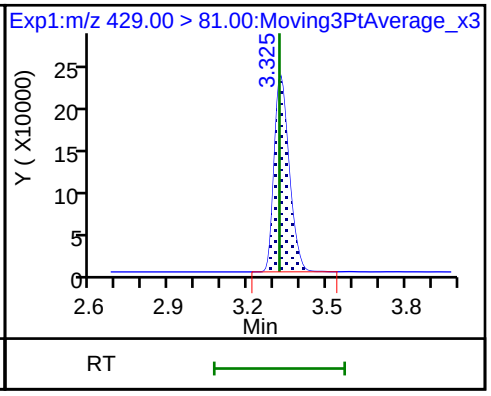
18 DONA



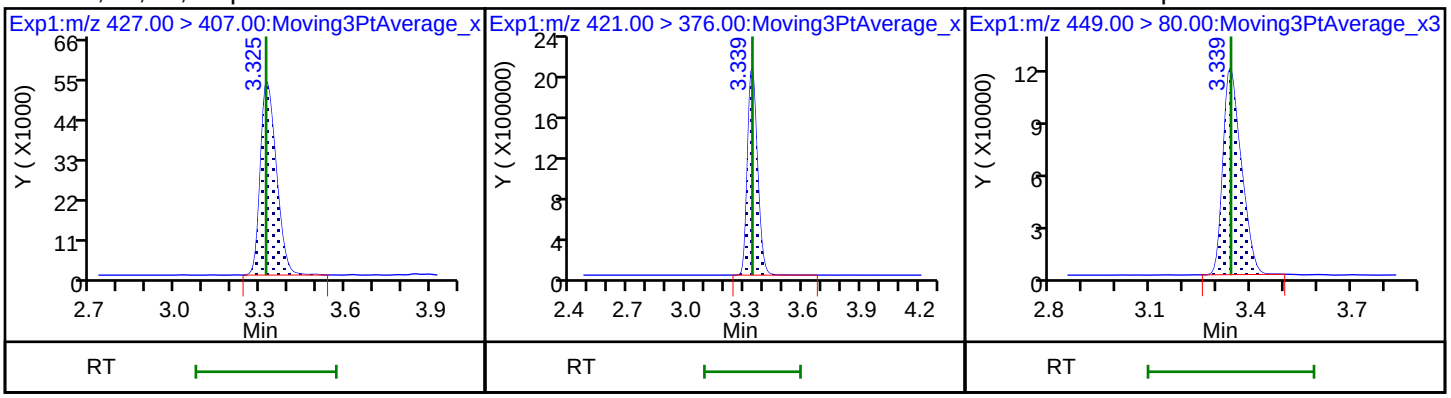
18 DONA



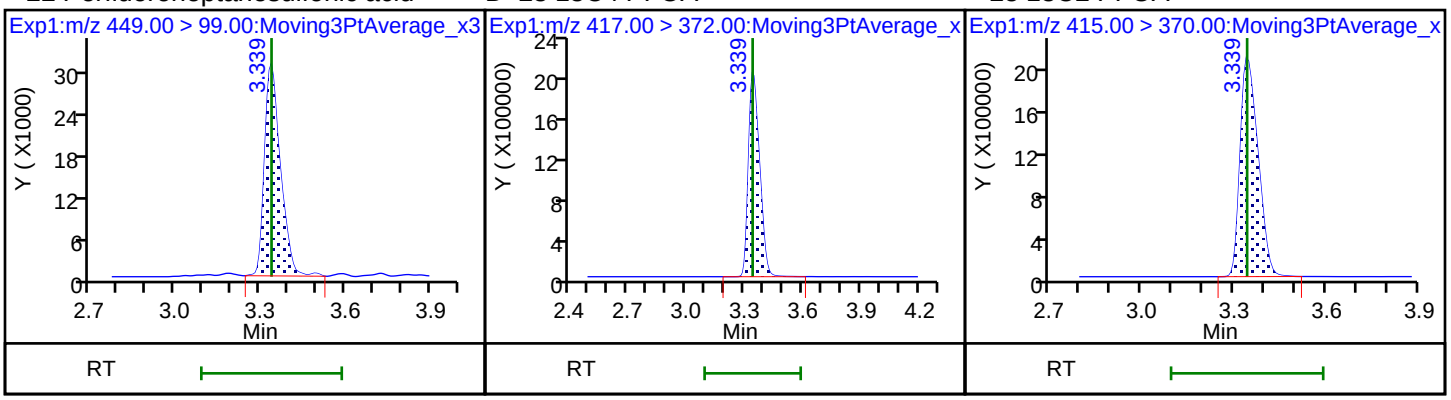
D 20 M2-6:2 FTS



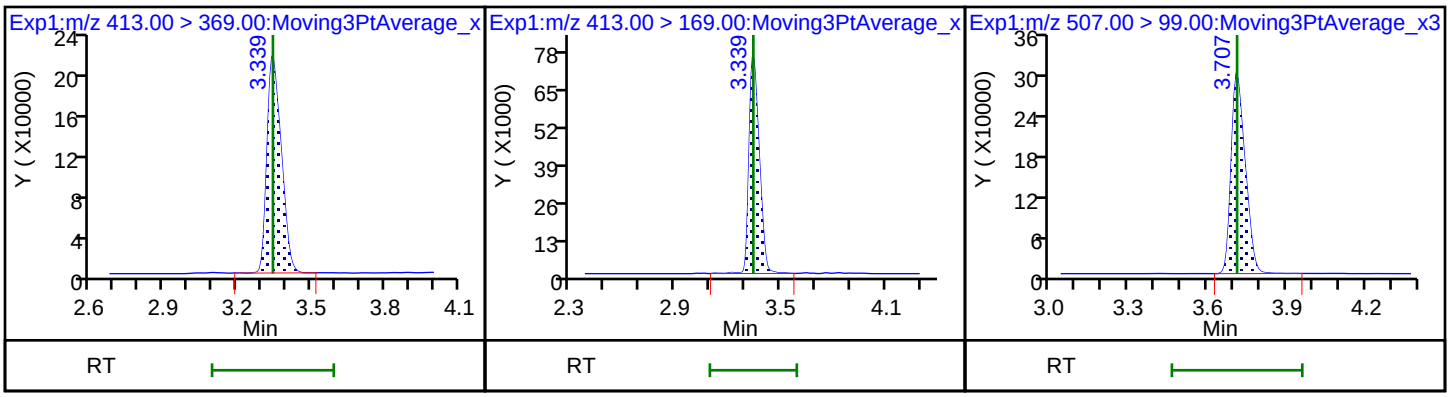
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



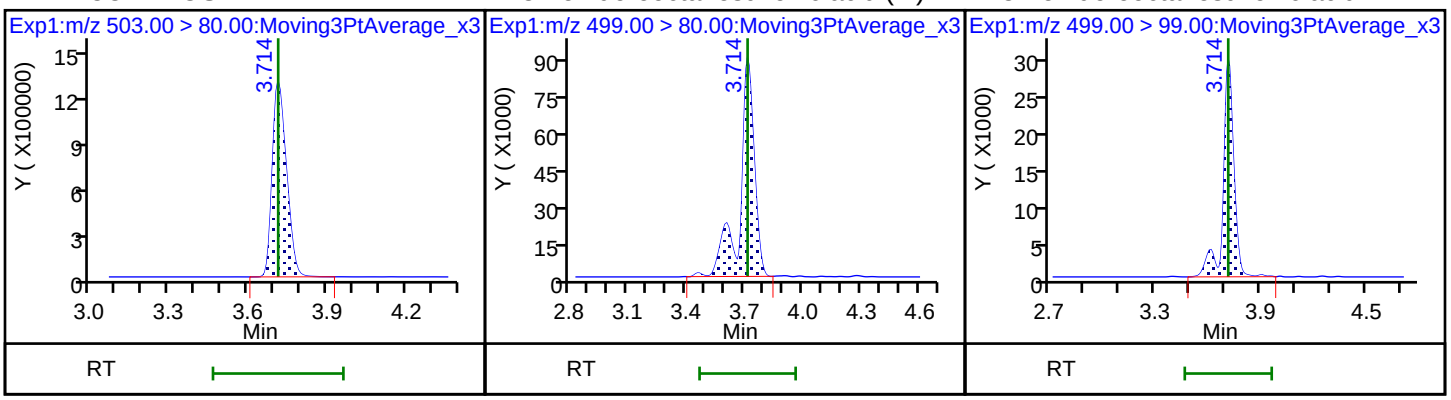
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



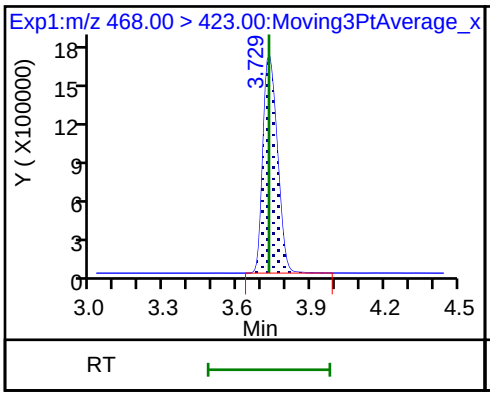
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



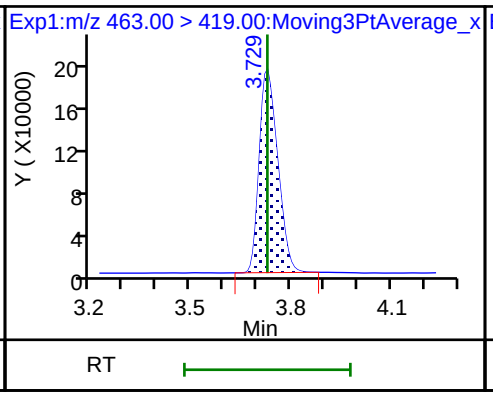
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid



D 30 13C5 PFNA



29 Perfluorononanoic acid



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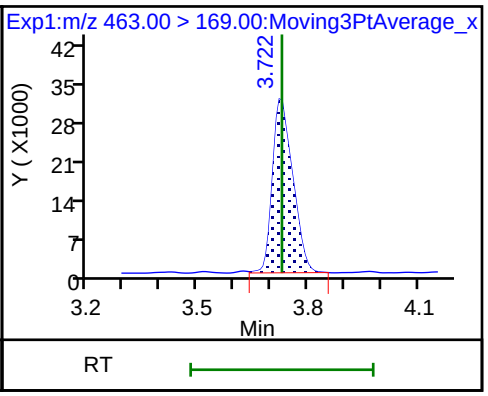
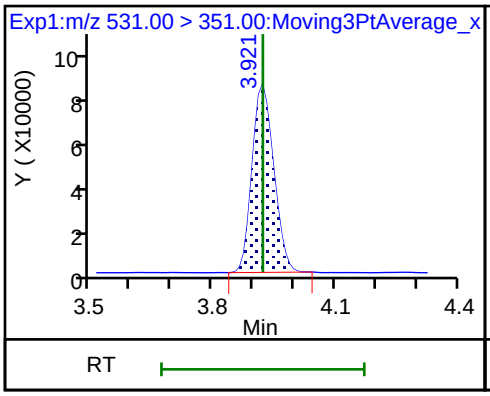
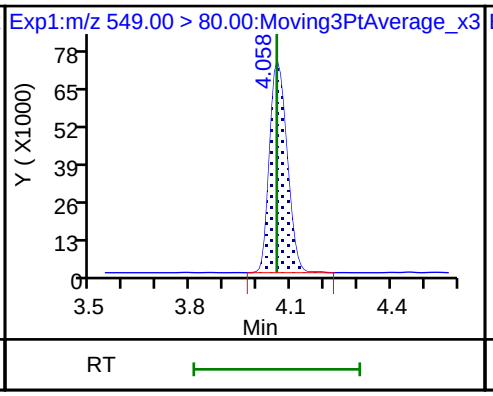


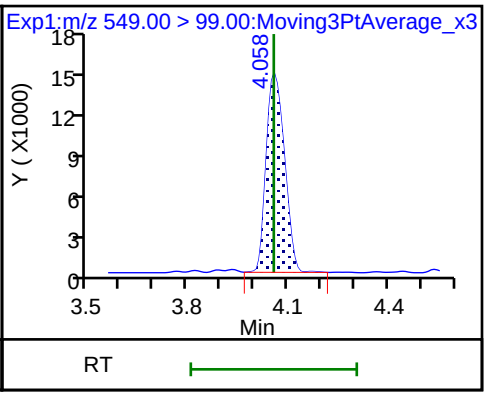
31 9-Chlorohexadecafluoro-3-oxanonane



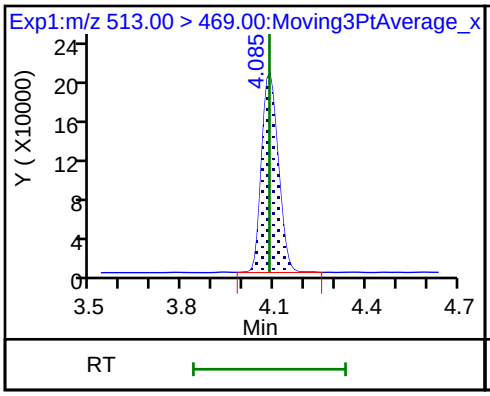
34 Perfluorononanesulfonic acid



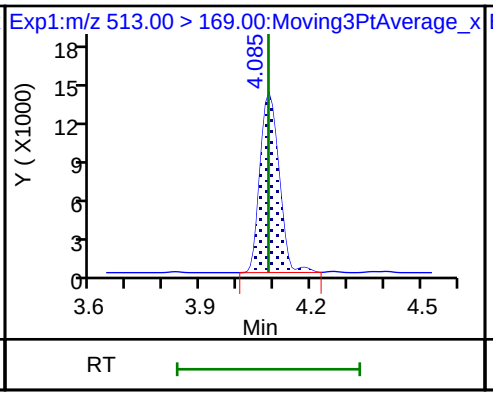
34 Perfluorononanesulfonic acid



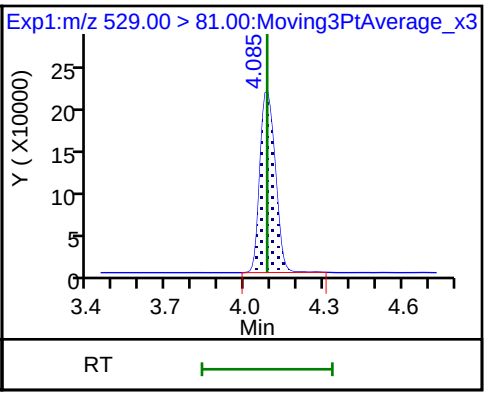
37 Perfluorodecanoic acid



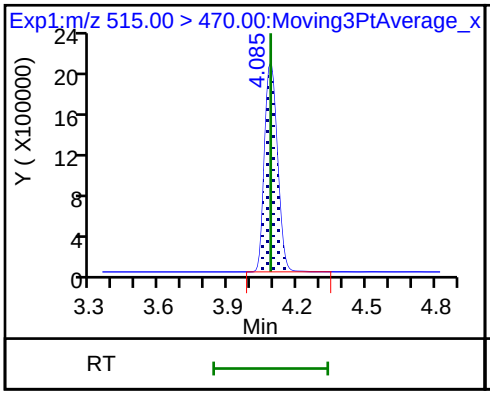
37 Perfluorodecanoic acid



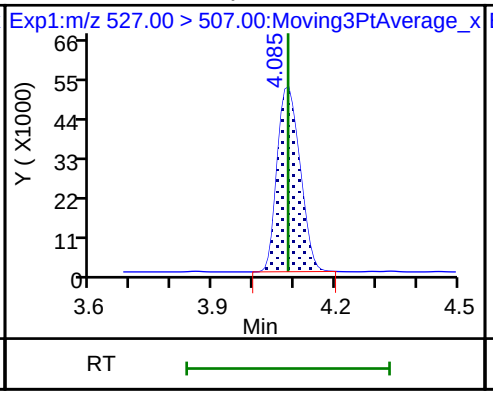
D 35 M2-8:2 FTS



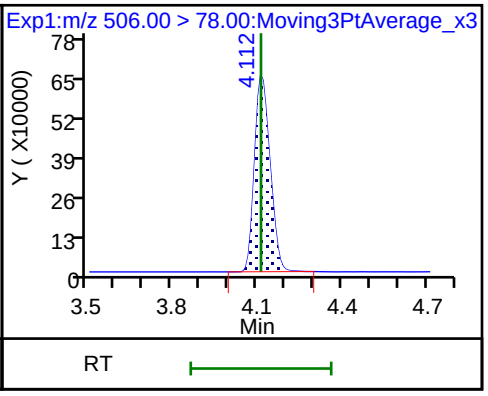
D 36 13C2 PFDA



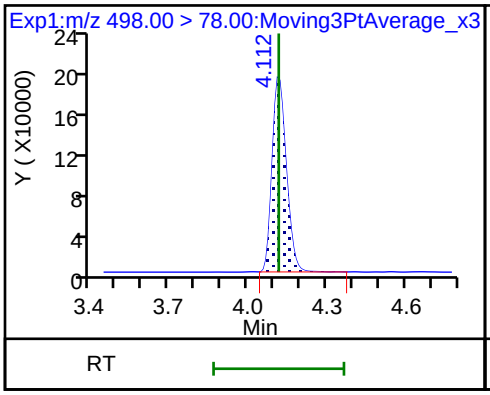
38 1H,1H,2H,2H-perfluorodecanesulfonic



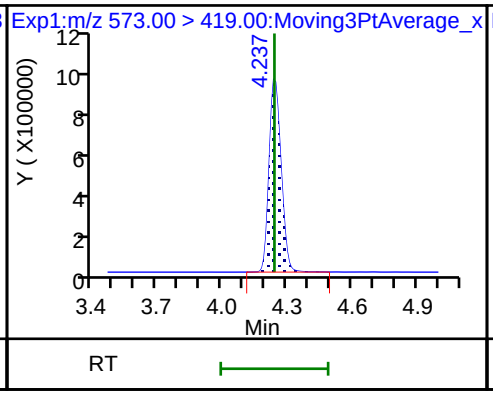
D 32 13C8 FOSA



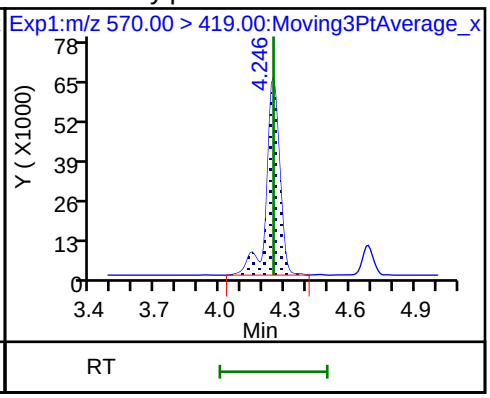
33 Perfluorooctanesulfonamide



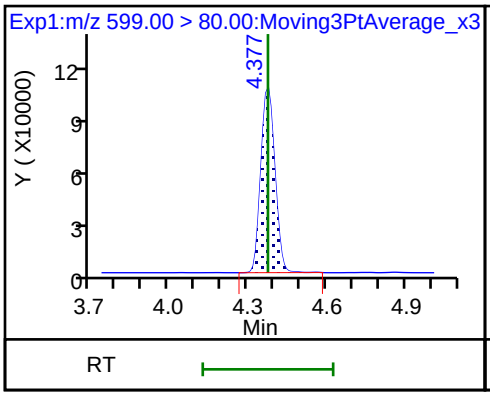
D 39 d3-NMeFOSAA



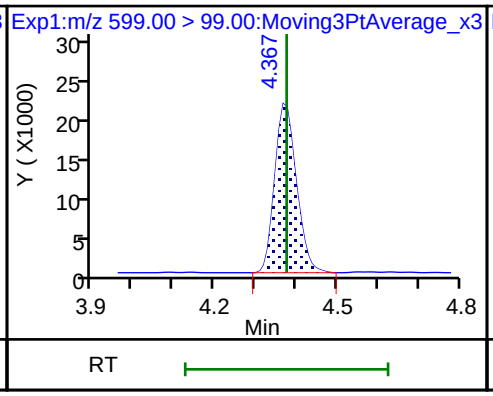
40 N-methylperfluorooctanesulfonamido



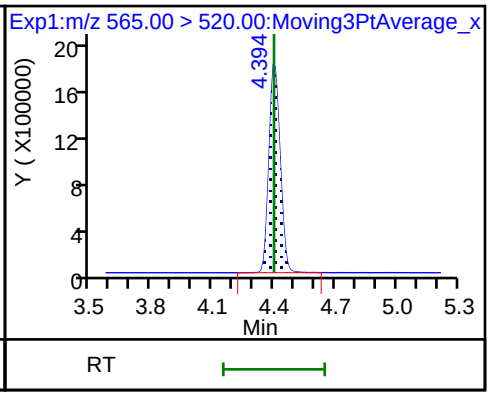
41 Perfluorodecanesulfonic acid



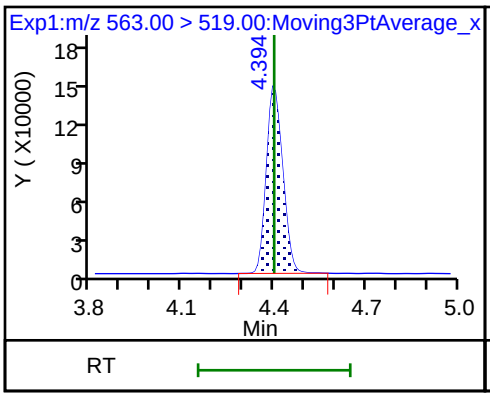
41 Perfluorodecanesulfonic acid



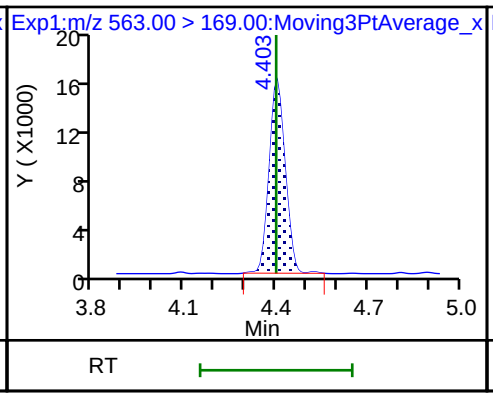
D 42 13C2 PFUnA



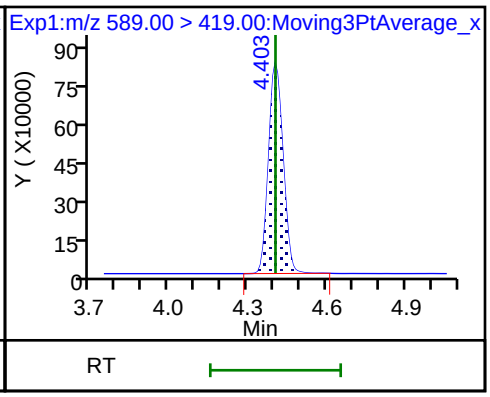
43 Perfluoroundecanoic acid



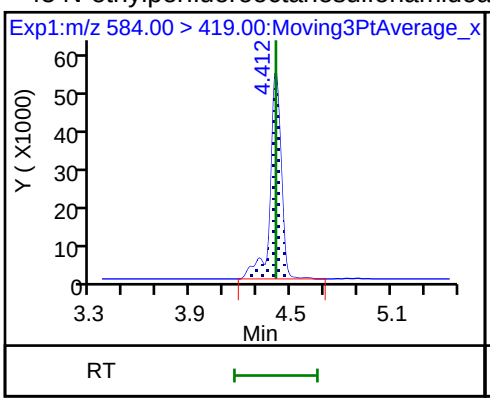
43 Perfluoroundecanoic acid



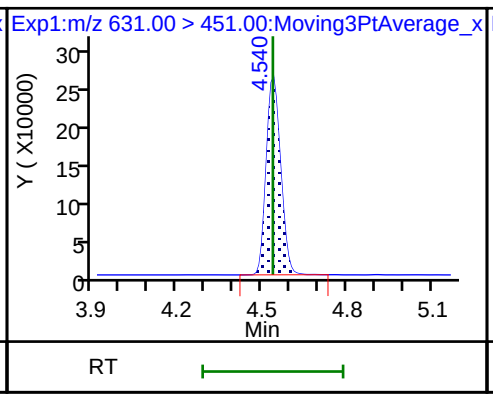
D 44 d5-NEtFOSAA



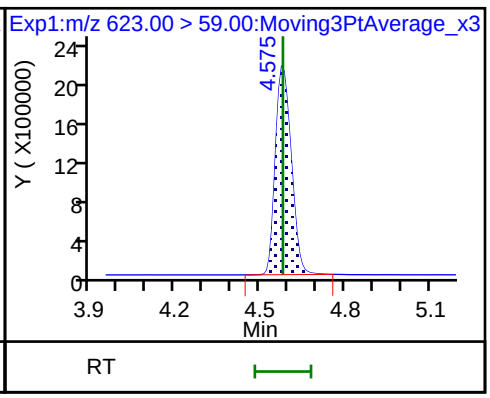
45 N-ethylperfluorooctanesulfonamidoa



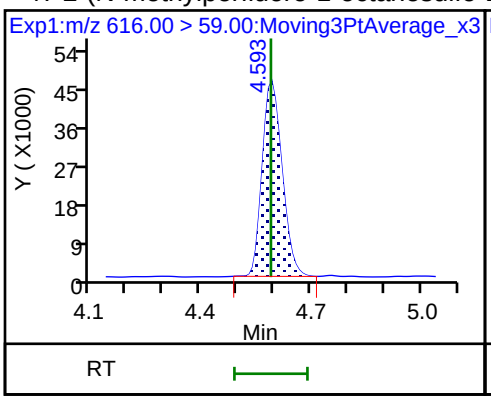
50 11-Chloroeicosafluoro-3-oxaundecan



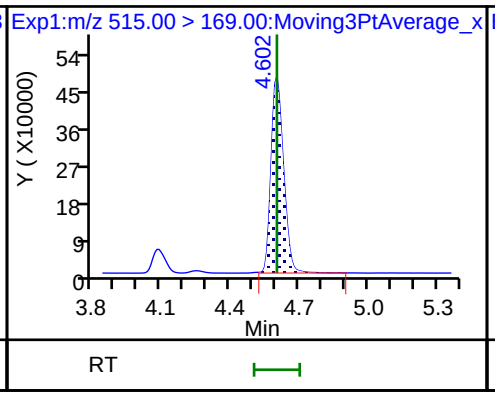
D 46 d7-N-MeFOSE-M



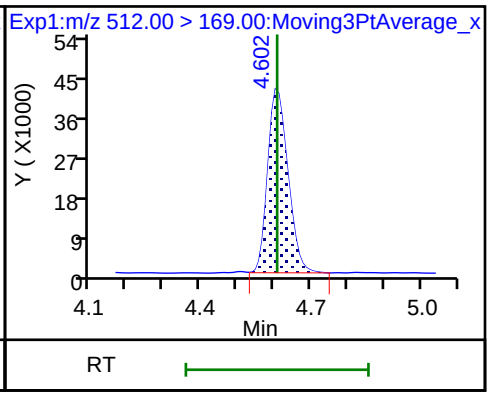
47 2-(N-methylperfluoro-1-octanesulfo



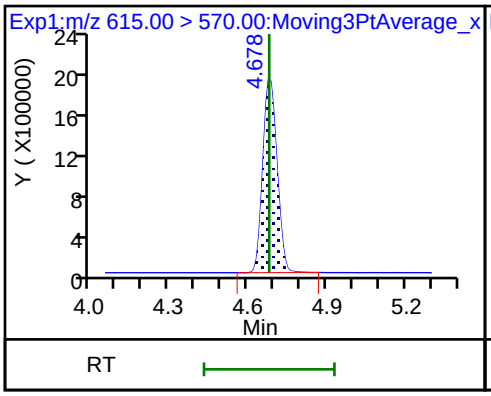
D 48 d-N-MeFOSA-M



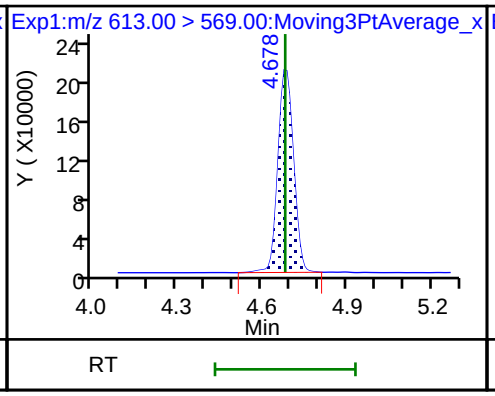
49 NMeFOSA



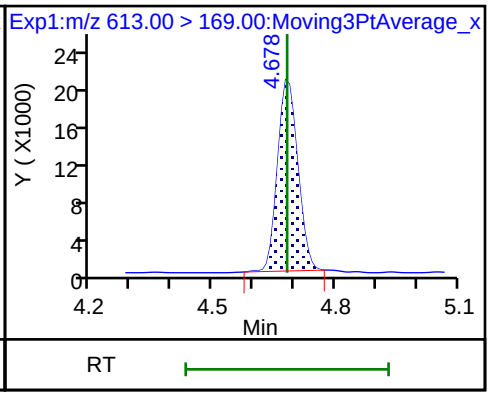
D 55 13C2 PFDoA



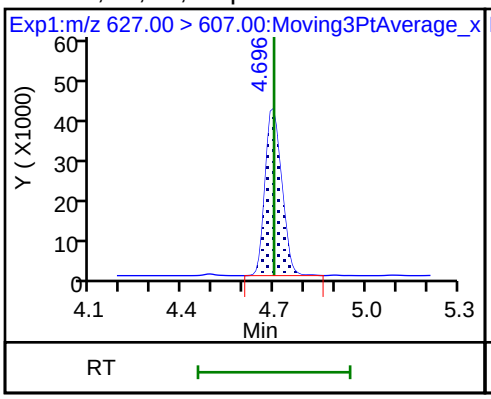
56 Perfluorododecanoic acid



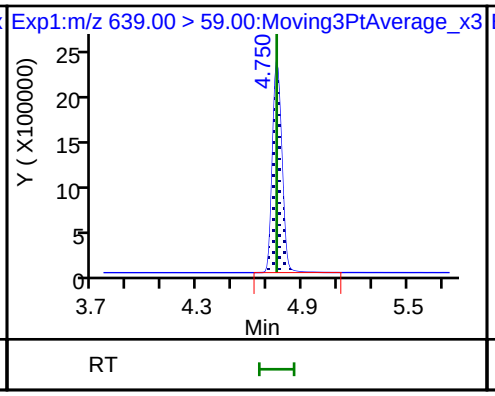
56 Perfluorododecanoic acid



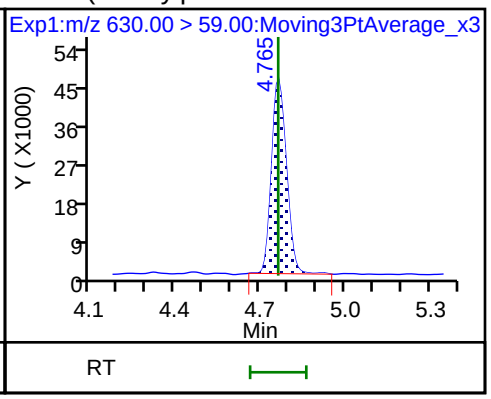
57 1H,1H,2H,2H-perfluorododecanesulfo



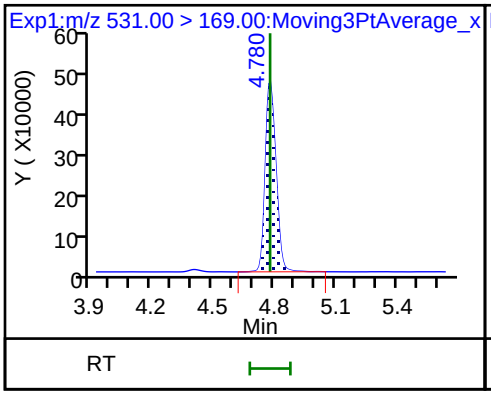
D 51 d9-N-EtFOSE-M



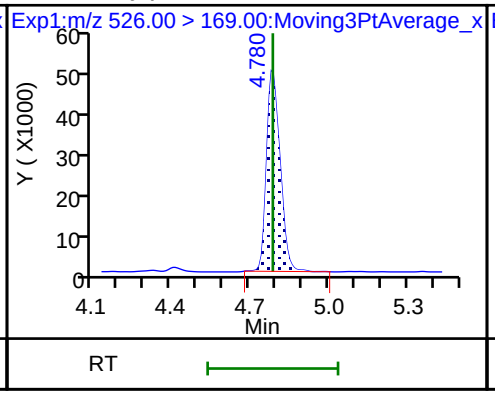
52 2-(N-ethylperfluoro-1-octanesulfon



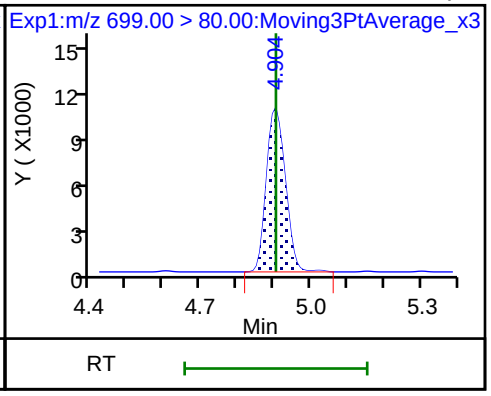
D 53 d-N-EtFOSA-M



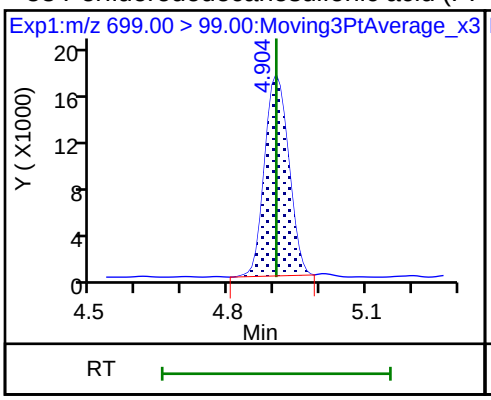
54 N-ethylperfluoro-1-octanesulfonami



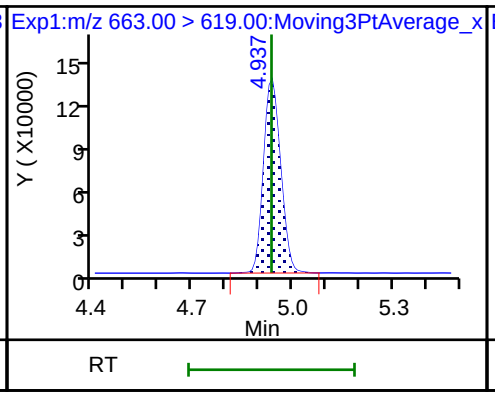
58 Perfluorododecanesulfonic acid (PF



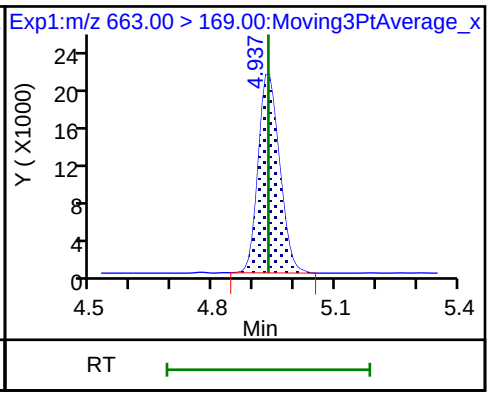
58 Perfluorododecanesulfonic acid (PF



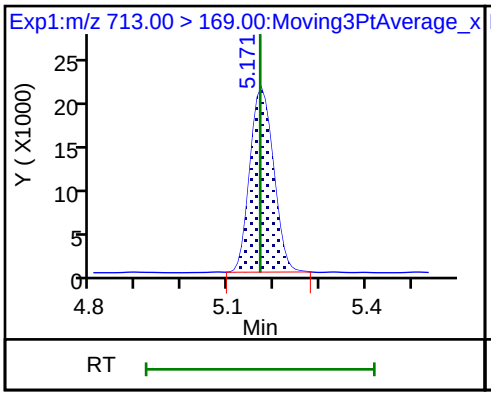
59 Perfluorotridecanoic acid



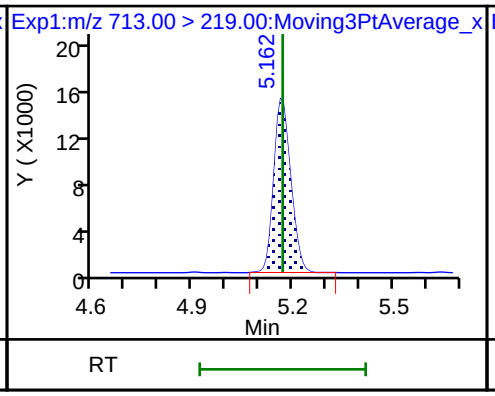
59 Perfluorotridecanoic acid



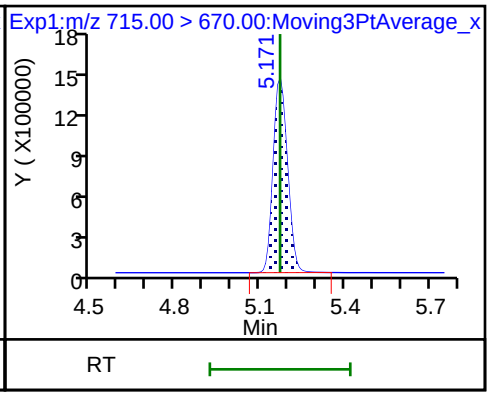
61 Perfluorotetradecanoic acid



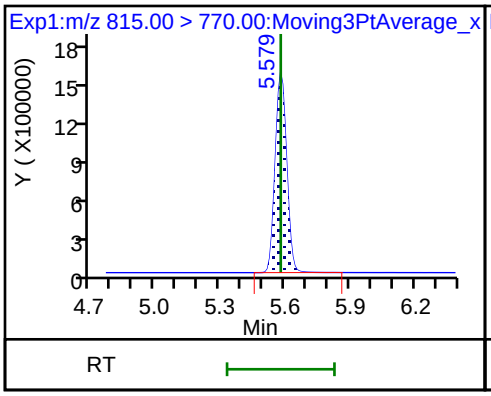
61 Perfluorotetradecanoic acid



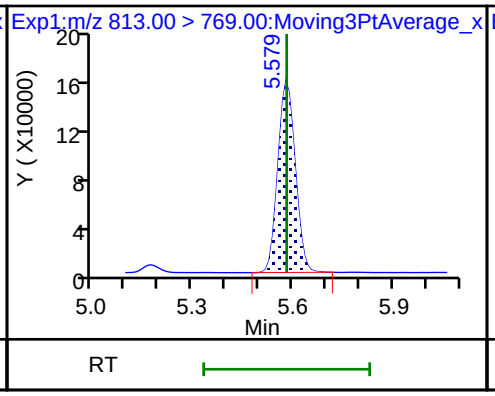
D 60 13C2 PFTeDA



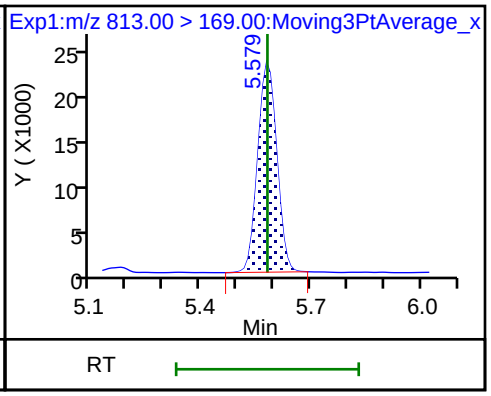
D 62 13C2 PFHxDA



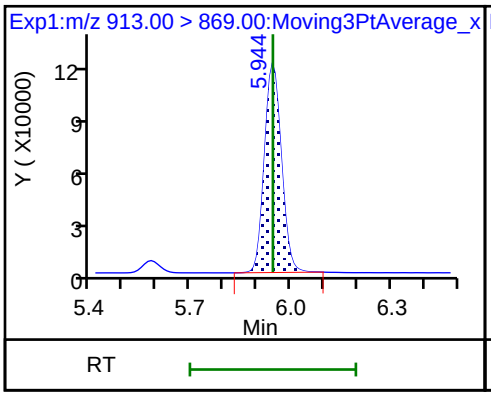
63 Perfluorohexadecanoic acid



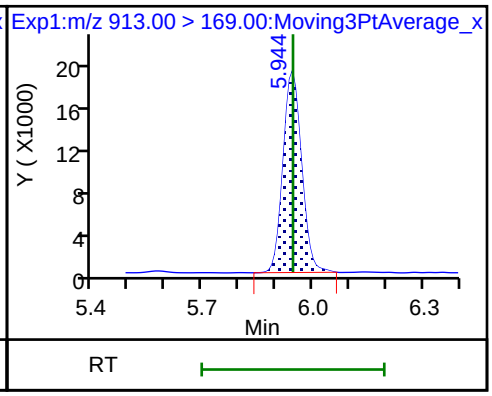
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

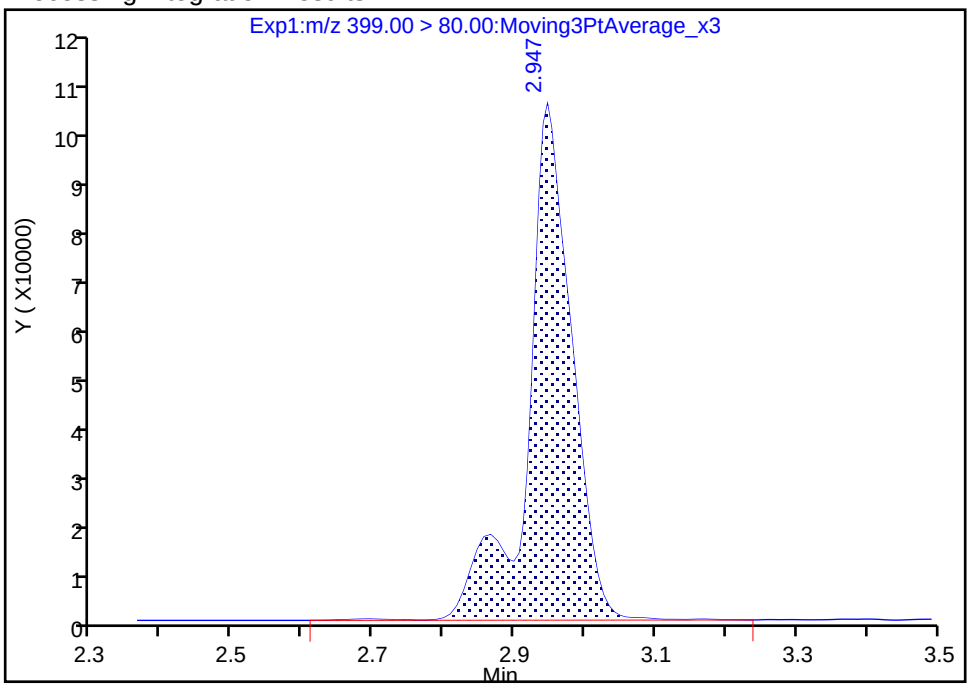
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_004.d				
Injection Date:	05-Oct-2019 18:23:02	Instrument ID:	A9		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

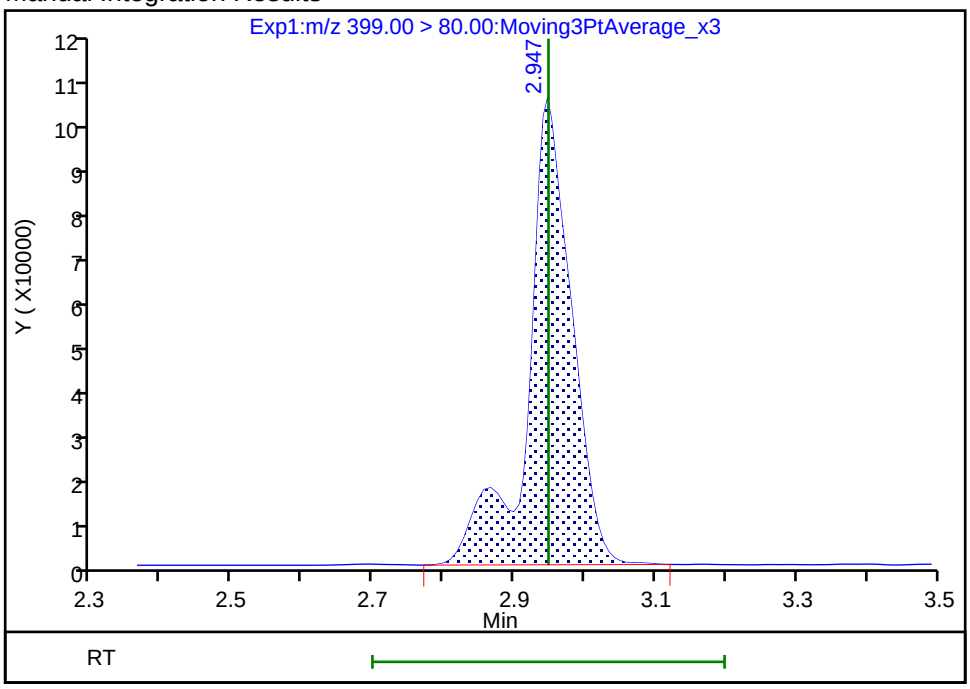
Processing Integration Results

RT: 2.95
Area: 450508
Amount: 0.215662
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 447681
Amount: 0.214620
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:28:34

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

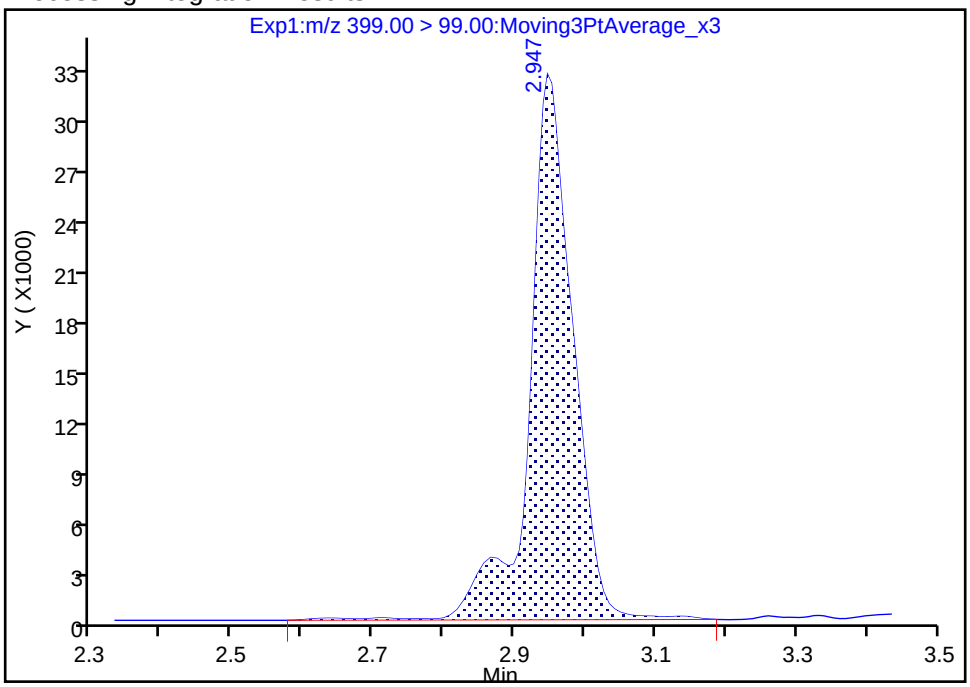
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_004.d
Injection Date: 05-Oct-2019 18:23:02 Instrument ID: A9
Lims ID: IC L3 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

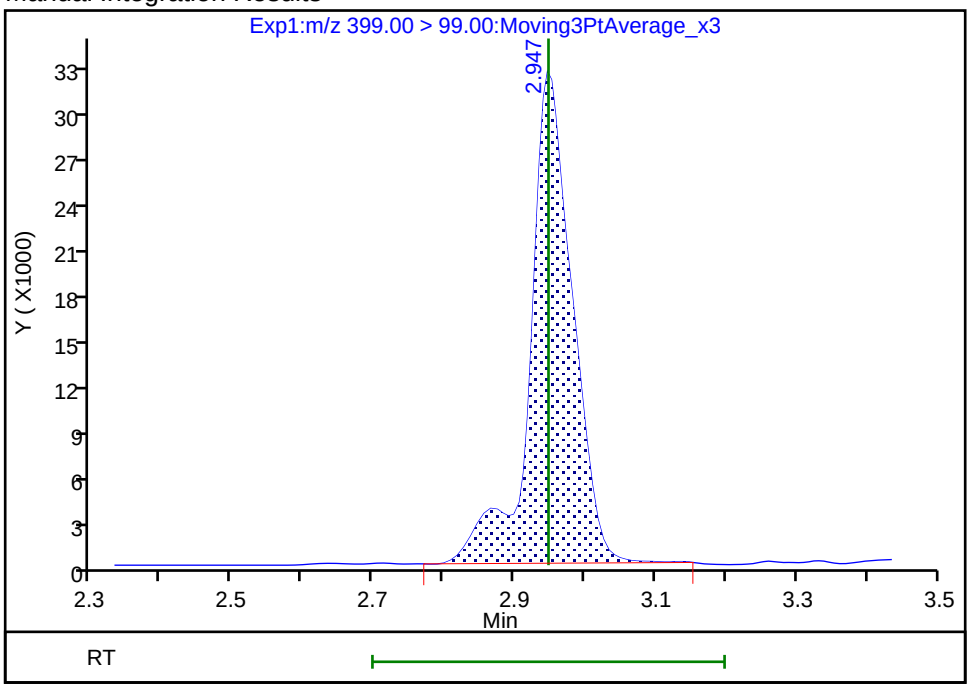
Processing Integration Results

RT: 2.95
Area: 140309
Amount: 0.215662
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 136963
Amount: 0.214620
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:28:39
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

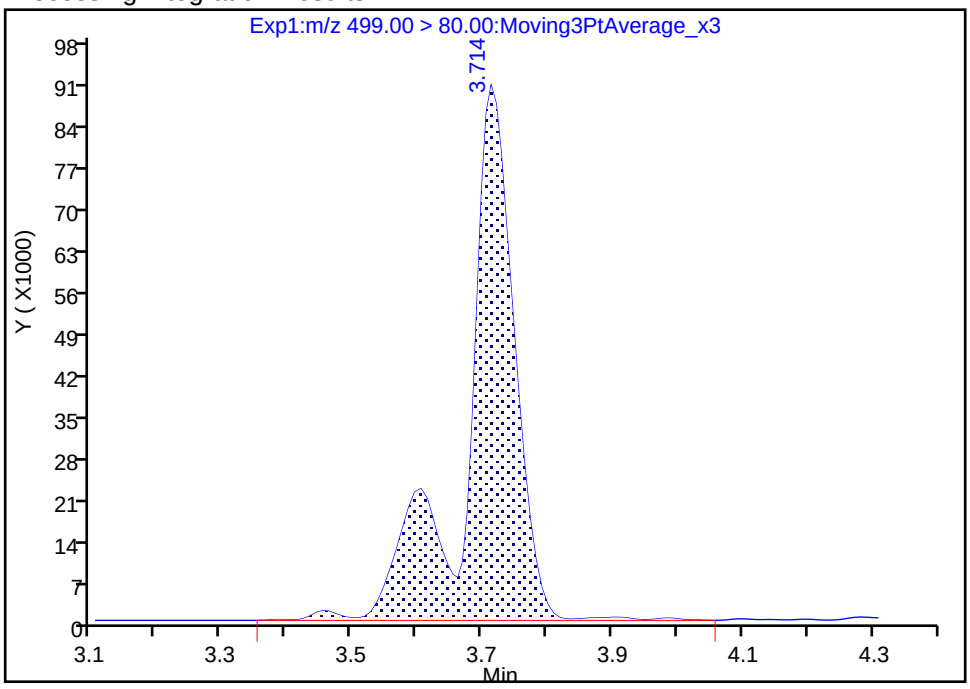
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_004.d				
Injection Date:	05-Oct-2019 18:23:02	Instrument ID:	A9		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

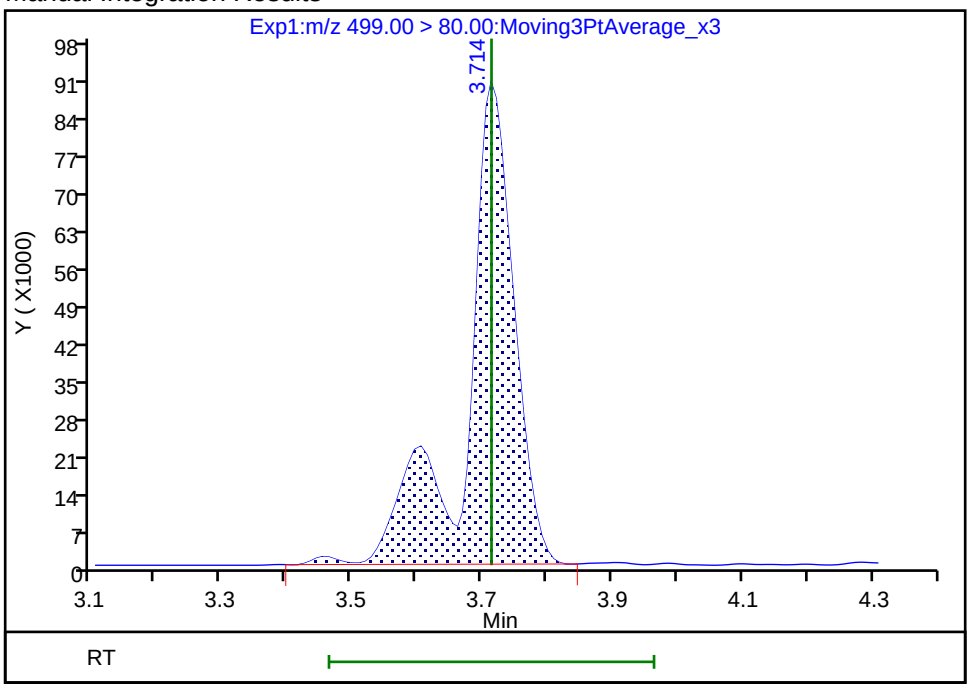
Processing Integration Results

RT: 3.71
Area: 474468
Amount: 0.216942
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 466112
Amount: 0.213746
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:28:51

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_005.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 05-Oct-2019 18:32:37 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:21:02 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:30:24
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.900	1.903	-0.003	0.569	6159803	2.51		101	5382	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.907	1.906	0.001	1.004	2154398	1.03		103	428	
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.660	4936369	2.41		96.3	3219	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.206	2.207	-0.001	1.000	2091694	1.03		103	573	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.232	2.236	-0.004	0.757	2684679	0.9042	Target=2.62	102	238	
298.90 > 99.00	2.232	2.236	-0.004	0.757	1000058		2.68(1.31-3.93)	102	178	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.519	-0.005	0.753	889687	2.27		97.4	1244	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.514	2.521	-0.007	1.000	928269	0.9505		102	3991	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.559	-0.002	0.766	5814847	2.46		98.5	3627	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.559	-0.002	1.000	2162469	1.00	Target=14.83	100	588	
313.00 > 119.00	2.557	2.559	-0.002	1.000	138678		15.59(7.41-22.24)	100	141	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.577	0.001	0.875	1411701	0.9085	Target=1.98	96.9	2302	
349.00 > 99.00	2.578	2.577	0.001	0.875	683702		2.06(0.99-2.97)	96.9	1738	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.686	0.0	1.000	620011	0.9717		97.2	627	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.804	1052710	2.56		102	2552	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.942	2.942	0.0	0.881	6786543	2.51		100	3854	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.942	2.944	-0.002	1.000	3062828	1.00	Target=4.24	100	959	
363.00 > 169.00	2.942	2.944	-0.002	1.000	698684		4.38(2.12-6.36)	100	658	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.947	0.0	0.882	4142437	2.39		101	5043	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.947	2.948	-0.001	1.000	1794895	0.8377	Target=3.27	92.1	3346	
399.00 > 99.00	2.947	2.948	-0.001	1.000	553848		3.24(1.64-4.91)	92.1	788	
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	5171965	1.01	Target=2.25	107	3169	
377.00 > 85.00	2.995	2.995	0.0	0.806	2225338		2.32(1.12-3.37)	107	3104	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.319	-0.001	0.994	915182	2.43		102	1850	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.320	-0.002	1.000	885204	0.9863		104	2124	
D 21 13C8 PFOA										
421.00 > 376.00	3.340	3.340	0.0	1.000	7384345	2.50		100	7112	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.340	3.340	0.0	0.899	1877737	0.9578	Target=3.58	101	2901	
449.00 > 99.00	3.340	3.340	0.0	0.899	490820		3.83(1.79-5.37)	101	643	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.341	-0.001	1.000	7724289	2.48		99.2	4108	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.342	-0.002		8309710	2.50			3869	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.344	-0.004	1.000	3343818	0.9572	Target=2.79	95.7	867	
413.00 > 169.00	3.340	3.344	-0.004	1.000	1083512		3.09(1.40-4.19)	95.7	1247	
D 26 13C8 PFOS										
507.00 > 99.00	3.708	3.710	-0.002	1.110	1088042	2.48		99.3	1668	
D 27 13C4 PFOS										
503.00 > 80.00	3.715	3.714	0.001	1.112	4737178	2.35		98.4	3226	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.715	3.714	0.001	1.000	1835006	0.8624	Target=3.83	92.9	1379	
499.00 > 99.00	3.715	3.714	0.001	1.000	467605		3.92(1.92-5.75)	92.9	715	
D 30 13C5 PFNA										
468.00 > 423.00	3.723	3.728	-0.005	1.115	6903599	2.49		99.6	3636	
29 Perfluorononanoic acid										
463.00 > 419.00	3.723	3.729	-0.006	1.000	2935957	1.03	Target=5.58	103	1986	
463.00 > 169.00	3.723	3.729	-0.006	1.000	518775		5.66(2.79-8.37)	103	690	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.922	3.922	0.0	1.056	1280556	0.9122		97.9	2078	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.052	4.057	-0.005	1.091	1166323	0.9659	Target=4.51	101	2280	
549.00 > 99.00	4.052	4.057	-0.005	1.091	274246		4.25(2.25-6.76)	101	1004	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.079	4.084	-0.005	1.000	3094766	1.05	Target=15.45	105	2059	
513.00 > 169.00	4.079	4.084	-0.005	1.000	187961		16.46(7.73-23.18)	105	277	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.079	4.084	-0.005	1.221	841467	2.37		99.1	1259	
D 36 13C2 PFDA										
515.00 > 470.00	4.079	4.084	-0.005	1.221	7785477	2.49		99.5	3485	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.079	4.084	-0.005	1.000	786829	1.01		106	1436	
D 32 13C8 FOSA										
506.00 > 78.00	4.114	4.113	0.001	1.232	2558734	2.46		98.5	2259	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.114	4.117	-0.003	1.000	2919040	1.04		104	2006	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.240	4.241	-0.001	1.270	3869718	2.62		105	3518	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.240	4.246	-0.006	1.000	1227876	0.9686		96.9	200	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.369	4.375	-0.006	1.176	1638871	1.02	Target=4.64	105	1992	
599.00 > 99.00	4.369	4.375	-0.006	1.176	345076		4.75(2.32-6.96)	105	916	
D 42 13C2 PFUnA										
565.00 > 520.00	4.397	4.398	-0.001	1.317	6844959	2.56		103	3458	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.397	4.399	-0.002	1.000	2089872	0.9703	Target=9.27	97.0	2961	
563.00 > 169.00	4.397	4.399	-0.002	1.000	203050		10.29(4.63-13.90)	97.0	1200	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.406	4.404	0.002	1.319	3260359	2.57		103	3436	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.406	4.409	-0.003	1.000	1043417	1.00		100	2050	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.534	4.537	-0.003	1.220	3717997	1.00		106	4636	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.579	4.580	-0.001		8460401	12.4		99.6	2421	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.587	4.590	-0.003	1.002	691224	0.9802		98.0	1258	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.596	4.602	-0.006		1849318	2.49		99.7	284	
49 NMeFOSA										
512.00 > 169.00	4.606	4.607	-0.001	1.002	625224	0.9690		96.9	911	
D 55 13C2 PFDoA										
615.00 > 570.00	4.681	4.680	0.001	1.402	7112308	2.42		96.8	4086	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.681	4.681	0.0	1.000	3202560	1.09	Target=9.58	109	3799	
613.00 > 169.00	4.681	4.681	0.0	1.000	318605		10.05(4.79-14.36)	109	930	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.700	4.699	0.001	1.152	604969	1.01		105	1449	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.753	4.752	0.001		8788670	12.4		99.4	4479	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.761	4.763	-0.002	1.002	722880	0.9754		97.5	434	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.776	4.779	-0.003		1733757	2.42		97.0	1485	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.784	4.786	-0.002	1.002	731377	1.05		105	747	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.907	4.904	0.003	1.321	167885	1.01	Target=0.64	105	829	
699.00 > 99.00	4.898	4.904	-0.006	1.318	248340		0.68(0.32-0.96)	105	1334	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.932	4.935	-0.003	1.054	1888160	1.03	Target=5.94	103	3659	
663.00 > 169.00	4.932	4.935	-0.003	1.054	330856		5.71(2.97-8.91)	103	1568	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.166	5.169	-0.003	1.000	271624	0.9074	Target=1.42	90.7	1178	
713.00 > 219.00	5.166	5.169	-0.003	1.000	198842		1.37(0.71-2.13)	90.7	1037	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.166	5.170	-0.004	1.547	5296810	2.54		102	5009	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.575	5.579	-0.004	1.669	5734303	2.50		100	7530	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.584	5.581	0.003	1.002	2104225	1.03	Target=6.39	103	1642	
813.00 > 169.00	5.575	5.581	-0.006	1.000	310141		6.78(3.19-9.58)	103	1501	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.948	5.945	0.003	1.067	1610096	0.9730	Target=6.02	97.3	1426	
913.00 > 169.00	5.940	5.945	-0.005	1.066	272557		5.91(3.01-9.03)	97.3	1572	

Reagents:

LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:21:03 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_005.d

Injection Date: 05-Oct-2019 18:32:37 Instrument ID: A9

Lims ID: IC L4 Full

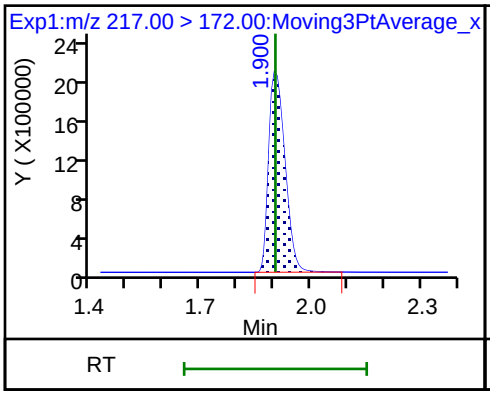
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 5

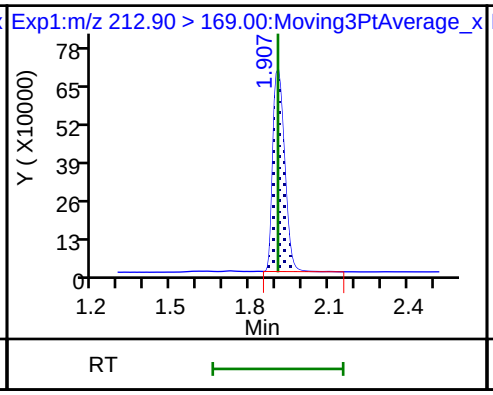
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

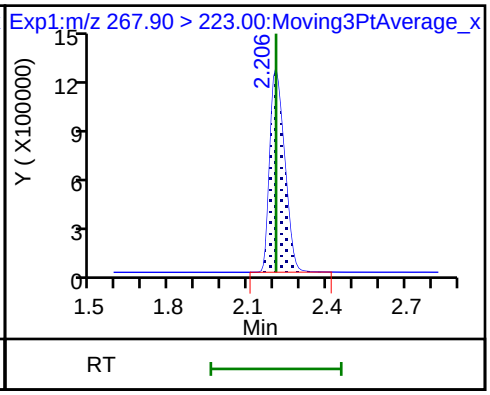
D 1 13C4 PFBA



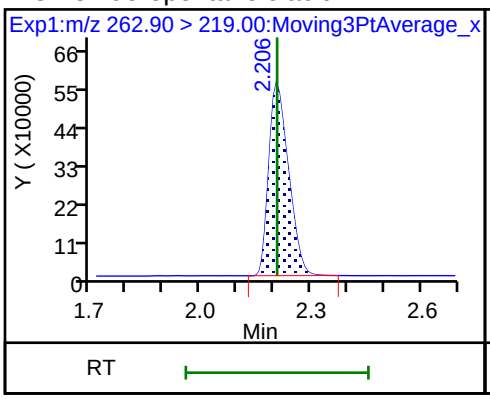
2 Perfluorobutanoic acid



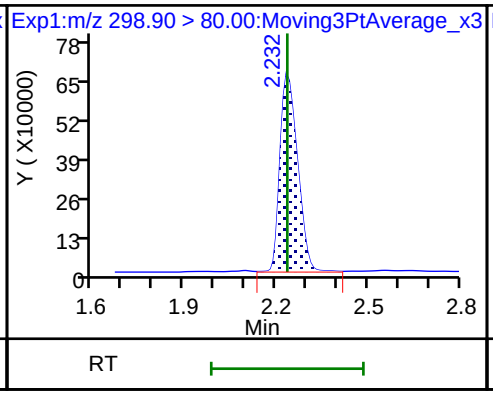
D 4 13C5 PFPeA



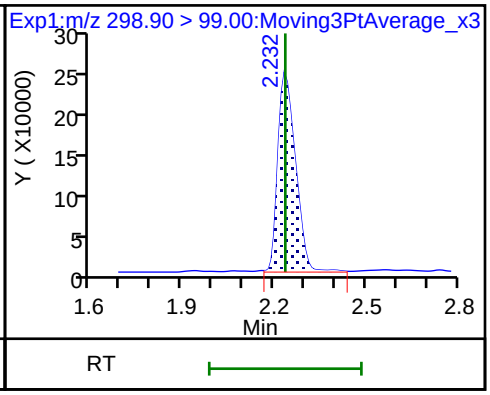
3 Perfluoropentanoic acid



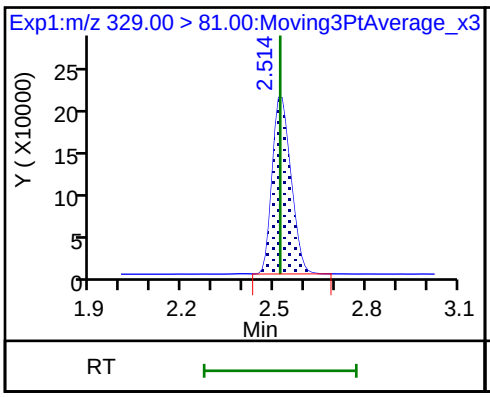
5 Perfluorobutanesulfonic acid



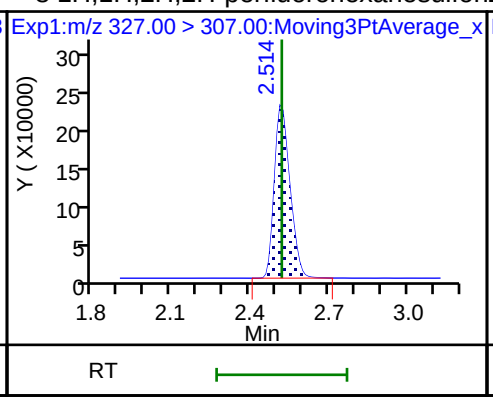
5 Perfluorobutanesulfonic acid



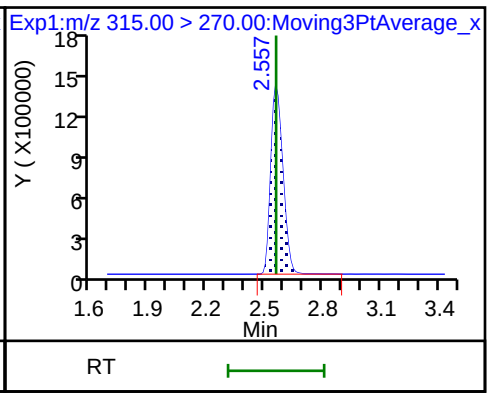
D 7 M2-4:2 FTS



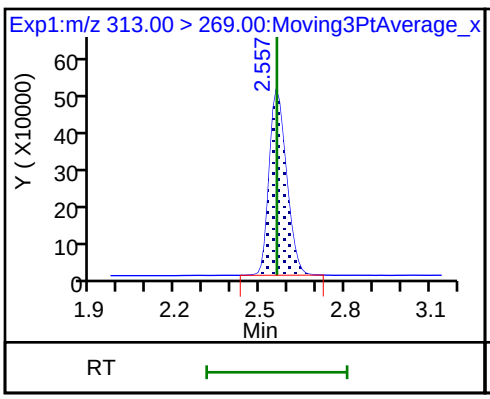
8 1H,1H,2H,2H-perfluorohexanesulfon



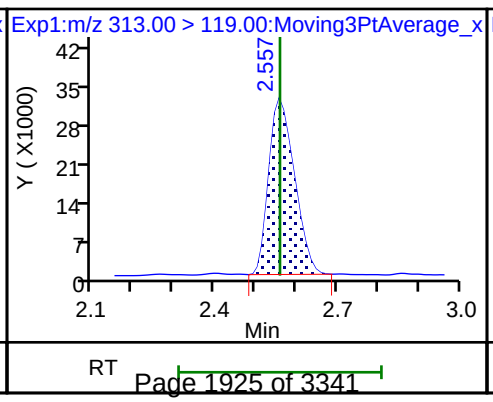
D 9 13C2 PFHxA



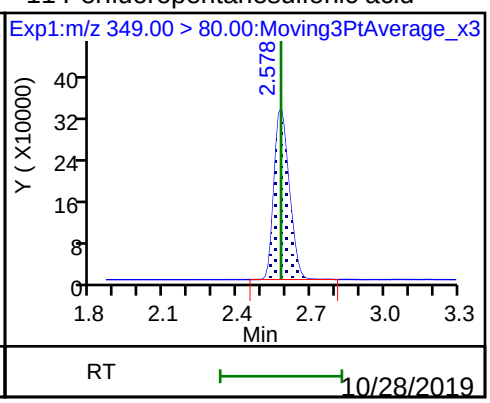
10 Perfluorohexanoic acid



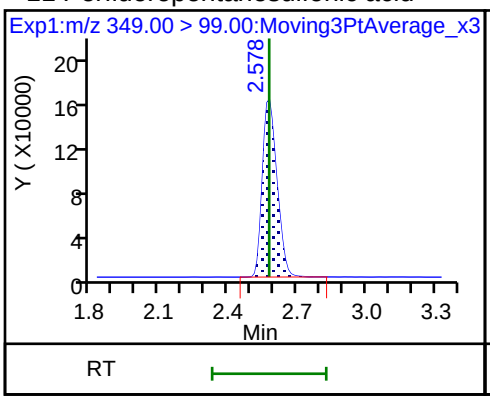
10 Perfluorohexanoic acid



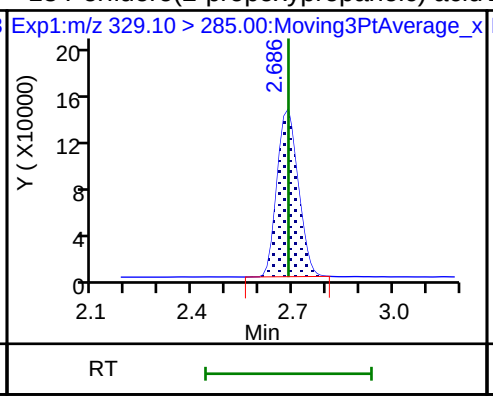
11 Perfluoropentanesulfonic acid



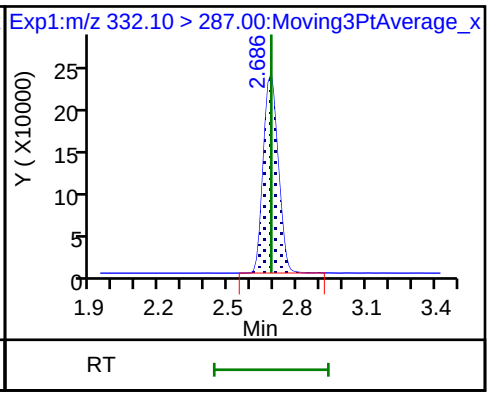
11 Perfluoropentanesulfonic acid



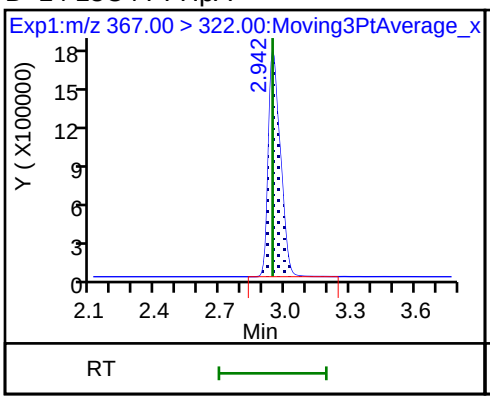
13 Perfluoro(2-propoxypropanoic) acid



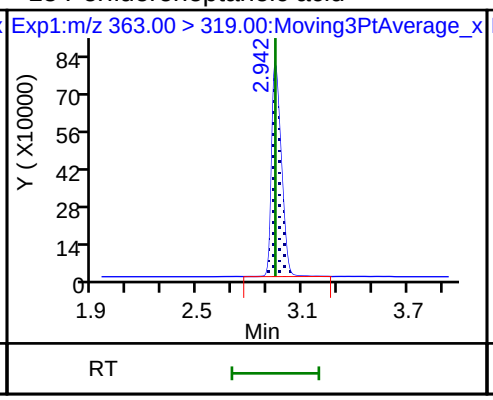
D 12 13C3 HFPO-DA



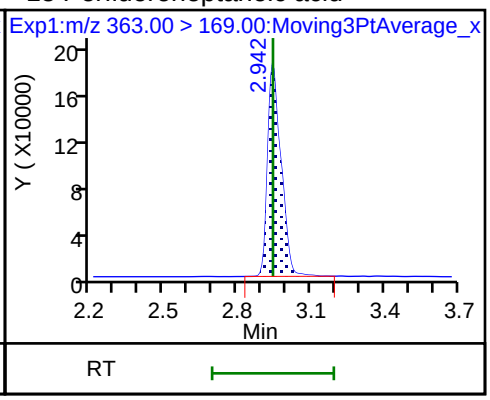
D 14 13C4 PFHpA



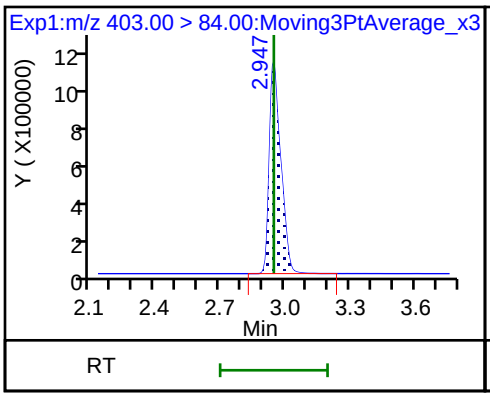
15 Perfluoroheptanoic acid



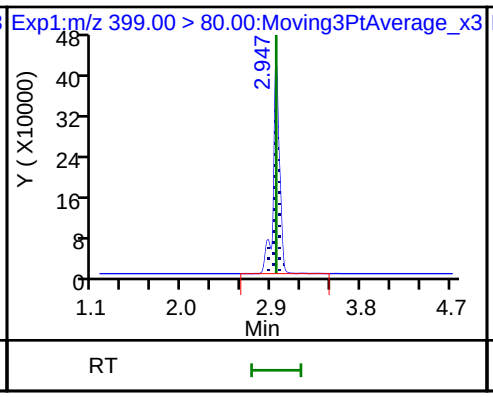
15 Perfluoroheptanoic acid



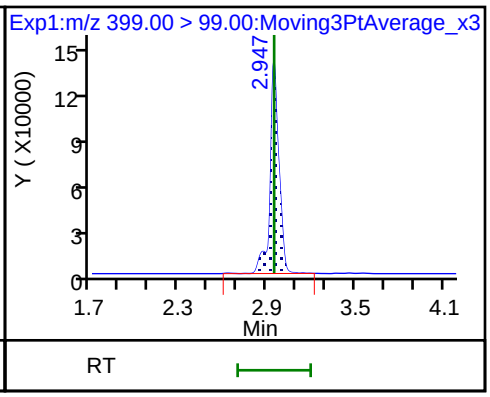
D 16 18O2 PFHxS



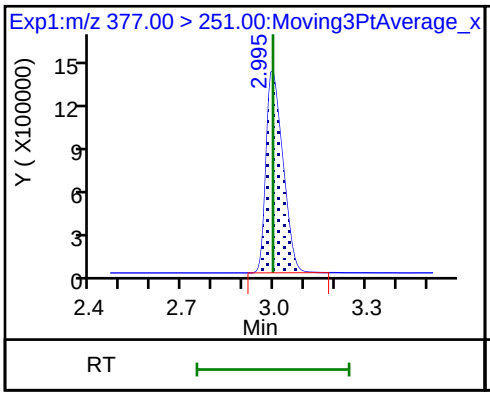
17 Perfluorohexanesulfonic acid



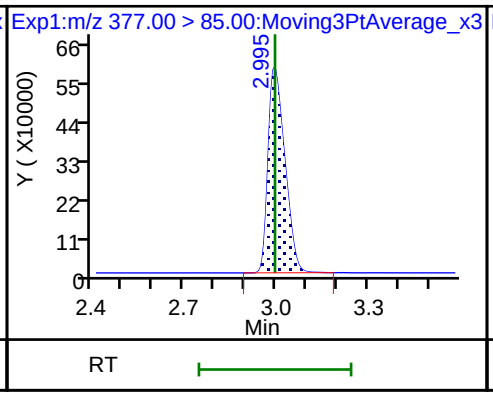
17 Perfluorohexanesulfonic acid



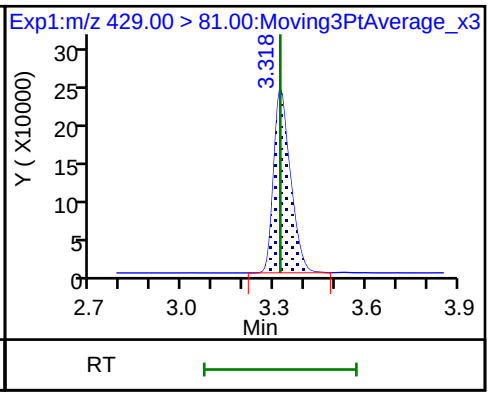
18 DONA



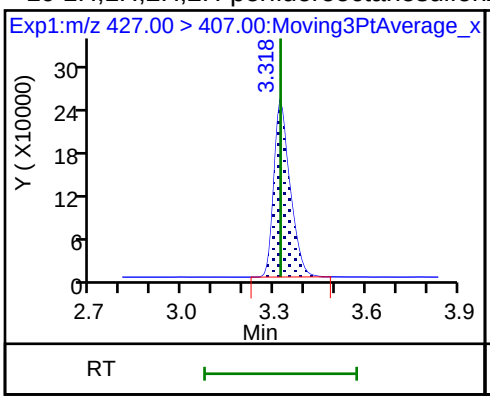
18 DONA



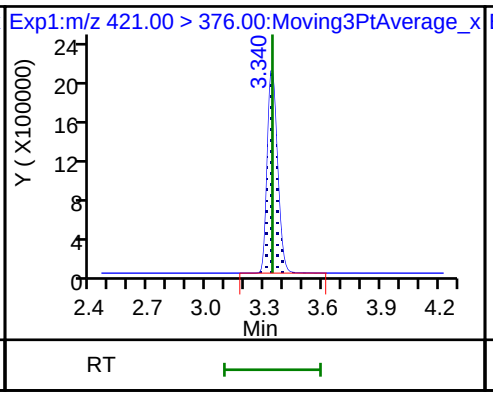
D 20 M2-6:2 FTS



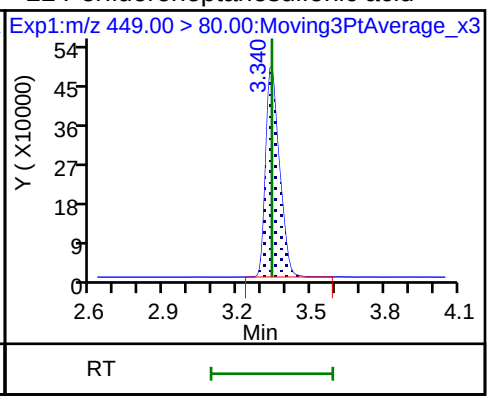
19 1H,1H,2H,2H-perfluorooctanesulfon



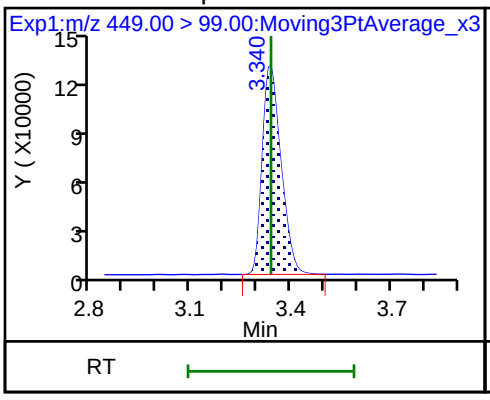
D 21 13C8 PFOA



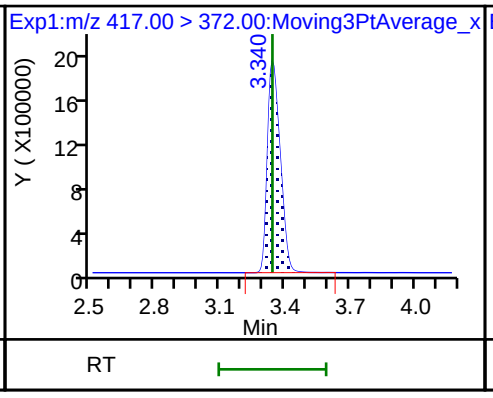
22 Perfluoroheptanesulfonic acid



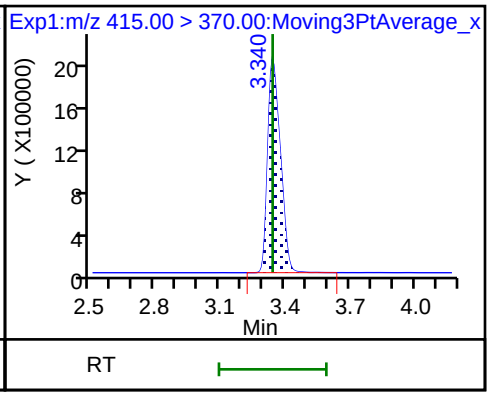
22 Perfluoroheptanesulfonic acid



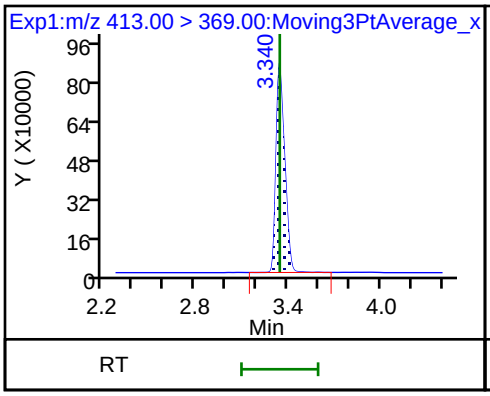
D 23 13C4 PFOA



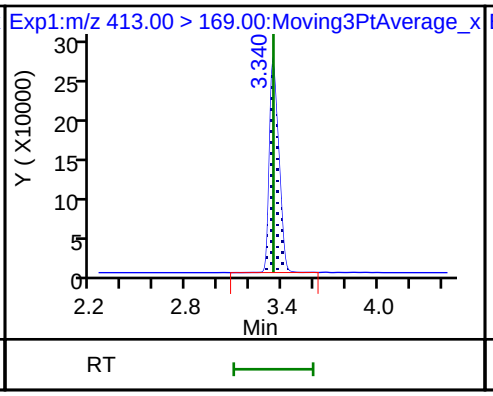
* 25 13C2 PFOA



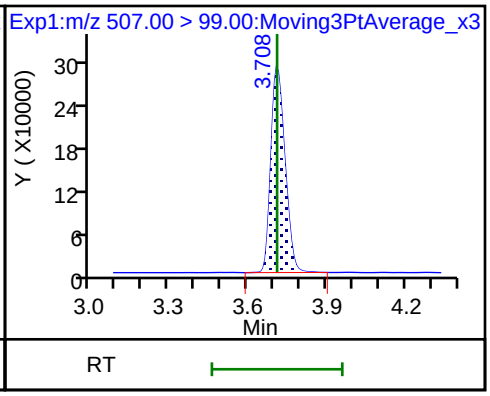
24 Perfluorooctanoic acid



24 Perfluorooctanoic acid



D 26 13C8 PFOS



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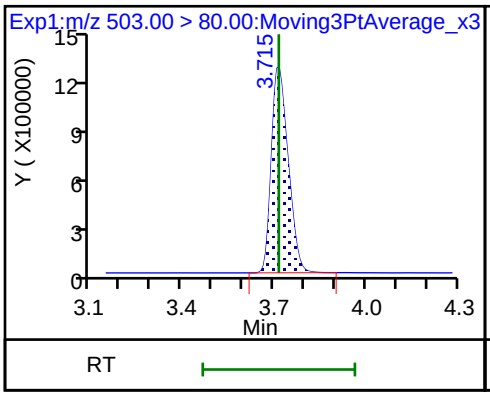
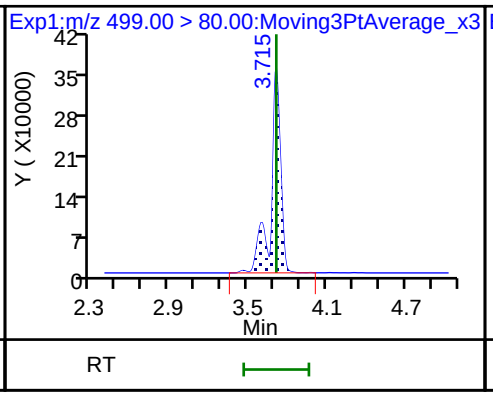
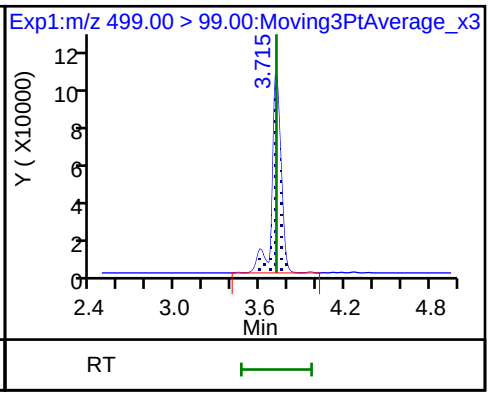


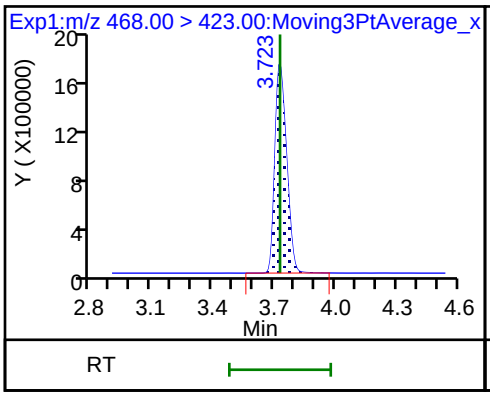
28 Perfluorooctanesulfonic acid



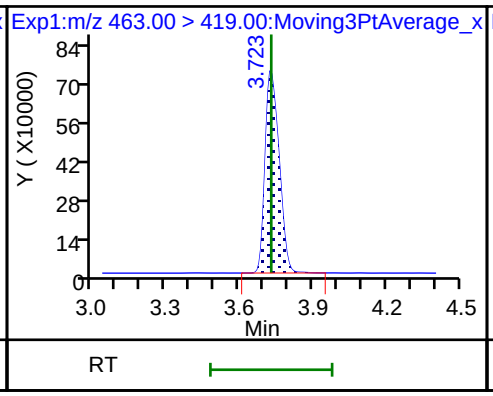
28 Perfluorooctanesulfonic acid



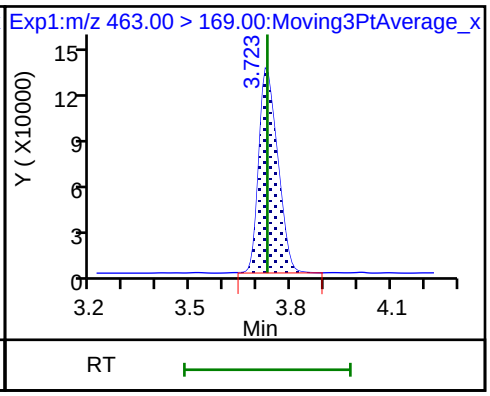
D 30 13C5 PFNA



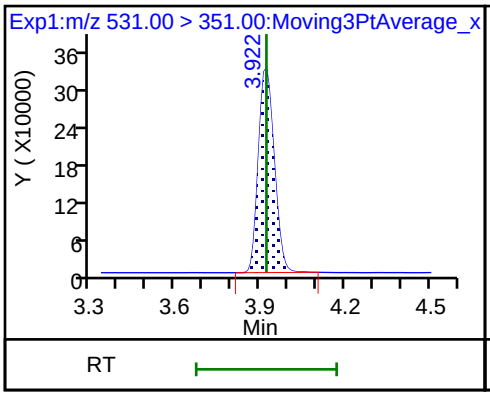
29 Perfluorononanoic acid



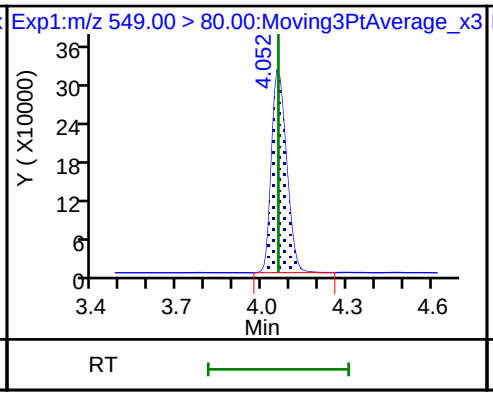
29 Perfluorononanoic acid



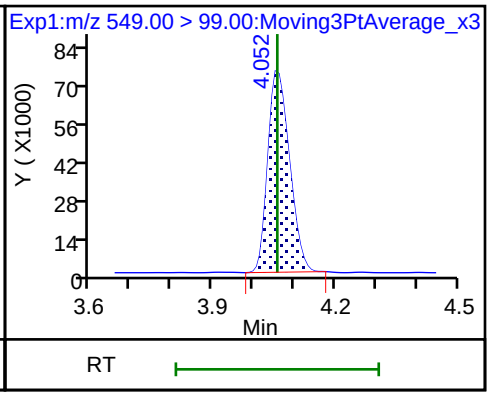
31 9-Chlorohexadecafluoro-3-oxanonane



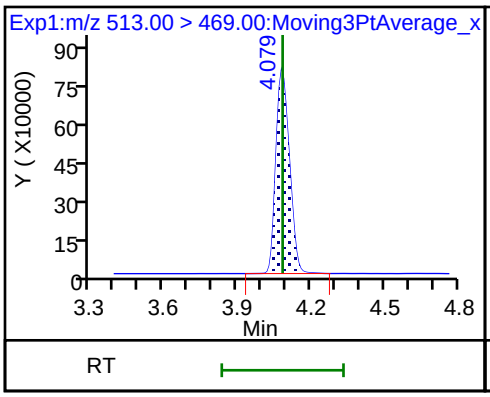
34 Perfluorononanesulfonic acid



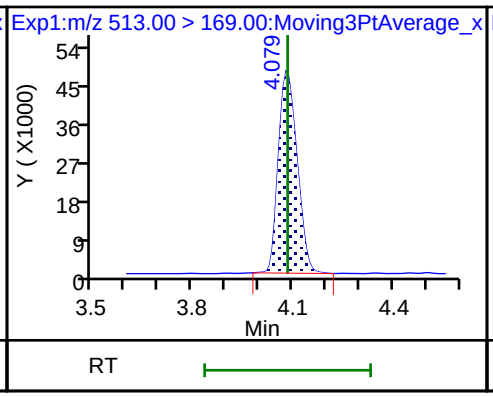
34 Perfluorononanesulfonic acid



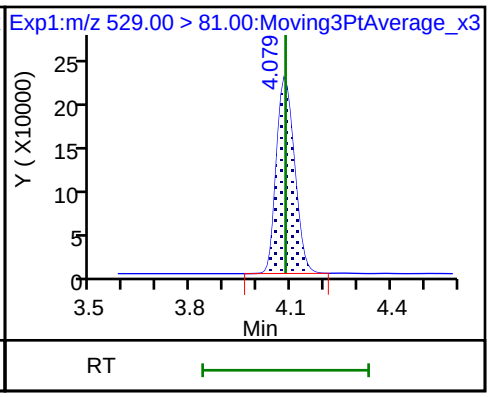
37 Perfluorodecanoic acid



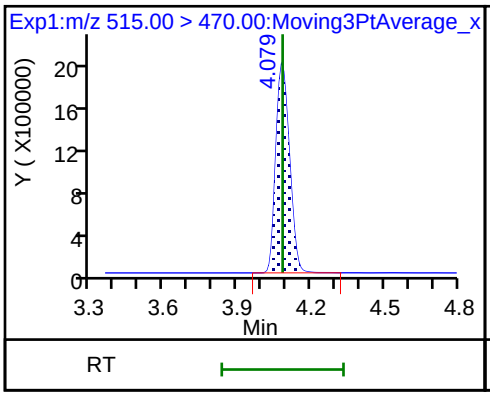
37 Perfluorodecanoic acid



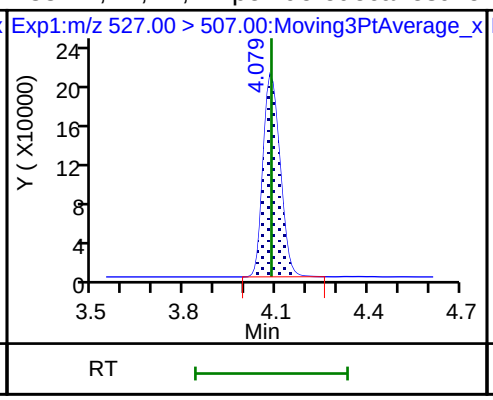
D 35 M2-8:2 FTS



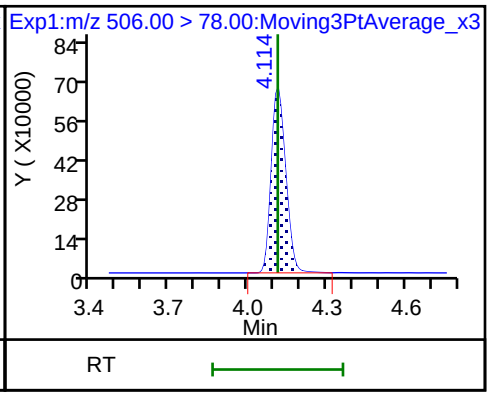
D 36 13C2 PFDA



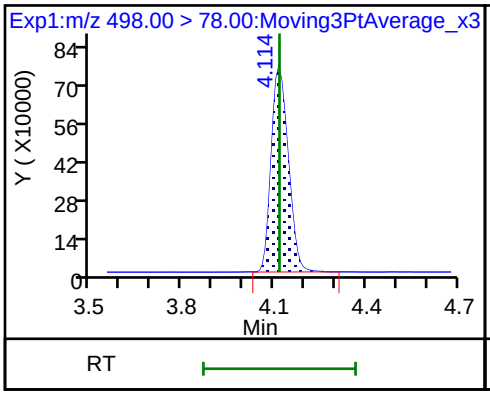
38 1H,1H,2H,2H-perfluorodecanesulfonic



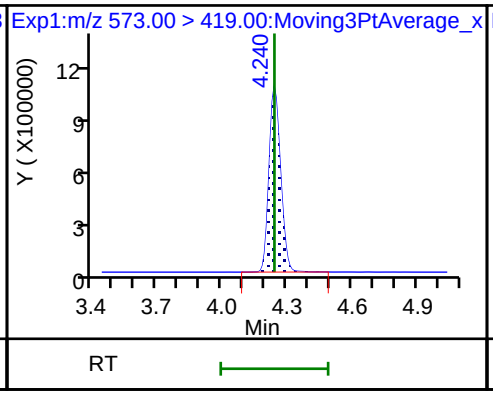
D 32 13C8 FOSA



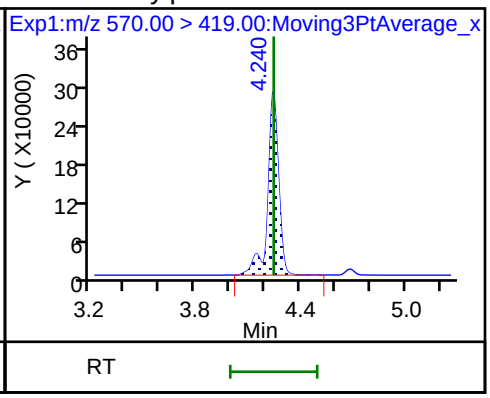
33 Perfluorooctanesulfonamide



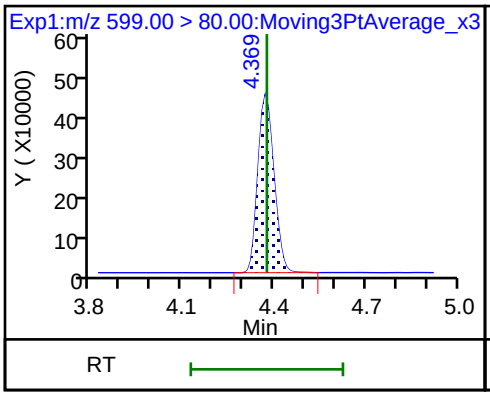
D 39 d3-NMeFOSAA



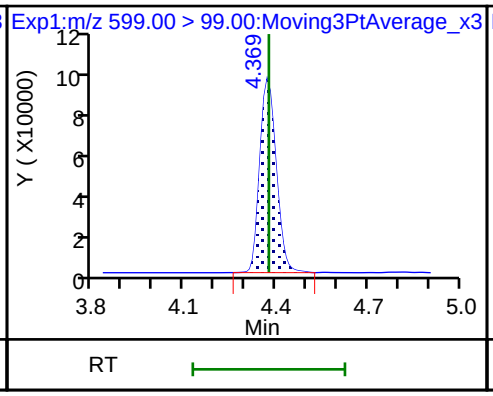
40 N-methylperfluorooctanesulfonamido



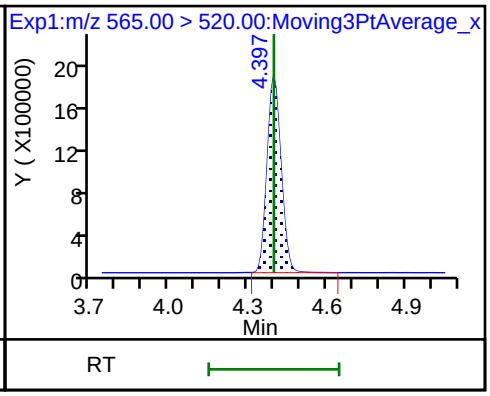
41 Perfluorodecanesulfonic acid



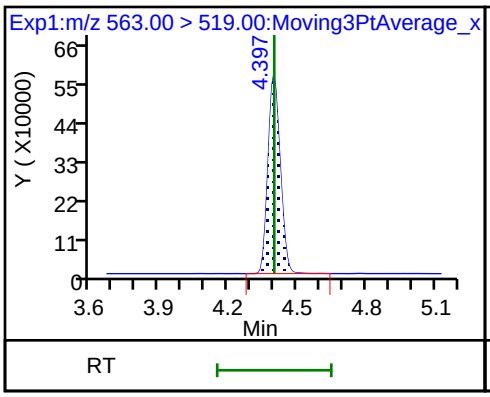
41 Perfluorodecanesulfonic acid



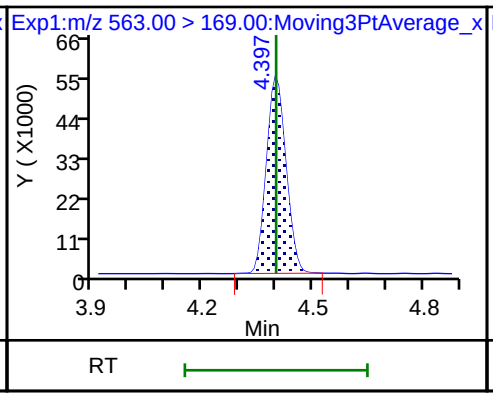
D 42 13C2 PFUnA



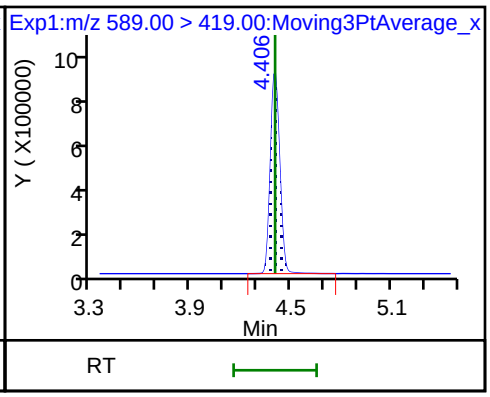
43 Perfluoroundecanoic acid



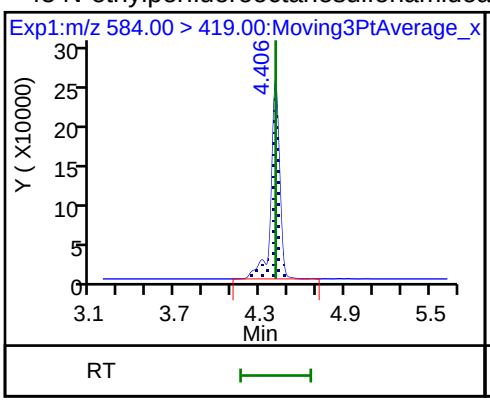
43 Perfluoroundecanoic acid



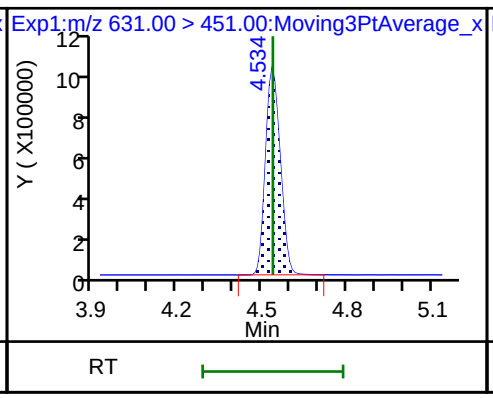
D 44 d5-NEtFOSAA



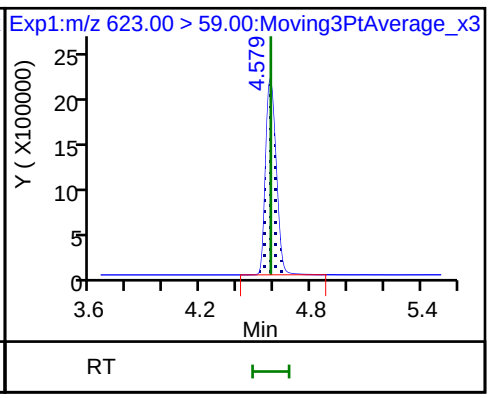
45 N-ethylperfluorooctanesulfonamidoa



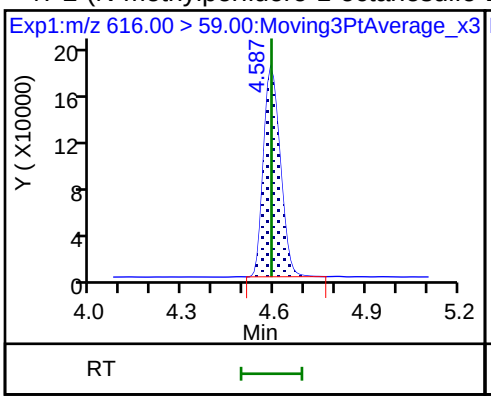
50 11-Chloroeicosafluoro-3-oxaundecan



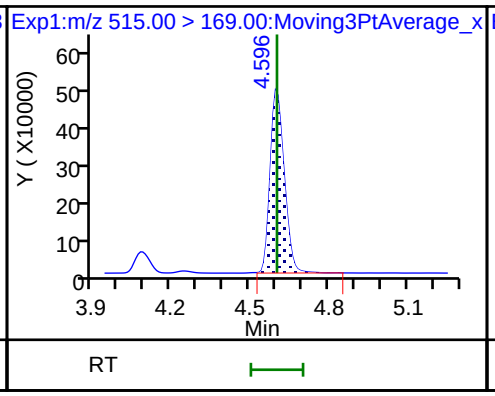
D 46 d7-N-MeFOSE-M



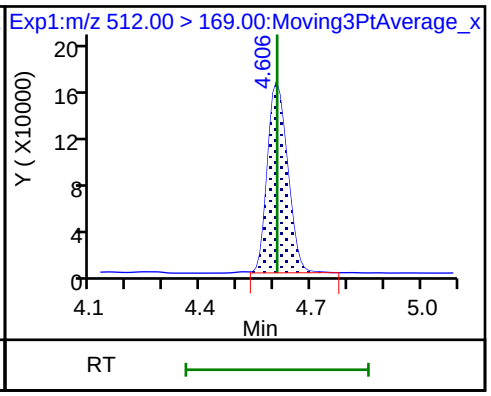
47 2-(N-methylperfluoro-1-octanesulfo



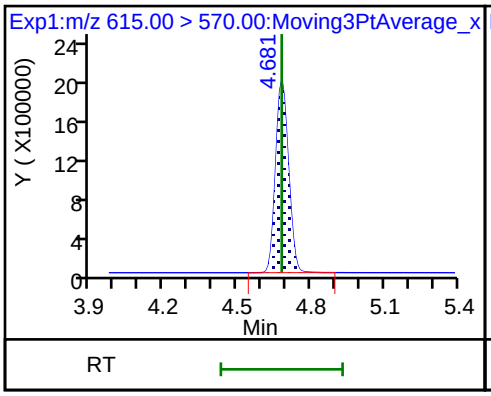
D 48 d-N-MeFOSA-M



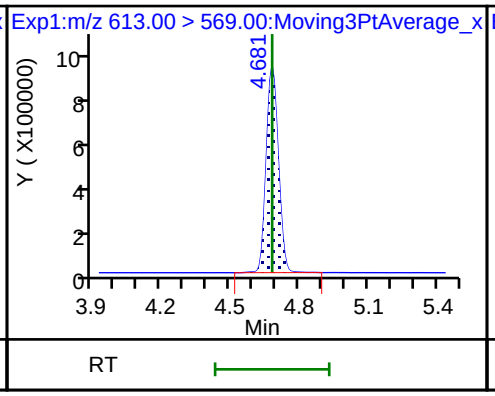
49 NMeFOSA



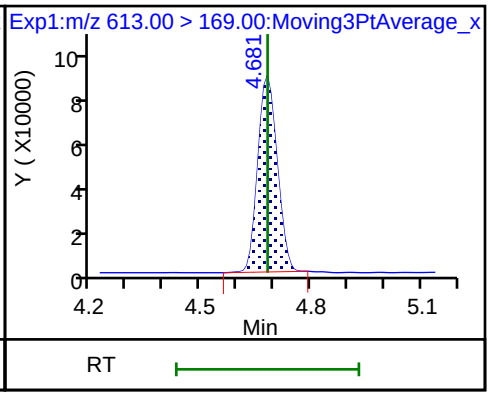
D 55 13C2 PFDoA



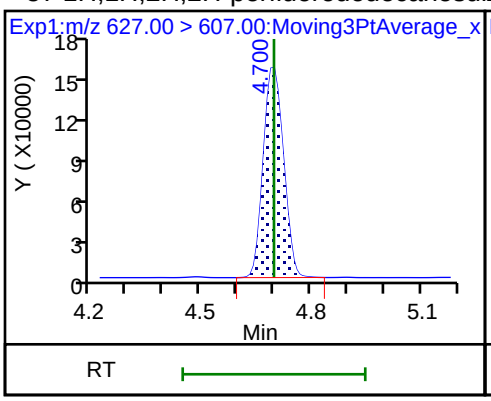
56 Perfluorododecanoic acid



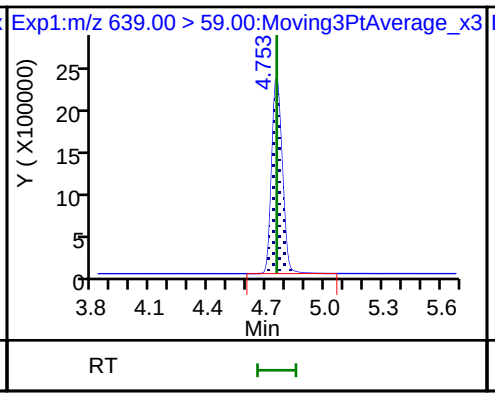
56 Perfluorododecanoic acid



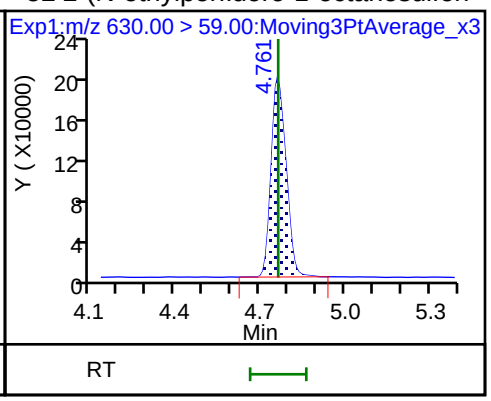
57 1H,1H,2H,2H-perfluorododecanesulfo



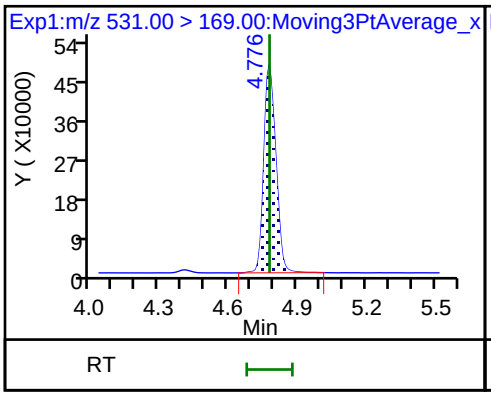
D 51 d9-N-EtFOSE-M



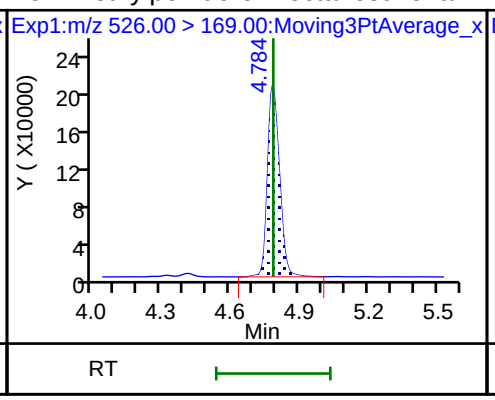
52 2-(N-ethylperfluoro-1-octanesulfon



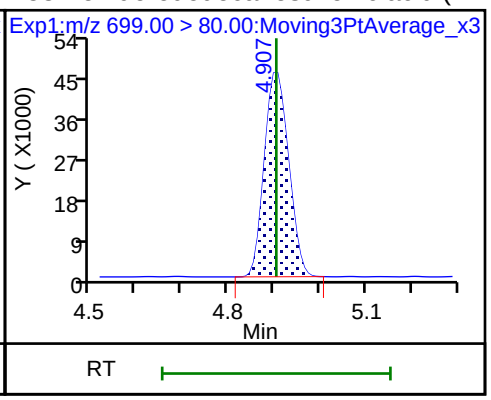
D 53 d-N-EtFOSA-M



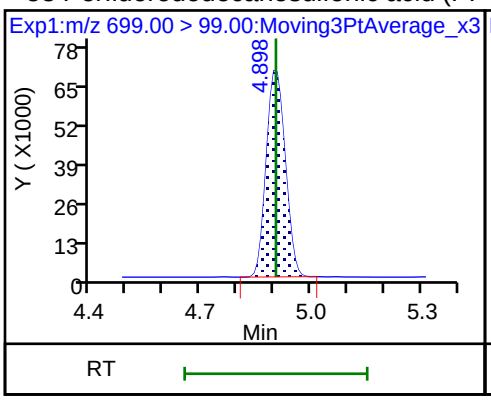
54 N-ethylperfluoro-1-octanesulfonami



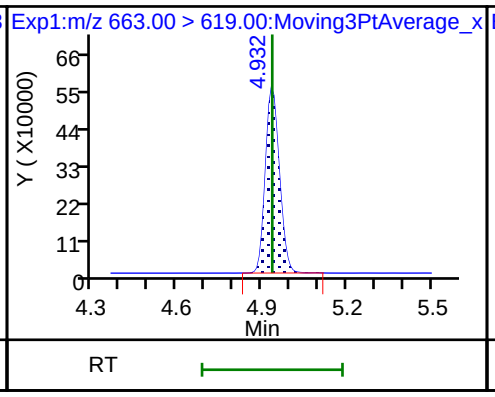
58 Perfluorododecanesulfonic acid (PF



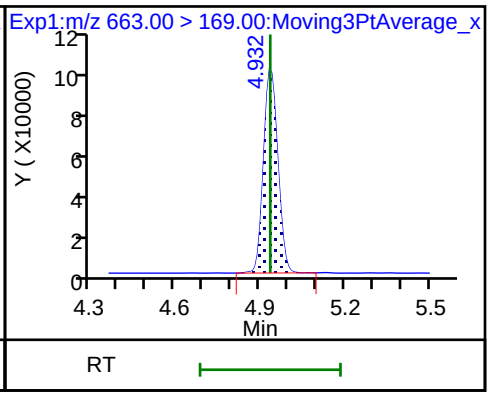
58 Perfluorododecanesulfonic acid (PF



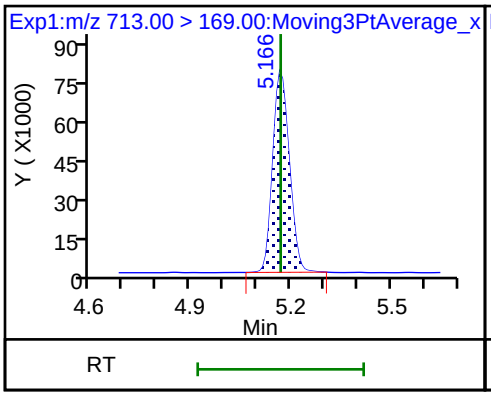
59 Perfluorotridecanoic acid



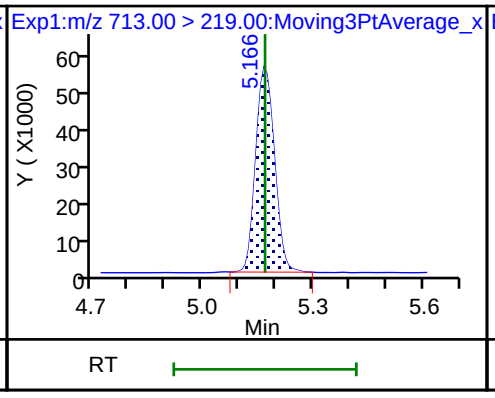
59 Perfluorotridecanoic acid



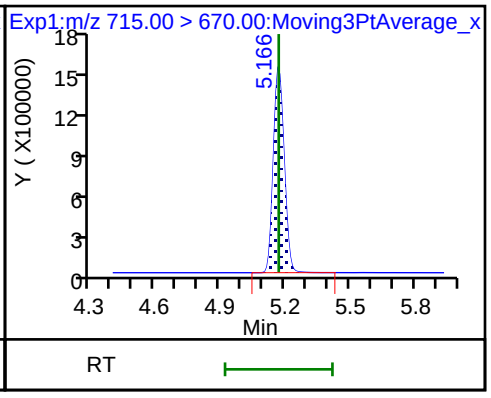
61 Perfluorotetradecanoic acid



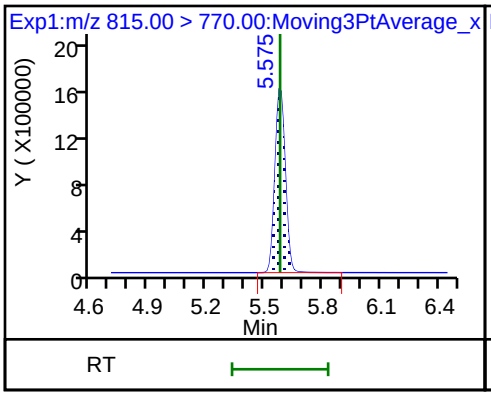
61 Perfluorotetradecanoic acid



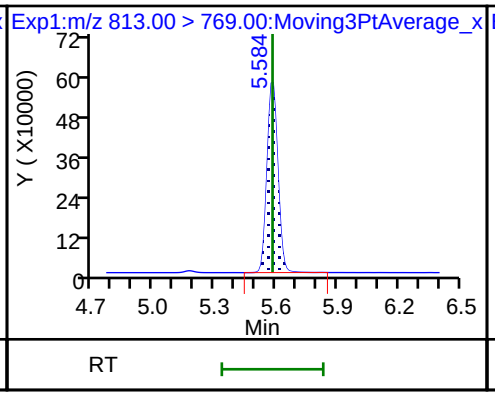
D 60 13C2 PFTeDA



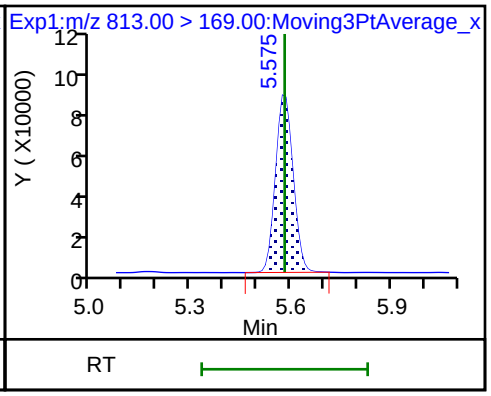
D 62 13C2 PFHxDA



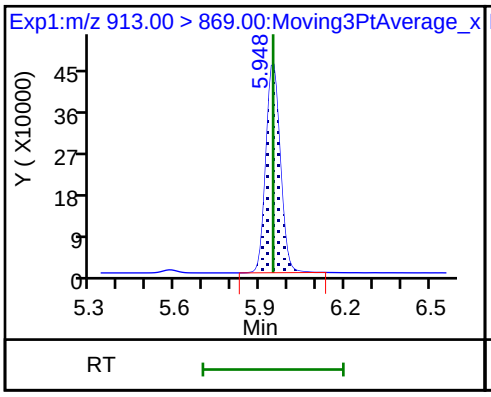
63 Perfluorohexadecanoic acid



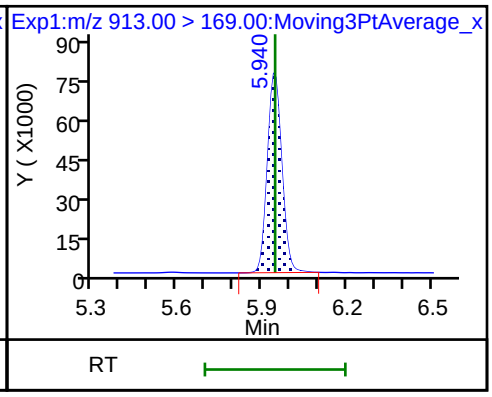
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_006.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 05-Oct-2019 18:42:11 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:21:07 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:34:20
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.901	1.903	-0.002	0.569	6111831	2.54		101	6794	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.901	1.906	-0.005	1.000	5336965	2.57		103	1023	
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.661	5103257	2.53		101	3861	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.206	2.207	-0.001	1.000	5112132	2.44		97.8	1166	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.233	2.236	-0.003	0.758	6322747	2.16	Target=2.62	97.5	442	
298.90 > 99.00	2.233	2.236	-0.003	0.758	2352701		2.69(1.31-3.93)	97.5	426	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.519	-0.005	0.753	859369	2.23		95.6	1258	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.514	2.521	-0.007	1.000	2283370	2.42		104	4399	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.559	-0.002	0.766	5869939	2.53		101	2627	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.559	-0.002	1.000	5336442	2.45	Target=14.83	97.9	1155	
313.00 > 119.00	2.557	2.559	-0.002	1.000	343350		15.54(7.41-22.24)	97.9	361	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.577	0.001	0.875	3608445	2.35	Target=1.98	100	4000	
349.00 > 99.00	2.568	2.577	-0.009	0.872	1808156		2.00(0.99-2.97)	100	2950	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.686	0.0	1.000	1555414	2.57		103	1223	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.805	997088	2.47		98.7	1872	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.942	-0.002	0.881	6542108	2.46		98.4	3680	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.940	2.944	-0.004	1.000	7641469	2.60	Target=4.24	104	2135	
363.00 > 169.00	2.940	2.944	-0.004	1.000	1709301		4.47(2.12-6.36)	104	1601	
D 16 18O2 PFHxS										
403.00 > 84.00	2.946	2.947	-0.001	0.883	4092089	2.40		101	5456	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.946	2.948	-0.002	1.000	4533955	2.14	Target=3.27	94.2	3312	
399.00 > 99.00	2.946	2.948	-0.002	1.000	1377077		3.29(1.64-4.91)	94.2	1598	
18 DONA										
377.00 > 251.00	2.993	2.995	-0.002	0.806	12158222	2.42	Target=2.25	103	4341	
377.00 > 85.00	2.993	2.995	-0.002	0.806	5569426		2.18(1.12-3.37)	103	4344	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.319	-0.003	0.994	908828	2.45		103	2538	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.316	3.320	-0.004	1.000	2050974	2.30		97.1	1643	
D 21 13C8 PFOA										
421.00 > 376.00	3.338	3.340	-0.002	1.000	7521202	2.59		104	6579	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.340	-0.002	0.899	4681168	2.43	Target=3.58	102	4763	
449.00 > 99.00	3.338	3.340	-0.002	0.899	1256251		3.73(1.79-5.37)	102	1019	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.341	-0.003	1.000	7635319	2.49		99.7	3417	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.342	-0.004		8174755	2.50			4104	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.345	3.344	0.001	1.002	8145187	2.36	Target=2.79	94.4	1747	
413.00 > 169.00	3.338	3.344	-0.006	1.000	2836389		2.87(1.40-4.19)	94.4	1754	
D 26 13C8 PFOS										
507.00 > 99.00	3.711	3.710	0.001	1.112	1089425	2.53		101	1626	
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.714	-0.003	1.112	4651232	2.35		98.2	3933	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.711	3.714	-0.003	1.000	4576677	2.19	Target=3.83	94.4	2293	M
499.00 > 99.00	3.711	3.714	-0.003	1.000	1182037		3.87(1.92-5.75)	94.4	2929	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.117	6786292	2.49		99.5	4504	
29 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.729	-0.002	1.000	7048443	2.52	Target=5.58	101	3793	
463.00 > 169.00	3.727	3.729	-0.002	1.000	1206216		5.84(2.79-8.37)	101	1301	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.918	3.922	-0.004	1.056	3261960	2.37		102	2635	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.056	4.057	-0.001	1.093	2938477	2.48	Target=4.51	103	3279	
549.00 > 99.00	4.056	4.057	-0.001	1.093	660622		4.45(2.25-6.76)	103	1444	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.082	4.084	-0.002	1.000	7452940	2.50	Target=15.45	99.9	4268	
513.00 > 169.00	4.082	4.084	-0.002	1.000	480906		15.50(7.73-23.18)	99.9	321	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.084	-0.002	1.223	824438	2.36		98.7	1544	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.084	-0.002	1.223	7847175	2.55		102	2998	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.084	-0.002	1.000	1878787	2.46		103	3867	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.113	-0.004	1.231	2641759	2.58		103	3236	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.118	4.117	0.001	1.002	7236875	2.49		99.7	2309	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.241	0.002	1.271	3759020	2.59		104	2759	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.243	4.246	-0.003	1.000	3116739	2.53		101	470	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.374	4.375	-0.001	1.178	4002514	2.53	Target=4.64	105	3259	
599.00 > 99.00	4.374	4.375	-0.001	1.178	824186		4.86(2.32-6.96)	105	1656	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.398	0.002	1.318	6583620	2.51		100	3080	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.399	0.001	1.000	5057291	2.44	Target=9.27	97.7	3588	
563.00 > 169.00	4.400	4.399	0.001	1.000	543198		9.31(4.63-13.90)	97.7	1829	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.404	-0.004	1.318	3318814	2.66		106	2235	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.409	4.409	0.0	1.002	2477954	2.34		93.6	2828	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.537	4.537	0.0	1.222	9201776	2.53		107	5927	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.581	4.580	0.001		8457560	12.6		101	2266	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.590	4.590	0.0	1.002	1716843	2.44		97.4	2720	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.599	4.602	-0.003		1839028	2.52		101	266	
49 NMeFOSA										
512.00 > 169.00	4.608	4.607	0.001	1.002	1633454	2.55		102	1331	
D 55 13C2 PFDoA										
615.00 > 570.00	4.674	4.680	-0.006	1.400	7229580	2.50		100.0	3630	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.683	4.681	0.002	1.002	7522749	2.52	Target=9.58	101	4365	
613.00 > 169.00	4.674	4.681	-0.007	1.000	800235		9.40(4.79-14.36)	101	2170	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.693	4.699	-0.006	1.150	1413290	2.41		99.9	2613	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.748	4.752	-0.004		8813227	12.7		101	4104	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.763	4.763	0.0	1.003	1910679	2.57		103	1070	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.778	4.779	-0.001		1796039	2.55		102	1354	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.786	4.786	0.0	1.002	1776813	2.46		98.5	862	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.902	4.904	-0.002	1.321	398380	2.45	Target=0.64	101	2226	
699.00 > 99.00	4.902	4.904	-0.002	1.321	611705		0.65(0.32-0.96)	101	2141	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.935	4.935	0.0	1.056	4644922	2.49	Target=5.94	99.7	3911	
663.00 > 169.00	4.935	4.935	0.0	1.056	774945		5.99(2.97-8.91)	99.7	2118	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.169	5.169	0.0	1.000	723612	2.42	Target=1.42	97.0	2380	
713.00 > 219.00	5.169	5.169	0.0	1.000	514559		1.41(0.71-2.13)	97.0	2560	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.169	5.170	-0.001	1.549	5280170	2.57		103	4028	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.576	5.579	-0.003	1.671	5600565	2.48		99.4	6722	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.576	5.581	-0.005	1.000	5115298	2.60	Target=6.39	104	2870	
813.00 > 169.00	5.576	5.581	-0.005	1.000	785055		6.52(3.19-9.58)	104	2890	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.942	5.945	-0.003	1.065	4122009	2.55	Target=6.02	102	2513	
913.00 > 169.00	5.942	5.945	-0.003	1.065	685939		6.01(3.01-9.03)	102	2890	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:21:08 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_006.d

Injection Date: 05-Oct-2019 18:42:11 Instrument ID: A9

Lims ID: IC L5 Full

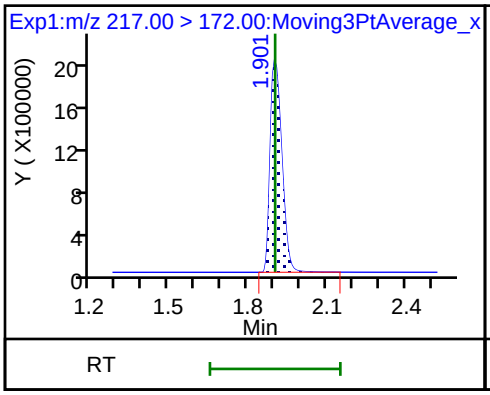
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 6

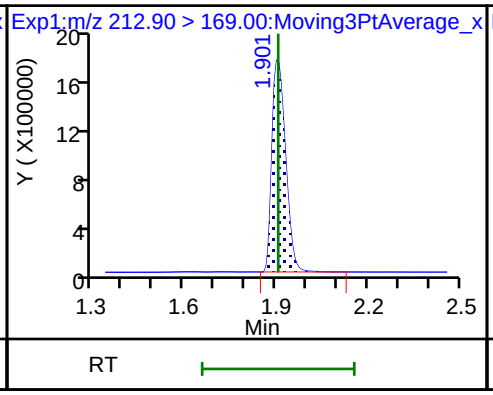
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

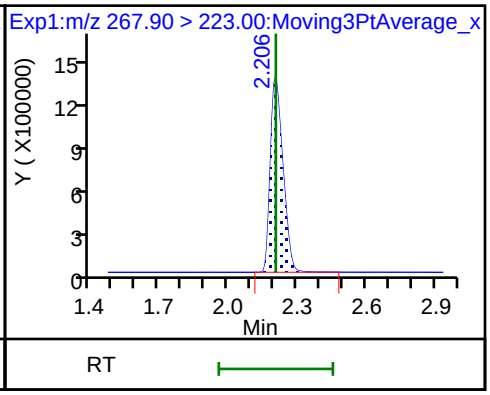
D 1 13C4 PFBA



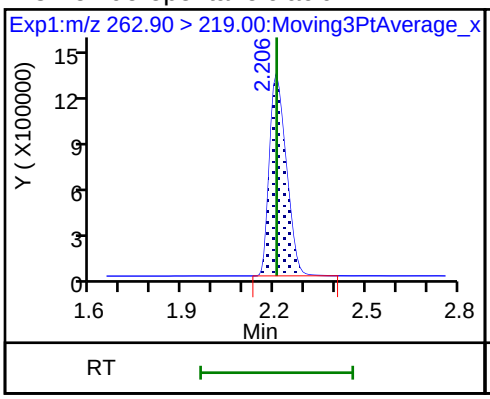
2 Perfluorobutanoic acid



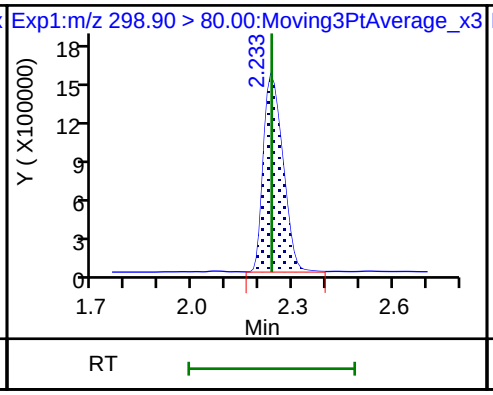
D 4 13C5 PFPeA



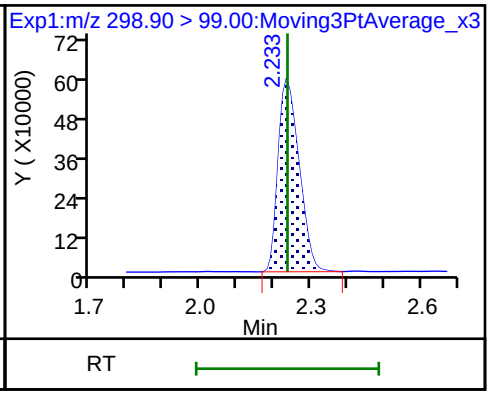
3 Perfluoropentanoic acid



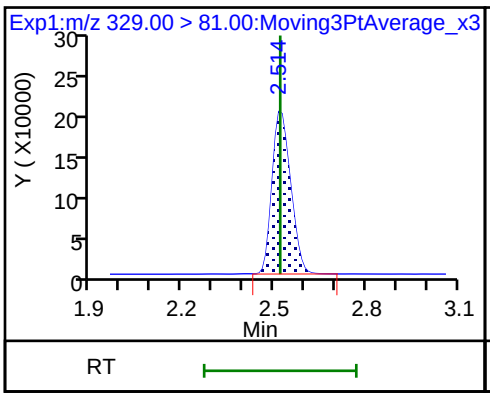
5 Perfluorobutanesulfonic acid



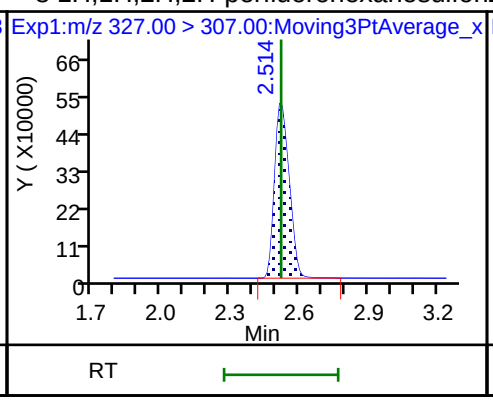
5 Perfluorobutanesulfonic acid



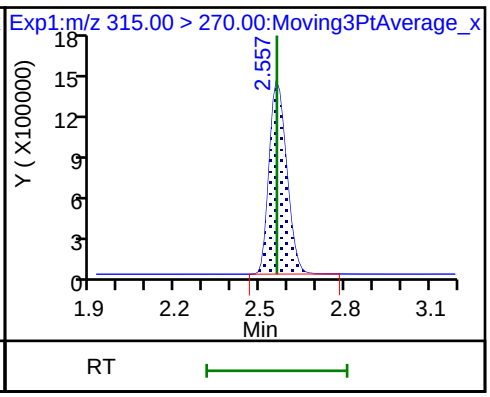
D 7 M2-4:2 FTS



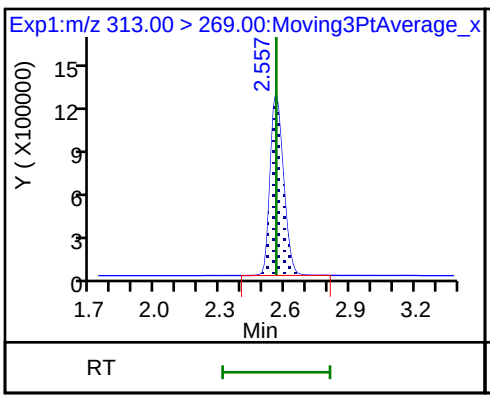
8 1H,1H,2H,2H-perfluorohexanesulfon



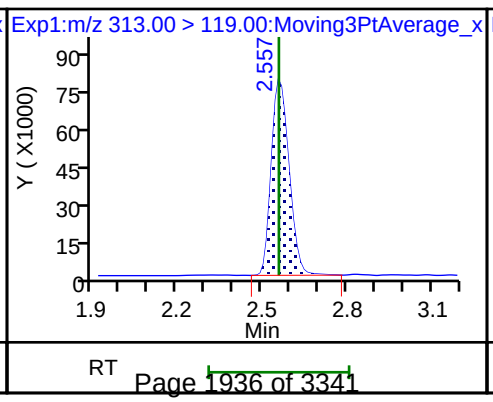
D 9 13C2 PFHxA



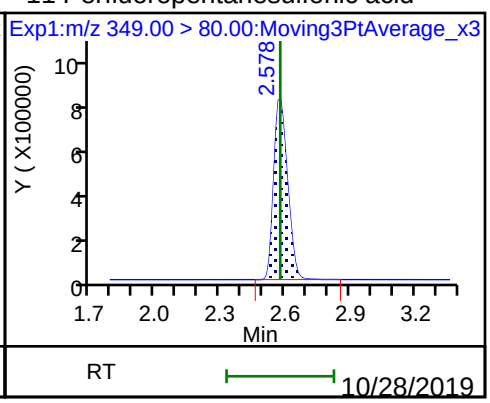
10 Perfluorohexanoic acid



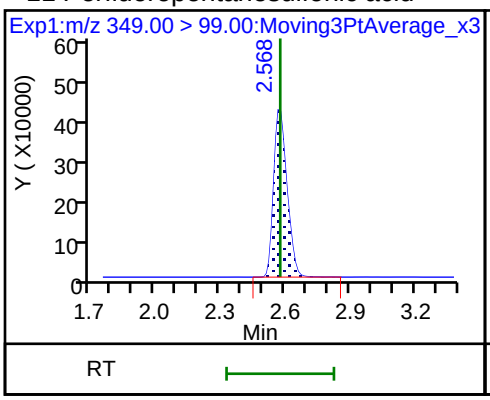
10 Perfluorohexanoic acid



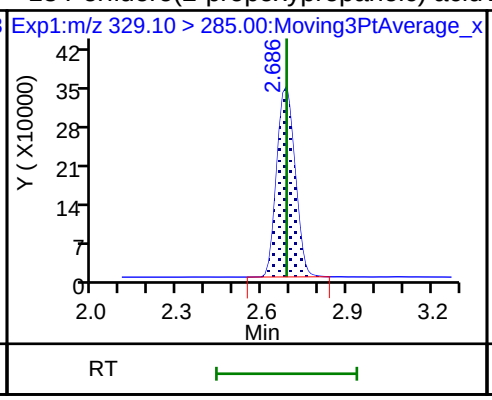
11 Perfluoropentanesulfonic acid



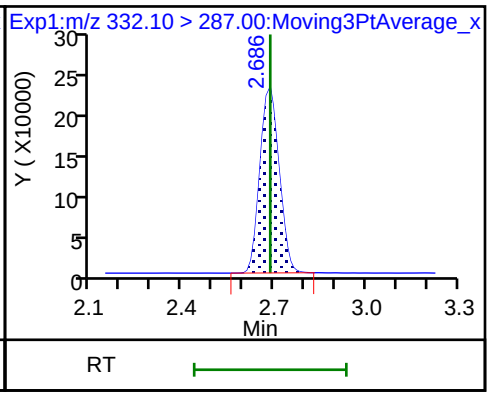
11 Perfluoropentanesulfonic acid



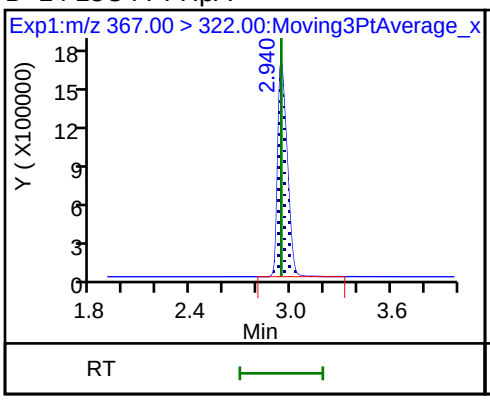
13 Perfluoro(2-propoxypropanoic) acid



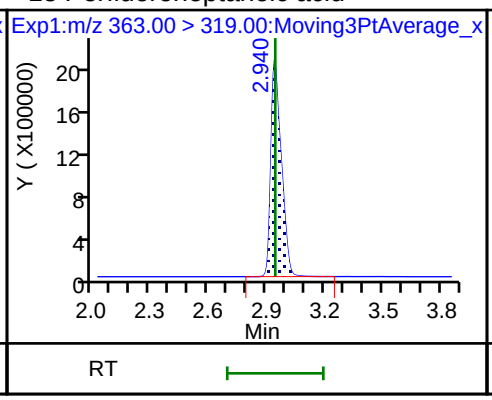
D 12 13C3 HFPO-DA



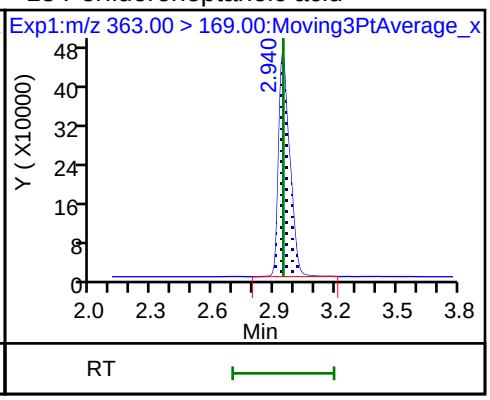
D 14 13C4 PFHpA



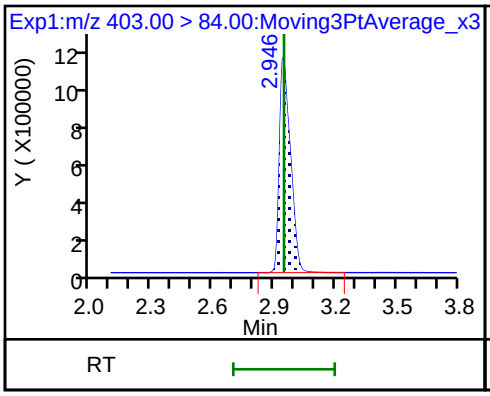
15 Perfluoroheptanoic acid



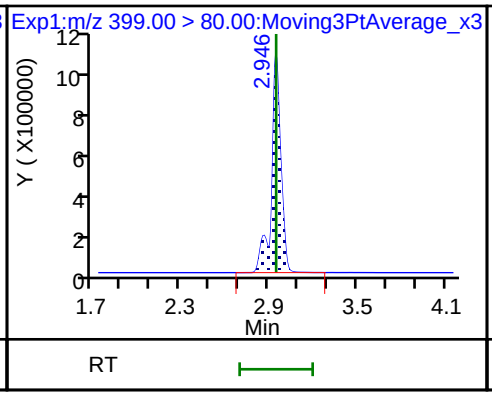
15 Perfluoroheptanoic acid



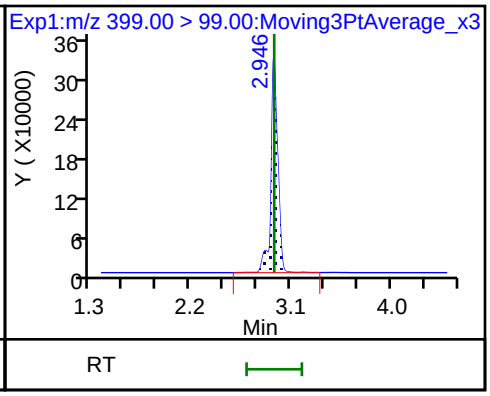
D 16 18O2 PFHxS



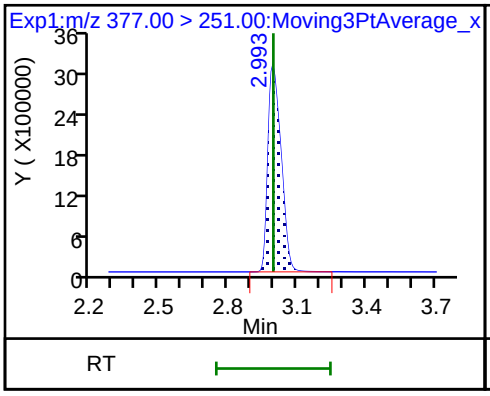
17 Perfluorohexanesulfonic acid



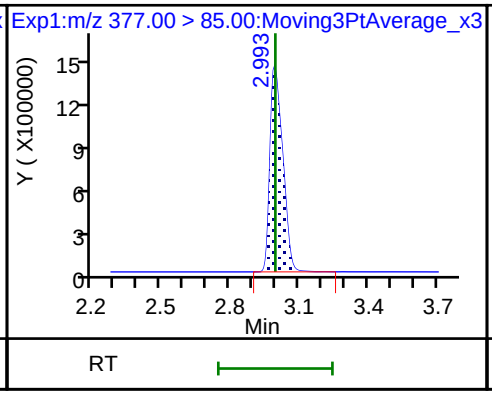
17 Perfluorohexanesulfonic acid



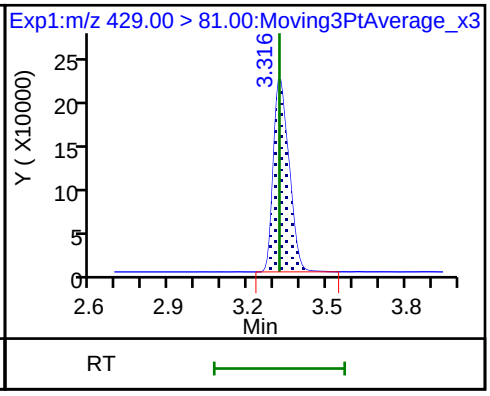
18 DONA



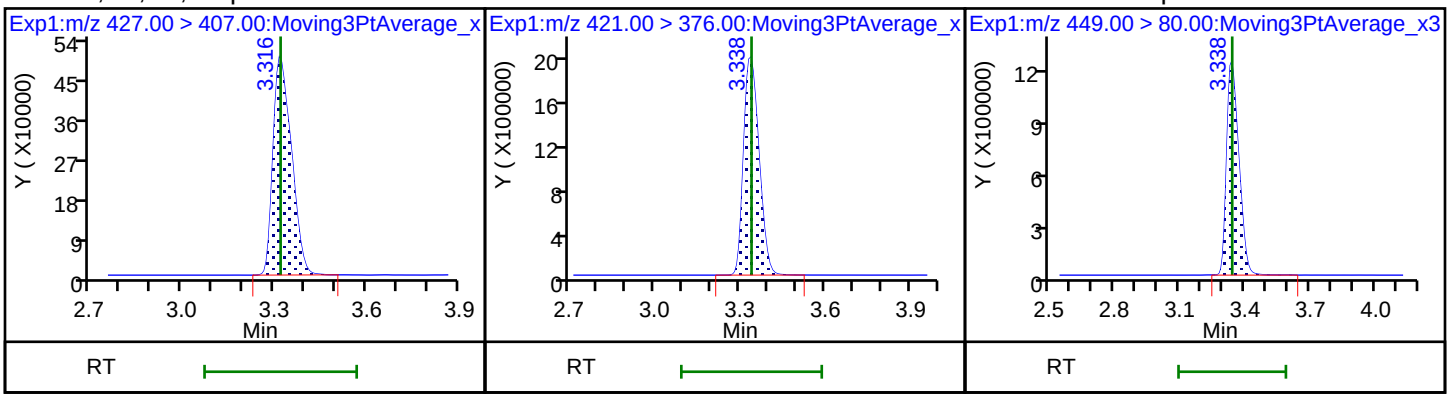
18 DONA



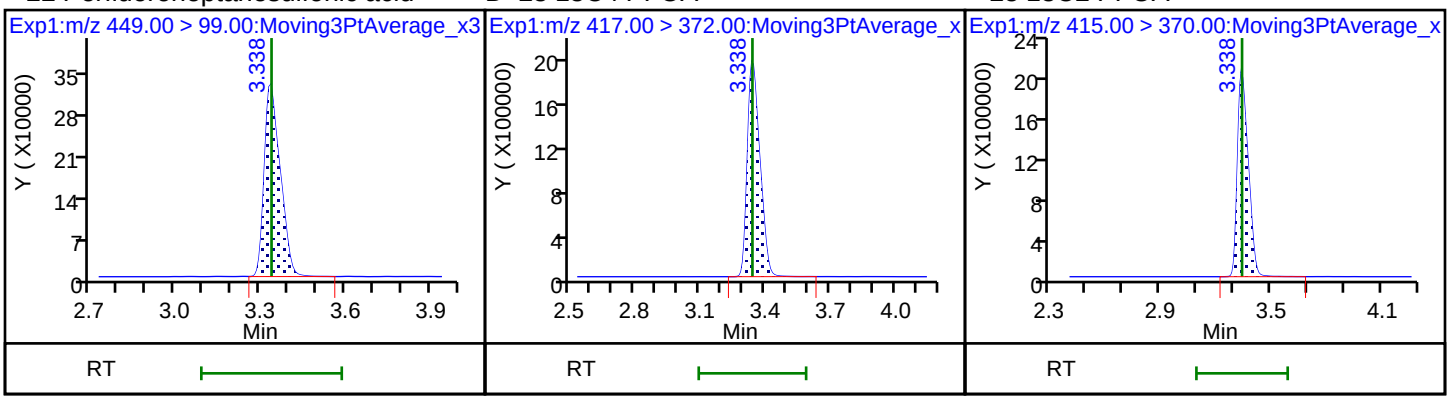
D 20 M2-6:2 FTS



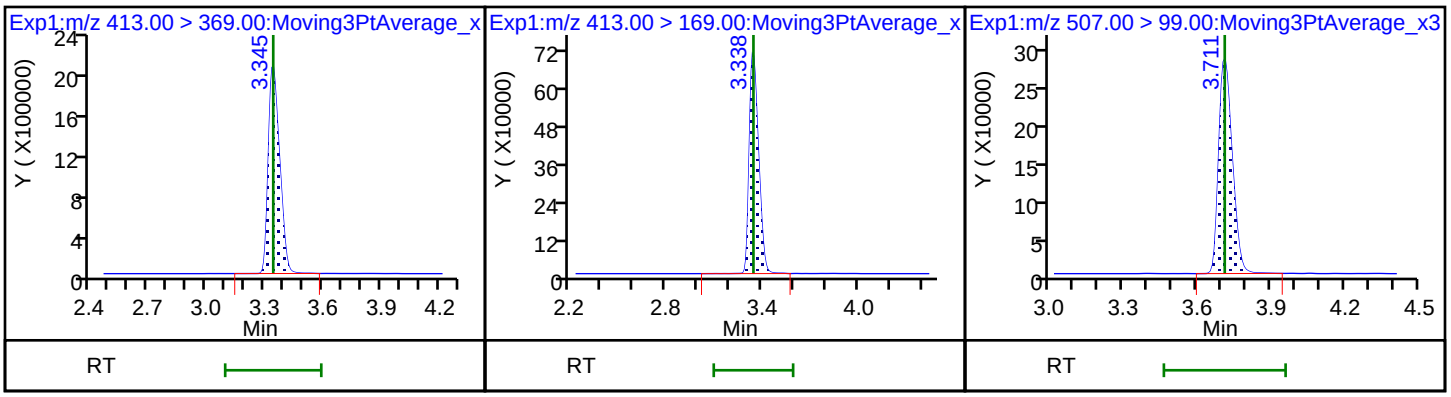
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



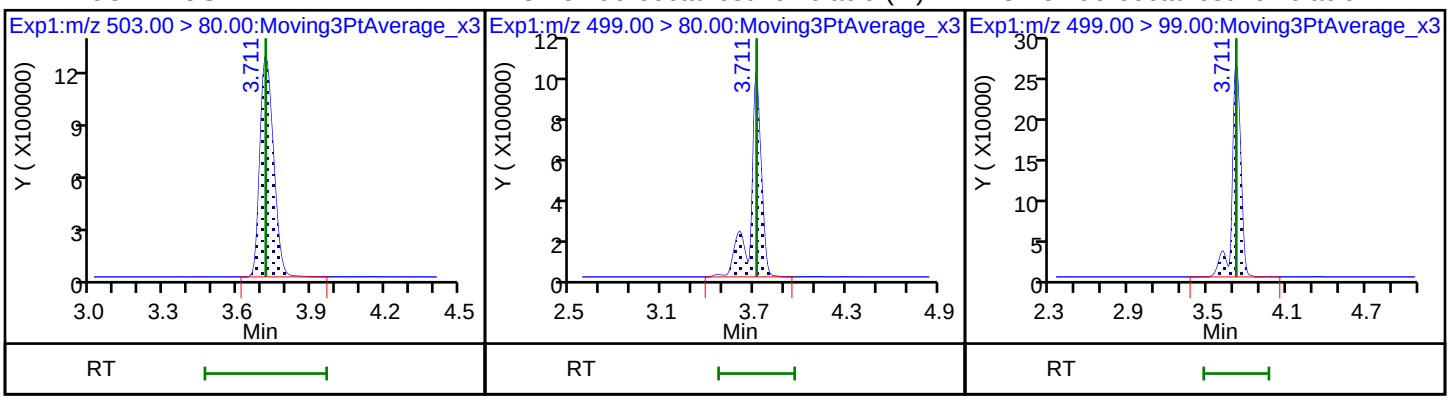
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



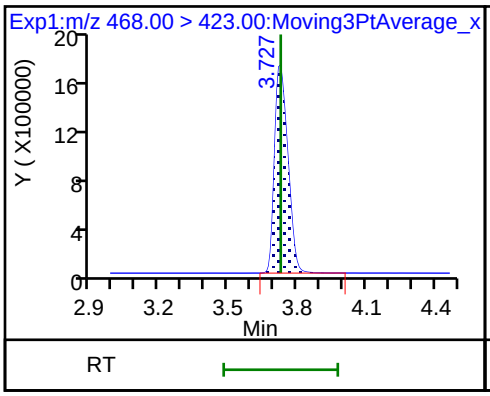
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



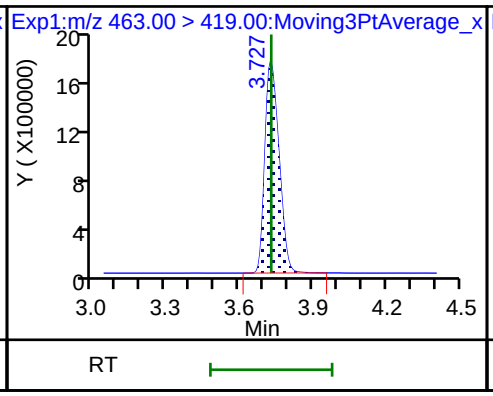
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid



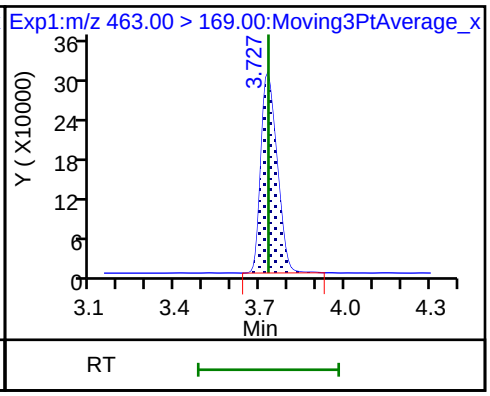
D 30 13C5 PFNA



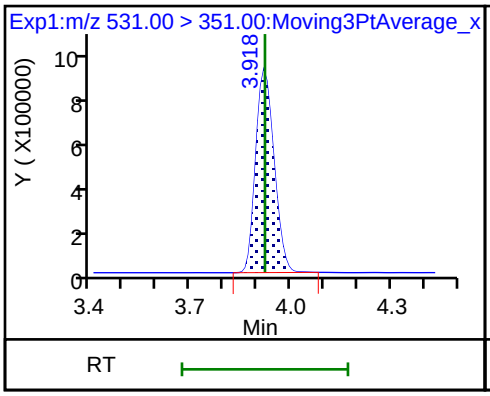
29 Perfluorononanoic acid



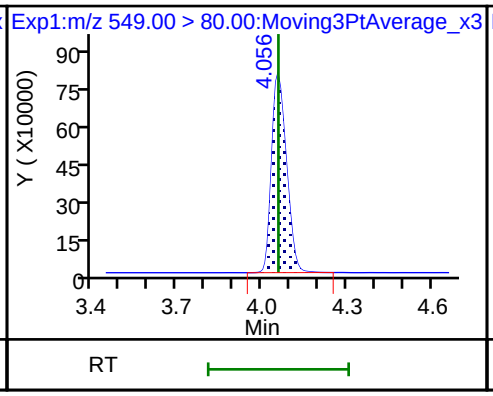
29 Perfluorononanoic acid



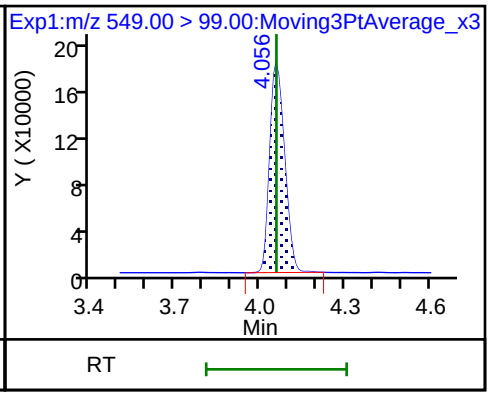
31 9-Chlorohexadecafluoro-3-oxanonane



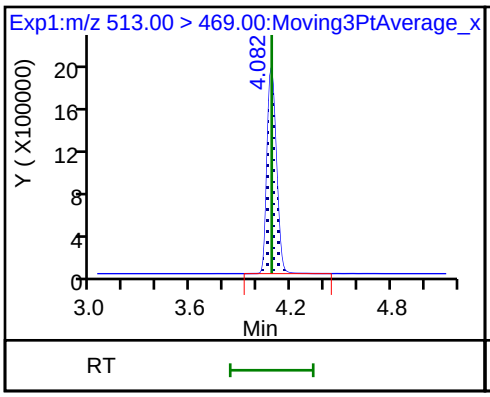
34 Perfluorononanesulfonic acid



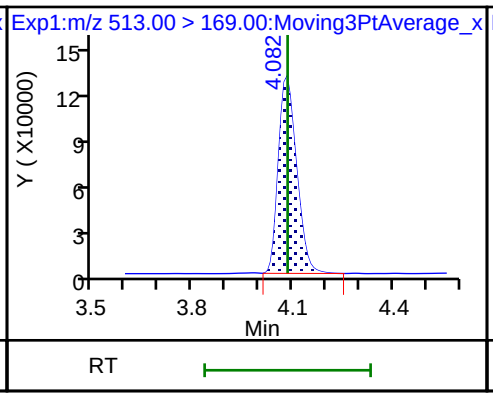
34 Perfluorononanesulfonic acid



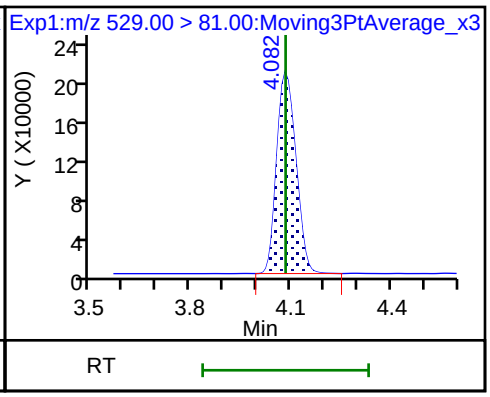
37 Perfluorodecanoic acid



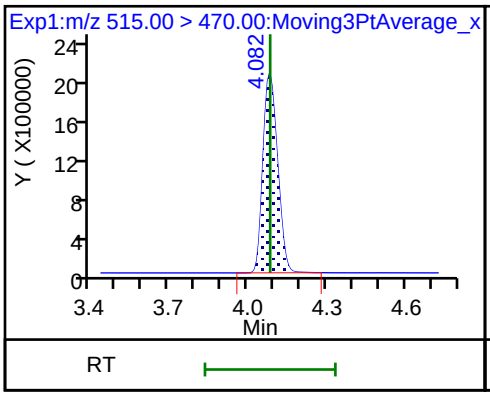
37 Perfluorodecanoic acid



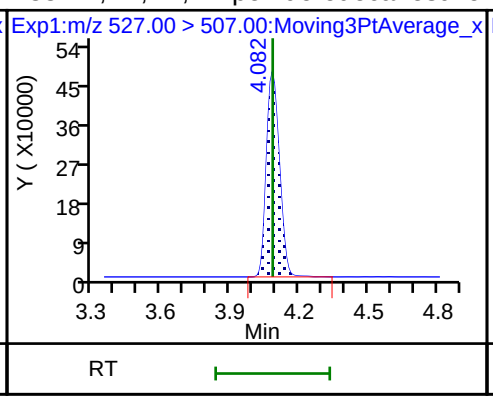
D 35 M2-8:2 FTS



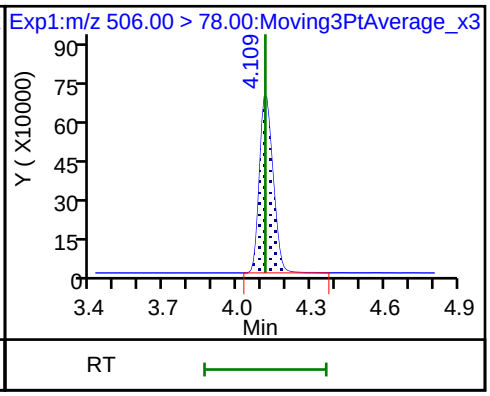
D 36 13C2 PFDA



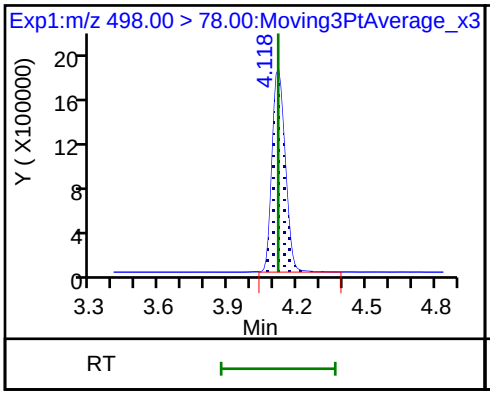
38 1H,1H,2H,2H-perfluorodecanesulfon



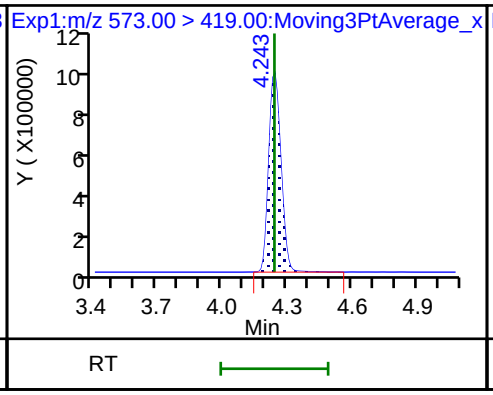
D 32 13C8 FOSA



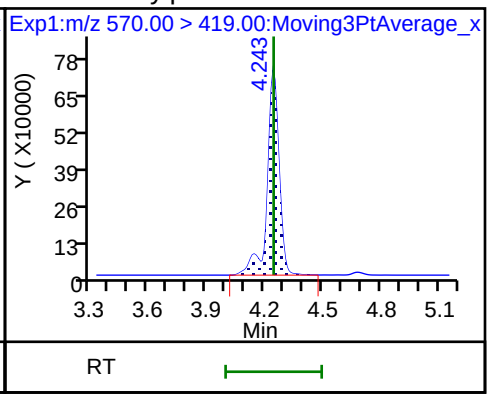
33 Perfluorooctanesulfonamide



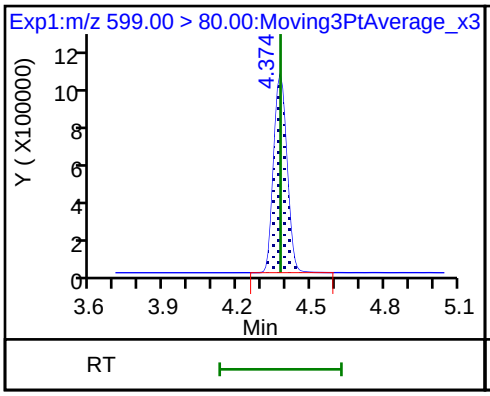
D 39 d3-NMeFOSAA



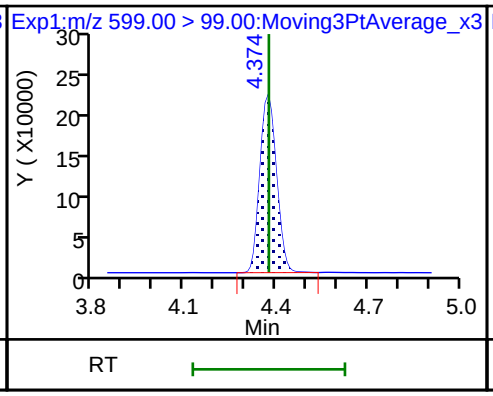
40 N-methylperfluorooctanesulfonamido



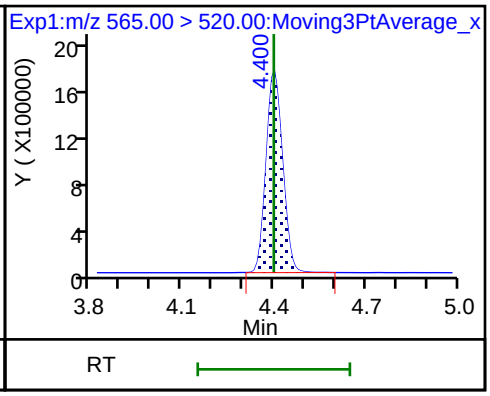
41 Perfluorodecanesulfonic acid



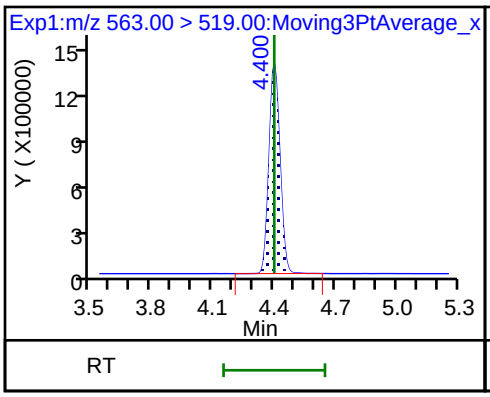
41 Perfluorodecanesulfonic acid



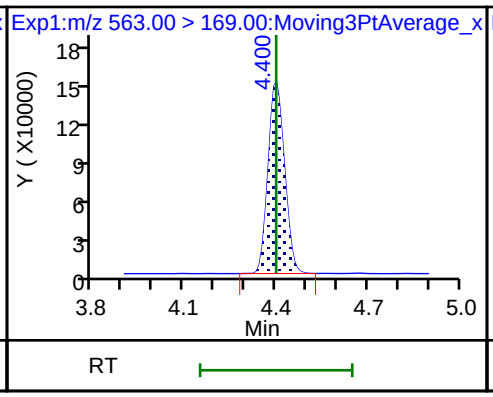
D 42 13C2 PFUnA



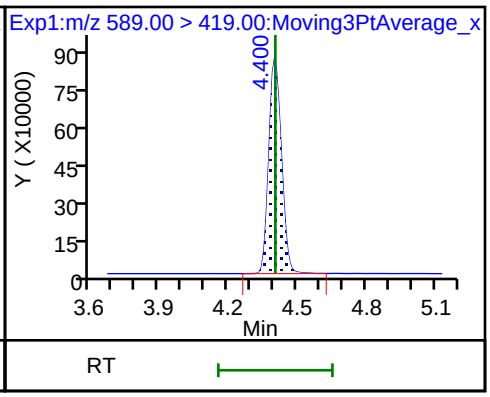
43 Perfluoroundecanoic acid



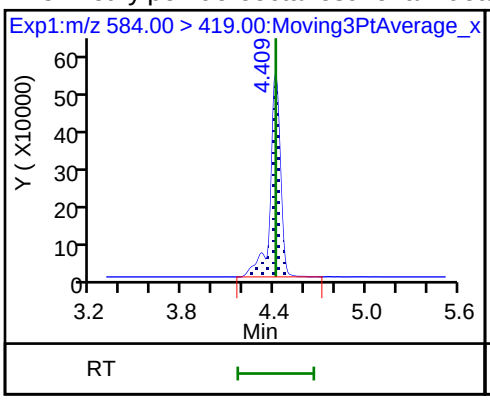
43 Perfluoroundecanoic acid



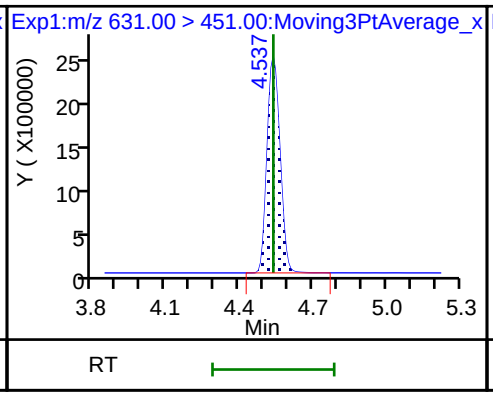
D 44 d5-NEtFOSAA



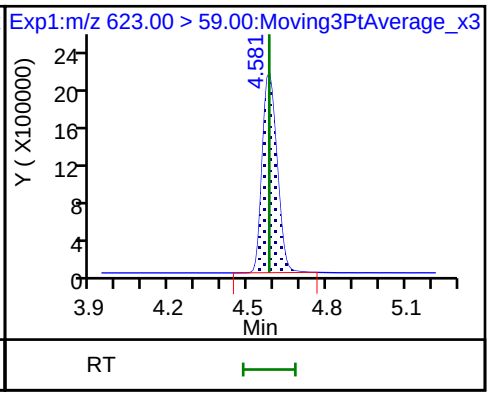
45 N-ethylperfluorooctanesulfonamidoa



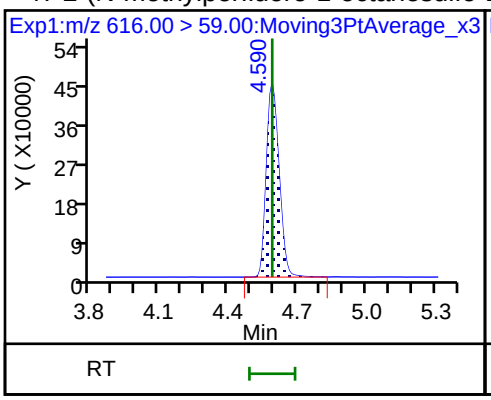
50 11-Chloroeicosafluoro-3-oxaundecan



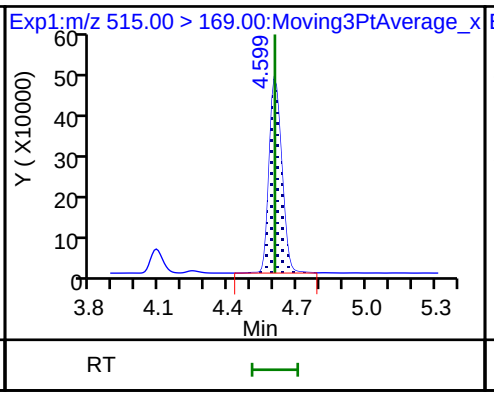
D 46 d7-N-MeFOSE-M



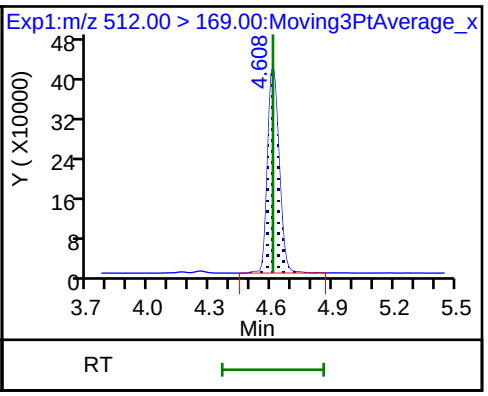
47 2-(N-methylperfluoro-1-octanesulfo



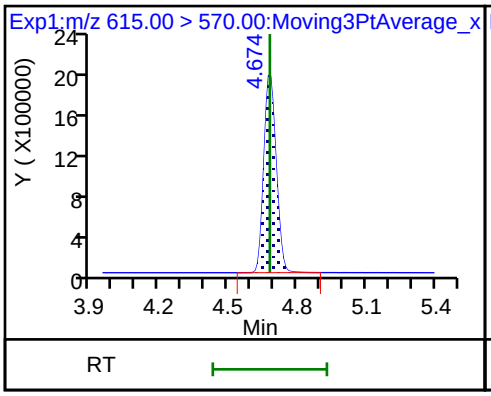
D 48 d-N-MeFOSA-M



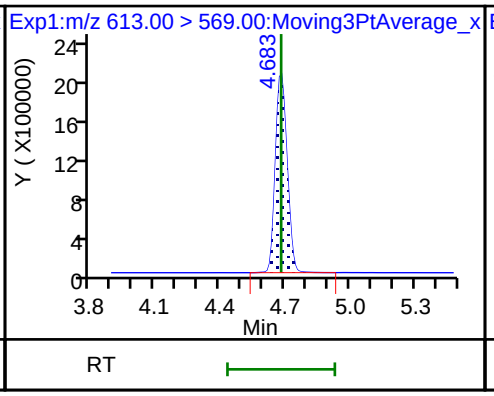
49 NMeFOSA



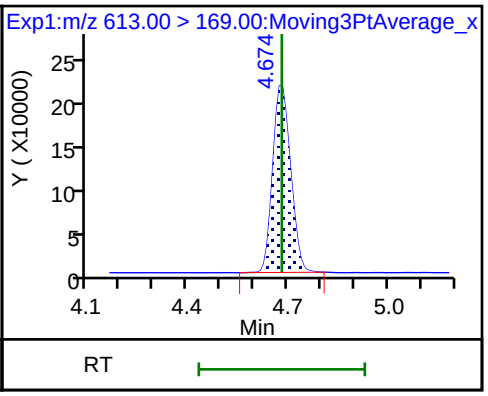
D 55 13C2 PFDoA



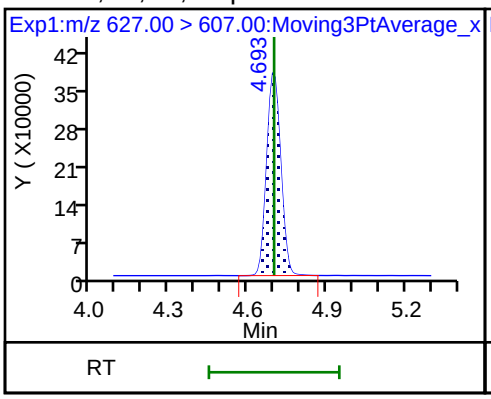
56 Perfluorododecanoic acid



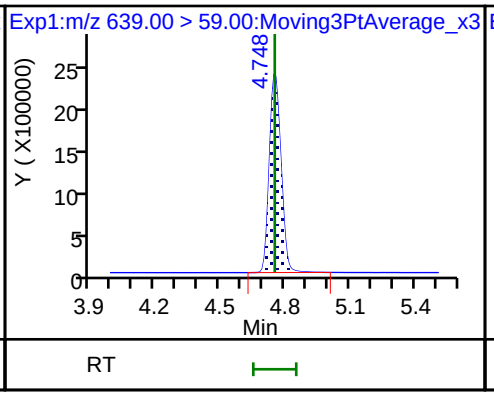
56 Perfluorododecanoic acid



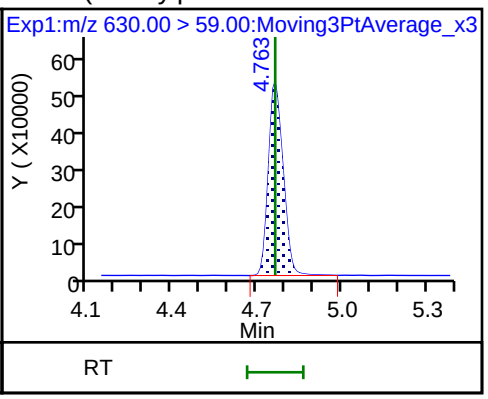
57 1H,1H,2H,2H-perfluorododecanesulfo



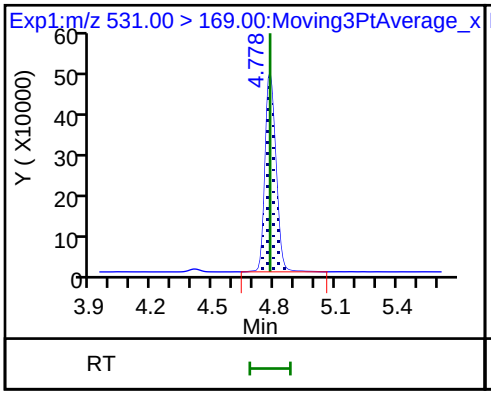
D 51 d9-N-EtFOSE-M



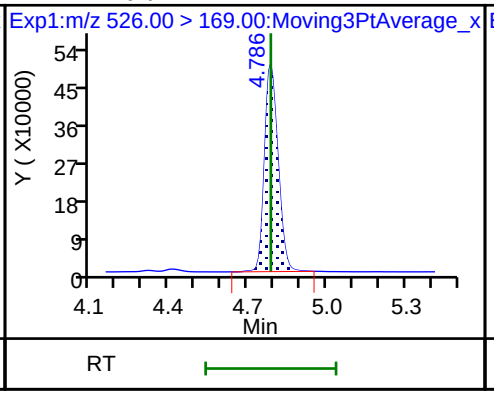
52 2-(N-ethylperfluoro-1-octanesulfon



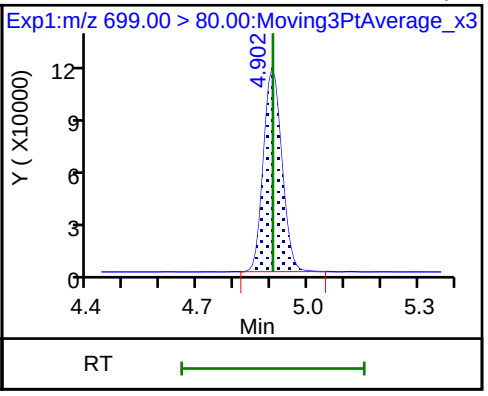
D 53 d-N-EtFOSA-M



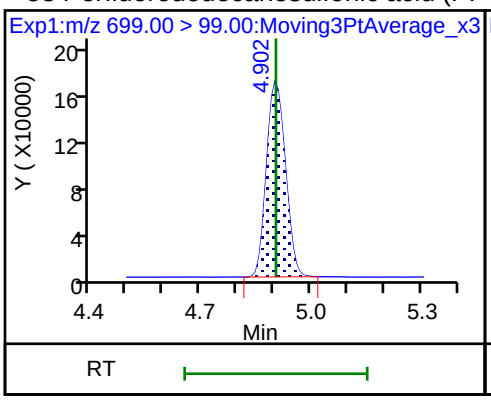
54 N-ethylperfluoro-1-octanesulfonami



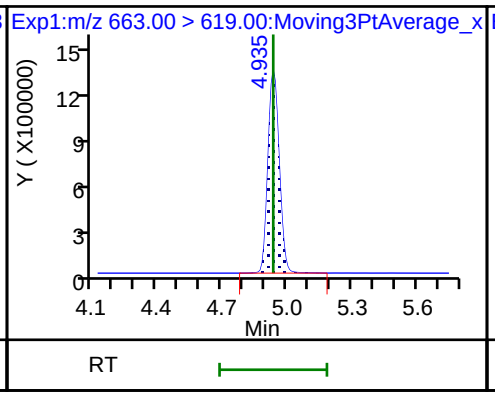
58 Perfluorododecanesulfonic acid (PF



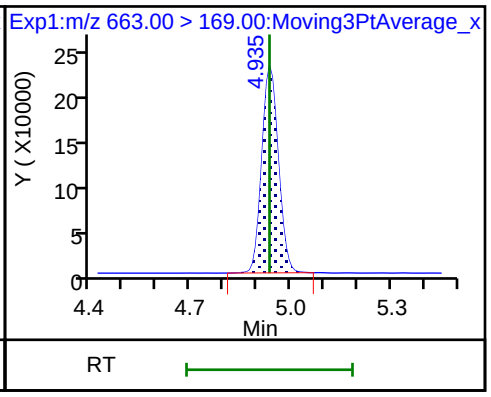
58 Perfluorododecanesulfonic acid (PF



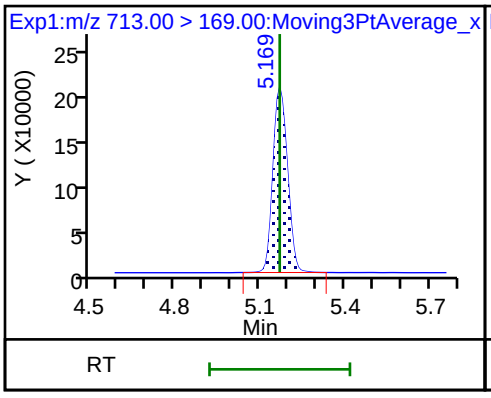
59 Perfluorotridecanoic acid



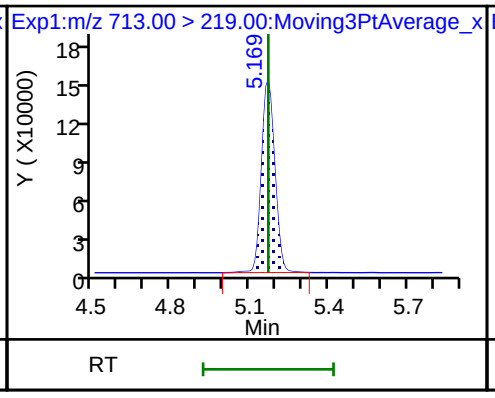
59 Perfluorotridecanoic acid



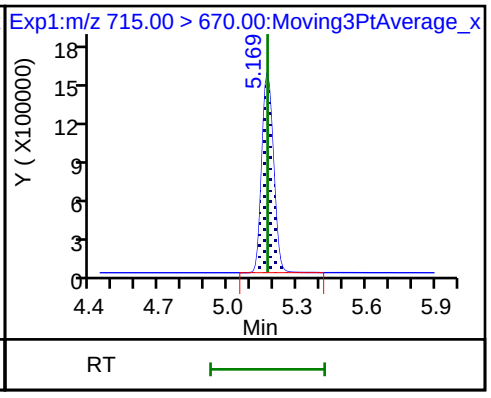
61 Perfluorotetradecanoic acid



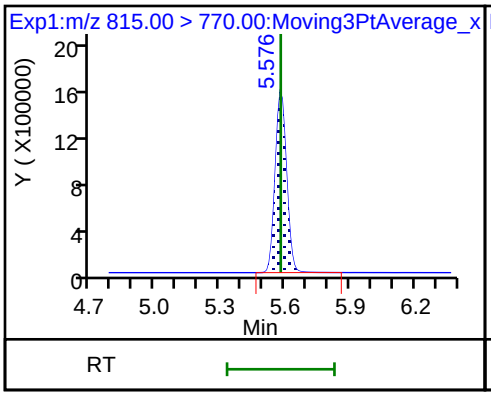
61 Perfluorotetradecanoic acid



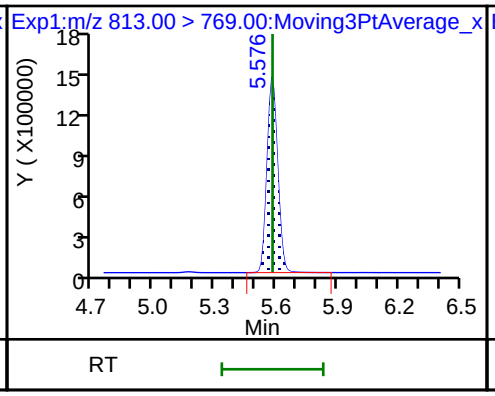
D 60 13C2 PFTeDA



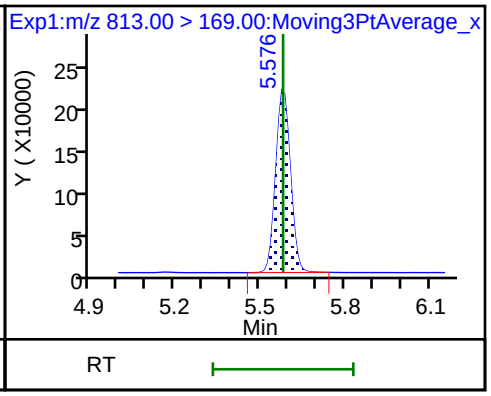
D 62 13C2 PFHxDA



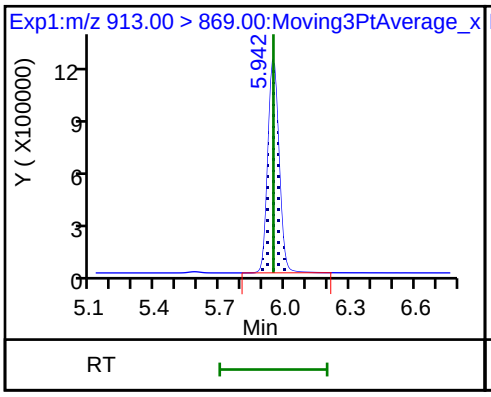
63 Perfluorohexadecanoic acid



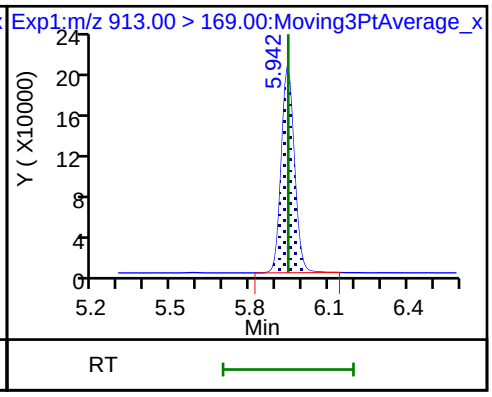
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

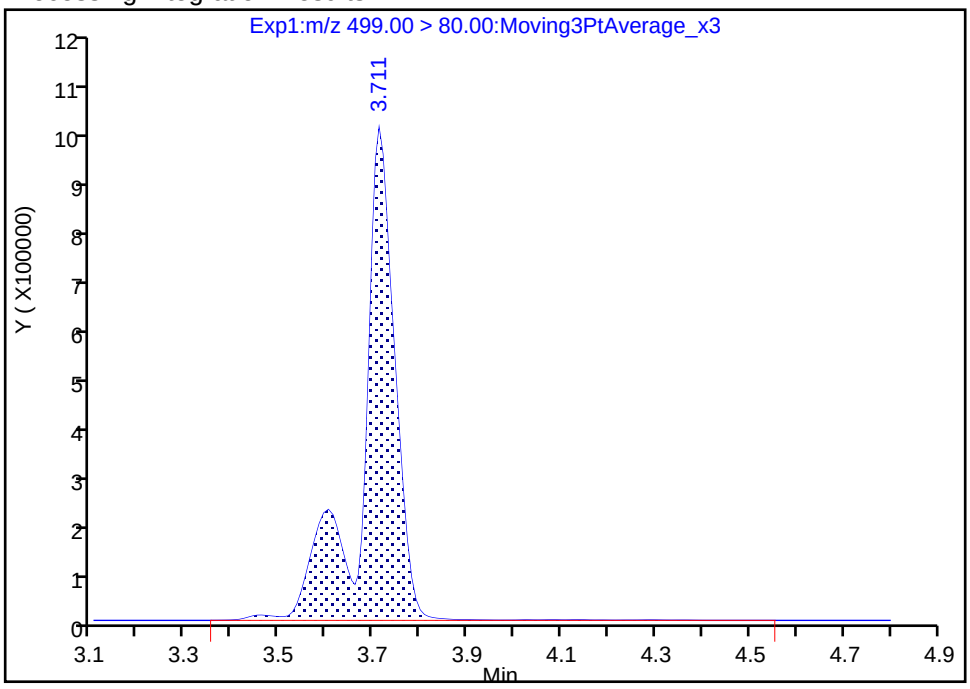
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_006.d				
Injection Date:	05-Oct-2019 18:42:11	Instrument ID:	A9		
Lims ID:	IC L5 Full				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	14	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

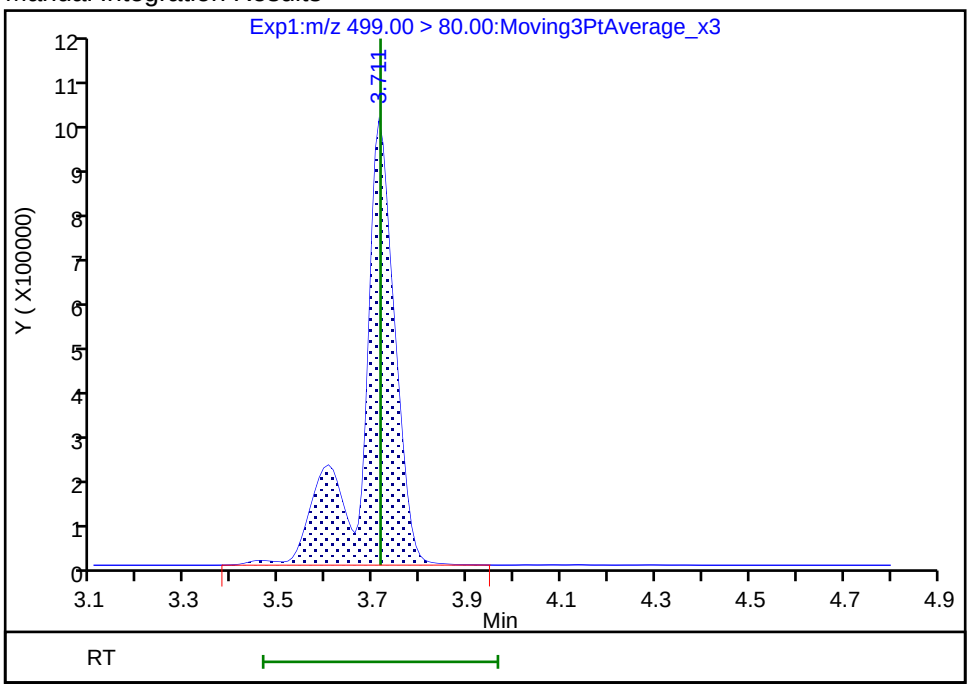
Processing Integration Results

RT: 3.71
Area: 4596156
Amount: 2.198731
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 4576677
Amount: 2.190669
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:33:35
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_007.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 05-Oct-2019 18:51:44 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD6
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:21:12 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:36:35
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.908	1.903	0.005	0.570	6055882	2.56		103	5647	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.908	1.906	0.002	1.000	9978156	4.85		97.0	1904	
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.659	5150979	2.61		104	3455	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.206	2.207	-0.001	1.000	10008342	4.74		94.8	1820	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.242	2.236	0.006	0.761	12486974	4.41	Target=2.62	99.9	764	
298.90 > 99.00	2.232	2.236	-0.004	0.757	4960175		2.52(1.31-3.93)	99.9	540	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.525	2.519	0.006	0.754	823566	2.18		93.5	1274	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.525	2.521	0.004	1.000	4153822	4.59		98.4	4544	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.559	-0.002	0.764	5622540	2.47		98.7	2778	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.559	-0.002	1.000	10338485	4.95	Target=14.83	99.0	1685	
313.00 > 119.00	2.557	2.559	-0.002	1.000	704186		14.68(7.41-22.24)	99.0	631	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.577	0.001	0.875	7311823	4.94	Target=1.98	105	4319	
349.00 > 99.00	2.578	2.577	0.001	0.875	3649107		2.00(0.99-2.97)	105	3381	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.686	0.0	1.000	3122871	5.02		100	1799	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.802	1027232	2.59		104	1944	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.942	2.942	0.0	0.879	6741751	2.59		103	3258	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.942	2.944	-0.002	1.000	14020719	4.63	Target=4.24	92.6	2538	
363.00 > 169.00	2.942	2.944	-0.002	1.000	3600662		3.89(2.12-6.36)	92.6	2026	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.947	0.0	0.881	3946921	2.36		99.7	4909	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.947	2.948	-0.001	1.000	9172567	4.49	Target=3.27	98.7	3658	M
399.00 > 99.00	2.947	2.948	-0.001	1.000	2775623		3.30(1.64-4.91)	98.7	1760	M
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	22624818	4.63	Target=2.25	98.3	5826	
377.00 > 85.00	2.995	2.995	0.0	0.806	10812670		2.09(1.12-3.37)	98.3	4501	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.319	3.319	0.0	0.991	785135	2.16		91.0	1976	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.319	3.320	-0.001	1.000	3674780	4.77		101	3253	
D 21 13C8 PFOA										
421.00 > 376.00	3.340	3.340	0.0	0.998	6965890	2.45		97.8	7965	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.340	3.340	0.0	0.899	9281041	4.96	Target=3.58	104	4290	
449.00 > 99.00	3.340	3.340	0.0	0.899	2454144		3.78(1.79-5.37)	104	2170	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.341	-0.001	0.998	7587695	2.53		101	3106	
* 25 13C2 PFOA										
415.00 > 370.00	3.347	3.342	0.005		8014172	2.50			2676	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.347	3.344	0.003	1.002	15178193	4.42	Target=2.79	88.5	2841	
413.00 > 169.00	3.347	3.344	0.003	1.002	5683192		2.67(1.40-4.19)	88.5	2889	
D 26 13C8 PFOS										
507.00 > 99.00	3.708	3.710	-0.002	1.108	1052522	2.49		99.6	1536	
D 27 13C4 PFOS										
503.00 > 80.00	3.715	3.714	0.001	1.110	4521521	2.33		97.3	3149	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.715	3.714	0.001	1.000	9391167	4.62	Target=3.83	99.7	2817	
499.00 > 99.00	3.715	3.714	0.001	1.000	2379190		3.95(1.92-5.75)	99.7	2765	
D 30 13C5 PFNA										
468.00 > 423.00	3.731	3.728	0.003	1.115	6684442	2.50		100.0	4119	
29 Perfluorononanoic acid										
463.00 > 419.00	3.731	3.729	0.002	1.000	13546796	4.92	Target=5.58	98.4	6289	
463.00 > 169.00	3.731	3.729	0.002	1.000	2433184		5.57(2.79-8.37)	98.4	2553	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.924	3.922	0.002	1.056	7057132	5.27		113	5348	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.053	4.057	-0.004	1.091	5994271	5.20	Target=4.51	108	3849	
549.00 > 99.00	4.062	4.057	0.005	1.093	1328845		4.51(2.25-6.76)	108	2792	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.089	4.084	0.005	1.002	13571138	4.68	Target=15.45	93.7	3739	
513.00 > 169.00	4.080	4.084	-0.004	1.000	919629		14.76(7.73-23.18)	93.7	249	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.080	4.084	-0.004	1.219	807780	2.36		98.7	1828	
D 36 13C2 PFDA										
515.00 > 470.00	4.080	4.084	-0.004	1.219	7620451	2.52		101	3178	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.089	4.084	0.005	1.002	3606364	4.83		101	2188	
D 32 13C8 FOSA										
506.00 > 78.00	4.116	4.113	0.003	1.230	2576509	2.57		103	3199	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.116	4.117	-0.001	1.000	13343046	4.71		94.3	2358	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.241	4.241	0.0	1.267	3604778	2.53		101	2066	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.250	4.246	0.004	1.002	6013564	5.09		102	762	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.372	4.375	-0.003	1.177	7754560	5.04	Target=4.64	105	4174	
599.00 > 99.00	4.372	4.375	-0.003	1.177	1696229		4.57(2.32-6.96)	105	3394	
D 42 13C2 PFUnA										
565.00 > 520.00	4.398	4.398	0.0	1.314	6331425	2.46		98.3	3988	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.398	4.399	-0.001	1.000	9752335	4.90	Target=9.27	97.9	3162	
563.00 > 169.00	4.398	4.399	-0.001	1.000	1055372		9.24(4.63-13.90)	97.9	2047	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.407	4.404	0.003	1.317	2925321	2.39		95.6	1721	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.407	4.409	-0.002	1.000	4846651	5.19		104	3444	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.535	4.537	-0.002	1.221	16490535	4.66		99.0	5463	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.579	4.580	-0.001		8397419	12.8		102	2432	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.588	4.590	-0.002	1.002	3538359	5.06		101	3502	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.606	4.602	0.004		1851772	2.59		103	301	
49 NMeFOSA										
512.00 > 169.00	4.606	4.607	-0.001	1.000	3394885	5.25		105	1602	
D 55 13C2 PFDoA										
615.00 > 570.00	4.681	4.680	0.001	1.399	7509180	2.65		106	3924	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.681	4.681	0.0	1.000	13621637	4.40	Target=9.58	88.0	3738	
613.00 > 169.00	4.681	4.681	0.0	1.000	1633565		8.34(4.79-14.36)	88.0	3473	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.700	4.699	0.001	1.152	2843341	4.94		103	3107	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.754	4.752	0.002		8734288	12.8		102	4846	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.762	4.763	-0.001	1.002	3799395	5.16		103	1872	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.777	4.779	-0.002		1764417	2.56		102	1375	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.784	4.786	-0.002	1.002	3659635	5.16		103	980	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.908	4.904	0.004	1.321	799266	5.06	Target=0.64	105	3346	
699.00 > 99.00	4.908	4.904	0.004	1.321	1226519		0.65(0.32-0.96)	105	3222	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.933	4.935	-0.002	1.054	8750670	4.52	Target=5.94	90.4	4454	
663.00 > 169.00	4.933	4.935	-0.002	1.054	1586024		5.52(2.97-8.91)	90.4	3138	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.166	5.169	-0.003	1.000	1481465	5.19	Target=1.42	104	2538	
713.00 > 219.00	5.166	5.169	-0.003	1.000	988203		1.50(0.71-2.13)	104	2298	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.166	5.170	-0.004	1.544	5048305	2.51		100	3749	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.584	5.579	0.005	1.668	5798351	2.62		105	6822	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.584	5.581	0.003	1.000	9864559	4.87	Target=6.39	97.5	4417	
813.00 > 169.00	5.584	5.581	0.003	1.000	1627688		6.06(3.19-9.58)	97.5	3660	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.948	5.945	0.003	1.065	8382157	5.01	Target=6.02	100	3514	
913.00 > 169.00	5.948	5.945	0.003	1.065	1395495		6.01(3.01-9.03)	100	3229	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00016 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:21:13 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_007.d

Injection Date: 05-Oct-2019 18:51:44 Instrument ID: A9

Lims ID: IC L6 Full

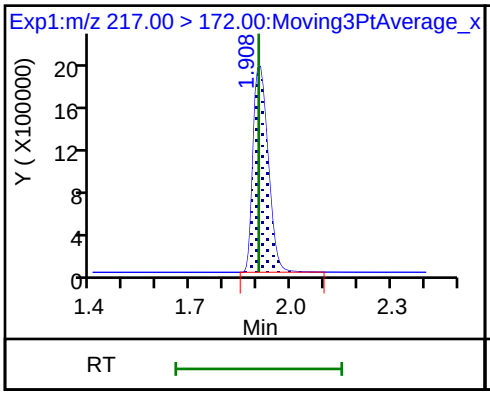
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 15 Worklist Smp#: 7

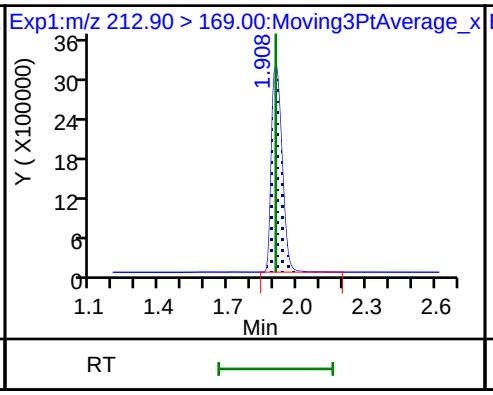
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

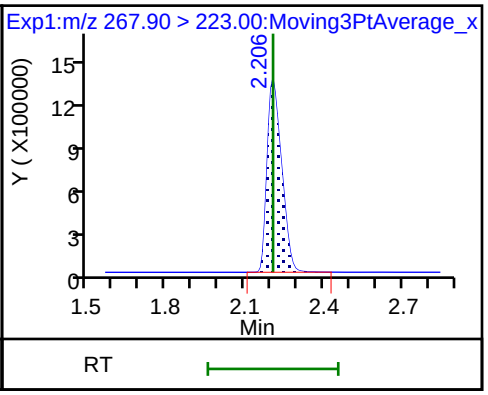
D 1 13C4 PFBA



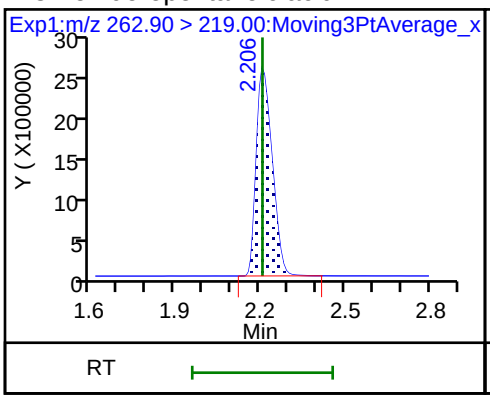
2 Perfluorobutanoic acid



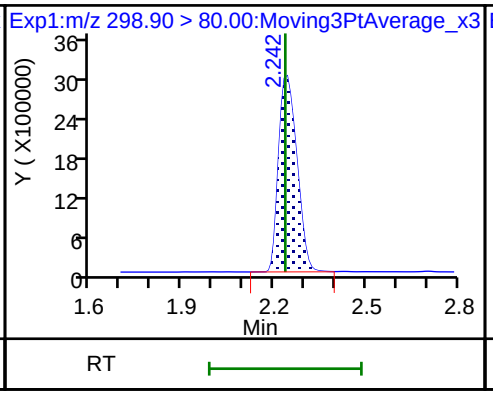
D 4 13C5 PFPeA



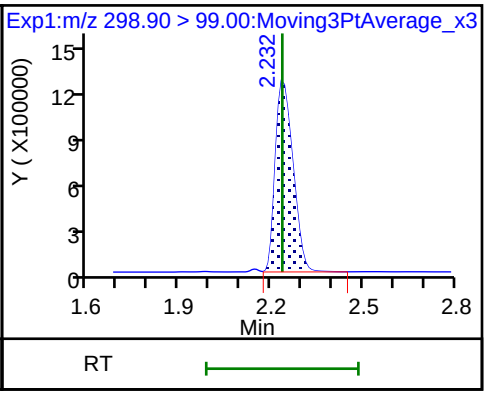
3 Perfluoropentanoic acid



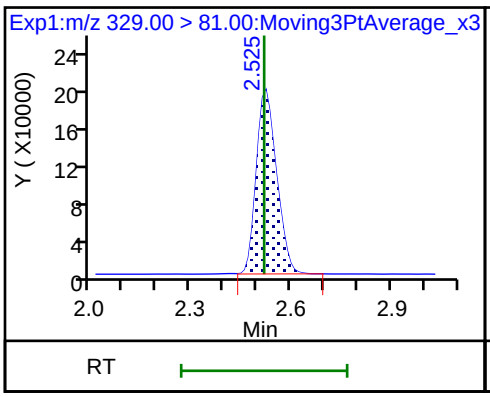
5 Perfluorobutanesulfonic acid



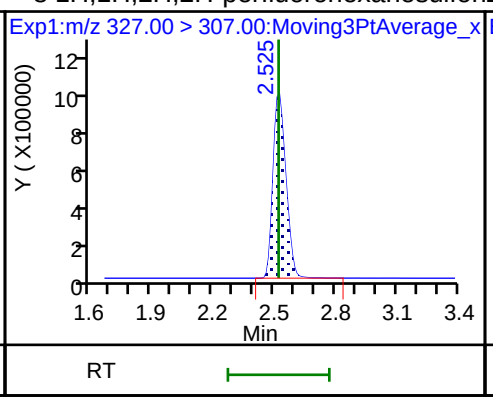
5 Perfluorobutanesulfonic acid



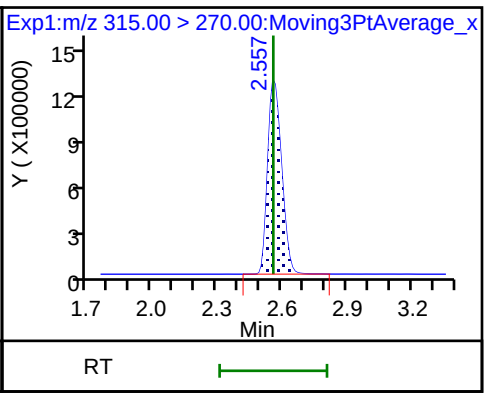
D 7 M2-4:2 FTS



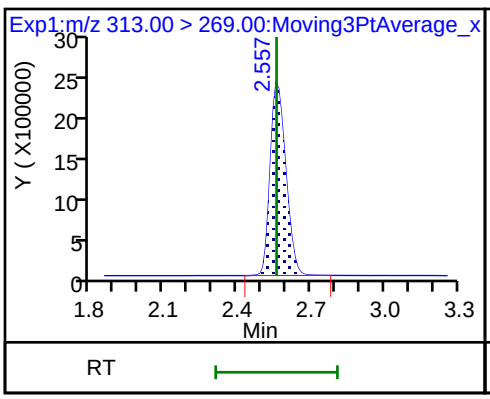
8 1H,1H,2H,2H-perfluorohexanesulfon



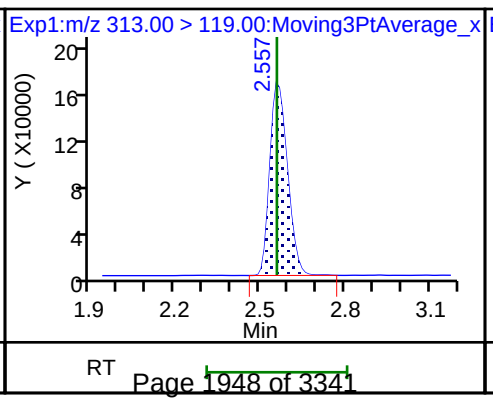
D 9 13C2 PFHxA



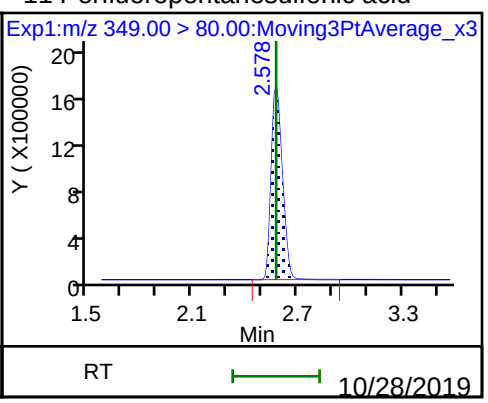
10 Perfluorohexanoic acid



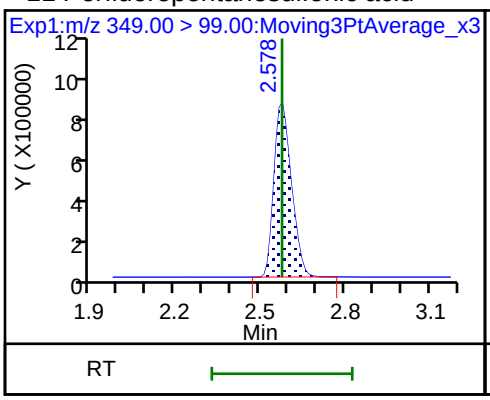
10 Perfluorohexanoic acid



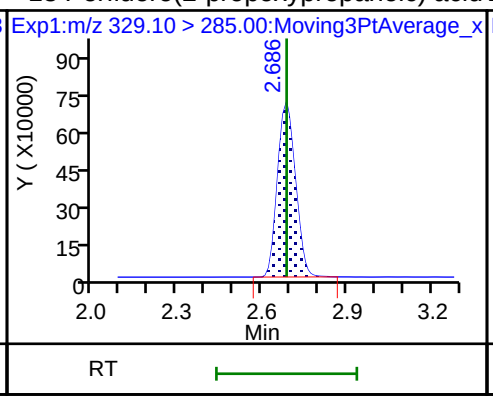
11 Perfluoropentanesulfonic acid



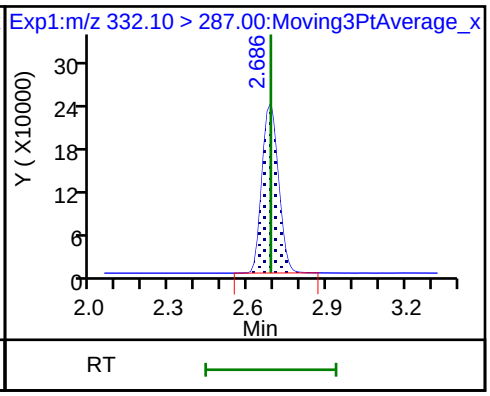
11 Perfluoropentanesulfonic acid



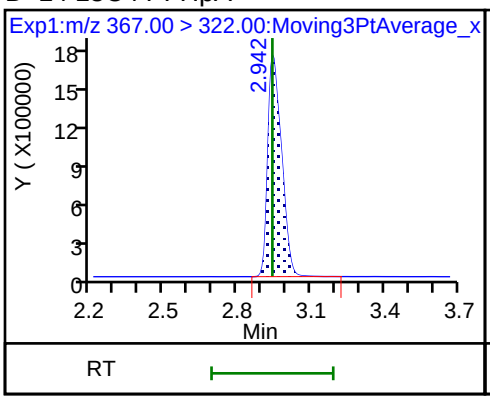
13 Perfluoro(2-propoxypropanoic) acid



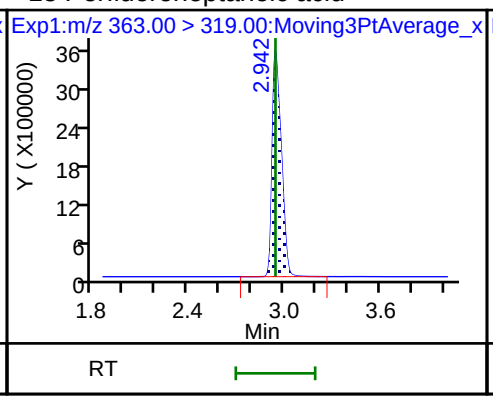
D 12 13C3 HFPO-DA



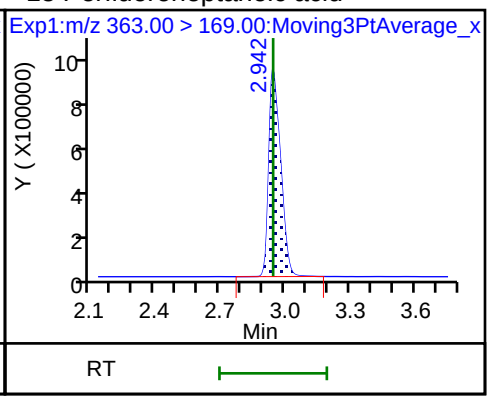
D 14 13C4 PFHpA



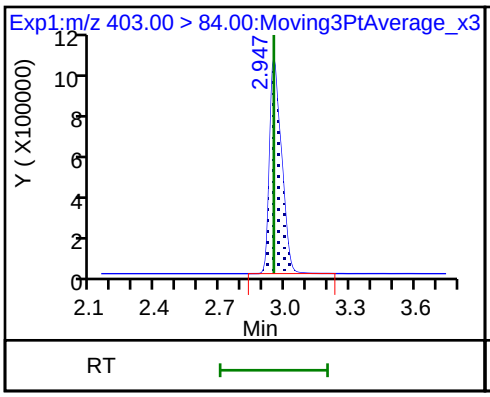
15 Perfluoroheptanoic acid



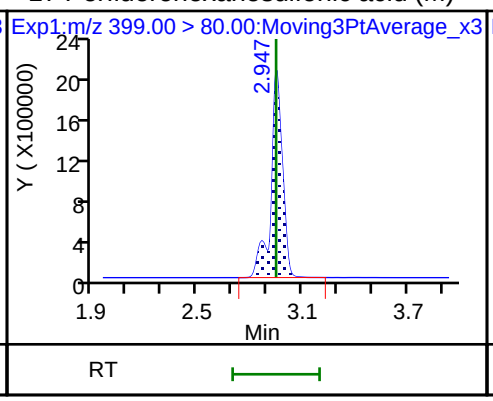
15 Perfluoroheptanoic acid



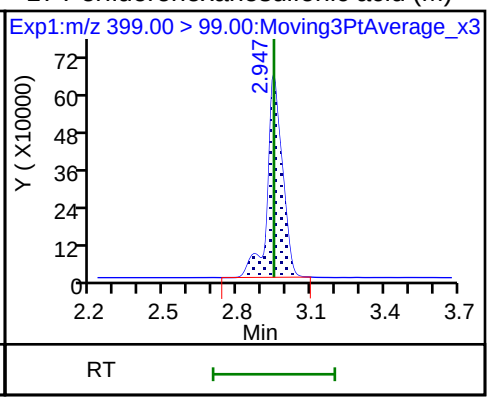
D 16 18O2 PFHxS



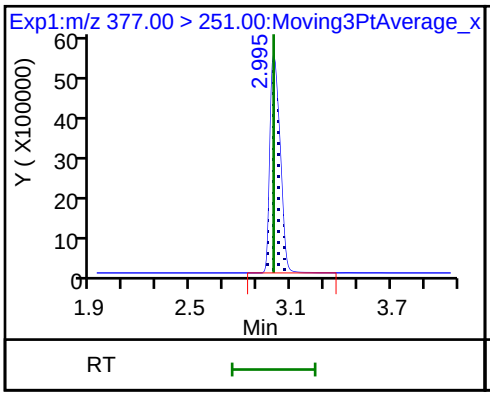
17 Perfluorohexanesulfonic acid (M)



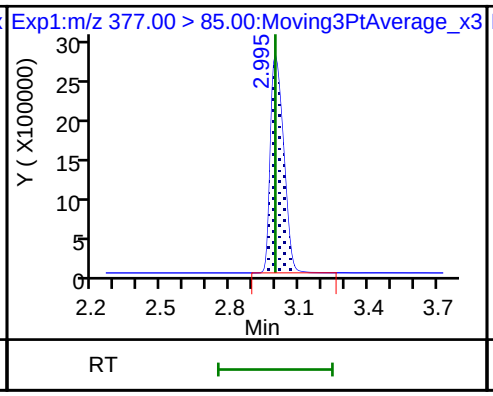
17 Perfluorohexanesulfonic acid (M)



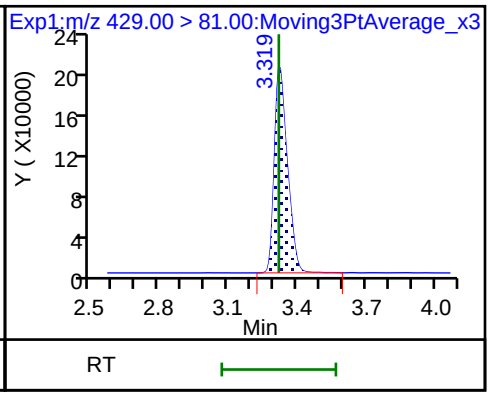
18 DONA



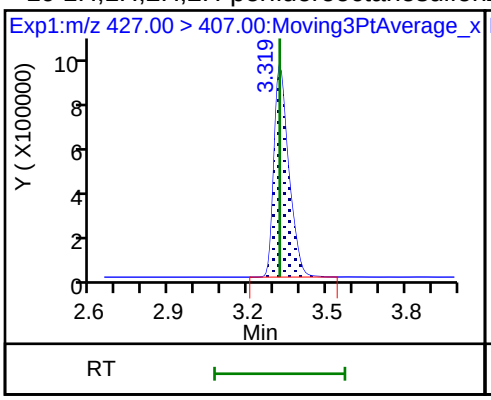
18 DONA



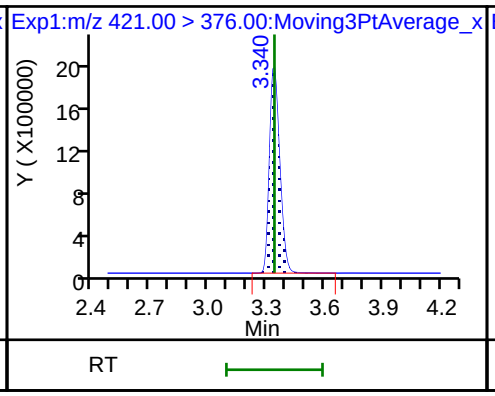
D 20 M2-6:2 FTS



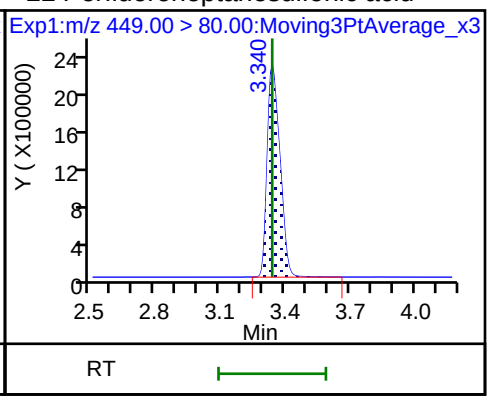
19 1H,1H,2H,2H-perfluorooctanesulfon



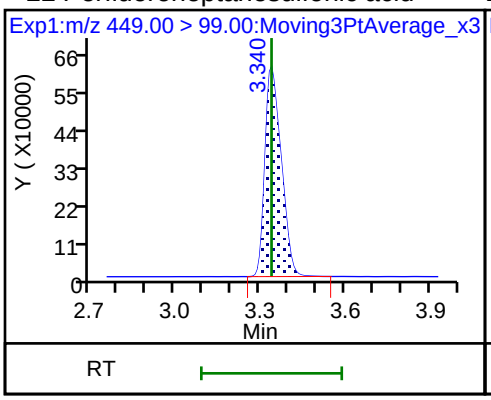
D 21 13C8 PFOA



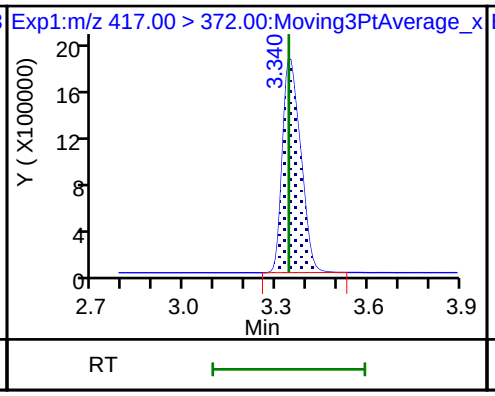
22 Perfluoroheptanesulfonic acid



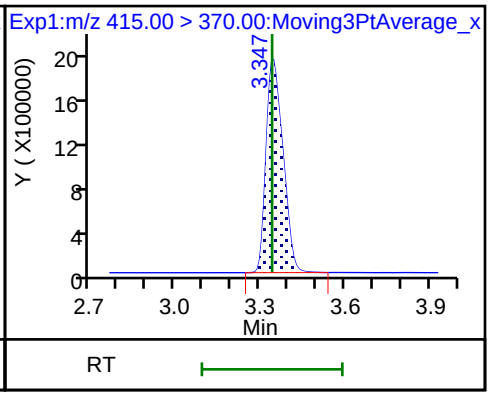
22 Perfluoroheptanesulfonic acid



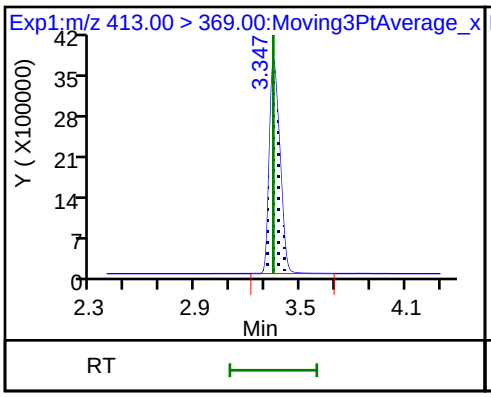
D 23 13C4 PFOA



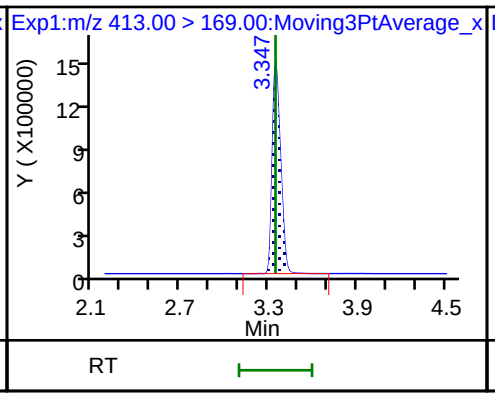
* 25 13C2 PFOA



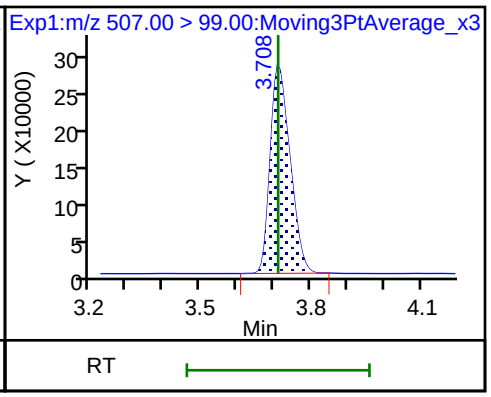
24 Perfluorooctanoic acid



24 Perfluorooctanoic acid



D 26 13C8 PFOS



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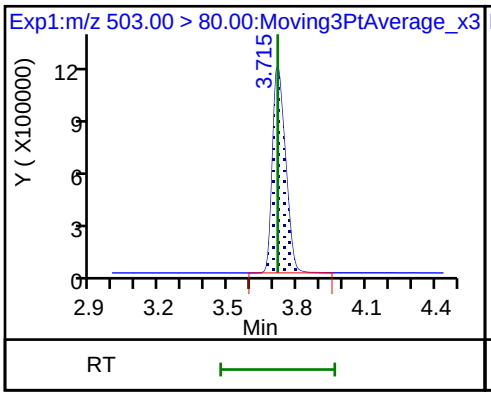
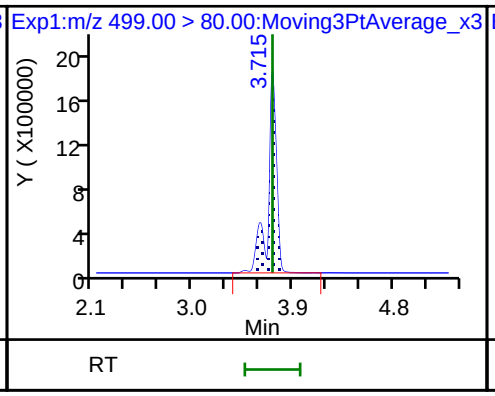
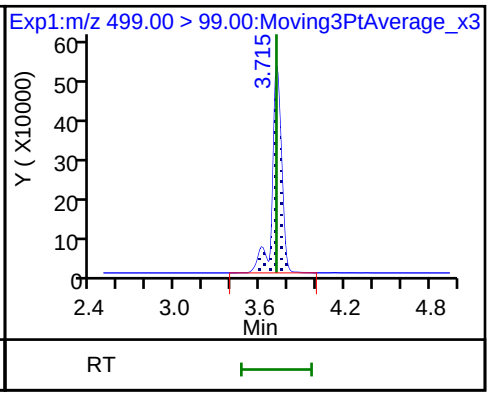


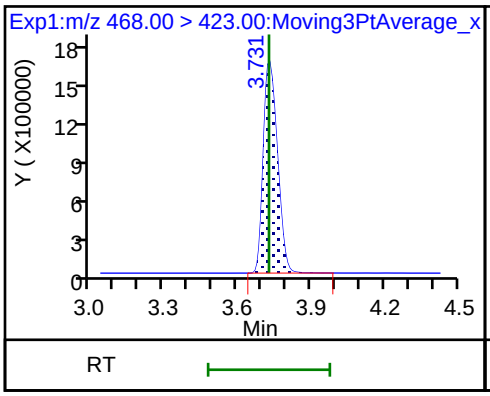
28 Perfluorooctanesulfonic acid



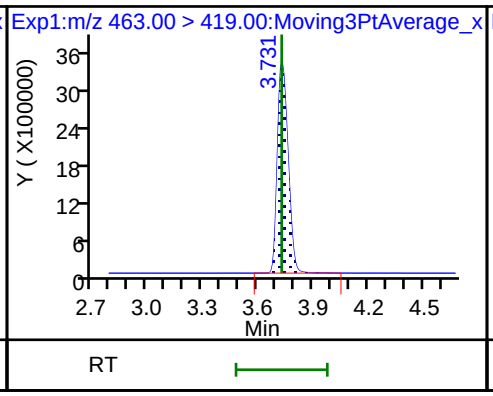
28 Perfluorooctanesulfonic acid



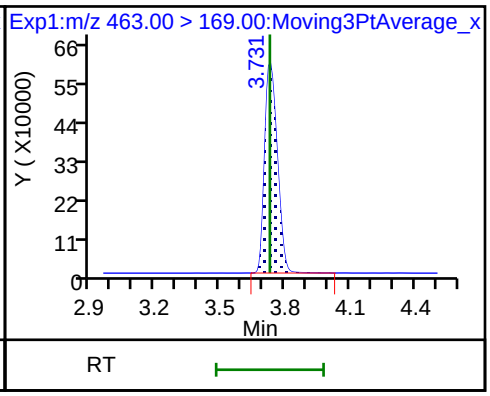
D 30 13C5 PFNA



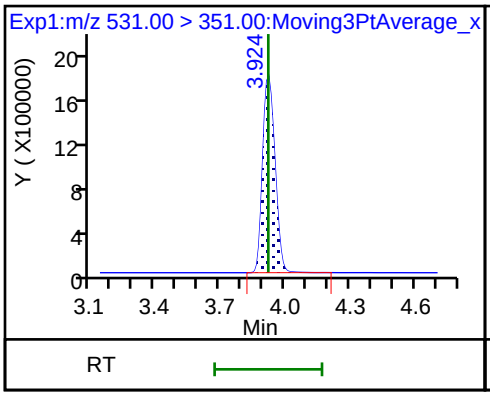
29 Perfluorononanoic acid



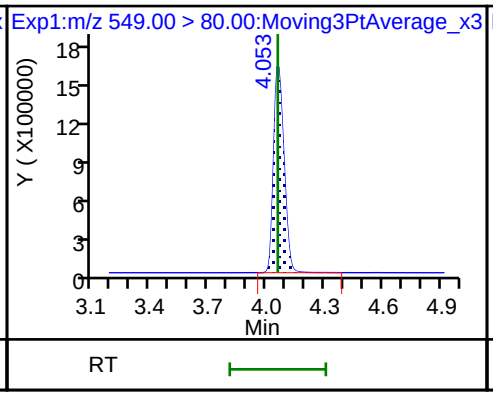
29 Perfluorononanoic acid



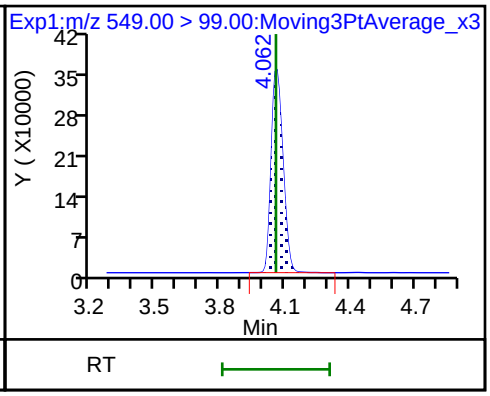
31 9-Chlorohexadecafluoro-3-oxanonane



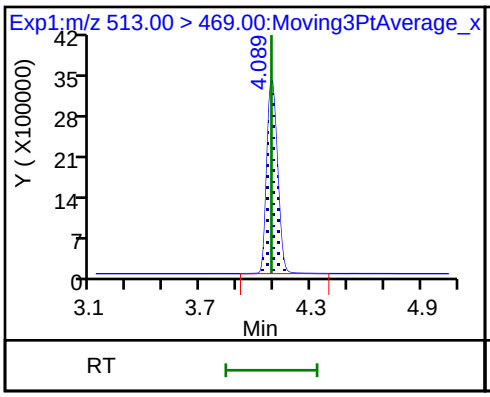
34 Perfluorononanesulfonic acid



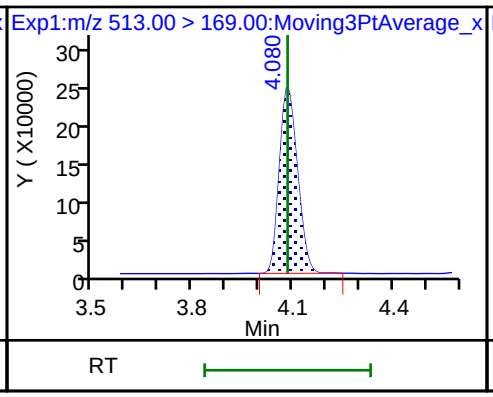
34 Perfluorononanesulfonic acid



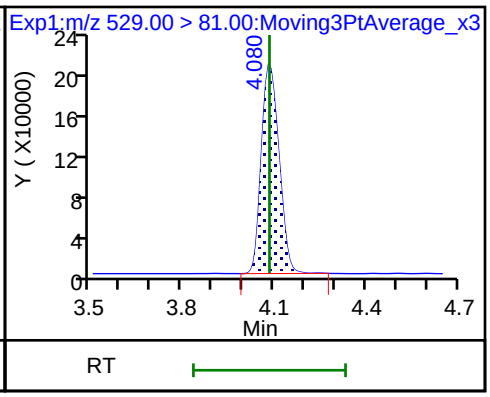
37 Perfluorodecanoic acid



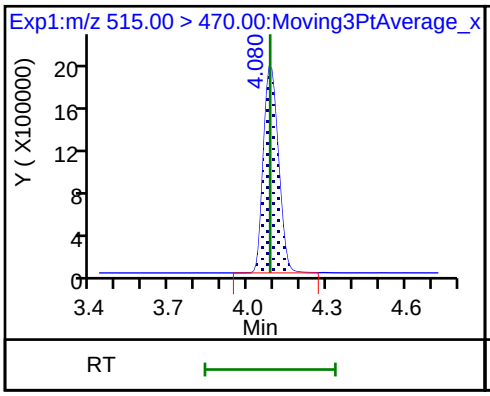
37 Perfluorodecanoic acid



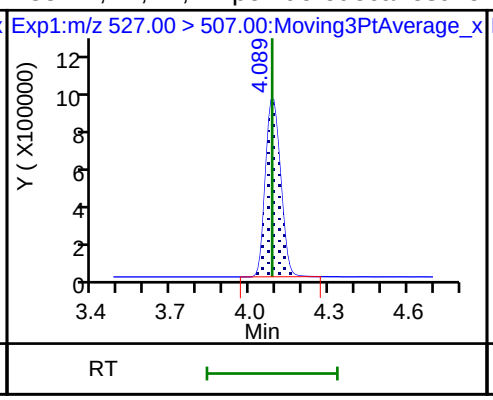
D 35 M2-8:2 FTS



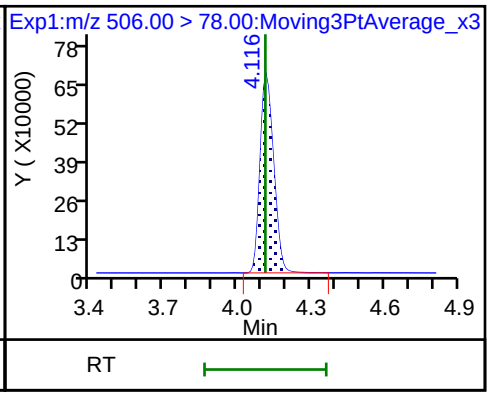
D 36 13C2 PFDA



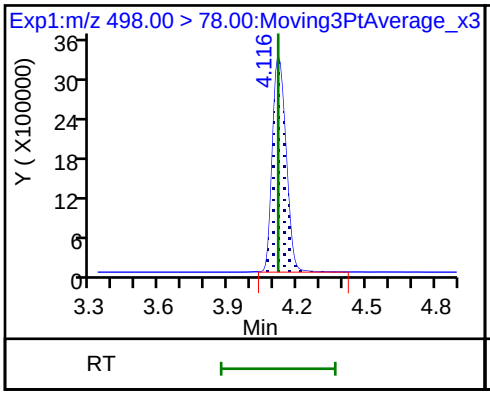
38 1H,1H,2H,2H-perfluorodecanesulfonic



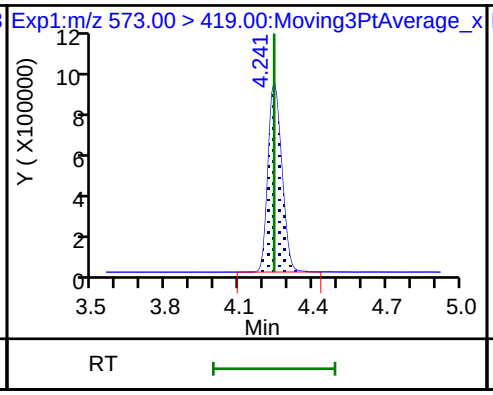
D 32 13C8 FOSA



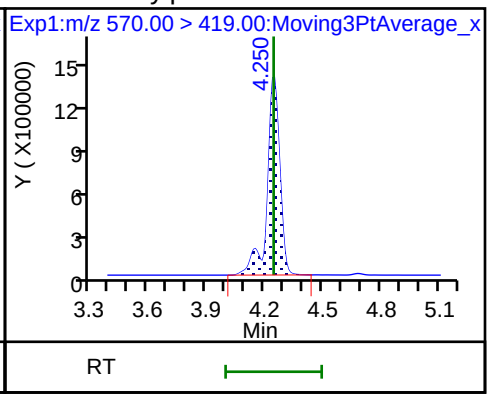
33 Perfluorooctanesulfonamide



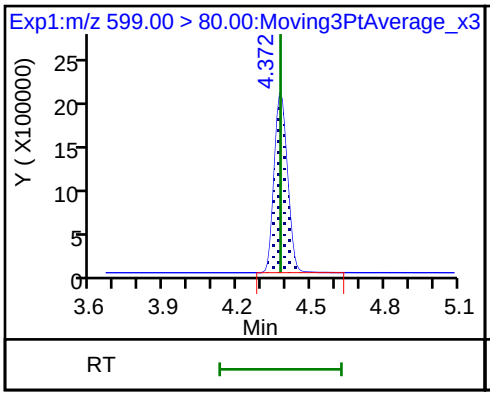
D 39 d3-NMeFOSAA



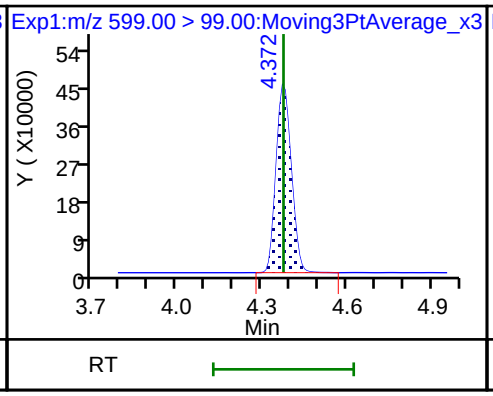
40 N-methylperfluorooctanesulfonamido



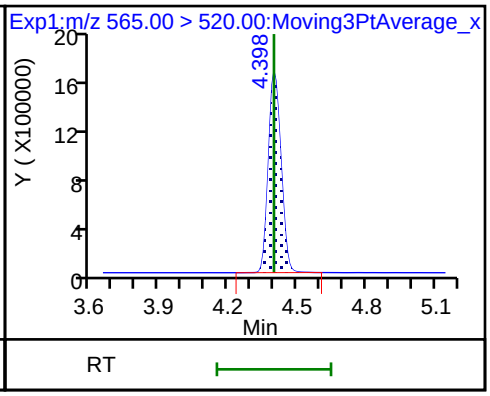
41 Perfluorodecanesulfonic acid



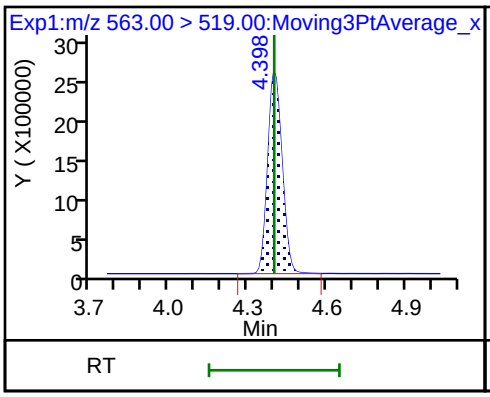
41 Perfluorodecanesulfonic acid



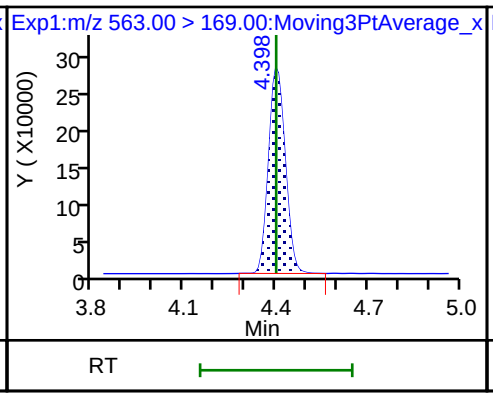
D 42 13C2 PFUnA



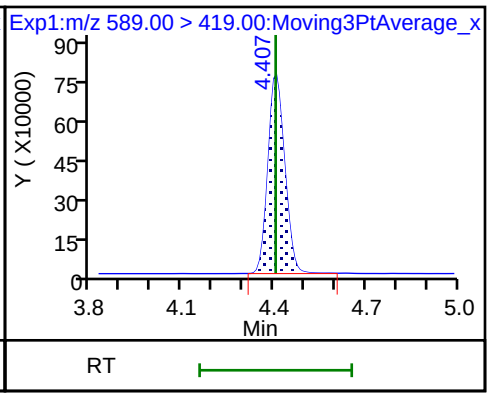
43 Perfluoroundecanoic acid



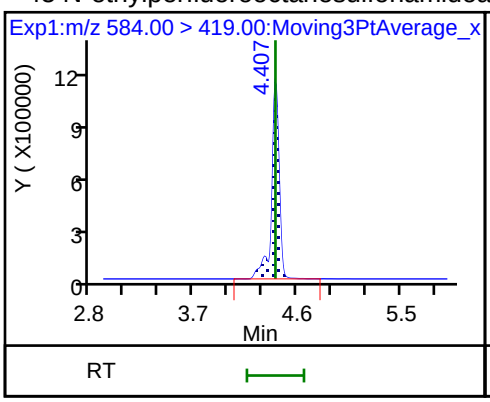
43 Perfluoroundecanoic acid



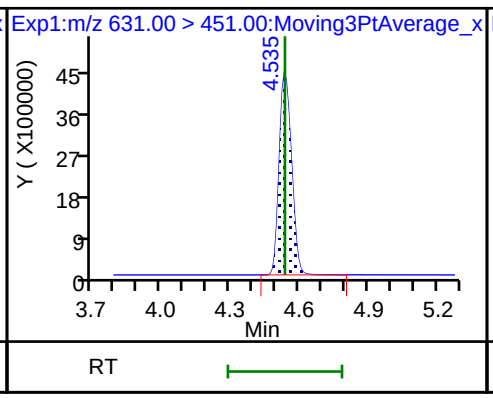
D 44 d5-NEtFOSAA



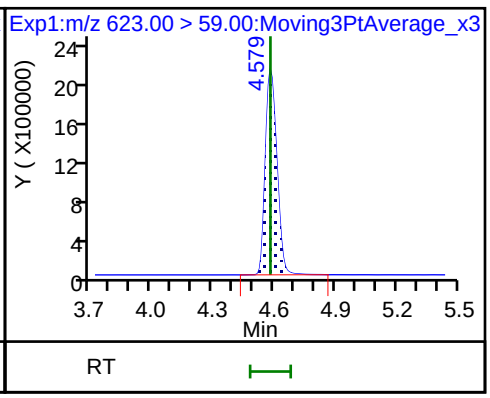
45 N-ethylperfluorooctanesulfonamidoa



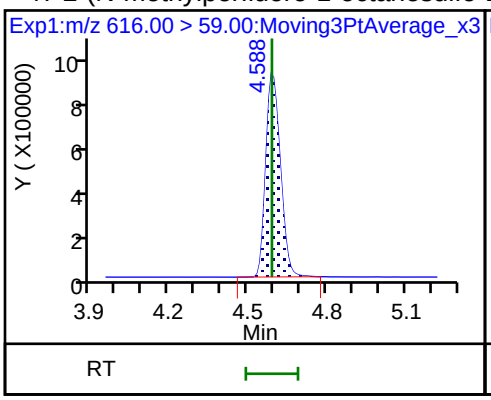
50 11-Chloroeicosafluoro-3-oxaundecan



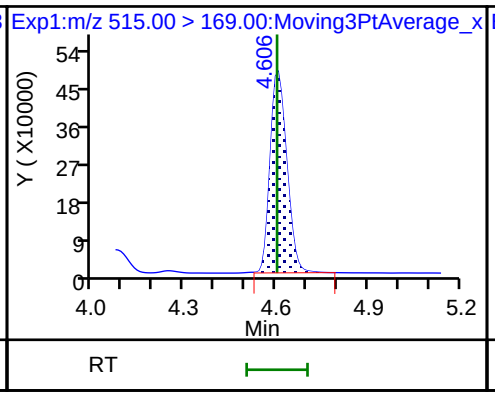
D 46 d7-N-MeFOSE-M



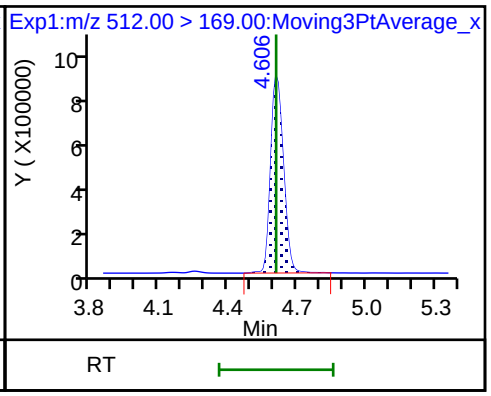
47 2-(N-methylperfluoro-1-octanesulfo



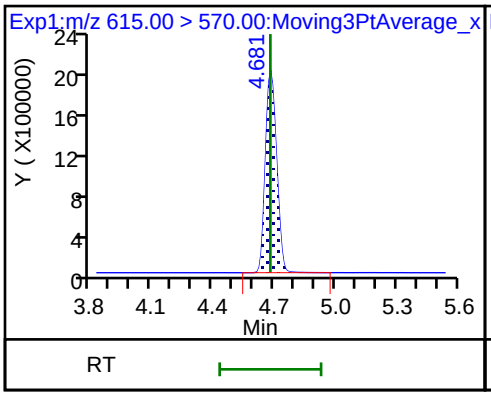
D 48 d-N-MeFOSA-M



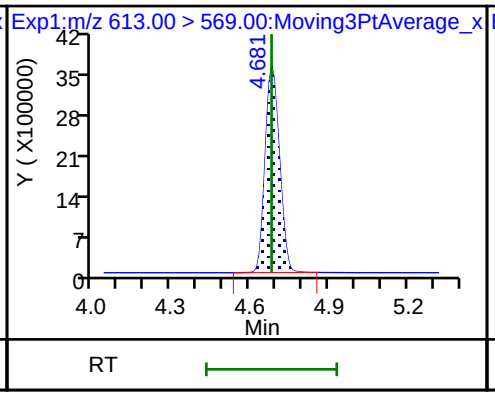
49 NMeFOSA



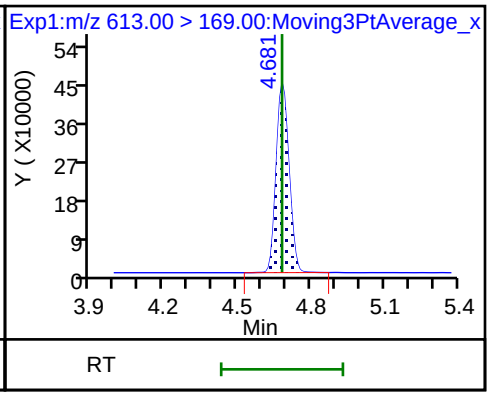
D 55 13C2 PFDoA



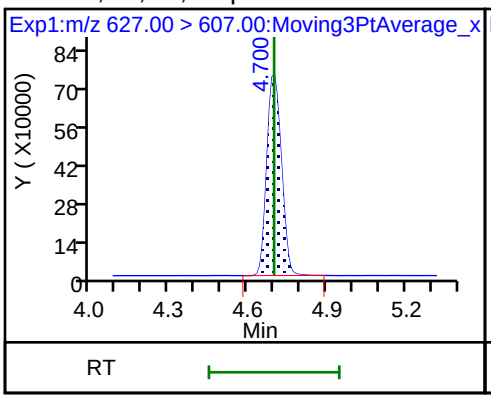
56 Perfluorododecanoic acid



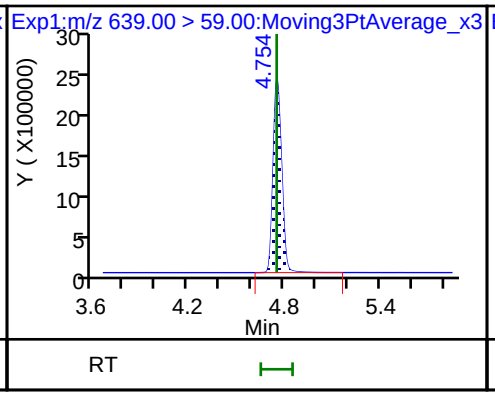
56 Perfluorododecanoic acid



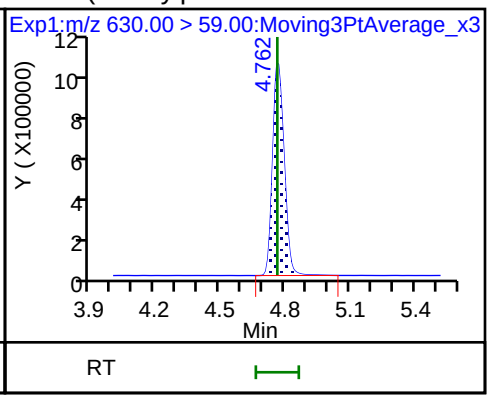
57 1H,1H,2H,2H-perfluorododecanesulfo



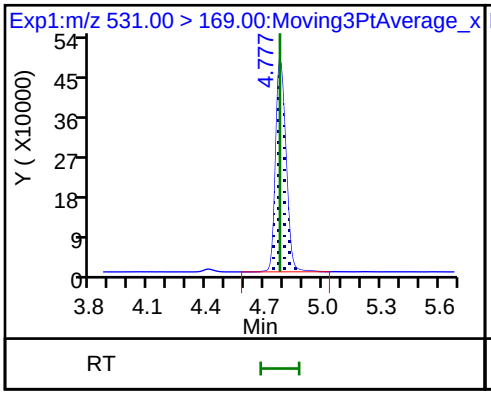
D 51 d9-N-EtFOSE-M



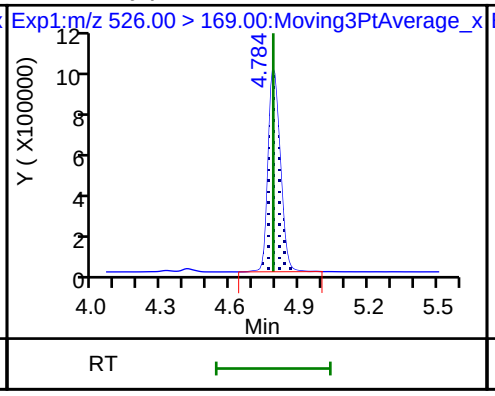
52 2-(N-ethylperfluoro-1-octanesulfon



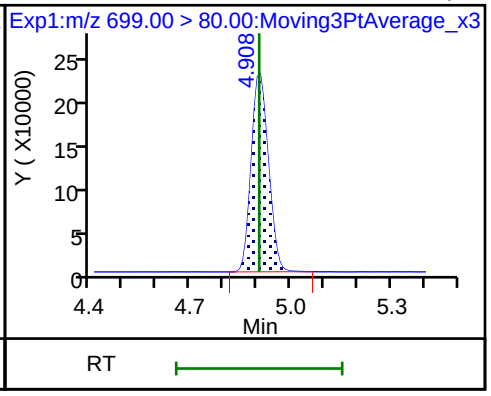
D 53 d-N-EtFOSA-M



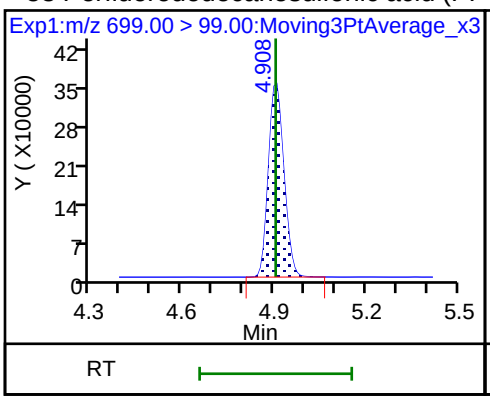
54 N-ethylperfluoro-1-octanesulfonami



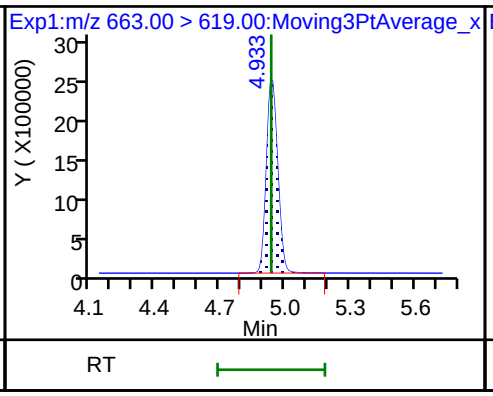
58 Perfluorododecanesulfonic acid (PF



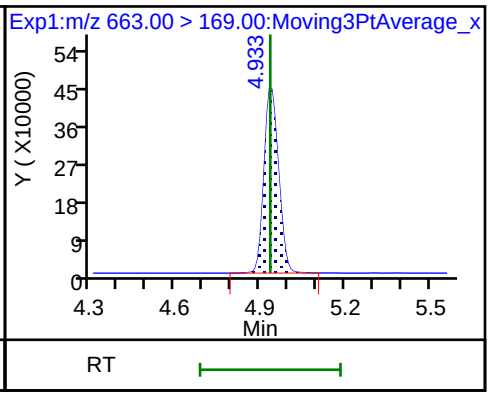
58 Perfluorododecanesulfonic acid (PF



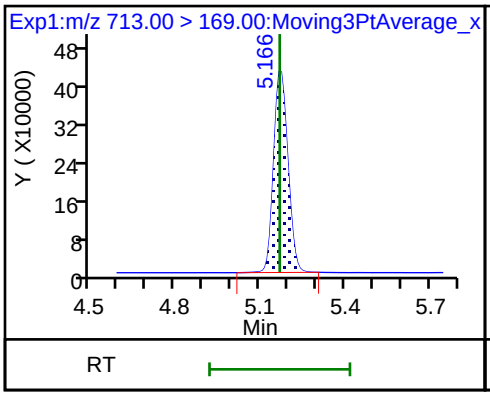
59 Perfluorotridecanoic acid



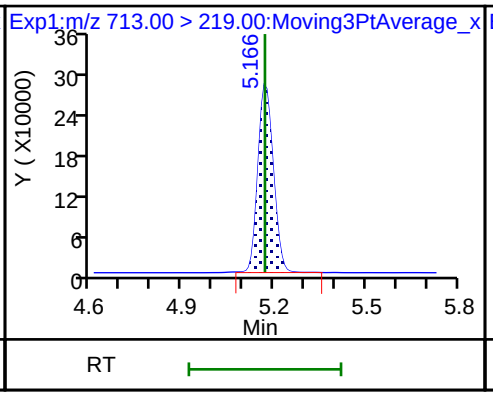
59 Perfluorotridecanoic acid



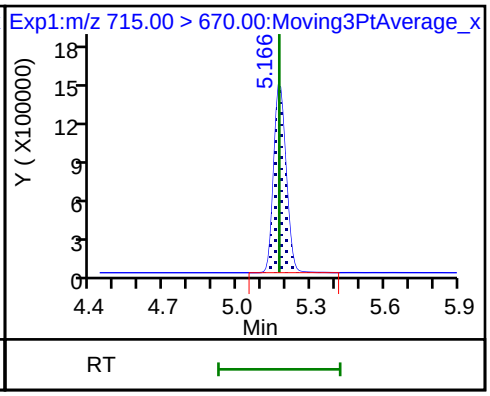
61 Perfluorotetradecanoic acid



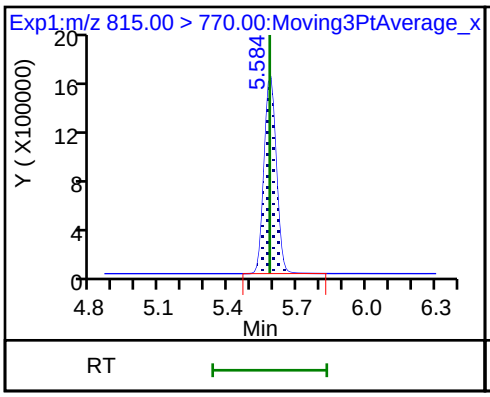
61 Perfluorotetradecanoic acid



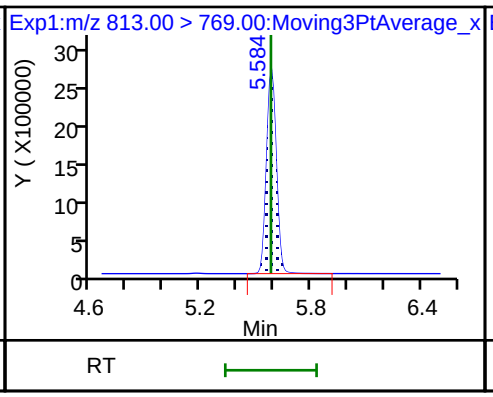
D 60 13C2 PFTeDA



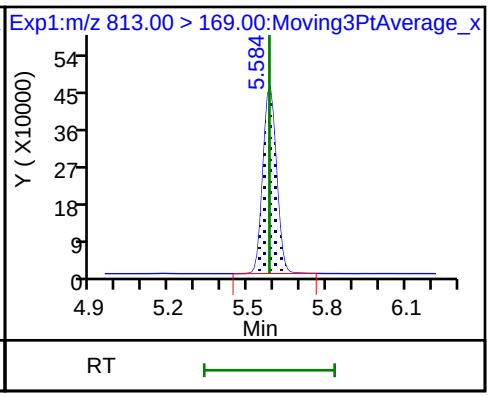
D 62 13C2 PFHxDA



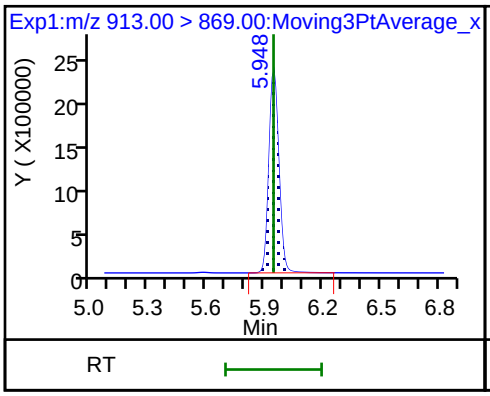
63 Perfluorohexadecanoic acid



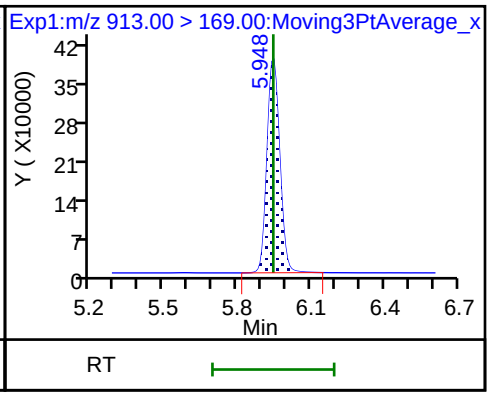
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

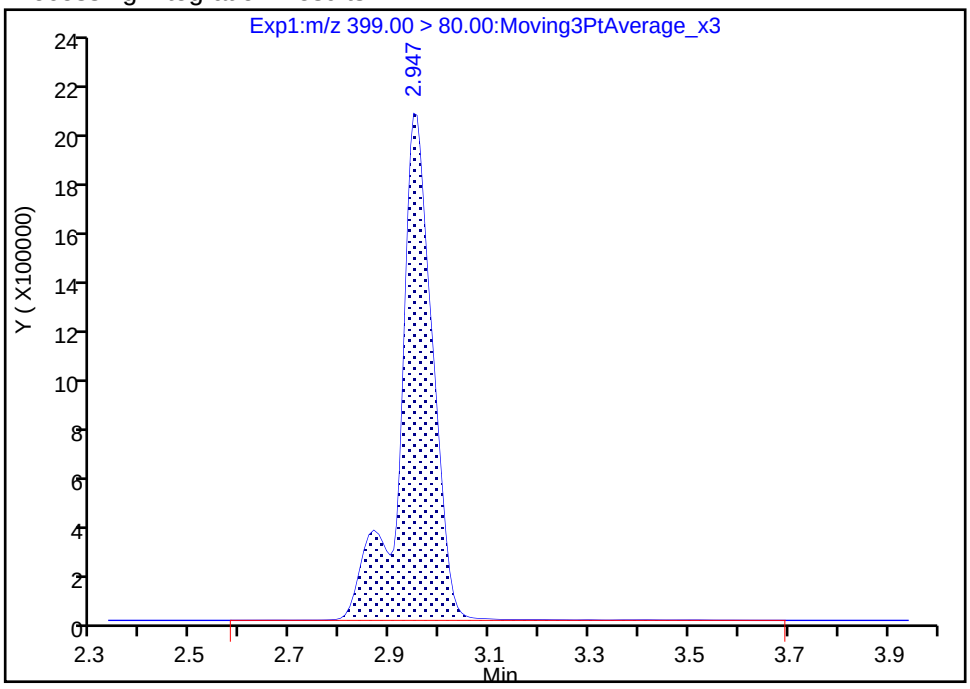
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_007.d
Injection Date: 05-Oct-2019 18:51:44 Instrument ID: A9
Lims ID: IC L6 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

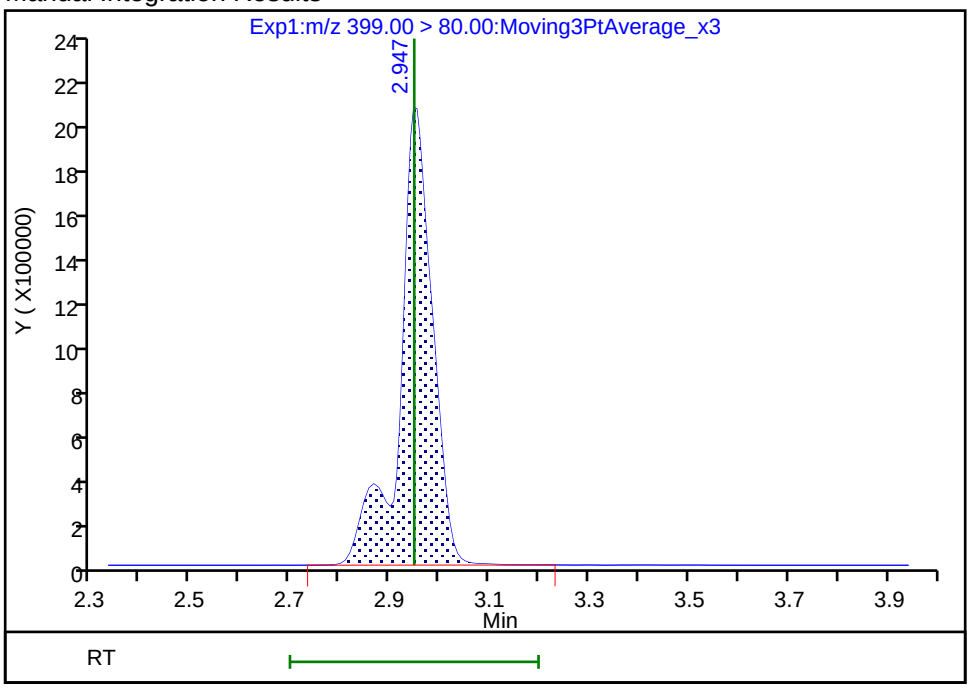
Processing Integration Results

RT: 2.95
Area: 9211659
Amount: 4.509470
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 9172567
Amount: 4.493032
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:35:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

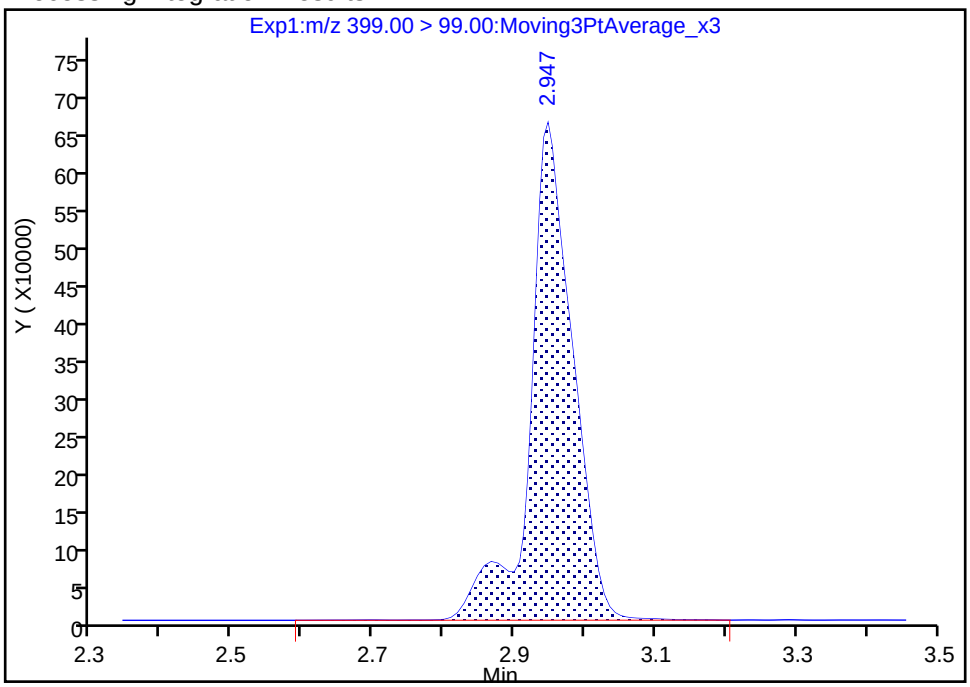
Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_007.d
Injection Date: 05-Oct-2019 18:51:44 Instrument ID: A9
Lims ID: IC L6 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

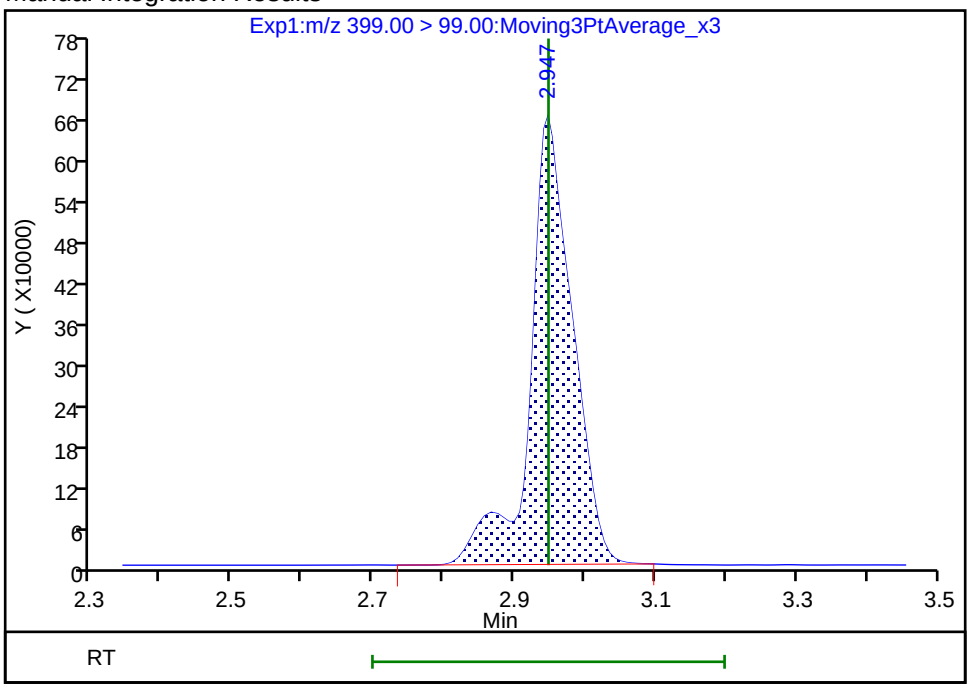
Processing Integration Results

RT: 2.95
Area: 2799693
Amount: 4.509470
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 2775623
Amount: 4.493032
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 10:35:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 05-Oct-2019 19:10:52 ALS Bottle#: 16 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD7
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:21:20 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:37:35
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.903	1.903	0.0	0.569	5840919	2.55		102	5696	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.911	1.906	0.005	1.004	17886175	9.01		90.1	3186	
D 4 13C5 PFPeA										
267.90 > 223.00	2.209	2.206	0.003	0.660	4908508	2.56		102	3938	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.209	2.207	0.002	1.000	17978413	8.94		89.4	2343	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.235	2.236	-0.001	0.759	22357919	7.96	Target=2.62	90.0	1318	
298.90 > 99.00	2.235	2.236	-0.001	0.759	9169658		2.44(1.31-3.93)	90.0	1462	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.517	2.519	-0.002	0.752	860112	2.35		101	1303	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.517	2.521	-0.004	1.000	8521819	9.03		96.6	6042	
D 9 13C2 PFHxA										
315.00 > 270.00	2.560	2.559	0.001	0.765	5557663	2.51		101	3049	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.560	2.559	0.001	1.000	18731134	9.07	Target=14.83	90.7	2716	
313.00 > 119.00	2.560	2.559	0.001	1.000	1402225		13.36(7.41-22.24)	90.7	1046	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.581	2.577	0.004	0.876	13841139	9.41	Target=1.98	100	4819	
349.00 > 99.00	2.581	2.577	0.004	0.876	7087657		1.95(0.99-2.97)	100	4364	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.688	2.686	0.002	1.000	6217101	10.5		105	2262	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.688	2.686	0.002	0.803	973901	2.53		101	2262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.942	-0.001	0.879	6369189	2.52		101	3373	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.947	2.944	0.003	1.002	24469776	8.55	Target=4.24	85.5	3233	
363.00 > 169.00	2.947	2.944	0.003	1.002	6630694		3.69(2.12-6.36)	85.5	2790	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.947	0.0	0.881	3920448	2.41		102	4277	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.947	2.948	-0.001	1.000	17306713	8.53	Target=3.27	93.8	4310	
399.00 > 99.00	2.947	2.948	-0.001	1.000	5458548		3.17(1.64-4.91)	93.8	3356	
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	38304555	7.63	Target=2.25	81.0	6970	
377.00 > 85.00	2.995	2.995	0.0	0.806	20076731		1.91(1.12-3.37)	81.0	4484	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.319	-0.001	0.991	738647	2.09		88.1	2537	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.320	-0.002	1.000	6697984	9.25		97.5	3480	
D 21 13C8 PFOA										
421.00 > 376.00	3.339	3.340	-0.001	0.998	6913785	2.50		100	5974	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.339	3.340	-0.001	0.899	16924511	8.80	Target=3.58	92.4	4509	
449.00 > 99.00	3.339	3.340	-0.001	0.899	4953780		3.42(1.79-5.37)	92.4	4613	
D 23 13C4 PFOA										
417.00 > 372.00	3.347	3.341	0.006	1.000	7403196	2.54		102	4175	
* 25 13C2 PFOA										
415.00 > 370.00	3.347	3.342	0.005		7780493	2.50			3704	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.347	3.344	0.003	1.000	25839554	7.72	Target=2.79	77.2	3000	
413.00 > 169.00	3.339	3.344	-0.005	0.998	10477157		2.47(1.40-4.19)	77.2	42436	
D 26 13C8 PFOS										
507.00 > 99.00	3.714	3.710	0.004	1.110	1018428	2.48		99.3	1032	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.110	4646561	2.46		103	4773	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.714	0.0	1.000	17840172	8.55	Target=3.83	92.1	3019	
499.00 > 99.00	3.714	3.714	0.0	1.000	4895523		3.64(1.92-5.75)	92.1	6926	
D 30 13C5 PFNA										
468.00 > 423.00	3.730	3.728	0.002	1.114	6277242	2.42		96.7	3799	
29 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.729	0.001	1.000	23224755	8.98	Target=5.58	89.8	6574	
463.00 > 169.00	3.730	3.729	0.001	1.000	4780629		4.86(2.79-8.37)	89.8	2972	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.921	3.922	-0.001	1.056	13531556	9.83		105	5301	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.060	4.057	0.003	1.093	11115033	9.38	Target=4.51	97.8	4625	
549.00 > 99.00	4.060	4.057	0.003	1.093	2514652		4.42(2.25-6.76)	97.8	3204	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.084	0.002	1.000	22827875	8.18	Target=15.45	81.8	3731	
513.00 > 169.00	4.086	4.084	0.002	1.000	1802857		12.66(7.73-23.18)	81.8	239	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.086	4.084	0.002	1.221	732390	2.21		92.1	1404	
D 36 13C2 PFDA										
515.00 > 470.00	4.086	4.084	0.002	1.221	7338608	2.50		100	3989	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.078	4.084	-0.006	0.998	6312594	9.32		97.3	2449	
D 32 13C8 FOSA										
506.00 > 78.00	4.113	4.113	0.0	1.229	2405348	2.47		98.9	2747	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.122	4.117	0.005	1.002	24533018	9.28		92.8	2224	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.238	4.241	-0.003	1.267	3409196	2.47		98.7	2486	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.248	4.246	0.002	1.002	11101962	9.94		99.4	1016	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.375	0.003	1.179	14613634	9.24	Target=4.64	95.8	4292	
599.00 > 99.00	4.378	4.375	0.003	1.179	3462539		4.22(2.32-6.96)	95.8	3183	
D 42 13C2 PFUnA										
565.00 > 520.00	4.396	4.398	-0.002	1.314	6127321	2.45		98.0	4775	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.396	4.399	-0.003	1.000	17551214	9.10	Target=9.27	91.0	4805	
563.00 > 169.00	4.396	4.399	-0.003	1.000	1993541		8.80(4.63-13.90)	91.0	2568	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.405	4.404	0.001	1.316	2860515	2.41		96.3	2796	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.413	4.409	0.004	1.002	9157895	10.0		100	2435	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.541	4.537	0.004	1.223	27811511	7.65		81.2	2881	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.586	4.580	0.006		8071050	12.7		101	2329	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.595	4.590	0.004	1.002	7076395	10.5		105	5396	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.604	4.602	0.002		1840313	2.65		106	289	
49 NMeFOSA										
512.00 > 169.00	4.613	4.607	0.006	1.002	6544231	10.2		102	1640	
D 55 13C2 PFDoA										
615.00 > 570.00	4.679	4.680	-0.001	1.398	6975840	2.53		101	4478	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.679	4.681	-0.002	1.000	22703989	7.90	Target=9.58	79.0	5153	
613.00 > 169.00	4.679	4.681	-0.002	1.000	3086055		7.36(4.79-14.36)	79.0	3943	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.698	4.699	-0.001	1.150	5278185	10.1		105	4250	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.752	4.752	0.0		8461100	12.8		102	4679	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.767	4.763	0.004	1.003	7282336	10.2		102	3164	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.782	4.779	0.003		1760478	2.63		105	1593	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.790	4.786	0.004	1.002	7266135	10.3		103	1171	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.905	4.904	0.001	1.321	1608646	9.91	Target=0.64	102	3410	
699.00 > 99.00	4.905	4.904	0.001	1.321	2496083		0.64(0.32-0.96)	102	4087	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.939	4.935	0.004	1.055	15756282	8.76	Target=5.94	87.6	4607	
663.00 > 169.00	4.939	4.935	0.004	1.055	3033414		5.19(2.97-8.91)	87.6	3190	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.173	5.169	0.004	1.000	2898256	10.5	Target=1.42	105	3118	
713.00 > 219.00	5.173	5.169	0.004	1.000	2001589		1.45(0.71-2.13)	105	3426	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.173	5.170	0.003	1.546	4897646	2.51		100	3531	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.580	5.579	0.001	1.667	5664982	2.64		106	6318	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.580	5.581	-0.001	1.000	17435777	8.84	Target=6.39	88.4	5630	
813.00 > 169.00	5.580	5.581	-0.001	1.000	3050797		5.72(3.19-9.58)	88.4	4077	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.945	5.945	0.0	1.065	14533198	8.89	Target=6.02	88.9	4194	
913.00 > 169.00	5.945	5.945	0.0	1.065	2772729		5.24(3.01-9.03)	88.9	4038	

Reagents:

LCPFC_LL7_00015 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:21:22 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Injection Date: 05-Oct-2019 19:10:52 Instrument ID: A9

Lims ID: IC L7 Full

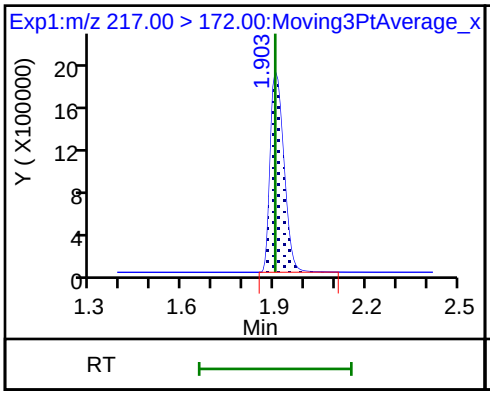
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 16 Worklist Smp#: 9

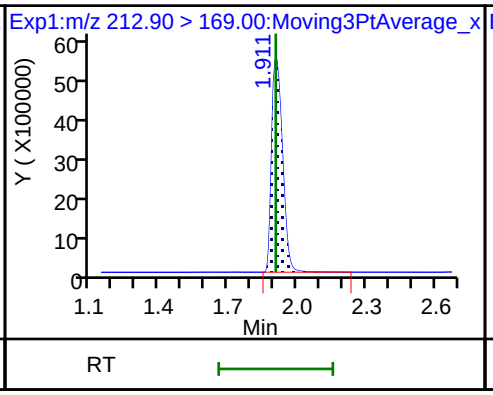
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

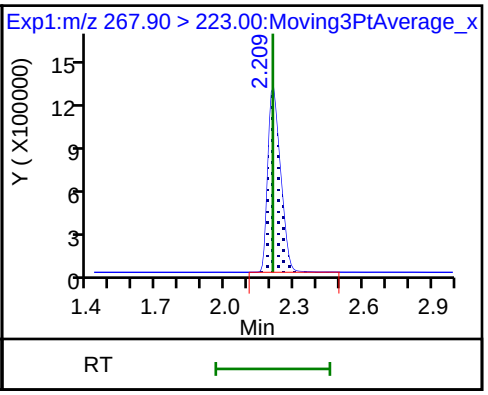
D 1 13C4 PFBA



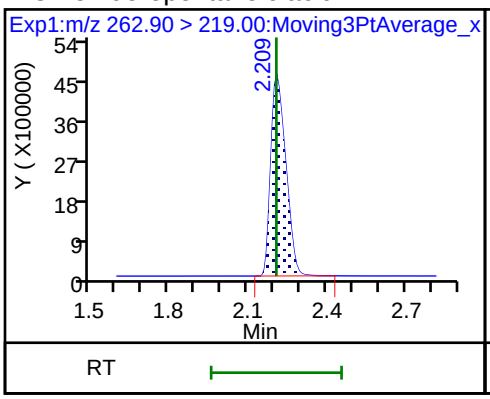
2 Perfluorobutanoic acid



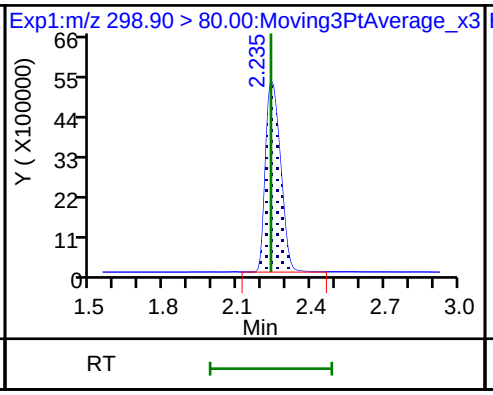
D 4 13C5 PFPeA



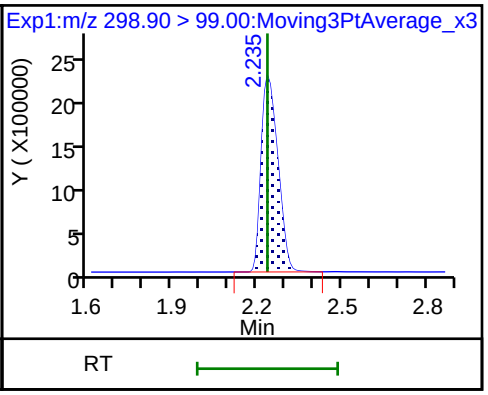
3 Perfluoropentanoic acid



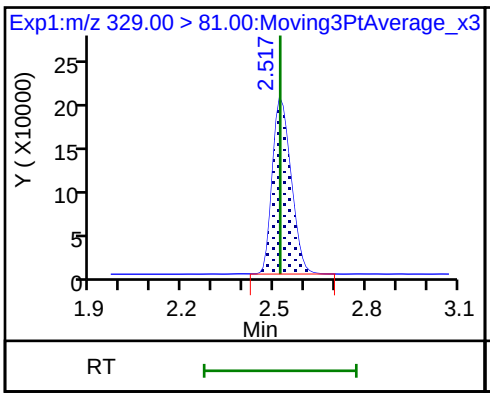
5 Perfluorobutanesulfonic acid



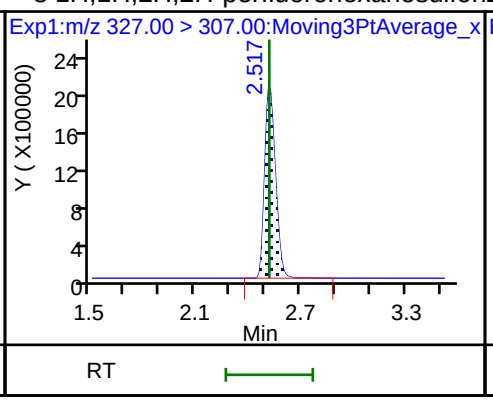
5 Perfluorobutanesulfonic acid



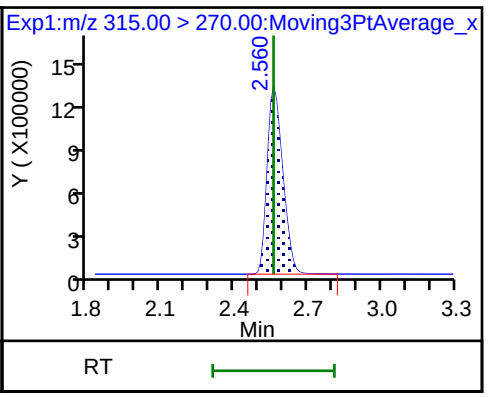
D 7 M2-4:2 FTS



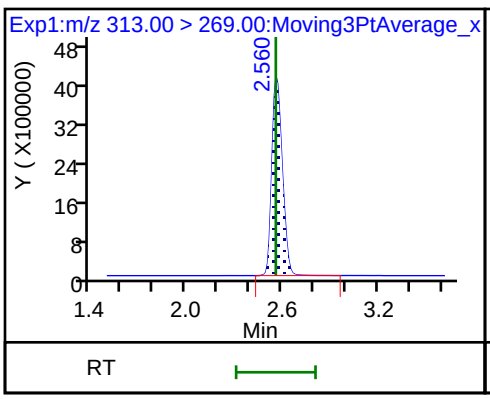
8 1H,1H,2H,2H-perfluorohexanesulfon



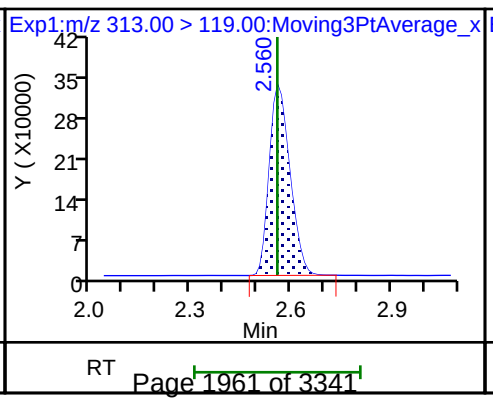
D 9 13C2 PFHxA



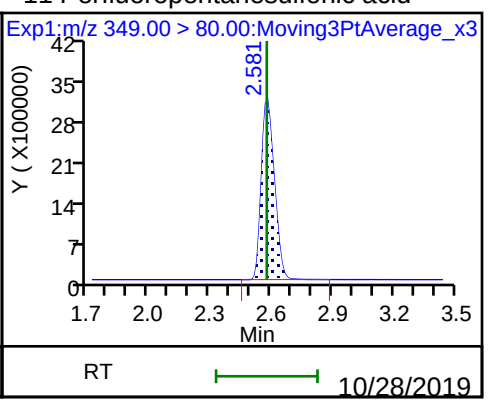
10 Perfluorohexanoic acid



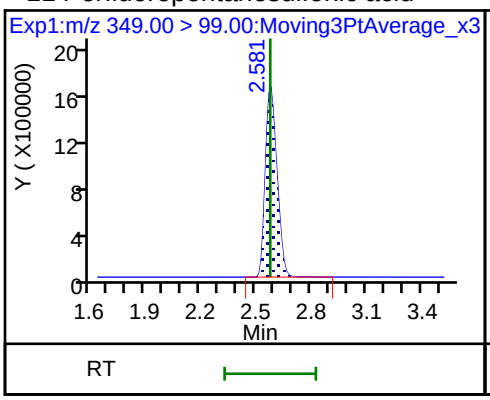
10 Perfluorohexanoic acid



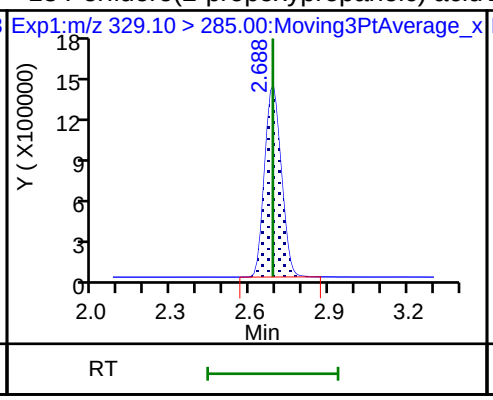
11 Perfluoropentanesulfonic acid



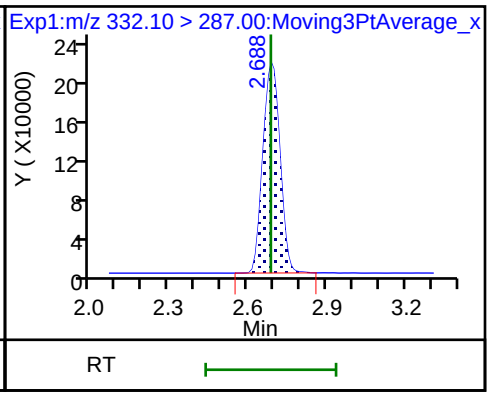
11 Perfluoropentanesulfonic acid



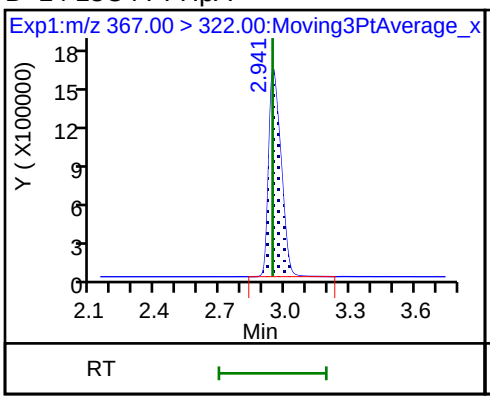
13 Perfluoro(2-propoxypropanoic) acid



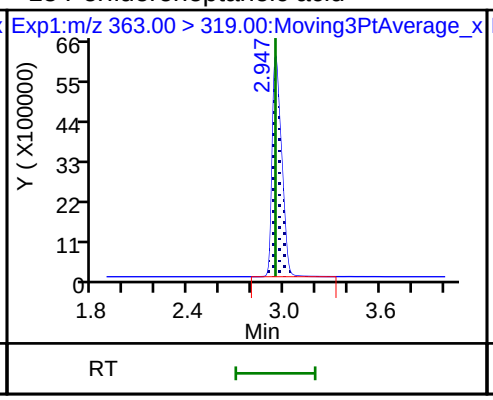
D 12 13C3 HFPO-DA



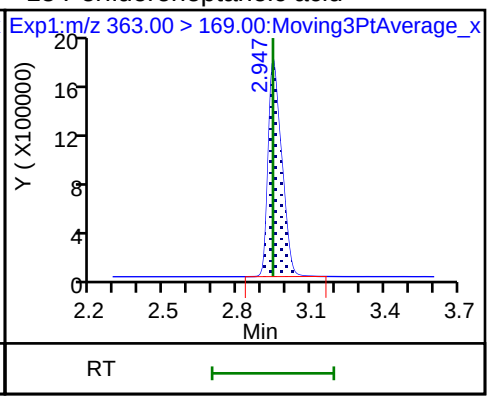
D 14 13C4 PFHpA



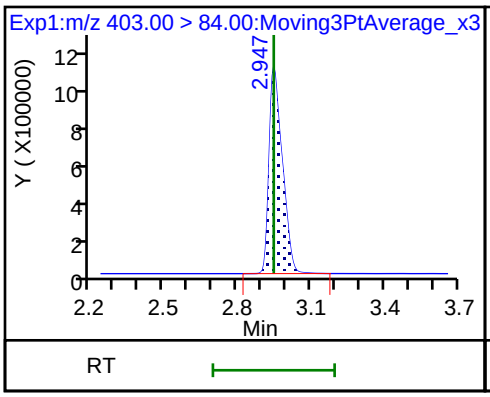
15 Perfluoroheptanoic acid



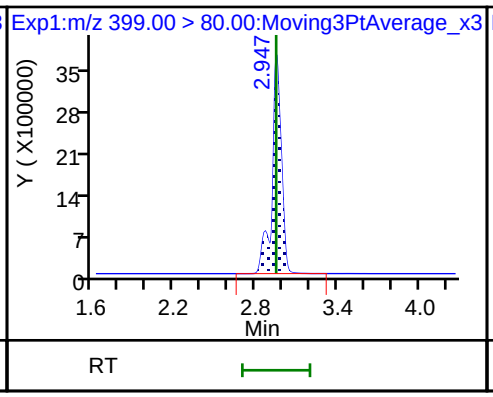
15 Perfluoroheptanoic acid



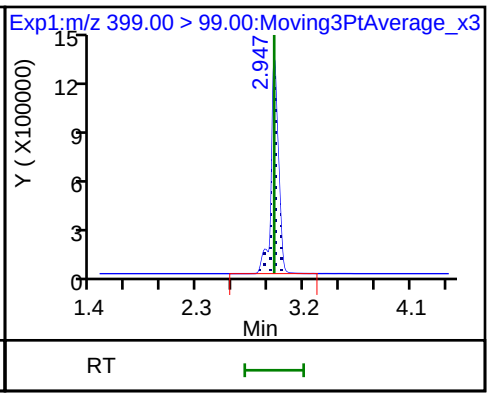
D 16 18O2 PFHxS



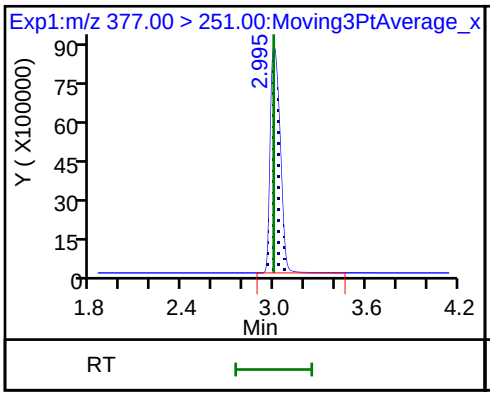
17 Perfluorohexanesulfonic acid



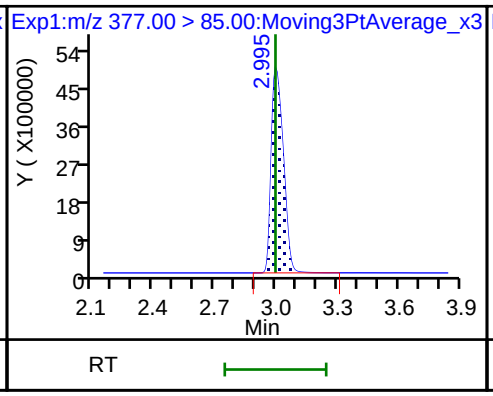
17 Perfluorohexanesulfonic acid



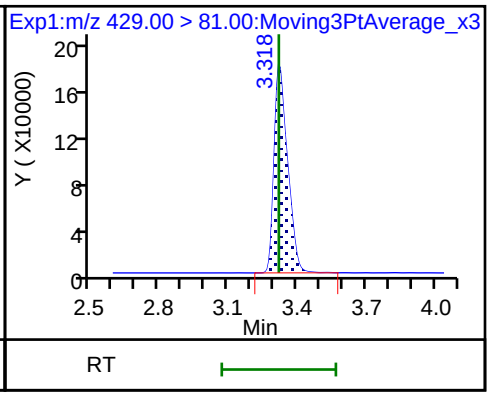
18 DONA



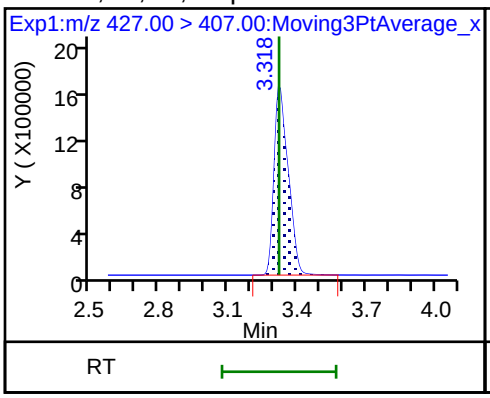
18 DONA



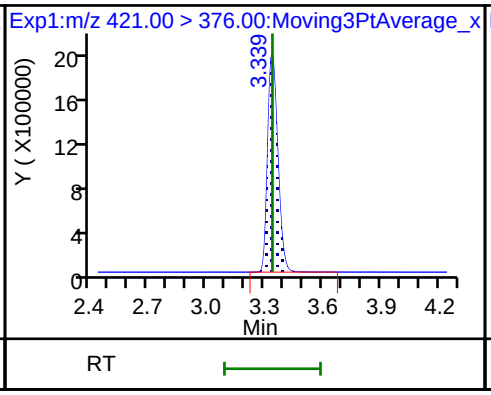
D 20 M2-6:2 FTS



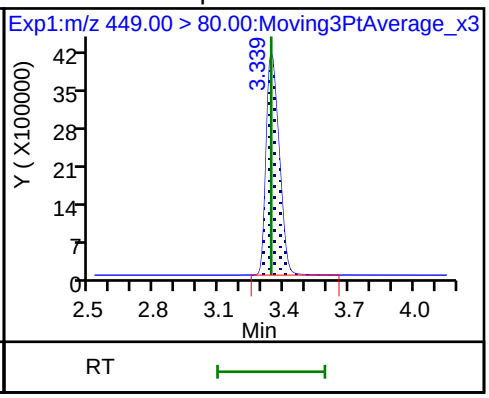
19 1H,1H,2H,2H-perfluorooctanesulfon



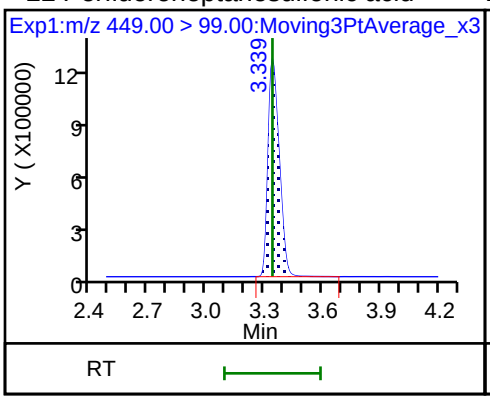
D 21 13C8 PFOA



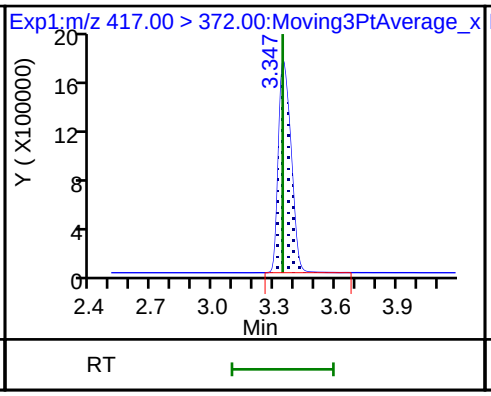
22 Perfluoroheptanesulfonic acid



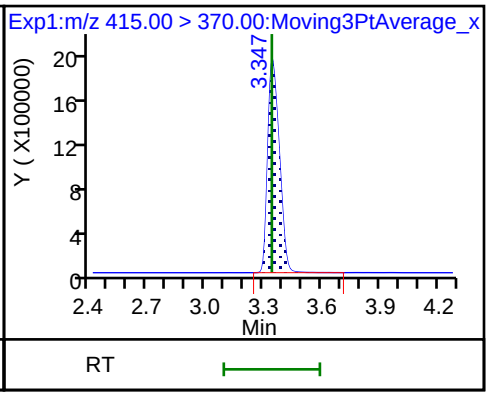
22 Perfluoroheptanesulfonic acid



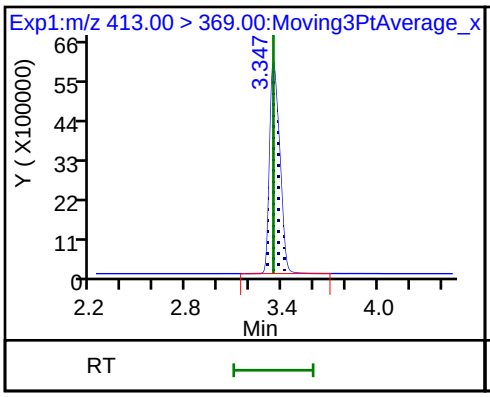
D 23 13C4 PFOA



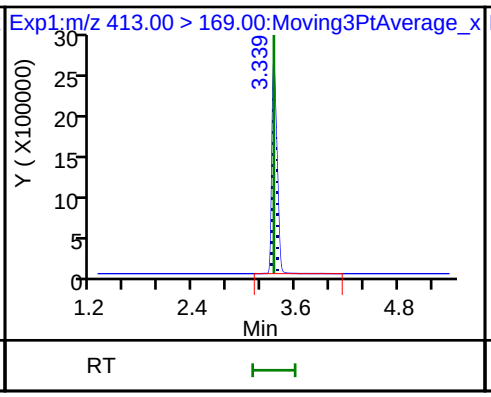
* 25 13C2 PFOA



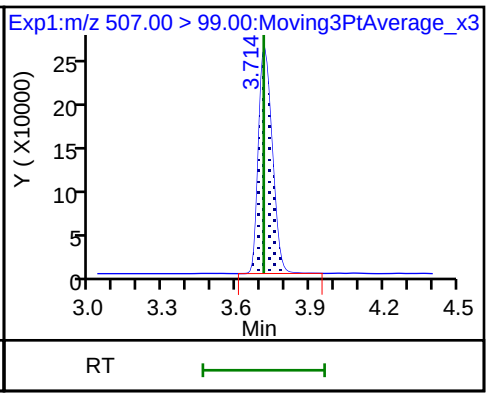
24 Perfluorooctanoic acid



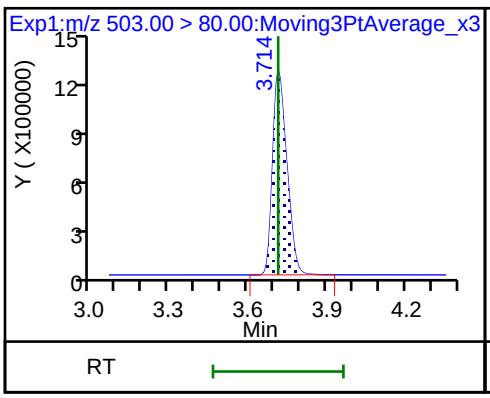
24 Perfluorooctanoic acid



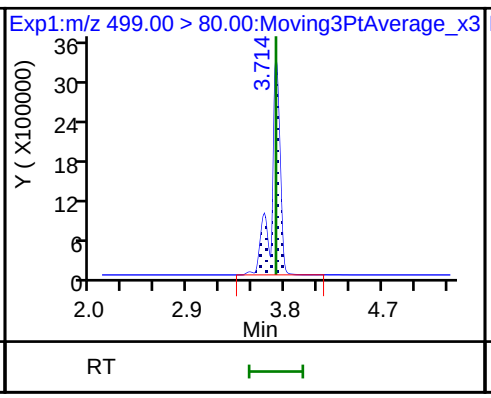
D 26 13C8 PFOS



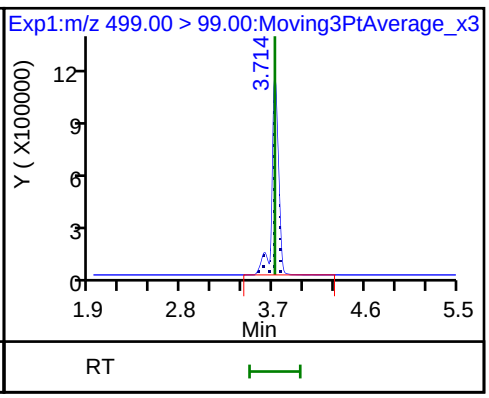
D 27 13C4 PFOS



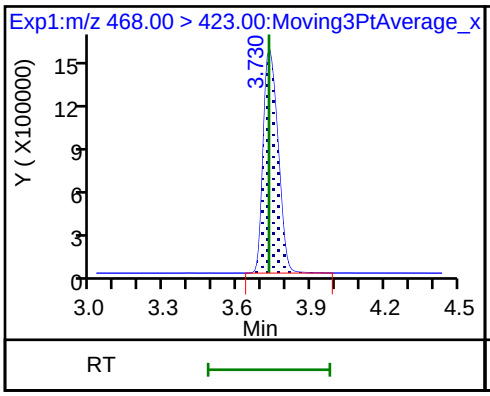
28 Perfluorooctanesulfonic acid



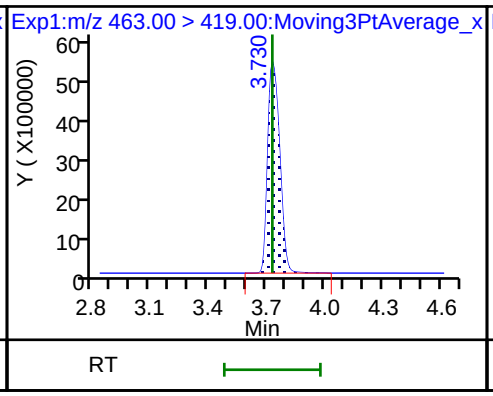
28 Perfluorooctanesulfonic acid



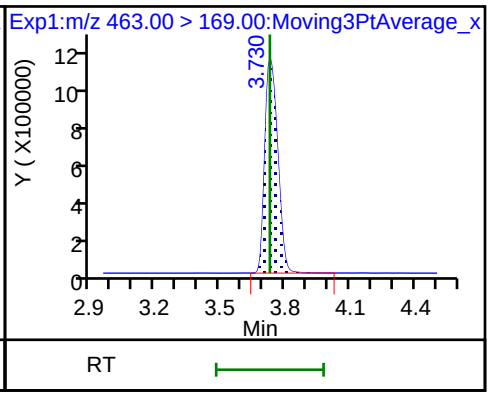
D 30 13C5 PFNA



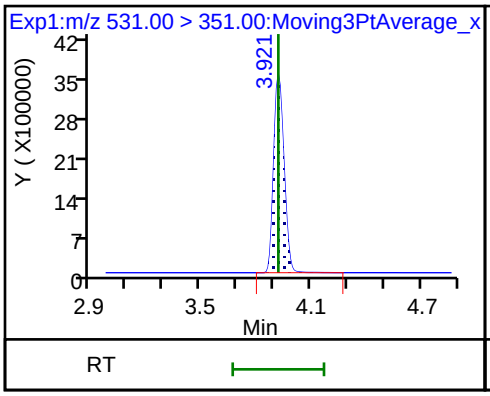
29 Perfluorononanoic acid



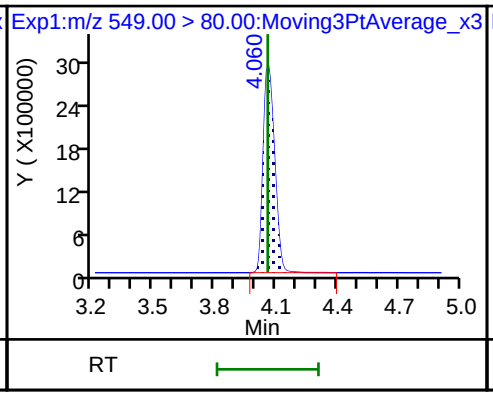
29 Perfluorononanoic acid



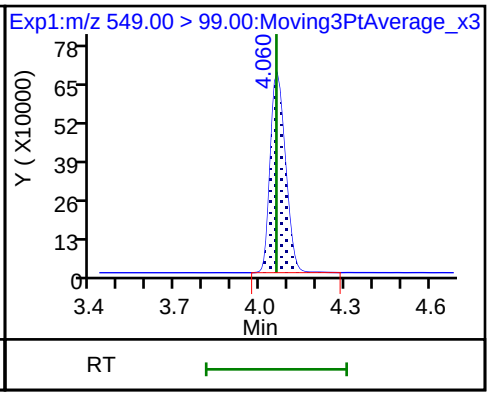
31 9-Chlorohexadecafluoro-3-oxanonane



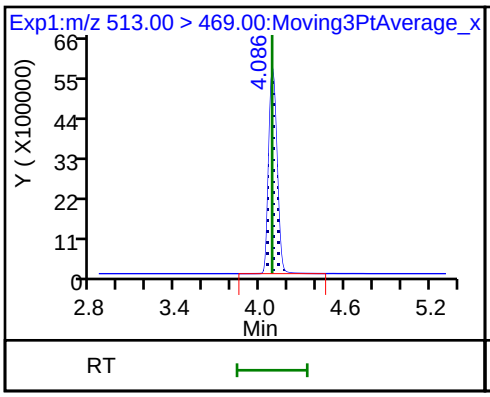
34 Perfluorononanesulfonic acid



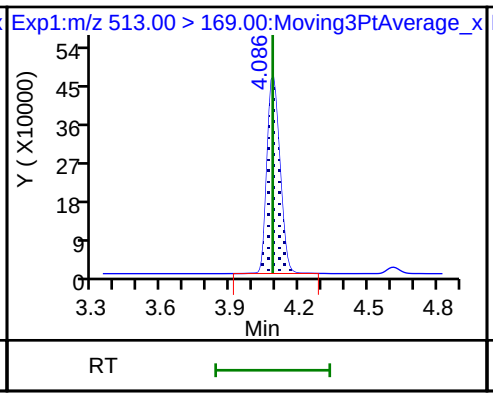
34 Perfluorononanesulfonic acid



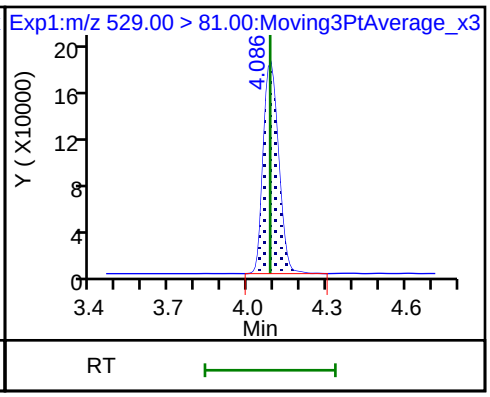
37 Perfluorodecanoic acid



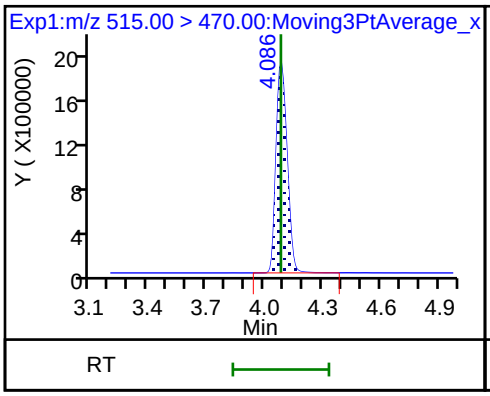
37 Perfluorodecanoic acid



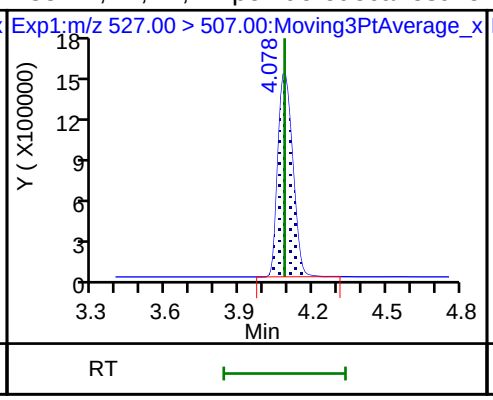
D 35 M2-8:2 FTS



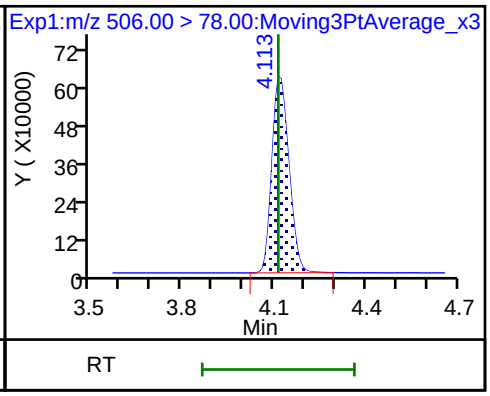
D 36 13C2 PFDA



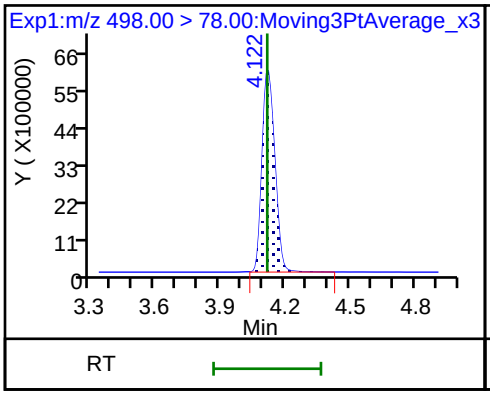
38 1H,1H,2H,2H-perfluorodecanesulfonic



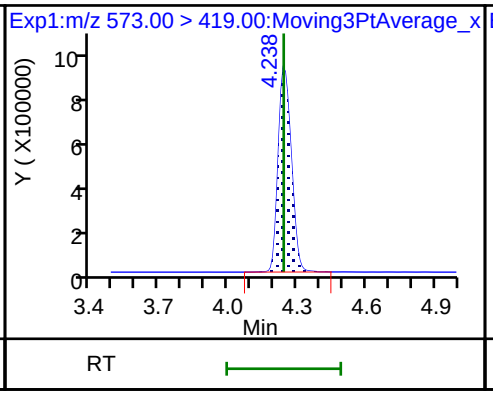
D 32 13C8 FOSA



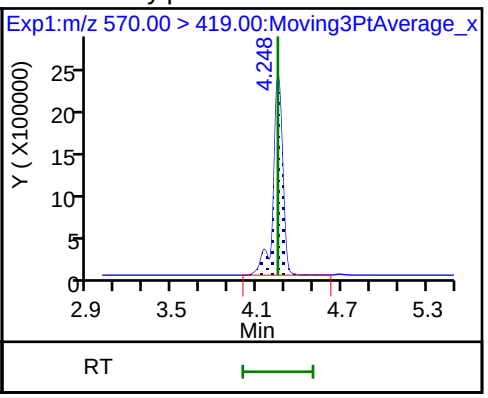
33 Perfluorooctanesulfonamide



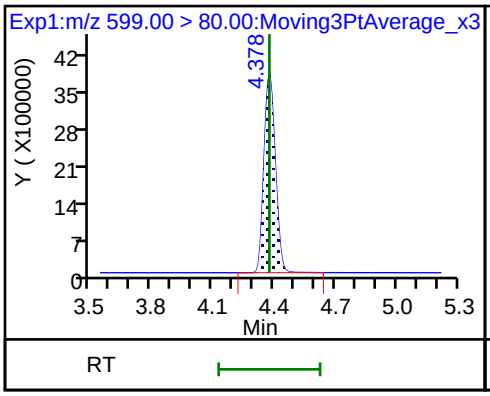
D 39 d3-NMeFOSAA



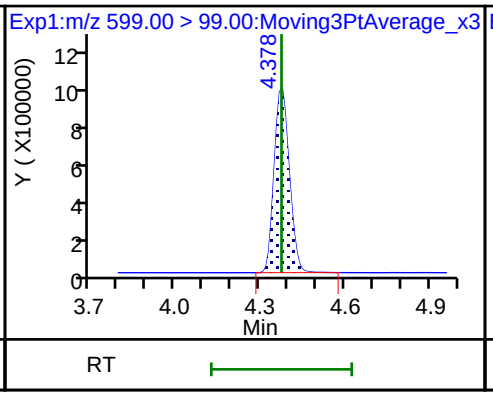
40 N-methylperfluorooctanesulfonamido



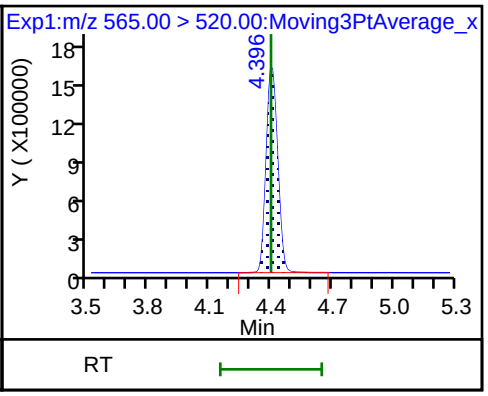
41 Perfluorodecanesulfonic acid



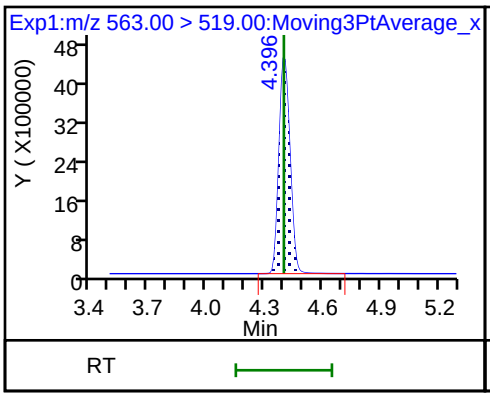
41 Perfluorodecanesulfonic acid



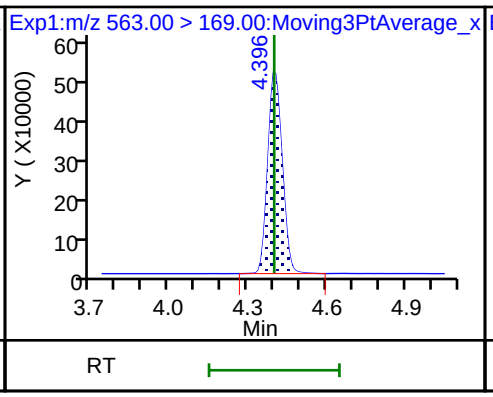
D 42 13C2 PFUnA



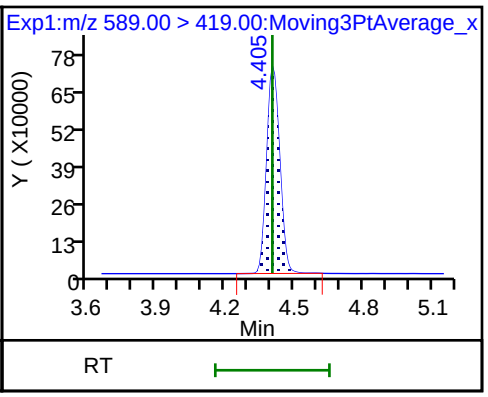
43 Perfluoroundecanoic acid



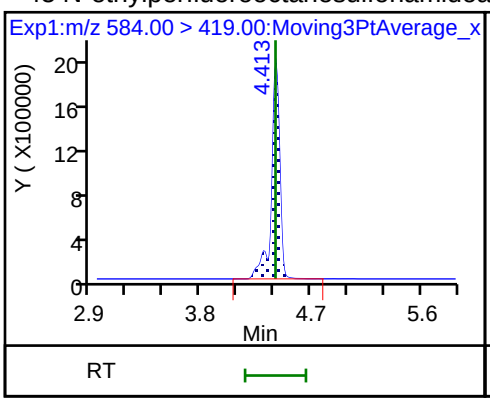
43 Perfluoroundecanoic acid



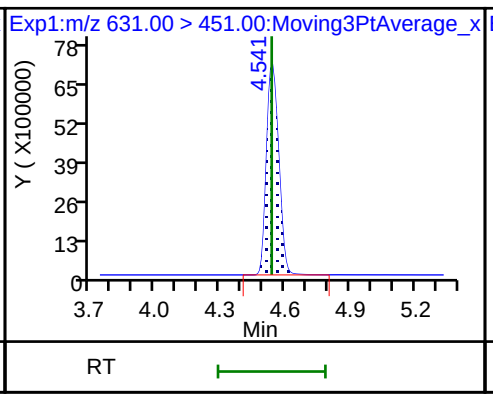
D 44 d5-NEtFOSAA



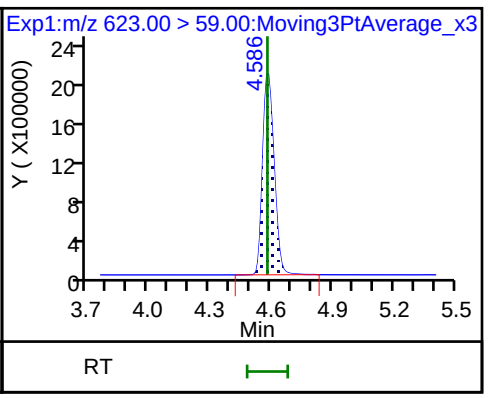
45 N-ethylperfluorooctanesulfonamidoa



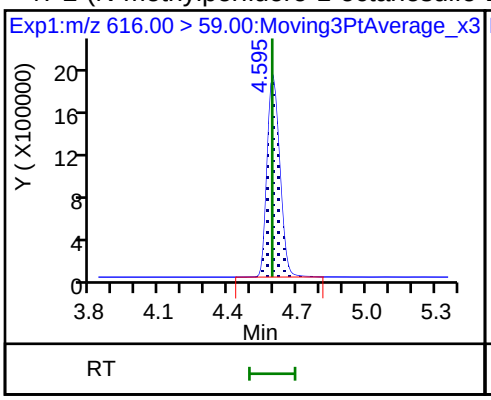
50 11-Chloroeicosafluoro-3-oxaundecan



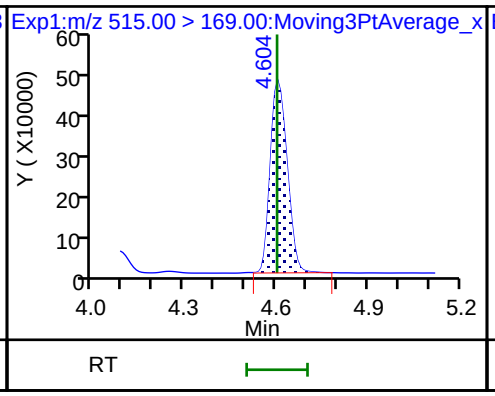
D 46 d7-N-MeFOSE-M



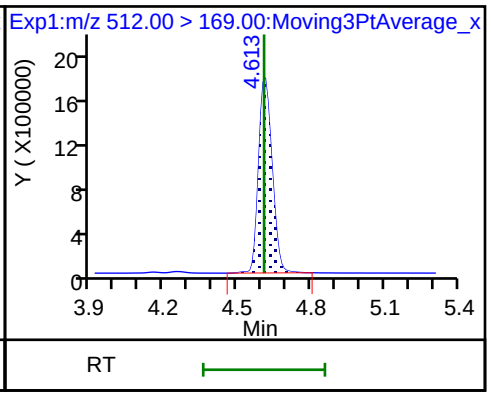
47 2-(N-methylperfluoro-1-octanesulfo



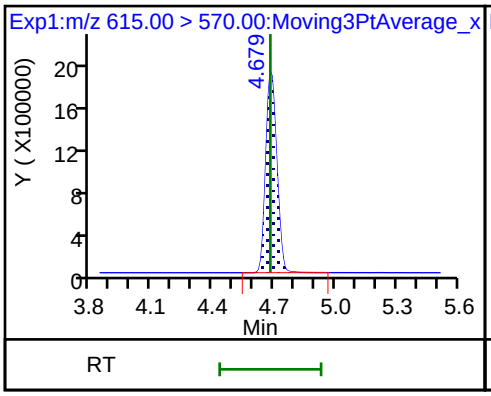
D 48 d-N-MeFOSA-M



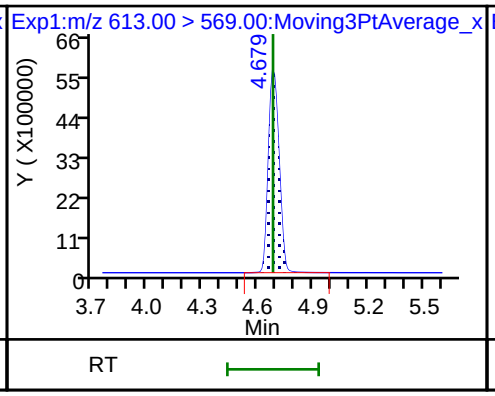
49 NMeFOSA



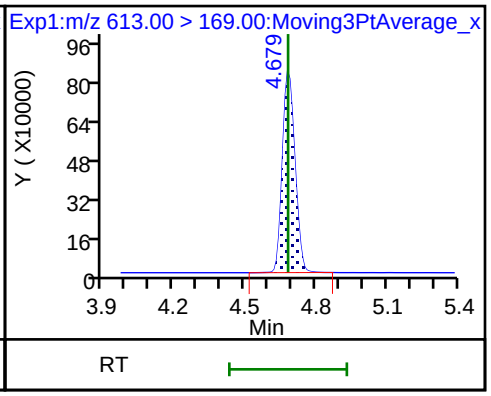
D 55 13C2 PFDoA



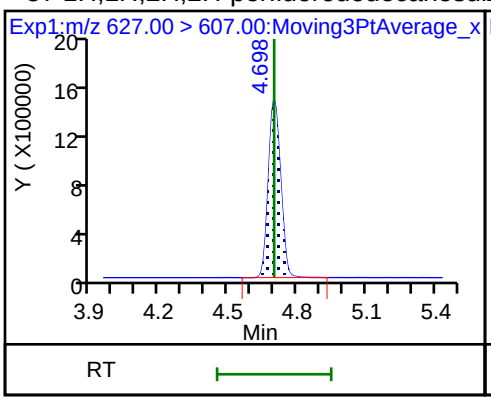
56 Perfluorododecanoic acid



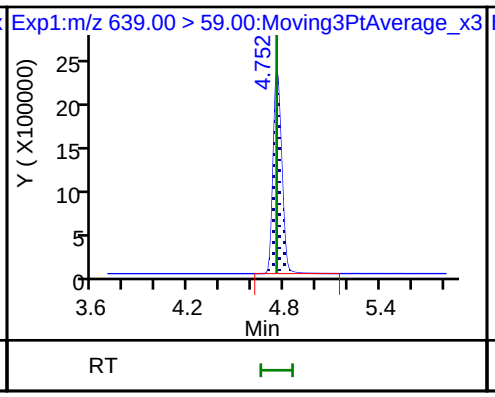
56 Perfluorododecanoic acid



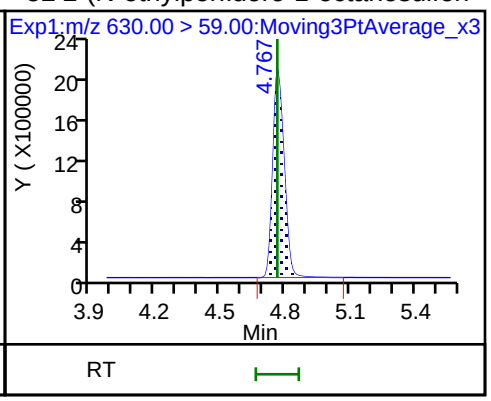
57 1H,1H,2H,2H-perfluorododecanesulfo



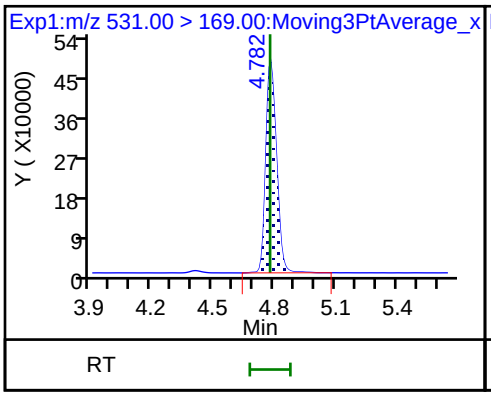
D 51 d9-N-EtFOSE-M



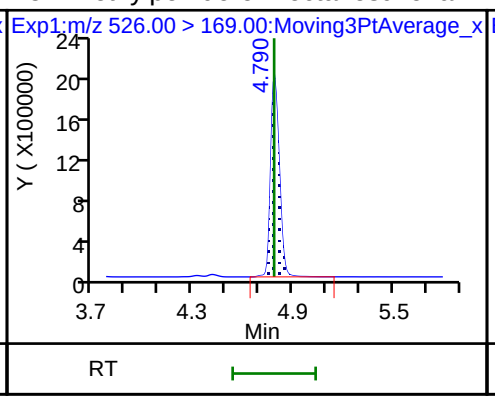
52 2-(N-ethylperfluoro-1-octanesulfon



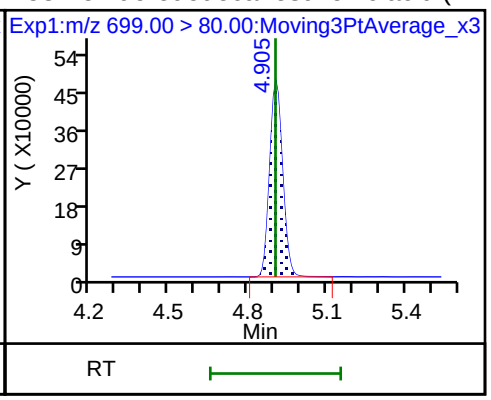
D 53 d-N-EtFOSA-M



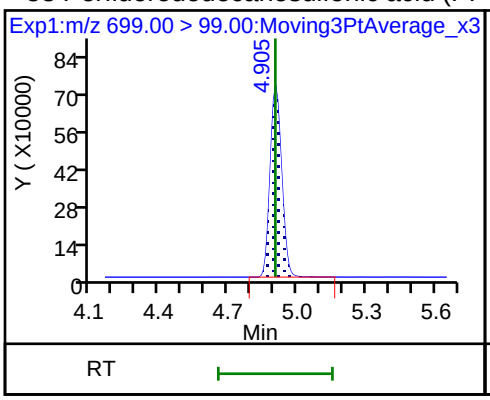
54 N-ethylperfluoro-1-octanesulfonami



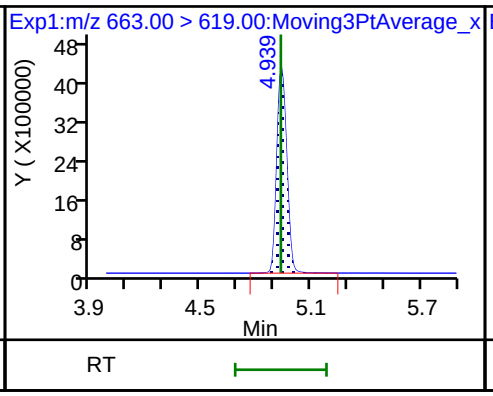
58 Perfluorododecanesulfonic acid (PF



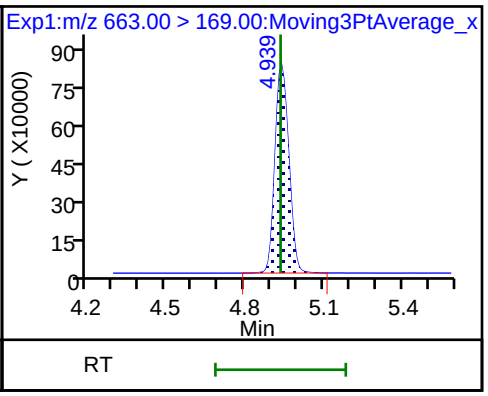
58 Perfluorododecanesulfonic acid (PF



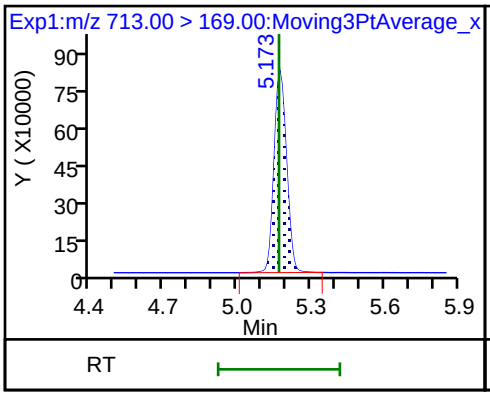
59 Perfluorotridecanoic acid



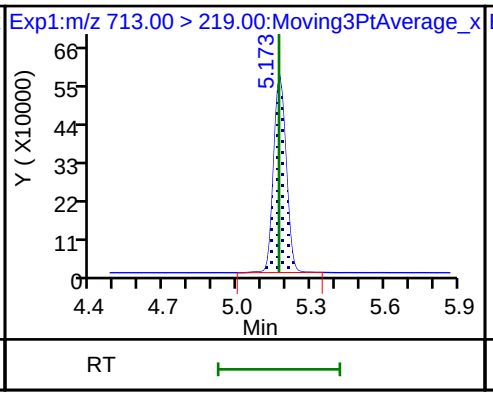
59 Perfluorotridecanoic acid



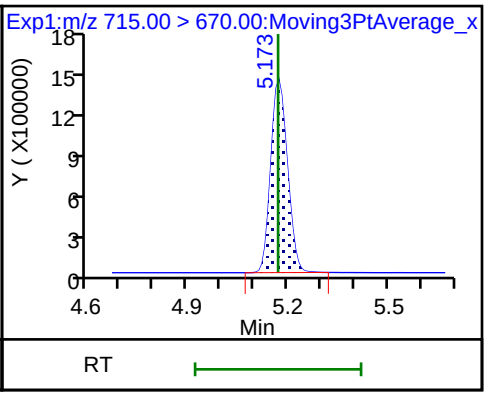
61 Perfluorotetradecanoic acid



61 Perfluorotetradecanoic acid



D 60 13C2 PFTeDA



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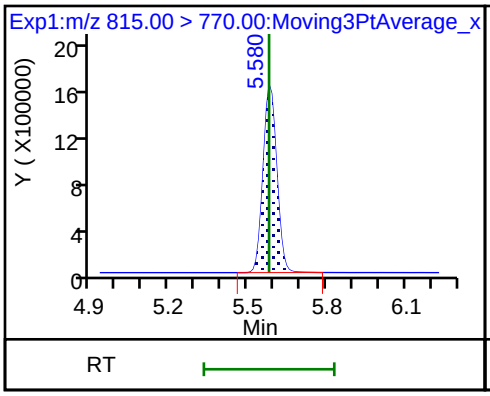
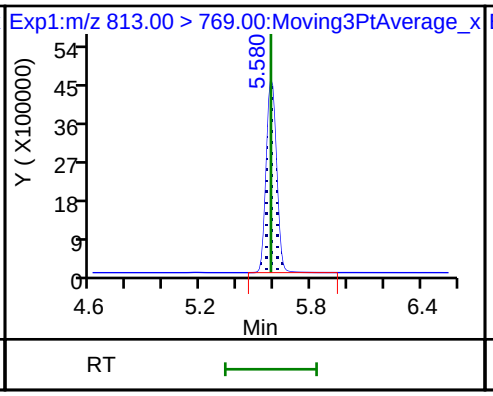
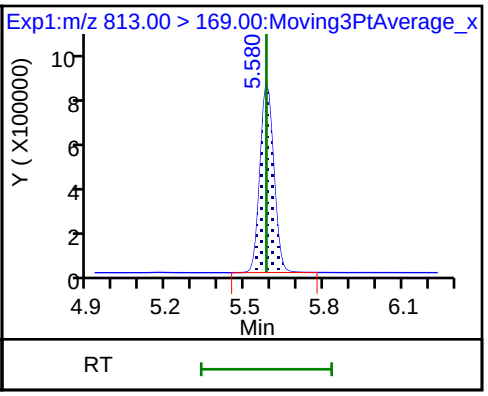


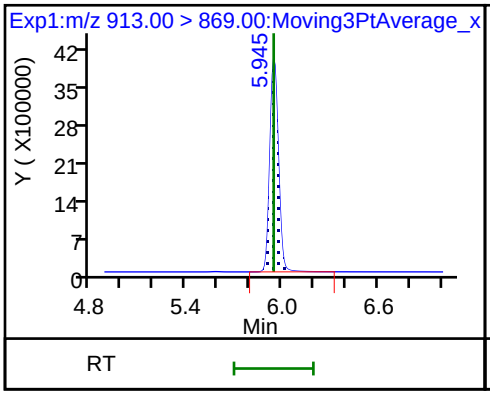
63 Perfluorohexadecanoic acid



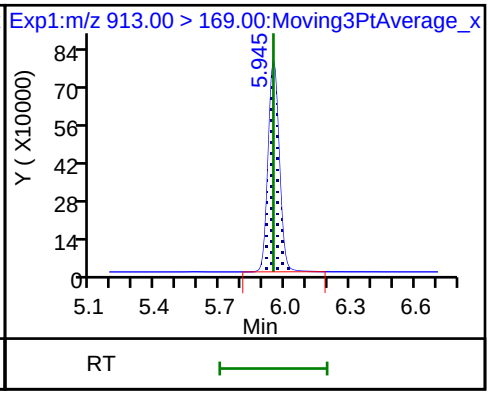
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: ICV 320-326599/11 Calibration Date: 09/26/2019 22:46

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.09.26.ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8713	0.9780		2.81	2.50	12.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.057	1.139		2.69	2.50	7.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.701	1.770		2.60	2.50	4.1	50.0
4:2 FTS	AveID	2.715	3.053		2.63	2.34	12.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9491	1.090		2.87	2.50	14.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.360	1.438		2.48	2.35	5.8	50.0
HFPO-DA (GenX)	AveID	2.765	2.534		2.29	2.50	-8.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.043	1.048		2.51	2.50	0.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.278	1.241		2.43	2.50	-2.9	40.0
DONA	AveID	5.174	5.435		2.63	2.50	5.0	50.0
6:2 FTS	AveID	2.039	2.201		2.56	2.37	8.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.195	1.246		2.48	2.38	4.2	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.040	1.071		2.58	2.50	3.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	0.9740		2.24	2.50	-10.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9752	1.095		2.81	2.50	12.3	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.531	2.583		2.55	2.50	2.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.998	1.012		2.54	2.50	1.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8331	0.8963		2.58	2.40	7.6	50.0
8:2 FTS	AveID	1.917	2.070		2.59	2.40	8.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9598	0.9682		2.52	2.50	0.9	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.7884	0.8123		2.58	2.50	3.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7795	0.8162		2.52	2.41	4.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8321	0.7607		2.29	2.50	-8.6	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7543	0.8047		2.67	2.50	6.7	40.0
NMeFOSE	AveID	1.048	1.032		2.46	2.50	-1.5	40.0
NMeFOSA	AveID	0.9631	0.9155		2.38	2.50	-4.9	50.0
F-53B Minor	AveID	4.788	4.096		2.14	2.50	-14.5	50.0
NEtFOSE	AveID	1.049	1.085		2.58	2.50	3.4	40.0
NEtFOSA	AveID	0.9899	0.9906		2.50	2.50	0.0	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9587	0.9686		2.53	2.50	1.0	40.0
10:2 FTS	AveID	1.246	1.429		2.76	2.41	14.7	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3013	0.3288		2.64	2.42	9.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

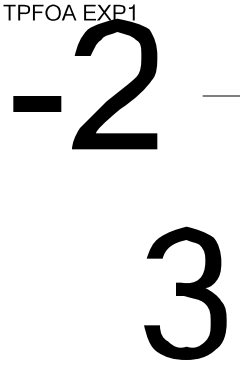
Lab Sample ID: ICV 320-326599/11 Calibration Date: 09/26/2019 22:46

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.09.26.ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.9178	0.8414		2.29	2.50	-8.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0946	0.0982		2.60	2.50	3.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9419		2.55	2.50	2.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6071	0.6547		2.70	2.50	7.8	50.0
13C4 PFBA	Ave	0.8530	0.8056		2.36	2.50	-5.6	50.0
13C5 PFPeA	Ave	0.7618	0.7126		2.34	2.50	-6.5	50.0
M2-4:2 FTS	Ave	0.1656	0.1551		2.19	2.34	-6.4	50.0
13C2 PFHxA	Ave	0.8514	0.7947		2.33	2.50	-6.7	50.0
13C3 HFPO-DA	Ave	0.0181	0.0200		2.76	2.50	10.4	50.0
13C4 PFHpA	Ave	0.7796	0.7341		2.35	2.50	-5.8	50.0
18O2 PFHxS	Ave	0.5235	0.5107		2.31	2.37	-2.5	50.0
M2-6:2 FTS	Ave	0.1946	0.1886		2.30	2.38	-3.1	50.0
13C4 PFOA	Ave	0.9123	0.8966		2.46	2.50	-1.7	50.0
13C8 PFOA	Ave	0.7927	0.7678		2.42	2.50	-3.1	50.0
13C8 PFOS	Ave	0.2310	0.2191		2.37	2.50	-5.1	50.0
13C4 PFOS	Ave	0.4531	0.4513		2.38	2.39	-0.4	50.0
13C5 PFNA	Ave	0.8000	0.7947		2.48	2.50	-0.7	50.0
13C8 FOSA	Ave	0.6148	0.5988		2.44	2.50	-2.6	50.0
13C2 PFDA	Ave	0.8529	0.8886		2.60	2.50	4.2	50.0
M2-8:2 FTS	Ave	0.2312	0.2162		2.24	2.40	-6.5	50.0
d3-NMeFOSAA	Ave	0.5647	0.5536		2.45	2.50	-2.0	50.0
13C2 PFUnA	Ave	0.7999	0.7690		2.40	2.50	-3.9	50.0
d5-NEtFOSAA	Ave	0.5657	0.5417		2.39	2.50	-4.2	50.0
d7-N-MeFOSE-M	Ave	0.1309	0.1296		12.4	12.5	-1.0	50.0
d-N-MeFOSA-M	Ave	0.3353	0.3528		2.63	2.50	5.2	50.0
d9-N-EtFOSE-M	Ave	0.1376	0.1370		12.5	12.5	-0.4	50.0
d-N-EtFOSA-M	Ave	0.3476	0.3525		2.54	2.50	1.4	50.0
13C2 PFDoA	Ave	0.8325	0.8248		2.48	2.50	-0.9	50.0
13C2 PFTeDA	Ave	0.7347	0.7990		2.72	2.50	8.8	50.0
13C2 PFHxDA	Ave	0.5879	0.5744		2.44	2.50	-2.3	50.0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3

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_013.d
Lims ID: ICV FULL
Client ID:
Sample Type: ICV
Inject. Date: 26-Sep-2019 22:46:57 ALS Bottle#: 8 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist:

Method: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 27-Sep-2019 13:52:09 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: phomsophat Date: 27-Sep-2019 12:33:27
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.201	2.205	-0.004	0.581	6099474	2.36		94.4	17465	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.201	2.209	-0.008	1.000	5965535	2.81			2543	
D 4 13C5 PFPeA										
267.90 > 223.00	2.556	2.559	-0.003	0.675	5395954	2.34		93.5	20188	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.556	2.562	-0.006	1.000	6144043	2.69			2294	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.589	2.593	-0.004	0.769	6845355	2.60	Target=1.87		1460	
298.90 > 99.00	2.589	2.593	-0.004	0.769	3745001		1.83(0.94-2.81)		2021	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.907	2.910	-0.003	1.000	3347686	2.63			40336	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.907	2.910	-0.003	0.768	1096524	2.19		93.6	1010	
D 10 13C2 PFHxA										
315.00 > 270.00	2.950	2.956	-0.006	0.779	6016924	2.33		93.3	24815	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.950	2.956	-0.006	1.000	6555513	2.87	Target=11.57		2571	
313.00 > 119.00	2.950	2.956	-0.006	1.000	562164		11.66(5.78-17.35)		1035	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.961	2.971	-0.010	0.879	5216878	2.48	Target=2.40		13913	
349.00 > 99.00	2.961	2.971	-0.010	0.879	2161386		2.41(1.20-3.60)		5041	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.083	3.087	-0.004	0.814	151032	2.76		110	2114	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.083	3.089	-0.006	1.000	382716	2.29			1313	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 17 13C4 PFHpA										
367.00 > 322.00	3.369	3.382	-0.013	0.890	5558670	2.35		94.2	60356	
D 15 18O2 PFHxS										
403.00 > 84.00	3.369	3.382	-0.013	0.890	3657816	2.31		97.5	49194	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.369	3.382	-0.013	1.000	5826987	2.51	Target=3.70		4399	
363.00 > 169.00	3.369	3.382	-0.013	1.000	1564870		3.72(1.85-5.54)		2325	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.378	3.382	-0.004	1.003	4799503	2.43	Target=2.98		14461	
399.00 > 99.00	3.378	3.382	-0.004	1.003	1582453		3.03(1.49-4.47)		3411	
18 DONA										
377.00 > 251.00	3.423	3.433	-0.010	0.821	18572955	2.63	Target=2.81		44528	
377.00 > 85.00	3.423	3.433	-0.010	0.821	6666912		2.79(1.41-4.22)		38261	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.769	3.775	-0.006	1.002	2980393	2.56			21984	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.760	3.775	-0.015	0.993	1356903	2.30		96.9	5390	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.777	3.789	-0.012	0.905	4053650	2.48	Target=4.19		24142	
449.00 > 99.00	3.777	3.789	-0.012	0.905	935441		4.33(2.09-6.28)		3833	
D 23 13C8 PFOA										
421.00 > 376.00	3.786	3.790	-0.004	1.000	5813867	2.42		96.9	49309	
D 25 13C4 PFOA										
417.00 > 372.00	3.786	3.797	-0.011	1.000	6788529	2.46		98.3	64167	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.786	3.798	-0.012	1.000	7272882	2.58	Target=2.68		2421	
413.00 > 169.00	3.786	3.798	-0.012	1.000	2554424		2.85(1.34-4.02)		380	
* 24 13C2 PFOA										
415.00 > 370.00	3.786	3.798	-0.012		7571837	2.50			47424	
D 27 13C8 PFOS										
507.00 > 99.00	4.163	4.176	-0.013	1.100	1659297	2.37		94.9	7193	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.172	4.181	-0.009	1.000	3328173	2.24	Target=4.19		194	
499.00 > 99.00	4.172	4.181	-0.009	1.000	781809		4.26(2.09-6.28)		743	
D 28 13C4 PFOS										
503.00 > 80.00	4.172	4.181	-0.009	1.102	3266669	2.38		99.6	9881	
30 Perfluorononanoic acid										
463.00 > 419.00	4.189	4.199	-0.010	1.000	6588910	2.81	Target=8.84		4133	
463.00 > 169.00	4.189	4.199	-0.010	1.000	770129		8.56(4.42-13.26)		1941	
D 29 13C5 PFNA										
468.00 > 423.00	4.189	4.199	-0.010	1.107	6017545	2.48		99.3	52339	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.379	4.393	-0.014	1.050	8827466	2.55			27770	
D 33 13C8 FOSA										
506.00 > 78.00	4.457	4.460	-0.003	1.177	4533949	2.43		97.4	31828	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.457	4.464	-0.007	1.000	4588782	2.54			17702	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.530	4.544	-0.014	1.086	2940112	2.58	Target=2.27		8111	
549.00 > 99.00	4.530	4.544	-0.014	1.086	1276722		2.30(1.13-3.40)		5476	
D 36 13C2 PFDA										
515.00 > 470.00	4.558	4.572	-0.014	1.204	6727974	2.60		104	37924	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.558	4.572	-0.014	1.000	6514109	2.52	Target=10.36		6450	
513.00 > 169.00	4.558	4.572	-0.014	1.000	701548		9.29(5.18-15.54)		307	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.558	4.574	-0.016	1.000	3245959	2.59			28155	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.558	4.574	-0.016	1.204	1568422	2.24		93.5	8607	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.725	4.741	-0.016	1.248	4191470	2.45		98.0	14135	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.735	4.744	-0.009	1.002	3404831	2.58			21951	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.860	4.876	-0.016	1.165	2688392	2.52	Target=2.70		12666	
599.00 > 99.00	4.860	4.876	-0.016	1.165	983167		2.73(1.35-4.05)		8736	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.899	4.897	0.002	1.294	4907191	12.4		99.0	11410	
D 43 13C2 PFUnA										
565.00 > 520.00	4.889	4.906	-0.017	1.291	5822461	2.40		96.1	64710	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.899	4.907	-0.008	1.002	4429385	2.29	Target=9.31		5364	
563.00 > 169.00	4.899	4.907	-0.008	1.002	556130		7.96(4.65-13.96)		321	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.909	4.909	0.0	1.002	1013315	2.46			4034	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.899	4.915	-0.016	1.294	4101273	2.39		95.8	14080	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.909	4.922	-0.013	1.002	3300464	2.67			17422	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.920	4.924	-0.004	1.299	2671673	2.63		105	57.9	
50 NMeFOSA										
512.00 > 169.00	4.931	4.930	0.001	1.002	2445931	2.38			255	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	5.040	5.054	-0.014	1.208	13995459	2.14			50968	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.068	-0.002	1.338	5186791	12.4		99.6	12223	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.084	-0.001	1.003	1125202	2.58			3883	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.101	5.101	0.0	1.347	2668931	2.54		101	212	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.109	5.110	-0.001	1.002	2643881	2.50			214	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 57 13C2 PFDoA										
615.00 > 570.00	5.200	5.217	-0.017	1.373	6245247	2.48		99.1	38591	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.200	5.219	-0.019	1.000	6049322	2.53	Target=8.07		2228	
613.00 > 169.00	5.200	5.219	-0.019	1.000	753178		8.03(4.03-12.10)		1618	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.221	5.236	-0.015	1.146	2255400	2.76			24096	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.443	5.460	-0.017	1.305	1087666	2.64	Target=0.52		23903	
699.00 > 99.00	5.443	5.460	-0.017	1.305	2091996		0.52(0.26-0.77)		7487	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.488	5.504	-0.016	1.055	5254717	2.29	Target=6.35		5978	
663.00 > 169.00	5.480	5.504	-0.024	1.054	802489		6.55(3.18-9.53)		2157	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.757	5.774	-0.017	1.521	6050172	2.72		109	38845	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.757	5.775	-0.018	1.000	593864	2.59	Target=0.85		437	
713.00 > 219.00	5.757	5.775	-0.018	1.000	640026		0.93(0.43-1.28)		173	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.277	6.305	-0.028	1.658	4349215	2.44		97.7	15937	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.277	6.308	-0.031	1.000	4096493	2.55	Target=7.95		368	
813.00 > 169.00	6.277	6.308	-0.031	1.000	533218		7.68(3.98-11.93)		2267	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.858	6.905	-0.047	1.092	2847364	2.70	Target=8.96		626	
913.00 > 169.00	6.858	6.905	-0.047	1.092	317669		8.96(4.48-13.45)		1468	

Reagents:

LCPFCIC_FULL_00027 Amount Added: 1.00 Units: mL

Report Date: 27-Sep-2019 13:52:10 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_013.d

Injection Date: 26-Sep-2019 22:46:57 Instrument ID: A13

Lims ID: ICV FULL

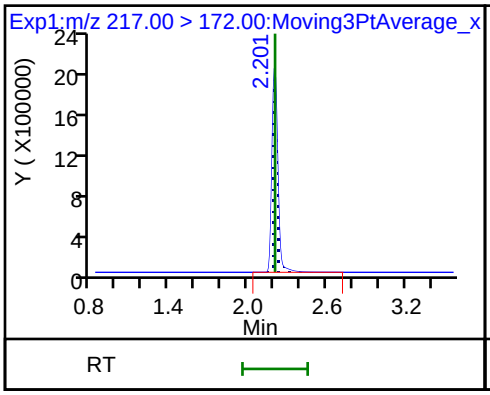
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 11

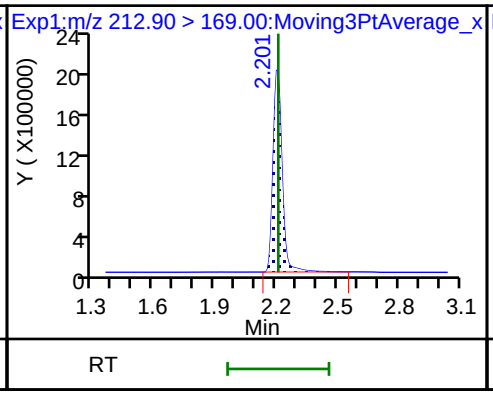
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

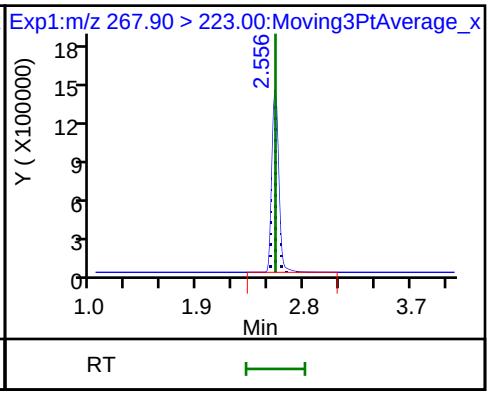
D 2 13C4 PFBA



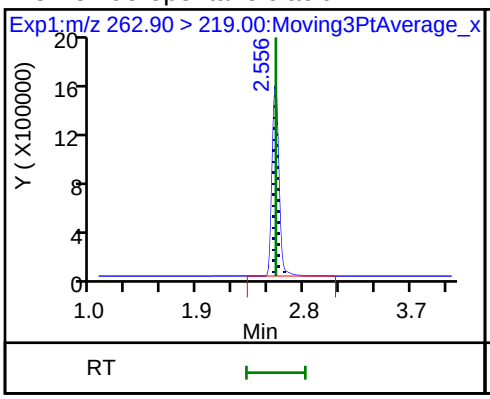
3 Perfluorobutanoic acid



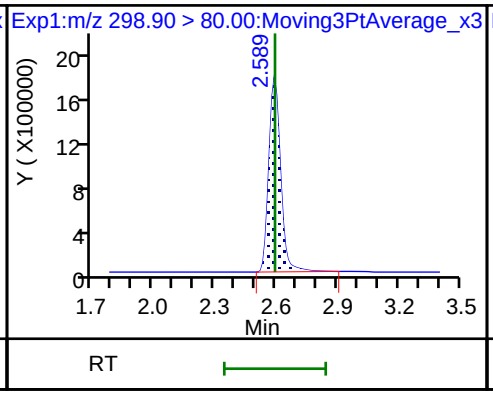
D 4 13C5 PFPeA



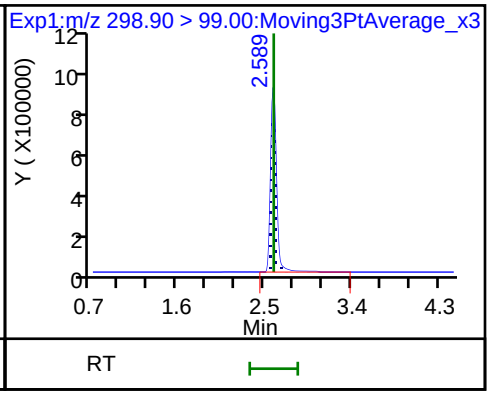
5 Perfluoropentanoic acid



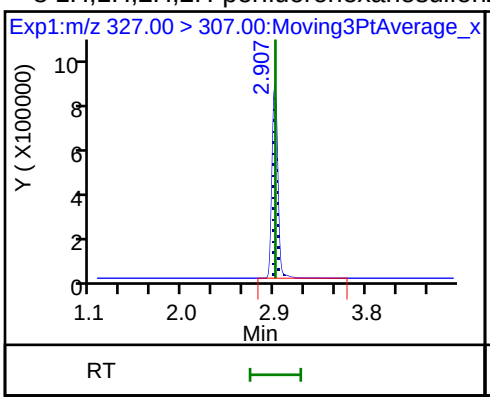
6 Perfluorobutanesulfonic acid



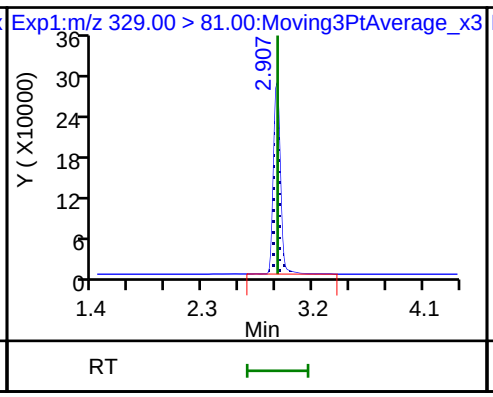
6 Perfluorobutanesulfonic acid



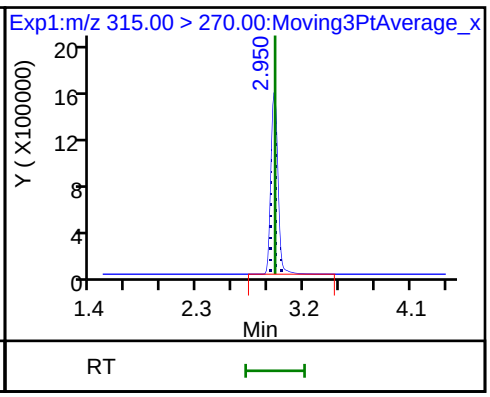
8 1H,1H,2H,2H-perfluorohexanesulfon



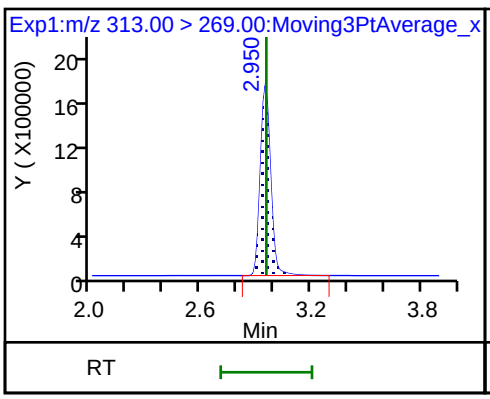
D 7 M2-4:2 FTS



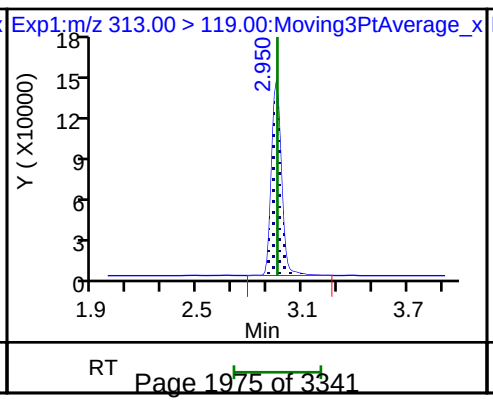
D 10 13C2 PFHxA



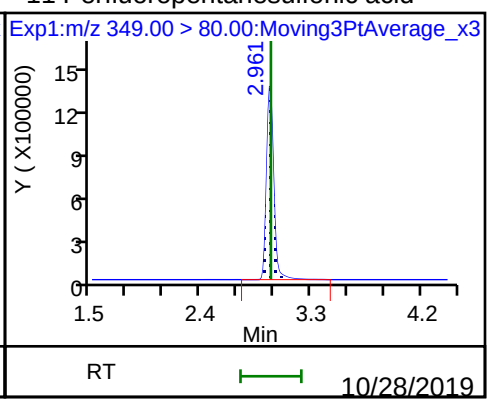
9 Perfluorohexanoic acid



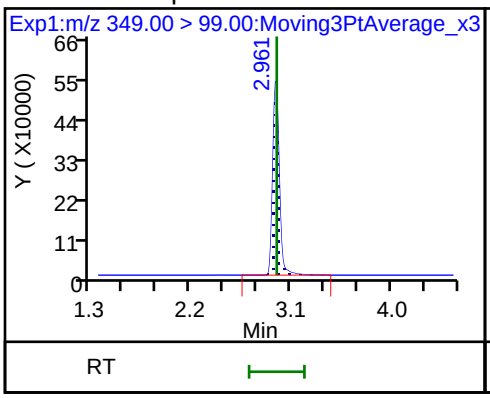
9 Perfluorohexanoic acid



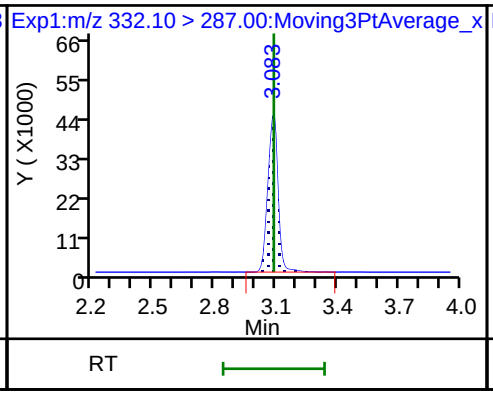
11 Perfluoropentanesulfonic acid



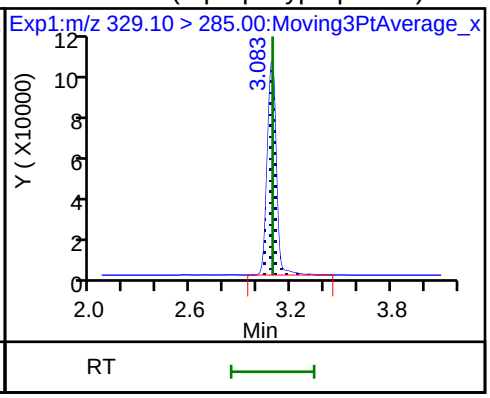
11 Perfluoropentanesulfonic acid



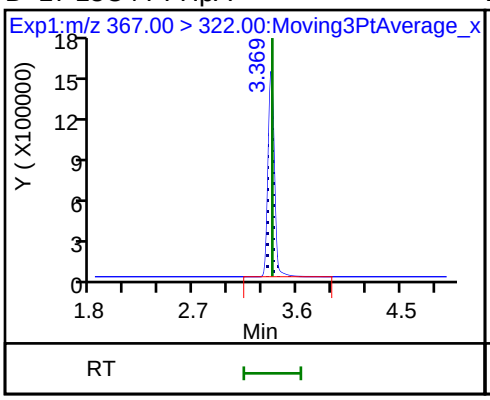
D 12 13C3 HFPO-DA



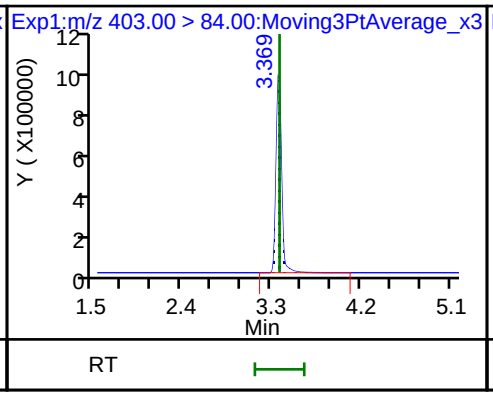
13 Perfluoro(2-propoxypropanoic) acid



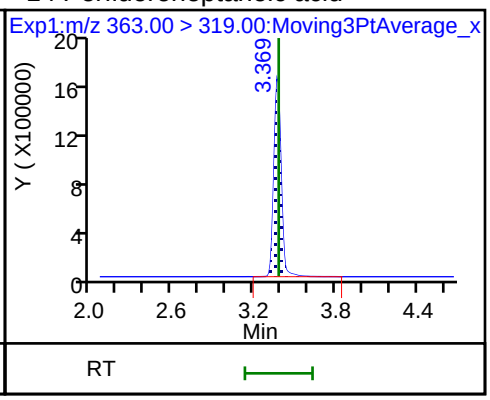
D 17 13C4 PFHpA



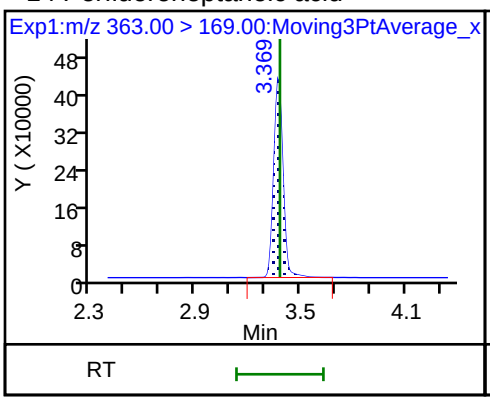
D 15 18O2 PFHxS



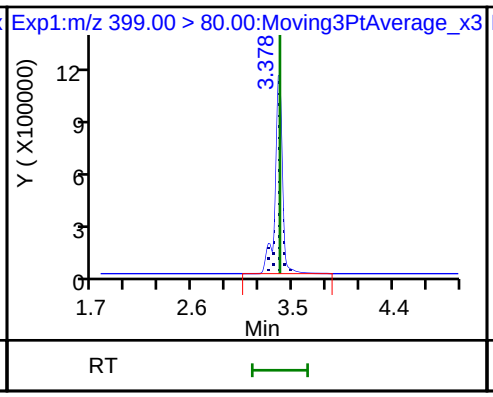
14 Perfluoroheptanoic acid



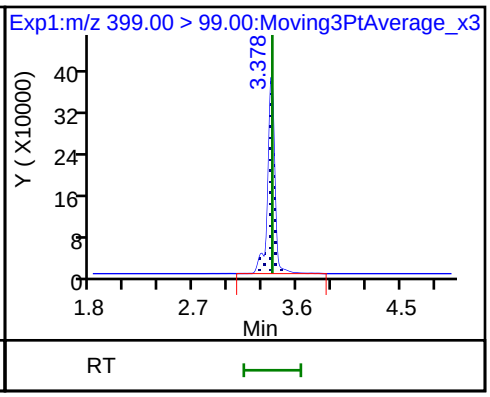
14 Perfluoroheptanoic acid



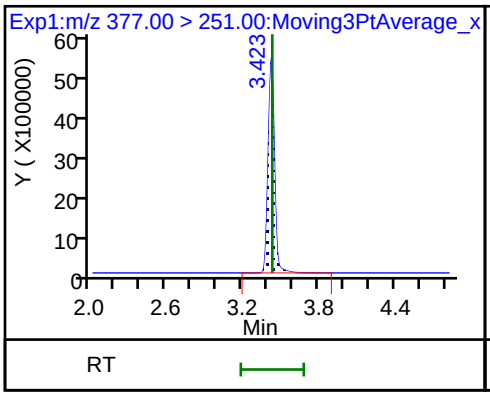
16 Perfluorohexanesulfonic acid



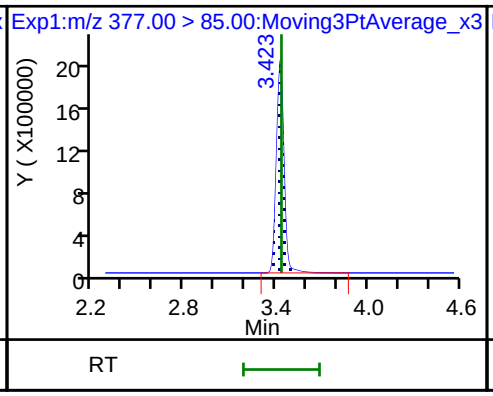
16 Perfluorohexanesulfonic acid



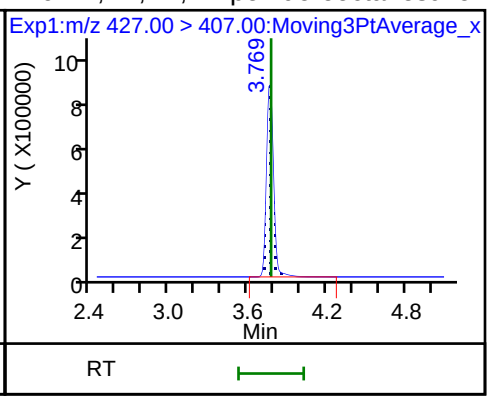
18 DONA



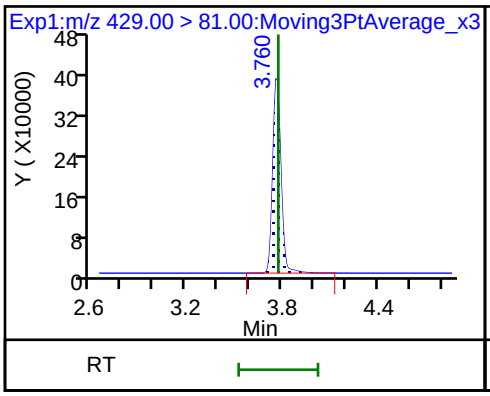
18 DONA



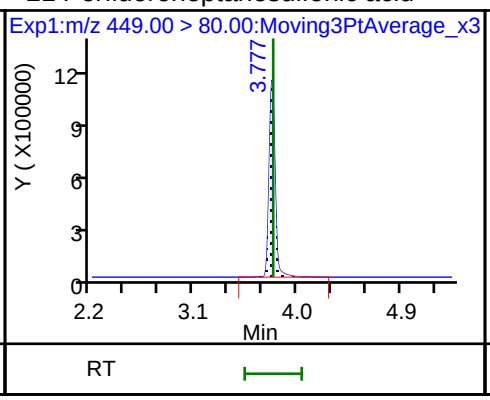
19 1H,1H,2H,2H-perfluorooctanesulfoni



D 20 M2-6:2 FTS



21 Perfluoroheptanesulfonic acid



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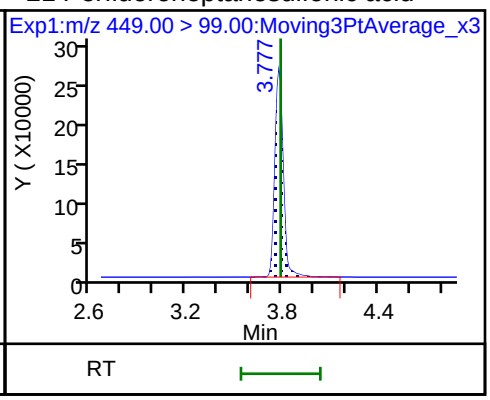
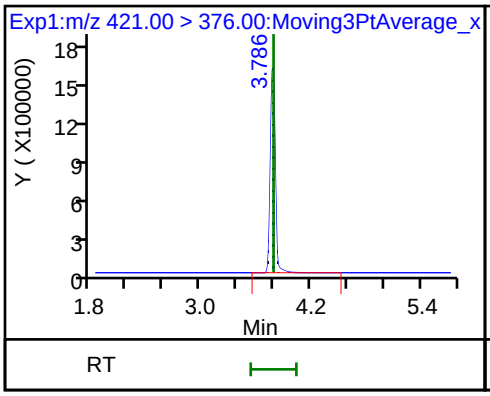
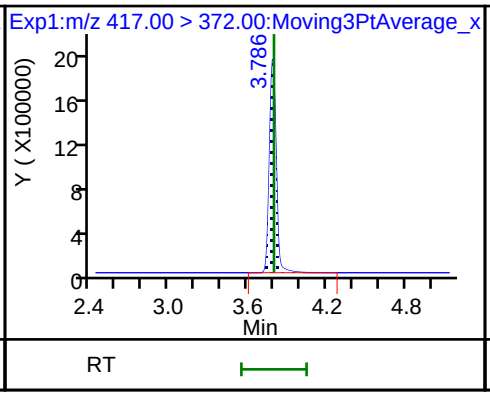


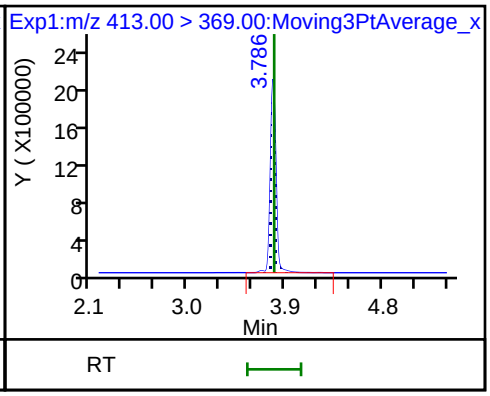
D 23 13C8 PFOA



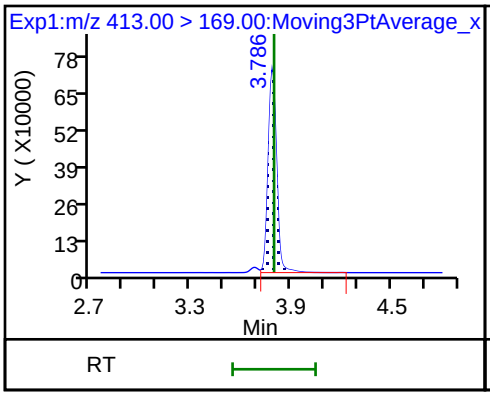
D 25 13C4 PFOA



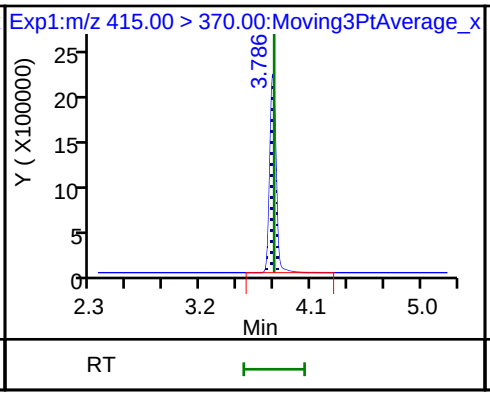
22 Perfluorooctanoic acid



22 Perfluorooctanoic acid



* 24 13C2 PFOA



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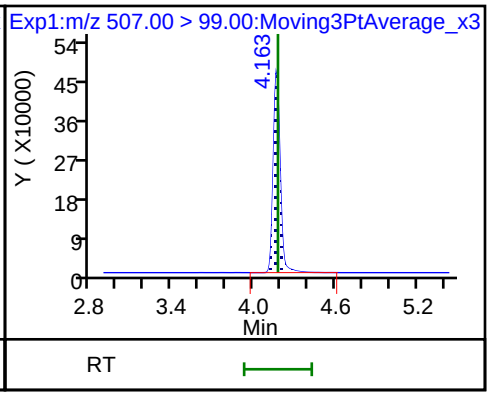
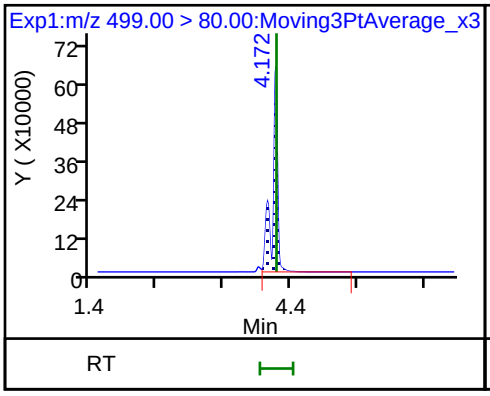
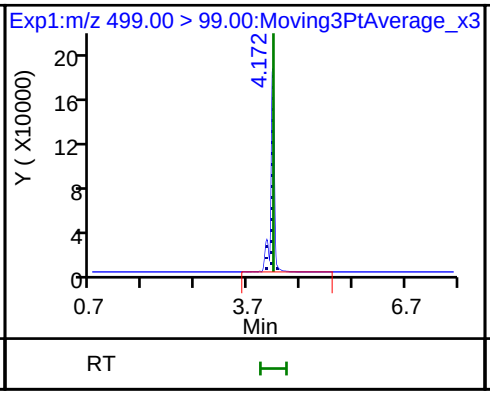


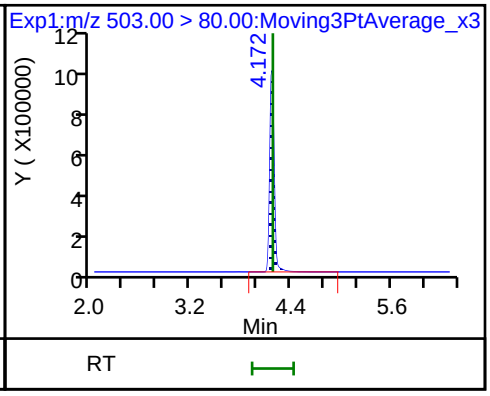
26 Perfluorooctanesulfonic acid



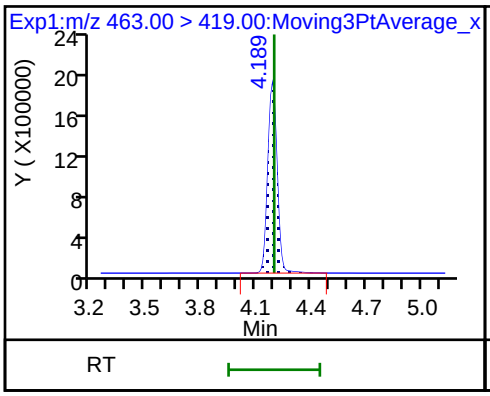
26 Perfluorooctanesulfonic acid



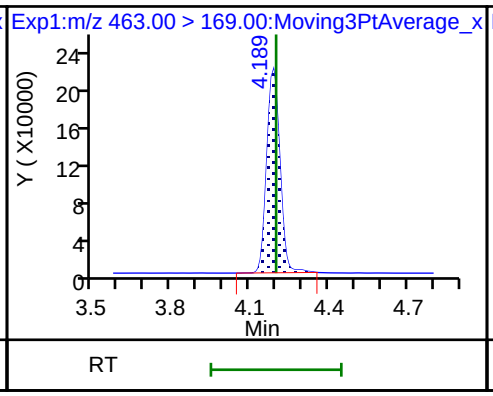
D 28 13C4 PFOS



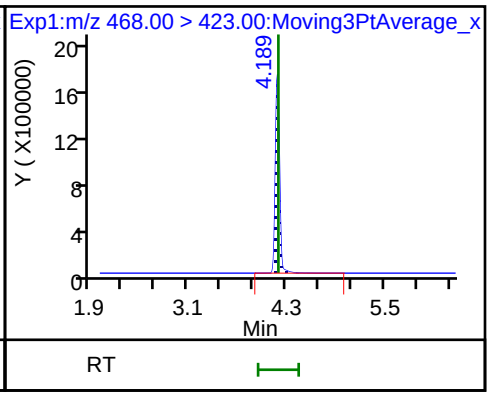
30 Perfluorononanoic acid



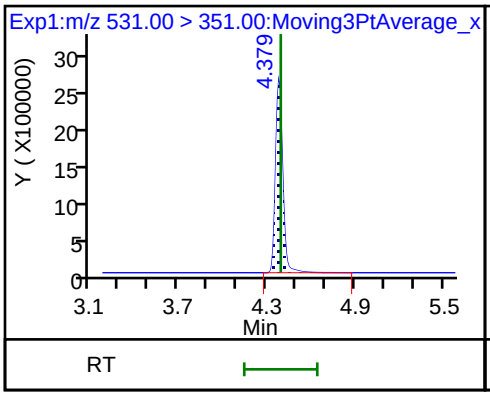
30 Perfluorononanoic acid



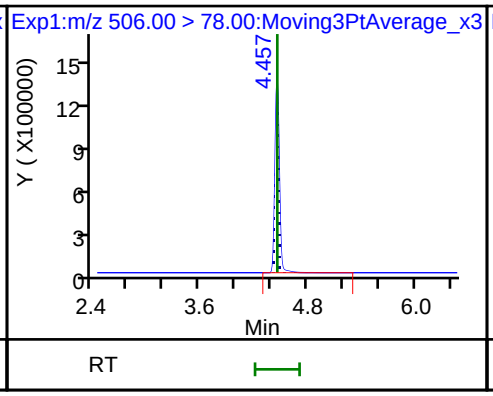
D 29 13C5 PFNA



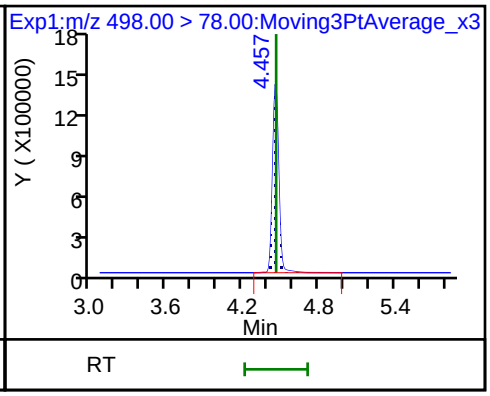
31 9-Chlorohexadecafluoro-3-oxanonane



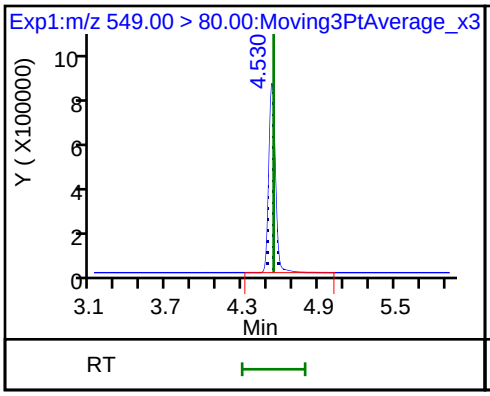
D 33 13C8 FOSA



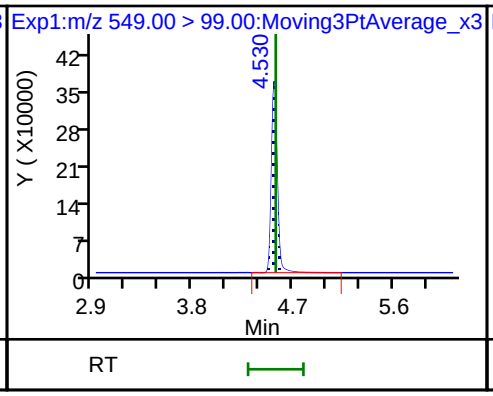
32 Perfluorooctanesulfonamide



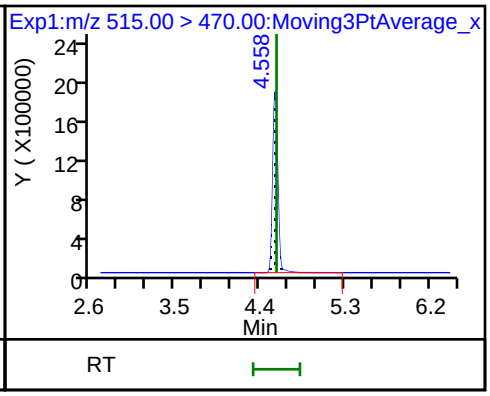
38 Perfluorononanesulfonic acid



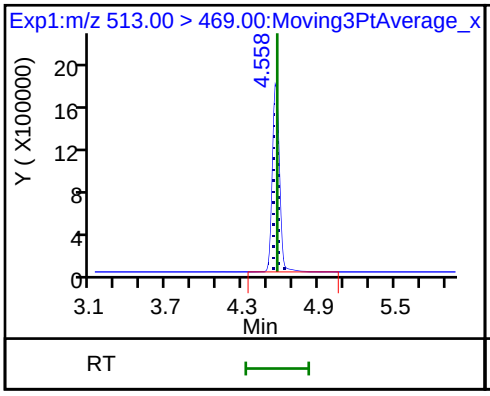
38 Perfluorononanesulfonic acid



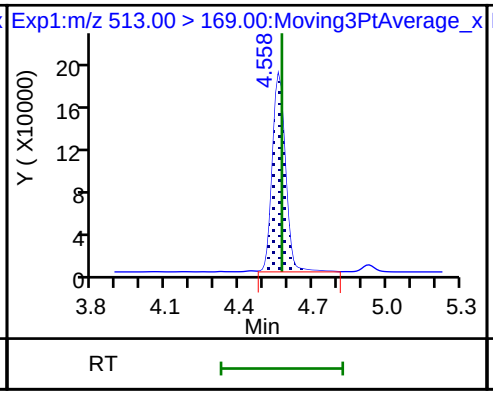
D 36 13C2 PFDA



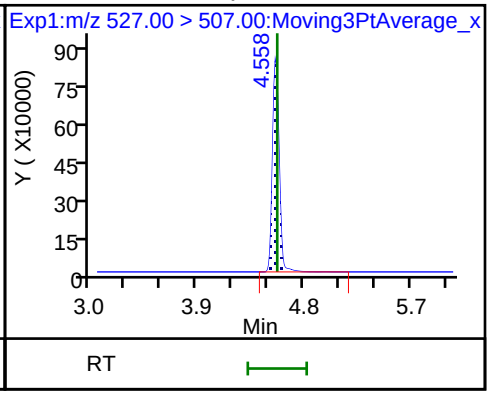
34 Perfluorodecanoic acid



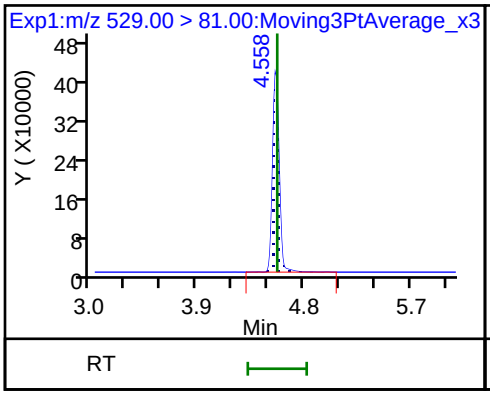
34 Perfluorodecanoic acid



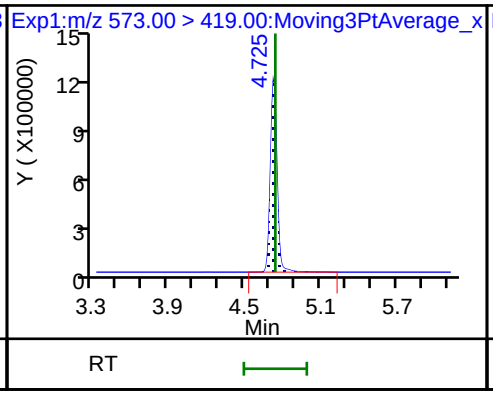
35 1H,1H,2H,2H-perfluorodecanesulfoni



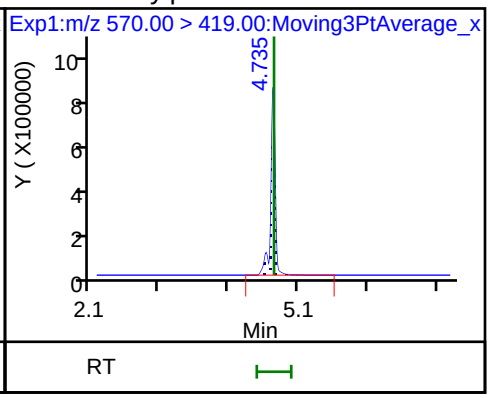
D 37 M2-8:2 FTS



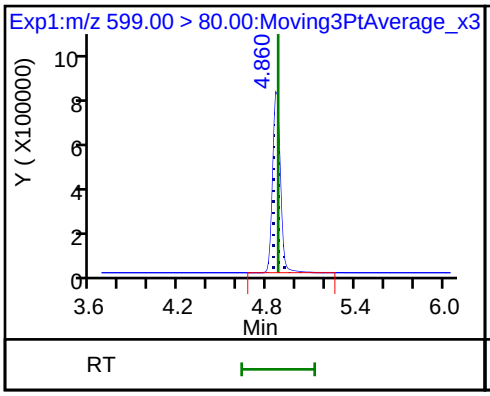
D 40 d3-NMeFOSAA



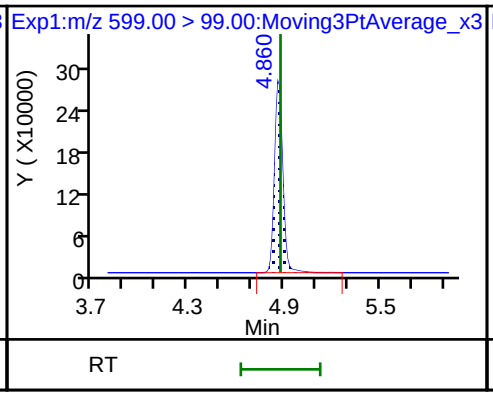
41 N-methylperfluorooctanesulfonamido



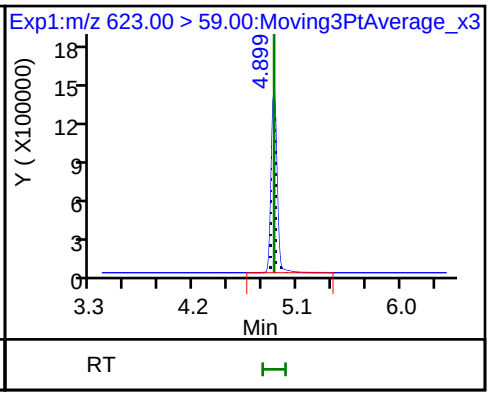
48 Perfluorodecanesulfonic acid



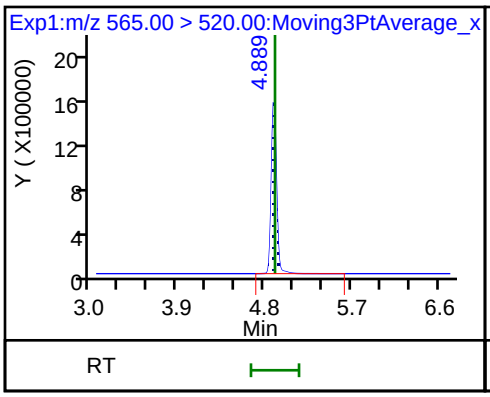
48 Perfluorodecanesulfonic acid



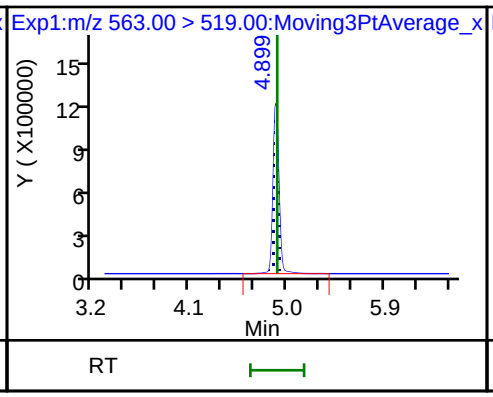
D 46 d7-N-MeFOSE-M



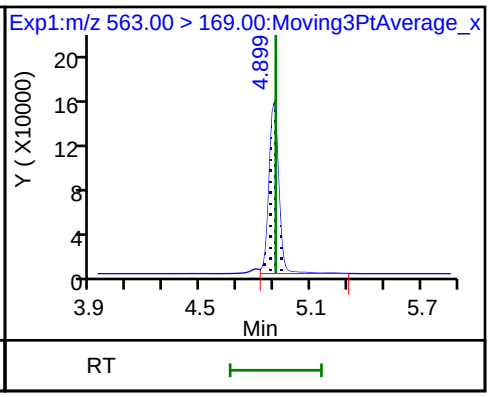
D 43 13C2 PFUnA



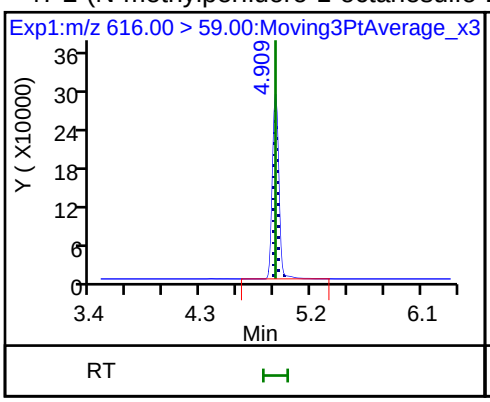
42 Perfluoroundecanoic acid



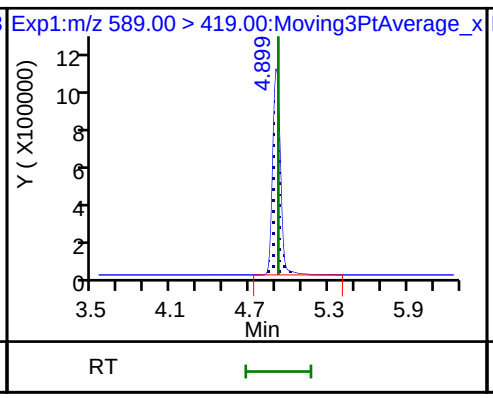
42 Perfluoroundecanoic acid



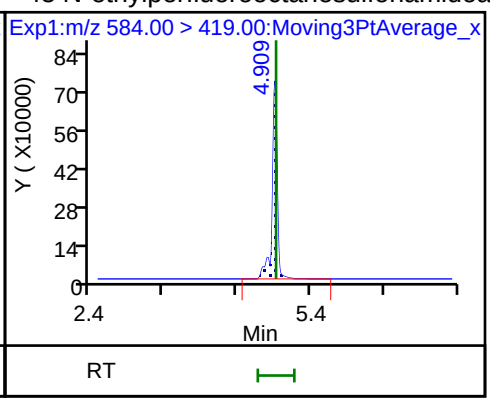
47 2-(N-methylperfluoro-1-octanesulfo



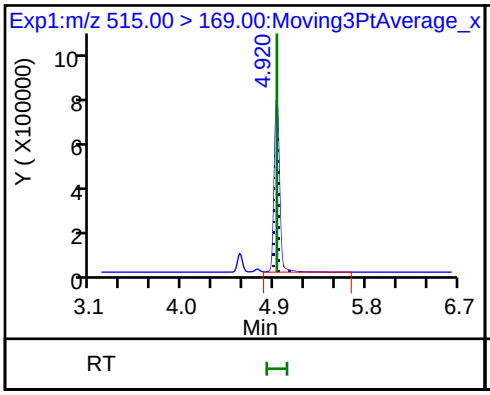
D 44 d5-NEtFOSAA



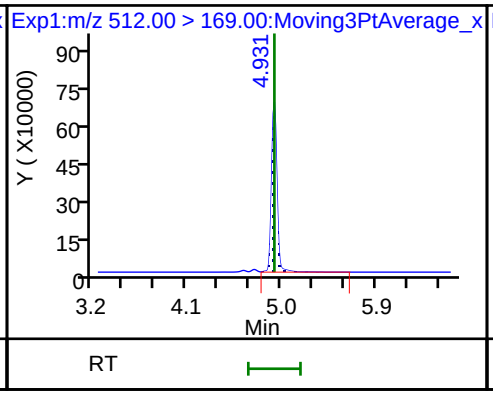
45 N-ethylperfluorooctanesulfonamidoa



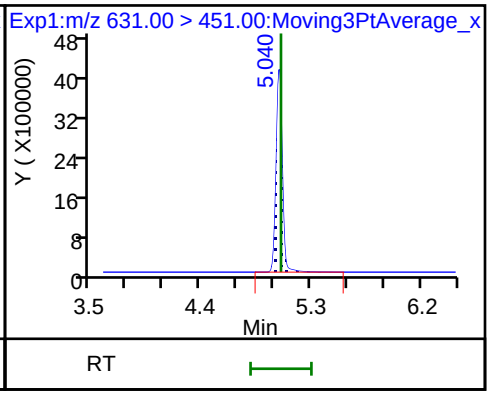
D 49 d-N-MeFOSA-M



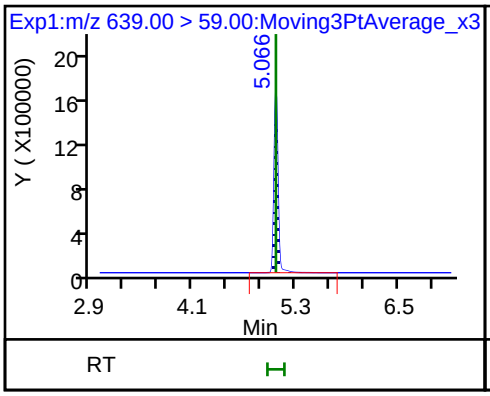
50 NMeFOSA



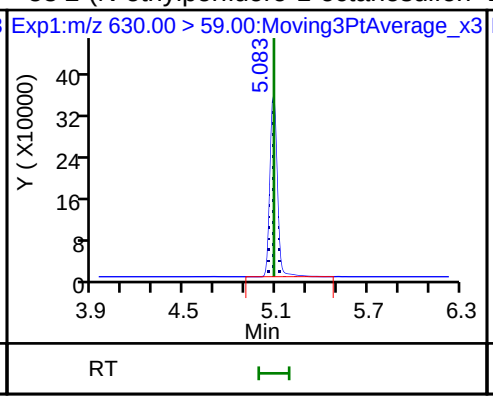
51 11-Chloroeicosafluoro-3-oxaundecan



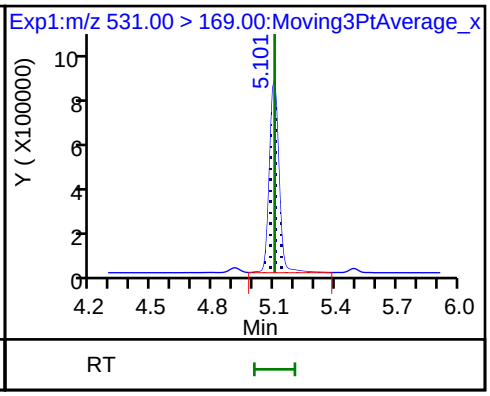
D 52 d9-N-EtFOSE-M



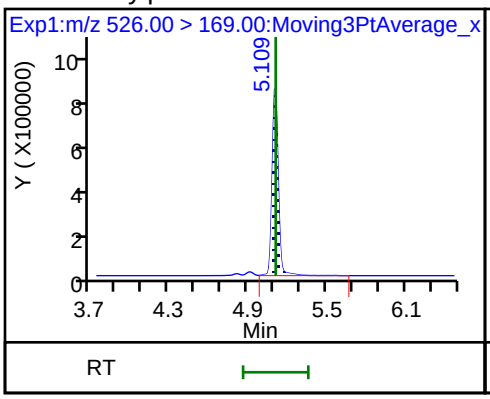
53 2-(N-ethylperfluoro-1-octanesulfon



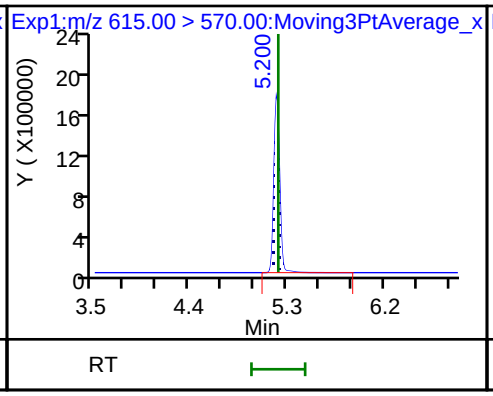
D 55 d-N-EtFOSA-M



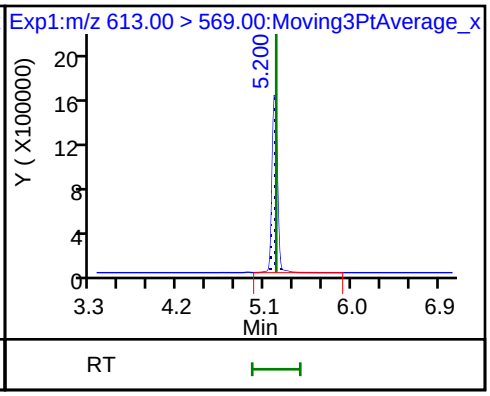
54 N-ethylperfluoro-1-octanesulfonami



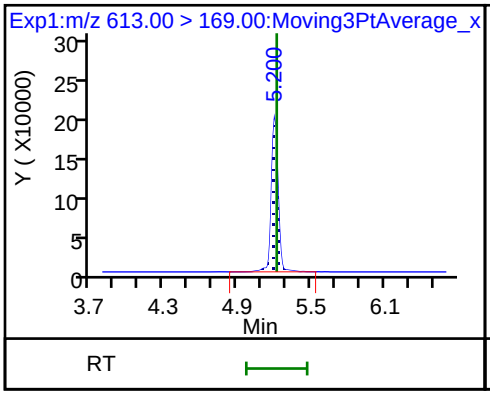
D 57 13C2 PFDoA



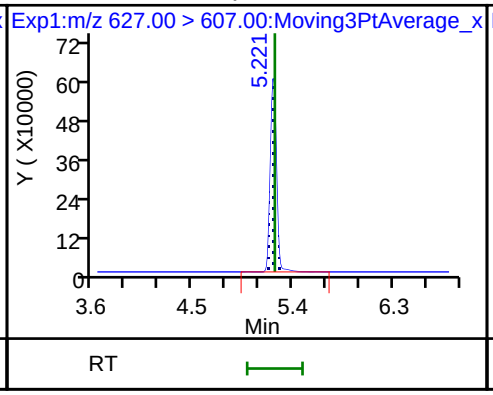
56 Perfluorododecanoic acid



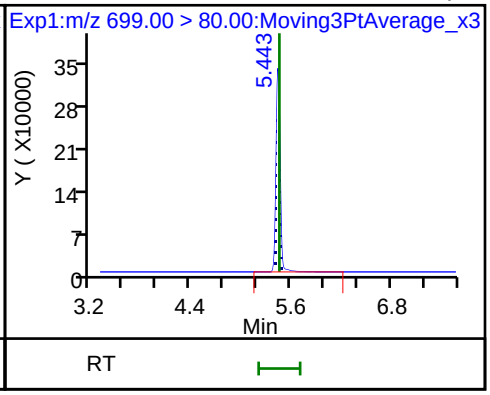
56 Perfluorododecanoic acid



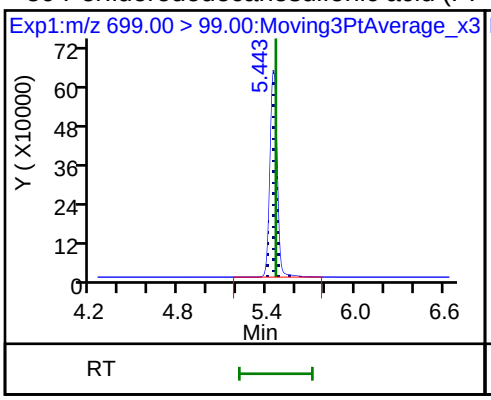
58 1H,1H,2H,2H-perfluorododecanesulfo



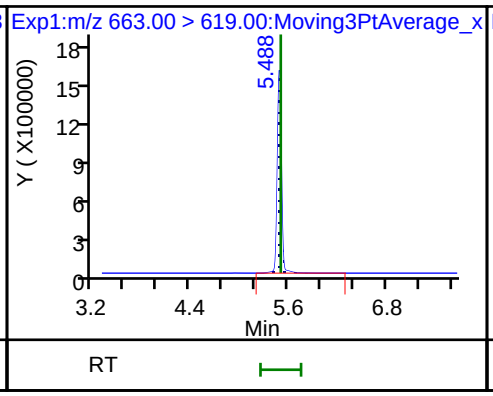
59 Perfluorododecanesulfonic acid (PF



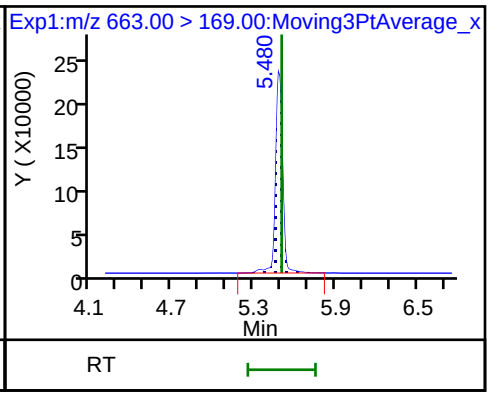
59 Perfluorododecanesulfonic acid (PF



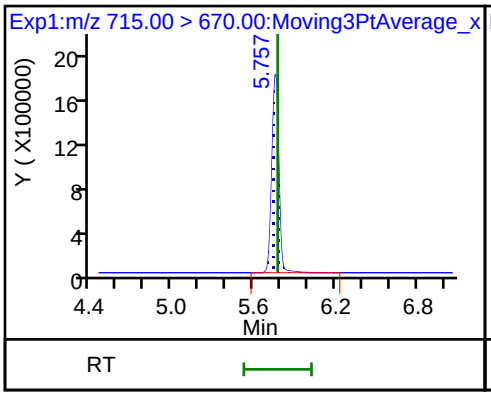
60 Perfluorotridecanoic acid



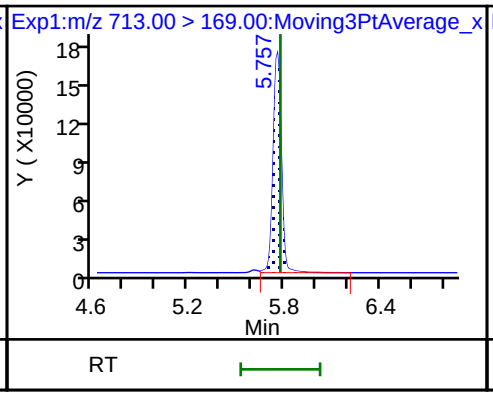
60 Perfluorotridecanoic acid



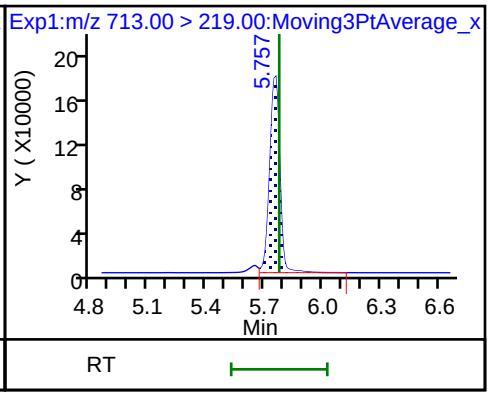
D 61 13C2 PFTeDA



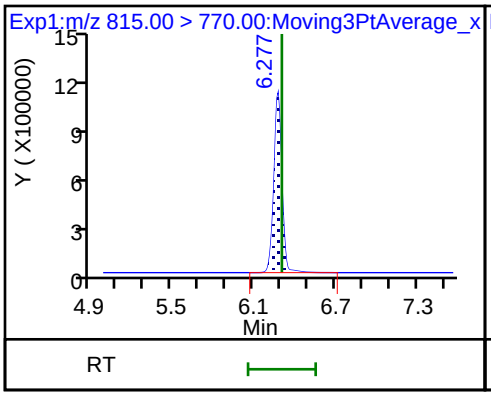
62 Perfluorotetradecanoic acid



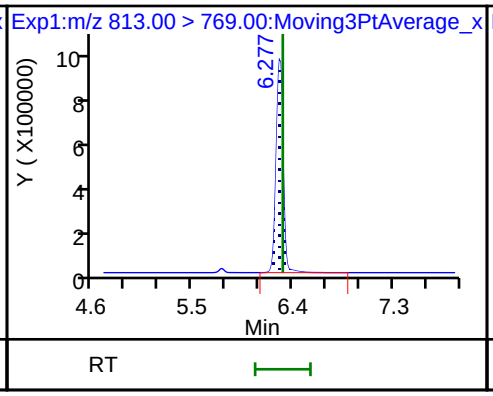
62 Perfluorotetradecanoic acid



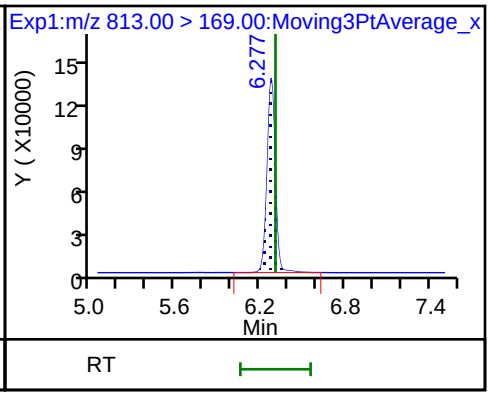
D 63 13C2 PFHxDA



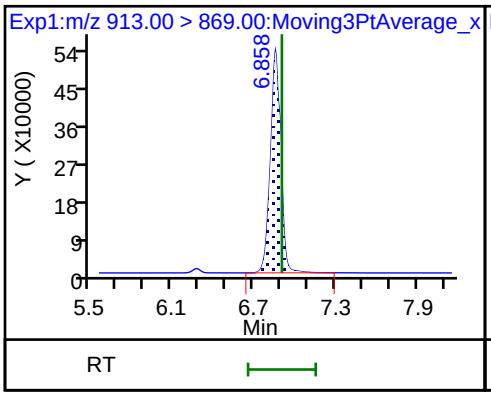
64 Perfluorohexadecanoic acid



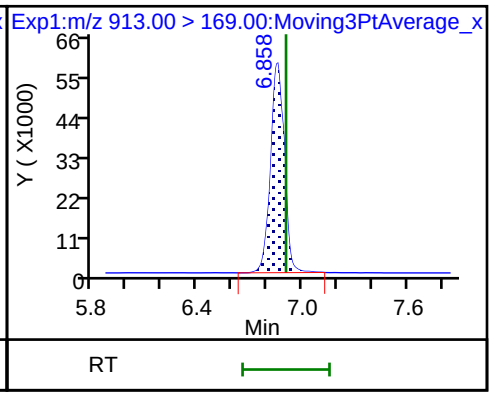
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-328148/2 Calibration Date: 10/03/2019 11:50

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8713	0.8873		0.0509	0.0500	1.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.057	1.114		0.0527	0.0500	5.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.701	1.632		0.0424	0.0442	-4.1	50.0
4:2 FTS	AveID	2.715	3.166		0.545	0.467	16.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9491	1.014		0.0534	0.0500	6.8	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.360	1.350		0.0465	0.0469	-0.7	50.0
HFPO-DA (GenX)	AveID	2.765	2.509		0.0454	0.0500	-9.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.043	1.114		0.0534	0.0500	6.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.278	1.409		0.0502	0.0455	10.2	50.0
DONA	AveID	5.174	5.432		0.0494	0.0471	5.0	50.0
6:2 FTS	AveID	2.039	2.287		0.532	0.474	12.2	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.195	1.220		0.0486	0.0476	2.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.040	1.319		0.0634	0.0500	26.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.238		0.0528	0.0464	13.8	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9752	1.031		0.0528	0.0500	5.7	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.531	2.587		0.0476	0.0466	2.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8331	0.8016		0.0462	0.0480	-3.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.998	1.029		0.0516	0.0500	3.1	50.0
8:2 FTS	AveID	1.917	2.160		0.540	0.479	12.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9598	0.9480		0.0494	0.0500	-1.2	50.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.7884	0.8432		0.535	0.500	7.0	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7795	0.7399		0.0458	0.0482	-5.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8321	0.8046		0.0483	0.0500	-3.3	50.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7543	0.7647		0.507	0.500	1.4	50.0
NMeFOSE	AveID	1.048	1.024		0.0489	0.0500	-2.3	50.0
F-53B Minor	AveID	4.788	5.214		0.0513	0.0471	8.9	50.0
NMeFOSA	AveID	0.9631	1.003		100	0.0500	4.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9587	0.9778		0.0510	0.0500	2.0	50.0
NEtFOSE	AveID	1.049	0.9565		0.0456	0.0500	-8.8	50.0
10:2 FTS	AveID	1.246	1.136		0.0440	0.0482	-8.8	50.0
NEtFOSA	AveID	0.9899	1.005		100	0.0500	1.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3013	0.2626		0.0422	0.0484	-12.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-328148/2 Calibration Date: 10/03/2019 11:50

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.9178	0.8662		0.0472	0.0500	-5.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0946	0.1108		0.0586	0.0500	17.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		1.366		0.0524	0.0500	4.8	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6071	0.6755		0.0556	0.0500	11.3	50.0
13C4 PFBA	Ave	0.8530	0.8828		2.59	2.50	3.5	50.0
13C5 PFPeA	Ave	0.7618	0.8051		2.64	2.50	5.7	50.0
M2-4:2 FTS	Ave	0.1656	0.1486		2.10	2.34	-10.3	50.0
13C2 PFHxA	Ave	0.8514	0.8768		2.57	2.50	3.0	50.0
13C3 HFPO-DA	Ave	0.0181	0.0145		2.01	2.50	-19.7	50.0
13C4 PFHpA	Ave	0.7796	0.7900		2.53	2.50	1.3	50.0
18O2 PFHxS	Ave	0.5235	0.5836		2.64	2.37	11.5	50.0
M2-6:2 FTS	Ave	0.1946	0.1897		2.32	2.38	-2.5	50.0
13C4 PFOA	Ave	0.9123	0.9148		2.51	2.50	0.3	50.0
13C8 PFOA	Ave	0.7927	0.7862		2.48	2.50	-0.8	50.0
13C4 PFOS	Ave	0.4531	0.4886		2.58	2.39	7.8	50.0
13C8 PFOS	Ave	0.2310	0.2461		2.66	2.50	6.5	50.0
13C5 PFNA	Ave	0.8000	0.7665		2.40	2.50	-4.2	50.0
13C8 FOSA	Ave	0.6148	0.6469		2.63	2.50	5.2	50.0
13C2 PFDA	Ave	0.8529	0.8833		2.59	2.50	3.6	50.0
M2-8:2 FTS	Ave	0.2312	0.2111		2.19	2.40	-8.7	50.0
d3-NMeFOSAA	Ave	0.5647	0.5892		2.61	2.50	4.3	50.0
13C2 PFUnA	Ave	0.7999	0.8173		2.55	2.50	2.2	50.0
d5-NEtFOSAA	Ave	0.5657	0.6061		2.68	2.50	7.2	50.0
d7-N-MeFOSE-M	Ave	0.1309	0.1359		13.0	12.5	3.8	50.0
d-N-MeFOSA-M	Ave	0.3353	0.3571		2.66	2.50	6.5	50.0
d9-N-EtFOSE-M	Ave	0.1376	0.1432		13.0	12.5	4.1	50.0
13C2 PFDoA	Ave	0.8325	0.7887		2.37	2.50	-5.3	50.0
d-N-EtFOSA-M	Ave	0.3476	0.3692		2.66	2.50	6.2	50.0
13C2 PFTeDA	Ave	0.7347	0.5898		2.01	2.50	-19.7	50.0
13C2 PFHxDA	Ave	0.5879	0.4561		1.94	2.50	-22.4	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 03-Oct-2019 11:50:28 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 04-Oct-2019 11:05:43 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0311

First Level Reviewer: mongkols Date: 04-Oct-2019 11:05:43
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.186	2.186	0.0	0.589	6324907	2.59		104	6842	
3 Perfluorobutanoic acid										M
212.90 > 169.00	2.194	2.194	0.0	1.003	112238	0.0509		102	37.3	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.680	5768095	2.64		106	8563	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.534	2.534	0.0	1.004	128533	0.0527		105	39.0	M
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.556	2.556	0.0	0.769	120628	0.0424	Target=1.87	95.9	23.0	M
298.90 > 99.00	2.556	2.556	0.0	0.769	61655		1.96(0.94-2.81)		20.2	M
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.865	2.865	0.0	1.000	629729	0.5446		117	5602	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.865	2.865	0.0	0.772	994419	2.09		89.7	1351	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.908	2.908	0.0	1.000	127381	0.0534	Target=11.57	107	64.4	
313.00 > 119.00	2.908	2.908	0.0	1.000	14096		9.04(5.78-17.35)		37.5	
D 10 13C2 PFHxA										
315.00 > 270.00	2.908	2.908	0.0	0.783	6281579	2.57		103	14338	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.918	2.918	0.0	0.879	105870	0.0465	Target=2.40	99.3	358	
349.00 > 99.00	2.918	2.918	0.0	0.879	43081		2.46(1.20-3.60)		173	
13 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	3.036	3.036	0.0	1.000	5219	0.0454		90.7	27.6	M
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.036	3.036	0.0	0.818	104009	2.01		80.3	2121	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.312	3.312	0.0	1.000	126065	0.0534	Target=3.70	107	85.7	
363.00 > 169.00	3.312	3.312	0.0	1.000	37067		3.40(1.85-5.54)		86.1	
D 17 13C4 PFHpA										
367.00 > 322.00	3.312	3.312	0.0	0.892	5659723	2.53		101	20071	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.322	3.322	0.0	1.000	107200	0.0502	Target=2.98	110	278	
399.00 > 99.00	3.322	3.322	0.0	1.000	34106		3.14(1.49-4.47)		90.1	M
D 15 18O2 PFHxS										
403.00 > 84.00	3.322	3.322	0.0	0.895	3955312	2.64		111	53525	
18 DONA										
377.00 > 251.00	3.362	3.362	0.0	0.823	358290	0.0494	Target=2.81	105	800	
377.00 > 85.00	3.362	3.362	0.0	0.823	116459		3.08(1.41-4.22)		840	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.694	3.694	0.0	1.000	589471	0.5318		112	2353	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.694	3.694	0.0	0.995	1291270	2.31		97.5	5277	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.711	3.711	0.0	0.909	81304	0.0486	Target=4.19	102	569	
449.00 > 99.00	3.711	3.711	0.0	0.909	21770		3.73(2.09-6.28)		187	
D 23 13C8 PFOA										
421.00 > 376.00	3.711	3.711	0.0	1.000	5632650	2.48		99.2	35073	
D 25 13C4 PFOA										
417.00 > 372.00	3.711	3.711	0.0	1.000	6553690	2.51		100	36457	
* 24 13C2 PFOA										
415.00 > 370.00	3.711	3.720	-0.009		7164488	2.50			44650	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.720	3.720	0.0	1.002	172878	0.0634	Target=2.68	127	86.0	
413.00 > 169.00	3.711	3.720	-0.009	1.000	61236		2.82(1.34-4.02)		190	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.085	4.085	0.0	1.000	80436	0.0528	Target=4.19	114	522	
499.00 > 99.00	4.085	4.085	0.0	1.000	19222		4.18(2.09-6.28)		123	
D 27 13C8 PFOS										
507.00 > 99.00	4.085	4.085	0.0	1.101	1762811	2.66		107	17295	
D 28 13C4 PFOS										
503.00 > 80.00	4.085	4.085	0.0	1.101	3346674	2.58		108	15610	
30 Perfluorononanoic acid										
463.00 > 419.00	4.102	4.102	0.0	1.000	113203	0.0528	Target=8.84	106	134	
463.00 > 169.00	4.102	4.102	0.0	1.000	11846		9.56(4.42-13.26)		79.1	
D 29 13C5 PFNA										
468.00 > 423.00	4.102	4.102	0.0	1.105	5491600	2.40		95.8	34618	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.294	4.294	0.0	1.051	168834	0.0476		102	888	
D 33 13C8 FOSA										
506.00 > 78.00	4.434	4.434	0.0	1.195	4634484	2.63		105	15488	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.443	4.434	0.009	1.002	95347	0.0516		103	659	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.443	4.434	0.009	1.088	53875	0.0462	Target=2.27	96.2	897	
549.00 > 99.00	4.434	4.434	0.0	1.085	23428		2.30(1.13-3.40)		181	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.460	4.460	0.0	1.000	119987	0.0494	Target=10.36	98.8	251	
513.00 > 169.00	4.460	4.460	0.0	1.000	12366		9.70(5.18-15.54)		47.4	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.460	4.460	0.0	1.000	625739	0.5396		113	7035	
D 36 13C2 PFDA										
515.00 > 470.00	4.460	4.460	0.0	1.202	6328532	2.59		104	54358	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.460	4.460	0.0	1.202	1448773	2.19		91.3	9866	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.623	4.623	0.0	1.246	4221615	2.61		104	15076	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.632	4.633	-0.001	1.002	711957	0.5348		107	217	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.758	4.758	0.0	1.165	49937	0.0458	Target=2.70	94.9	367	
599.00 > 99.00	4.758	4.758	0.0	1.165	15980		3.12(1.35-4.05)		124	
D 43 13C2 PFUnA										
565.00 > 520.00	4.787	4.787	0.0	1.290	5855170	2.55		102	35050	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.787	4.787	0.0	1.290	4342714	2.68		107	3252	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.787	4.787	0.0	1.000	94219	0.0483	Target=9.31	96.7	272	
563.00 > 169.00	4.787	4.787	0.0	1.000	12375		7.61(4.65-13.96)		124	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.796	4.797	-0.001	1.002	664184	0.5069		101	5526	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.893	4.893	0.0	1.318	4868348	13.0		104	13675	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.903	4.914	-0.011	1.002	19943	0.0489		97.7	136	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.925	4.925	0.0	1.327	2558663	2.66		107	49.1	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.925	4.925	0.0	1.206	343908	0.0513		109	3682	
50 NMeFOSA										
512.00 > 169.00	4.925	4.925	0.0	1.000	51325	0.0521		104	20.9	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.071	5.071	0.0	1.366	5129453	13.0		104	23254	
D 57 13C2 PFDoA										
615.00 > 570.00	5.080	5.080	0.0	1.369	5650811	2.37		94.7	36566	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.080	5.080	0.0	1.000	110506	0.0510	Target=8.07	102	75.2	
613.00 > 169.00	5.080	5.080	0.0	1.000	13643		8.10(4.03-12.10)		135	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.089	5.080	0.008	1.003	19626	0.0456		91.2	134	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.097	5.097	0.0	1.373	2644955	2.66		106	249	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.097	5.098	-0.001	1.143	33125	0.0440		91.2	136	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.106	5.106	0.0	1.002	53154	0.0508		102	29.7	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.314	5.315	-0.001	1.301	17798	0.0422	Target=0.52	87.2	211	
699.00 > 99.00	5.314	5.315	-0.001	1.301	38906		0.46(0.26-0.77)		676	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.345	5.345	0.0	1.052	97891	0.0472	Target=6.35	94.4	334	
663.00 > 169.00	5.354	5.345	0.009	1.054	16405		5.97(3.18-9.53)		130	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.598	5.592	0.006	1.001	9367	0.0586	Target=0.85	117	158	
713.00 > 219.00	5.593	5.592	0.001	1.000	10515		0.89(0.43-1.28)		241	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.593	5.593	0.0	1.507	4225475	2.01		80.3	74256	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.041	6.041	0.0	1.628	3267865	1.94		77.6	7013	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.053	6.047	0.006	1.002	89297	0.0524	Target=7.95	105	417	
813.00 > 169.00	6.053	6.047	0.006	1.002	11549		7.73(3.98-11.93)		230	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.497	6.500	-0.003	1.075	44149	0.0556	Target=8.96	111	22.2	
913.00 > 169.00	6.497	6.500	-0.003	1.075	5357		8.24(4.48-13.45)		115	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00009 Amount Added: 1.00 Units: mL

Report Date: 04-Oct-2019 11:05:44 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d

Injection Date: 03-Oct-2019 11:50:28 Instrument ID: A13

Lims ID: CCVL

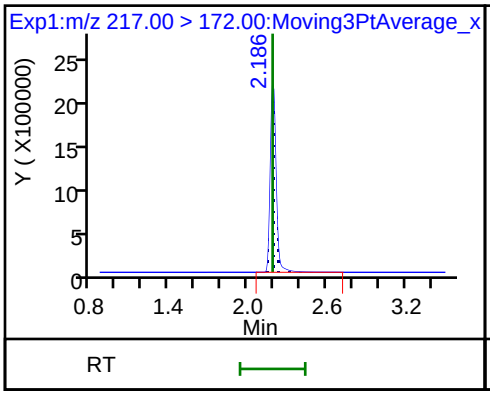
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 51 Worklist Smp#: 2

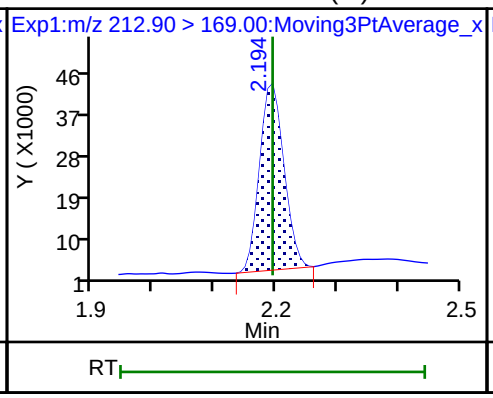
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

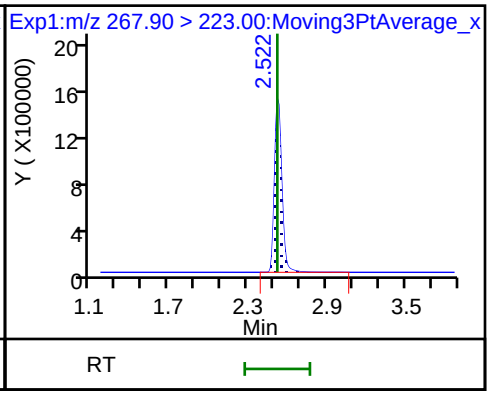
D 2 13C4 PFBA



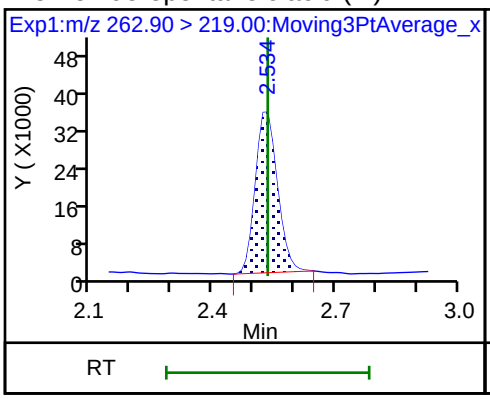
3 Perfluorobutanoic acid (M)



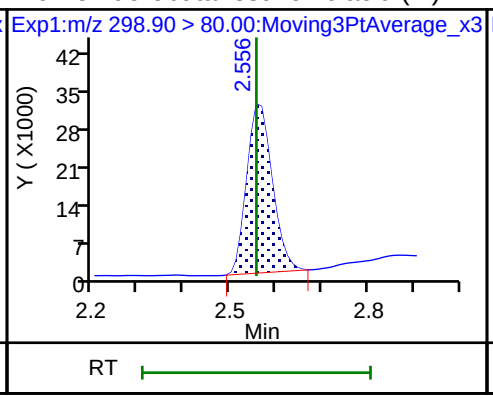
D 4 13C5 PFPeA



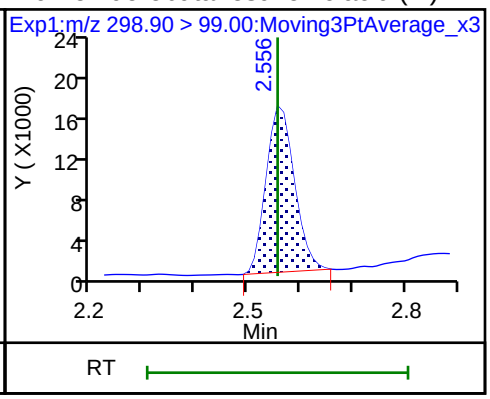
5 Perfluoropentanoic acid (M)



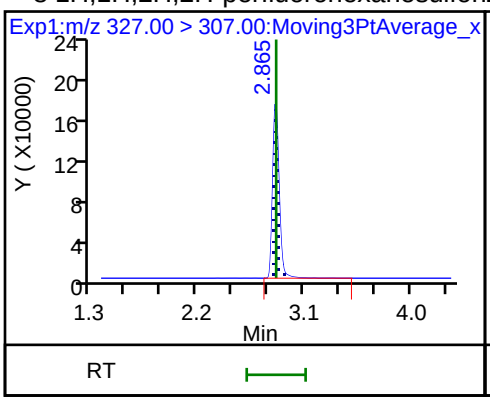
6 Perfluorobutanesulfonic acid (M)



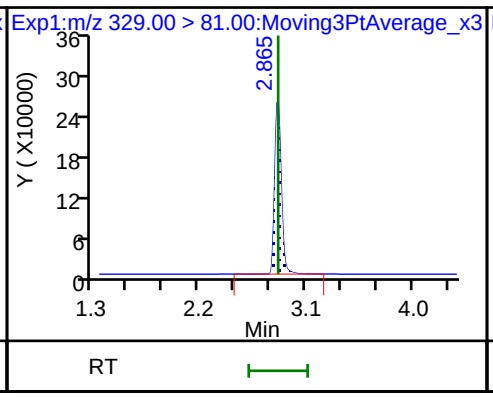
6 Perfluorobutanesulfonic acid (M)



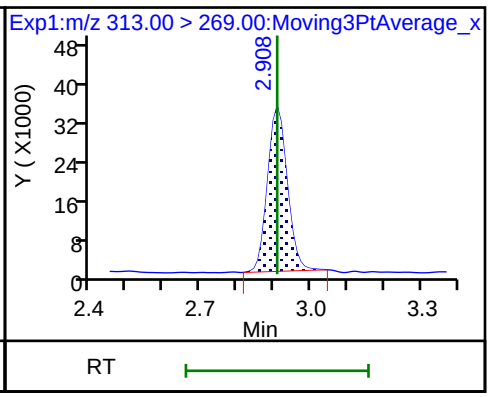
8 1H,1H,2H,2H-perfluorohexanesulfon



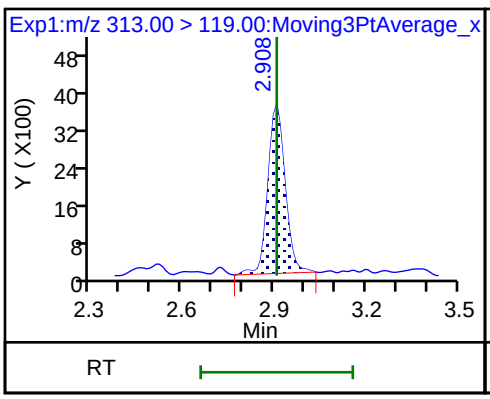
D 7 M2-4:2 FTS



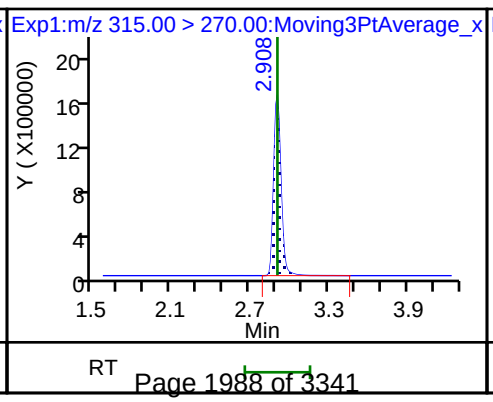
9 Perfluorohexanoic acid



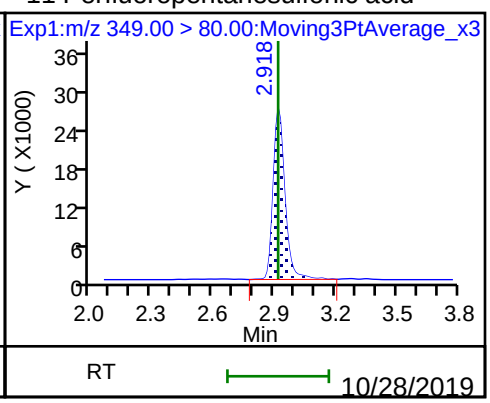
9 Perfluorohexanoic acid



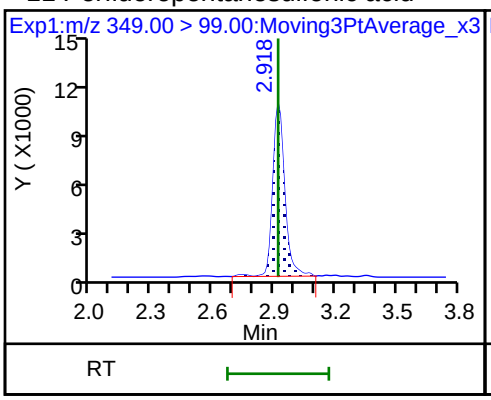
D 10 13C2 PFHxA



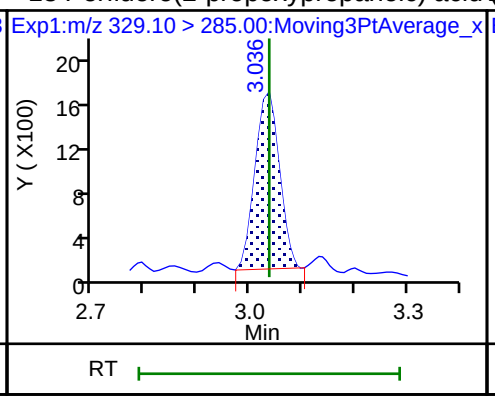
11 Perfluoropentanesulfonic acid



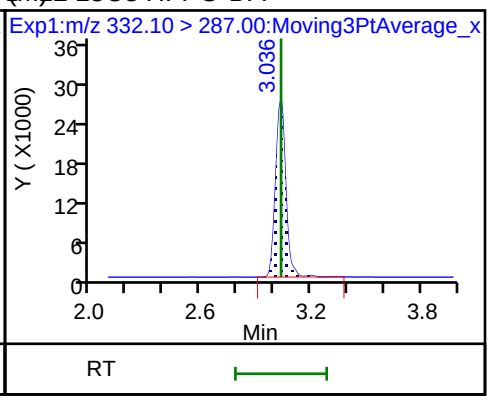
11 Perfluoropentanesulfonic acid



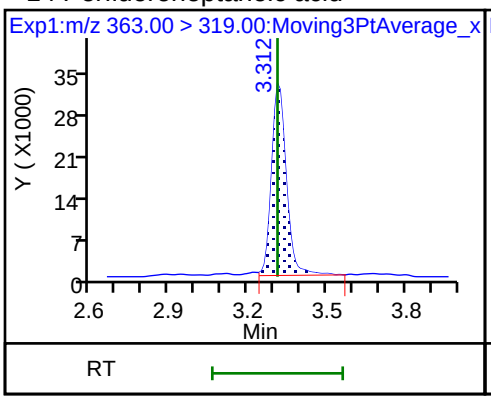
13 Perfluoro(2-propoxypropanoic) acid (M)



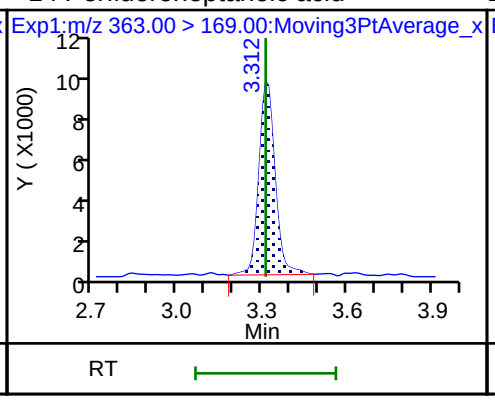
D 12 13C3 HFPO-DA



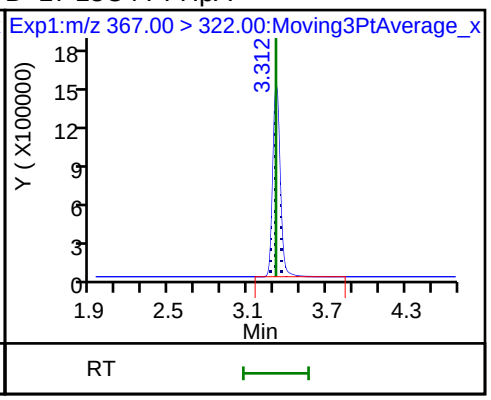
14 Perfluoroheptanoic acid



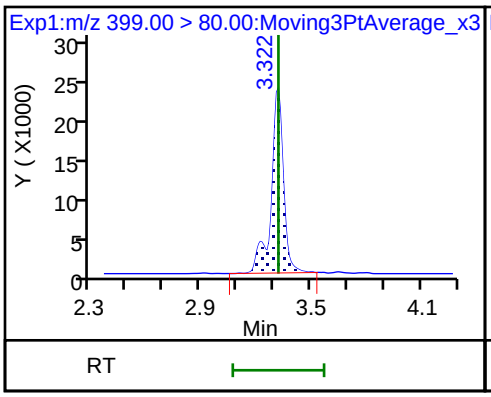
14 Perfluoroheptanoic acid



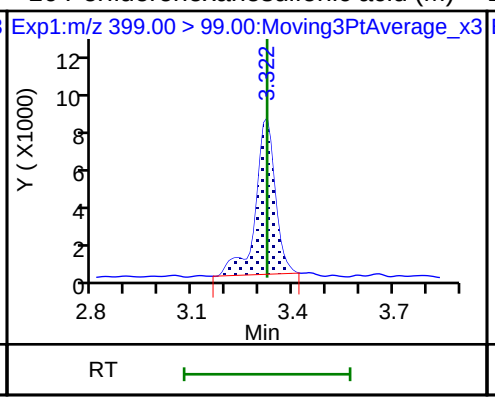
D 17 13C4 PFHpA



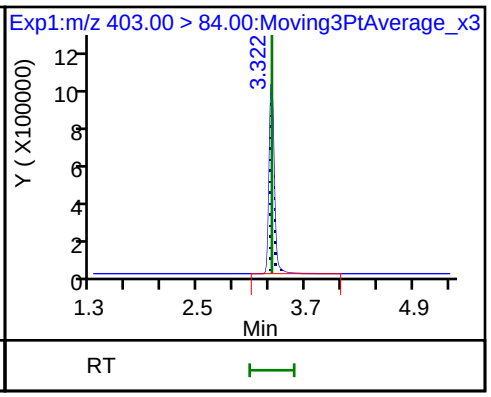
16 Perfluorohexanesulfonic acid



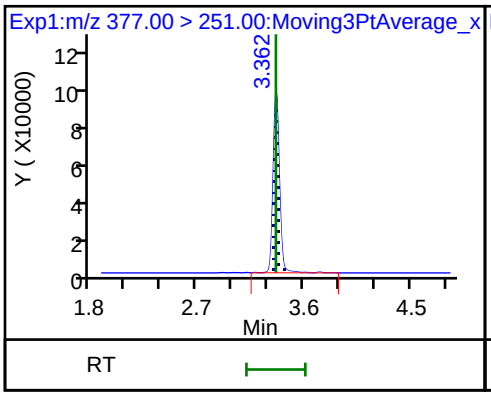
16 Perfluorohexanesulfonic acid (M)



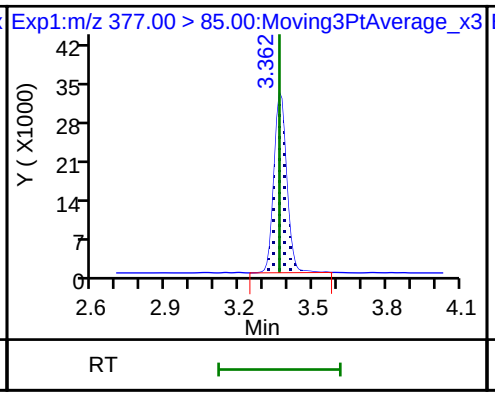
D 15 18O2 PFHxS



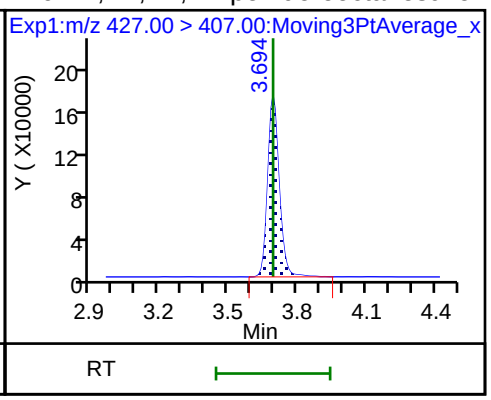
18 DONA



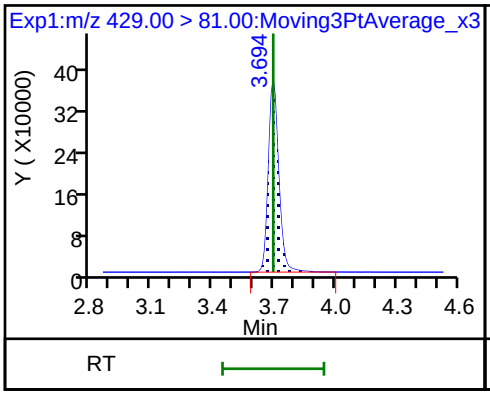
18 DONA



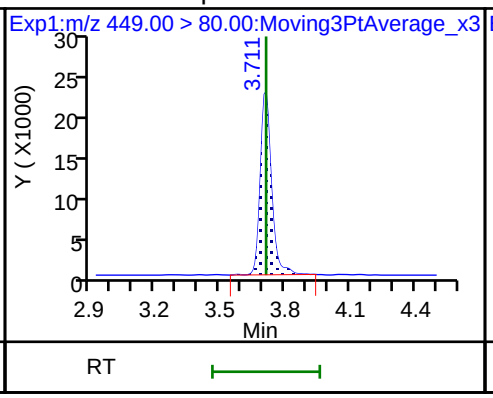
19 1H,1H,2H,2H-perfluorooctanesulfoni



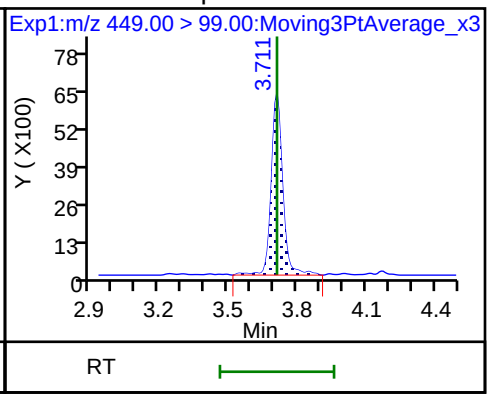
D 20 M2-6:2 FTS



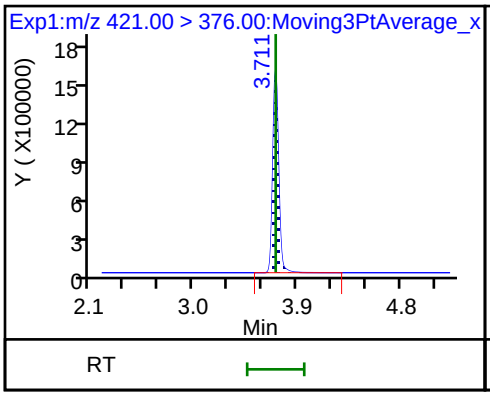
21 Perfluoroheptanesulfonic acid



21 Perfluoroheptanesulfonic acid



D 23 13C8 PFOA



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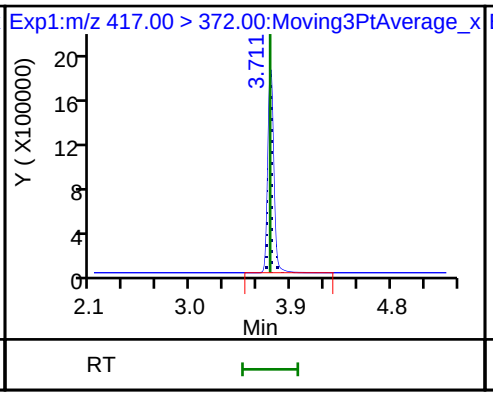
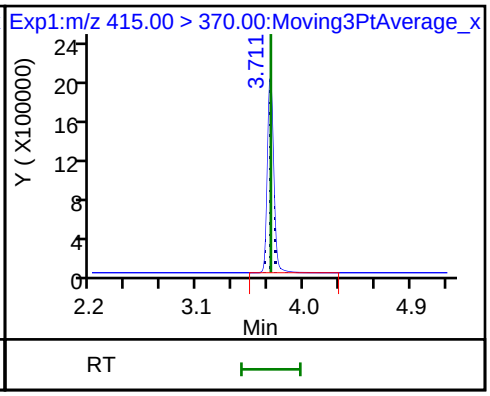
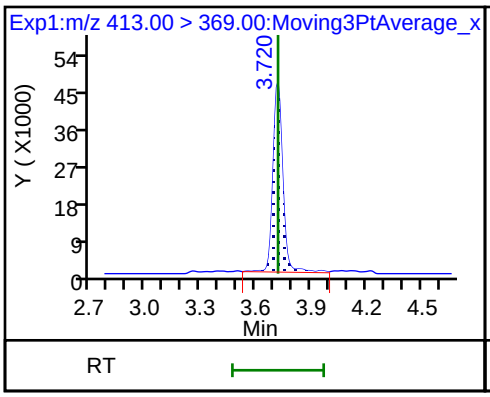


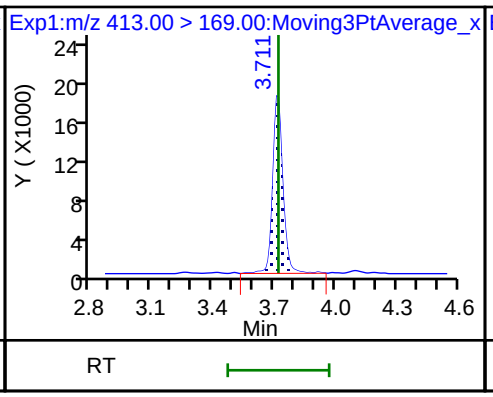
* 24 13C2 PFOA



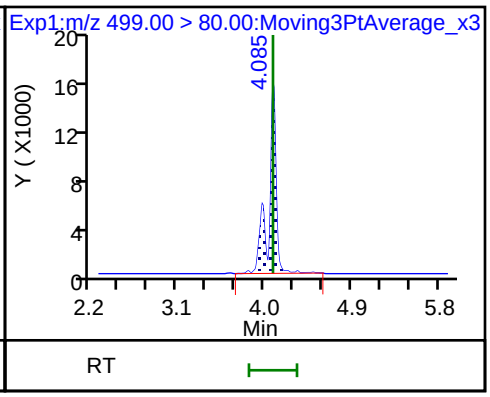
22 Perfluorooctanoic acid



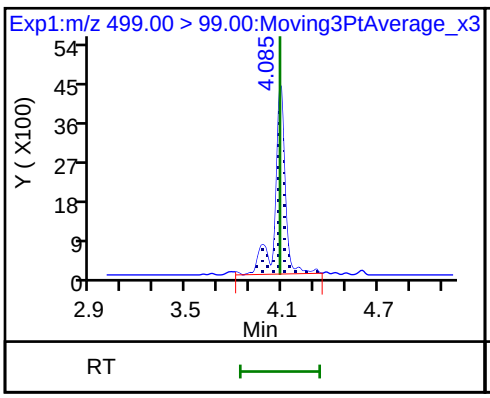
22 Perfluorooctanoic acid



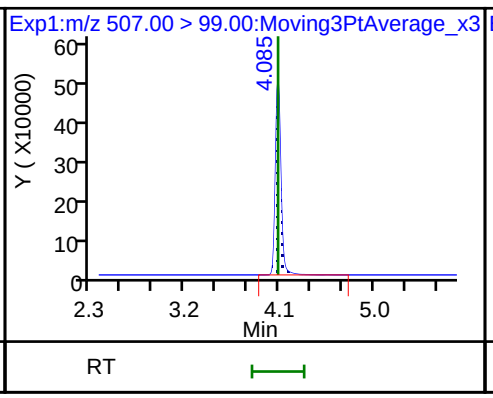
26 Perfluorooctanesulfonic acid



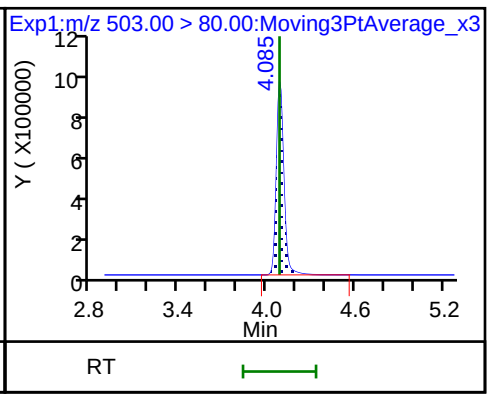
26 Perfluorooctanesulfonic acid



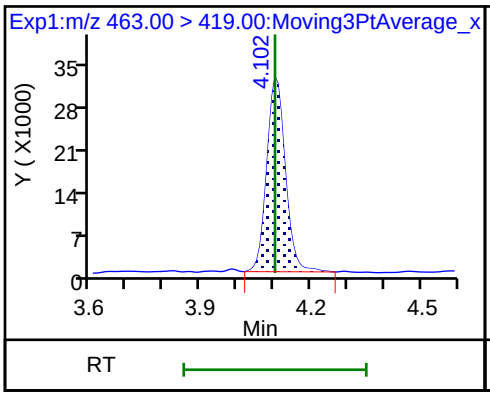
D 27 13C8 PFOS



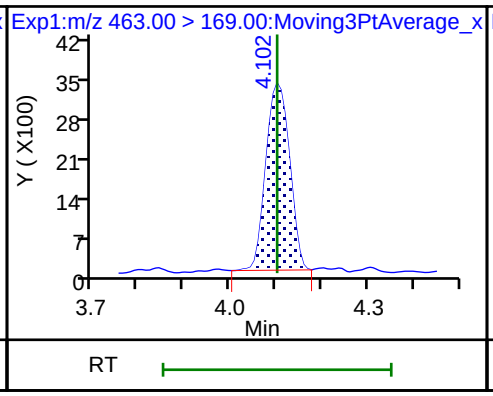
D 28 13C4 PFOS



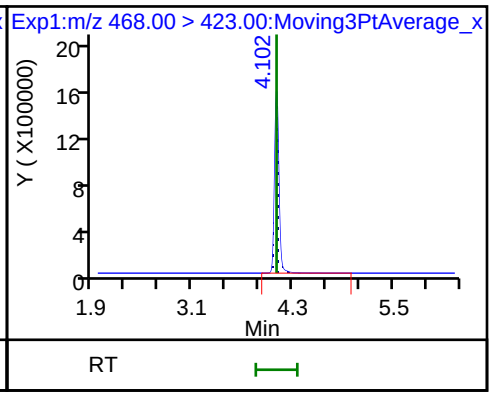
30 Perfluorononanoic acid



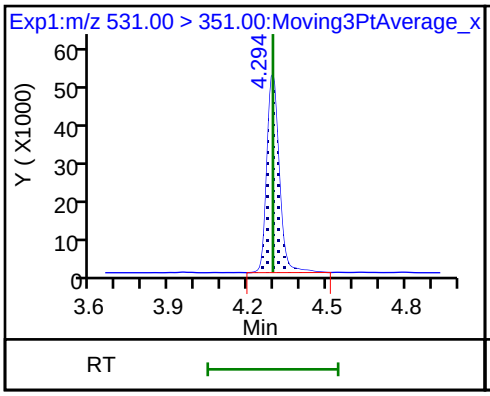
30 Perfluorononanoic acid



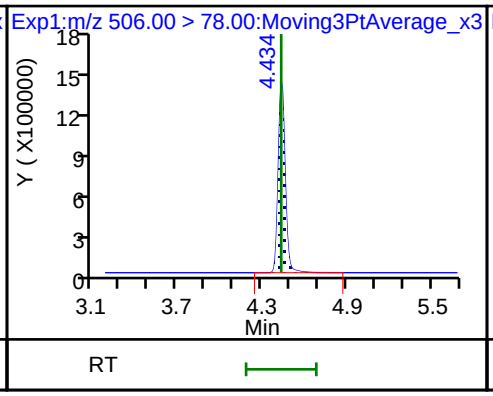
D 29 13C5 PFNA



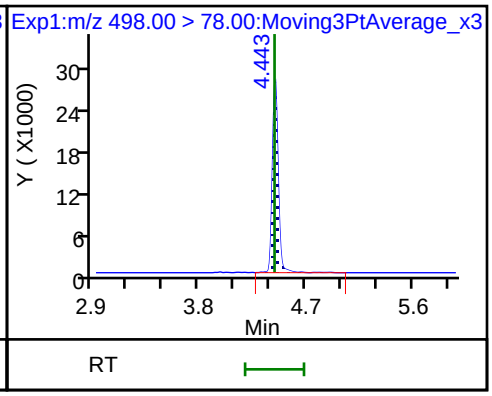
31 9-Chlorohexadecafluoro-3-oxanonanoic



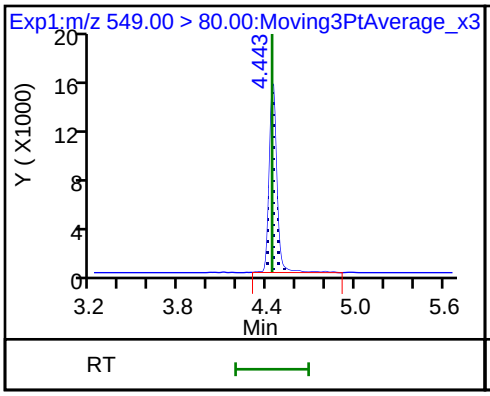
D 33 13C8 FOSA



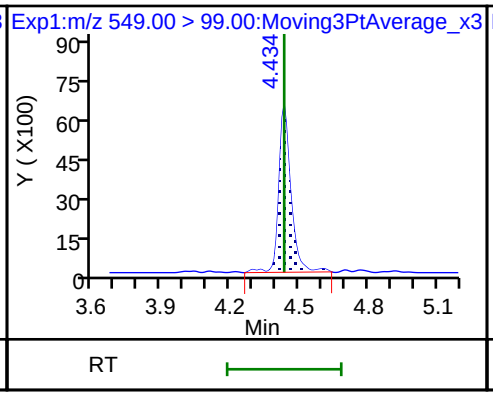
32 Perfluorooctanesulfonamide



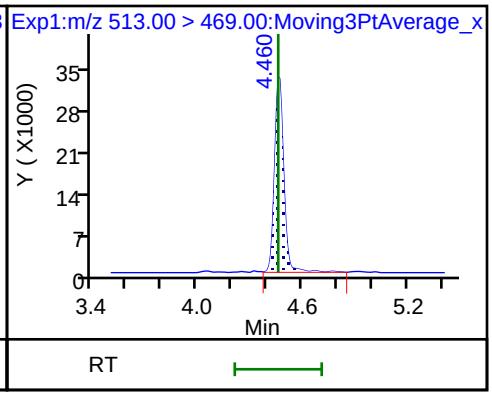
38 Perfluorononanesulfonic acid



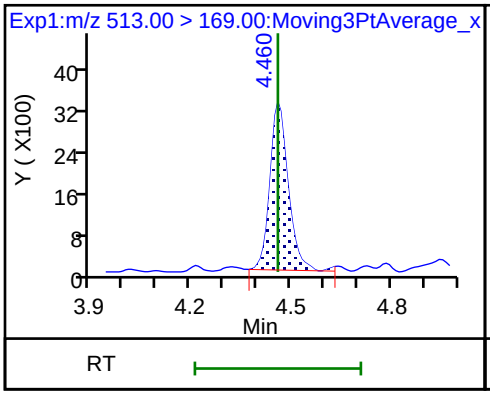
38 Perfluorononanesulfonic acid



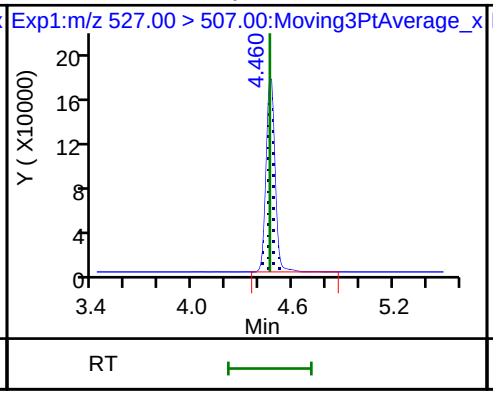
34 Perfluorodecanoic acid



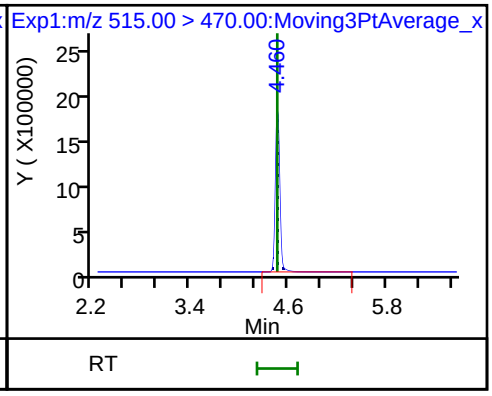
34 Perfluorodecanoic acid



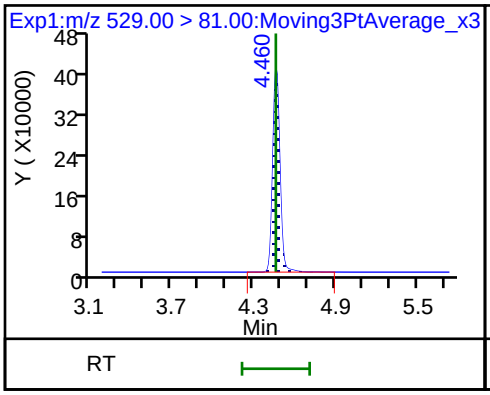
35 1H,1H,2H,2H-perfluorodecanesulfonic



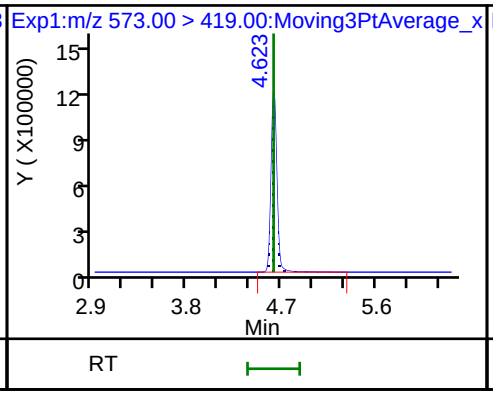
D 36 13C2 PFDA



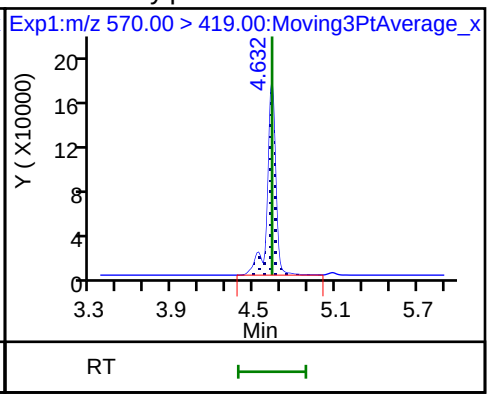
D 37 M2-8:2 FTS



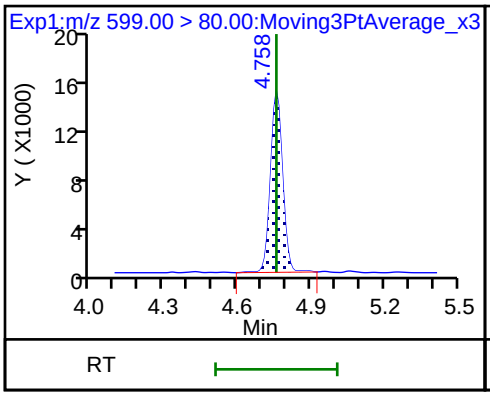
D 40 d3-NMeFOSAA



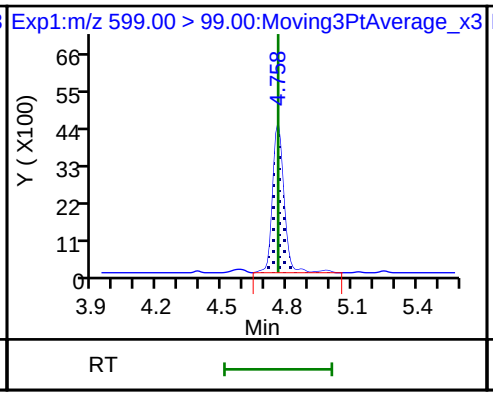
41 N-methylperfluorooctanesulfonamido



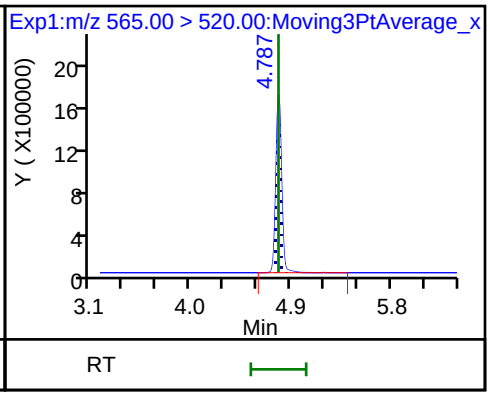
48 Perfluorodecanesulfonic acid



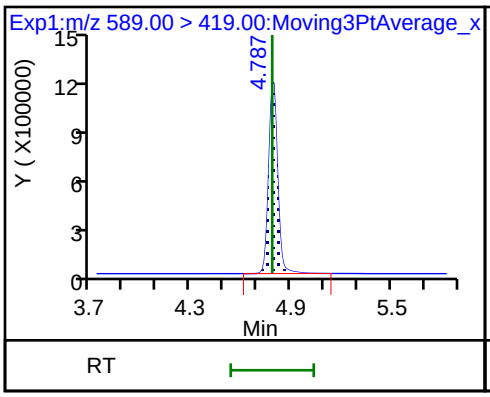
48 Perfluorodecanesulfonic acid



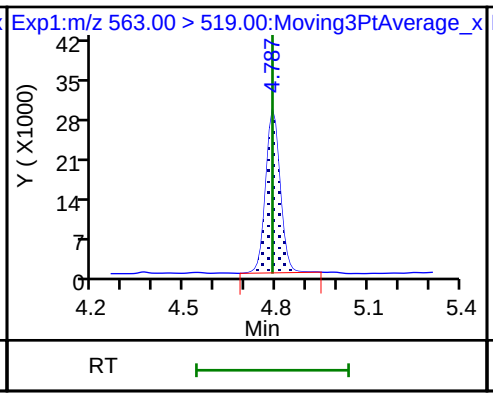
D 43 13C2 PFUnA



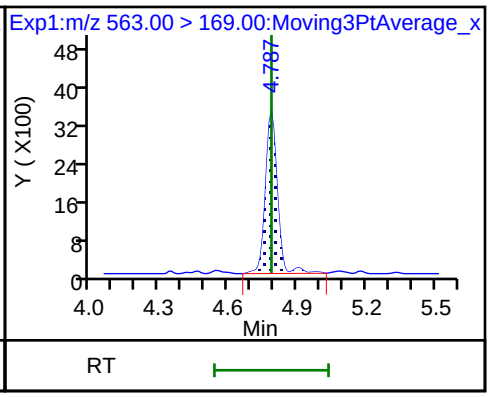
D 44 d5-NEtFOSAA



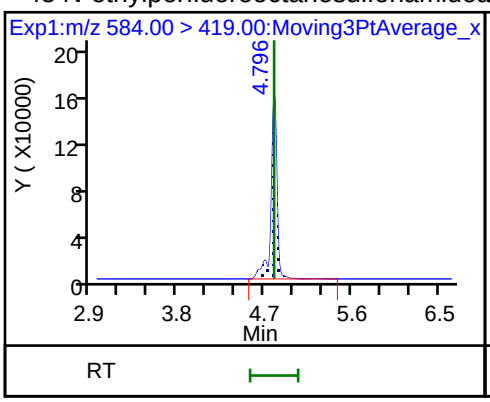
42 Perfluoroundecanoic acid



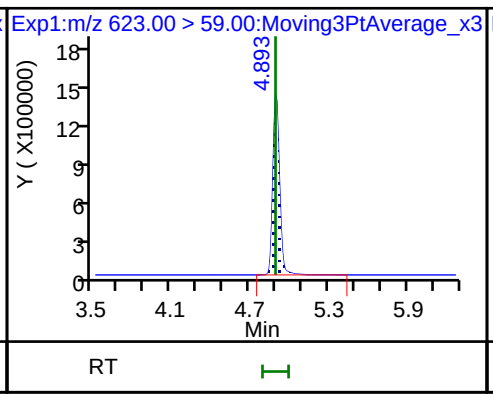
42 Perfluoroundecanoic acid



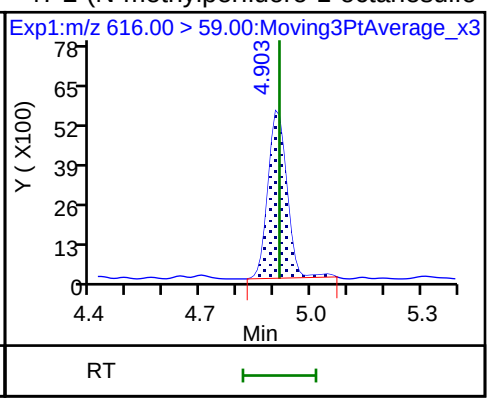
45 N-ethylperfluorooctanesulfonamidoa



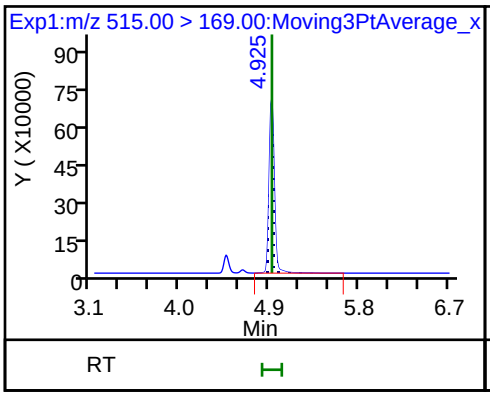
D 46 d7-N-MeFOSE-M



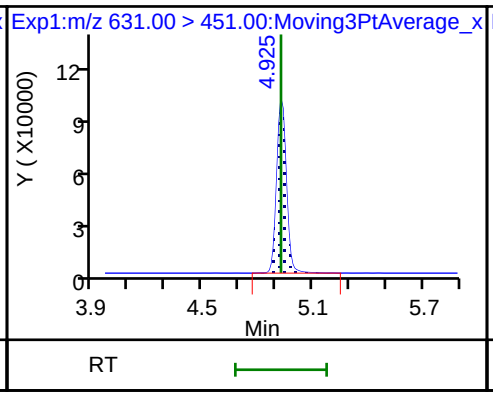
47 2-(N-methylperfluoro-1-octanesulfo



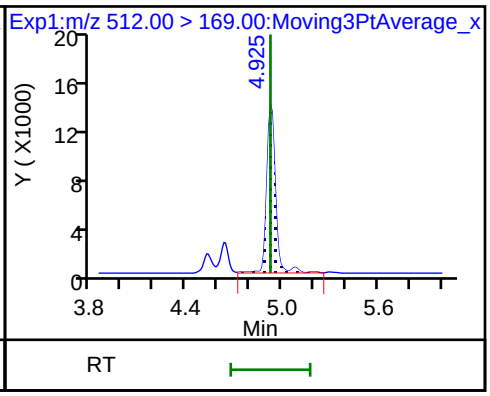
D 49 d-N-MeFOSA-M



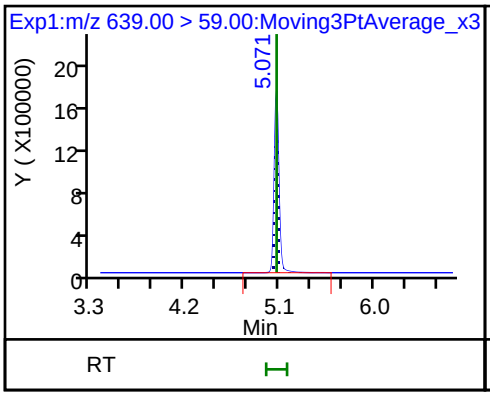
51 11-Chloroeicosafluoro-3-oxaundecan



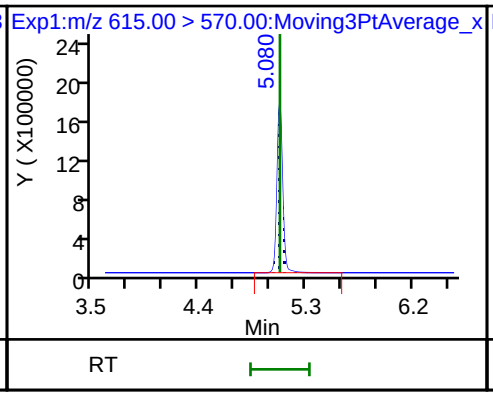
50 NMeFOSA



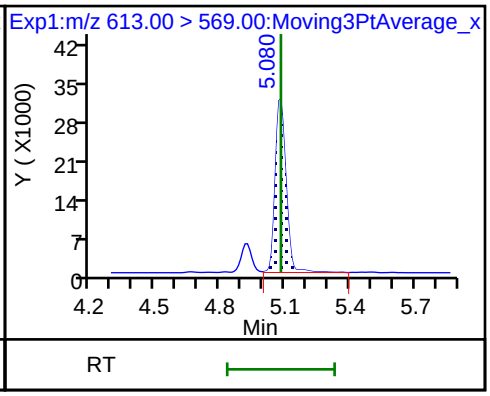
D 52 d9-N-EtFOSE-M



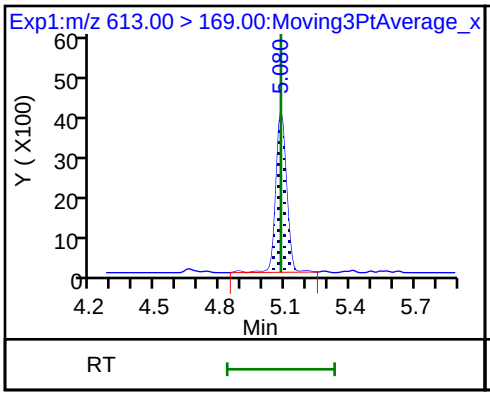
D 57 13C2 PFDoA



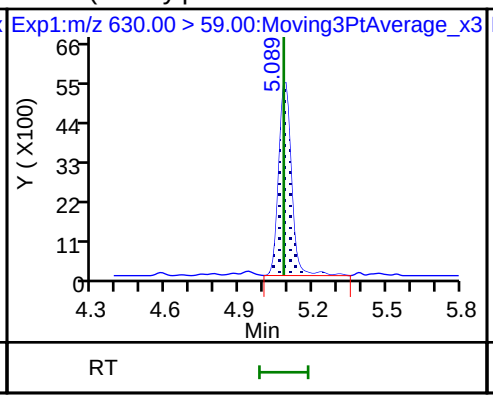
56 Perfluorododecanoic acid



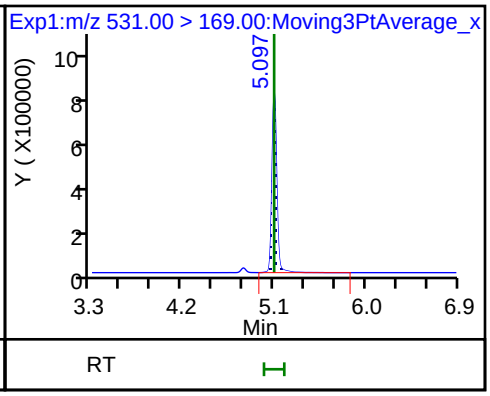
56 Perfluorododecanoic acid



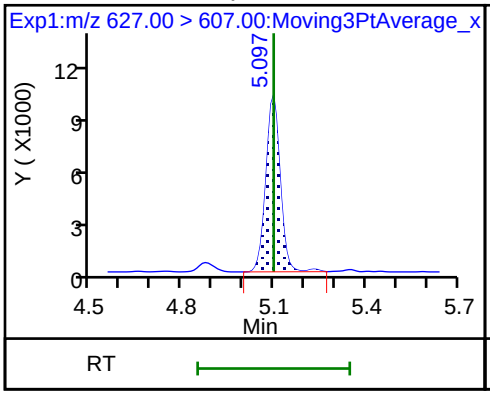
53 2-(N-ethylperfluoro-1-octanesulfon



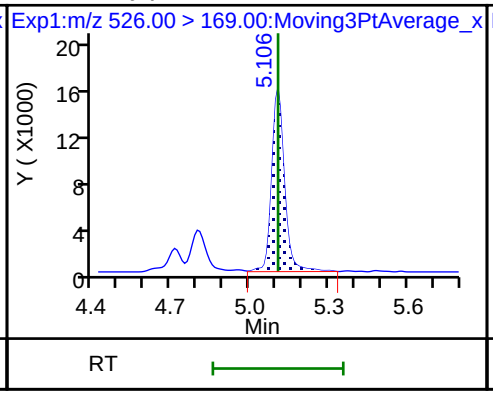
D 55 d-N-EtFOSA-M



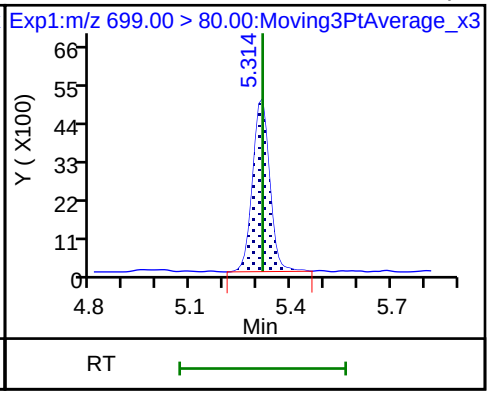
58 1H,1H,2H,2H-perfluorododecanesulfo



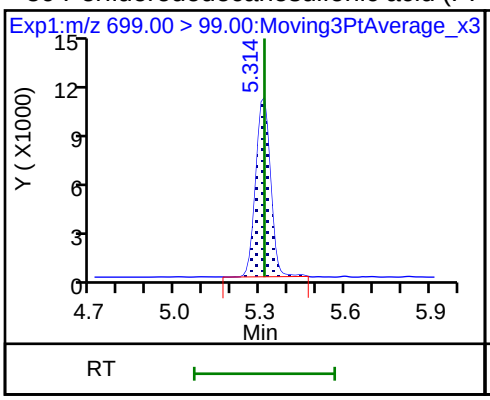
54 N-ethylperfluoro-1-octanesulfonami



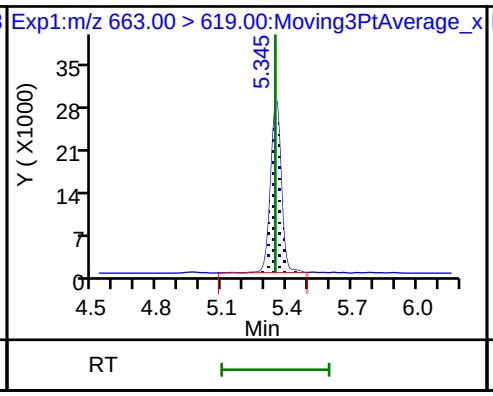
59 Perfluorododecanesulfonic acid (PF



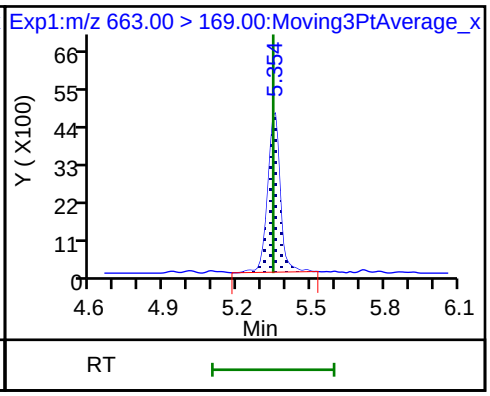
59 Perfluorododecanesulfonic acid (PF



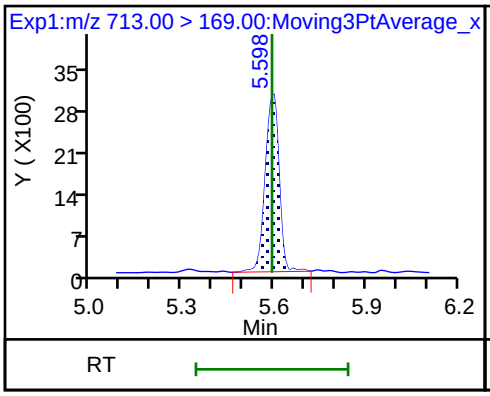
60 Perfluorotridecanoic acid



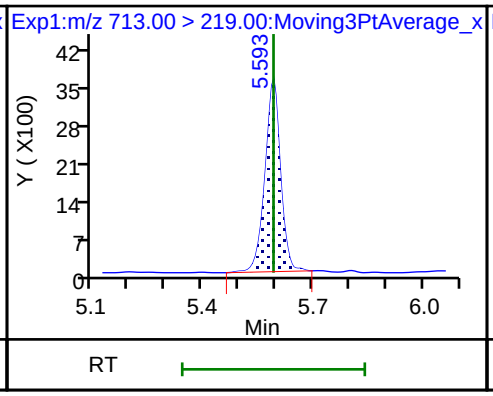
60 Perfluorotridecanoic acid



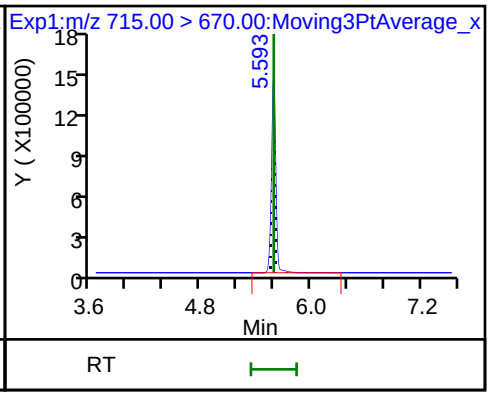
62 Perfluorotetradecanoic acid



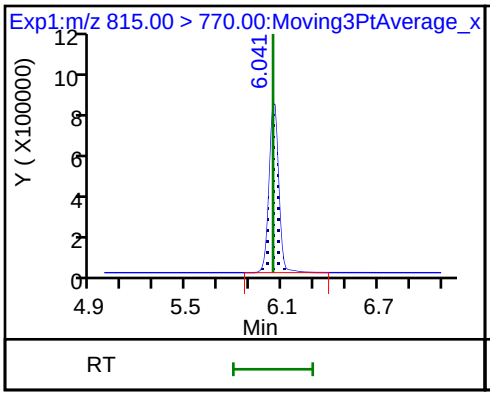
62 Perfluorotetradecanoic acid



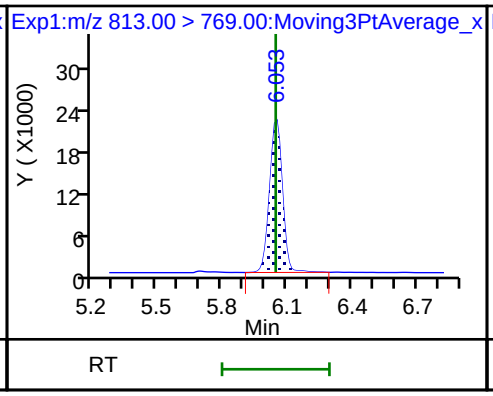
D 61 13C2 PFTeDA



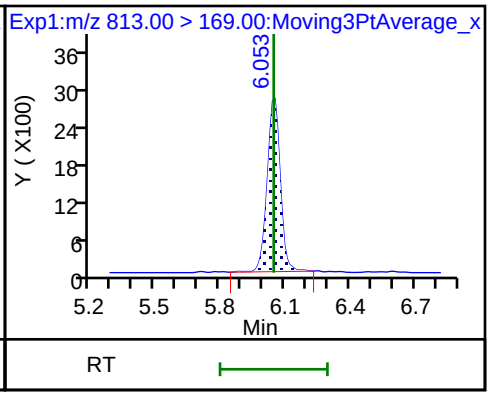
D 63 13C2 PFHxDA



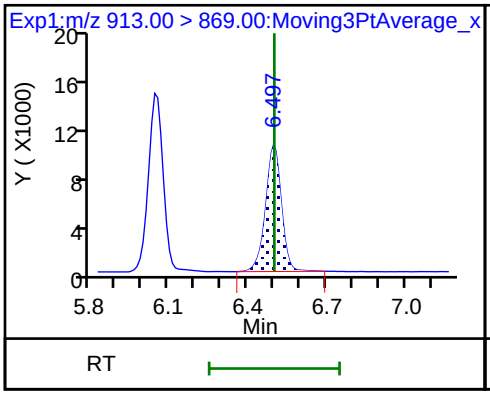
64 Perfluorohexadecanoic acid



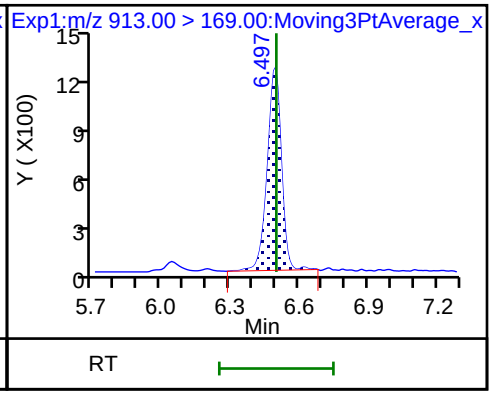
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

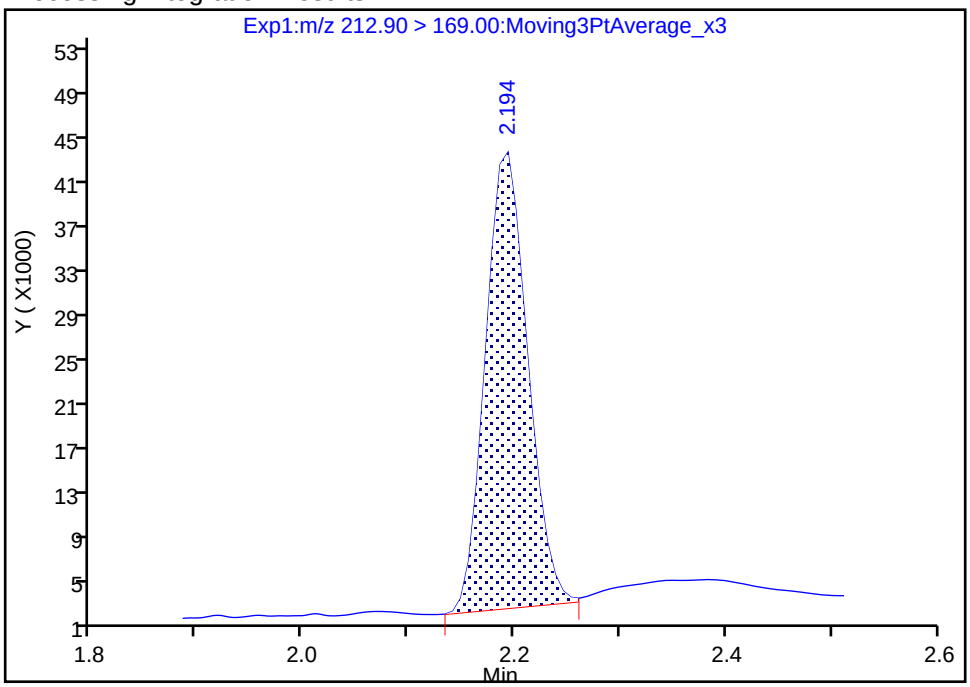
Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d
Injection Date: 03-Oct-2019 11:50:28 Instrument ID: A13
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

3 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

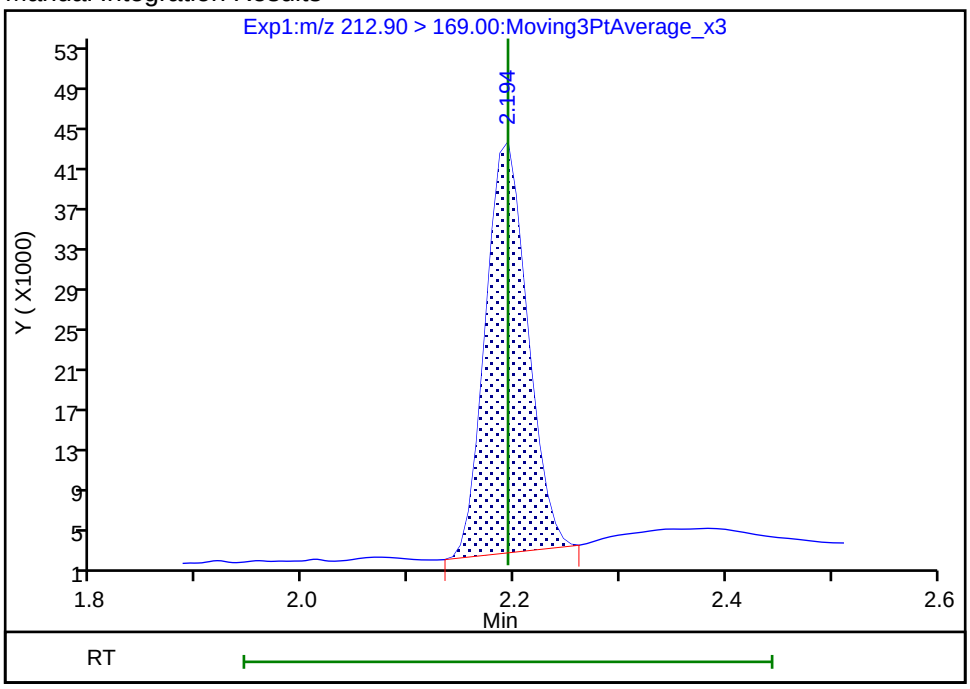
Processing Integration Results

RT: 2.19
Area: 113653
Amount: 0.051559
Amount Units: ng/ml



Manual Integration Results

RT: 2.19
Area: 112238
Amount: 0.050917
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:04:46
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

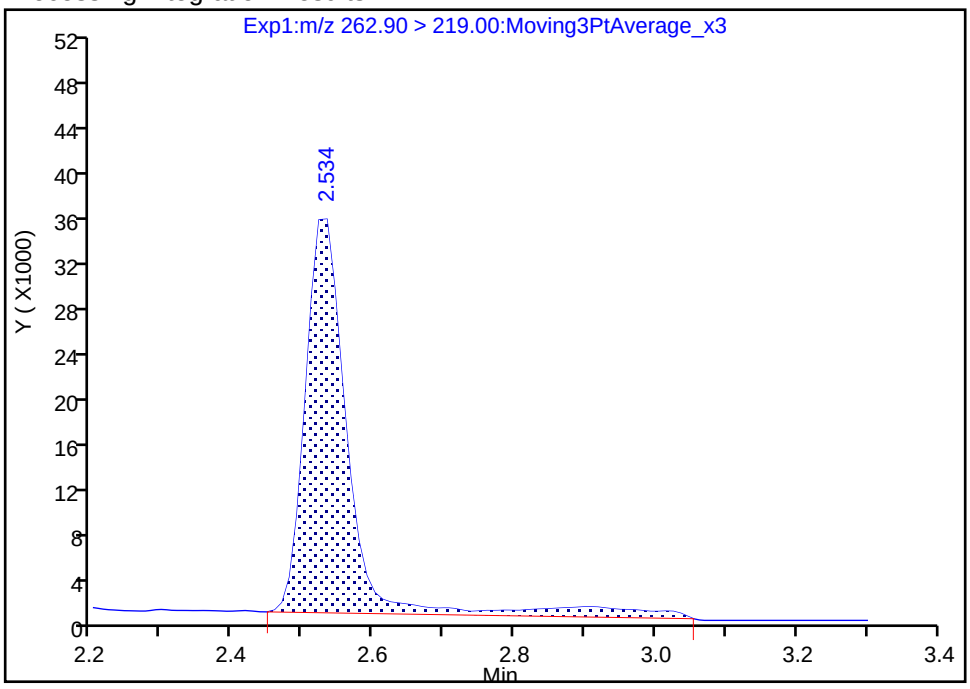
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d				
Injection Date:	03-Oct-2019 11:50:28	Instrument ID:	A13		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

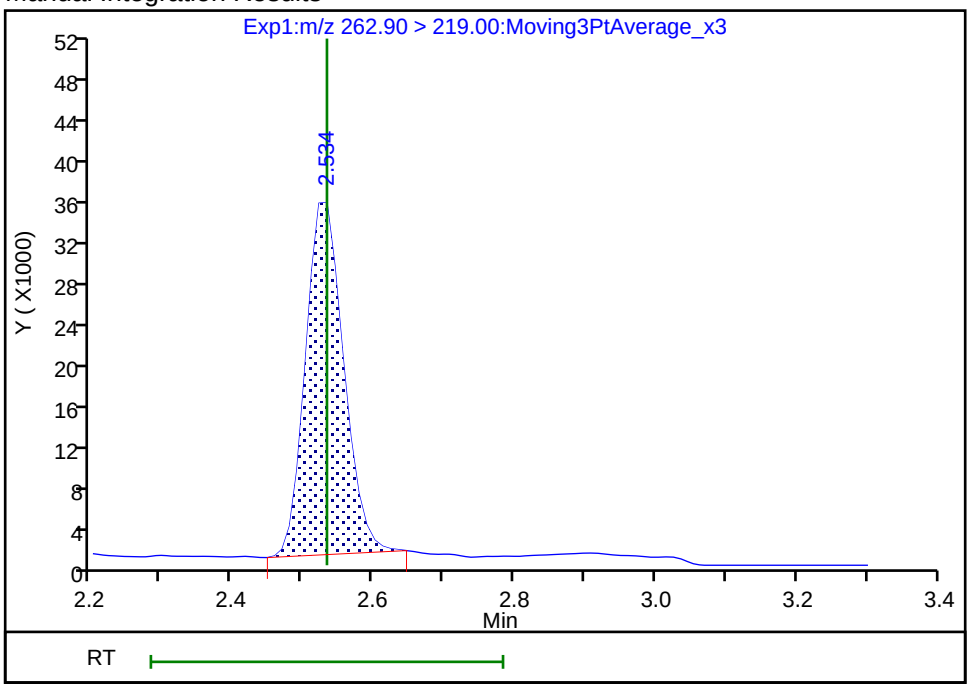
Processing Integration Results

RT: 2.53
Area: 148527
Amount: 0.060910
Amount Units: ng/ml



Manual Integration Results

RT: 2.53
Area: 128533
Amount: 0.052710
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:04:53
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

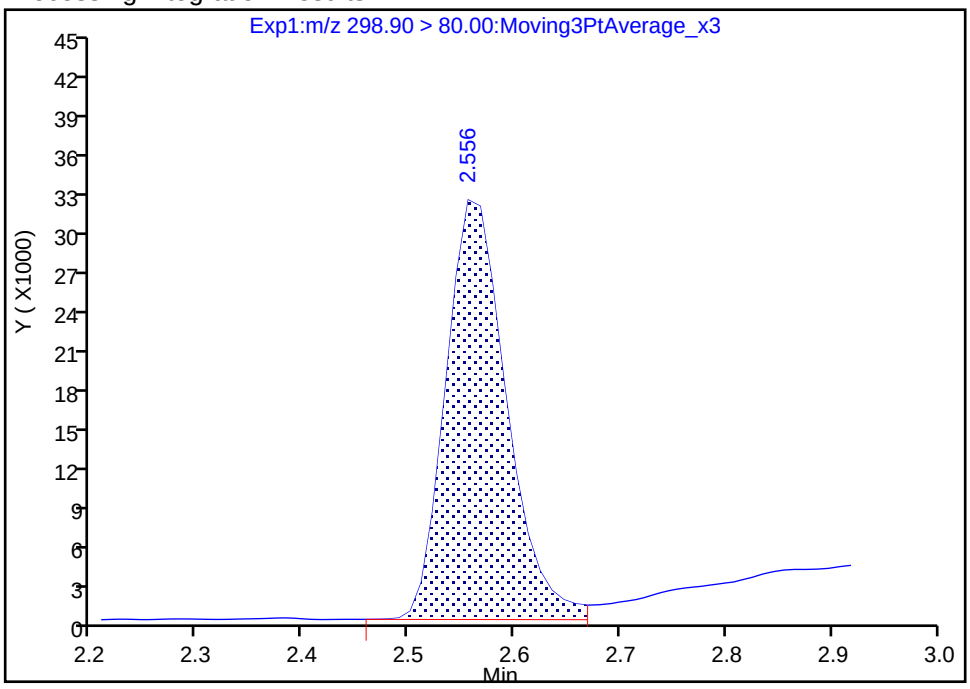
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d				
Injection Date:	03-Oct-2019 11:50:28	Instrument ID:	A13		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

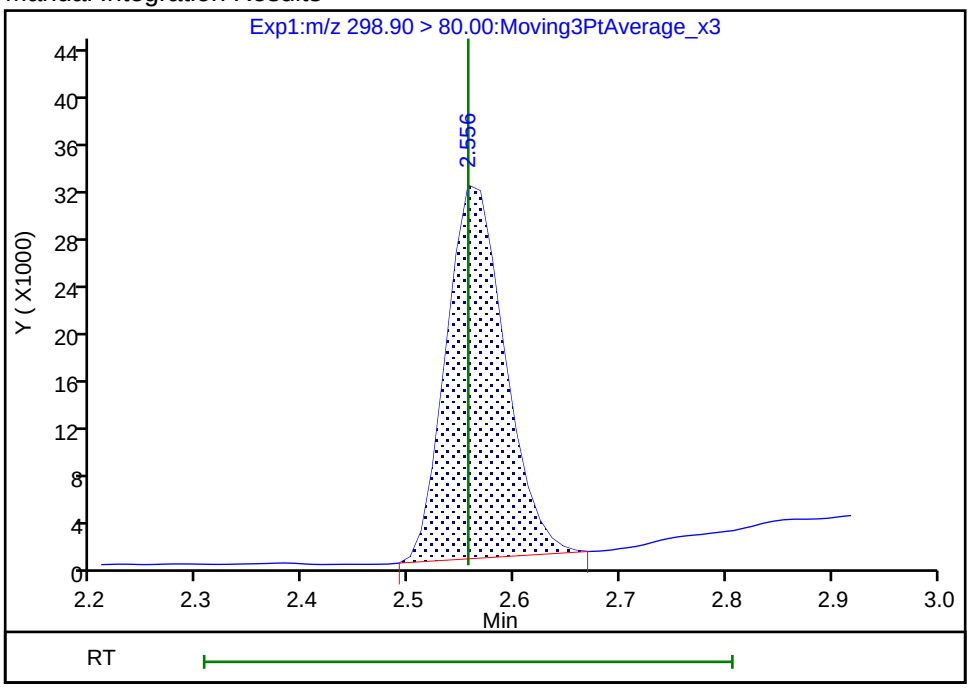
Processing Integration Results

RT: 2.56
Area: 127152
Amount: 0.044685
Amount Units: ng/ml



Manual Integration Results

RT: 2.56
Area: 120628
Amount: 0.042393
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:05:00

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

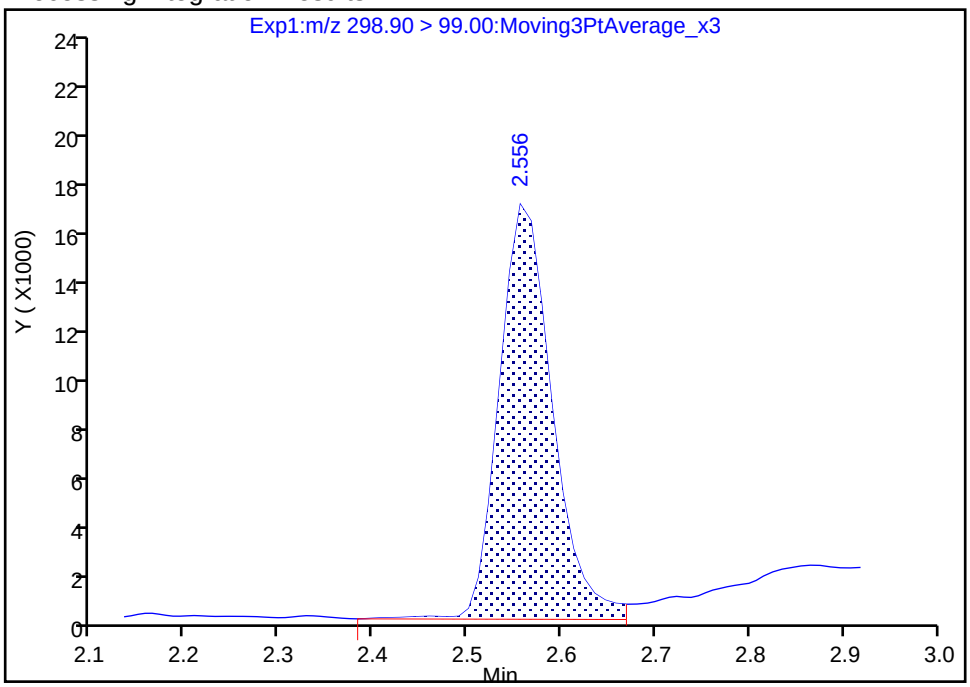
Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d
Injection Date: 03-Oct-2019 11:50:28 Instrument ID: A13
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

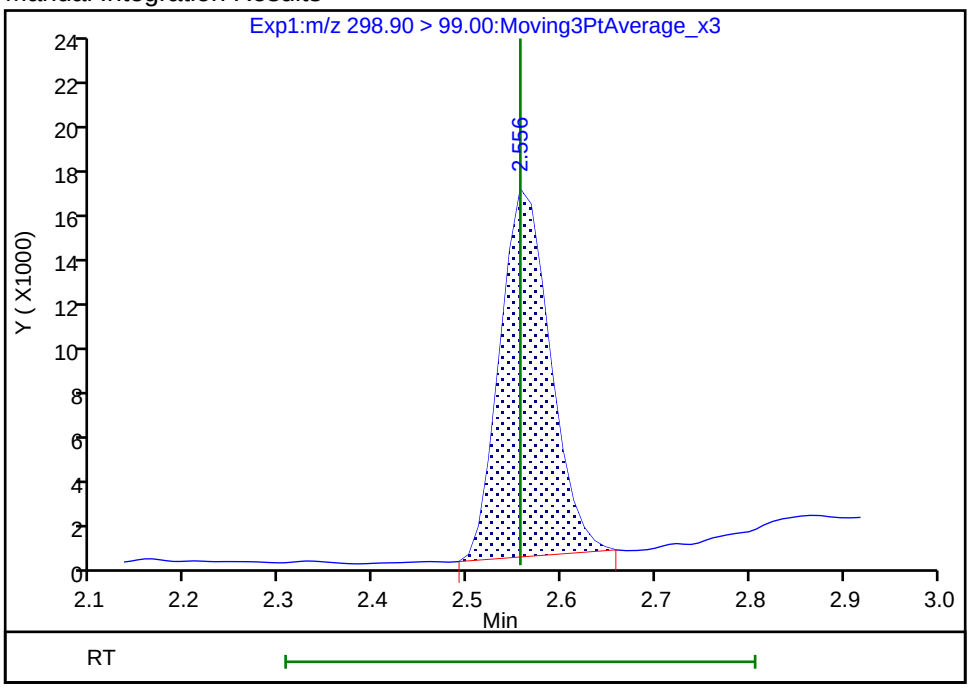
Processing Integration Results

RT: 2.56
Area: 66390
Amount: 0.044685
Amount Units: ng/ml



Manual Integration Results

RT: 2.56
Area: 61655
Amount: 0.042393
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:05:13
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

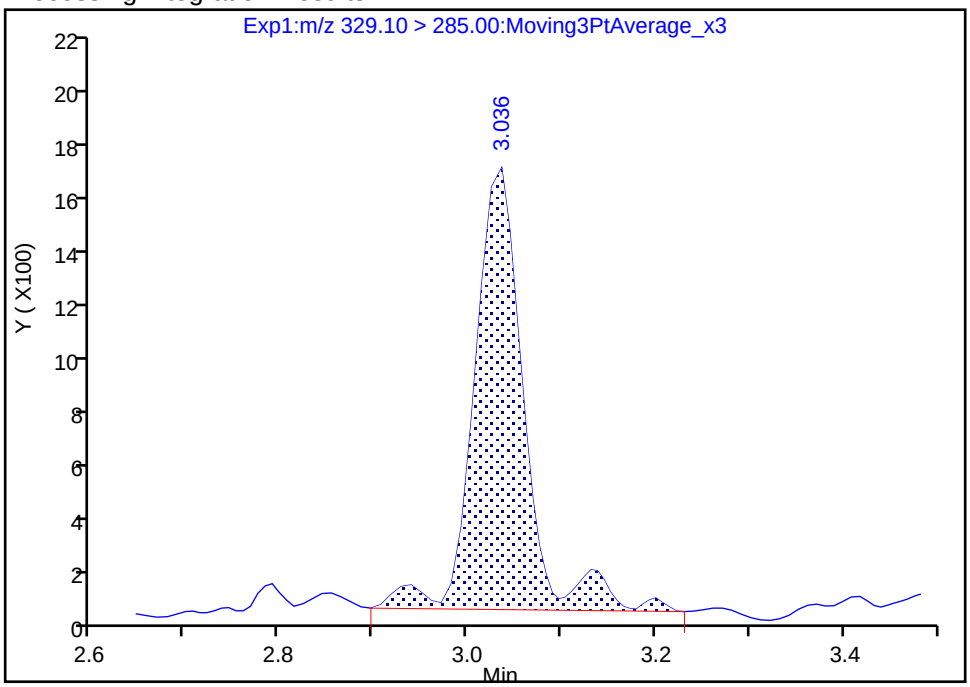
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d				
Injection Date:	03-Oct-2019 11:50:28	Instrument ID:	A13		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

13 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

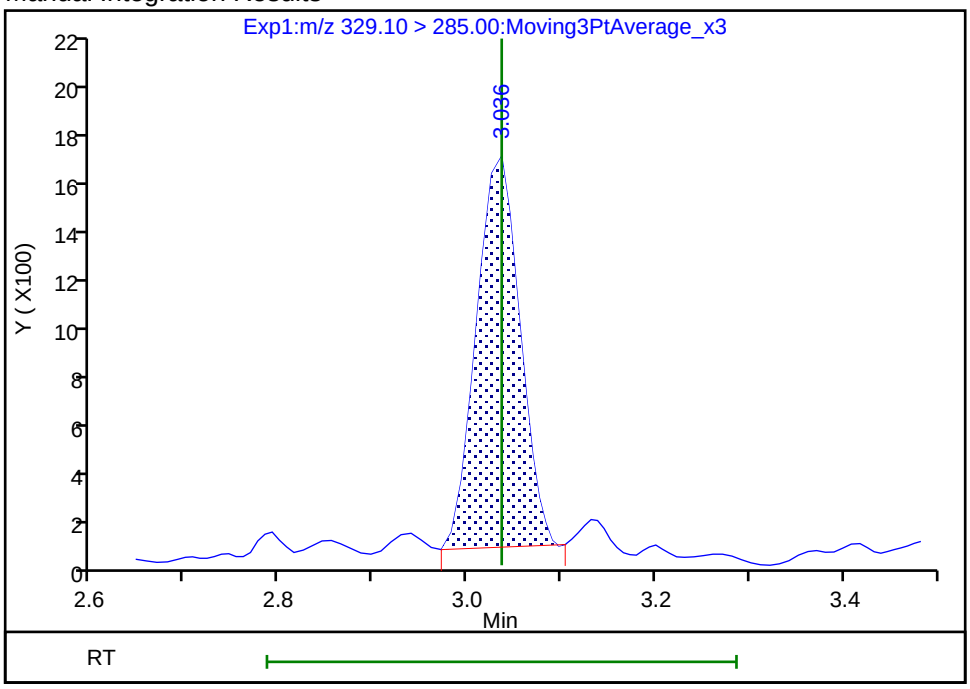
Processing Integration Results

RT: 3.04
Area: 6149
Amount: 0.053446
Amount Units: ng/ml



Manual Integration Results

RT: 3.04
Area: 5219
Amount: 0.045363
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:05:23

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

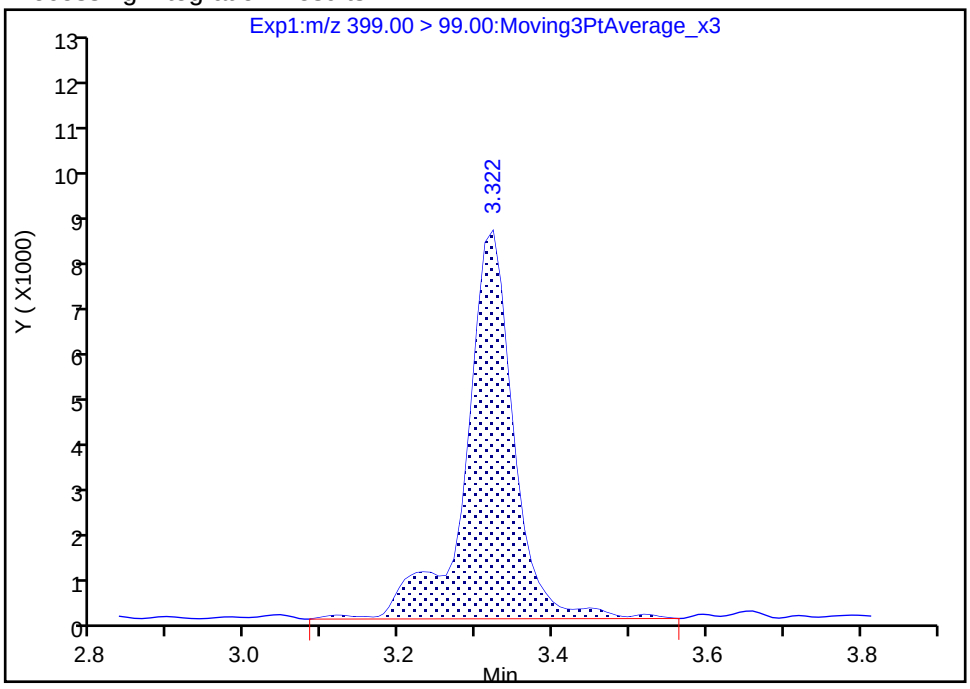
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_005.d				
Injection Date:	03-Oct-2019 11:50:28	Instrument ID:	A13		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

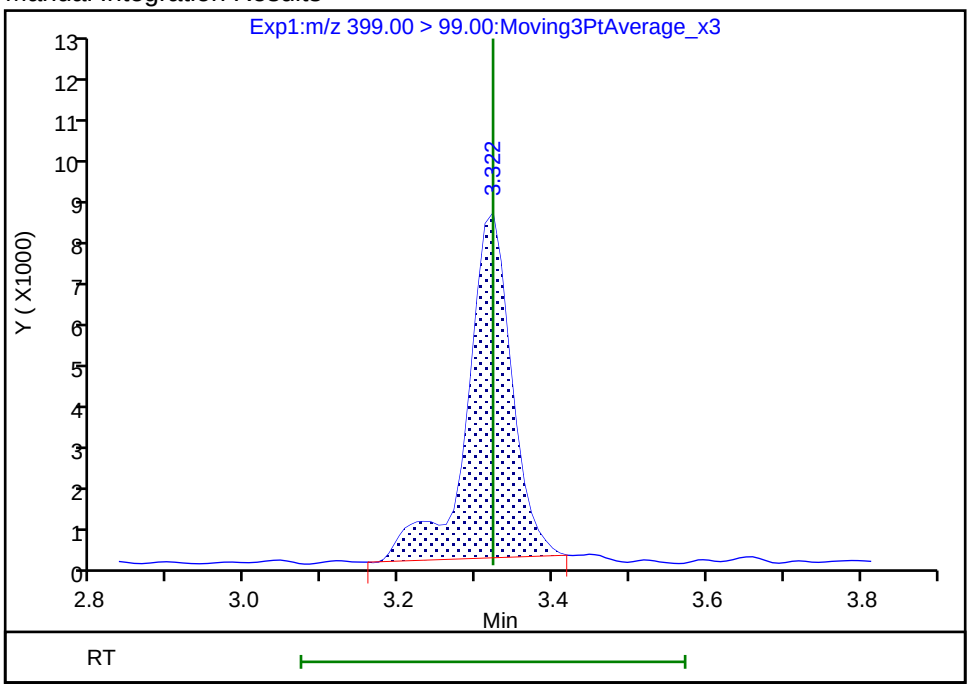
Processing Integration Results

RT: 3.32
Area: 37239
Amount: 0.050156
Amount Units: ng/ml



Manual Integration Results

RT: 3.32
Area: 34106
Amount: 0.050156
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:05:31
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/3 Calibration Date: 10/03/2019 11:59

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8713	0.8890		1.02	1.00	2.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.057	1.051		0.995	1.00	-0.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.701	1.740		0.904	0.884	2.3	50.0
4:2 FTS	AveID	2.715	2.665		0.917	0.934	-1.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9491	0.9445		0.995	1.00	-0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.360	1.384		0.955	0.938	1.8	50.0
HFPO-DA (GenX)	AveID	2.765	2.751		0.995	1.00	-0.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.043	1.062		1.02	1.00	1.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.278	1.219		0.868	0.910	-4.6	40.0
DONA	AveID	5.174	5.447		0.992	0.942	5.3	50.0
6:2 FTS	AveID	2.039	2.089		0.971	0.948	2.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.195	1.230		0.979	0.952	2.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.040	1.026		0.987	1.00	-1.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.046		0.892	0.928	-3.9	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9752	0.9657		0.990	1.00	-1.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.531	2.635		0.970	0.932	4.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8331	0.8460		0.975	0.960	1.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.998	0.9574		0.960	1.00	-4.0	40.0
8:2 FTS	AveID	1.917	1.891		0.945	0.958	-1.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9598	0.9734		1.01	1.00	1.4	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.7884	0.7909		1.00	1.00	0.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7795	0.7572		0.936	0.964	-2.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8321	0.7269		0.874	1.00	-12.6	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7543	0.7322		0.971	1.00	-2.9	40.0
NMeFOSE	AveID	1.048	1.045		0.998	1.00	-0.2	40.0
F-53B Minor	AveID	4.788	5.228		1.03	0.942	9.2	50.0
NMeFOSA	AveID	0.9631	0.9358		0.972	1.00	-2.8	50.0
NEtFOSE	AveID	1.049	1.061		1.01	1.00	1.1	40.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9587	0.9249		0.965	1.00	-3.5	40.0
10:2 FTS	AveID	1.246	1.172		0.907	0.964	-5.9	50.0
NEtFOSA	AveID	0.9899	0.9604		100	1.00	-3.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3013	0.3092		0.994	0.968	2.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/3 Calibration Date: 10/03/2019 11:59

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.9178	0.9073		0.988	1.00	-1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0946	0.0954		1.01	1.00	0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9742		1.04	1.00	4.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6071	0.6442		1.06	1.00	6.1	50.0
13C4 PFBA	Ave	0.8530	0.8681		2.54	2.50	1.8	50.0
13C5 PFPeA	Ave	0.7618	0.7799		2.56	2.50	2.4	50.0
M2-4:2 FTS	Ave	0.1656	0.1447		2.04	2.34	-12.6	50.0
13C2 PFHxA	Ave	0.8514	0.8277		2.43	2.50	-2.8	50.0
13C3 HFPO-DA	Ave	0.0181	0.0164		2.26	2.50	-9.5	50.0
13C4 PFHpA	Ave	0.7796	0.7630		2.45	2.50	-2.1	50.0
18O2 PFHxS	Ave	0.5235	0.5374		2.43	2.37	2.7	50.0
M2-6:2 FTS	Ave	0.1946	0.1733		2.12	2.38	-11.0	50.0
13C4 PFOA	Ave	0.9123	0.9251		2.54	2.50	1.4	50.0
13C8 PFOA	Ave	0.7927	0.7647		2.41	2.50	-3.5	50.0
13C4 PFOS	Ave	0.4531	0.4534		2.39	2.39	0.0	50.0
13C8 PFOS	Ave	0.2310	0.2400		2.60	2.50	3.9	50.0
13C5 PFNA	Ave	0.8000	0.7391		2.31	2.50	-7.6	50.0
13C8 FOSA	Ave	0.6148	0.6195		2.52	2.50	0.8	50.0
13C2 PFDA	Ave	0.8529	0.7936		2.33	2.50	-7.0	50.0
M2-8:2 FTS	Ave	0.2312	0.2070		2.14	2.40	-10.5	50.0
d3-NMeFOSAA	Ave	0.5647	0.5619		2.49	2.50	-0.5	50.0
13C2 PFUnA	Ave	0.7999	0.6713		2.10	2.50	-16.1	50.0
d5-NEtFOSAA	Ave	0.5657	0.5690		2.52	2.50	0.6	50.0
d7-N-MeFOSE-M	Ave	0.1309	0.1288		12.3	12.5	-1.6	50.0
d-N-MeFOSA-M	Ave	0.3353	0.3522		2.63	2.50	5.0	50.0
d9-N-EtFOSE-M	Ave	0.1376	0.1379		12.5	12.5	0.2	50.0
13C2 PFDoA	Ave	0.8325	0.7288		2.19	2.50	-12.5	50.0
d-N-EtFOSA-M	Ave	0.3476	0.3564		2.56	2.50	2.5	50.0
13C2 PFTeDA	Ave	0.7347	0.6142		2.09	2.50	-16.4	50.0
13C2 PFHxDA	Ave	0.5879	0.4897		2.08	2.50	-16.7	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 03-Oct-2019 11:59:57 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 04-Oct-2019 11:07:27 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0311

First Level Reviewer: mongkols Date: 04-Oct-2019 11:07:27
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.186	2.186	0.0	0.588	5953245	2.54		102	6612	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.194	2.194	0.0	1.003	2117003	1.02		102	849	
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.678	5348935	2.56		102	7451	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.534	2.534	0.0	1.004	2249640	0.99		99.5	647	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.556	2.556	0.0	0.769	2267623	0.9040	Target=1.87	102	382	
298.90 > 99.00	2.556	2.556	0.0	0.769	1195620		1.90(0.94-2.81)		1424	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.865	2.865	0.0	1.000	988344	0.9169		98.2	7692	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.865	2.865	0.0	0.770	927088	2.04		87.4	1219	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.908	2.908	0.0	1.000	2144697	1.00	Target=11.57	99.5	1199	
313.00 > 119.00	2.908	2.908	0.0	1.000	191597		11.19(5.78-17.35)		594	
D 10 13C2 PFHxA										
315.00 > 270.00	2.908	2.908	0.0	0.782	5676716	2.43		97.2	14645	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.918	2.918	0.0	0.878	1914126	0.9547	Target=2.40	102	6394	
349.00 > 99.00	2.918	2.918	0.0	0.878	797905		2.40(1.20-3.60)		1793	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.036	3.036	0.0	1.000	123404	0.99		99.5	848	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.036	3.036	0.0	0.816	112154	2.26		90.5	1370	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.312	3.312	0.0	1.000	2222618	1.02	Target=3.70	102	1343	
363.00 > 169.00	3.312	3.312	0.0	1.000	592585		3.75(1.85-5.54)		1254	
D 17 13C4 PFHpA										
367.00 > 322.00	3.312	3.312	0.0	0.890	5232986	2.45		97.9	19155	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.322	3.322	0.0	1.000	1635818	0.8682	Target=2.98	95.4	1912	M
399.00 > 99.00	3.322	3.322	0.0	1.000	559928		2.92(1.49-4.47)		2965	
D 15 18O2 PFHxS										
403.00 > 84.00	3.322	3.322	0.0	0.893	3486672	2.43		103	44203	
18 DONA										
377.00 > 251.00	3.362	3.362	0.0	0.823	6381127	0.99	Target=2.81	105	7603	
377.00 > 85.00	3.362	3.362	0.0	0.823	2138129		2.98(1.41-4.22)		20416	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.694	3.694	0.0	1.000	941289	0.9711		102	6177	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.694	3.694	0.0	0.993	1129129	2.11		89.0	6641	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.711	3.711	0.0	0.909	1455882	0.9793	Target=4.19	103	15533	
449.00 > 99.00	3.711	3.711	0.0	0.909	341905		4.26(2.09-6.28)		1657	
D 23 13C8 PFOA										
421.00 > 376.00	3.711	3.711	0.0	0.998	5244092	2.41		96.5	22233	
D 25 13C4 PFOA										
417.00 > 372.00	3.711	3.711	0.0	0.998	6344383	2.54		101	40470	
* 24 13C2 PFOA										
415.00 > 370.00	3.720	3.720	0.0		6858114	2.50			51717	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.720	3.720	0.0	1.002	2603324	0.9866	Target=2.68	98.7	1284	
413.00 > 169.00	3.720	3.720	0.0	1.002	919963		2.83(1.34-4.02)		4185	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.085	4.085	0.0	1.000	1207013	0.8919	Target=4.19	96.1	1916	
499.00 > 99.00	4.085	4.085	0.0	1.000	283755		4.25(2.09-6.28)		3517	
D 27 13C8 PFOS										
507.00 > 99.00	4.085	4.085	0.0	1.098	1645614	2.60		104	11355	
D 28 13C4 PFOS										
503.00 > 80.00	4.085	4.085	0.0	1.098	2972382	2.39		100	14091	
30 Perfluorononanoic acid										
463.00 > 419.00	4.102	4.102	0.0	1.000	1958059	0.99	Target=8.84	99.0	2503	
463.00 > 169.00	4.102	4.102	0.0	1.000	215782		9.07(4.42-13.26)		1299	
D 29 13C5 PFNA										
468.00 > 423.00	4.102	4.102	0.0	1.103	5069110	2.31		92.4	44206	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.294	4.294	0.0	1.051	3054490	0.9705		104	10490	
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.434	4.434	0.0	1.085	1010116	0.9749	Target=2.27	102	5098	
549.00 > 99.00	4.434	4.434	0.0	1.085	429345		2.35(1.13-3.40)		3774	
D 33 13C8 FOSA										
506.00 > 78.00	4.434	4.434	0.0	1.192	4248383	2.52		101	16911	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.434	4.434	0.0	1.000	1626990	0.9596		96.0	8303	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.460	4.460	0.0	1.000	2119074	1.01	Target=10.36	101	3194	
513.00 > 169.00	4.460	4.460	0.0	1.000	210845		10.05(5.18-15.54)		230	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.460	4.460	0.0	1.000	1028764	0.9451		98.7	4981	
D 36 13C2 PFDA										
515.00 > 470.00	4.460	4.460	0.0	1.199	5442390	2.33		93.0	51280	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.460	4.460	0.0	1.199	1359880	2.14		89.5	6610	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.623	4.623	0.0	1.243	3853446	2.49		99.5	22386	
41 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.633	4.633	0.0	1.002	1219020	1.00		100	513	M
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.758	4.758	0.0	1.165	907804	0.9364	Target=2.70	97.1	4461	
599.00 > 99.00	4.758	4.758	0.0	1.165	334052		2.72(1.35-4.05)		2819	
D 43 13C2 PFUnA										
565.00 > 520.00	4.787	4.787	0.0	1.287	4603593	2.10		83.9	21786	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.787	4.787	0.0	1.287	3902213	2.51		101	14832	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.787	4.787	0.0	1.000	1338541	0.8736	Target=9.31	87.4	2983	
563.00 > 169.00	4.787	4.787	0.0	1.000	173825		7.70(4.65-13.96)		896	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.797	4.797	0.0	1.002	1142890	0.9708		97.1	1375	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.904	4.893	0.011	1.318	4417560	12.3		98.4	10789	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.914	4.914	0.0	1.002	369379	1.00		99.8	1809	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.925	4.925	0.0	1.324	2415141	2.63		105	48.6	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.925	4.925	0.0	1.206	6125228	1.03		109	41799	
50 NMeFOSA										
512.00 > 169.00	4.925	4.925	0.0	1.000	904022	0.9717		97.2	213	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.071	5.071	0.0	1.363	4727112	12.5		100	21034	
D 57 13C2 PFDoA										
615.00 > 570.00	5.080	5.080	0.0	1.366	4998247	2.19		87.5	17800	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.080	5.080	0.0	1.000	1849054	0.9647	Target=8.07	96.5	1099	
613.00 > 169.00	5.080	5.080	0.0	1.000	231700		7.98(4.03-12.10)		1834	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.080	5.080	0.0	1.002	401074	1.01		101	6917	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.098	5.097	0.001	1.370	2443858	2.56		103	294	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.098	5.098	0.0	1.143	641700	0.9071		94.1	1962	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.106	5.106	0.0	1.002	938809	0.9701		97.0	156	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.315	5.315	0.0	1.301	372285	0.99	Target=0.52	103	2617	
699.00 > 99.00	5.315	5.315	0.0	1.301	709715		0.52(0.26-0.77)		3545	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.345	5.345	0.0	1.052	1813860	0.9885	Target=6.35	98.8	6308	
663.00 > 169.00	5.354	5.345	0.009	1.054	261517		6.94(3.18-9.53)		1379	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.592	5.592	0.0	1.000	160809	1.01	Target=0.85	101	3999	
713.00 > 219.00	5.592	5.592	0.0	1.000	174601		0.92(0.43-1.28)		1736	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.592	5.593	-0.001	1.503	4212416	2.09		83.6	24931	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.047	6.041	0.006	1.626	3358316	2.08		83.3	21679	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.047	6.047	0.0	1.000	1308641	1.04	Target=7.95	104	3492	
813.00 > 169.00	6.047	6.047	0.0	1.000	164487		7.96(3.98-11.93)		2259	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.500	6.500	0.0	1.075	865372	1.06	Target=8.96	106	380	
913.00 > 169.00	6.500	6.500	0.0	1.075	95653		9.05(4.48-13.45)		1336	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 04-Oct-2019 11:07:28 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d

Injection Date: 03-Oct-2019 11:59:57 Instrument ID: A13

Lims ID: CCV L4

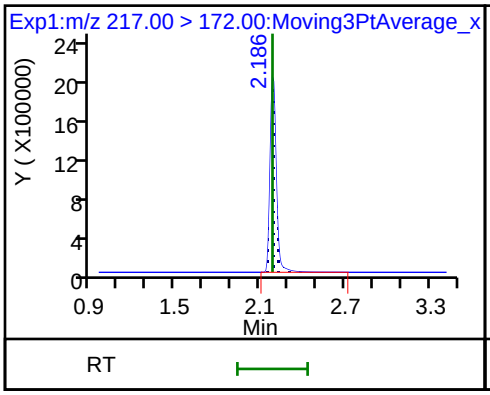
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 3

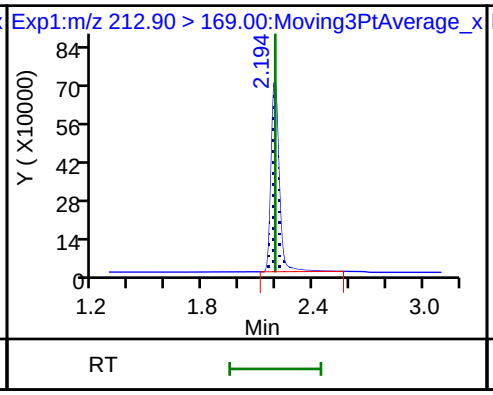
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

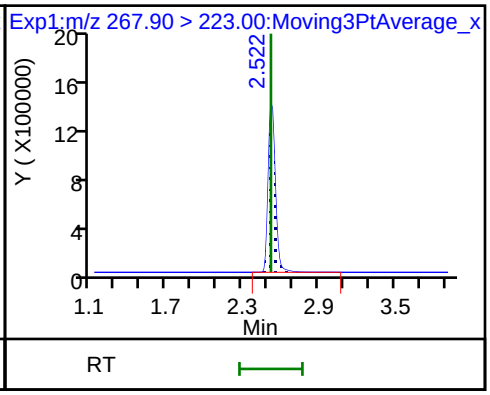
D 2 13C4 PFBA



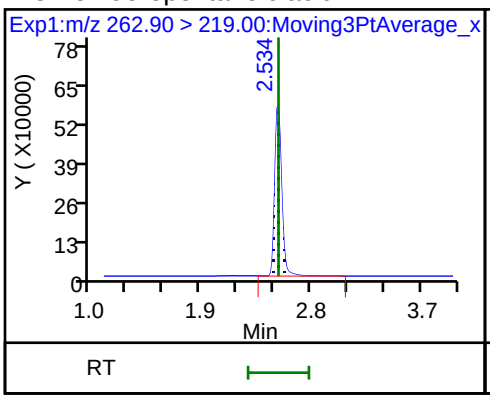
3 Perfluorobutanoic acid



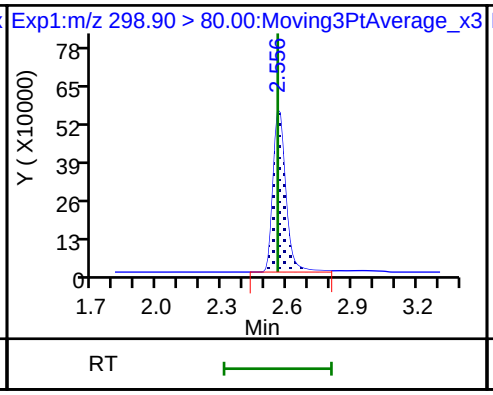
D 4 13C5 PFPeA



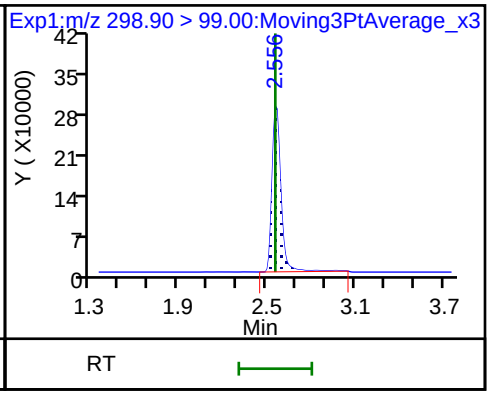
5 Perfluoropentanoic acid



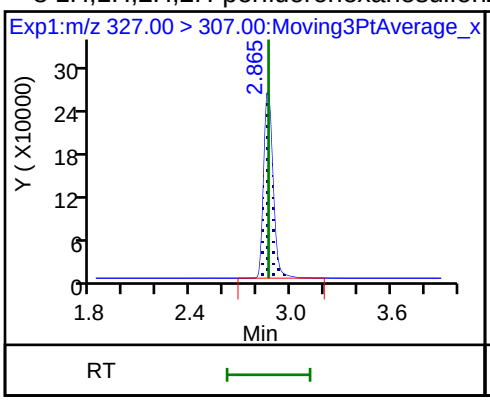
6 Perfluorobutanesulfonic acid



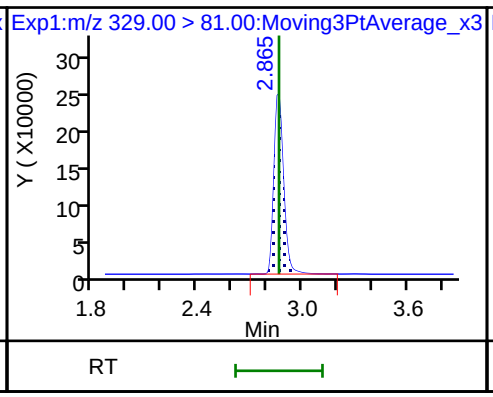
6 Perfluorobutanesulfonic acid



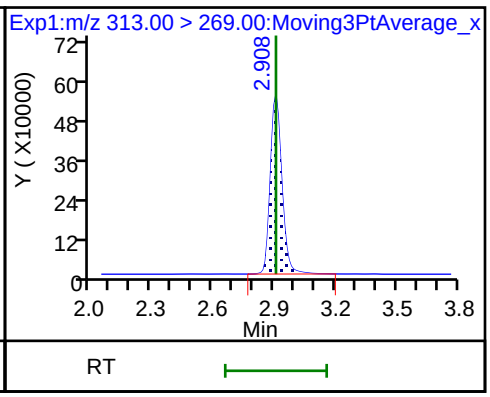
8 1H,1H,2H,2H-perfluorohexanesulfon



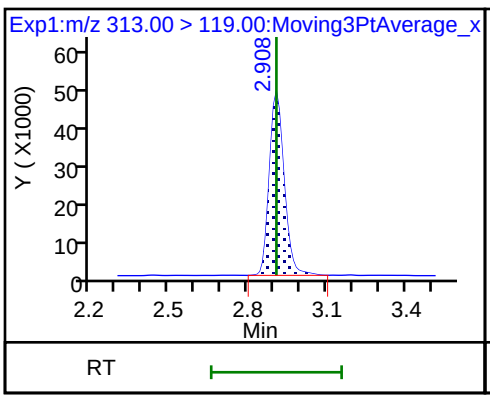
D 7 M2-4:2 FTS



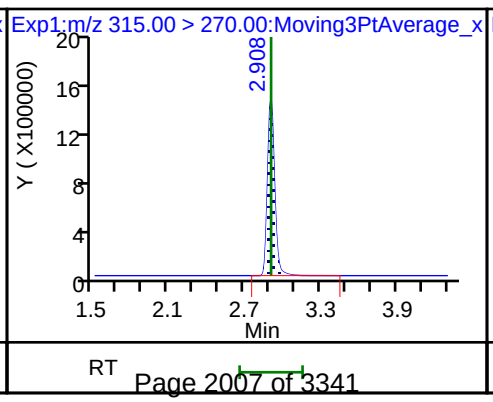
9 Perfluorohexanoic acid



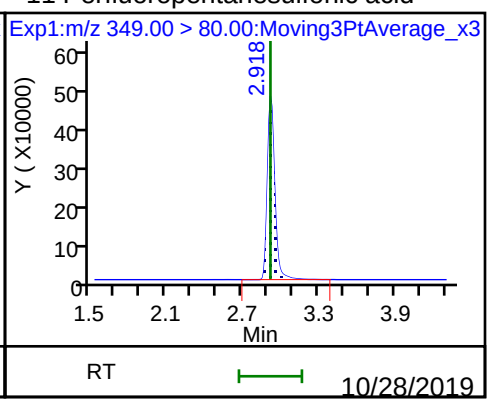
9 Perfluorohexanoic acid



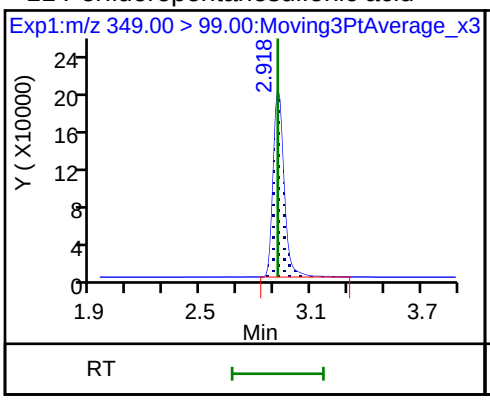
D 10 13C2 PFHxA



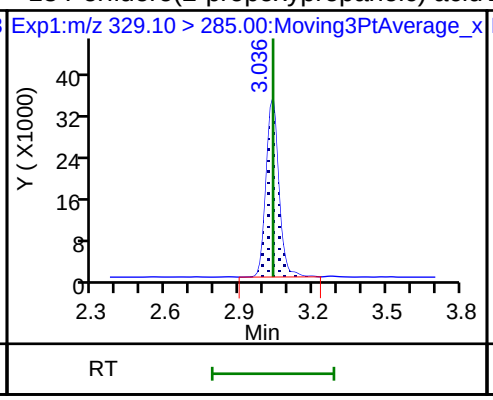
11 Perfluoropentanesulfonic acid



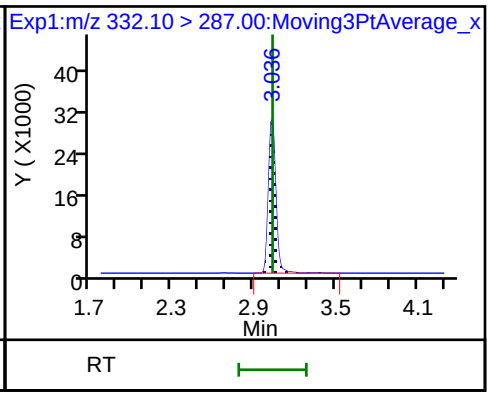
11 Perfluoropentanesulfonic acid



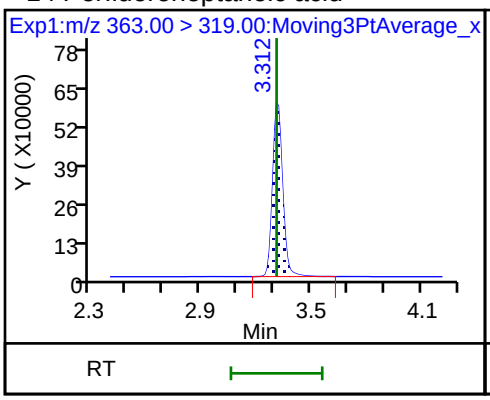
13 Perfluoro(2-propoxypropanoic) acid



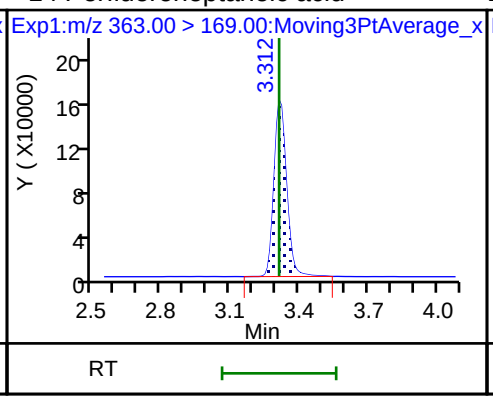
D 12 13C3 HFPO-DA



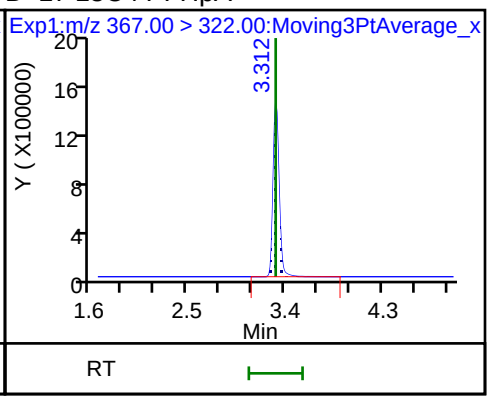
14 Perfluoroheptanoic acid



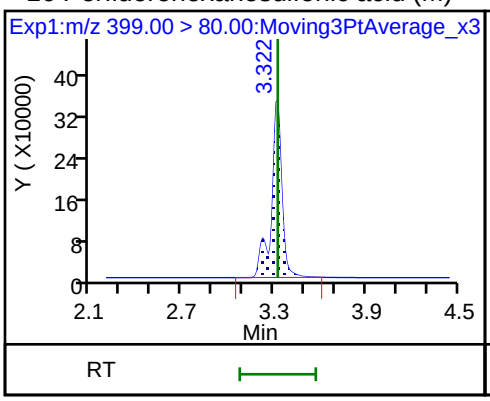
14 Perfluoroheptanoic acid



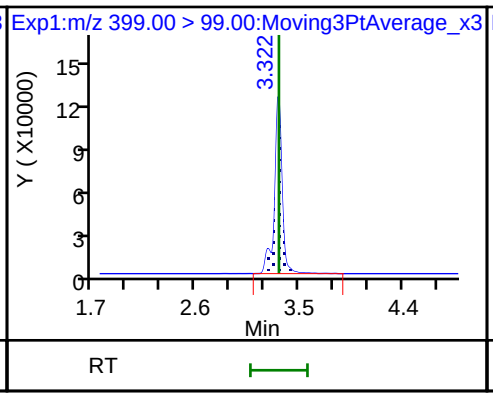
D 17 13C4 PFHpA



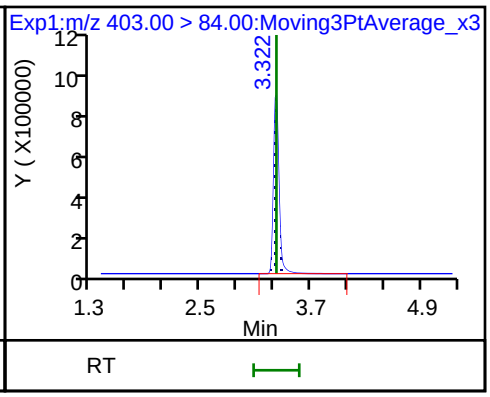
16 Perfluorohexanesulfonic acid (M)



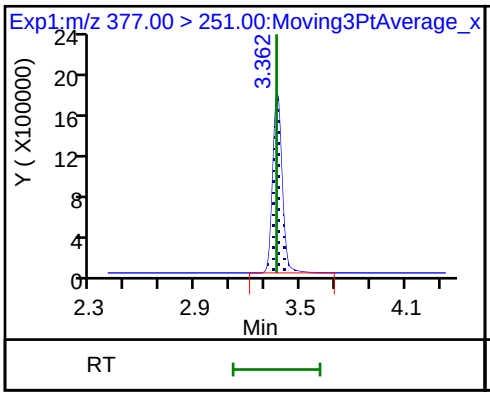
16 Perfluorohexanesulfonic acid



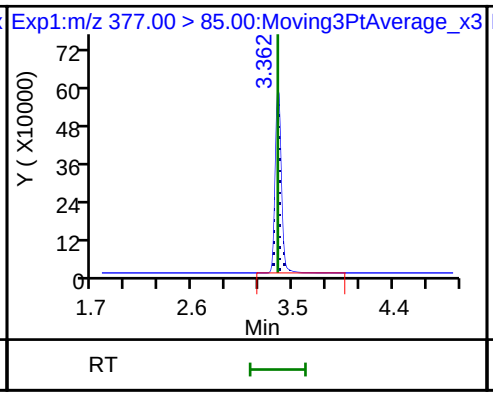
D 15 18O2 PFHxS



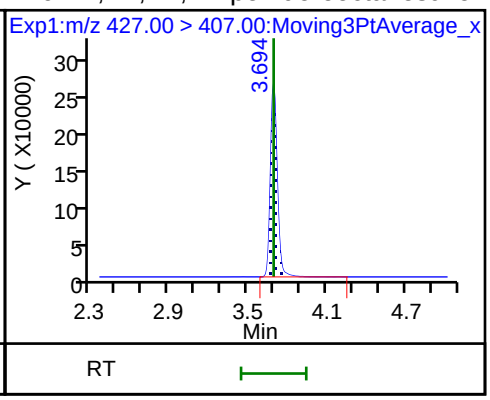
18 DONA



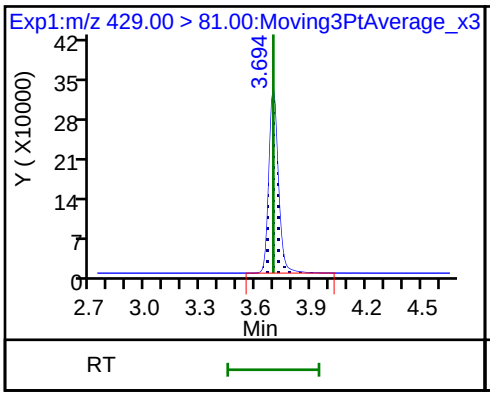
18 DONA



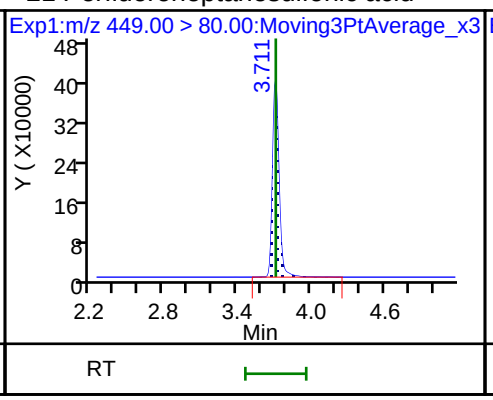
19 1H,1H,2H,2H-perfluorooctanesulfoni



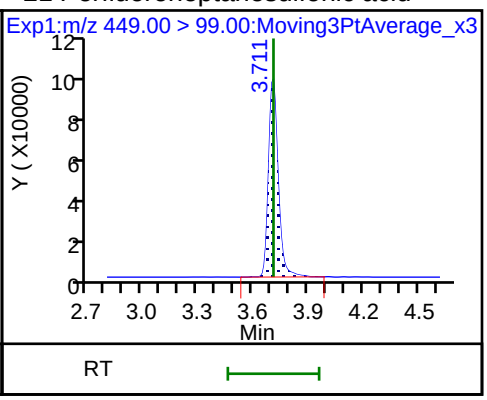
D 20 M2-6:2 FTS



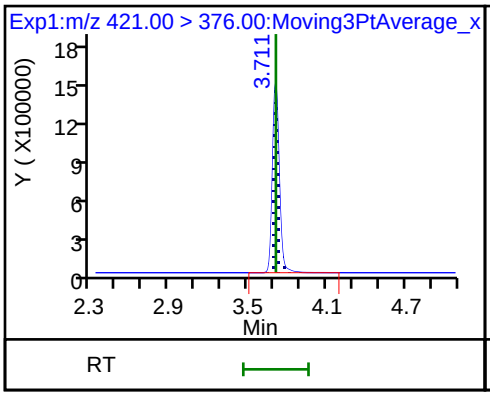
21 Perfluoroheptanesulfonic acid



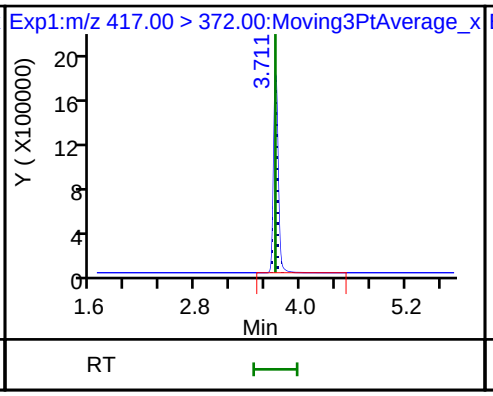
21 Perfluoroheptanesulfonic acid



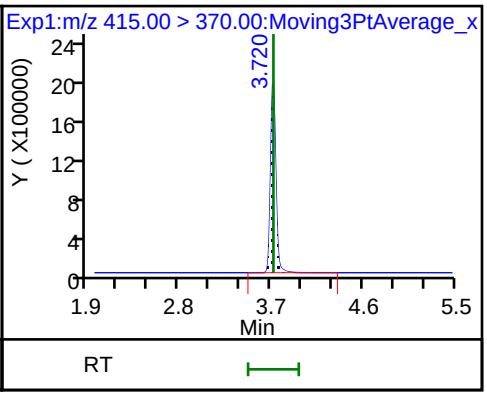
D 23 13C8 PFOA



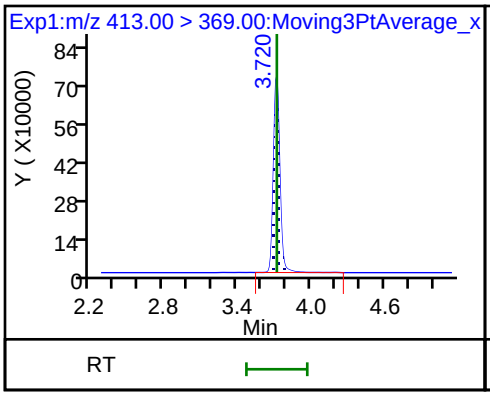
D 25 13C4 PFOA



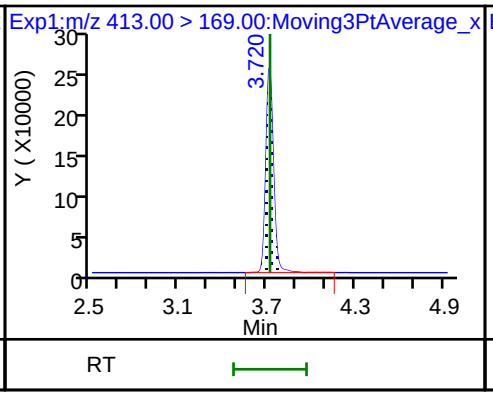
* 24 13C2 PFOA



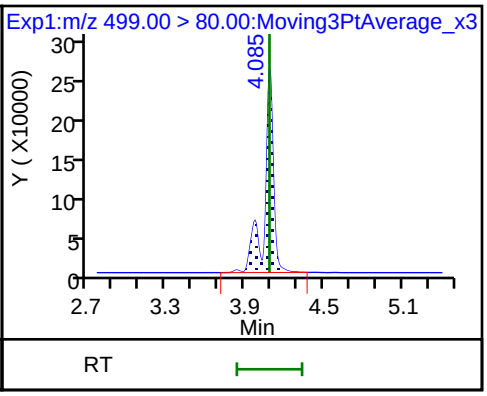
22 Perfluorooctanoic acid



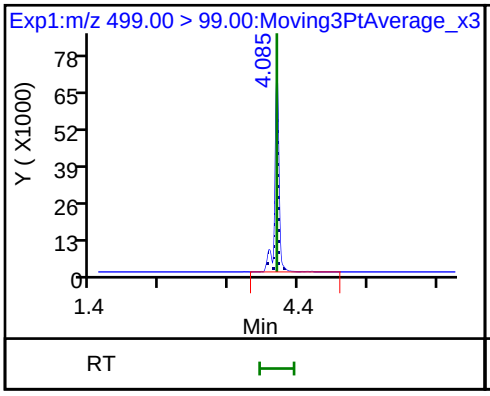
22 Perfluorooctanoic acid



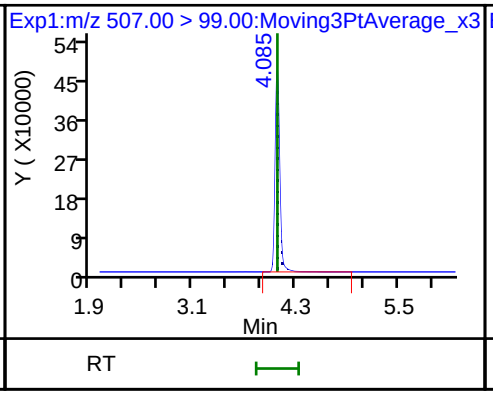
26 Perfluorooctanesulfonic acid



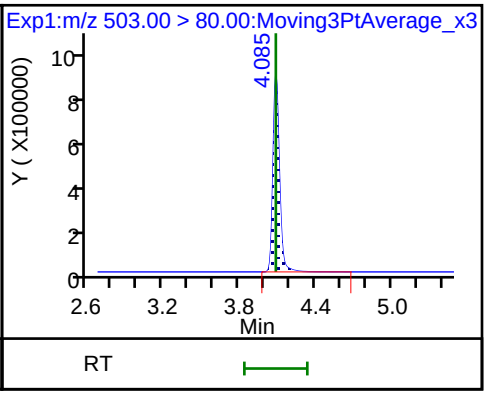
26 Perfluorooctanesulfonic acid



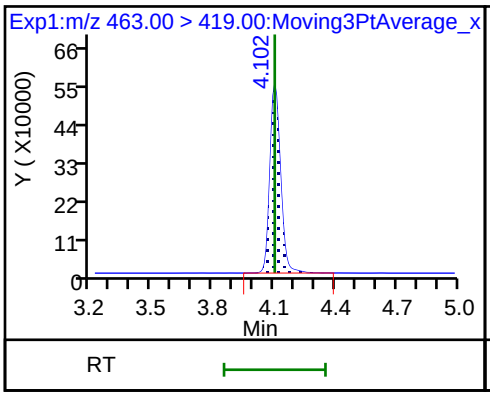
D 27 13C8 PFOS



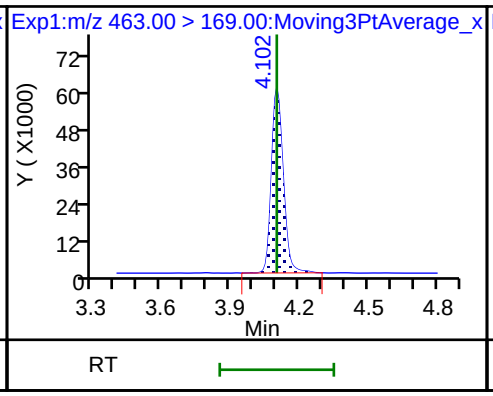
D 28 13C4 PFOS



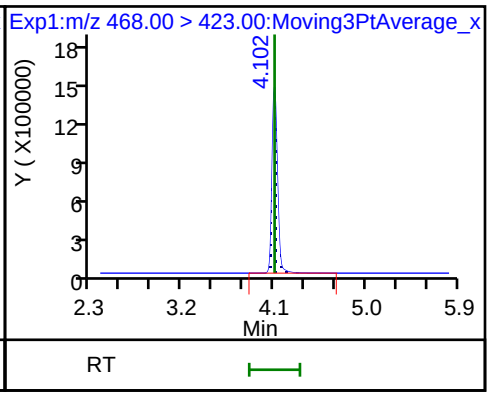
30 Perfluorononanoic acid



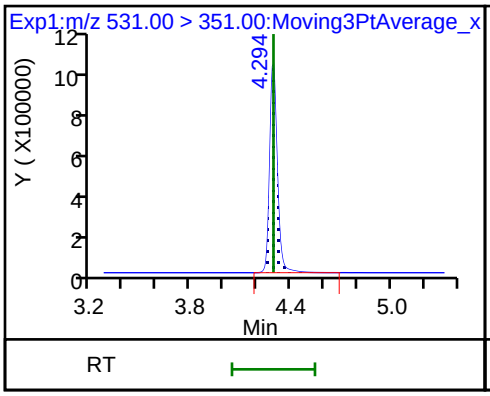
30 Perfluorononanoic acid



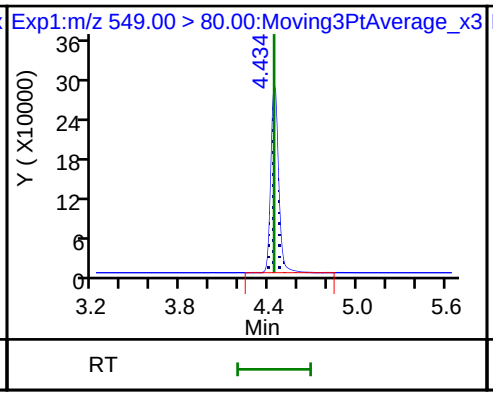
D 29 13C5 PFNA



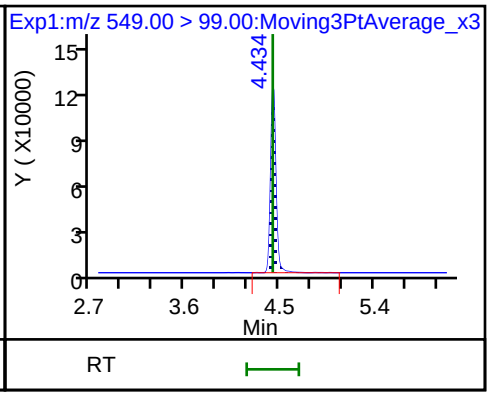
31 9-Chlorohexadecafluoro-3-oxanonane



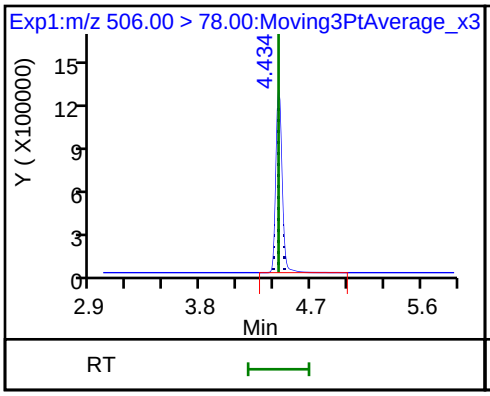
38 Perfluorononanesulfonic acid



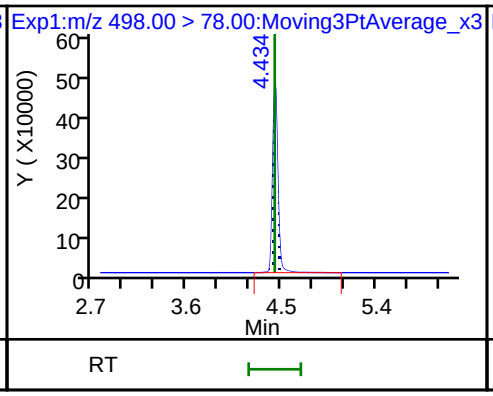
38 Perfluorononanesulfonic acid



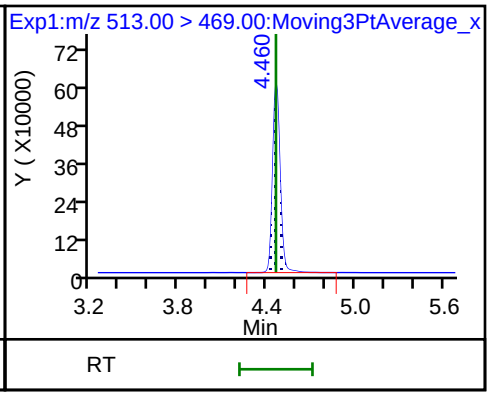
D 33 13C8 FOSA



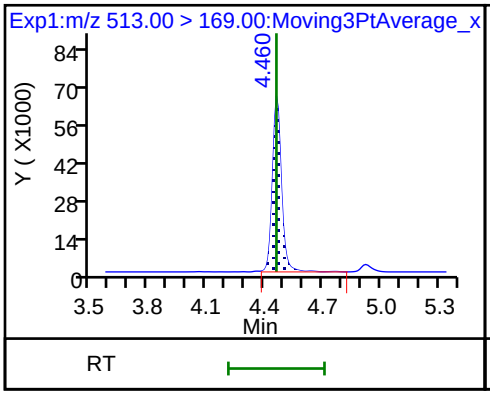
32 Perfluorooctanesulfonamide



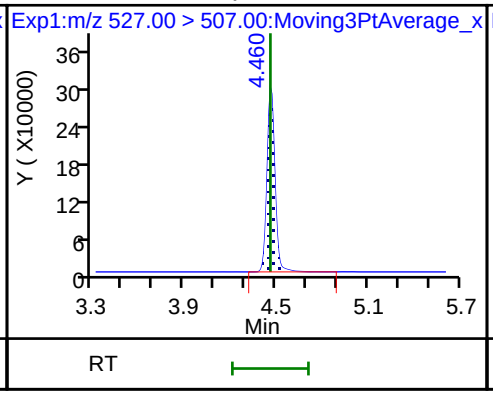
34 Perfluorodecanoic acid



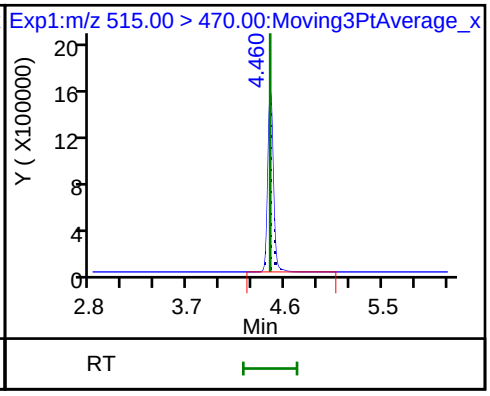
34 Perfluorodecanoic acid



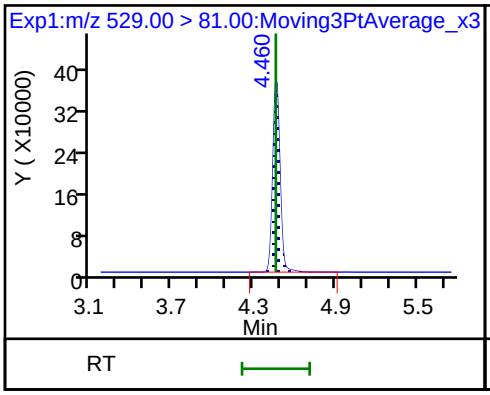
35 1H,1H,2H,2H-perfluorodecanesulfon



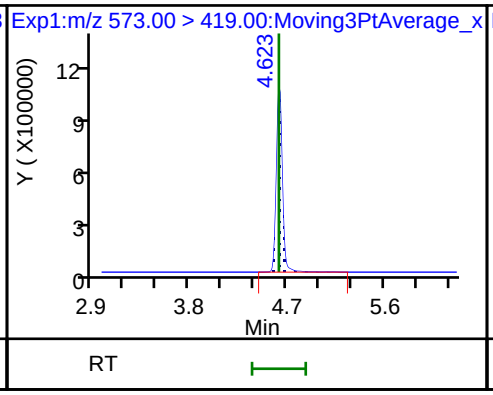
D 36 13C2 PFDA



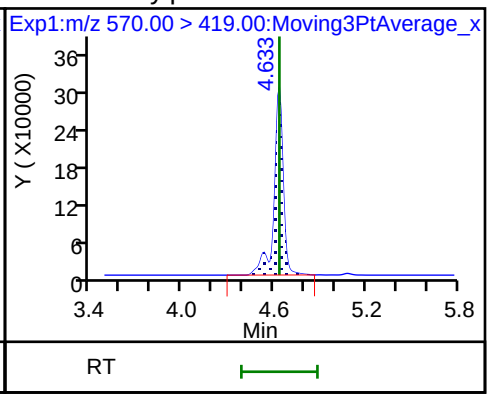
D 37 M2-8:2 FTS



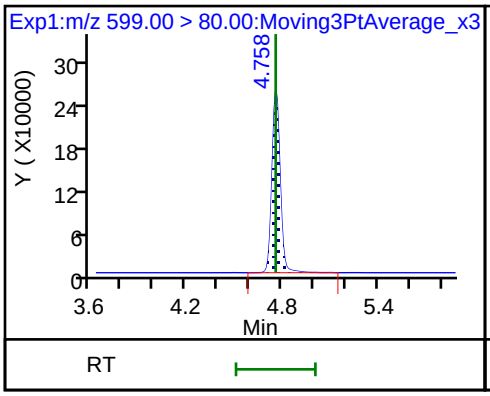
D 40 d3-NMeFOSAA



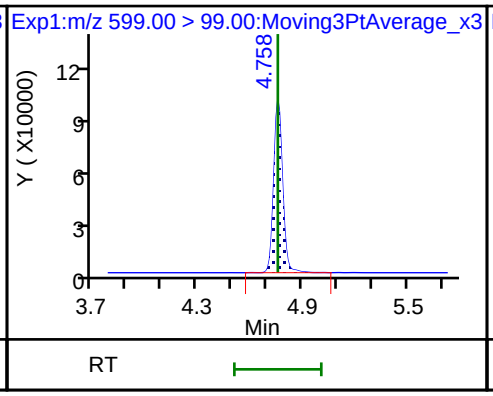
41 N-methylperfluorooctanesulfonamido (M)



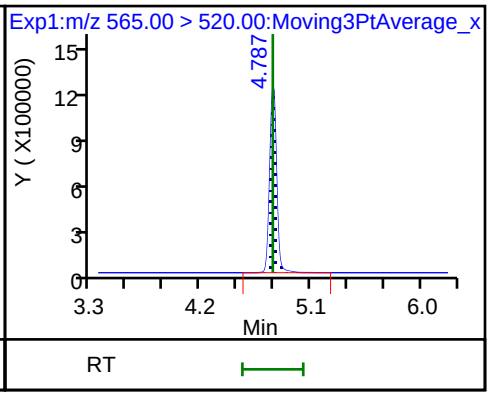
48 Perfluorodecanesulfonic acid



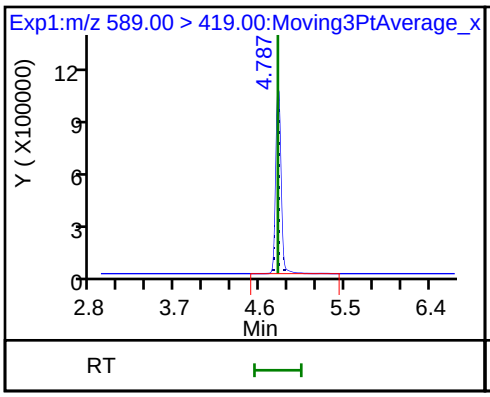
48 Perfluorodecanesulfonic acid



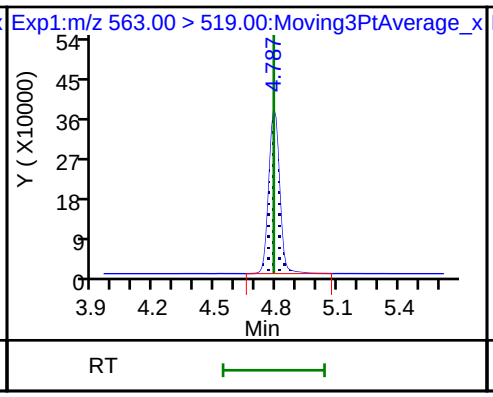
D 43 13C2 PFUnA



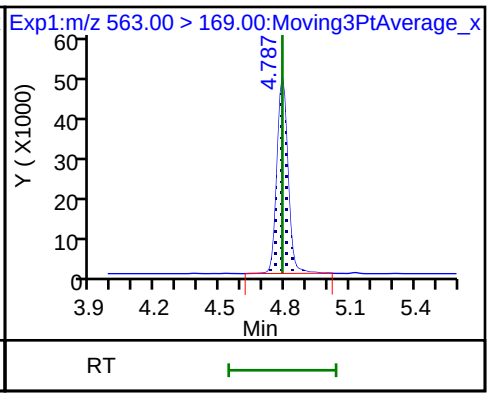
D 44 d5-NEtFOSAA



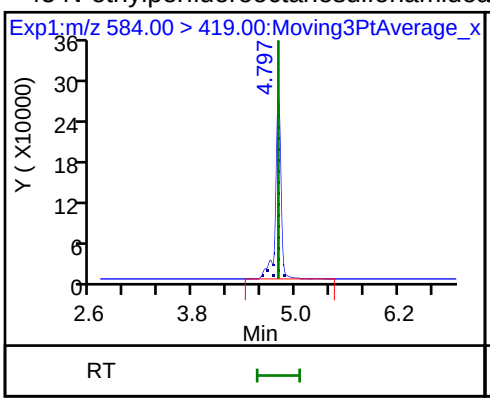
42 Perfluoroundecanoic acid



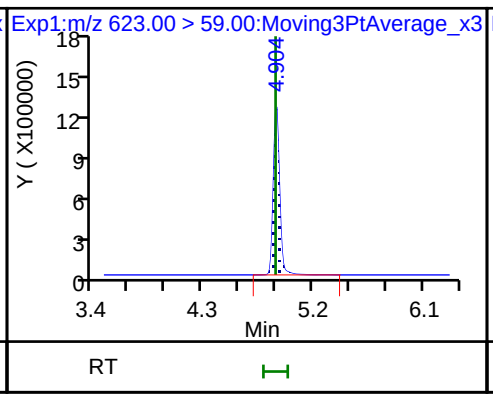
42 Perfluoroundecanoic acid



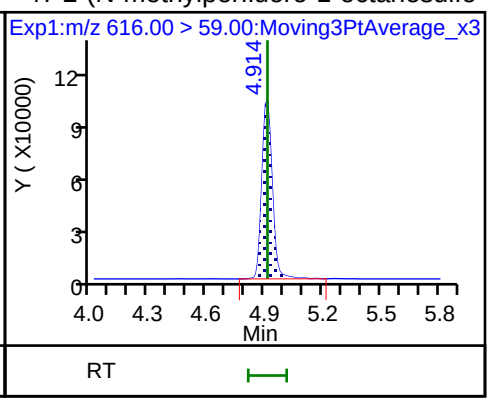
45 N-ethylperfluorooctanesulfonamidoa



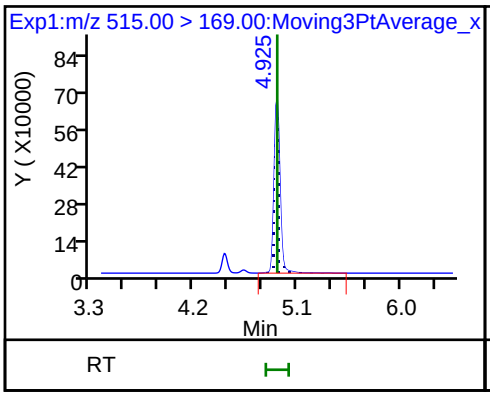
D 46 d7-N-MeFOSE-M



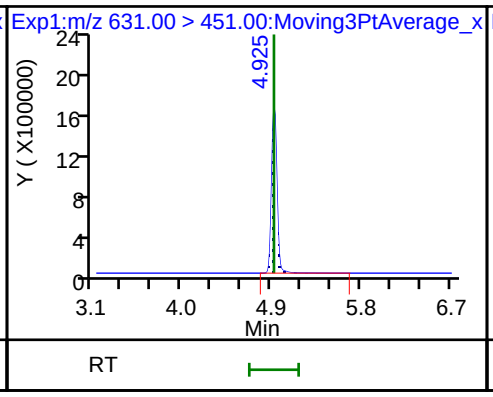
47 2-(N-methylperfluoro-1-octanesulfo



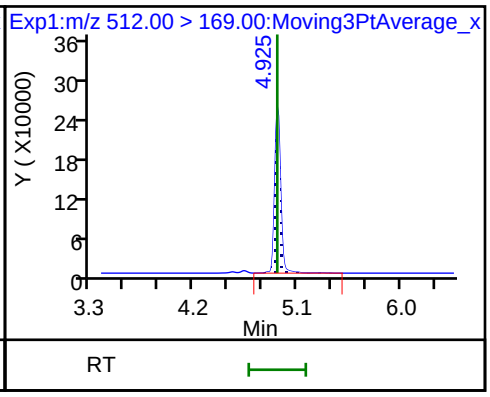
D 49 d-N-MeFOSA-M



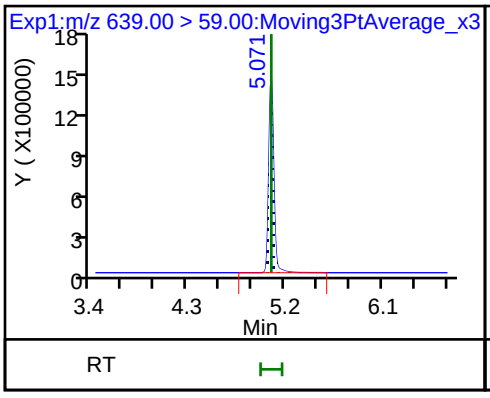
51 11-Chloroeicosafluoro-3-oxaundecan



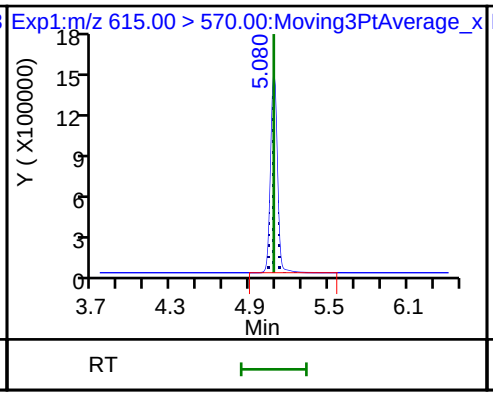
50 NMeFOSA



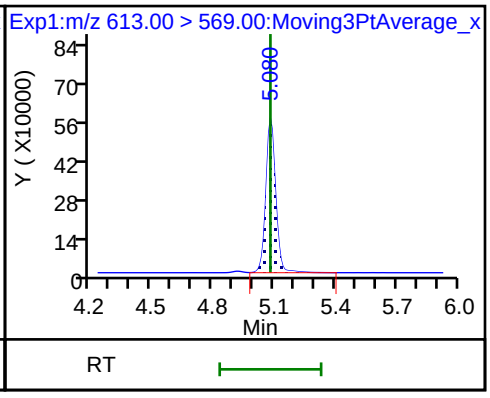
D 52 d9-N-EtFOSE-M



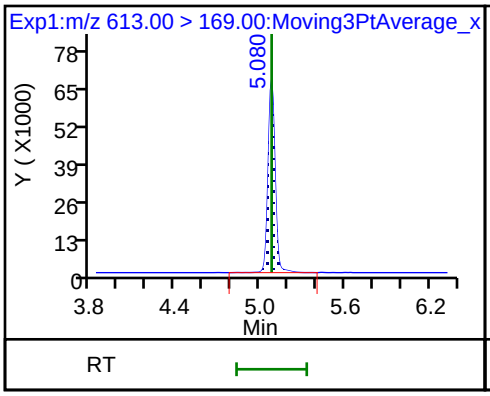
D 57 13C2 PFDoA



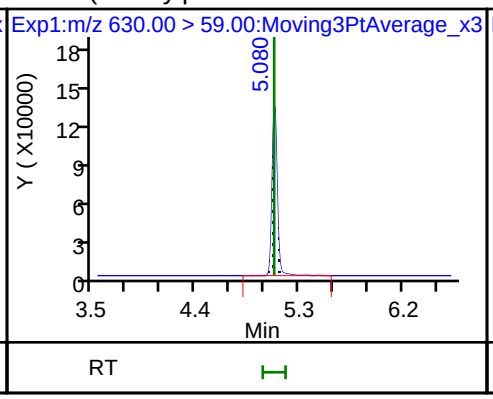
56 Perfluorododecanoic acid



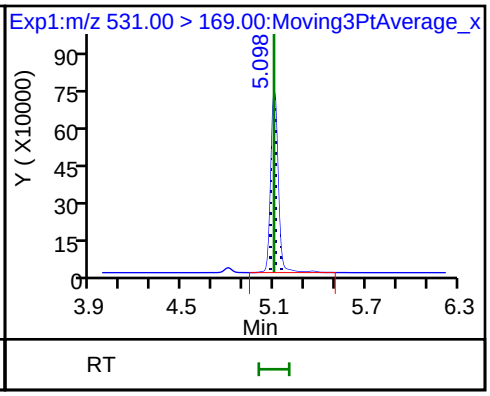
56 Perfluorododecanoic acid



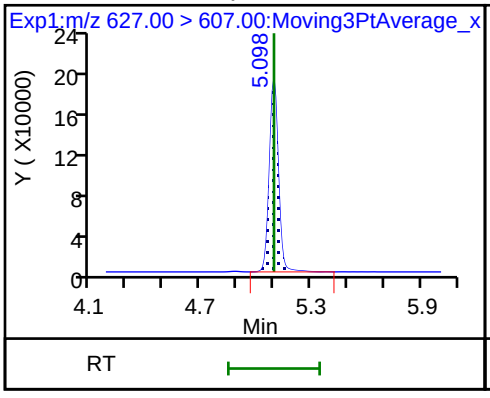
53 2-(N-ethylperfluoro-1-octanesulfon



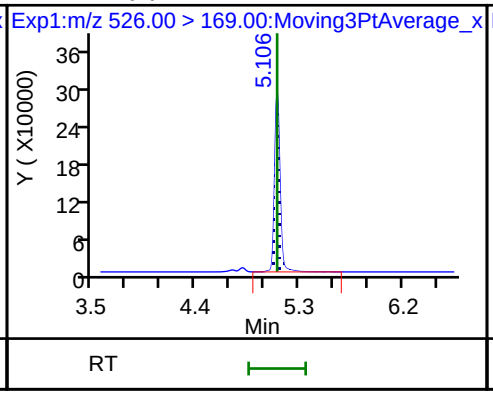
D 55 d-N-EtFOSA-M



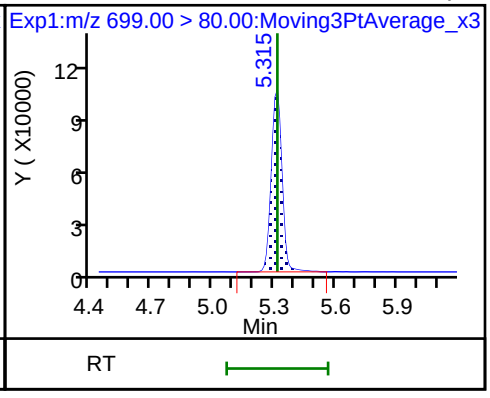
58 1H,1H,2H,2H-perfluorododecanesulfo



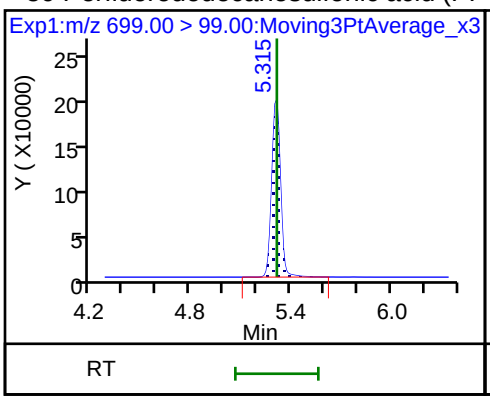
54 N-ethylperfluoro-1-octanesulfonami



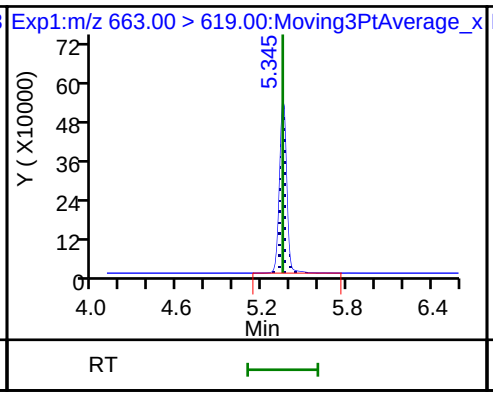
59 Perfluorododecanesulfonic acid (PF



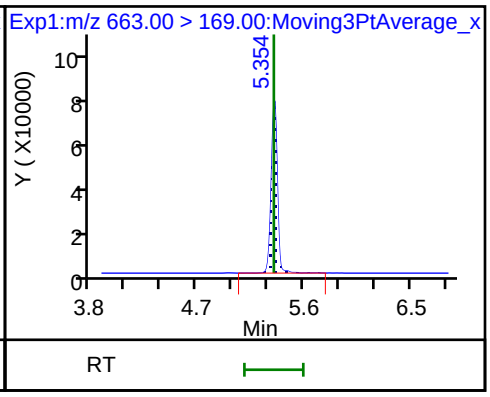
59 Perfluorododecanesulfonic acid (PF



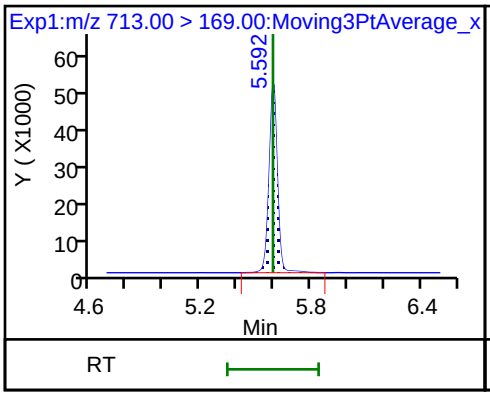
60 Perfluorotridecanoic acid



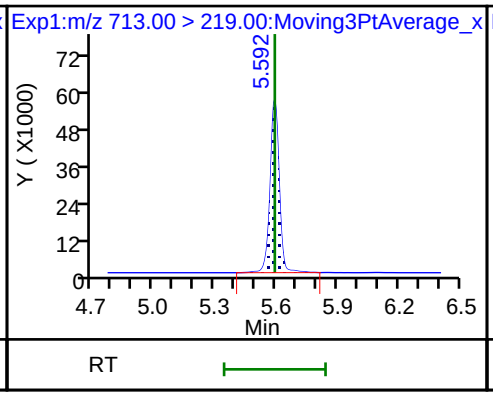
60 Perfluorotridecanoic acid



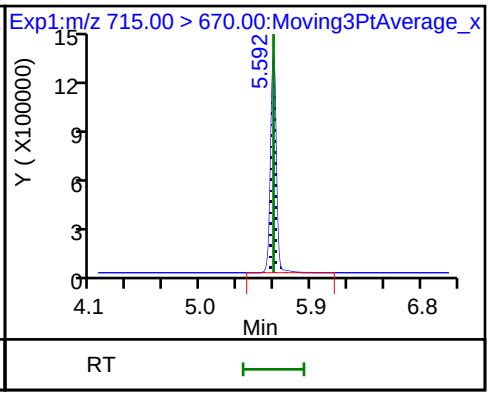
62 Perfluorotetradecanoic acid



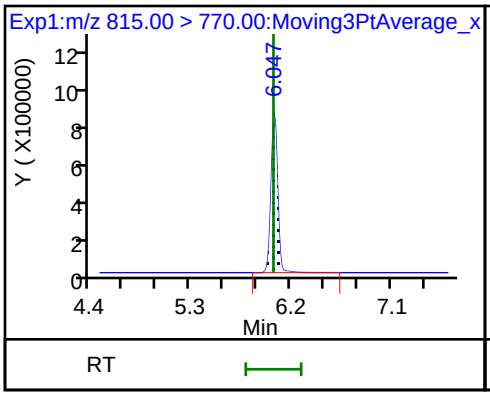
62 Perfluorotetradecanoic acid



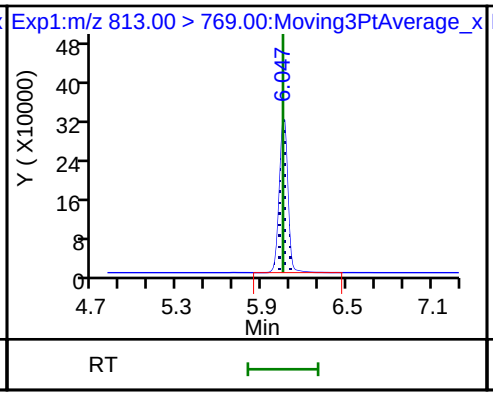
D 61 13C2 PFTeDA



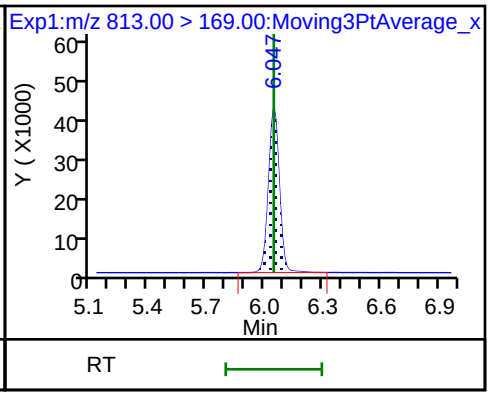
D 63 13C2 PFHxDA



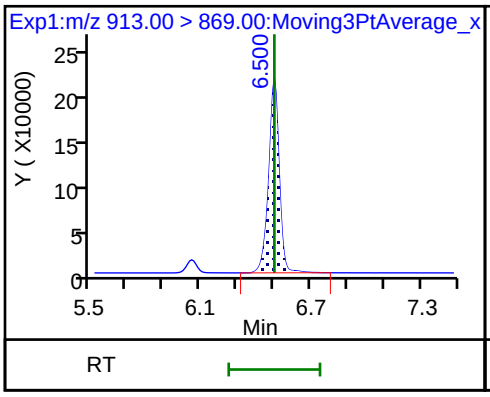
64 Perfluorohexadecanoic acid



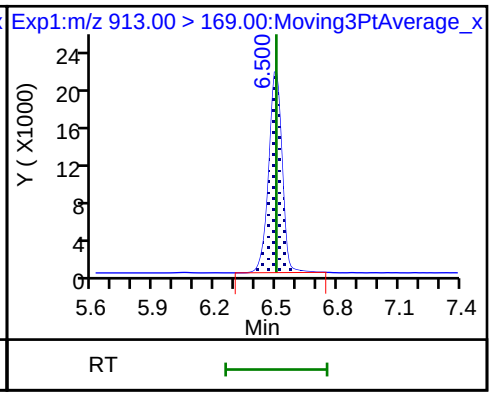
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

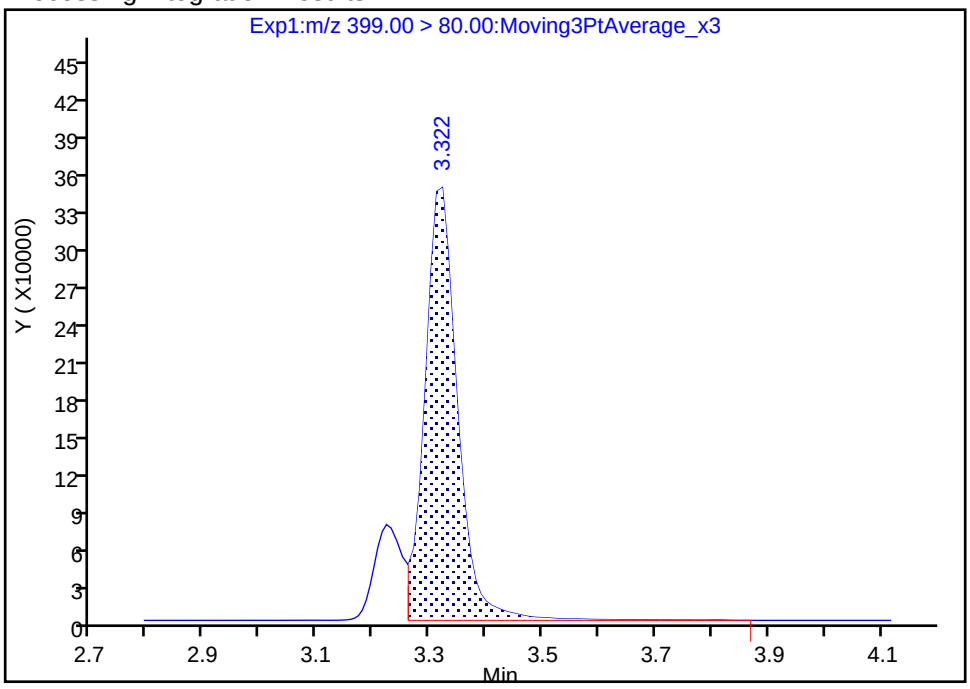
Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d
Injection Date: 03-Oct-2019 11:59:57 Instrument ID: A13
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

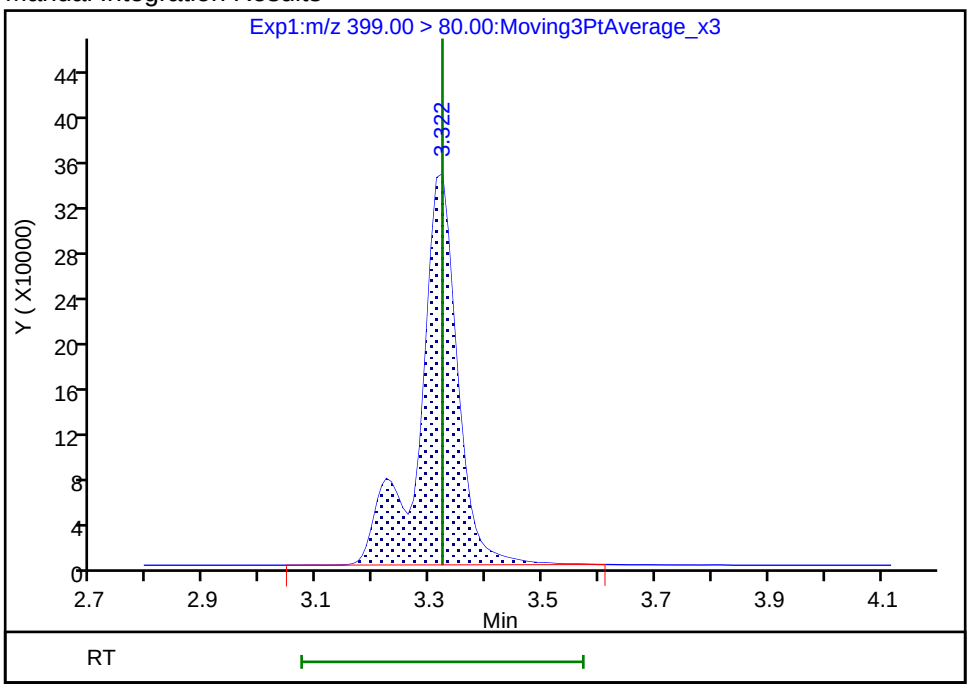
Processing Integration Results

RT: 3.32
Area: 1388894
Amount: 0.737174
Amount Units: ng/ml



Manual Integration Results

RT: 3.32
Area: 1635818
Amount: 0.868233
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:06:35
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

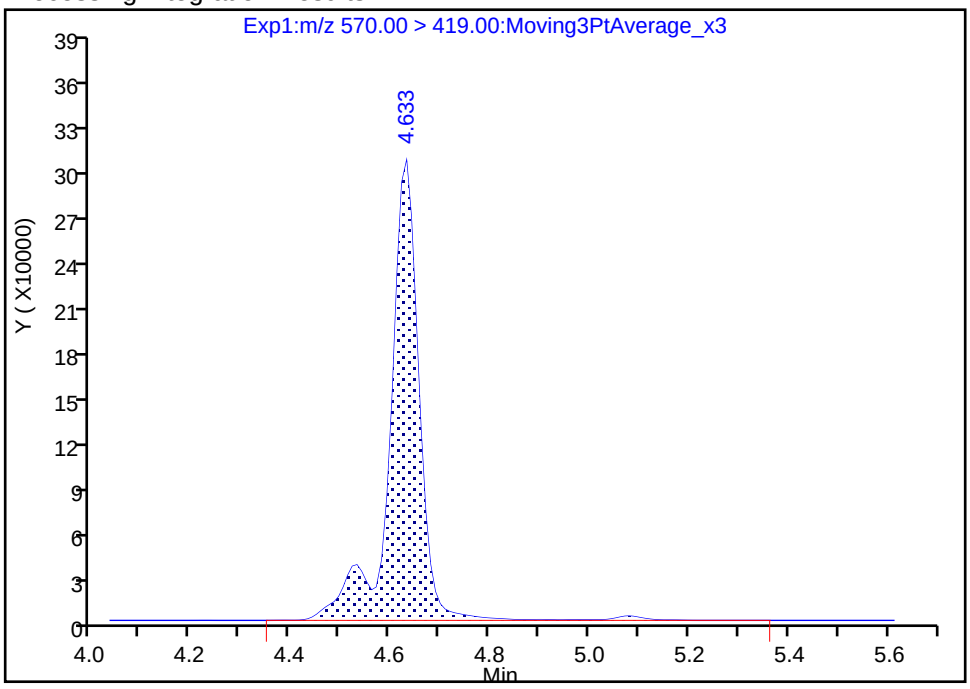
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d				
Injection Date:	03-Oct-2019 11:59:57	Instrument ID:	A13		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

41 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

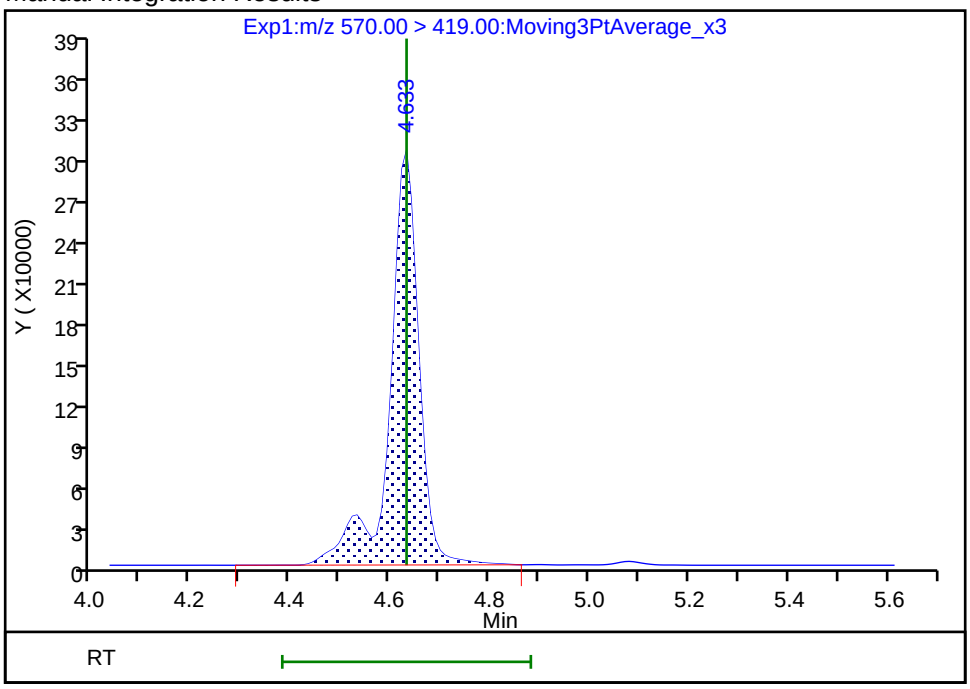
Processing Integration Results

RT: 4.63
Area: 1238418
Amount: 1.019143
Amount Units: ng/ml



Manual Integration Results

RT: 4.63
Area: 1219020
Amount: 1.003180
Amount Units: ng/ml



Reviewer: mongkols, 04-Oct-2019 11:07:19

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/15 Calibration Date: 10/03/2019 13:54

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_018.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8713	0.9051		2.60	2.50	3.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.057	1.048		2.48	2.50	-0.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.701	1.725		2.24	2.21	1.4	50.0
4:2 FTS	AveID	2.715	2.651		2.28	2.34	-2.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9491	0.9126		2.40	2.50	-3.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.360	1.365		2.35	2.35	0.3	50.0
HFPO-DA (GenX)	AveID	2.765	2.538		2.29	2.50	-8.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.043	1.008		2.42	2.50	-3.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.278	1.022		1.82	2.28	-20.1	40.0
DONA	AveID	5.174	5.112		2.33	2.36	-1.2	50.0
6:2 FTS	AveID	2.039	2.046		2.38	2.37	0.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.195	1.210		2.41	2.38	1.2	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.040	0.9447		2.27	2.50	-9.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.042		2.22	2.32	-4.3	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9752	1.014		2.60	2.50	4.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.531	2.617		2.41	2.33	3.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8331	0.8350		2.41	2.40	0.2	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.998	0.997		2.50	2.50	-0.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9598	0.9902		2.58	2.50	3.2	40.0
8:2 FTS	AveID	1.917	1.918		2.40	2.40	0.0	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.7884	0.7786		2.47	2.50	-1.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7795	0.7611		2.35	2.41	-2.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8321	0.8609		2.59	2.50	3.5	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7543	0.7228		2.40	2.50	-4.2	40.0
NMeFOSE	AveID	1.048	1.011		2.41	2.50	-3.5	40.0
F-53B Minor	AveID	4.788	5.025		2.47	2.36	4.9	50.0
NMeFOSA	AveID	0.9631	0.9190		2.39	2.50	-4.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9587	0.8547		2.23	2.50	-10.8	40.0
NEtFOSE	AveID	1.049	0.9496		2.26	2.50	-9.5	40.0
10:2 FTS	AveID	1.246	1.390		2.69	2.41	11.5	50.0
NEtFOSA	AveID	0.9899	0.9942		2.51	2.50	0.4	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3013	0.3066		2.46	2.42	1.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/15 Calibration Date: 10/03/2019 13:54

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_018.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.9178	0.7967		2.17	2.50	-13.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0946	0.0983		2.60	2.50	3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.9520		2.58	2.50	3.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6071	0.5654		2.33	2.50	-6.9	50.0
13C4 PFBA	Ave	0.8530	0.8701		2.55	2.50	2.0	50.0
13C5 PFPeA	Ave	0.7618	0.7761		2.55	2.50	1.9	50.0
M2-4:2 FTS	Ave	0.1656	0.1589		2.24	2.34	-4.1	50.0
13C2 PFHxA	Ave	0.8514	0.8482		2.49	2.50	-0.4	50.0
13C3 HFPO-DA	Ave	0.0181	0.0169		2.34	2.50	-6.5	50.0
13C4 PFHpA	Ave	0.7796	0.7829		2.51	2.50	0.4	50.0
18O2 PFHxS	Ave	0.5235	0.5610		2.53	2.37	7.2	50.0
M2-6:2 FTS	Ave	0.1946	0.1858		2.27	2.38	-4.6	50.0
13C8 PFOA	Ave	0.7927	0.7684		2.42	2.50	-3.1	50.0
13C4 PFOA	Ave	0.9123	0.9184		2.52	2.50	0.7	50.0
13C8 PFOS	Ave	0.2310	0.2394		2.59	2.50	3.6	50.0
13C4 PFOS	Ave	0.4531	0.4640		2.45	2.39	2.4	50.0
13C5 PFNA	Ave	0.8000	0.7575		2.37	2.50	-5.3	50.0
13C8 FOSA	Ave	0.6148	0.6130		2.49	2.50	-0.3	50.0
13C2 PFDA	Ave	0.8529	0.8035		2.36	2.50	-5.8	50.0
M2-8:2 FTS	Ave	0.2312	0.2096		2.17	2.40	-9.4	50.0
d3-NMeFOSAA	Ave	0.5647	0.5851		2.59	2.50	3.6	50.0
13C2 PFUnA	Ave	0.7999	0.6865		2.15	2.50	-14.2	50.0
d5-NEtFOSAA	Ave	0.5657	0.6083		2.69	2.50	7.5	50.0
d7-N-MeFOSE-M	Ave	0.1309	0.1253		12.0	12.5	-4.3	50.0
d-N-MeFOSA-M	Ave	0.3353	0.3582		2.67	2.50	6.8	50.0
d9-N-EtFOSE-M	Ave	0.1376	0.1460		13.3	12.5	6.1	50.0
13C2 PFDoA	Ave	0.8325	0.8396		2.52	2.50	0.9	50.0
d-N-EtFOSA-M	Ave	0.3476	0.3650		2.63	2.50	5.0	50.0
13C2 PFTeDA	Ave	0.7347	0.6862		2.34	2.50	-6.6	50.0
13C2 PFHxDA	Ave	0.5879	0.4993		2.12	2.50	-15.1	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 03-Oct-2019 13:54:21 ALS Bottle#: 53 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 16:42:23 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 16:42:23
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.186	2.186	0.0	0.589	6309062	2.55		102	5973	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.186	2.194	-0.008	1.000	5710389	2.60		104	1952	
D 4 13C5 PFPeA										
267.90 > 223.00	2.522	2.522	0.0	0.680	5627326	2.55		102	6783	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.522	2.534	-0.012	1.000	5897162	2.48		99.2	1439	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.556	2.556	0.0	0.770	6204816	2.24	Target=1.87	101	10747	
298.90 > 99.00	2.556	2.556	0.0	0.770	3270023		1.90(0.94-2.81)		3476	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.854	2.865	-0.011	1.000	2851968	2.28		97.6	14012	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.854	2.865	-0.011	0.770	1075990	2.24		95.9	1604	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.907	2.908	-0.001	1.000	5612525	2.40	Target=11.57	96.2	1845	
313.00 > 119.00	2.907	2.908	-0.001	1.000	483375		11.61(5.78-17.35)		939	
D 10 13C2 PFHxA										
315.00 > 270.00	2.907	2.908	-0.001	0.784	6149818	2.49		99.6	15875	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.918	2.918	0.0	0.879	5206508	2.35	Target=2.40	100	19959	
349.00 > 99.00	2.918	2.918	0.0	0.879	2182269		2.39(1.20-3.60)		7235	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.036	3.036	0.0	1.004	310914	2.29		91.8	1996	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.025	3.036	-0.011	0.816	122505	2.34		93.5	2948	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.309	3.312	-0.003	1.000	5720555	2.42	Target=3.70	96.6	2862	
363.00 > 169.00	3.309	3.312	-0.003	1.000	1490839		3.84(1.85-5.54)		2528	
D 17 13C4 PFHpA										
367.00 > 322.00	3.309	3.312	-0.003	0.892	5676265	2.51		100	23061	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.319	3.322	-0.003	1.000	3782178	1.82	Target=2.98	79.9	36.2	
399.00 > 99.00	3.319	3.322	-0.003	1.000	1292901		2.93(1.49-4.47)		50.7	
D 15 18O2 PFHxS										
403.00 > 84.00	3.319	3.322	-0.003	0.895	3848187	2.53		107	48241	
18 DONA										
377.00 > 251.00	3.369	3.362	0.007	0.824	16199632	2.33	Target=2.81	98.8	36407	
377.00 > 85.00	3.360	3.362	-0.002	0.822	5660196		2.86(1.41-4.22)		50390	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.692	3.694	-0.002	1.000	2612039	2.38		100	27624	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.692	3.694	-0.002	0.995	1279573	2.27		95.4	5924	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.709	3.711	-0.002	0.907	3874638	2.41	Target=4.19	101	41562	
449.00 > 99.00	3.709	3.711	-0.002	0.907	948527		4.08(2.09-6.28)		7512	
D 23 13C8 PFOA										
421.00 > 376.00	3.709	3.711	-0.002	1.000	5571409	2.42		96.9	27077	
D 25 13C4 PFOA										
417.00 > 372.00	3.717	3.711	0.006	1.002	6659082	2.52		101	23587	
* 24 13C2 PFOA										
415.00 > 370.00	3.709	3.720	-0.011		7250663	2.50			23247	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.717	3.720	-0.003	1.000	6290849	2.27	Target=2.68	90.9	3474	
413.00 > 169.00	3.717	3.720	-0.003	1.000	2407162		2.61(1.34-4.02)		8171	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.089	4.085	0.004	1.000	3252191	2.22	Target=4.19	95.7	1434	
499.00 > 99.00	4.080	4.085	-0.005	0.998	783151		4.15(2.09-6.28)		967	
D 27 13C8 PFOS										
507.00 > 99.00	4.080	4.085	-0.005	1.100	1735767	2.59		104	5190	
D 28 13C4 PFOS										
503.00 > 80.00	4.089	4.085	0.004	1.102	3215927	2.45		102	14599	
30 Perfluorononanoic acid										
463.00 > 419.00	4.105	4.102	0.003	1.000	5571777	2.60	Target=8.84	104	4435	
463.00 > 169.00	4.097	4.102	-0.005	0.998	592973		9.40(4.42-13.26)		3879	
D 29 13C5 PFNA										
468.00 > 423.00	4.105	4.102	0.003	1.107	5492585	2.37		94.7	40464	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.290	4.294	-0.004	1.049	8203765	2.41		103	74367	
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.430	4.434	-0.004	1.083	2696388	2.41	Target=2.27	100	19751	
549.00 > 99.00	4.439	4.434	0.005	1.086	1172442		2.30(1.13-3.40)		14118	
D 33 13C8 FOSA										
506.00 > 78.00	4.439	4.434	0.005	1.197	4444458	2.49		99.7	9442	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.439	4.434	0.005	1.000	4429715	2.50		99.9	9624	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.456	4.460	-0.004	0.998	5768916	2.58	Target=10.36	103	4520	
513.00 > 169.00	4.465	4.460	0.005	1.000	538677		10.71(5.18-15.54)		216	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.465	4.460	0.005	1.000	2791965	2.40		100	36518	
D 36 13C2 PFDA										
515.00 > 470.00	4.465	4.460	0.005	1.204	5825795	2.36		94.2	62323	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.465	4.460	0.005	1.204	1455698	2.17		90.6	7195	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.618	4.623	-0.005	1.245	4242200	2.59		104	31670	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.628	4.633	-0.005	1.002	3303082	2.47		98.8	55043	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.753	4.758	-0.005	1.163	2468164	2.35	Target=2.70	97.6	13020	
599.00 > 99.00	4.753	4.758	-0.005	1.163	874286		2.82(1.35-4.05)		3027	
D 43 13C2 PFUnA										
565.00 > 520.00	4.782	4.787	-0.005	1.289	4977476	2.15		85.8	12239	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.792	4.787	0.005	1.292	4410185	2.69		108	17940	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.782	4.787	-0.005	1.000	4285209	2.59	Target=9.31	103	3588	
563.00 > 169.00	4.782	4.787	-0.005	1.000	480138		8.92(4.65-13.96)		2785	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.792	4.797	-0.005	1.000	3187522	2.40		95.8	24802	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.898	4.893	0.005	1.321	4540800	12.0		95.7	14537	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.908	4.914	-0.006	1.002	918235	2.41		96.5	7545	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.918	4.925	-0.007	1.326	2596934	2.67		107	54.3	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.929	4.925	0.004	1.206	15921825	2.47		105	128038	
50 NMeFOSA										
512.00 > 169.00	4.929	4.925	0.004	1.002	2386598	2.39		95.4	227	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.065	5.071	-0.006	1.366	5294488	13.3		106	21230	
D 57 13C2 PFDoA										
615.00 > 570.00	5.074	5.080	-0.006	1.368	6087524	2.52		101	70123	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.074	5.080	-0.006	1.000	5202958	2.23	Target=8.07	89.2	2120	
613.00 > 169.00	5.074	5.080	-0.006	1.000	622458		8.36(4.03-12.10)		2663	
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.080	0.002	1.003	1005507	2.26		90.5	5245	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.100	5.097	0.003	1.375	2646700	2.63		105	334	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.091	5.098	-0.007	1.140	2035833	2.69		112	6695	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.100	5.106	-0.006	1.000	2631226	2.51		100	192	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.306	5.315	-0.009	1.298	998224	2.46	Target=0.52	102	1236	
699.00 > 99.00	5.306	5.315	-0.009	1.298	1946490		0.51(0.26-0.77)		5526	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.347	5.345	0.002	1.054	4849730	2.17	Target=6.35	86.8	7550	
663.00 > 169.00	5.347	5.345	0.002	1.054	815600		5.95(3.18-9.53)		4913	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.589	5.592	-0.003	1.001	488835	2.60	Target=0.85	104	6415	
713.00 > 219.00	5.589	5.592	-0.003	1.001	442141		1.11(0.43-1.28)		5564	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.583	5.593	-0.010	1.505	4975425	2.33		93.4	78455	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.042	6.041	0.001	1.629	3620356	2.12		84.9	10375	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.042	6.047	-0.005	1.000	3446603	2.58	Target=7.95	103	5639	
813.00 > 169.00	6.042	6.047	-0.005	1.000	437631		7.88(3.98-11.93)		3548	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.497	6.500	-0.003	1.075	2047002	2.33	Target=8.96	93.1	897	
913.00 > 169.00	6.489	6.500	-0.011	1.074	253390		8.08(4.48-13.45)		1720	

Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

Report Date: 09-Oct-2019 16:42:24 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_018.d

Injection Date: 03-Oct-2019 13:54:21 Instrument ID: A13

Lims ID: CCV L5

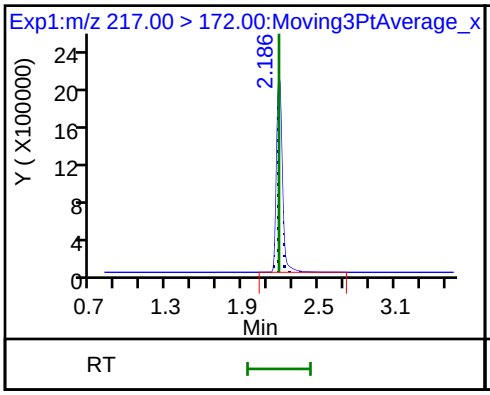
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 53 Worklist Smp#: 15

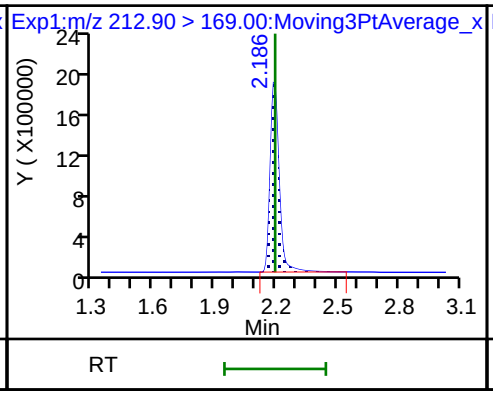
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

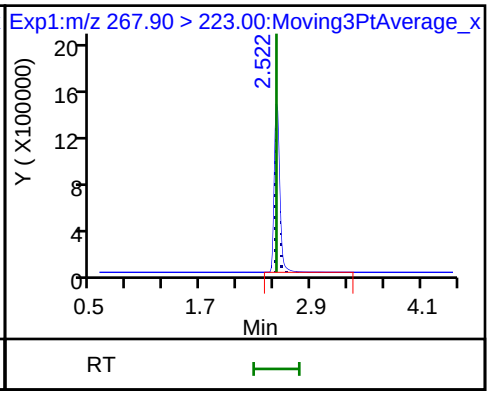
D 2 13C4 PFBA



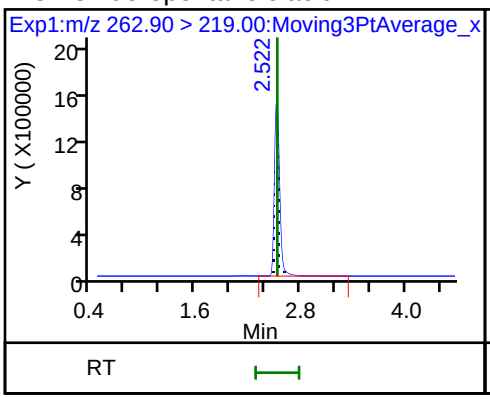
3 Perfluorobutanoic acid



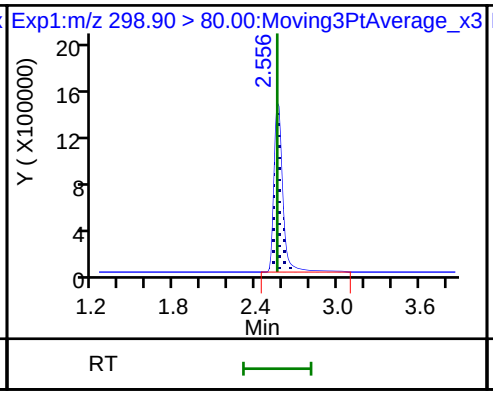
D 4 13C5 PFPeA



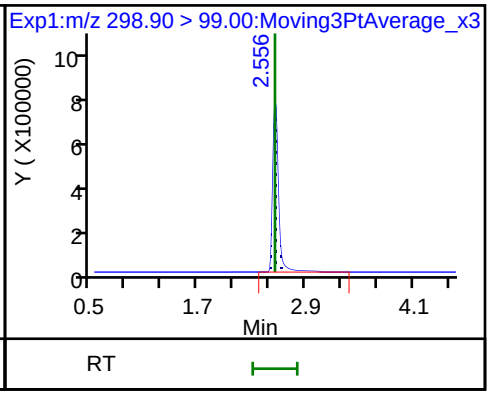
5 Perfluoropentanoic acid



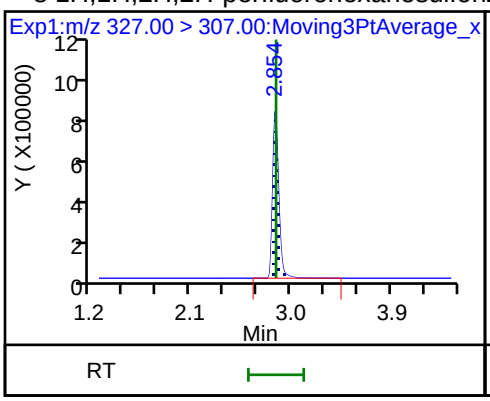
6 Perfluorobutanesulfonic acid



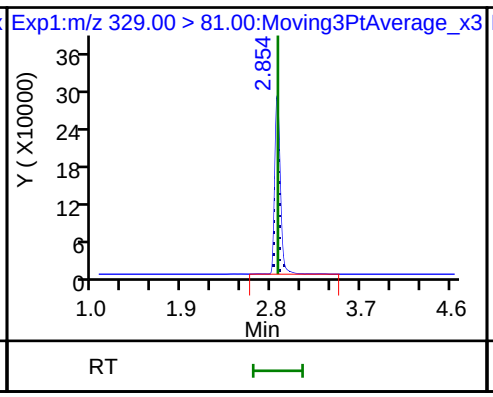
6 Perfluorobutanesulfonic acid



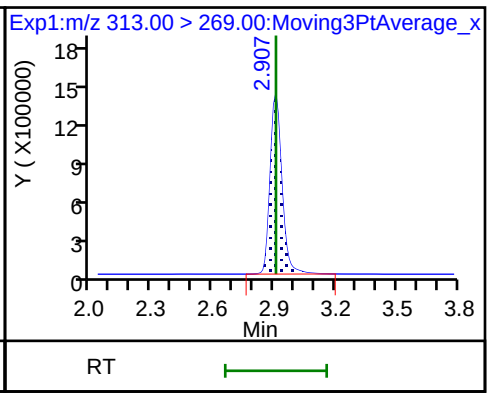
8 1H,1H,2H,2H-perfluorohexanesulfon



D 7 M2-4:2 FTS



9 Perfluorohexanoic acid



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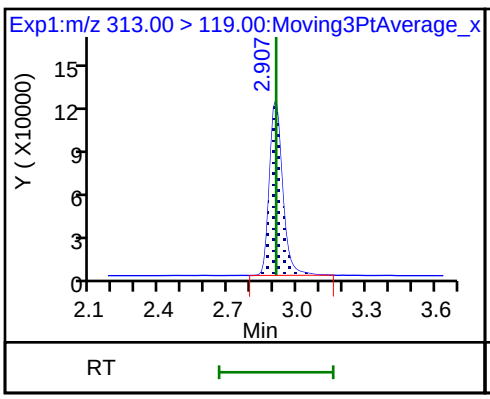
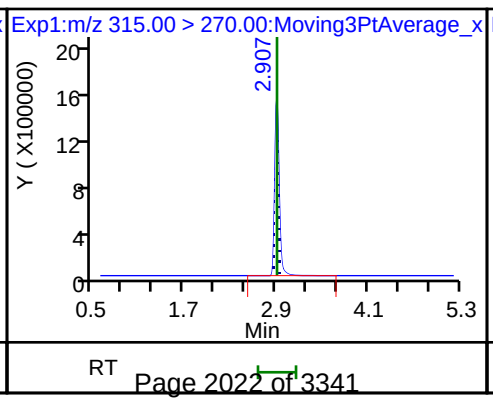
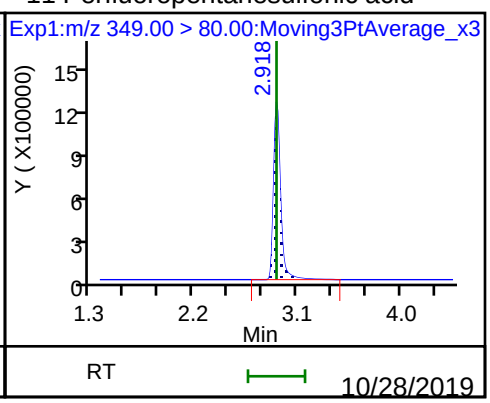


D 10 13C2 PFHxA



11 Perfluoropentanesulfonic acid



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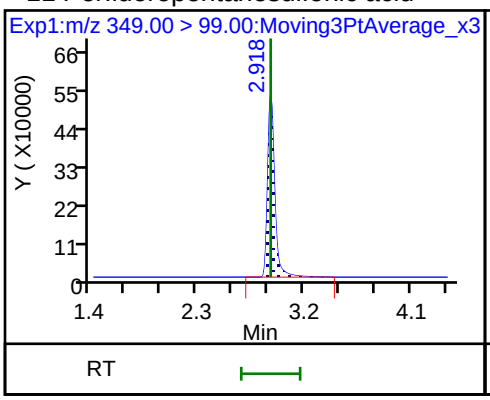
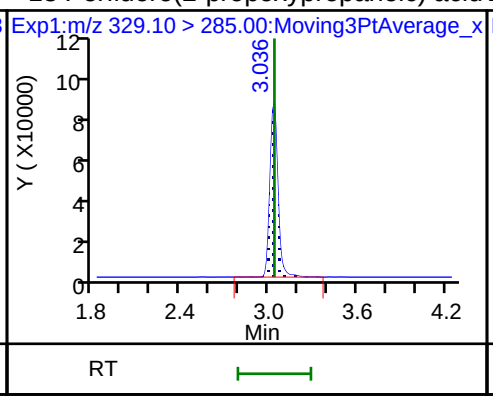
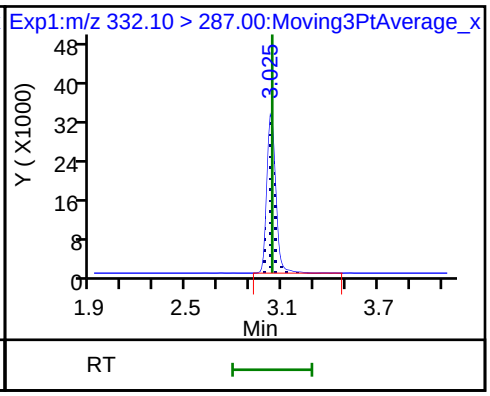


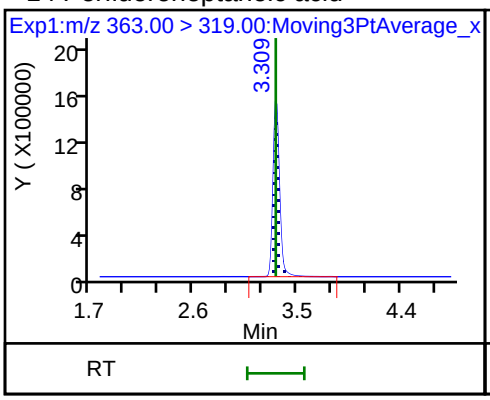
13 Perfluoro(2-propoxypropanoic) acid



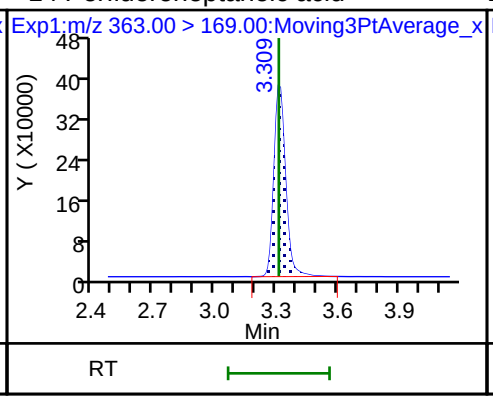
D 12 13C3 HFPO-DA



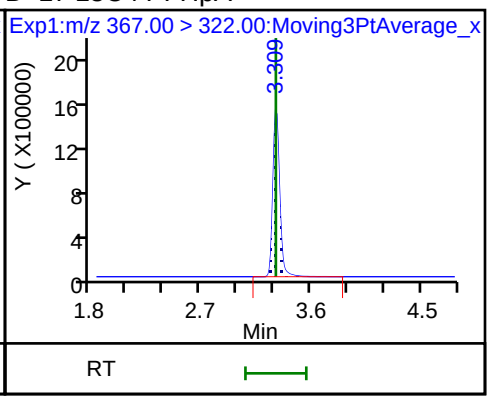
14 Perfluoroheptanoic acid



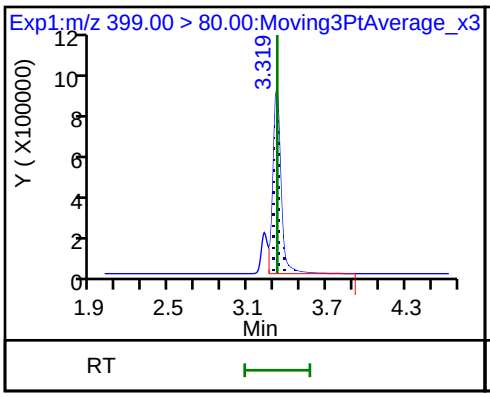
14 Perfluoroheptanoic acid



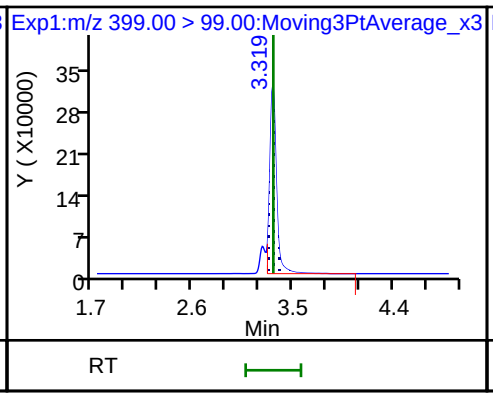
D 17 13C4 PFHpA



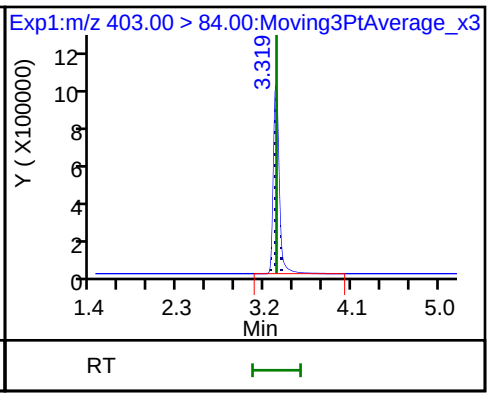
16 Perfluorohexanesulfonic acid



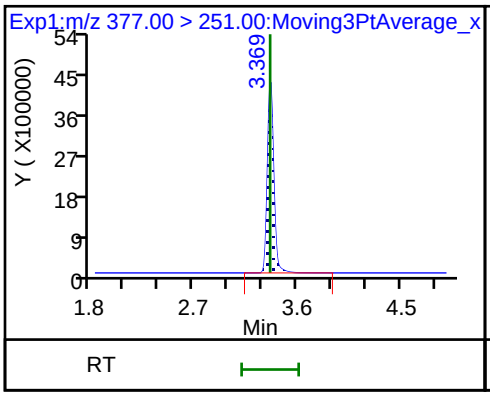
16 Perfluorohexanesulfonic acid



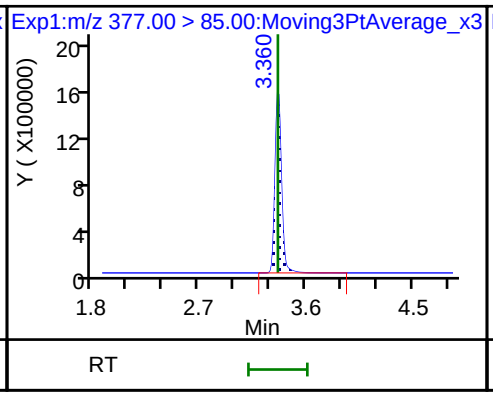
D 15 18O2 PFHxS



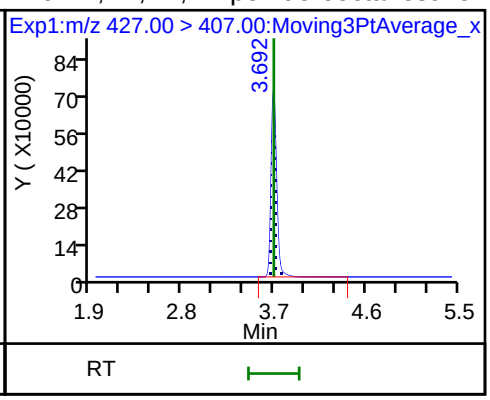
18 DONA



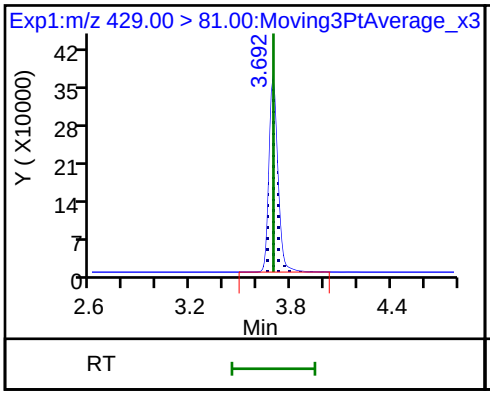
18 DONA



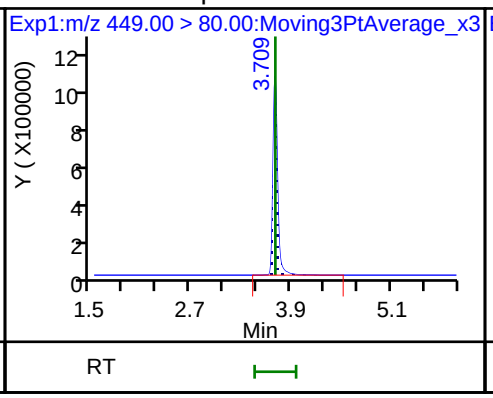
19 1H,1H,2H,2H-perfluorooctanesulfoni



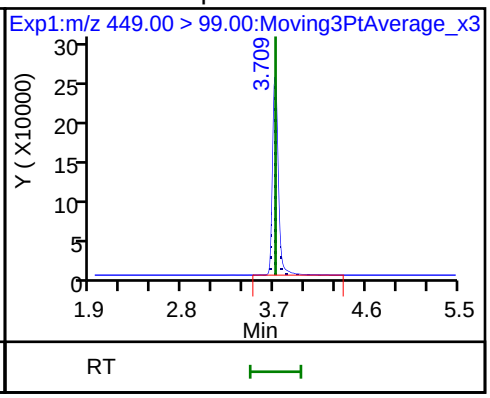
D 20 M2-6:2 FTS



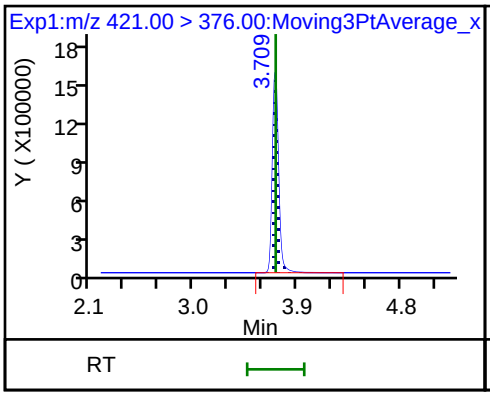
21 Perfluoroheptanesulfonic acid



21 Perfluoroheptanesulfonic acid



D 23 13C8 PFOA



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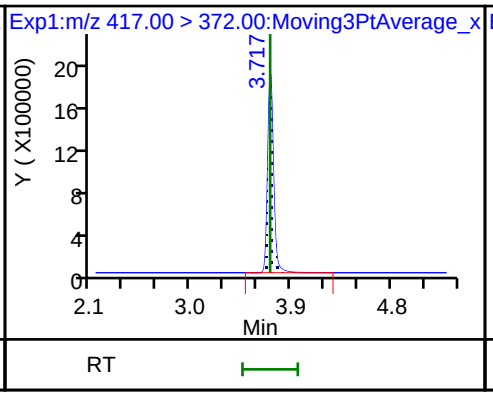
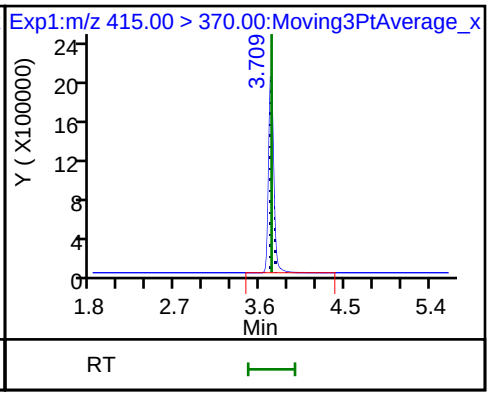
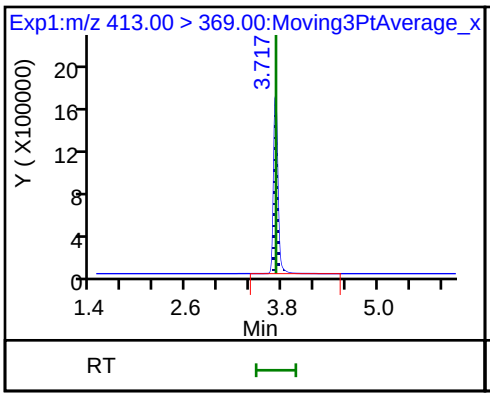


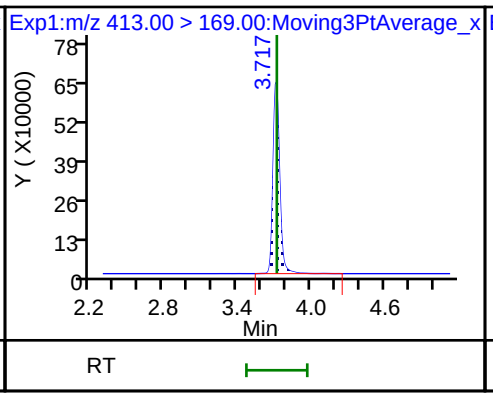
* 24 13C2 PFOA



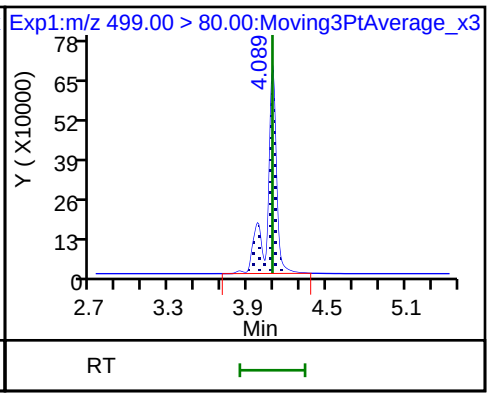
22 Perfluorooctanoic acid



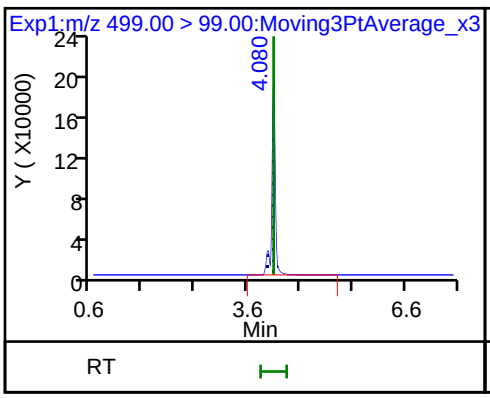
22 Perfluorooctanoic acid



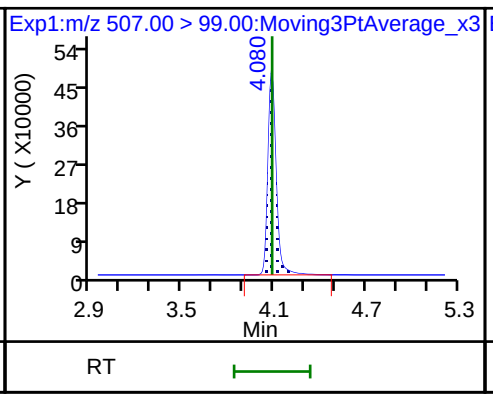
26 Perfluorooctanesulfonic acid



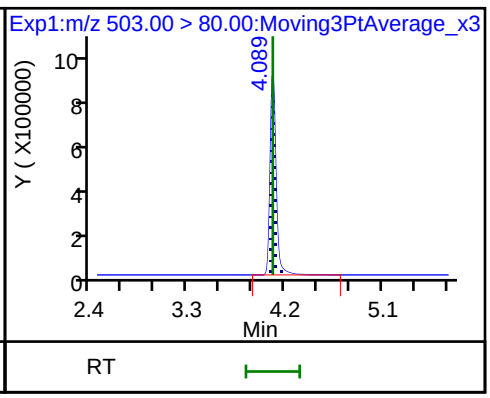
26 Perfluorooctanesulfonic acid



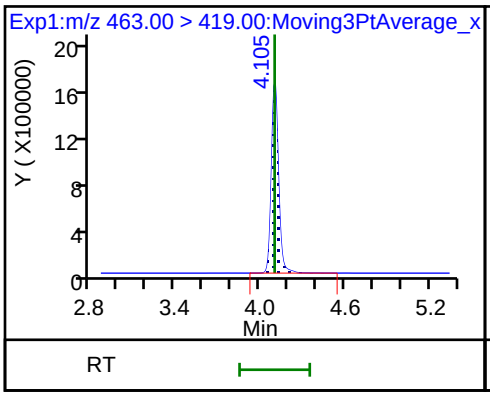
D 27 13C8 PFOS



D 28 13C4 PFOS



30 Perfluorononanoic acid



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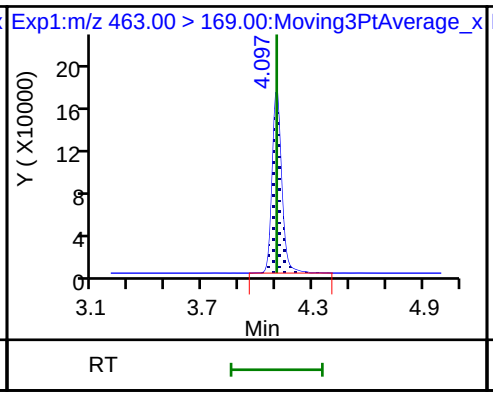

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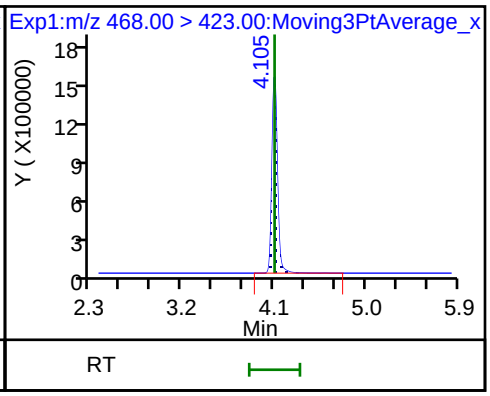
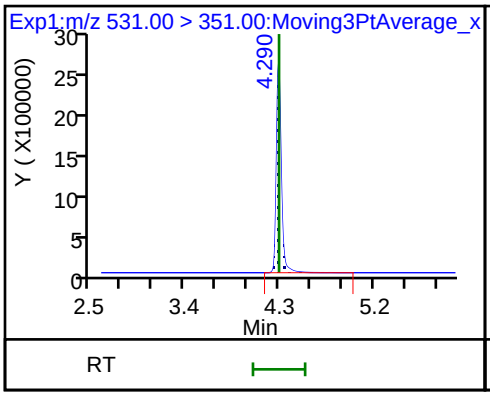
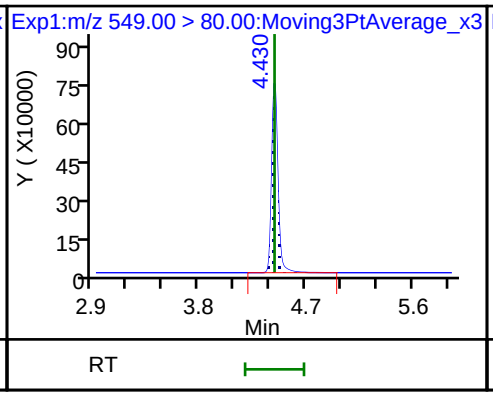


31 9-Chlorohexadecafluoro-3-oxanonane



38 Perfluorononanesulfonic acid



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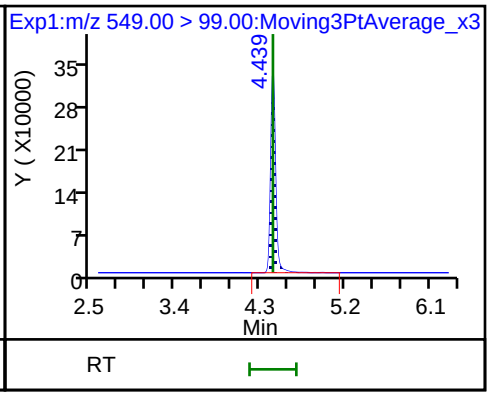
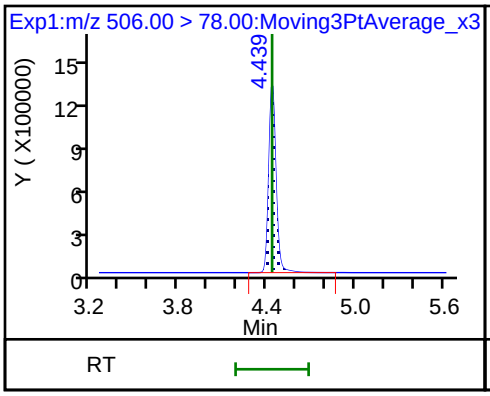
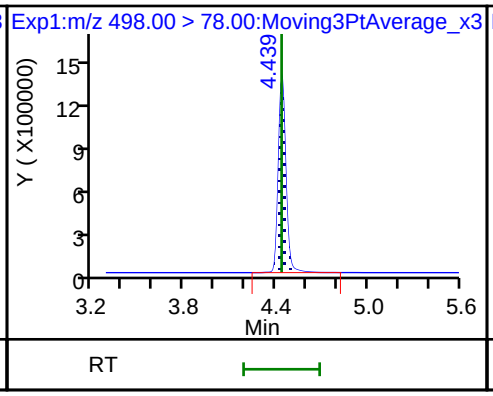


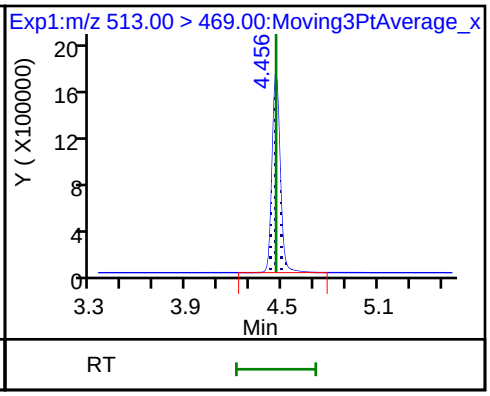
D 33 13C8 FOSA



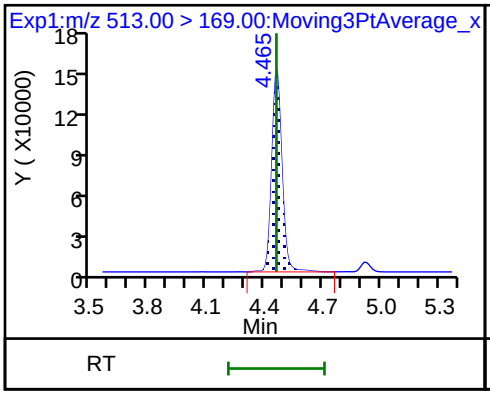
32 Perfluorooctanesulfonamide



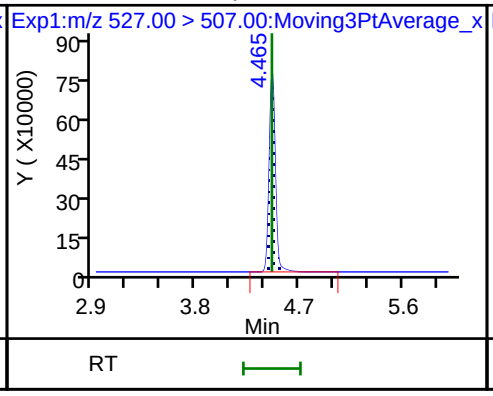
34 Perfluorodecanoic acid



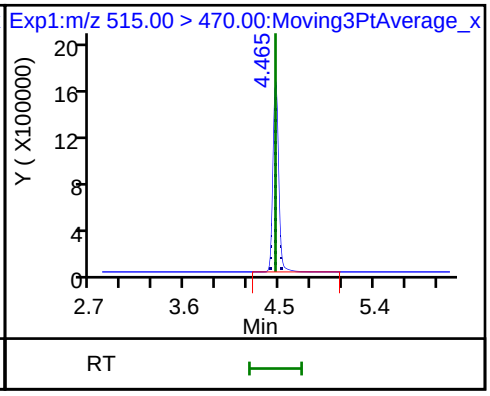
34 Perfluorodecanoic acid



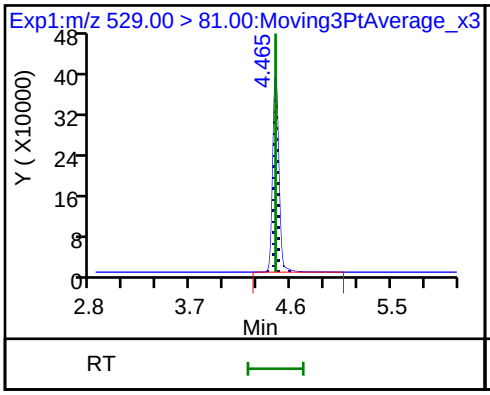
35 1H,1H,2H,2H-perfluorodecanesulfon



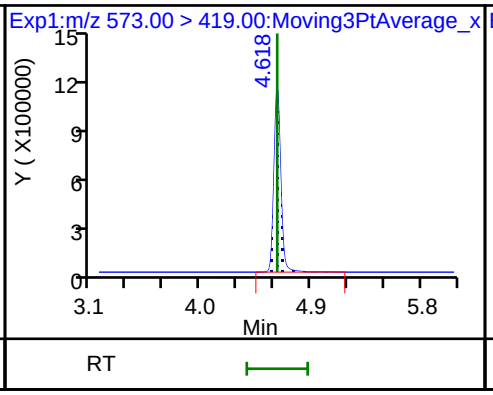
D 36 13C2 PFDA



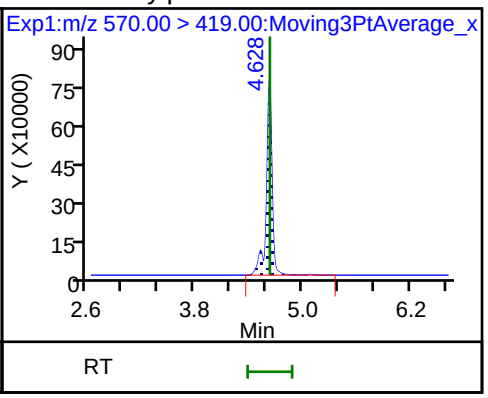
D 37 M2-8:2 FTS



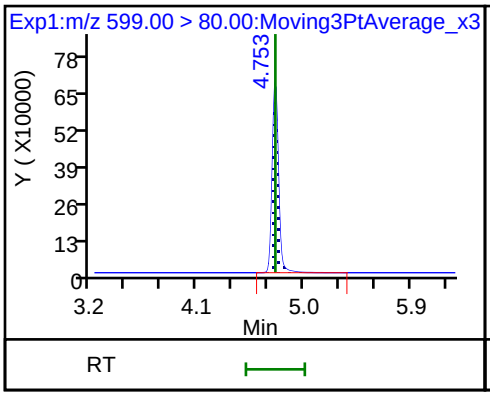
D 40 d3-NMeFOSAA



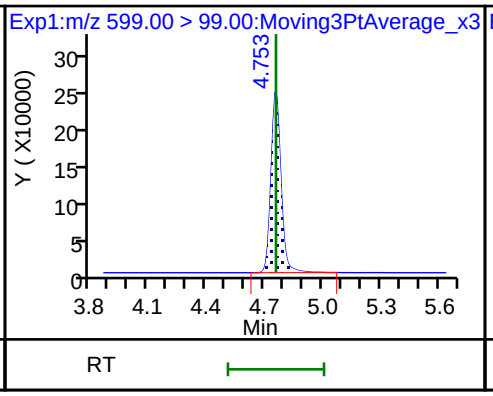
41 N-methylperfluorooctanesulfonamido



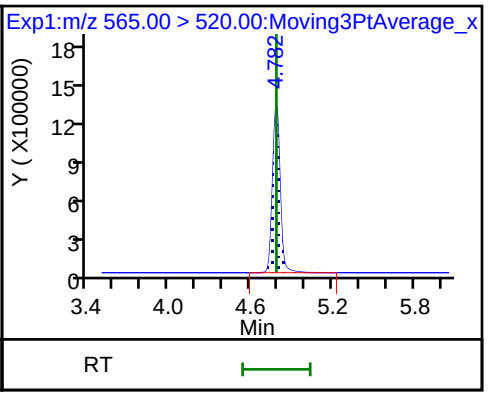
48 Perfluorodecanesulfonic acid



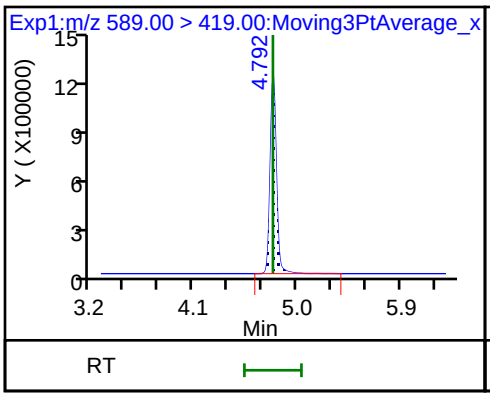
48 Perfluorodecanesulfonic acid



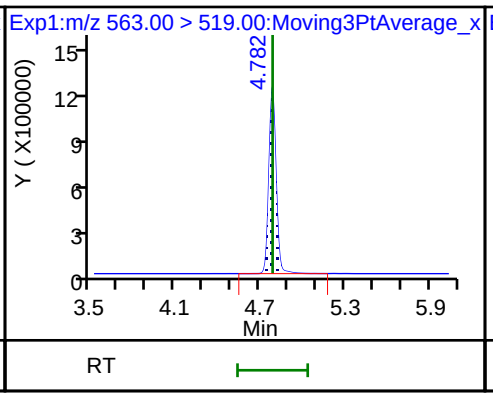
D 43 13C2 PFUnA



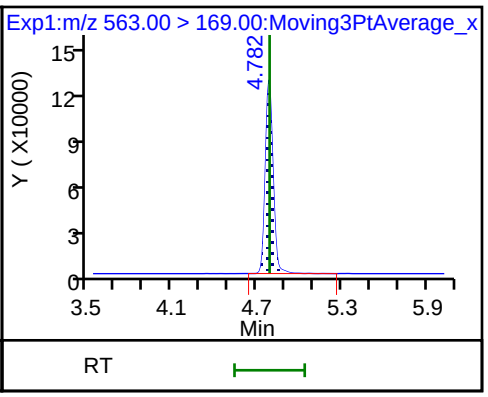
D 44 d5-NEtFOSAA



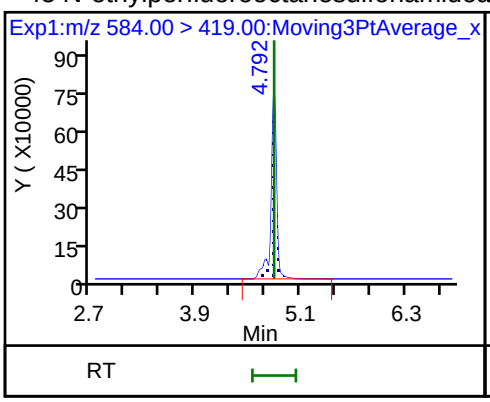
42 Perfluoroundecanoic acid



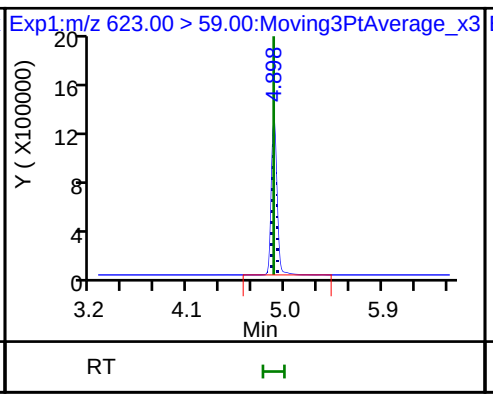
42 Perfluoroundecanoic acid



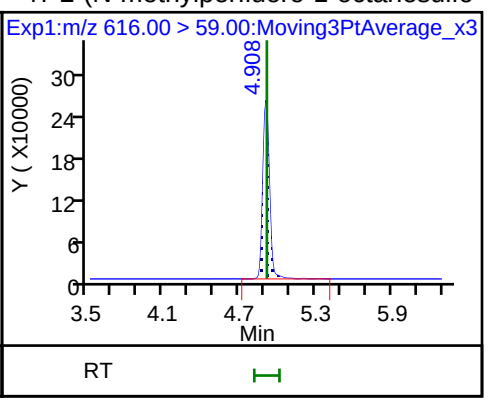
45 N-ethylperfluorooctanesulfonamidoa



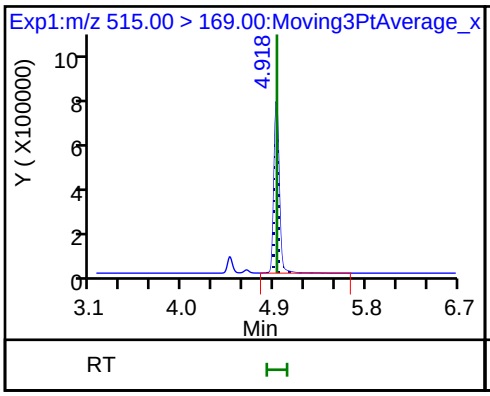
D 46 d7-N-MeFOSE-M



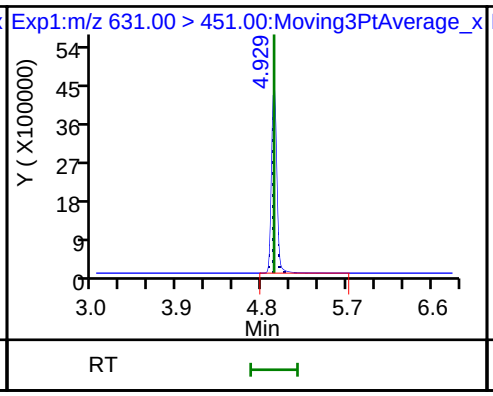
47 2-(N-methylperfluoro-1-octanesulfo



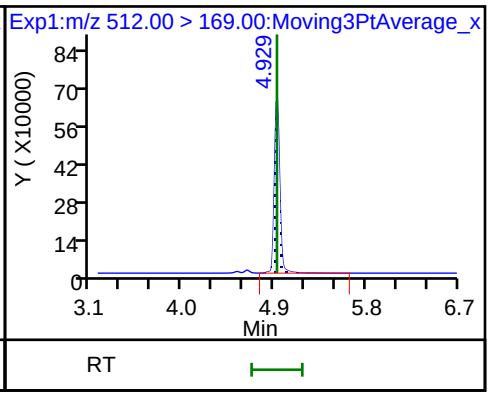
D 49 d-N-MeFOSA-M



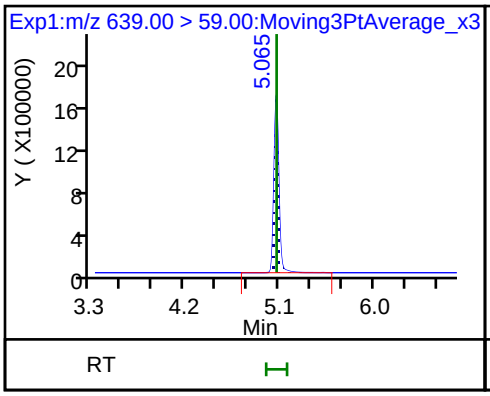
51 11-Chloroeicosafluoro-3-oxaundecan



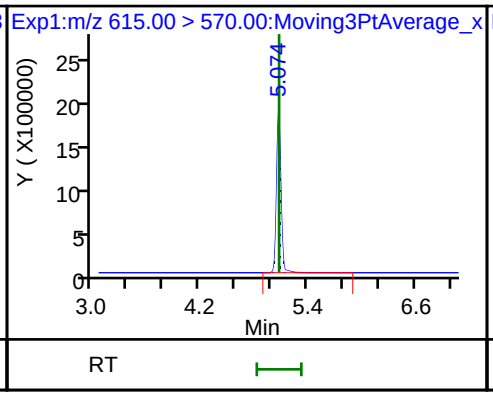
50 NMeFOSA



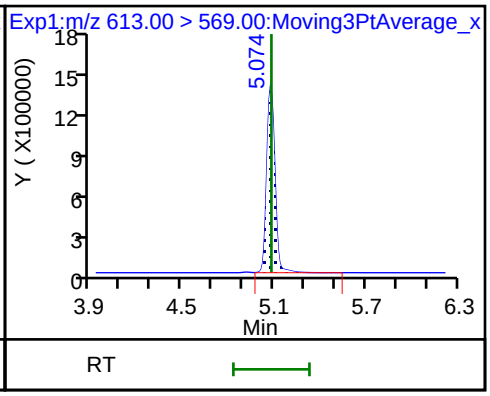
D 52 d9-N-EtFOSE-M



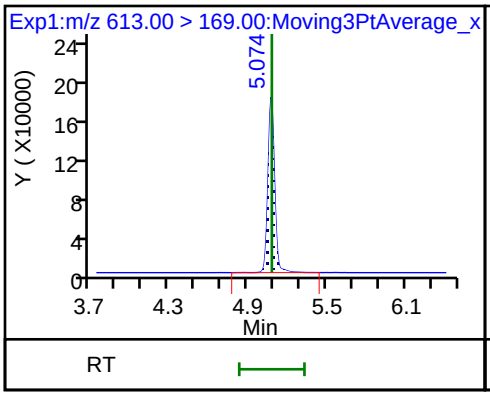
D 57 13C2 PFDoA



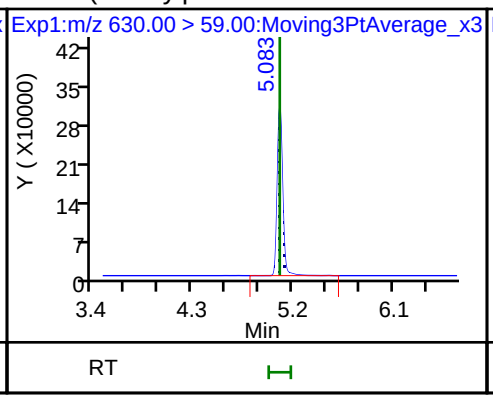
56 Perfluorododecanoic acid



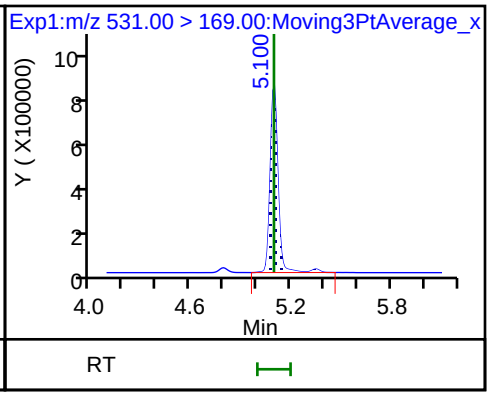
56 Perfluorododecanoic acid



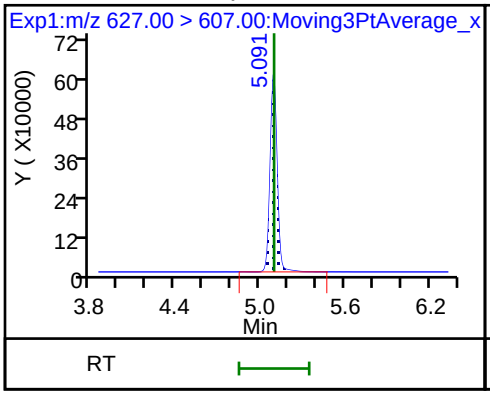
53 2-(N-ethylperfluoro-1-octanesulfon



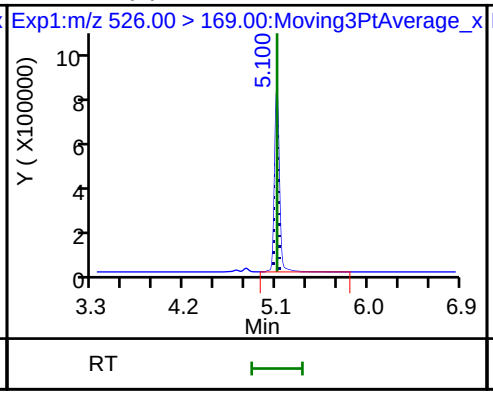
D 55 d-N-EtFOSA-M



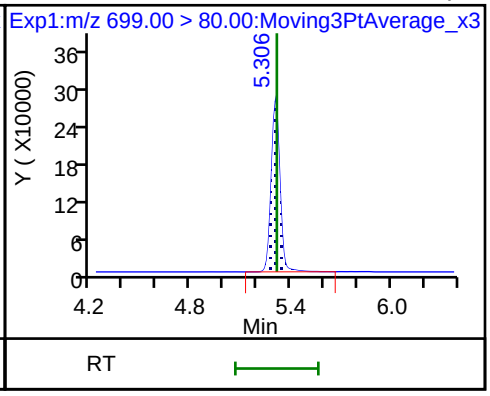
58 1H,1H,2H,2H-perfluorododecanesulfo



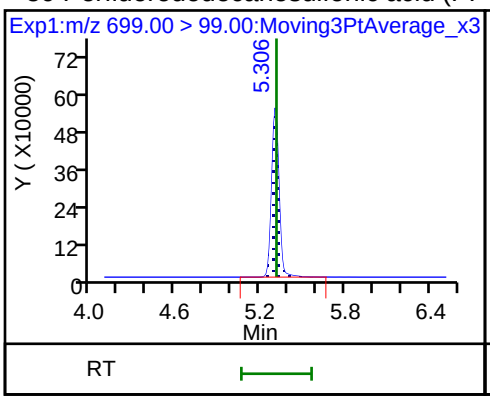
54 N-ethylperfluoro-1-octanesulfonami



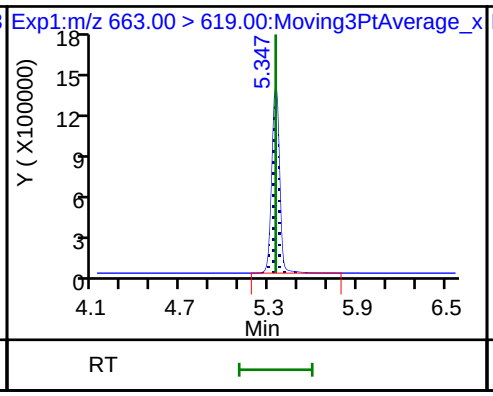
59 Perfluorododecanesulfonic acid (PF



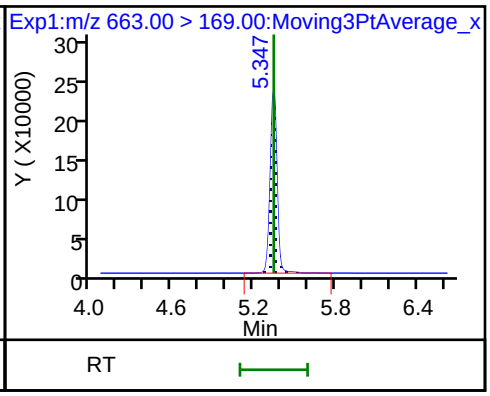
59 Perfluorododecanesulfonic acid (PF



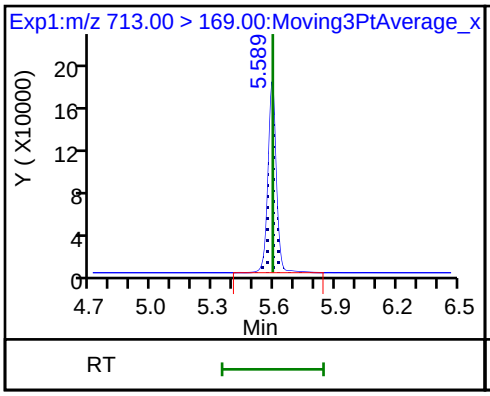
60 Perfluorotridecanoic acid



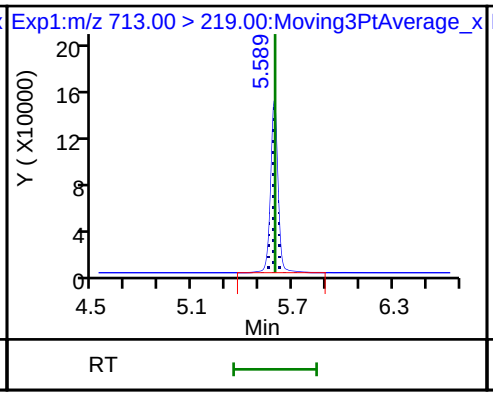
60 Perfluorotridecanoic acid



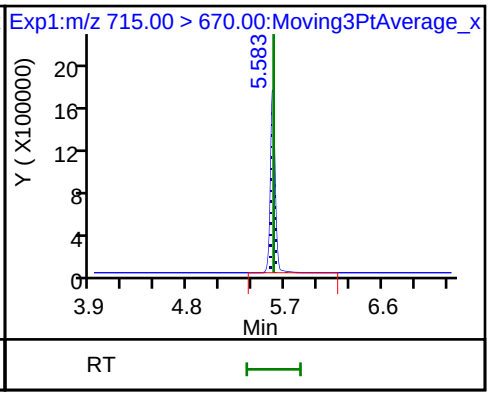
62 Perfluorotetradecanoic acid



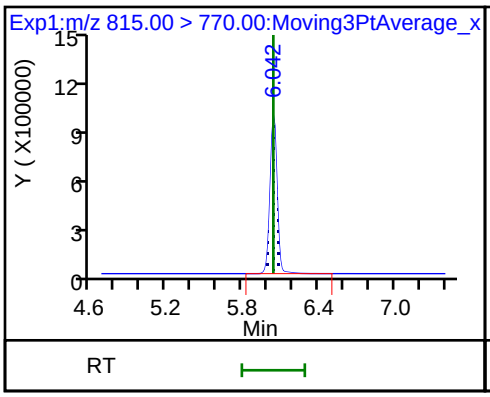
62 Perfluorotetradecanoic acid



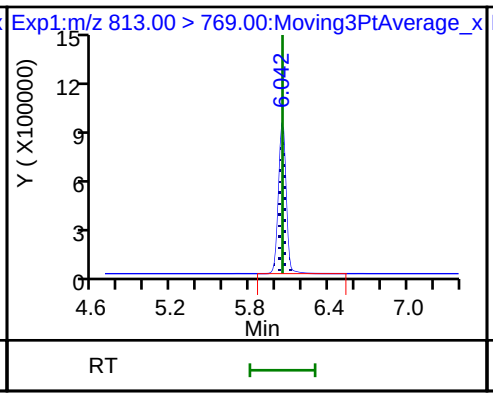
D 61 13C2 PFTeDA



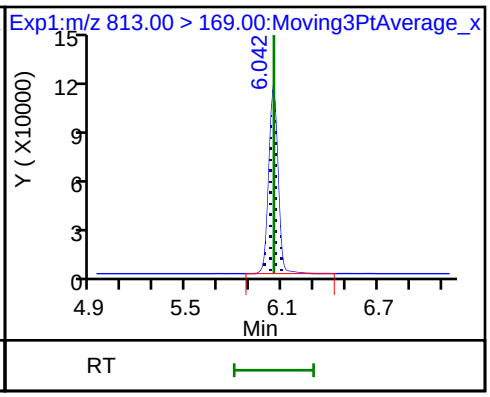
D 63 13C2 PFHxDA



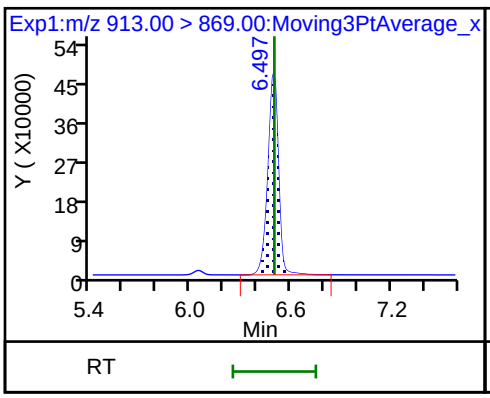
64 Perfluorohexadecanoic acid



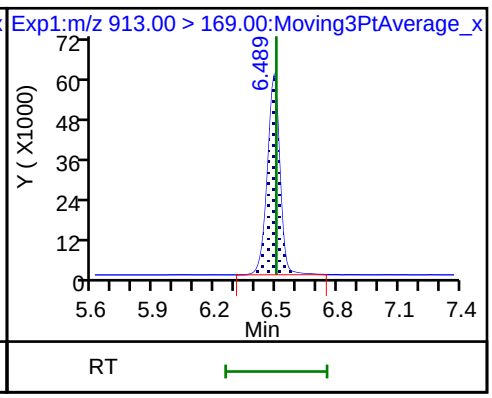
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/23 Calibration Date: 10/03/2019 15:10

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8713	0.8880		1.02	1.00	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.057	1.073		1.02	1.00	1.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.701	1.671		0.868	0.884	-1.8	50.0
4:2 FTS	AveID	2.715	2.670		0.918	0.934	-1.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9491	0.9244		0.974	1.00	-2.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.360	1.362		0.939	0.938	0.2	50.0
HFPO-DA (GenX)	AveID	2.765	2.737		0.990	1.00	-1.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.043	0.9874		0.947	1.00	-5.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.278	1.195		0.851	0.910	-6.5	40.0
DONA	AveID	5.174	5.501		1.00	0.942	6.3	50.0
6:2 FTS	AveID	2.039	2.051		0.954	0.948	0.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.195	1.239		0.987	0.952	3.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.040	1.056		1.02	1.00	1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.088	1.026		0.875	0.928	-5.7	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9752	1.033		1.06	1.00	5.9	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	2.531	2.656		0.978	0.932	4.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8331	0.8605		0.991	0.960	3.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.998	0.9698		0.972	1.00	-2.8	40.0
8:2 FTS	AveID	1.917	1.907		0.953	0.958	-0.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9598	1.084		1.13	1.00	12.9	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.7884	0.8172		1.04	1.00	3.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7795	0.7557		0.935	0.964	-3.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8321	0.7734		0.929	1.00	-7.1	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7543	0.7169		0.950	1.00	-5.0	40.0
NMeFOSE	AveID	1.048	0.9257		0.884	1.00	-11.6	40.0
F-53B Minor	AveID	4.788	5.176		1.02	0.942	8.1	50.0
NMeFOSA	AveID	0.9631	0.9362		0.972	1.00	-2.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9587	1.046		1.09	1.00	9.1	40.0
NEtFOSE	AveID	1.049	1.141		1.09	1.00	8.7	40.0
10:2 FTS	AveID	1.246	1.359		1.05	0.964	9.1	50.0
NEtFOSA	AveID	0.9899	0.9706		100	1.00	-2.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3013	0.3130		1.01	0.968	3.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-328148/23 Calibration Date: 10/03/2019 15:10

Instrument ID: A13 Calib Start Date: 09/26/2019 21:21

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 09/26/2019 22:27

Lab File ID: 2019.10.03.LLA_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.9178	0.8768		0.955	1.00	-4.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.0946	0.1012		1.07	1.00	7.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L1ID		0.8792		0.938	1.00	-6.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.6071	0.5826		0.960	1.00	-4.0	50.0
13C4 PFBA	Ave	0.8530	0.8575		2.51	2.50	0.5	50.0
13C5 PFPeA	Ave	0.7618	0.7500		2.46	2.50	-1.6	50.0
M2-4:2 FTS	Ave	0.1656	0.1509		2.13	2.34	-8.9	50.0
13C2 PFHxA	Ave	0.8514	0.8341		2.45	2.50	-2.0	50.0
13C3 HFPO-DA	Ave	0.0181	0.0141		1.95	2.50	-22.1	50.0
13C4 PFHpA	Ave	0.7796	0.7862		2.52	2.50	0.8	50.0
18O2 PFHxS	Ave	0.5235	0.5425		2.45	2.37	3.6	50.0
M2-6:2 FTS	Ave	0.1946	0.1905		2.32	2.38	-2.1	50.0
13C4 PFOA	Ave	0.9123	0.8805		2.41	2.50	-3.5	50.0
13C8 PFOA	Ave	0.7927	0.7463		2.35	2.50	-5.8	50.0
13C4 PFOS	Ave	0.4531	0.4517		2.38	2.39	-0.3	50.0
13C8 PFOS	Ave	0.2310	0.2419		2.62	2.50	4.7	50.0
13C5 PFNA	Ave	0.8000	0.7716		2.41	2.50	-3.5	50.0
13C8 FOSA	Ave	0.6148	0.6172		2.51	2.50	0.4	50.0
13C2 PFDA	Ave	0.8529	0.7804		2.29	2.50	-8.5	50.0
M2-8:2 FTS	Ave	0.2312	0.2204		2.28	2.40	-4.7	50.0
d3-NMeFOSAA	Ave	0.5647	0.5502		2.44	2.50	-2.6	50.0
13C2 PFUnA	Ave	0.7999	0.8113		2.54	2.50	1.4	50.0
d5-NEtFOSAA	Ave	0.5657	0.5804		2.57	2.50	2.6	50.0
d7-N-MeFOSE-M	Ave	0.1309	0.1457		13.9	12.5	11.3	50.0
d-N-MeFOSA-M	Ave	0.3353	0.3531		2.63	2.50	5.3	50.0
d9-N-EtFOSE-M	Ave	0.1376	0.1388		12.6	12.5	0.9	50.0
13C2 PFDoA	Ave	0.8325	0.8002		2.40	2.50	-3.9	50.0
d-N-EtFOSA-M	Ave	0.3476	0.3637		2.62	2.50	4.6	50.0
13C2 PFTeDA	Ave	0.7347	0.6543		2.23	2.50	-10.9	50.0
13C2 PFHxDA	Ave	0.5879	0.5258		2.24	2.50	-10.6	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_026.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 03-Oct-2019 15:10:41 ALS Bottle#: 52 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTLCMS01 Instrument ID: A13
Sublist: chrom-PFAS_A13*sub3

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 17:12:15 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 17:12:15
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.185	2.186	-0.001	0.589	6454479	2.51		101	6542	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.185	2.194	-0.009	1.000	2292582	1.02		102	871	
D 4 13C5 PFPeA										
267.90 > 223.00	2.521	2.522	-0.001	0.680	5645261	2.46		98.4	8670	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.521	2.534	-0.013	1.000	2422694	1.02		102	594	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.555	2.556	-0.001	0.772	2413635	0.8685	Target=1.87	98.2	468	
298.90 > 99.00	2.555	2.556	-0.001	0.772	1328611		1.82(0.94-2.81)		1258	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.854	2.865	-0.011	1.000	1132961	0.9183		98.3	4695	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.854	2.865	-0.011	0.769	1061020	2.13		91.1	1571	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.907	2.908	-0.001	1.004	2321693	0.9740	Target=11.57	97.4	884	
313.00 > 119.00	2.907	2.908	-0.001	1.004	192947		12.03(5.78-17.35)		539	
D 10 13C2 PFHxA										
315.00 > 270.00	2.896	2.908	-0.012	0.781	6278935	2.45		98.0	15675	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.917	2.918	-0.001	0.882	2086853	0.9394	Target=2.40	100	7218	
349.00 > 99.00	2.917	2.918	-0.001	0.882	870429		2.40(1.20-3.60)		5084	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.024	3.036	-0.012	0.996	116053	0.9898		99.0	687	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.035	3.036	-0.001	0.818	105999	1.95		77.9	418	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.309	3.312	-0.003	1.000	2337192	0.9467	Target=3.70	94.7	1162	
363.00 > 169.00	3.309	3.312	-0.003	1.000	656523		3.56(1.85-5.54)		1195	
D 17 13C4 PFHpA										
367.00 > 322.00	3.309	3.312	-0.003	0.892	5917846	2.52		101	26300	
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.309	3.322	-0.013	1.000	1776535	0.8510	Target=2.98	93.5	388	
399.00 > 99.00	3.309	3.322	-0.013	1.000	613583		2.90(1.49-4.47)		1851	
D 15 18O2 PFHxS										
403.00 > 84.00	3.309	3.322	-0.013	0.892	3863210	2.45		104	47276	
18 DONA										
377.00 > 251.00	3.360	3.362	-0.002	0.823	7047716	1.00	Target=2.81	106	15007	
377.00 > 85.00	3.360	3.362	-0.002	0.823	2313272		3.05(1.41-4.22)		30900	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.692	3.694	-0.002	1.002	1115155	0.9536		101	4760	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.684	3.694	-0.010	0.993	1362249	2.32		97.9	3961	
21 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.701	3.711	-0.010	0.907	1604040	0.9866	Target=4.19	104	13719	
449.00 > 99.00	3.701	3.711	-0.010	0.907	379672		4.22(2.09-6.28)		2474	
D 23 13C8 PFOA										
421.00 > 376.00	3.709	3.711	-0.002	1.000	5617919	2.35		94.2	19139	
D 25 13C4 PFOA										
417.00 > 372.00	3.709	3.711	-0.002	1.000	6627882	2.41		96.5	32578	
* 24 13C2 PFOA										
415.00 > 370.00	3.709	3.720	-0.011		7527424	2.50			41760	
22 Perfluorooctanoic acid										
413.00 > 369.00	3.709	3.720	-0.011	1.000	2800893	1.02	Target=2.68	102	1403	
413.00 > 169.00	3.709	3.720	-0.011	1.000	1000220		2.80(1.34-4.02)		1734	
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.081	4.085	-0.004	1.000	1295484	0.8754	Target=4.19	94.3	1205	
499.00 > 99.00	4.081	4.085	-0.004	1.000	308835		4.19(2.09-6.28)		1300	
D 27 13C8 PFOS										
507.00 > 99.00	4.081	4.085	-0.004	1.100	1820723	2.62		105	14040	
D 28 13C4 PFOS										
503.00 > 80.00	4.081	4.085	-0.004	1.100	3250365	2.38		99.7	19308	
30 Perfluorononanoic acid										
463.00 > 419.00	4.097	4.102	-0.005	1.000	2399405	1.06	Target=8.84	106	2133	
463.00 > 169.00	4.097	4.102	-0.005	1.000	246292		9.74(4.42-13.26)		1368	
D 29 13C5 PFNA										
468.00 > 423.00	4.097	4.102	-0.005	1.105	5808365	2.41		96.5	35080	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.285	4.294	-0.009	1.050	3365969	0.9780		105	22252	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.430	4.434	-0.004	1.000	1802347	0.9720		97.2	20240	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorononanesulfonic acid										
549.00 > 80.00	4.430	4.434	-0.004	1.086	1123413	0.99	Target=2.27	103	4454	
549.00 > 99.00	4.430	4.434	-0.004	1.086	476227		2.36(1.13-3.40)		7519	
D 33 13C8 FOSA										
506.00 > 78.00	4.430	4.434	-0.004	1.194	4646090	2.51		100	20579	
34 Perfluorodecanoic acid										
513.00 > 469.00	4.457	4.460	-0.003	1.000	2546877	1.13	Target=10.36	113	3285	
513.00 > 169.00	4.457	4.460	-0.003	1.000	229712		11.09(5.18-15.54)		238	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.457	4.460	-0.003	1.000	1212424	0.9531		99.5	6521	
D 36 13C2 PFDA										
515.00 > 470.00	4.457	4.460	-0.003	1.202	5874461	2.29		91.5	14882	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.457	4.460	-0.003	1.202	1589115	2.28		95.3	10712	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.619	4.623	-0.004	1.245	4141330	2.44		97.4	25270	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.628	4.633	-0.005	1.002	1353718	1.04		104	22124	
48 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.753	4.758	-0.005	1.165	990761	0.9346	Target=2.70	96.9	2228	
599.00 > 99.00	4.753	4.758	-0.005	1.165	368847		2.69(1.35-4.05)		1566	
D 43 13C2 PFUnA										
565.00 > 520.00	4.782	4.787	-0.005	1.289	6106856	2.54		101	41895	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.782	4.787	-0.005	1.289	4368601	2.57		103	18964	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.782	4.787	-0.005	1.000	1889155	0.9294	Target=9.31	92.9	2479	
563.00 > 169.00	4.782	4.787	-0.005	1.000	223533		8.45(4.65-13.96)		967	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.792	4.797	-0.005	1.002	1252742	0.9505		95.0	1931	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.888	4.893	-0.005	1.318	5485293	13.9		111	16548	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.898	4.914	-0.016	1.002	406226	0.8835		88.4	1555	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.919	4.925	-0.006	1.326	2657622	2.63		105	51.1	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.919	4.925	-0.006	1.205	6631128	1.02		108	40178	
50 NMeFOSA										
512.00 > 169.00	4.919	4.925	-0.006	1.000	995265	0.9721		97.2	258	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.066	5.071	-0.005	1.366	5224720	12.6		101	29591	
D 57 13C2 PFDoA										
615.00 > 570.00	5.074	5.080	-0.006	1.368	6023537	2.40		96.1	10931	
56 Perfluorododecanoic acid										
613.00 > 569.00	5.074	5.080	-0.006	1.000	2521026	1.09	Target=8.07	109	1188	
613.00 > 169.00	5.074	5.080	-0.006	1.000	259568		9.71(4.03-12.10)		2273	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	5.083	5.080	0.003	1.003	476940	1.09		109	4249	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.092	5.097	-0.005	1.373	2737563	2.62		105	321	
58 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	5.092	5.098	-0.006	1.142	869199	1.05		109	2235	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.100	5.106	-0.006	1.002	1062851	0.9805		98.0	228	
59 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	5.306	5.315	-0.009	1.300	412105	1.01	Target=0.52	104	1519	
699.00 > 99.00	5.306	5.315	-0.009	1.300	771250		0.53(0.26-0.77)		2504	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.347	5.345	0.002	1.054	2112550	0.9553	Target=6.35	95.5	6553	
663.00 > 169.00	5.347	5.345	0.002	1.054	335032		6.31(3.18-9.53)		1668	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.588	5.592	-0.004	1.000	199431	1.07	Target=0.85	107	2342	
713.00 > 219.00	5.583	5.592	-0.009	0.999	208022		0.96(0.43-1.28)		2092	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.588	5.593	-0.005	1.507	4925504	2.23		89.1	20829	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.042	6.041	0.001	1.629	3958099	2.24		89.4	10058	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.042	6.047	-0.005	1.000	1392055	0.9382	Target=7.95	93.8	2493	
813.00 > 169.00	6.042	6.047	-0.005	1.000	181389		7.67(3.98-11.93)		1464	
39 Perfluorooctadecanoic acid										
913.00 > 869.00	6.488	6.500	-0.012	1.074	922313	0.9595	Target=8.96	96.0	360	
913.00 > 169.00	6.488	6.500	-0.012	1.074	108810		8.48(4.48-13.45)		1015	

Reagents:

LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 09-Oct-2019 17:12:16 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_026.d

Injection Date: 03-Oct-2019 15:10:41 Instrument ID: A13

Lims ID: CCV L4

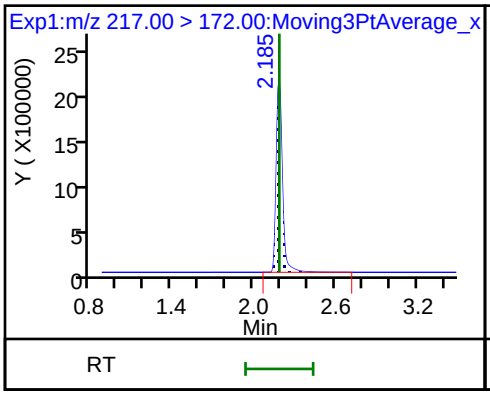
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 23

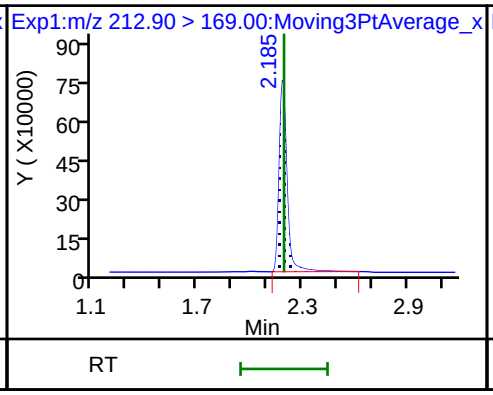
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

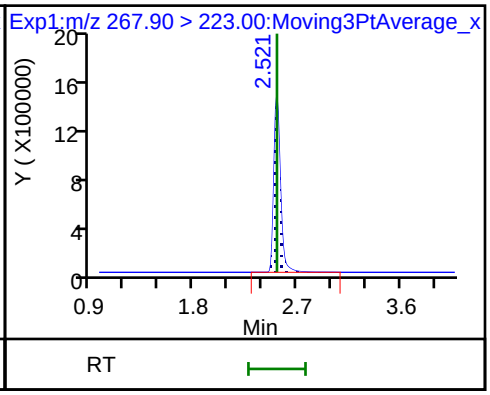
D 2 13C4 PFBA



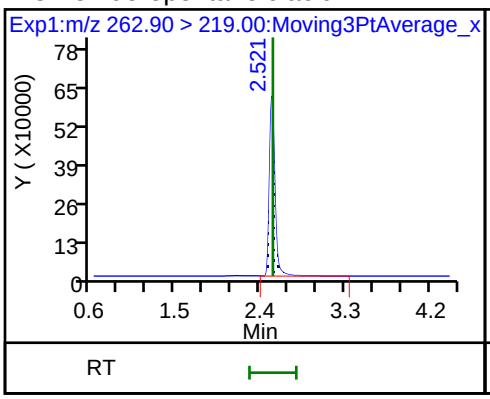
3 Perfluorobutanoic acid



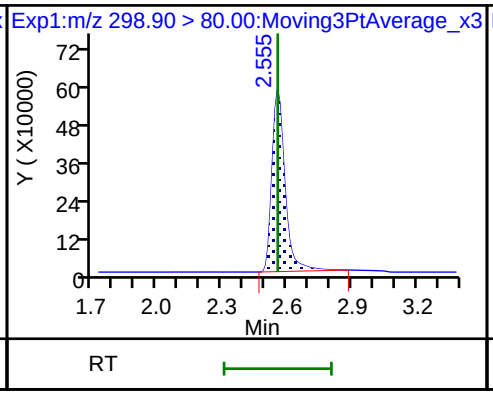
D 4 13C5 PFPeA



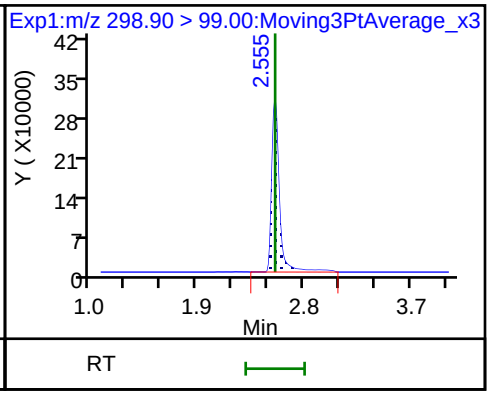
5 Perfluoropentanoic acid



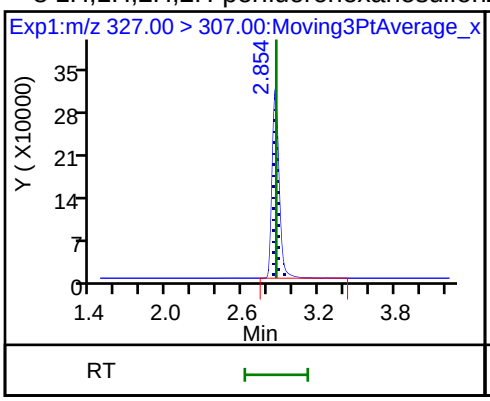
6 Perfluorobutanesulfonic acid



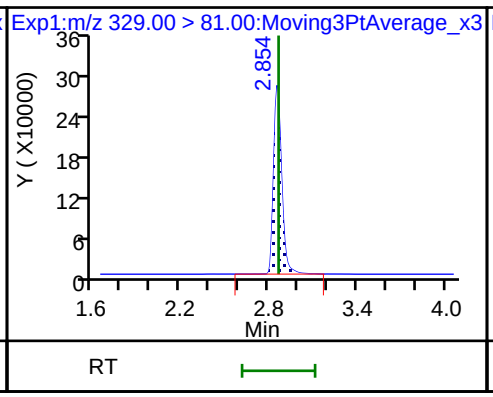
6 Perfluorobutanesulfonic acid



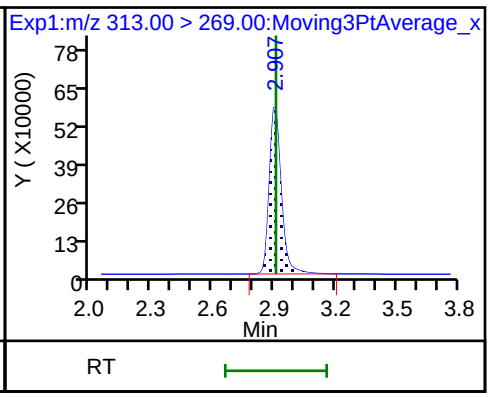
8 1H,1H,2H,2H-perfluorohexanesulfon



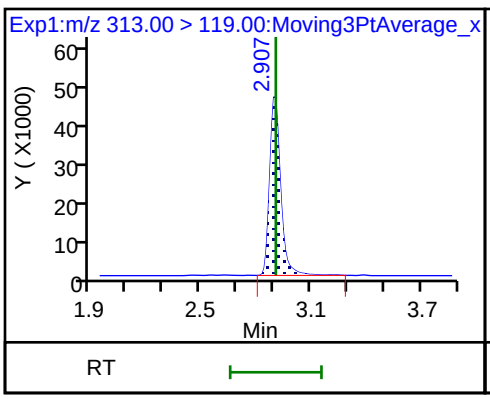
D 7 M2-4:2 FTS



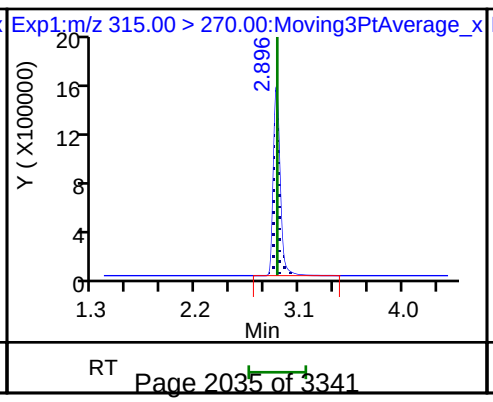
9 Perfluorohexanoic acid



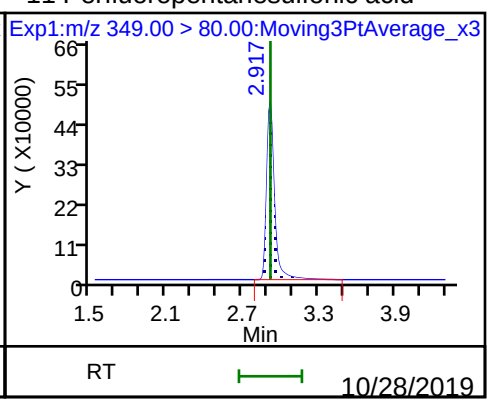
9 Perfluorohexanoic acid



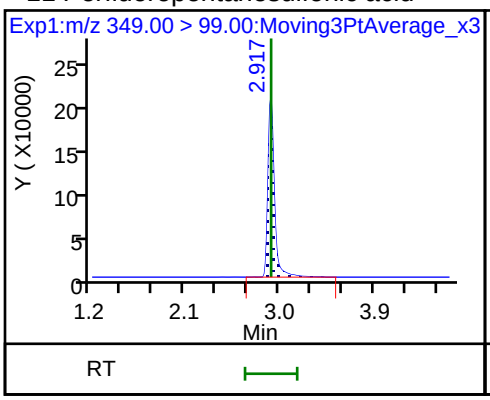
D 10 13C2 PFHxA



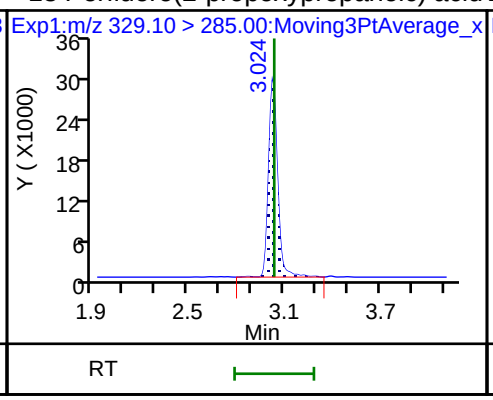
11 Perfluoropentanesulfonic acid



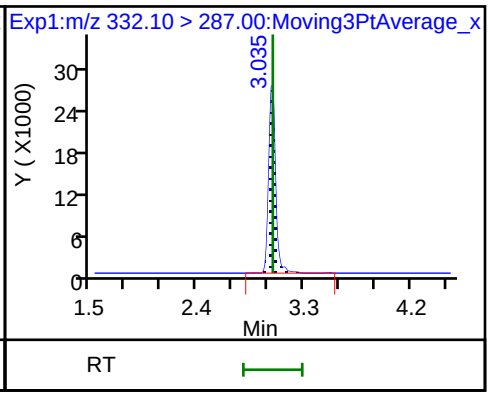
11 Perfluoropentanesulfonic acid



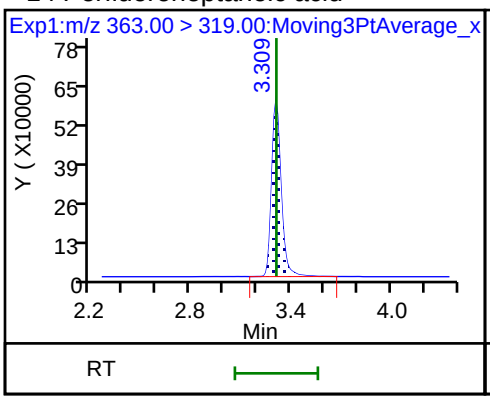
13 Perfluoro(2-propoxypropanoic) acid



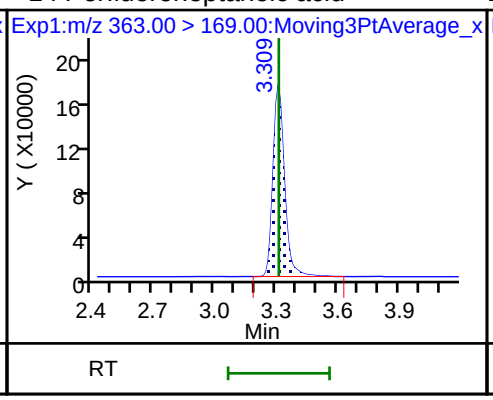
D 12 13C3 HFPO-DA



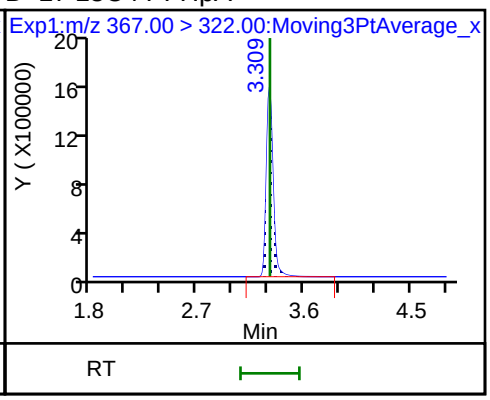
14 Perfluoroheptanoic acid



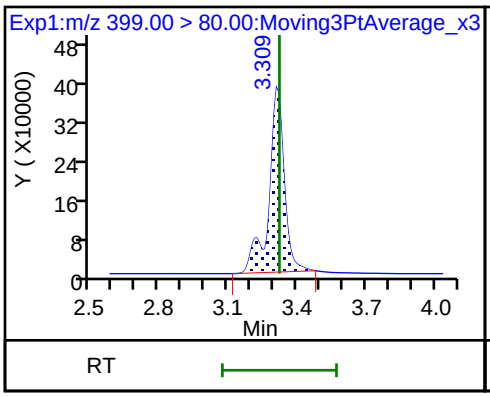
14 Perfluoroheptanoic acid



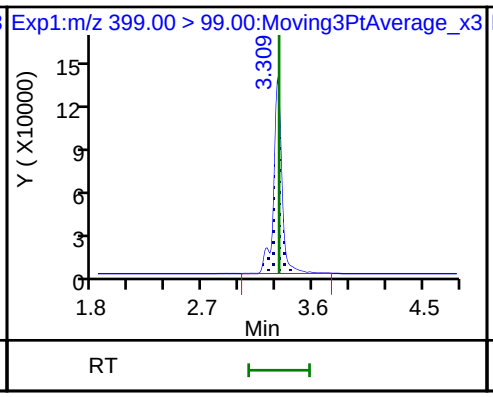
D 17 13C4 PFHpA



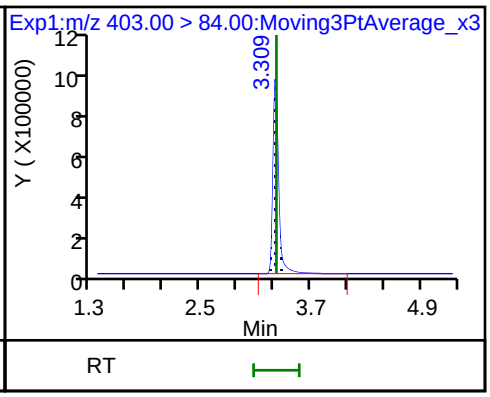
16 Perfluorohexanesulfonic acid



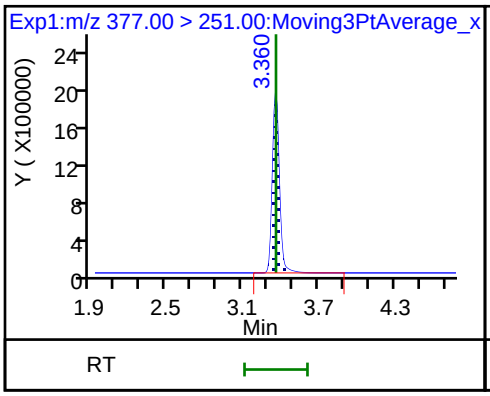
16 Perfluorohexanesulfonic acid



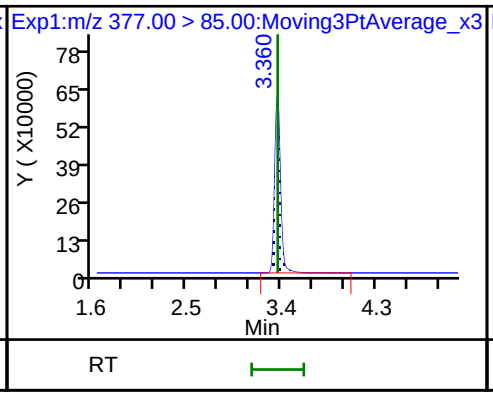
D 15 18O2 PFHxS



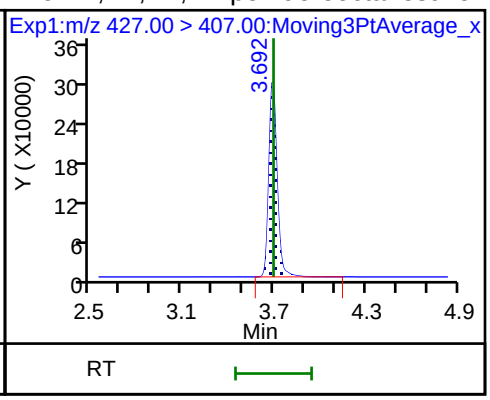
18 DONA



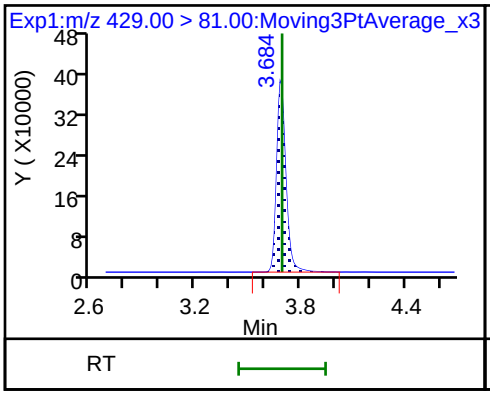
18 DONA



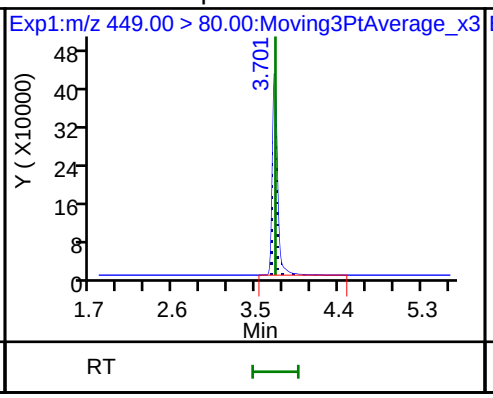
19 1H,1H,2H,2H-perfluorooctanesulfoni



D 20 M2-6:2 FTS



21 Perfluoroheptanesulfonic acid



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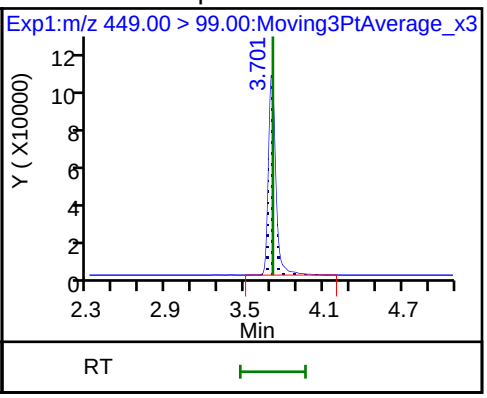
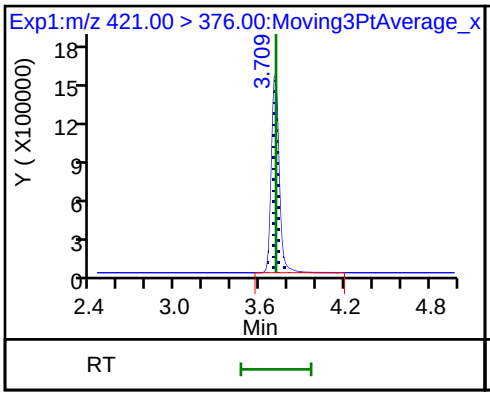
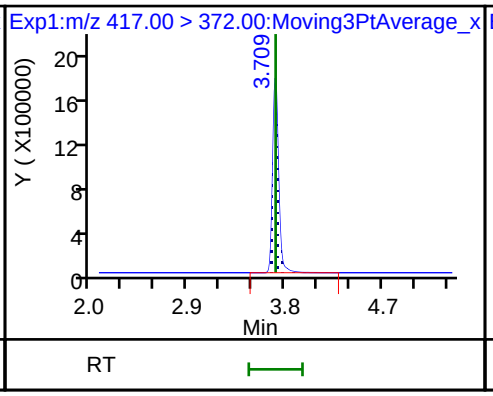


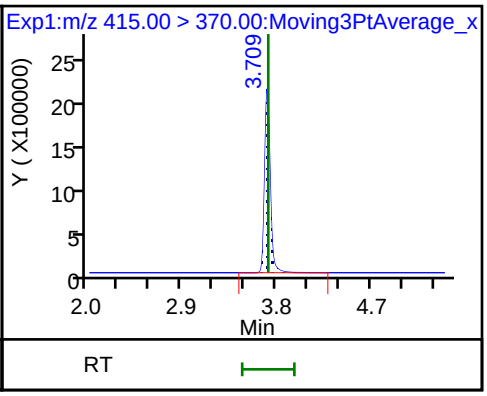
D 23 13C8 PFOA



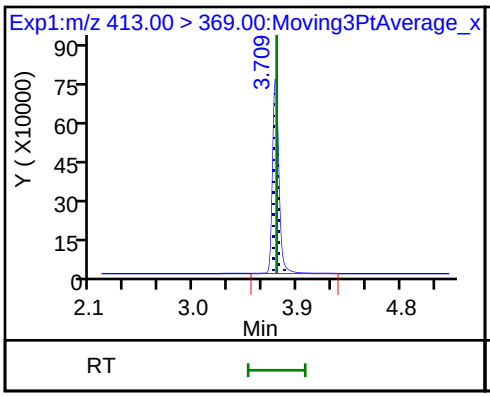
D 25 13C4 PFOA



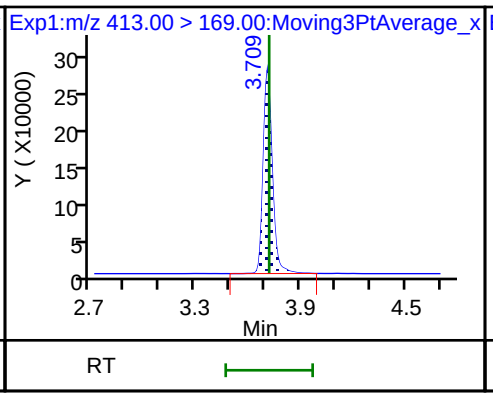
* 24 13C2 PFOA



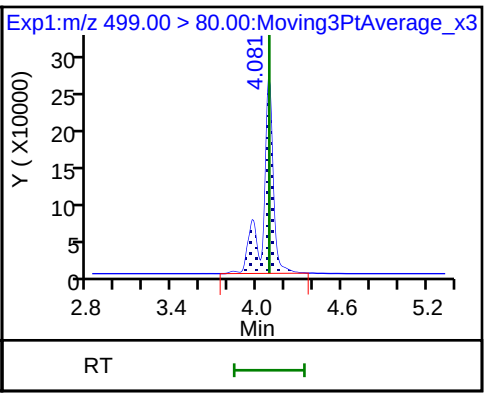
22 Perfluorooctanoic acid



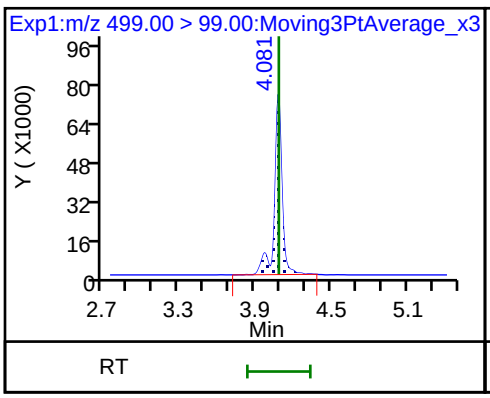
22 Perfluorooctanoic acid



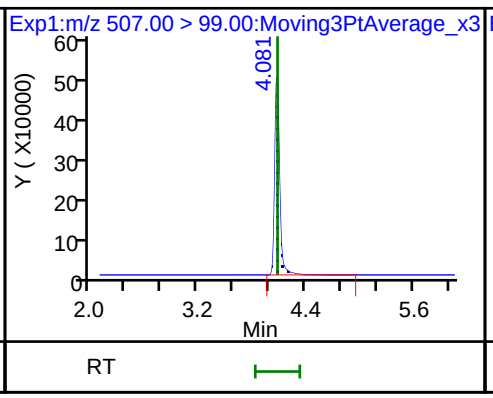
26 Perfluorooctanesulfonic acid



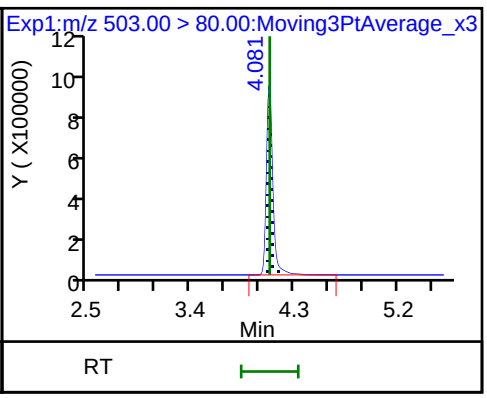
26 Perfluorooctanesulfonic acid



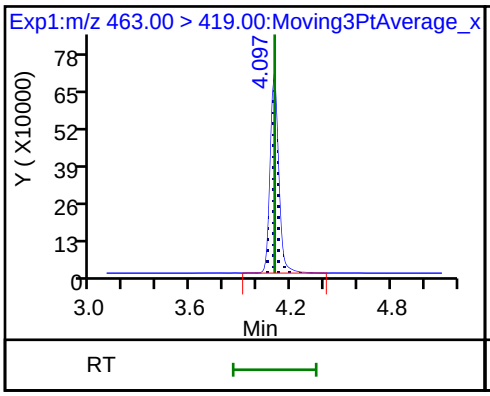
D 27 13C8 PFOS



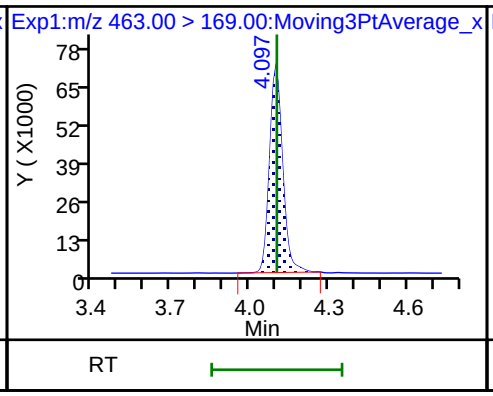
D 28 13C4 PFOS



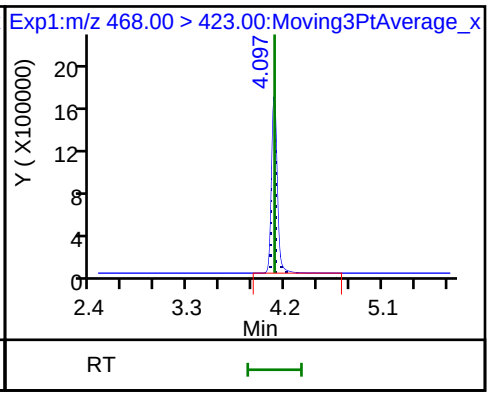
30 Perfluorononanoic acid



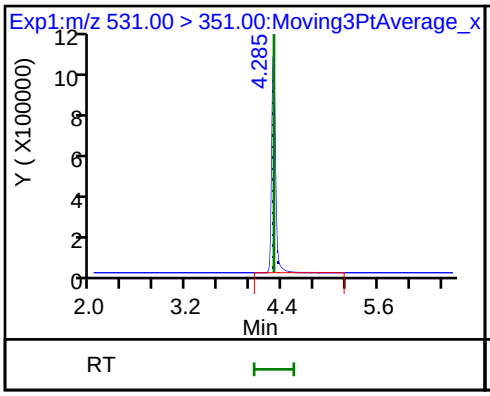
30 Perfluorononanoic acid



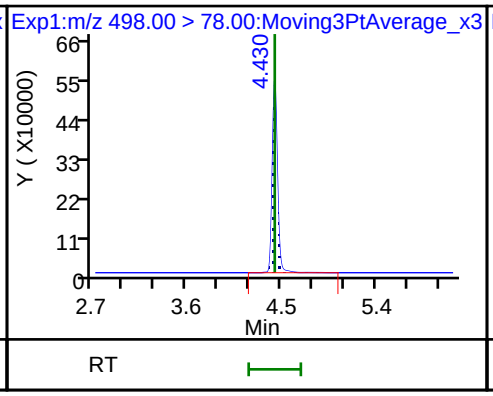
D 29 13C5 PFNA



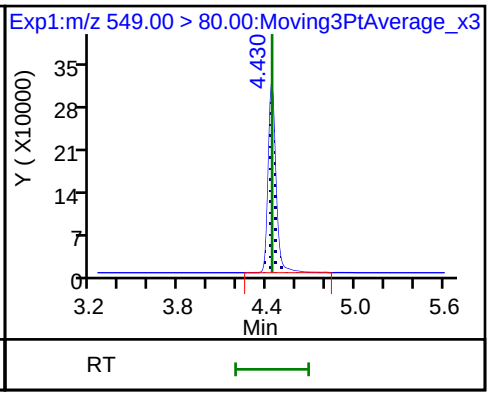
31 9-Chlorohexadecafluoro-3-oxanonane



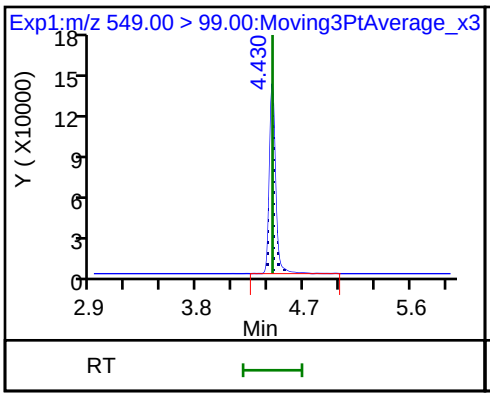
32 Perfluorooctanesulfonamide



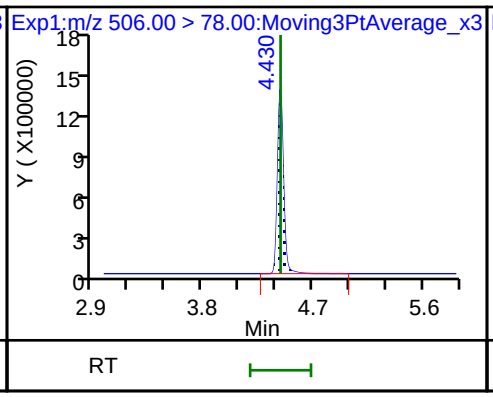
38 Perfluorononanesulfonic acid



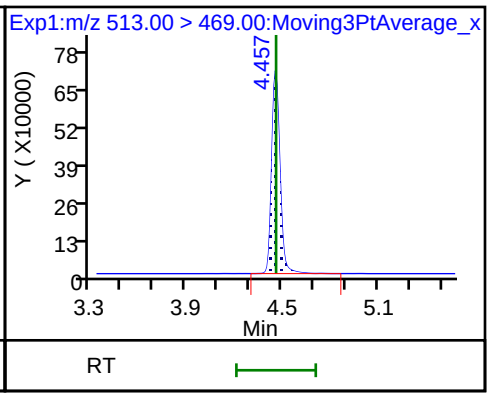
38 Perfluorononanesulfonic acid



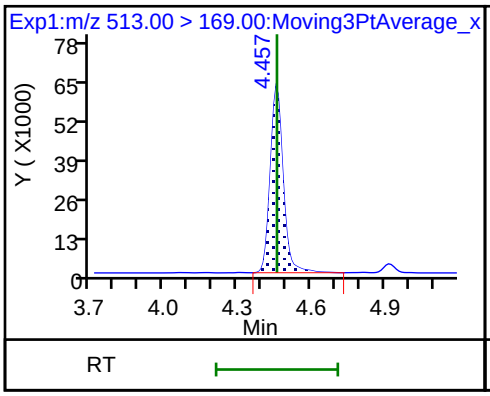
D 33 13C8 FOSA



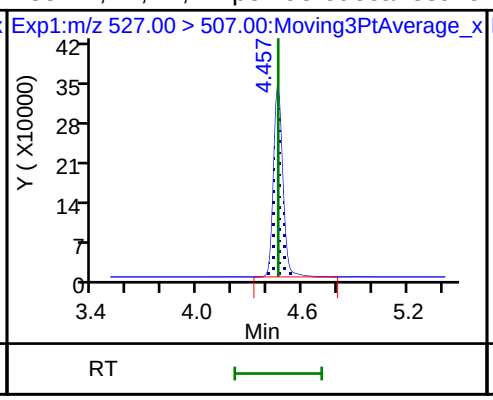
34 Perfluorodecanoic acid



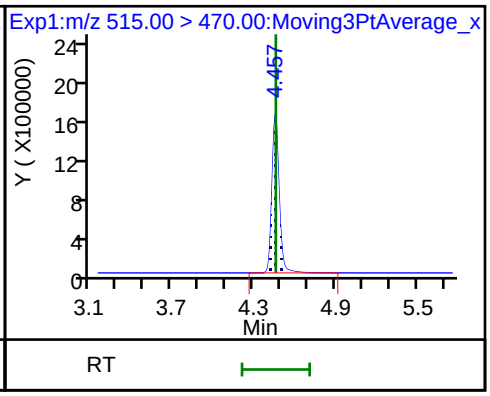
34 Perfluorodecanoic acid



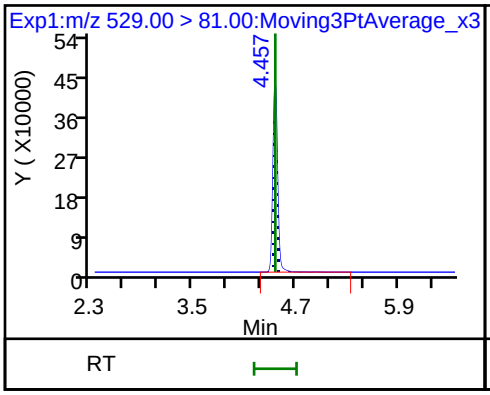
35 1H,1H,2H,2H-perfluorodecanesulfon



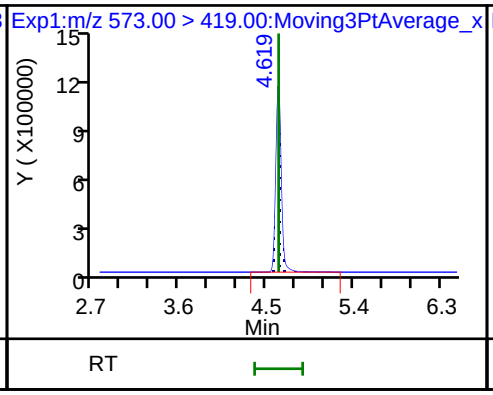
D 36 13C2 PFDA



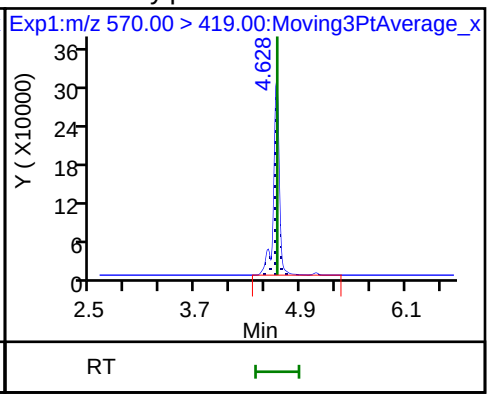
D 37 M2-8:2 FTS



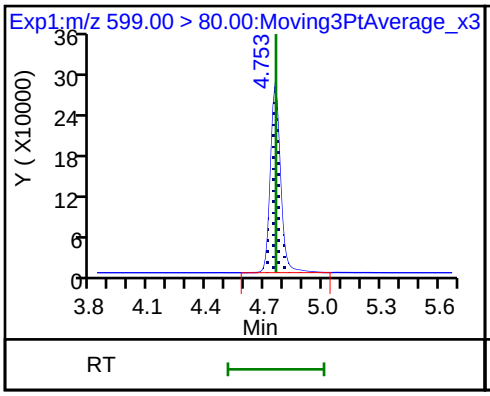
D 40 d3-NMeFOSAA



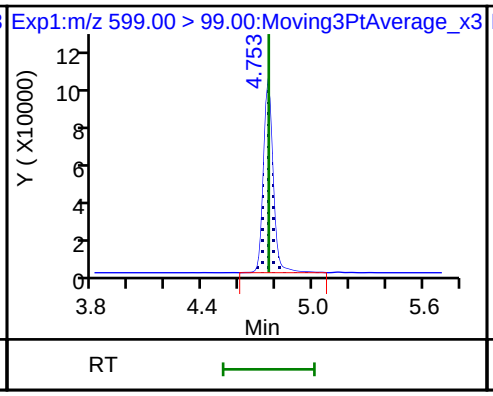
41 N-methylperfluorooctanesulfonamido



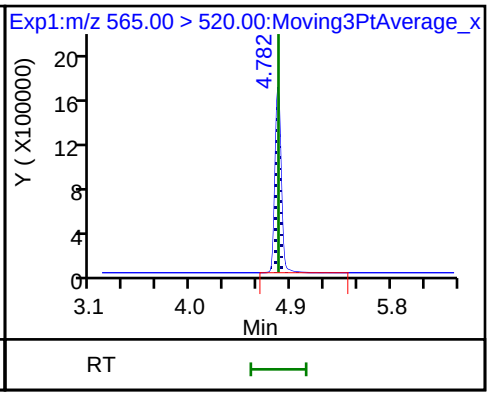
48 Perfluorodecanesulfonic acid



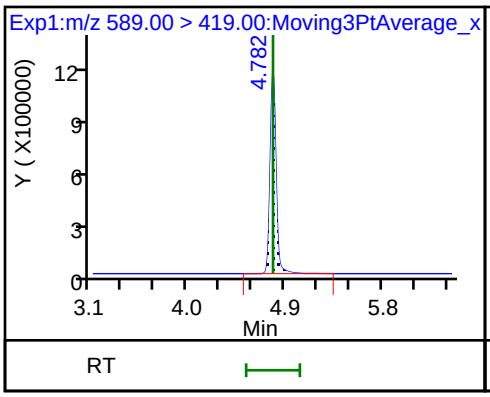
48 Perfluorodecanesulfonic acid



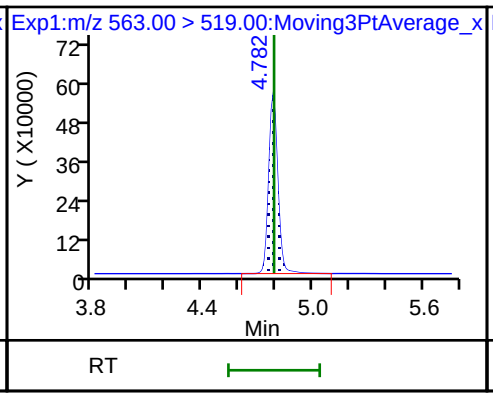
D 43 13C2 PFUnA



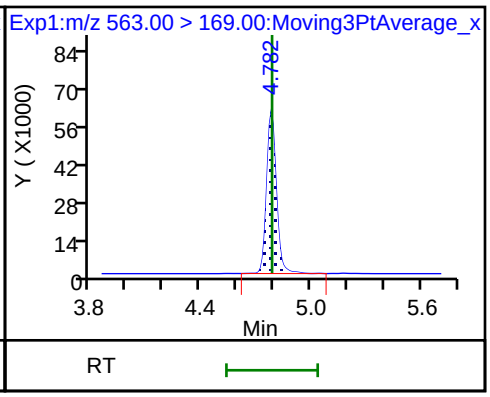
D 44 d5-NEtFOSAA



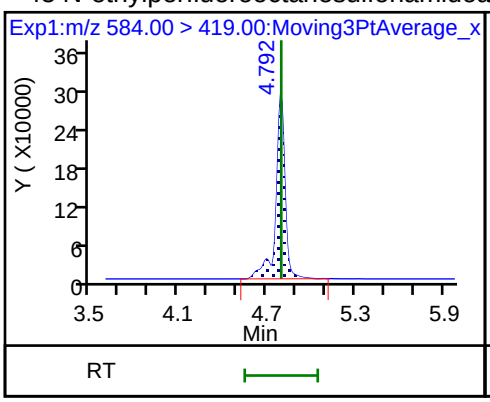
42 Perfluoroundecanoic acid



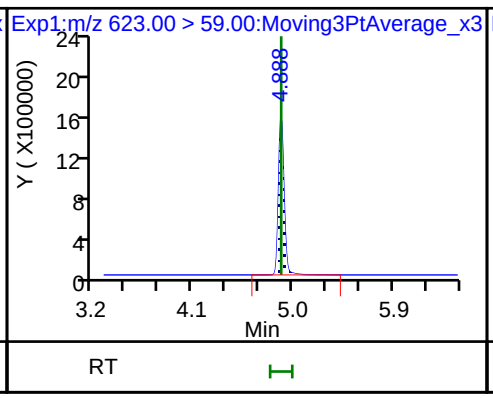
42 Perfluoroundecanoic acid



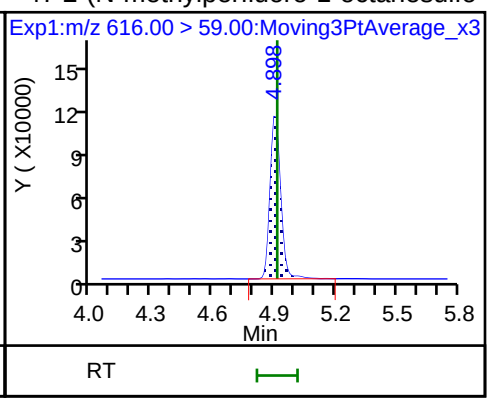
45 N-ethylperfluorooctanesulfonamidoa



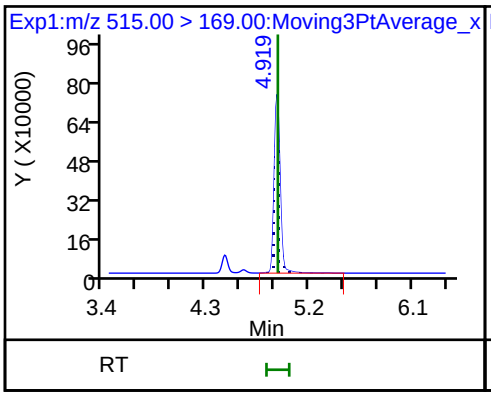
D 46 d7-N-MeFOSE-M



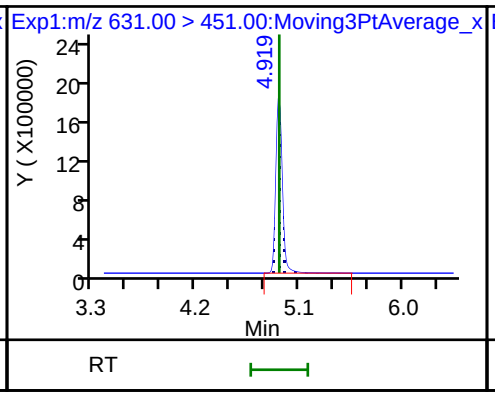
47 2-(N-methylperfluoro-1-octanesulfo



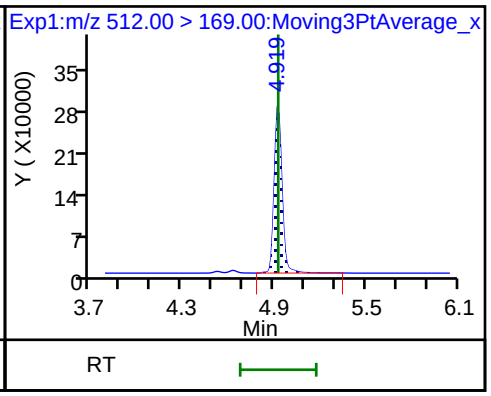
D 49 d-N-MeFOSA-M



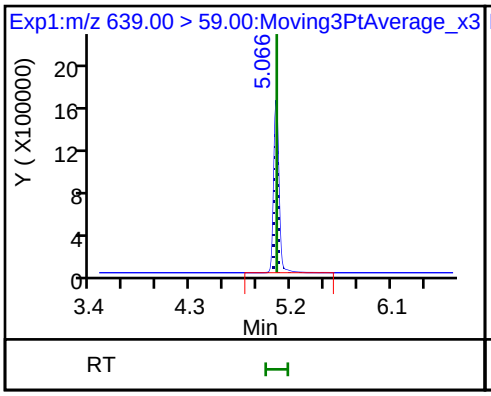
51 11-Chloroeicosafluoro-3-oxaundecan



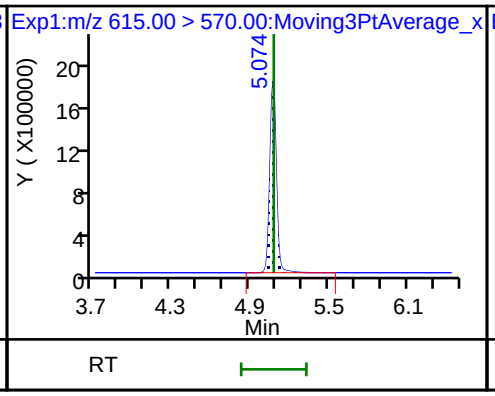
50 NMeFOSA



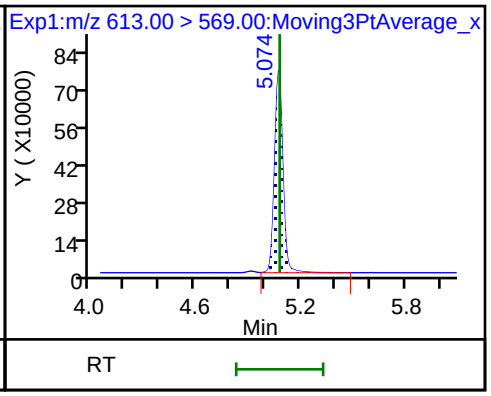
D 52 d9-N-EtFOSE-M



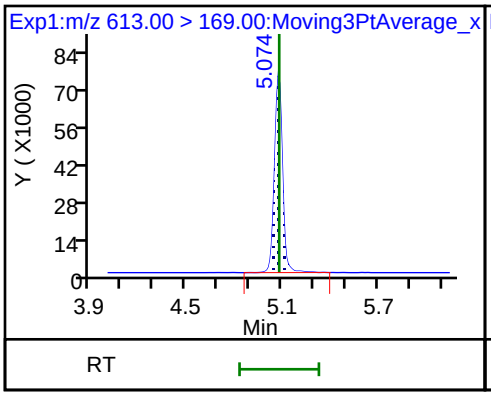
D 57 13C2 PFDoA



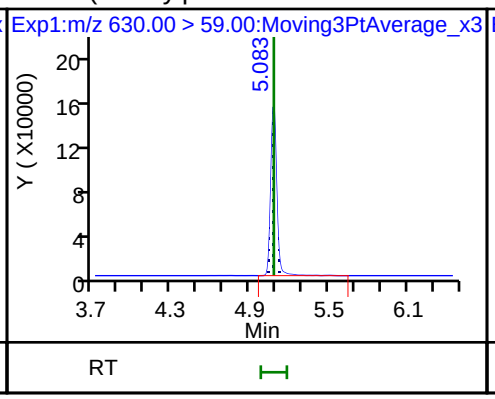
56 Perfluorododecanoic acid



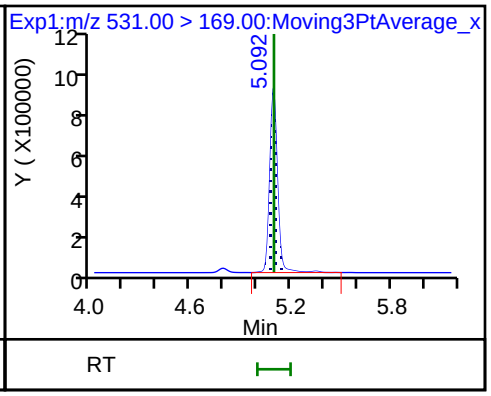
56 Perfluorododecanoic acid



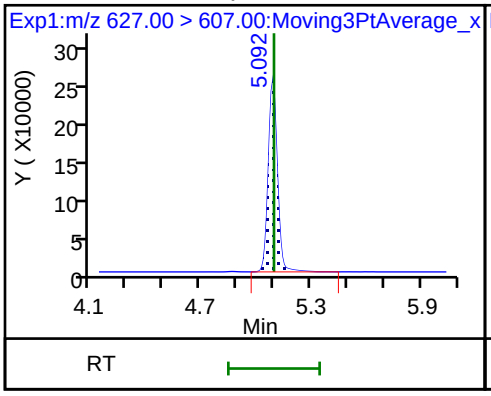
53 2-(N-ethylperfluoro-1-octanesulfon



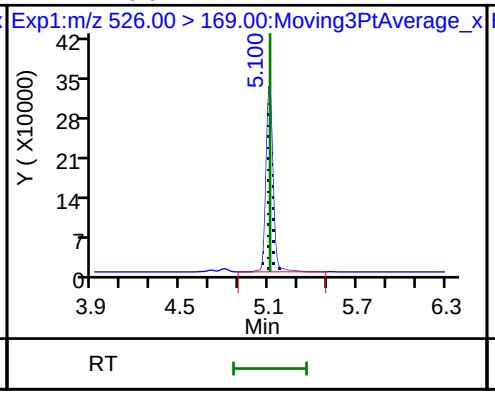
D 55 d-N-EtFOSA-M



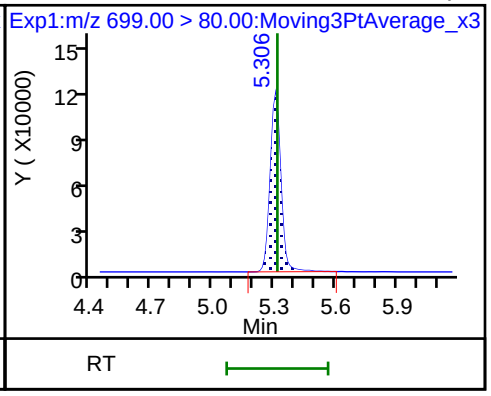
58 1H,1H,2H,2H-perfluorododecanesulfo



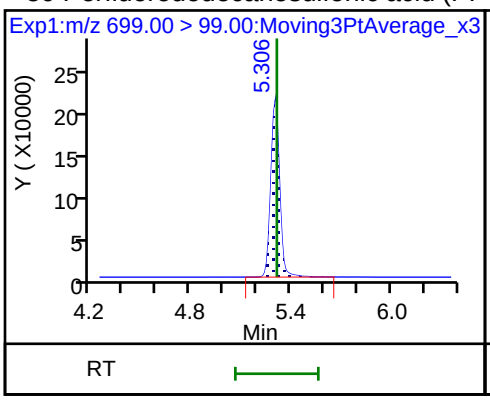
54 N-ethylperfluoro-1-octanesulfonami



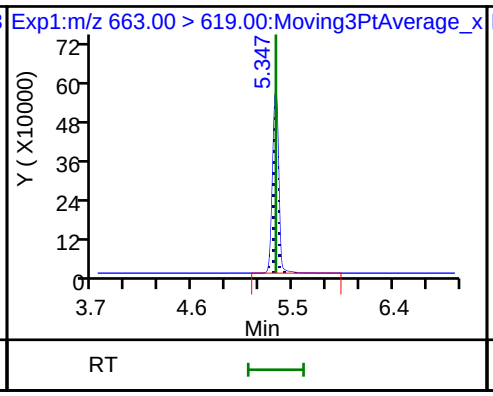
59 Perfluorododecanesulfonic acid (PF



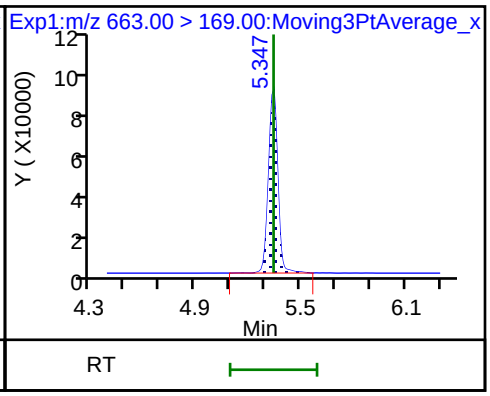
59 Perfluorododecanesulfonic acid (PF



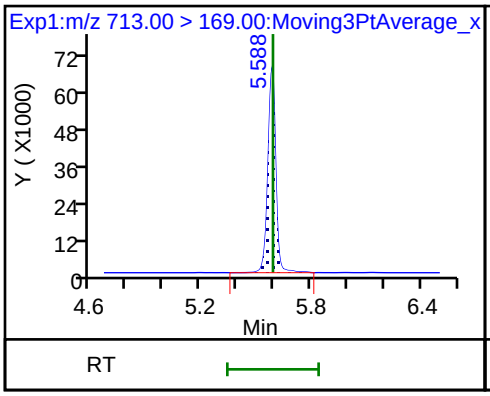
60 Perfluorotridecanoic acid



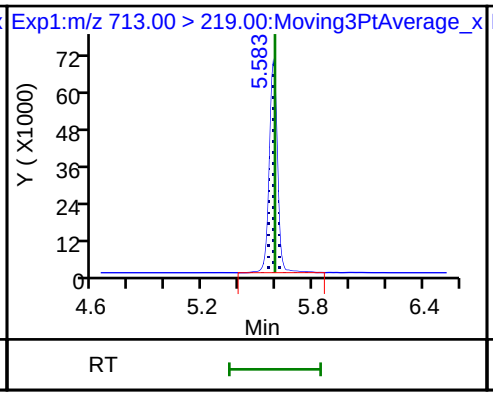
60 Perfluorotridecanoic acid



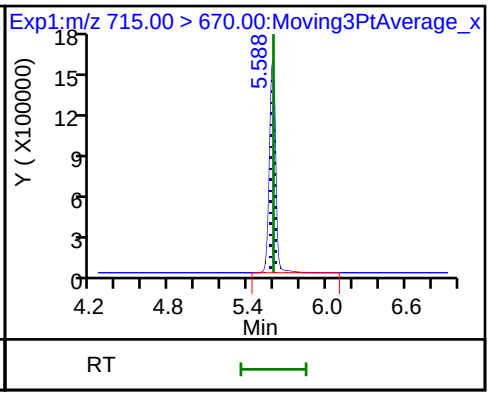
62 Perfluorotetradecanoic acid



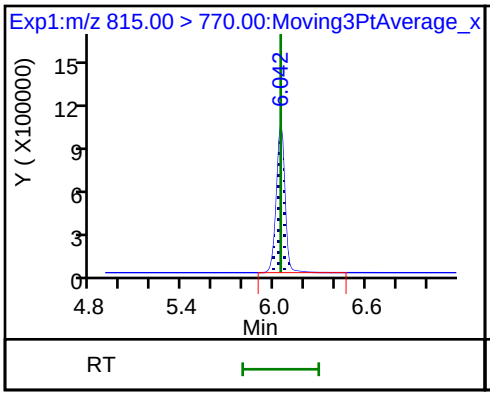
62 Perfluorotetradecanoic acid



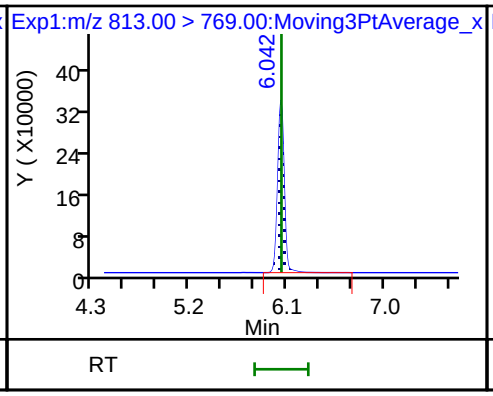
D 61 13C2 PFTeDA



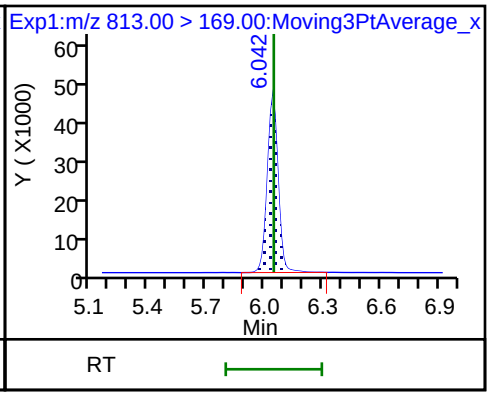
D 63 13C2 PFHxDA



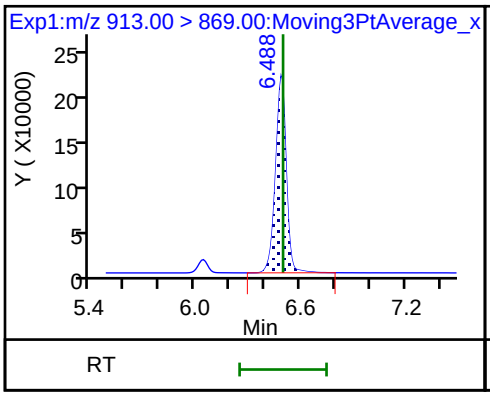
64 Perfluorohexadecanoic acid



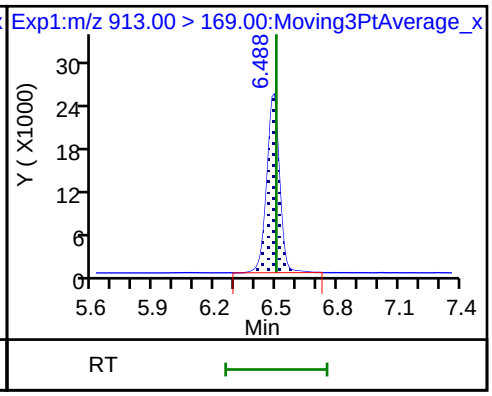
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid



39 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: ICV 320-328725/11 Calibration Date: 10/05/2019 19:29

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.05.ICALAAA_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.9423		2.77	2.50	10.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.085		2.65	2.50	5.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.788		2.64	2.50	5.5	50.0
4:2 FTS	AveID	2.563	2.790		2.54	2.34	8.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.999		2.69	2.50	7.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	1.009		2.67	2.35	13.7	50.0
HFPO-DA (GenX)	AveID	1.515	1.717		2.83	2.50	13.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.114		2.48	2.50	-0.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.246		2.55	2.50	1.8	40.0
DONA	AveID	2.582	2.823		2.73	2.50	9.4	50.0
6:2 FTS	AveID	2.329	2.564		2.61	2.37	10.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	1.097		2.64	2.38	10.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.142		2.53	2.50	1.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.024		2.39	2.50	-4.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.174		2.85	2.50	14.0	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7938		2.80	2.50	12.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6994		2.76	2.40	14.8	50.0
8:2 FTS	AveID	2.215	2.550		2.76	2.40	15.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	1.075		2.83	2.50	13.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.908		2.65	2.50	5.9	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8647		2.64	2.50	5.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8881		2.63	2.41	9.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.7820		2.49	2.50	-0.6	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.8359		2.62	2.50	4.8	40.0
F-53B Minor	AveID	1.870	1.561		2.09	2.50	-16.5	50.0
NMeFOSE	AveID	1.042	1.068		2.56	2.50	2.5	40.0
NMeFOSA	AveID	0.8723	0.9000		2.58	2.50	3.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.104		2.68	2.50	7.1	40.0
10:2 FTS	AveID	1.705	2.296		3.25	2.41	34.7	50.0
NEtFOSE	AveID	1.054	1.121		2.66	2.50	6.4	40.0
NEtFOSA	AveID	1.005	1.048		2.61	2.50	4.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0882		2.56	2.42	5.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

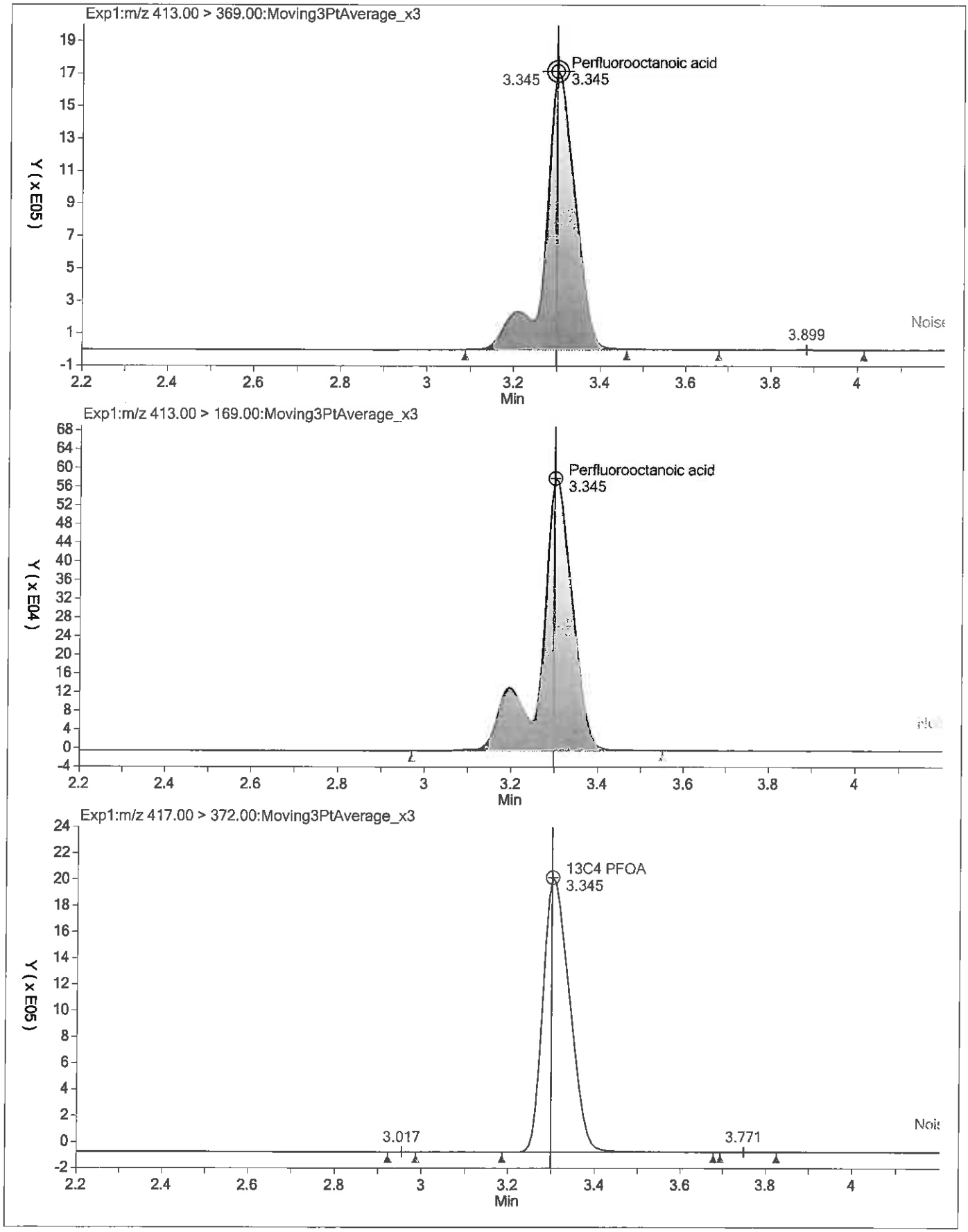
Lab Sample ID: ICV 320-328725/11 Calibration Date: 10/05/2019 19:29

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.05.ICALAAA_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6468		2.51	2.50	0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1697		3.00	2.50	20.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9702		2.77	2.50	10.7	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.6937		2.40	2.50	-3.9	50.0
13C4 PFBA	Ave	0.7371	0.7563		2.57	2.50	2.6	50.0
13C5 PFPeA	Ave	0.6168	0.6502		2.64	2.50	5.4	50.0
M2-4:2 FTS	Ave	0.1177	0.1177		2.33	2.34	-0.0	50.0
13C2 PFHxA	Ave	0.7105	0.7232		2.55	2.50	1.8	50.0
13C3 HFPO-DA	Ave	0.1236	0.1267		2.56	2.50	2.5	50.0
13C4 PFHpA	Ave	0.8130	0.8276		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	0.5224	0.5442		2.46	2.37	4.2	50.0
M2-6:2 FTS	Ave	0.1134	0.1037		2.17	2.38	-8.5	50.0
13C8 PFOA	Ave	0.8884	0.9404		2.65	2.50	5.8	50.0
13C4 PFOA	Ave	0.9372	0.9216		2.46	2.50	-1.7	50.0
13C4 PFOS	Ave	0.6062	0.6166		2.43	2.39	1.7	50.0
13C8 PFOS	Ave	0.1318	0.1328		2.52	2.50	0.7	50.0
13C5 PFNA	Ave	0.8344	0.8823		2.64	2.50	5.7	50.0
13C2 PFDA	Ave	0.9417	0.9282		2.46	2.50	-1.4	50.0
M2-8:2 FTS	Ave	0.1066	0.1010		2.27	2.40	-5.3	50.0
13C8 FOSA	Ave	0.3127	0.3376		2.70	2.50	8.0	50.0
d3-NMeFOSAA	Ave	0.4441	0.4477		2.52	2.50	0.8	50.0
13C2 PFUnA	Ave	0.8035	0.8454		2.63	2.50	5.2	50.0
d5-NEtFOSAA	Ave	0.3818	0.3868		2.53	2.50	1.3	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2112		12.9	12.5	3.3	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2412		2.70	2.50	8.0	50.0
13C2 PFDoA	Ave	0.8846	0.8599		2.43	2.50	-2.8	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2165		12.7	12.5	1.8	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2310		2.68	2.50	7.4	50.0
13C2 PFTeDA	Ave	0.6272	0.6060		2.42	2.50	-3.4	50.0
13C2 PFHxDA	Ave	0.6893	0.6886		2.50	2.50	-0.1	50.0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Perfluorooctanoic acid
3.345
3.345
3.899
Y (x E05)
Min
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x3
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3.345
Y (x E04)
Min
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3
13C4 PFOA
3.345
3.017
3.771
Y (x E05)
Min

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_011.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 05-Oct-2019 19:29:59 ALS Bottle#: 17 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist:

Method: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 07-Oct-2019 12:42:46 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0338

First Level Reviewer: montgomeryj Date: 06-Oct-2019 10:58:28
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.908	1.903	0.005	0.570	7082989	2.56		103	6899	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.908	1.906	0.002	1.000	6674061	2.77			1268	
D 4 13C5 PFPeA										
267.90 > 223.00	2.206	2.206	0.0	0.660	6089862	2.64		105	4928	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.206	2.207	-0.001	1.000	6606785	2.65			1300	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.233	2.236	-0.003	0.757	9116003	2.64	Target=2.62		620	
298.90 > 99.00	2.233	2.236	-0.003	0.757	3602707		2.53(1.31-3.93)		610	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.525	2.519	0.006	0.755	1029122	2.33		100.0	1797	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.515	2.521	-0.006	0.996	2870778	2.54			3674	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.559	-0.002	0.765	6773459	2.54		102	2825	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.559	-0.002	1.000	6763735	2.69	Target=14.83		1263	
313.00 > 119.00	2.557	2.559	-0.002	1.000	446322		15.15(7.41-22.24)		432	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.579	2.577	0.002	0.874	4824809	2.67	Target=1.98		4335	
349.00 > 99.00	2.579	2.577	0.002	0.874	2207927		2.19(0.99-2.97)		3441	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.687	2.686	0.001	1.000	2037924	2.83			1454	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.687	2.686	0.001	0.803	1186688	2.56		103	2499	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.946	2.942	0.004	0.881	7750571	2.54		102	3513	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.946	2.944	0.002	1.000	8631324	2.48	Target=4.24		1897	
363.00 > 169.00	2.946	2.944	0.002	1.000	2092747		4.12(2.12-6.36)		1280	
D 16 18O2 PFHxS										
403.00 > 84.00	2.951	2.947	0.004	0.882	4821899	2.46		104	5911	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.951	2.948	0.003	1.000	6348705	2.55	Target=3.27		3622	M
399.00 > 99.00	2.951	2.948	0.003	1.000	1832959		3.46(1.64-4.91)		1871	
18 DONA										
377.00 > 251.00	2.993	2.995	-0.002	0.807	16303096	2.73	Target=2.25		5671	
377.00 > 85.00	2.993	2.995	-0.002	0.807	7703667		2.12(1.12-3.37)		4469	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.323	3.319	0.004	0.994	922763	2.17		91.5	2018	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.323	3.320	0.003	1.000	2360750	2.61			2077	
D 21 13C8 PFOA										
421.00 > 376.00	3.338	3.340	-0.002	0.998	8807068	2.65		106	7153	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.340	-0.002	0.899	6030433	2.64	Target=3.58		2605	
449.00 > 99.00	3.338	3.340	-0.002	0.899	1596007		3.78(1.79-5.37)		1743	
D 23 13C4 PFOA										
417.00 > 372.00	3.345	3.341	0.004	1.000	8631165	2.46		98.3	3460	
* 25 13C2 PFOA										
415.00 > 370.00	3.345	3.342	0.003		9365549	2.50			4253	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.345	3.344	0.001	1.000	9855500	2.52	Target=2.79		652	
413.00 > 169.00	3.345	3.344	0.001	1.000	3451916		2.86(1.40-4.19)		245	
D 26 13C8 PFOS										
507.00 > 99.00	3.711	3.710	0.001	1.110	1243809	2.52		101	1891	
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.714	-0.003	1.110	5520269	2.43		102	5287	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.711	3.714	-0.003	1.000	5913970	2.39	Target=3.83		3089	
499.00 > 99.00	3.719	3.714	0.005	1.002	1414255		4.18(1.92-5.75)		2704	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.114	8263019	2.64		106	4189	
29 Perfluorononanoic acid										
463.00 > 419.00	3.734	3.729	0.005	1.002	9700327	2.85	Target=5.58		4442	
463.00 > 169.00	3.727	3.729	-0.002	1.000	1767623		5.49(2.79-8.37)		2210	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.918	3.922	-0.004	1.000	4583518	2.80			4923	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.055	4.057	-0.002	1.093	3876868	2.76	Target=4.51		3736	
549.00 > 99.00	4.055	4.057	-0.002	1.093	805899		4.81(2.25-6.76)		1892	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.082	4.084	-0.002	1.000	9343837	2.83	Target=15.45		2969	
513.00 > 169.00	4.082	4.084	-0.002	1.000	621359		15.04(7.73-23.18)		295	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.084	-0.002	1.220	906196	2.27		94.7	2105	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.084	-0.002	1.220	8693234	2.46		98.6	5666	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.084	-0.002	1.000	2310562	2.76			2903	
D 32 13C8 FOSA										
506.00 > 78.00	4.117	4.113	0.004	1.231	3161486	2.70		108	2754	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.117	4.117	0.0	1.000	9194058	2.65			2796	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.241	0.002	1.268	4192935	2.52		101	3413	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.243	4.246	-0.003	1.000	3625440	2.64			447	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.374	4.375	-0.001	1.178	4943739	2.63	Target=4.64		4074	
599.00 > 99.00	4.374	4.375	-0.001	1.178	1020105		4.85(2.32-6.96)		3541	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.398	0.002	1.315	7917767	2.63		105	3611	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.399	0.001	1.000	6192016	2.49	Target=9.27		3831	
563.00 > 169.00	4.400	4.399	0.001	1.000	639125		9.69(4.63-13.90)		338	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.404	-0.004	1.315	3622615	2.53		101	2884	
45 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	4.409	4.409	-0.001	1.002	3027963	2.62			1833	M
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.537	4.537	0.0	1.000	9015637	2.09			4542	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.581	4.580	0.001		9891930	12.9		103	2672	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.590	4.590	0.0	1.002	2112459	2.56			3382	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.599	4.602	-0.003		2258885	2.70		108	276	
49 NMeFOSA										
512.00 > 169.00	4.608	4.607	0.001	1.002	2032882	2.58			1292	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.680	0.003	1.400	8053626	2.43		97.2	4567	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.683	4.681	0.002	1.000	8888471	2.68	Target=9.58		3343	
613.00 > 169.00	4.683	4.681	0.002	1.000	963490		9.23(4.79-14.36)		562	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.702	4.699	0.003	1.152	2094078	3.25			2721	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.755	4.752	0.003		10138201	12.7		102	4897	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.763	4.763	0.0	1.002	2273976	2.66			1228	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.778	4.779	-0.001		2163408	2.68		107	1533	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.786	4.786	0.0	1.002	2266361	2.61			838	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.901	4.904	-0.003	1.321	492937	2.56	Target=0.64		2260	
699.00 > 99.00	4.901	4.904	-0.003	1.321	752451		0.66(0.32-0.96)		1670	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.935	4.935	0.0	1.054	5209009	2.51	Target=5.94		4081	
663.00 > 169.00	4.935	4.935	0.0	1.054	886076		5.88(2.97-8.91)		605	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.169	5.169	0.0	1.000	963215	3.00	Target=1.42		752	
713.00 > 219.00	5.169	5.169	0.0	1.000	645194		1.49(0.71-2.13)		336	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.169	5.170	-0.001	1.545	5675406	2.42		96.6	3804	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.576	5.579	-0.003	1.667	6449090	2.50		99.9	8217	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.586	5.581	0.005	1.002	6256777	2.77	Target=6.39		3266	
813.00 > 169.00	5.586	5.581	0.005	1.002	967608		6.47(3.19-9.58)		3249	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.949	5.945	0.004	1.067	4473642	2.40	Target=6.02		2525	
913.00 > 169.00	5.941	5.945	-0.004	1.065	762192		5.87(3.01-9.03)		2693	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00027 Amount Added: 1.00 Units: mL

Report Date: 07-Oct-2019 12:42:47 Chrom Revision: 2.3 17-Sep-2019 16:19:08

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_011.d

Injection Date: 05-Oct-2019 19:29:59 Instrument ID: A9

Lims ID: ICV

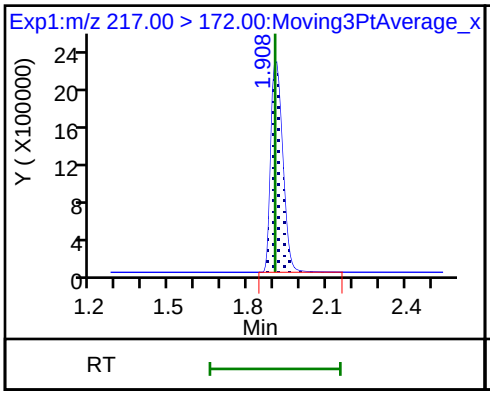
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 17 Worklist Smp#: 11

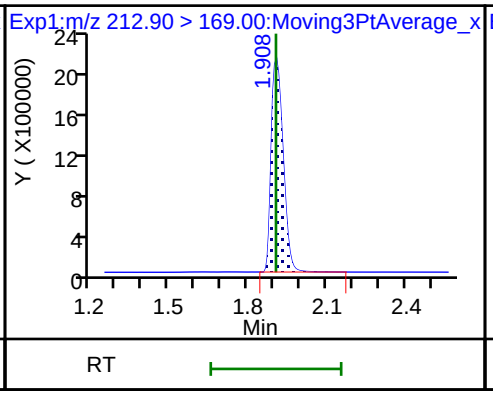
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

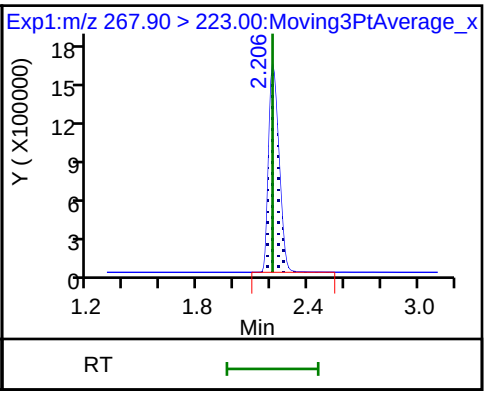
D 1 13C4 PFBA



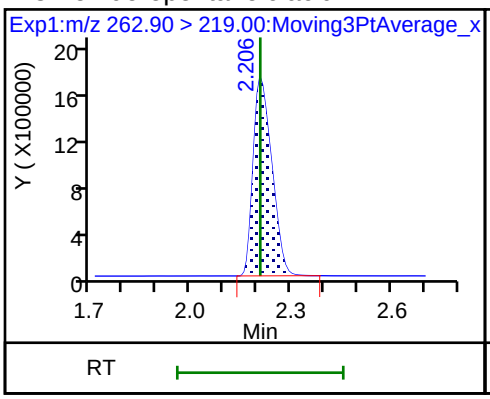
2 Perfluorobutanoic acid



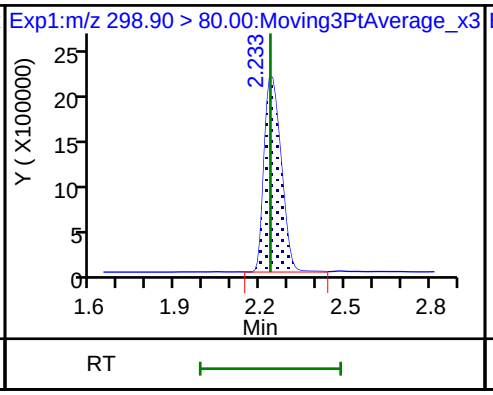
D 4 13C5 PFPeA



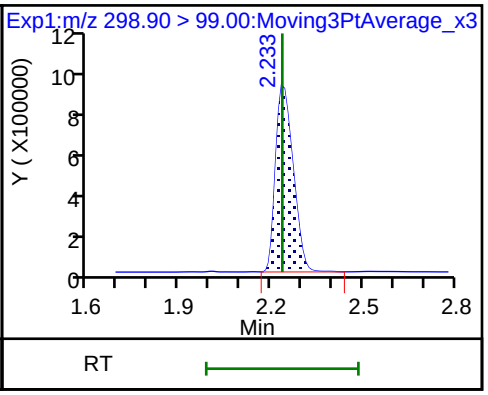
3 Perfluoropentanoic acid



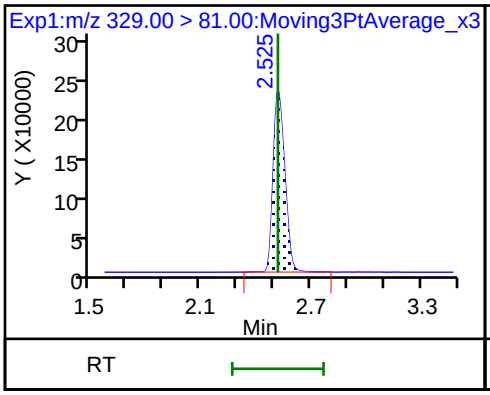
5 Perfluorobutanesulfonic acid



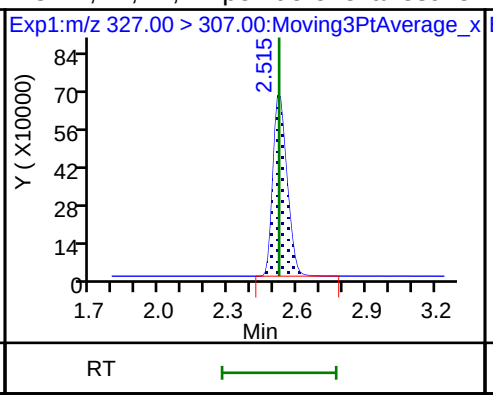
5 Perfluorobutanesulfonic acid



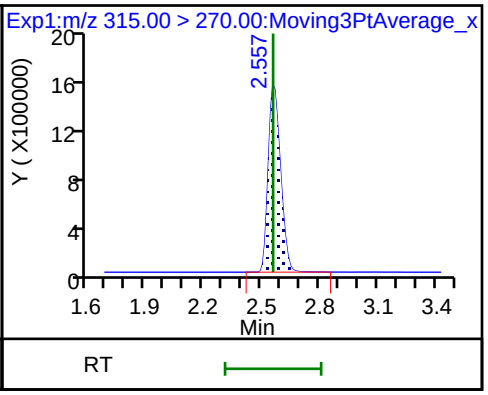
D 7 M2-4:2 FTS



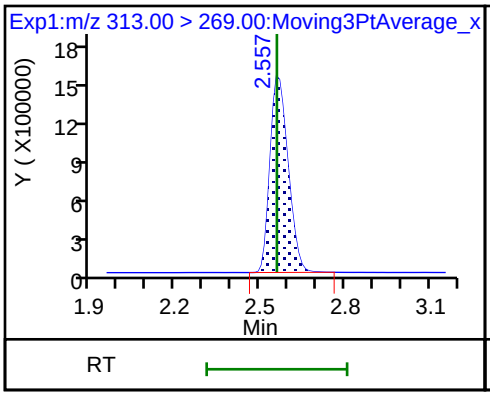
8 1H,1H,2H,2H-perfluorohexanesulfon



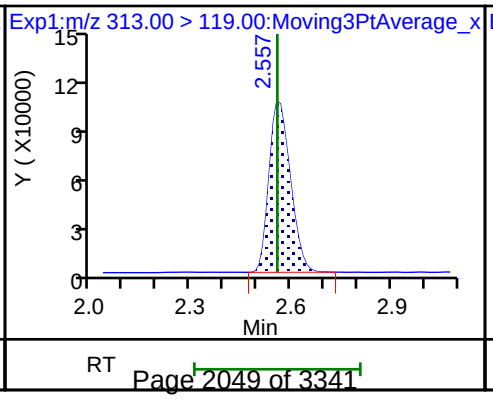
D 9 13C2 PFHxA



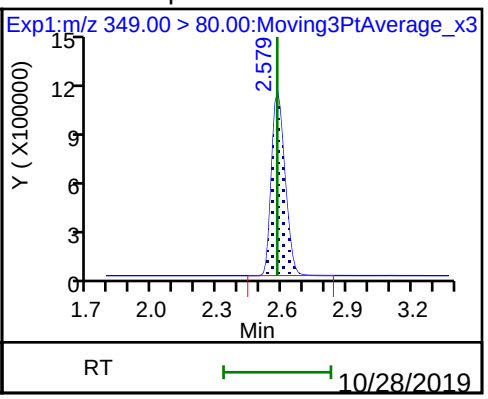
10 Perfluorohexanoic acid



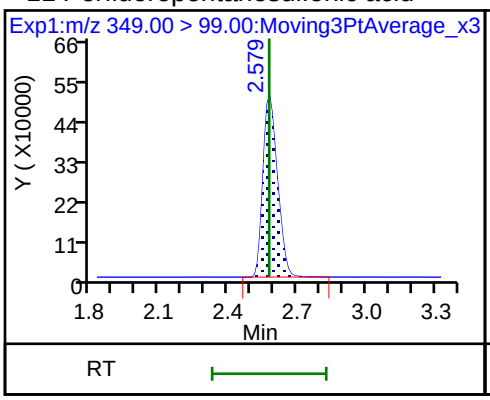
10 Perfluorohexanoic acid



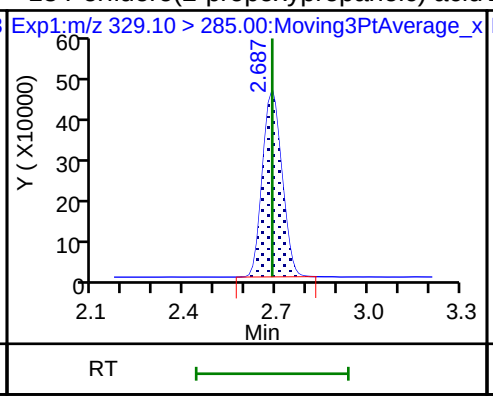
11 Perfluoropentanesulfonic acid



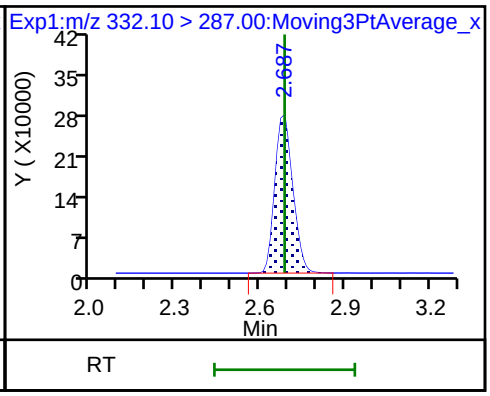
11 Perfluoropentanesulfonic acid



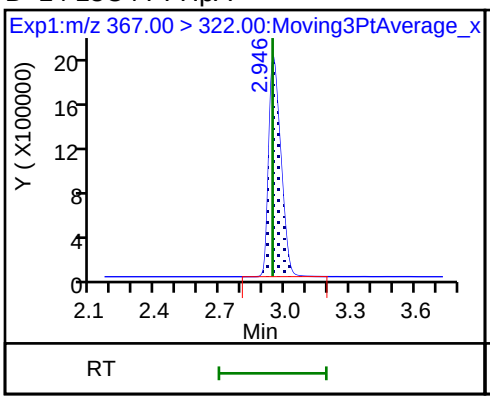
13 Perfluoro(2-propoxypropanoic) acid



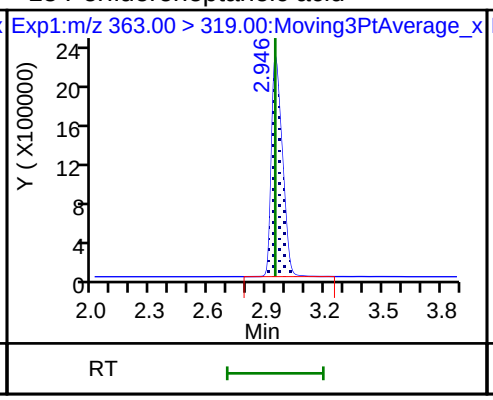
D 12 13C3 HFPO-DA



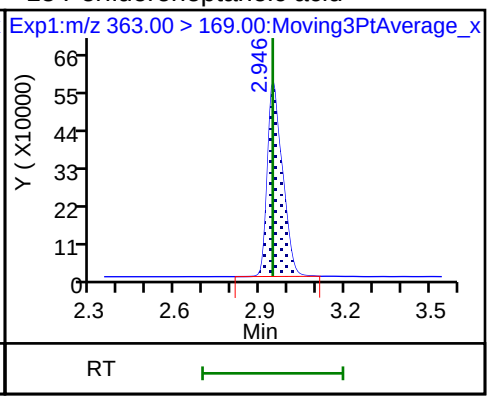
D 14 13C4 PFHpA



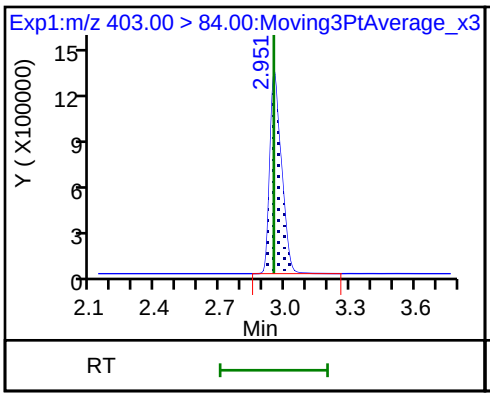
15 Perfluoroheptanoic acid



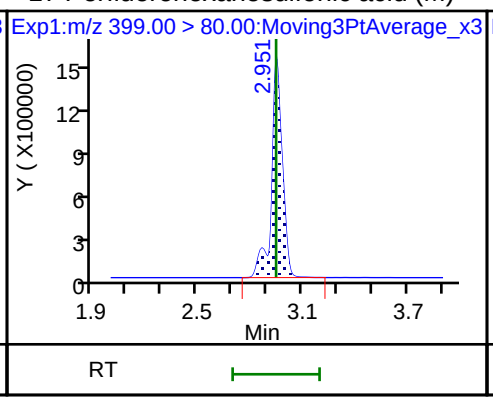
15 Perfluoroheptanoic acid



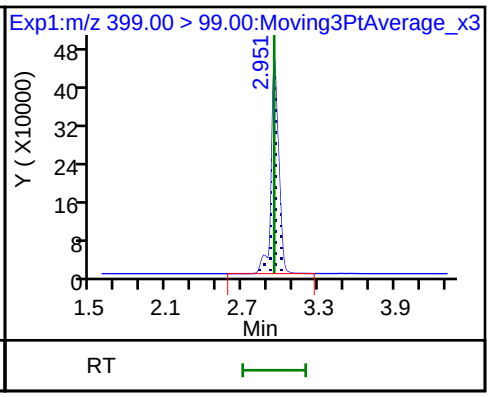
D 16 18O2 PFHxS



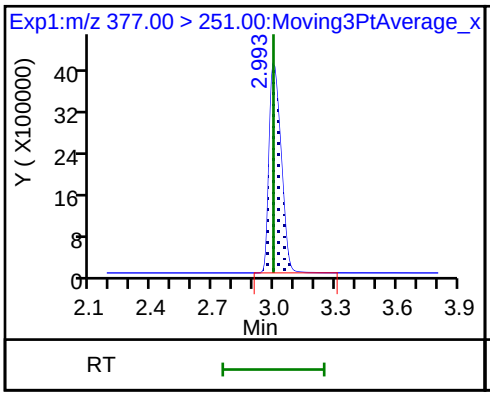
17 Perfluorohexanesulfonic acid (M)



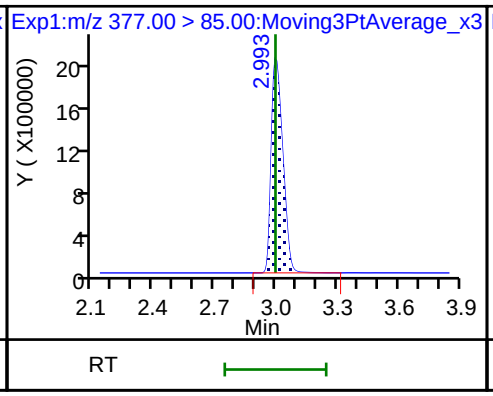
17 Perfluorohexanesulfonic acid



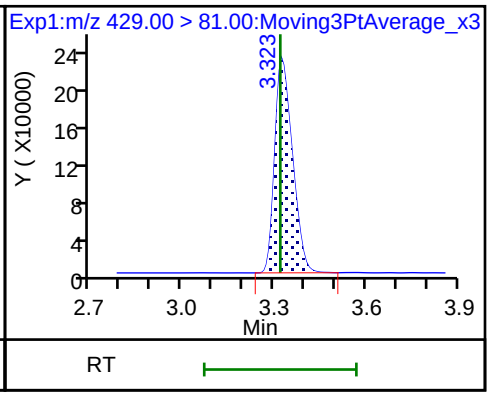
18 DONA



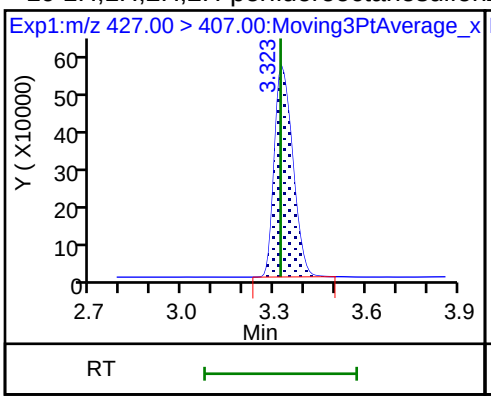
18 DONA



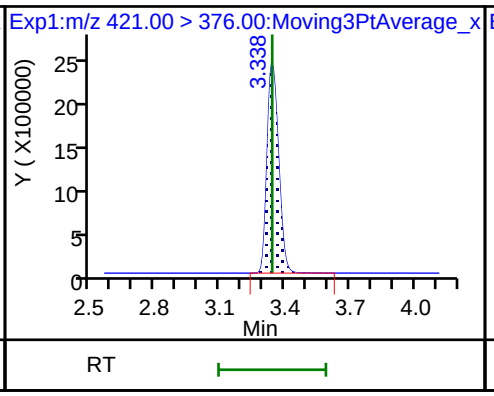
D 20 M2-6:2 FTS



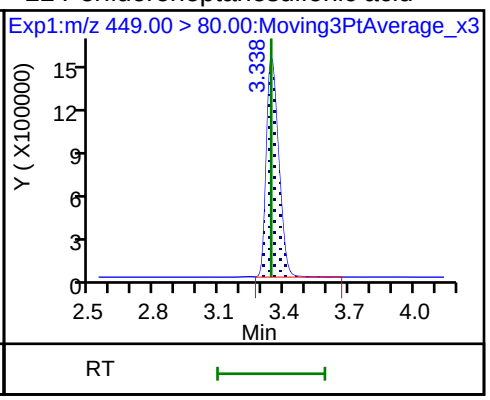
19 1H,1H,2H,2H-perfluorooctanesulfon



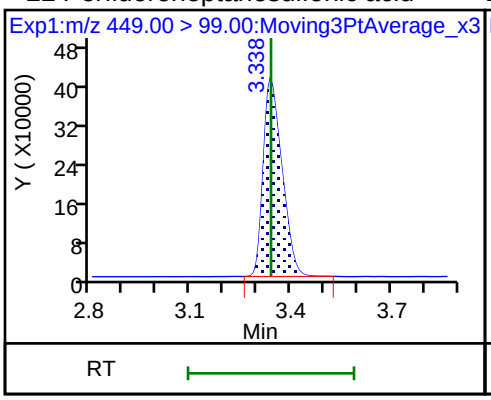
D 21 13C8 PFOA



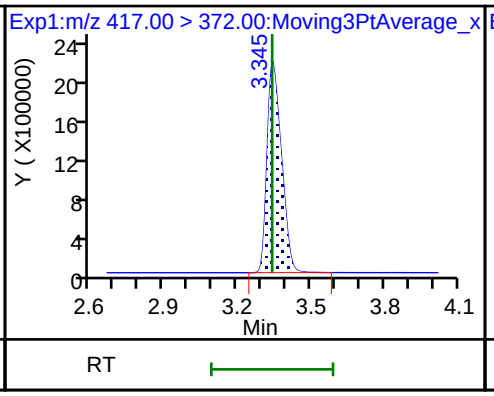
22 Perfluoroheptanesulfonic acid



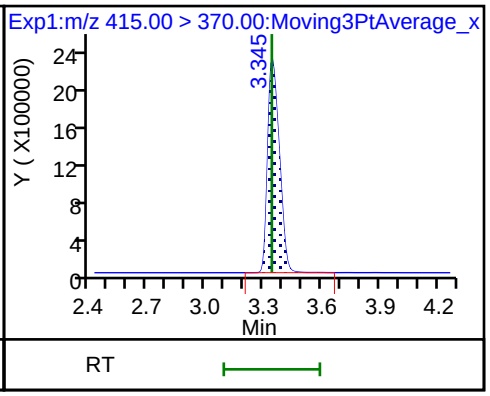
22 Perfluoroheptanesulfonic acid



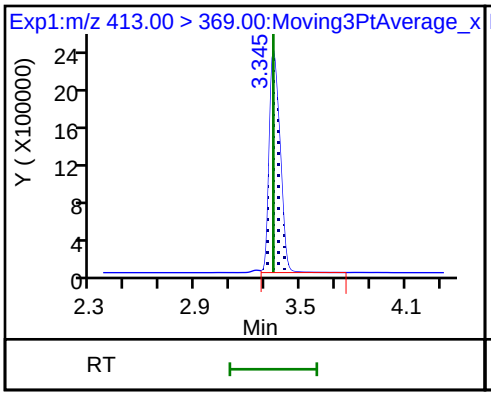
D 23 13C4 PFOA



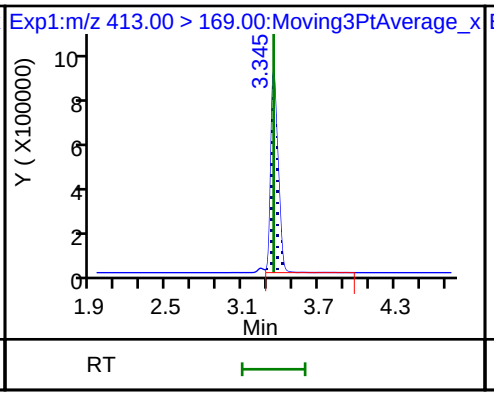
* 25 13C2 PFOA



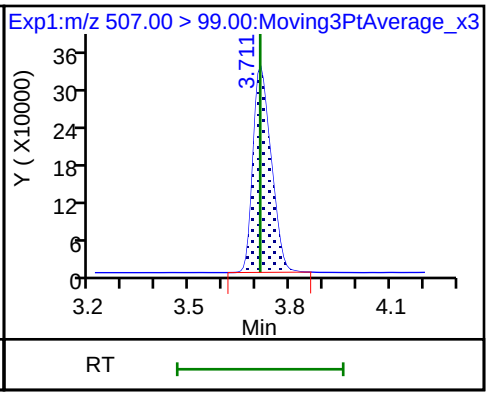
24 Perfluorooctanoic acid



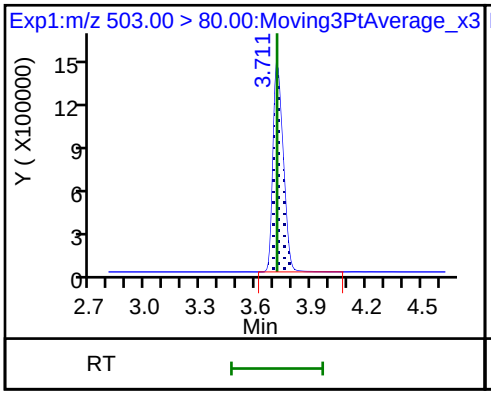
24 Perfluorooctanoic acid



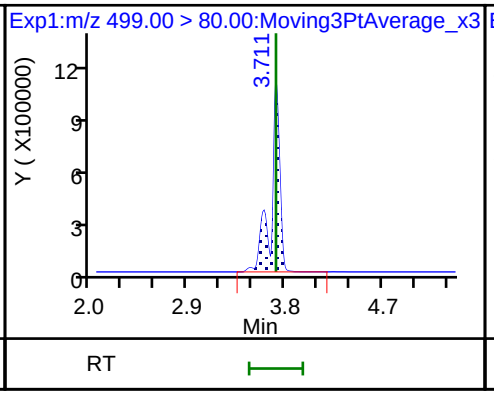
D 26 13C8 PFOS



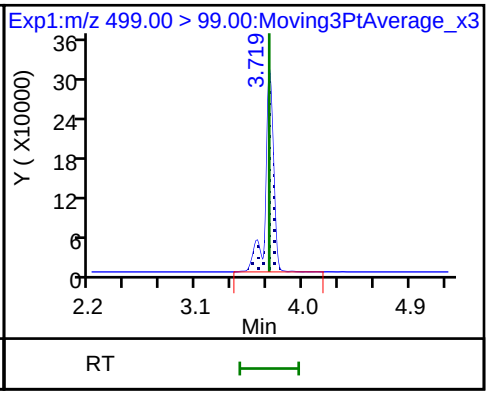
D 27 13C4 PFOS



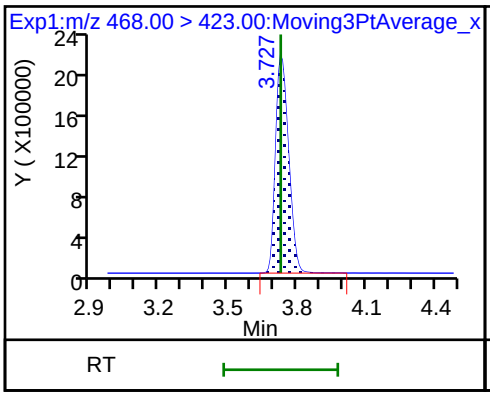
28 Perfluorooctanesulfonic acid



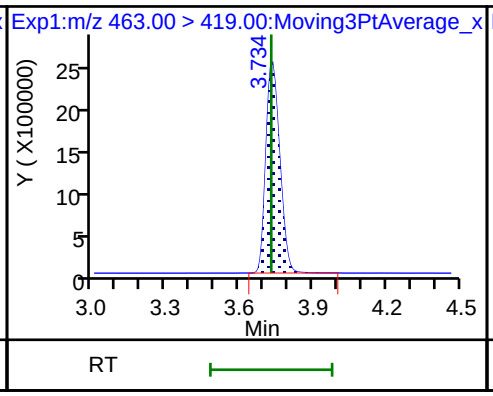
28 Perfluorooctanesulfonic acid



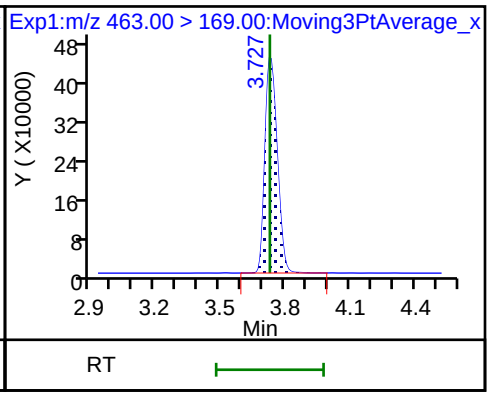
D 30 13C5 PFNA



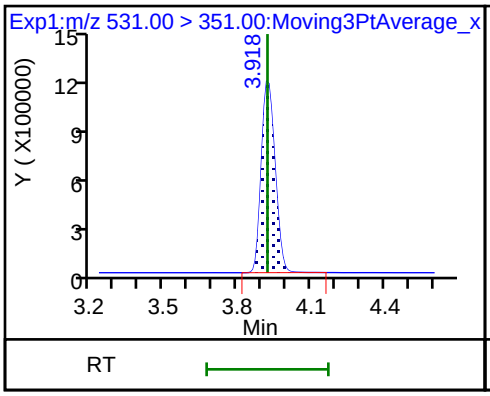
29 Perfluorononanoic acid



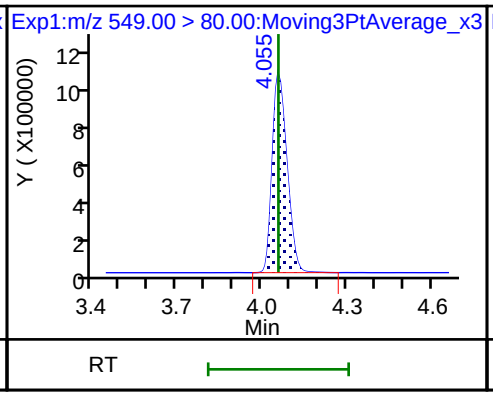
29 Perfluorononanoic acid



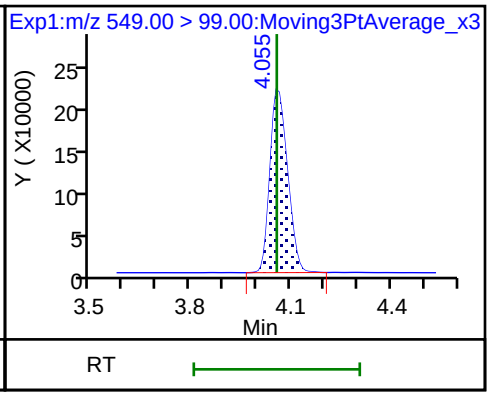
31 9-Chlorohexadecafluoro-3-oxanonane



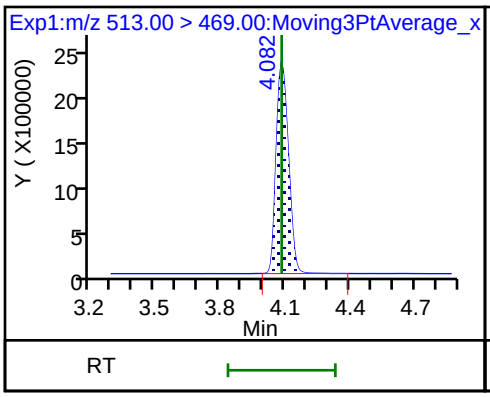
34 Perfluorononanesulfonic acid



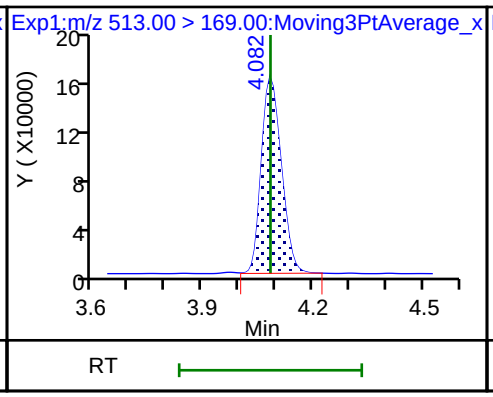
34 Perfluorononanesulfonic acid



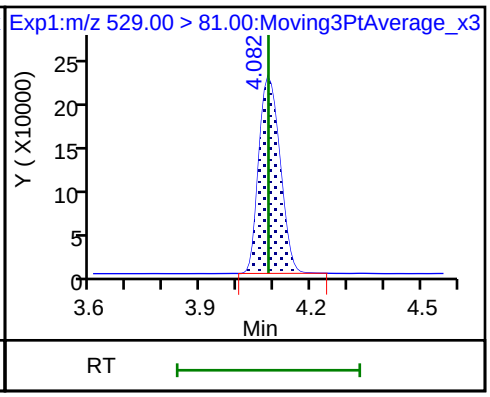
37 Perfluorodecanoic acid



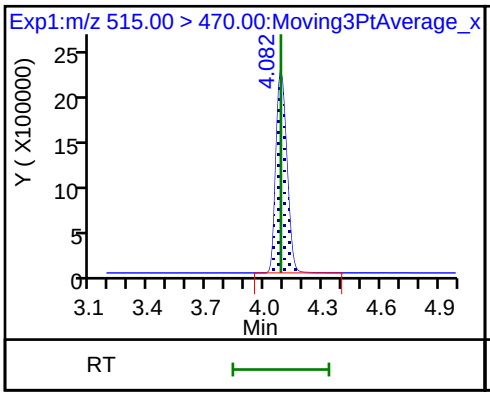
37 Perfluorodecanoic acid



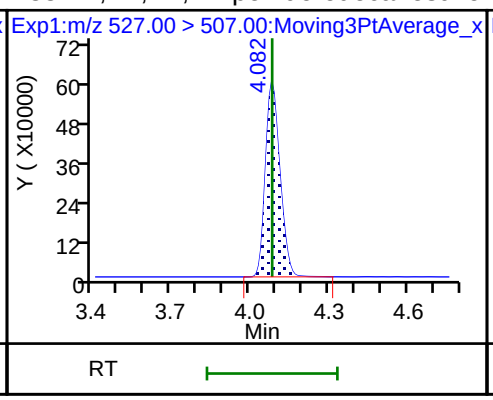
D 35 M2-8:2 FTS



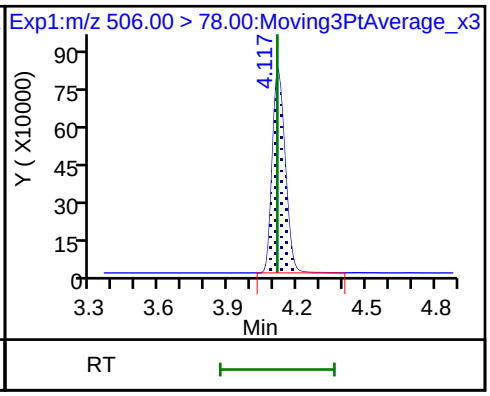
D 36 13C2 PFDA



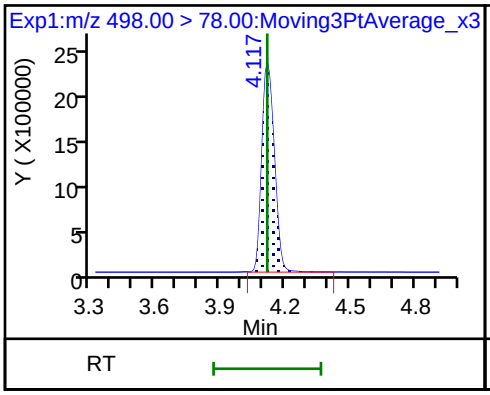
38 1H,1H,2H,2H-perfluorodecanesulfon



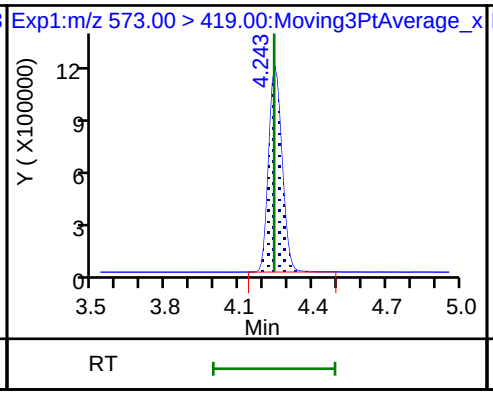
D 32 13C8 FOSA



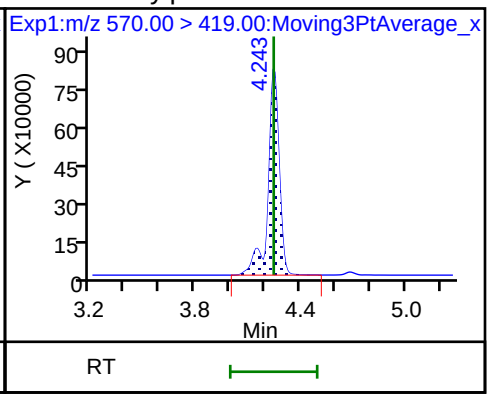
33 Perfluorooctanesulfonamide



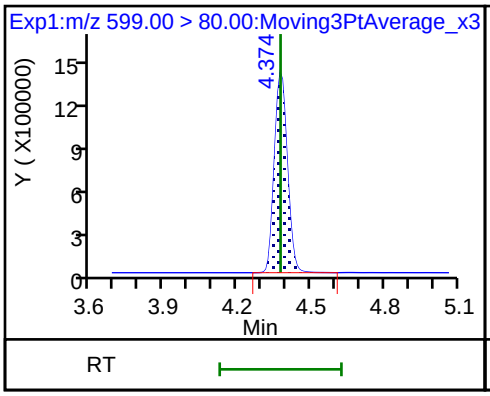
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido



41 Perfluorodecanesulfonic acid



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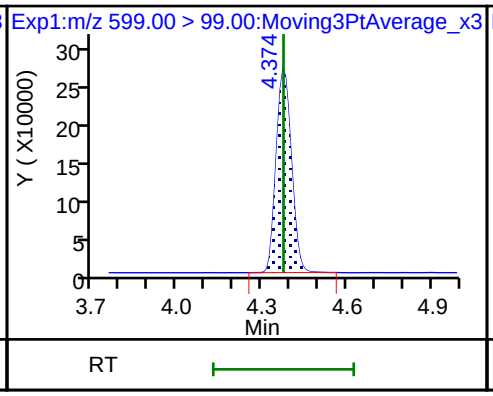
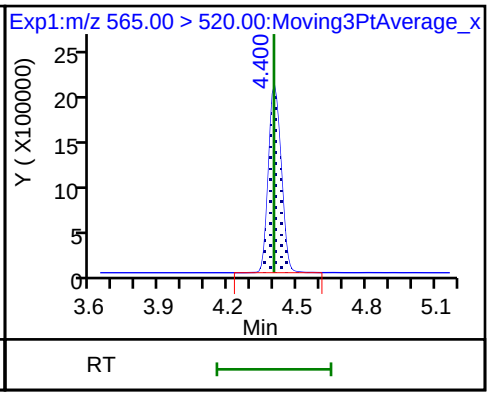
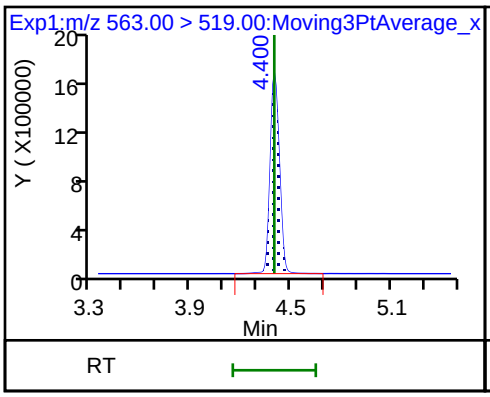


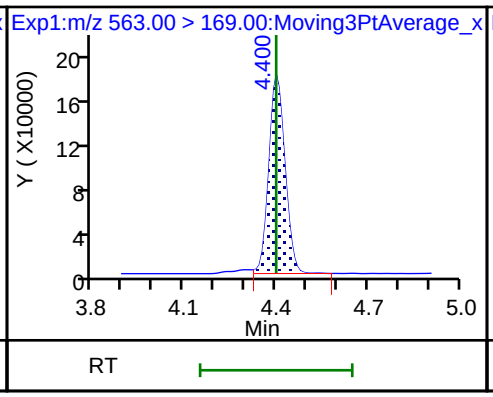
D 42 13C2 PFUnA



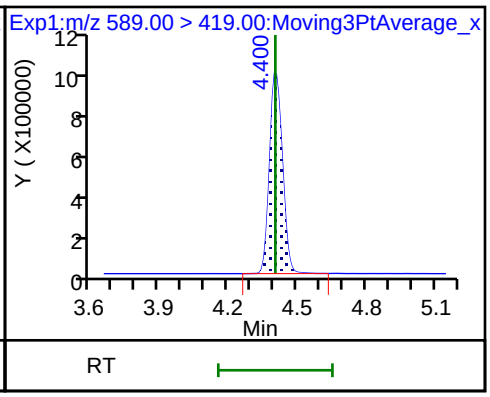
43 Perfluoroundecanoic acid



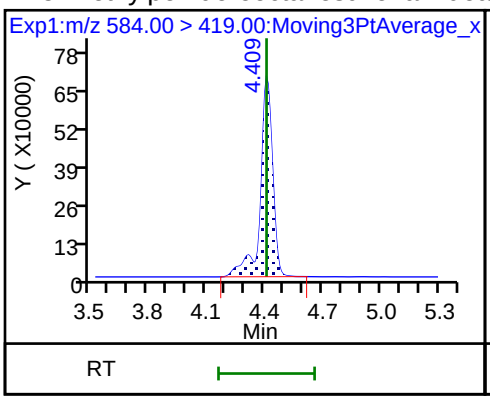
43 Perfluoroundecanoic acid



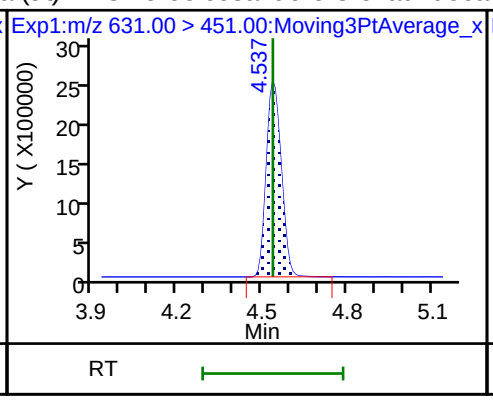
D 44 d5-NEtFOSAA



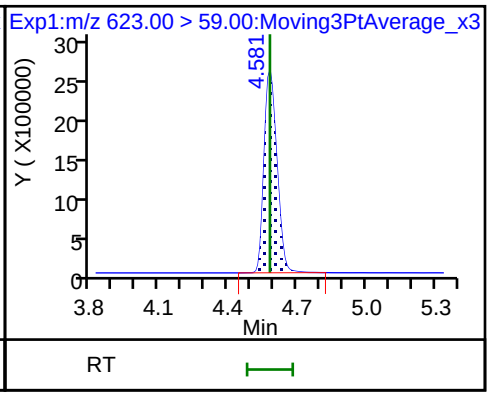
45 N-ethylperfluorooctanesulfonamidoa (SO



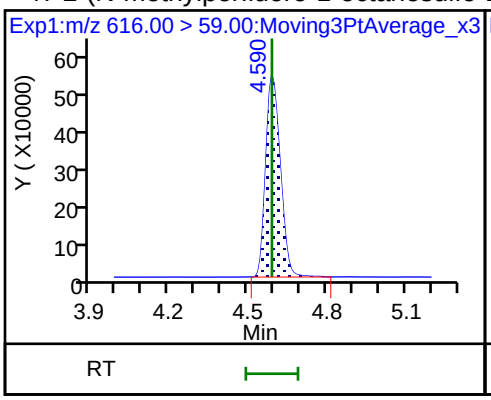
50 11-Chloroeicosafluoro-3-oxaundecan



D 46 d7-N-MeFOSE-M



47 2-(N-methylperfluoro-1-octanesulfo



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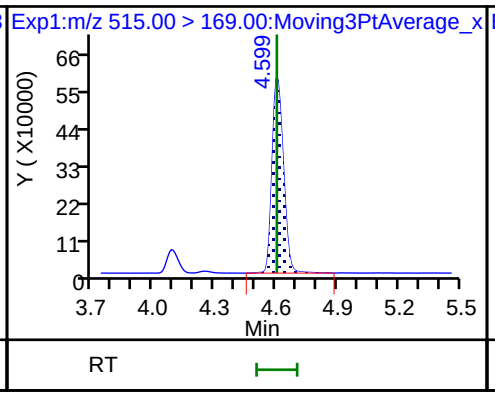
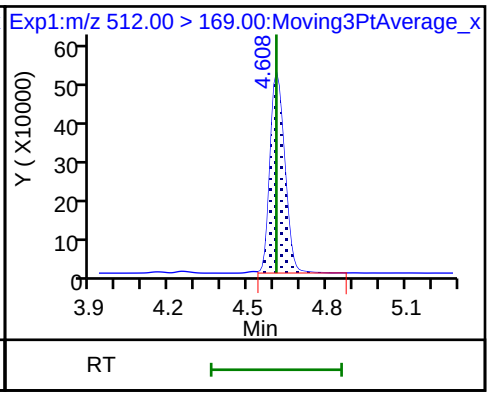
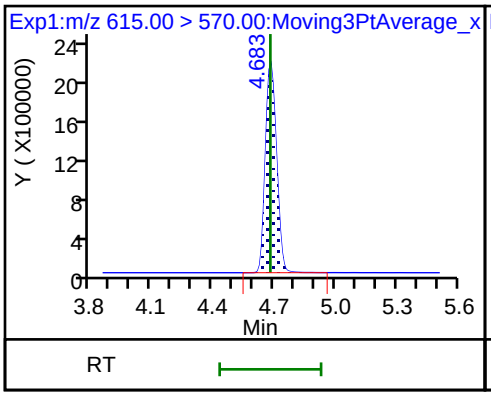


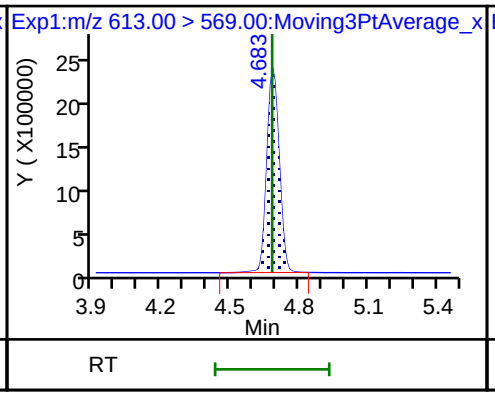
49 NMeFOSA



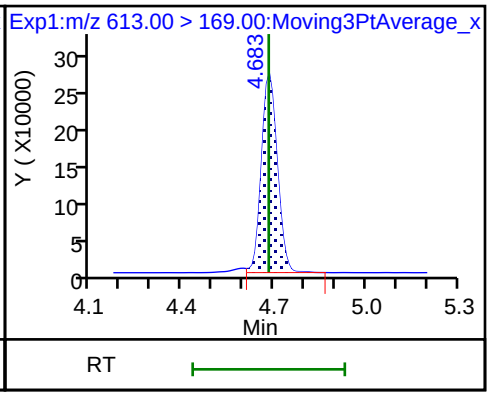
D 55 13C2 PFDoA



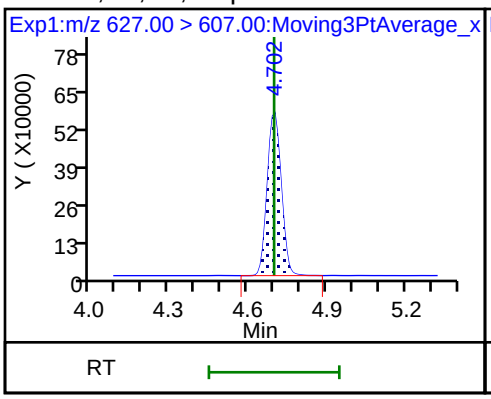
56 Perfluorododecanoic acid



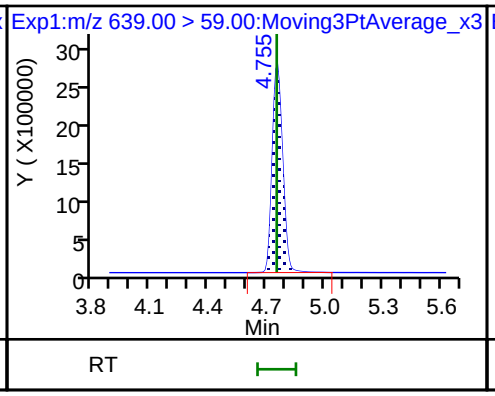
56 Perfluorododecanoic acid



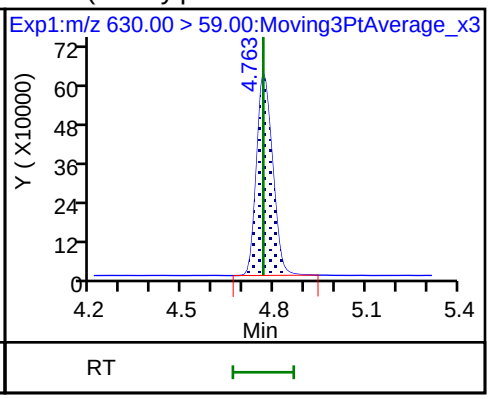
57 1H,1H,2H,2H-perfluorododecanesulfo



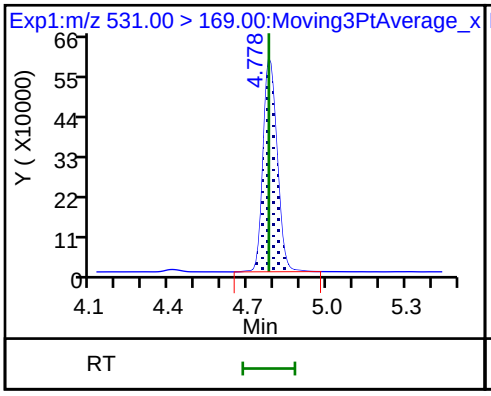
D 51 d9-N-EtFOSE-M



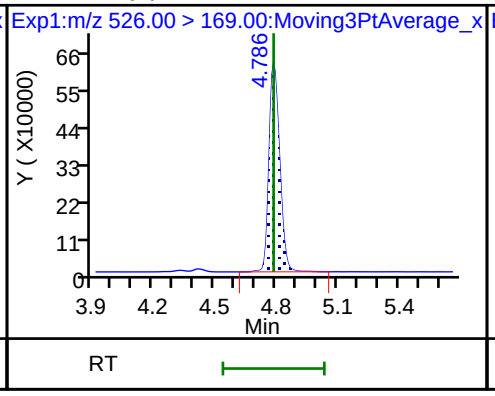
52 2-(N-ethylperfluoro-1-octanesulfon



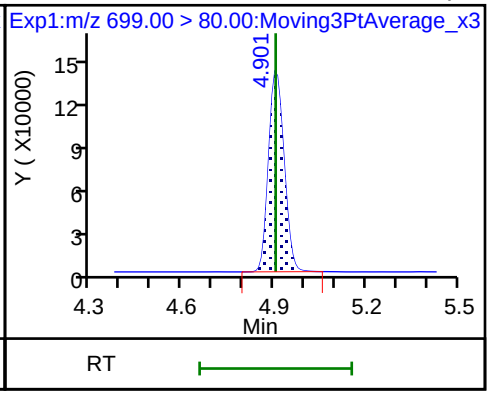
D 53 d-N-EtFOSA-M



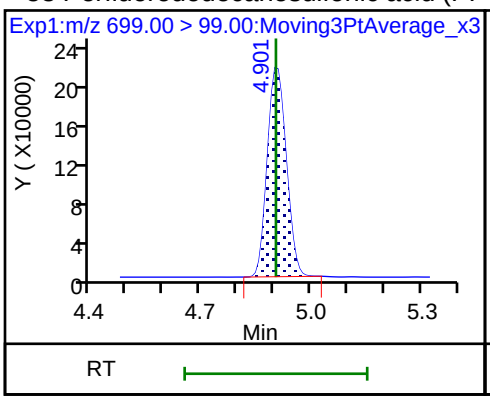
54 N-ethylperfluoro-1-octanesulfonami



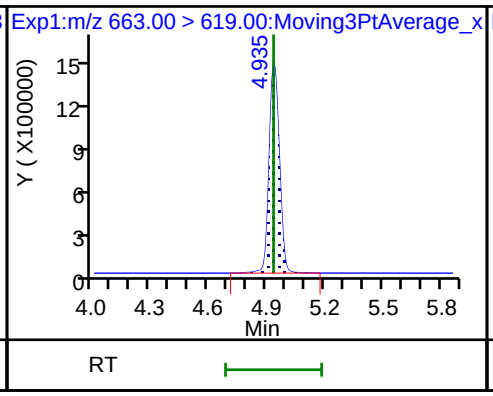
58 Perfluorododecanesulfonic acid (PF



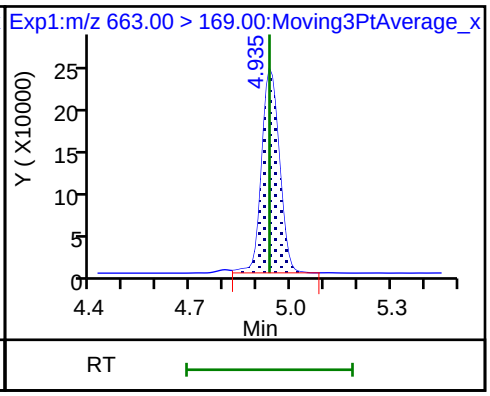
58 Perfluorododecanesulfonic acid (PF



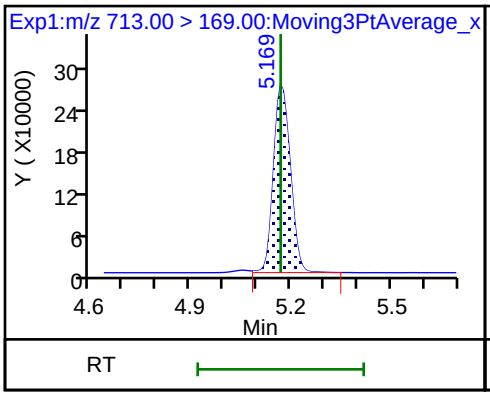
59 Perfluorotridecanoic acid



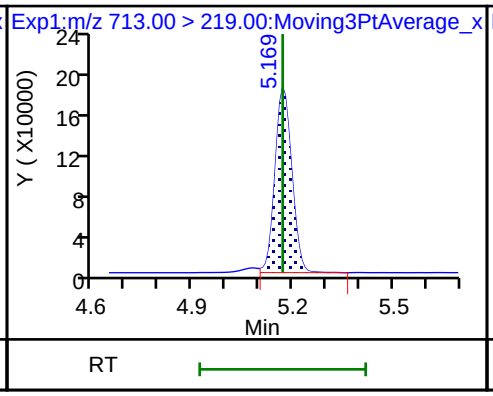
59 Perfluorotridecanoic acid



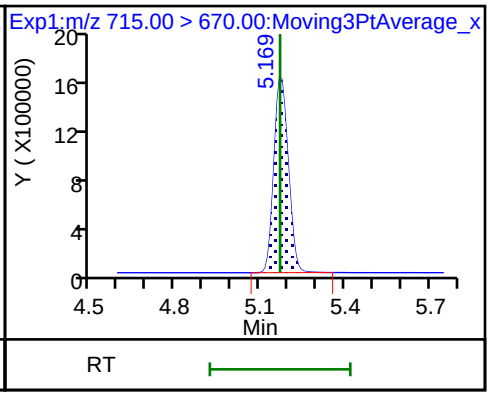
61 Perfluorotetradecanoic acid



61 Perfluorotetradecanoic acid



D 60 13C2 PFTeDA



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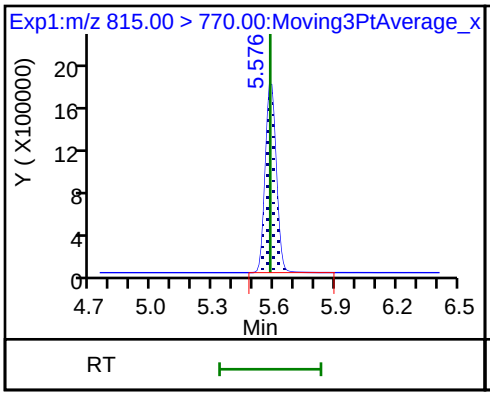
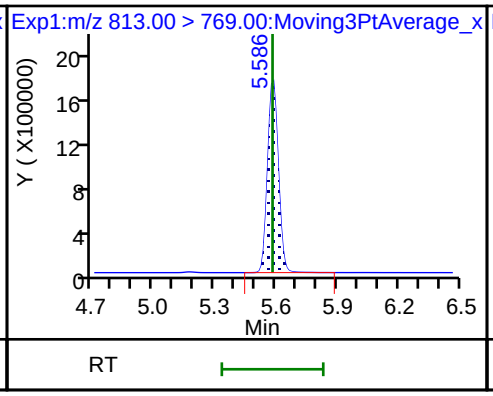
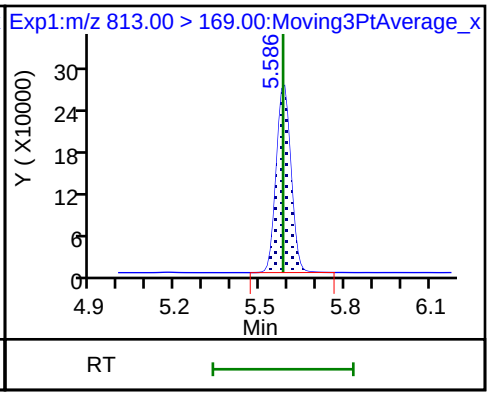


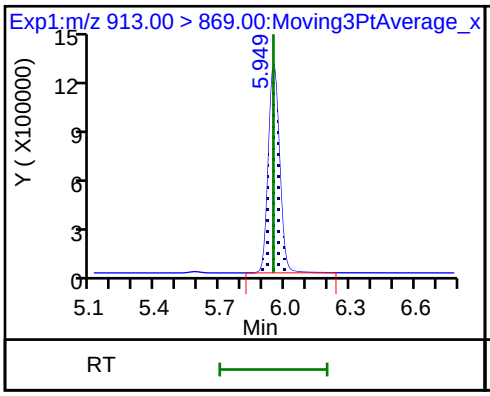
63 Perfluorohexadecanoic acid



63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



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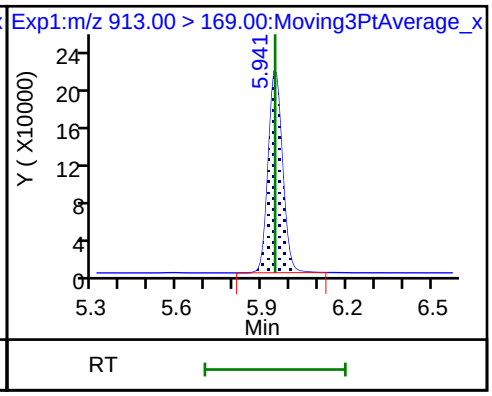

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

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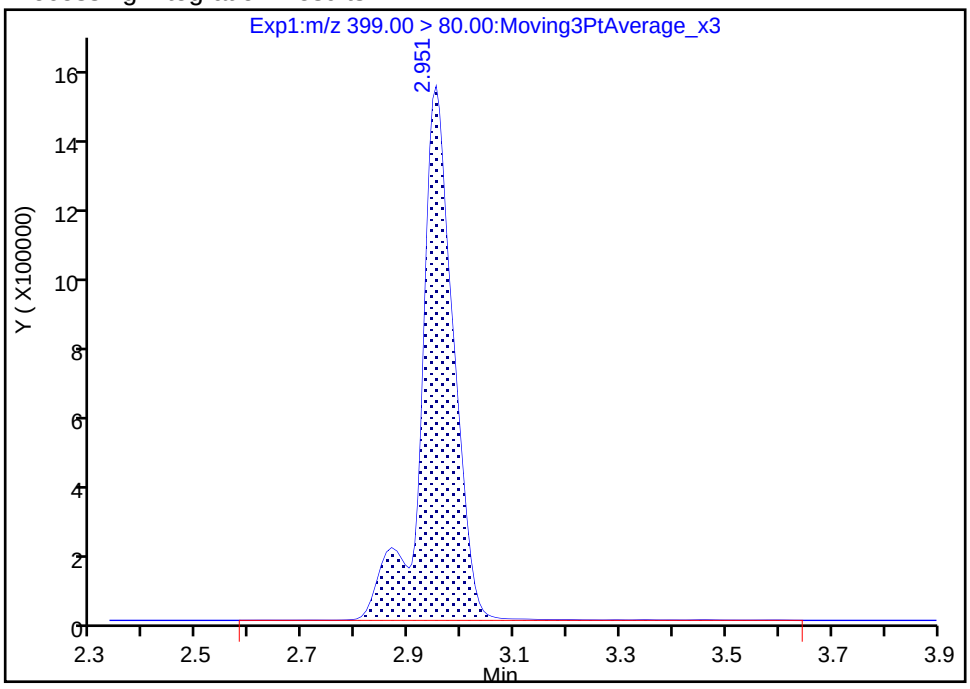
Lims ID:	ICV				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

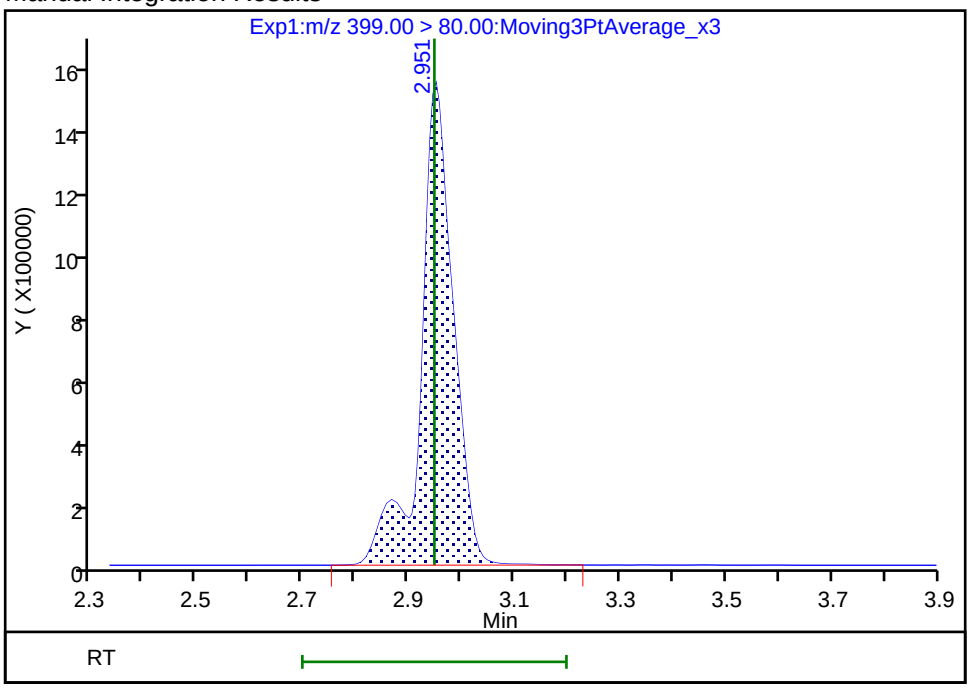
Processing Integration Results

RT: 2.95
Area: 6372555
Amount: 2.555069
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 6348705
Amount: 2.545506
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 13:07:07

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

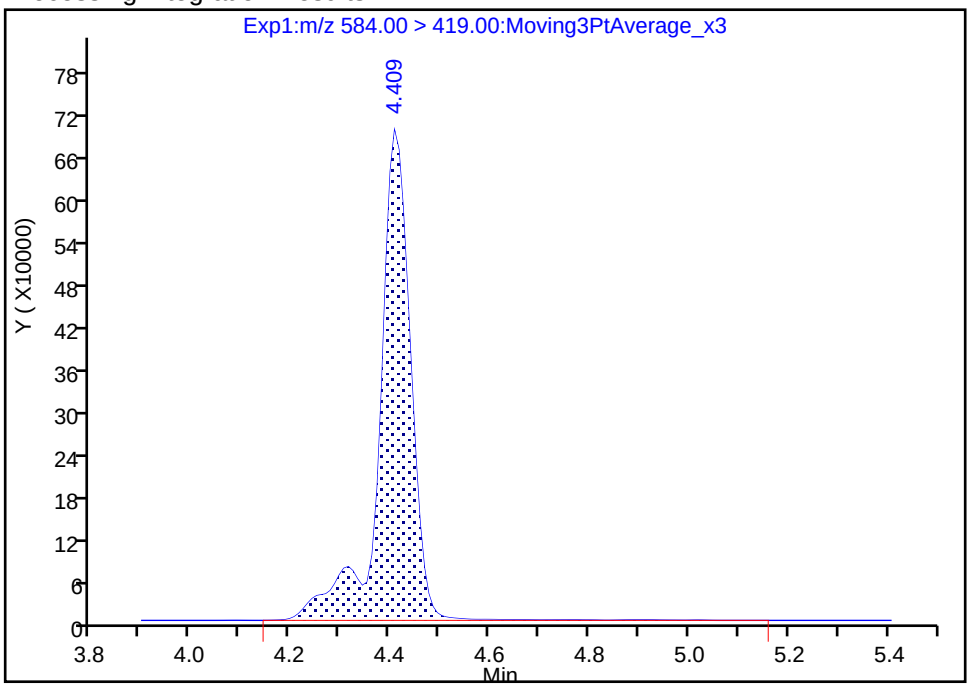
Data File:	\\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_011.d				
Injection Date:	05-Oct-2019 19:29:59	Instrument ID:	A9		
Lims ID:	ICV				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	17	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

45 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

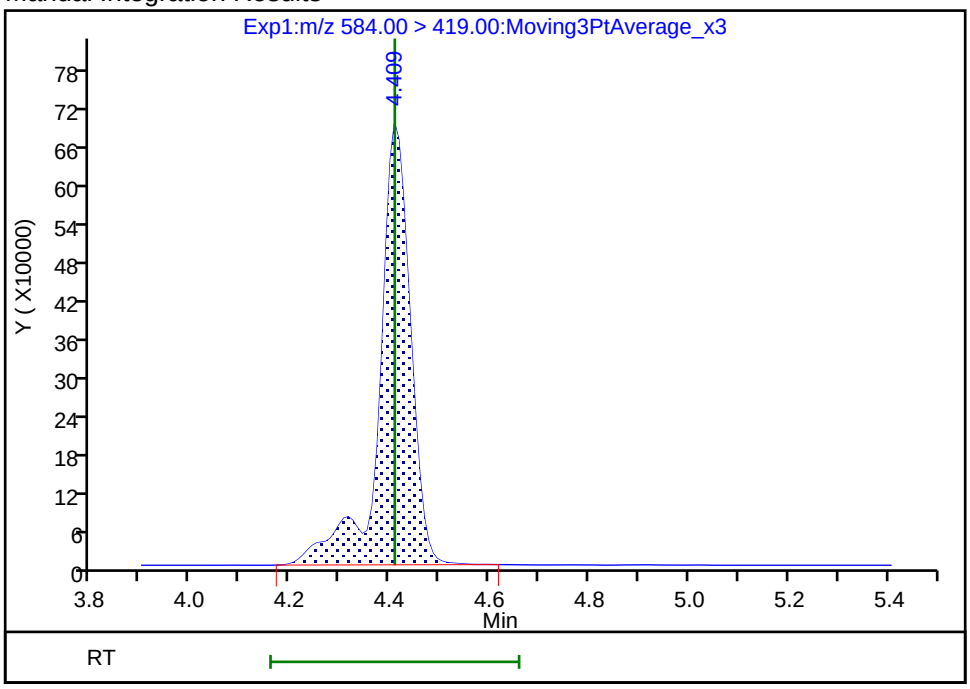
Processing Integration Results

RT: 4.41
Area: 3057436
Amount: 2.644835
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 3027963
Amount: 2.619340
Amount Units: ng/ml



Reviewer: montgomeryj, 06-Oct-2019 13:07:30

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-329447/2 Calibration Date: 10/09/2019 00:14

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8851		0.0521	0.0500	4.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.138		0.0556	0.0500	11.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.679		0.0438	0.0442	-0.9	50.0
4:2 FTS	AveID	2.563	2.587		0.471	0.467	0.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.9939		0.0535	0.0500	7.0	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9502		0.0502	0.0469	7.1	50.0
HFPO-DA (GenX)	AveID	1.515	1.455		0.0480	0.0500	-4.0	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.165		0.0519	0.0500	3.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.369		0.0509	0.0455	11.9	50.0
DONA	AveID	2.582	2.945		0.0537	0.0471	14.1	50.0
6:2 FTS	AveID	2.329	2.656		0.541	0.474	14.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	0.9749		0.0469	0.0476	-1.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.426		0.0631	0.0500	26.1	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.600		0.0692	0.0464	49.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.093		0.0531	0.0500	6.1	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7477		0.0492	0.0466	5.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.5978		0.0471	0.0480	-1.9	50.0
8:2 FTS	AveID	2.215	2.670		0.577	0.479	20.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	1.080		0.0568	0.0500	13.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	3.122		0.0568	0.0500	13.6	50.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8481		0.518	0.500	3.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8037		0.0476	0.0482	-1.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.9442		0.0600	0.0500	20.0	50.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.7843		0.492	0.500	-1.7	50.0
F-53B Minor	AveID	1.870	2.065		0.0520	0.0471	10.4	50.0
NMeFOSE	AveID	1.042	1.027		0.0493	0.0500	-1.4	50.0
NMeFOSA	AveID	0.8723	0.8950		100	0.0500	2.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.123		0.0545	0.0500	9.0	50.0
10:2 FTS	AveID	1.705	1.656		0.0468	0.0482	-2.9	50.0
NEtFOSE	AveID	1.054	1.125		0.0534	0.0500	6.8	50.0
NEtFOSA	AveID	1.005	1.004		100	0.0500	-0.0	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0766		0.0444	0.0484	-8.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-329447/2 Calibration Date: 10/09/2019 00:14

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6561		0.0509	0.0500	1.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1577		0.0558	0.0500	11.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.364		0.0501	0.0500	0.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7648		0.0530	0.0500	6.0	50.0
13C4 PFBA	Ave	0.7371	0.7478		2.54	2.50	1.5	50.0
13C5 PFPeA	Ave	0.6168	0.6006		2.43	2.50	-2.6	50.0
M2-4:2 FTS	Ave	0.1177	0.0895		1.78	2.34	-24.0	50.0
13C2 PFHxA	Ave	0.7105	0.7020		2.47	2.50	-1.2	50.0
13C3 HFPO-DA	Ave	0.1236	0.1362		2.75	2.50	10.2	50.0
13C4 PFHpA	Ave	0.8130	0.8334		2.56	2.50	2.5	50.0
18O2 PFHxS	Ave	0.5224	0.4912		2.22	2.37	-6.0	50.0
M2-6:2 FTS	Ave	0.1134	0.0795		1.67	2.38	-29.9	50.0
13C4 PFOA	Ave	0.9372	0.9125		2.43	2.50	-2.6	50.0
13C8 PFOA	Ave	0.8884	0.8837		2.49	2.50	-0.5	50.0
13C8 PFOS	Ave	0.1318	0.1254		2.38	2.50	-4.9	50.0
13C4 PFOS	Ave	0.6062	0.5841		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.8344	0.8312		2.49	2.50	-0.4	50.0
13C2 PFDA	Ave	0.9417	0.8978		2.38	2.50	-4.7	50.0
M2-8:2 FTS	Ave	0.1066	0.0715		1.61	2.40	-33.0	50.0
13C8 FOSA	Ave	0.3127	0.3189		2.55	2.50	2.0	50.0
d3-NMeFOSAA	Ave	0.4441	0.4428		2.49	2.50	-0.3	50.0
13C2 PFUnA	Ave	0.8035	0.8084		2.52	2.50	0.6	50.0
d5-NEtFOSAA	Ave	0.3818	0.4153		2.72	2.50	8.8	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2058		12.6	12.5	0.7	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2162		2.42	2.50	-3.2	50.0
13C2 PFDoA	Ave	0.8846	0.8238		2.33	2.50	-6.9	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2076		12.2	12.5	-2.4	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2111		2.45	2.50	-1.9	50.0
13C2 PFTeDA	Ave	0.6272	0.5736		2.29	2.50	-8.5	50.0
13C2 PFHxDA	Ave	0.6893	0.6285		2.28	2.50	-8.8	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 09-Oct-2019 00:14:22 ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 14:46:07 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0316

First Level Reviewer: nadonp Date: 18-Oct-2019 14:46:07
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										Ma
212.90 > 169.00	1.893	1.722	0.171	1.000	111012	0.0521		104	18.1	M
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.893	0.0	0.567	6271181	2.54		101	5973	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.198	2.200	-0.002	1.000	114657	0.0556		111	20.5	M
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.224	2.224	0.0	0.756	122265	0.0438	Target=2.62	99.1	8.4	M
298.90 > 99.00	2.224	2.224	0.0	0.756	41986		2.91(1.31-3.93)		8.6	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.198	0.0	0.658	5036435	2.43		97.4	3126	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.514	2.514	0.0	0.996	362458	0.4713		101	1367	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.525	2.525	0.0	0.756	700671	1.77		76.0	1680	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.557	0.0	0.766	5887118	2.47		98.8	3660	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.557	0.0	1.000	117025	0.0535	Target=14.83	107	31.2	
313.00 > 119.00	2.557	2.557	0.0	1.000	6628		17.66(7.41-22.24)		11.9	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.568	0.0	0.873	73418	0.0502	Target=1.98	107	274	
349.00 > 99.00	2.578	2.568	0.010	0.876	34348		2.14(0.99-2.97)		110	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.804	1141912	2.75		110	2069	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.686	0.0	1.000	33238	0.0480		96.0	36.8	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.942	2.942	0.0	1.000	162872	0.0519	Target=4.24	104	45.2	
363.00 > 169.00	2.942	2.942	0.0	1.000	37687		4.32(2.12-6.36)		57.4	
D 14 13C4 PFHpA										
367.00 > 322.00	2.942	2.942	0.0	0.881	6988686	2.56		103	3385	
D 16 18O2 PFHxS										
403.00 > 84.00	2.942	2.942	0.0	0.881	3896362	2.22		94.0	4796	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.942	2.952	-0.010	1.000	102628	0.0509	Target=3.27	112	203	M
399.00 > 99.00	2.942	2.952	-0.010	1.000	29890		3.43(1.64-4.91)		54.2	M
18 DONA										
377.00 > 251.00	2.989	2.989	0.0	0.804	271804	0.0537	Target=2.25	114	839	
377.00 > 85.00	2.996	2.989	0.007	0.806	111427		2.44(1.12-3.37)		489	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.319	3.319	0.0	0.994	633630	1.67		70.1	1842	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.319	3.332	-0.013	1.000	335881	0.5405		114	894	
D 21 13C8 PFOA										
421.00 > 376.00	3.340	3.340	0.0	1.000	7410665	2.49		99.5	7763	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.340	3.340	0.0	0.899	90925	0.0469	Target=3.58	98.6	239	
449.00 > 99.00	3.340	3.340	0.0	0.899	24286		3.74(1.79-5.37)		63.9	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.340	0.0	1.000	7652381	2.43		97.4	4314	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.346	-0.006		8386000	2.50			5363	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.346	-0.006	1.000	218208	0.0631	Target=2.79	126	28.5	
413.00 > 169.00	3.340	3.346	-0.006	1.000	64849		3.36(1.40-4.19)		156	
D 26 13C8 PFOS										
507.00 > 99.00	3.708	3.708	0.0	1.110	1051275	2.38		95.1	1928	
D 27 13C4 PFOS										
503.00 > 80.00	3.716	3.716	0.0	1.112	4682702	2.30		96.3	3890	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.716	3.721	-0.005	1.000	145498	0.0692	Target=3.83	149	174	M
499.00 > 99.00	3.716	3.721	-0.005	1.000	37662		3.86(1.92-5.75)		113	M
29 Perfluorononanoic acid										
463.00 > 419.00	3.723	3.723	0.0	0.998	152418	0.0531	Target=5.58	106	59.4	
463.00 > 169.00	3.740	3.723	0.017	1.002	31170		4.89(2.79-8.37)		75.4	
D 30 13C5 PFNA										
468.00 > 423.00	3.731	3.731	0.0	1.117	6970697	2.49		99.6	3814	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.924	3.924	0.0	1.056	68271	0.0492		106	309	
34 Perfluorononanesulfonic acid										M
549.00 > 80.00	4.063	4.063	0.0	1.093	56223	0.0471	Target=4.51	98.1	192	
549.00 > 99.00	4.063	4.063	0.0	1.093	11164		5.04(2.25-6.76)		46.0	M
D 36 13C2 PFDA										
515.00 > 470.00	4.089	4.089	0.0	1.224	7529068	2.38		95.3	3545	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.089	4.089	0.0	1.224	574378	1.61		67.0	1309	
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.089	4.094	-0.005	1.000	162583	0.0568	Target=15.45	114	87.1	M
513.00 > 169.00	4.089	4.094	-0.005	1.000	9517		17.08(7.73-23.18)		44.7	
D 32 13C8 FOSA										
506.00 > 78.00	4.107	4.107	0.0	1.230	2674624	2.55		102	2126	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.089	4.120	-0.031	1.000	306683	0.5775		121	1275	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.107	4.129	-0.022	1.000	166986	0.0568		114	487	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.250	4.250	0.0	1.272	3713507	2.49		99.7	2091	
40 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.250	4.250	0.0	1.000	629889	0.5178		104	160	M
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.381	4.381	0.0	1.179	75896	0.0476	Target=4.64	98.8	200	
599.00 > 99.00	4.381	4.381	0.0	1.179	13849		5.48(2.32-6.96)		58.0	
D 42 13C2 PFUnA										
565.00 > 520.00	4.407	4.407	0.0	1.319	6779437	2.52		101	4645	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.407	4.407	0.0	1.319	3483022	2.72		109	2332	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.407	4.411	-0.004	1.000	128023	0.0600	Target=9.27	120	95.6	
563.00 > 169.00	4.407	4.411	-0.004	1.000	12802		10.00(4.63-13.90)		67.8	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.415	4.415	0.0	1.002	546340	0.4916		98.3	846	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.700	4.700	0.0	1.149	19146	0.0468		97.1	68.3	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.544	4.548	-0.004	1.223	190576	0.0520		110	791	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.570	4.570	0.0		8630788	12.6		101	2946	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.579	4.579	0.0	1.002	35451	0.0493		98.6	107	
56 Perfluorododecanoic acid										M
613.00 > 569.00	4.691	4.691	0.0	1.000	155170	0.0545	Target=9.58	109	76.6	M
613.00 > 169.00	4.691	4.691	0.0	1.000	15858		9.78(4.79-14.36)		76.2	M
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.588	4.588	0.0		1813132	2.42		96.8	261	
49 NMeFOSA										
512.00 > 169.00	4.597	4.597	0.0	1.002	32454	0.0513		103	106	
D 55 13C2 PFDoA										
615.00 > 570.00	4.691	4.691	0.0	1.404	6908409	2.33		93.1	3504	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.738	4.738	0.0		8703389	12.2		97.6	3636	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.754	4.754	0.0	1.004	39176	0.0534		107	63.7	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.769	4.769	0.0		1770087	2.45		98.1	1630	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.777	4.777	0.0	1.002	35547	0.0500		99.9	89.3	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.916	4.916	0.0	1.323	7267	0.0444	Target=0.64	91.8	54.9	
699.00 > 99.00	4.925	4.916	0.008	1.325	11031		0.66(0.32-0.96)		68.0	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.950	4.950	0.0	1.055	90653	0.0509	Target=5.94	102	186	
663.00 > 169.00	4.950	4.950	0.0	1.055	17085		5.31(2.97-8.91)		126	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.183	5.183	0.0	1.000	15170	0.0558	Target=1.42	112	108	
713.00 > 219.00	5.183	5.183	0.0	1.000	8862		1.71(0.71-2.13)		62.1	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.183	5.183	0.0	1.552	4810438	2.29		91.5	3812	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.604	5.604	0.0	1.678	5270614	2.28		91.2	7221	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.604	5.617	-0.013	1.000	143795	0.0501	Target=6.39	100	91.4	
813.00 > 169.00	5.604	5.617	-0.013	1.000	21722		6.62(3.19-9.58)		159	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.988	5.988	0.0	1.069	80622	0.0530	Target=6.02	106	74.1	
913.00 > 169.00	5.980	5.988	-0.008	1.067	13154		6.13(3.01-9.03)		173	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC_LLCCVL_00009 Amount Added: 1.00 Units: mL

Report Date: 18-Oct-2019 14:46:08 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d

Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9

Lims ID: CCVL

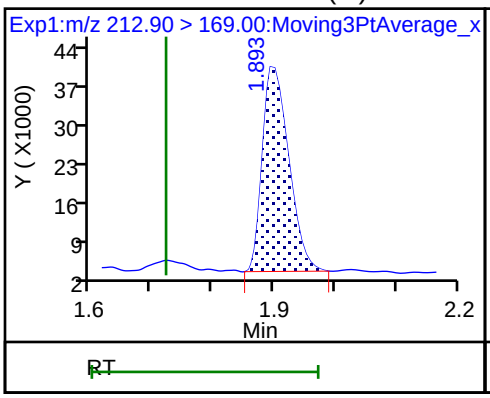
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2

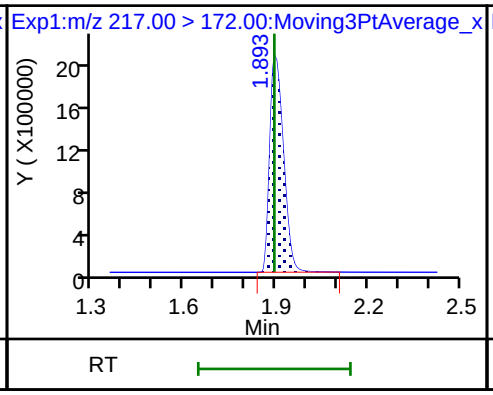
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

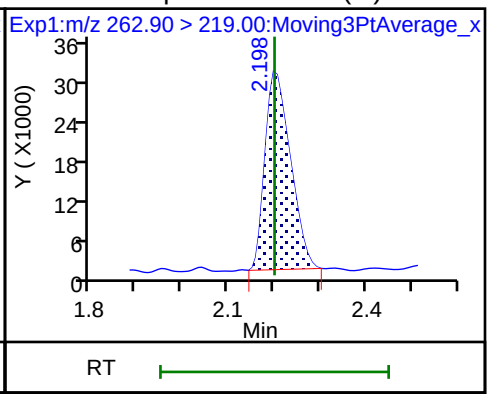
2 Perfluorobutanoic acid (M)



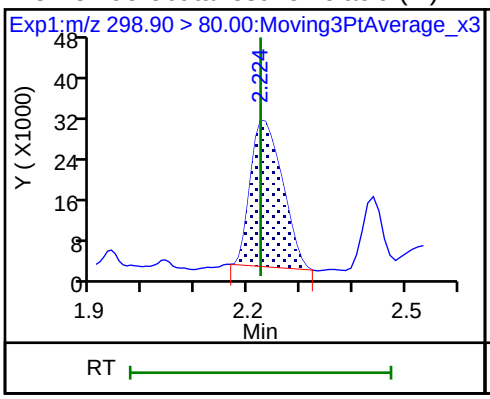
D 1 13C4 PFBA



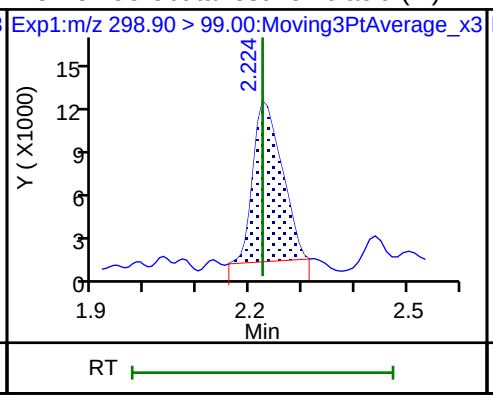
3 Perfluoropentanoic acid (M)



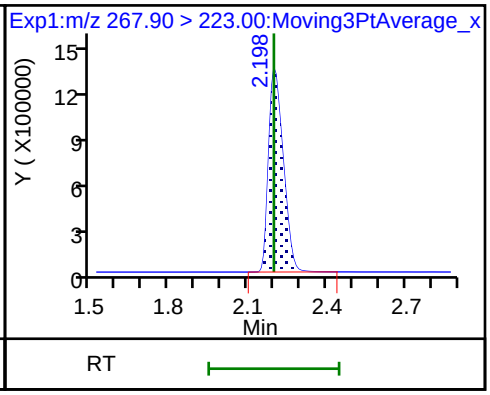
5 Perfluorobutanesulfonic acid (M)



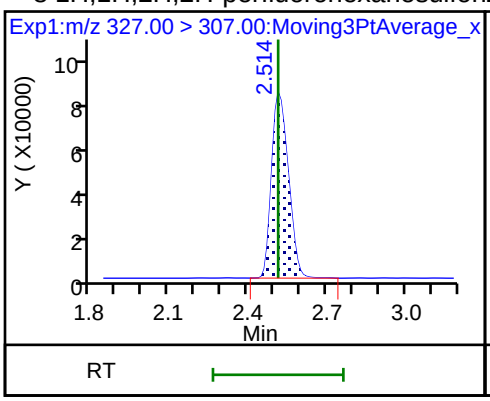
5 Perfluorobutanesulfonic acid (M)



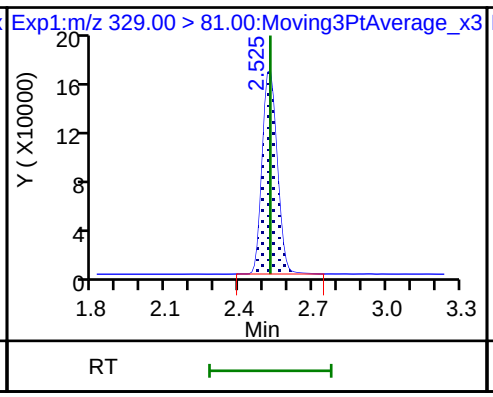
D 4 13C5 PFPeA



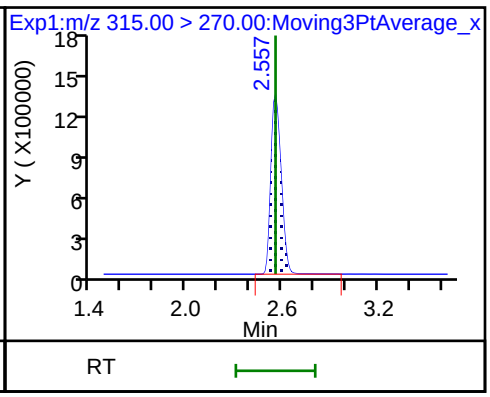
8 1H,1H,2H,2H-perfluorohexanesulfon



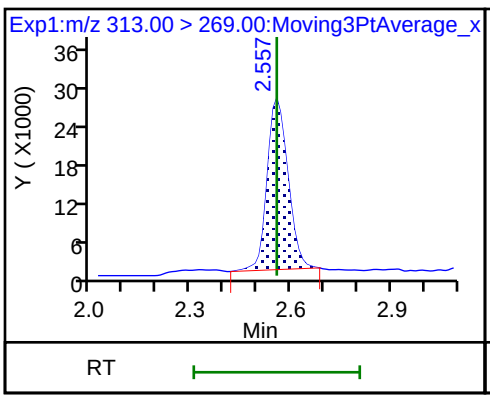
D 7 M2-4:2 FTS



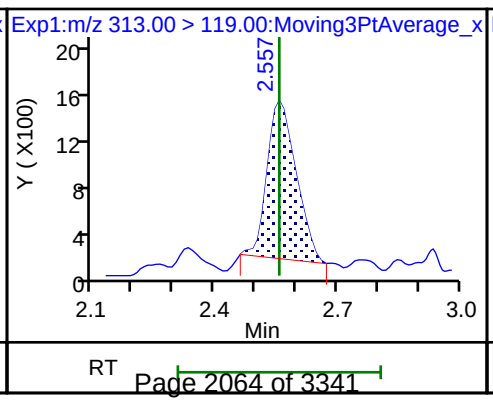
D 9 13C2 PFHxA



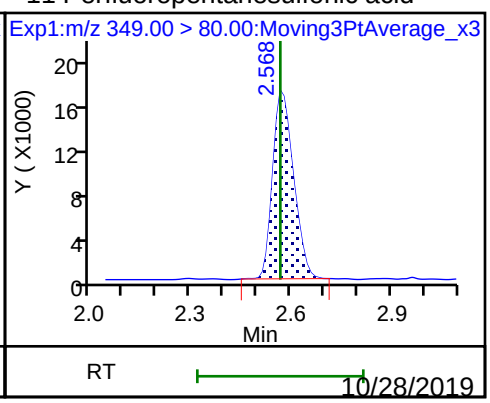
10 Perfluorohexanoic acid



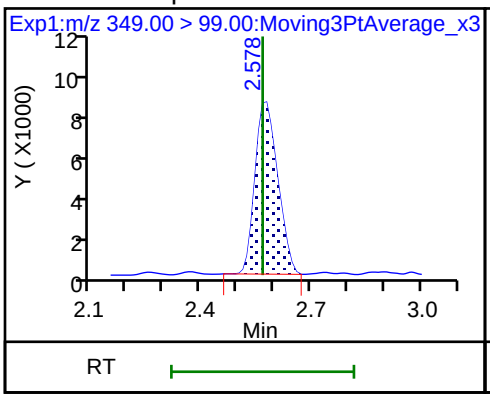
10 Perfluorohexanoic acid



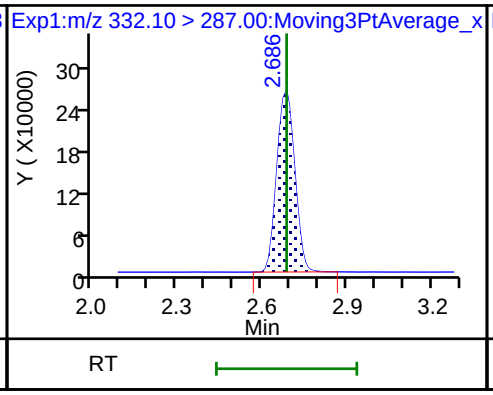
11 Perfluoropentanesulfonic acid



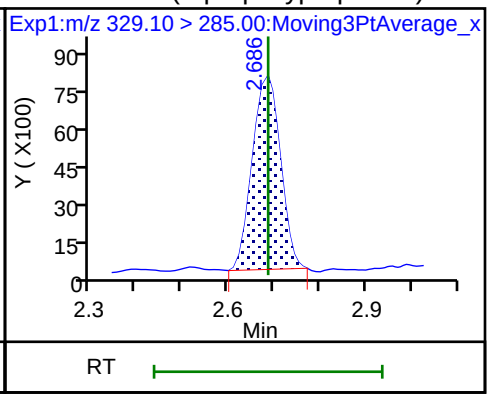
11 Perfluoropentanesulfonic acid



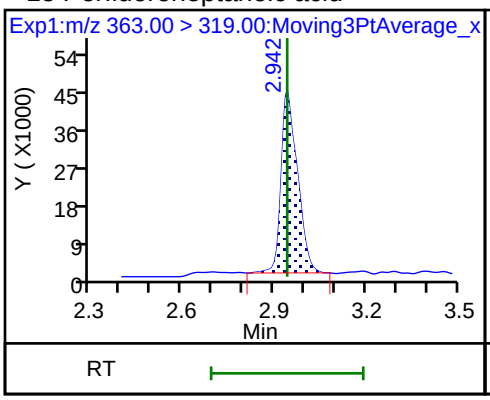
D 12 13C3 HFPO-DA



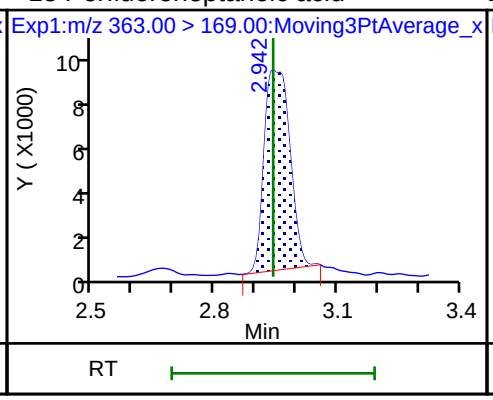
13 Perfluoro(2-propoxypropanoic) acid



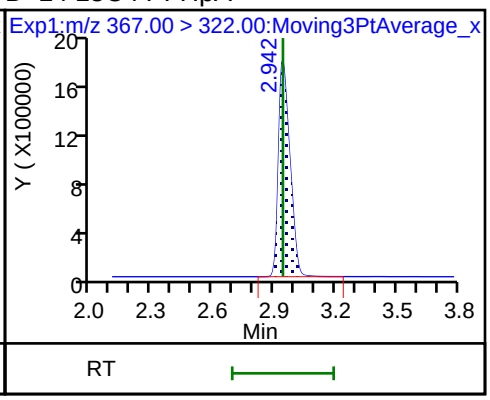
15 Perfluoroheptanoic acid



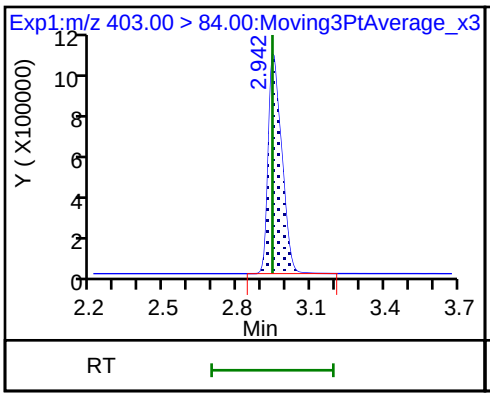
15 Perfluoroheptanoic acid



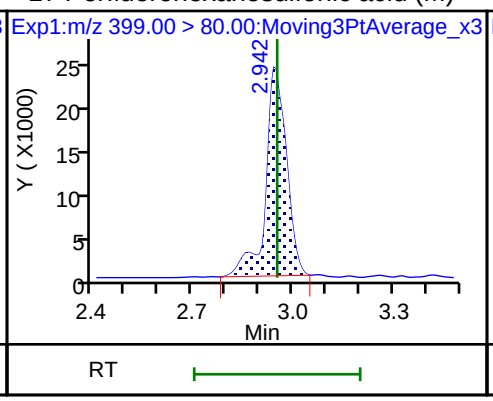
D 14 13C4 PFHpA



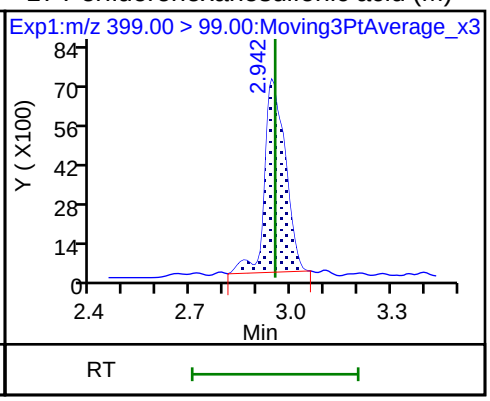
D 16 18O2 PFHxS



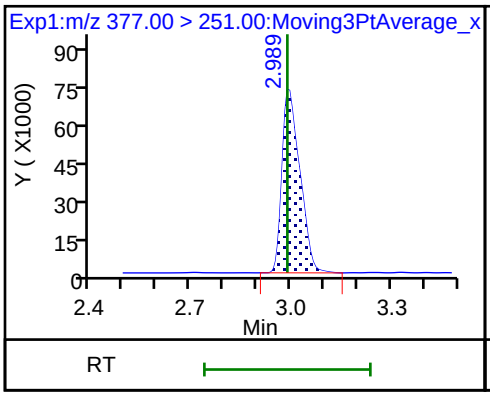
17 Perfluorohexanesulfonic acid (M)



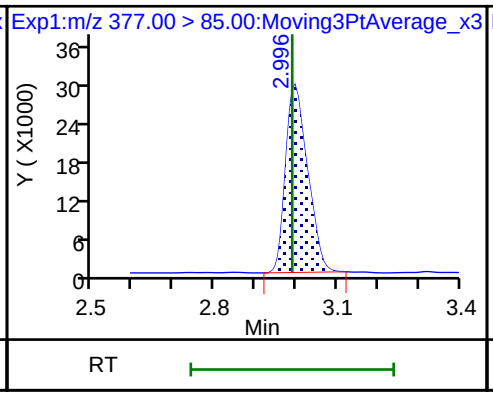
17 Perfluorohexanesulfonic acid (M)



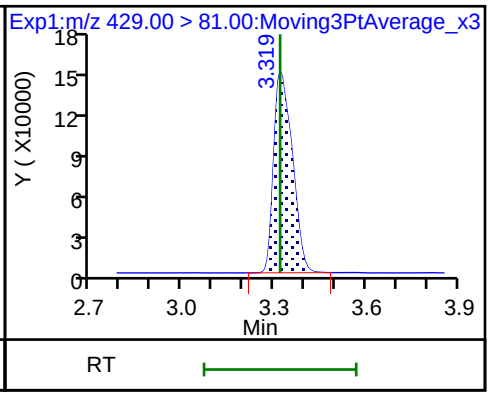
18 DONA



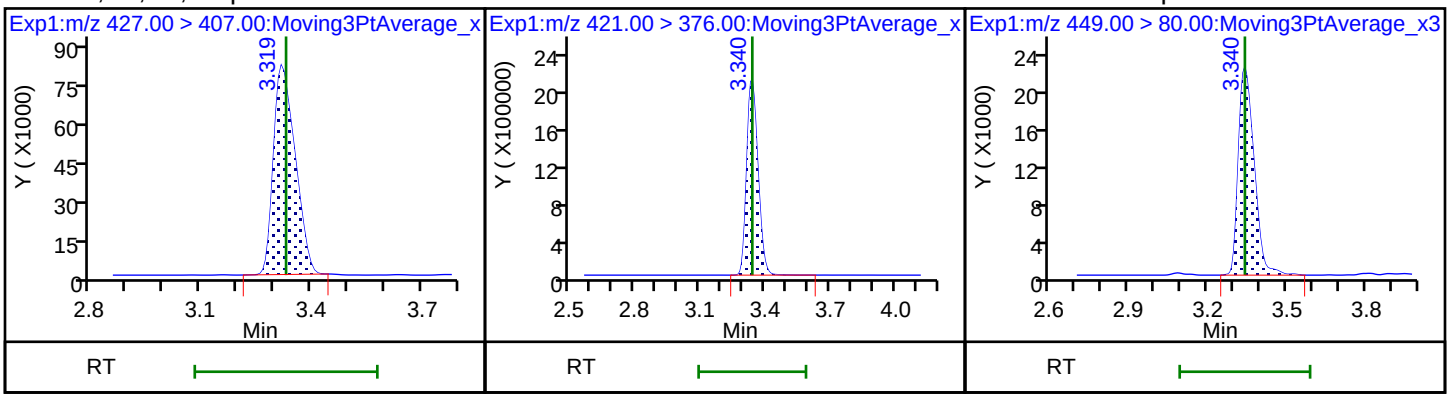
18 DONA



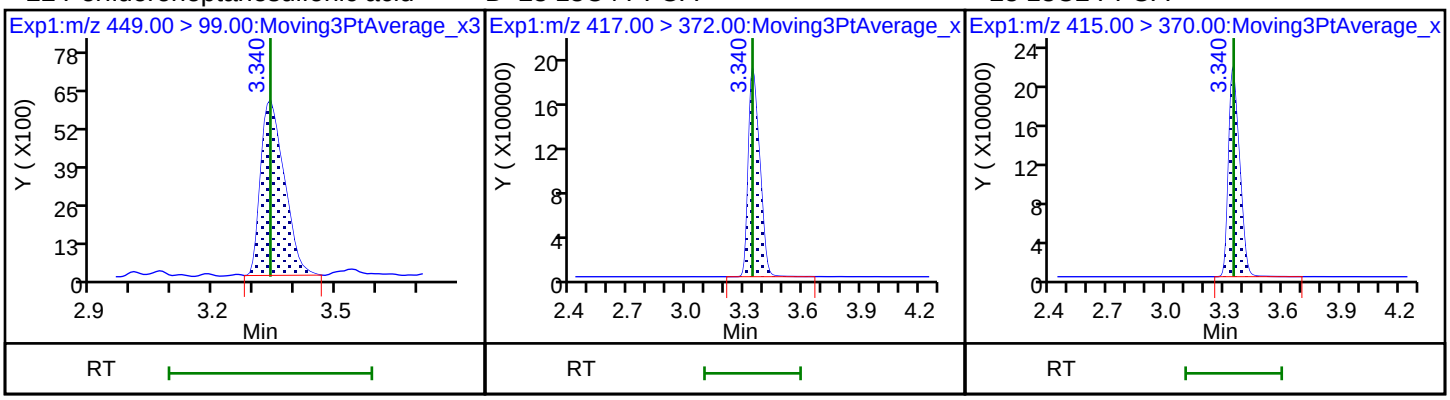
D 20 M2-6:2 FTS



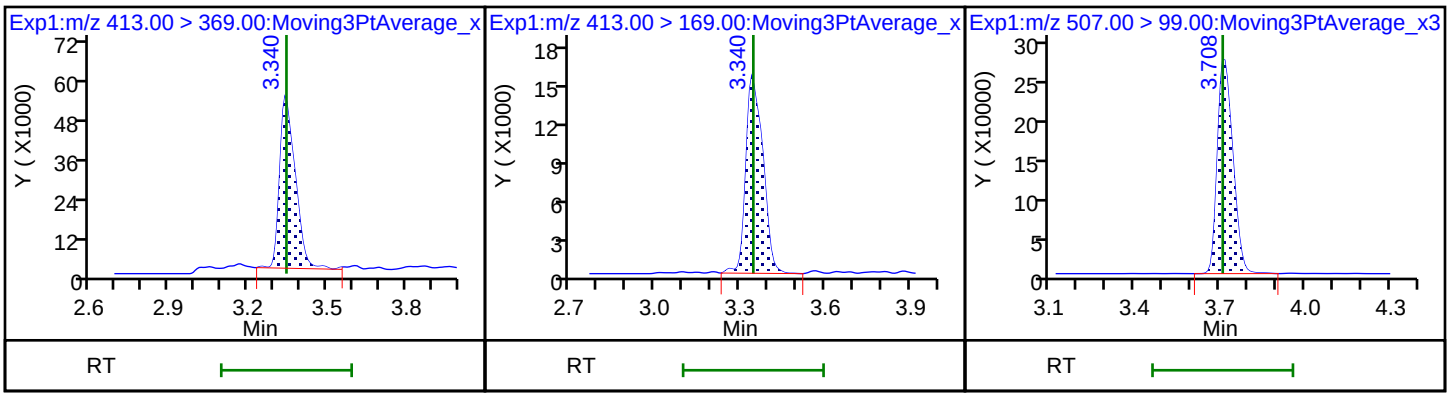
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



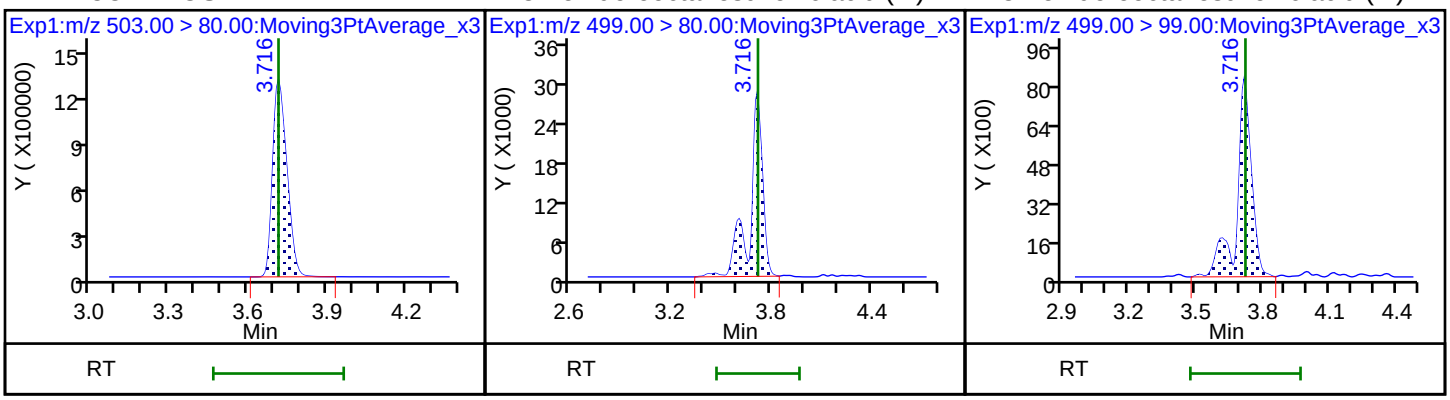
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



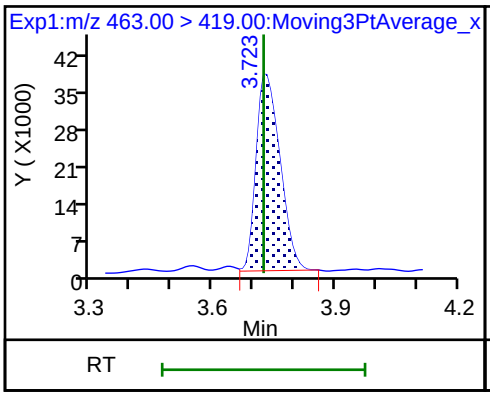
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid (M)



29 Perfluorononanoic acid



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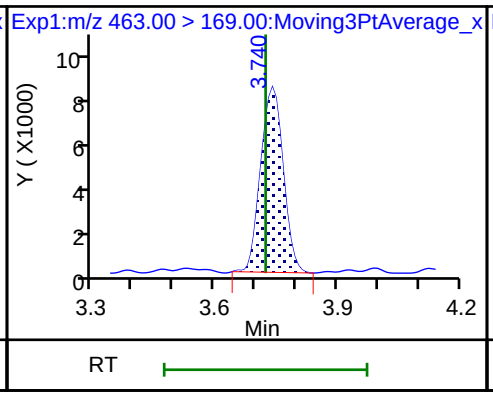
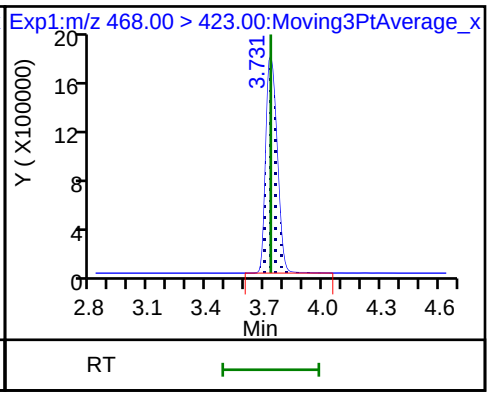
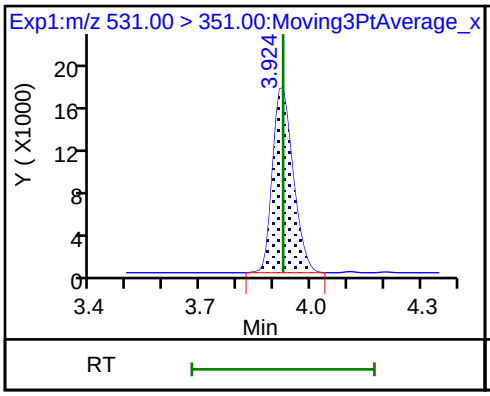


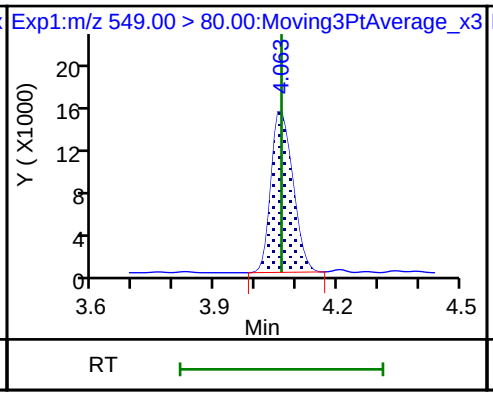
D 30 13C5 PFNA



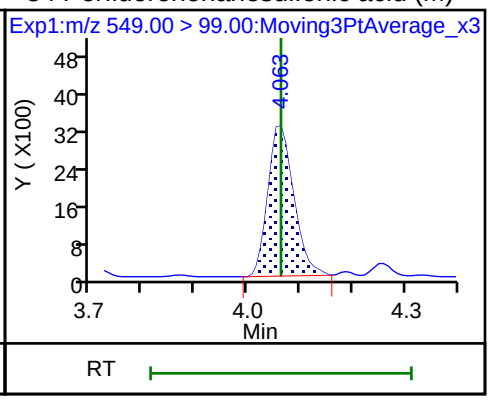
31 9-Chlorohexadecafluoro-3-oxanonane



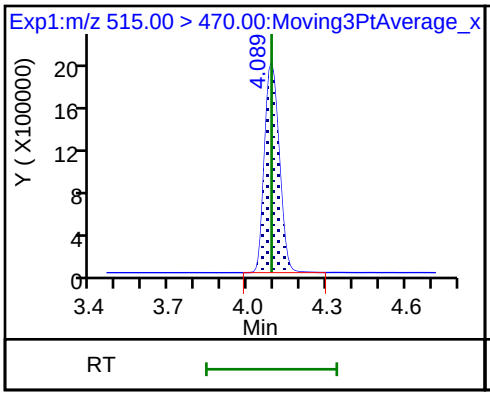
34 Perfluorononanesulfonic acid



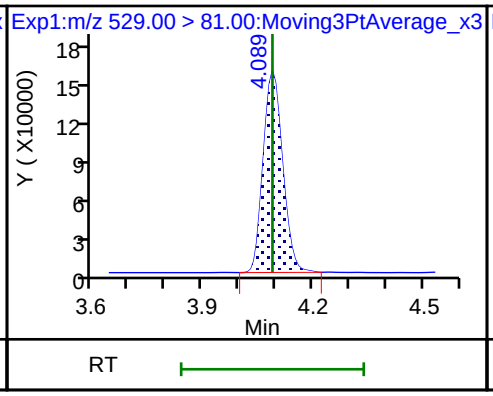
34 Perfluorononanesulfonic acid (M)



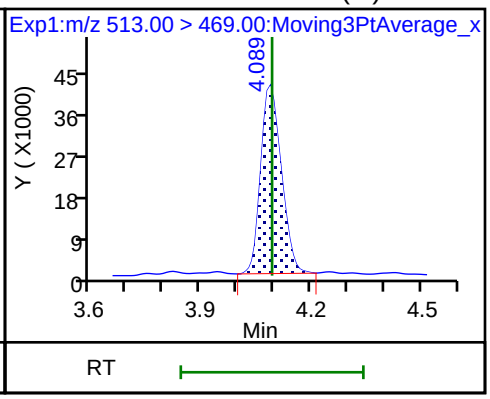
D 36 13C2 PFDA



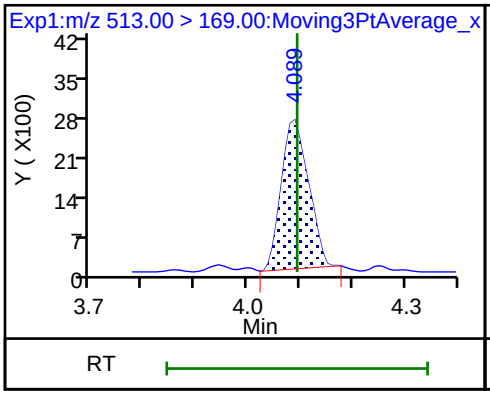
D 35 M2-8:2 FTS



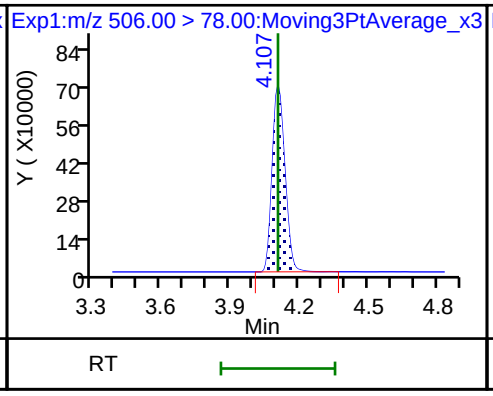
37 Perfluorodecanoic acid (M)



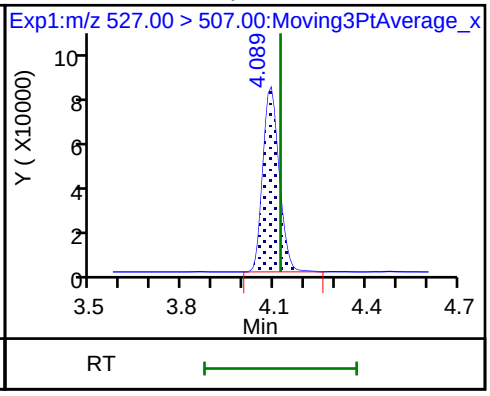
37 Perfluorodecanoic acid



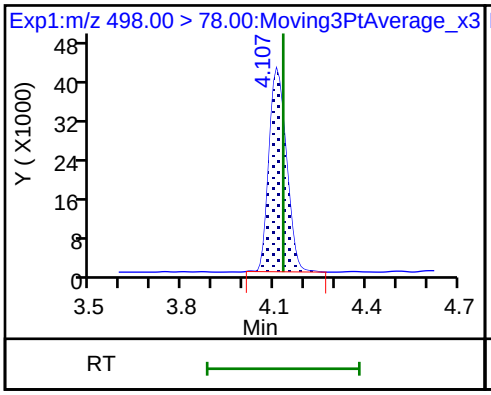
D 32 13C8 FOSA



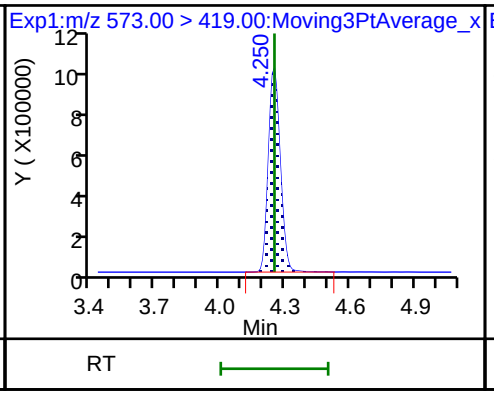
38 1H,1H,2H,2H-perfluorodecanesulfoni



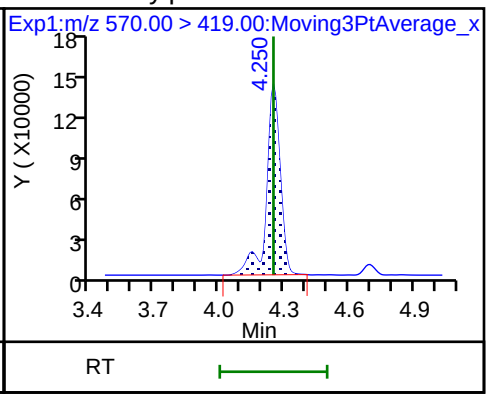
33 Perfluorooctanesulfonamide



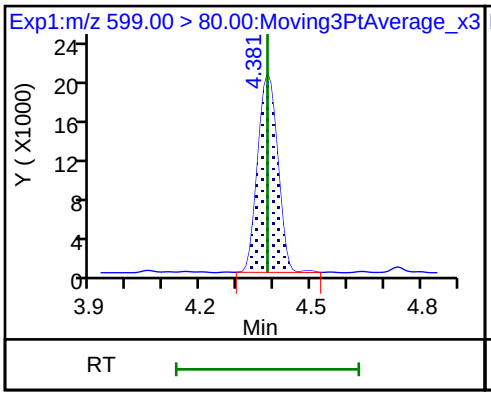
D 39 d3-NMeFOSAA



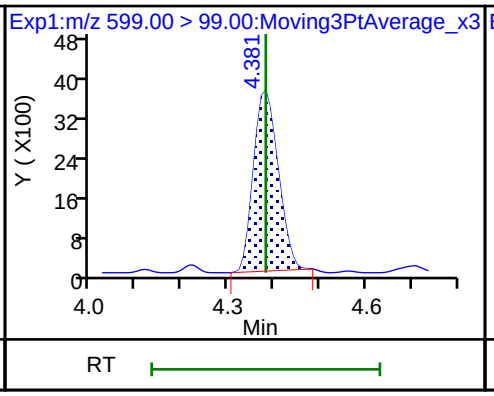
40 N-methylperfluorooctanesulfonamido (M)



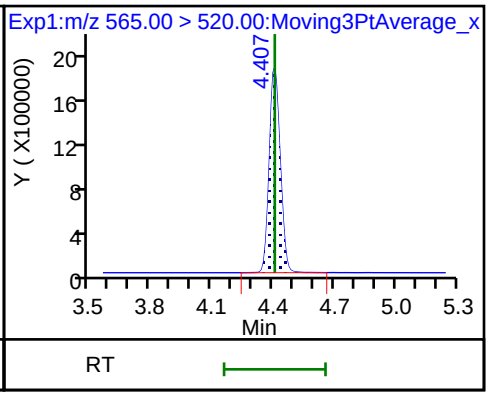
41 Perfluorodecanesulfonic acid



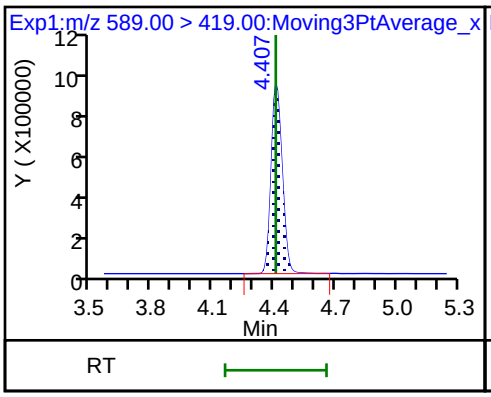
41 Perfluorodecanesulfonic acid



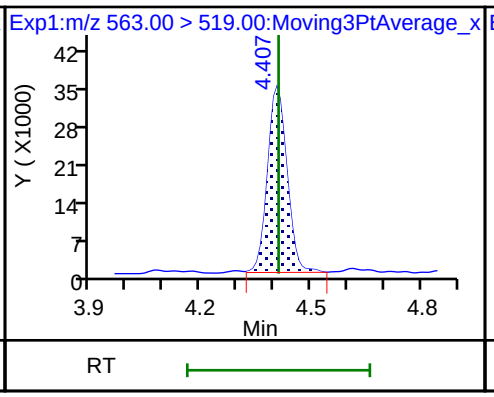
D 42 13C2 PFUnA



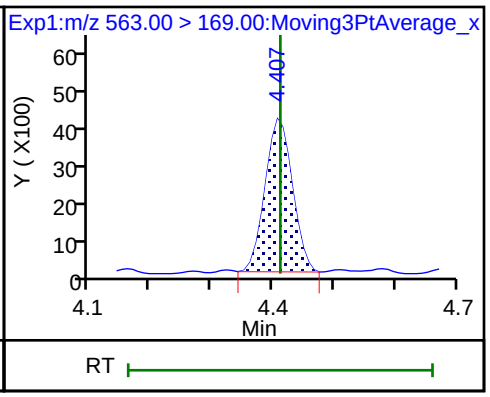
D 44 d5-NEtFOSAA



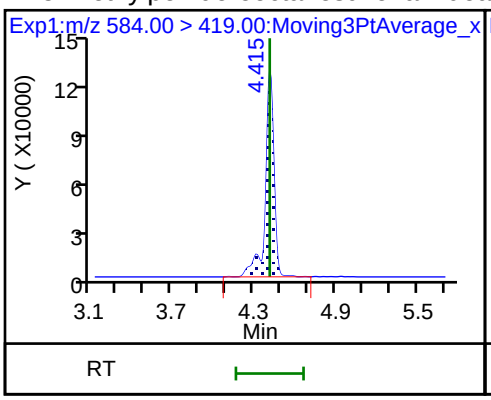
43 Perfluoroundecanoic acid



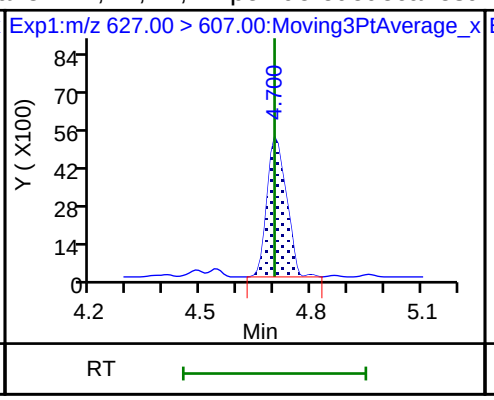
43 Perfluoroundecanoic acid



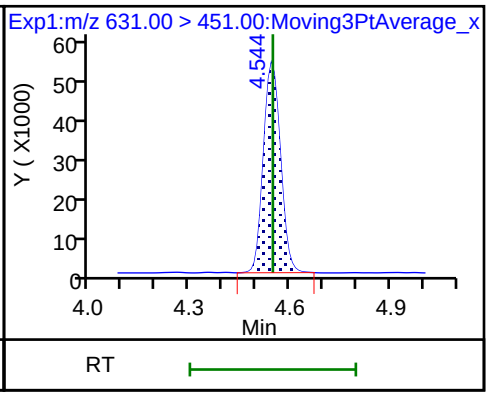
45 N-ethylperfluorooctanesulfonamidoa



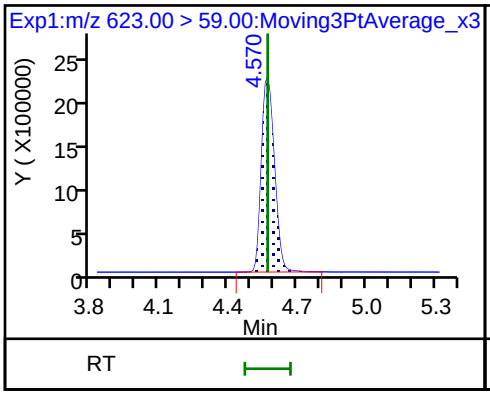
57 1H,1H,2H,2H-perfluorododecanesulfo



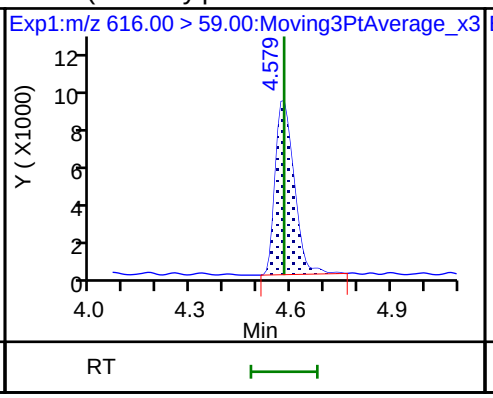
50 11-Chloroeicosafluoro-3-oxaundecan



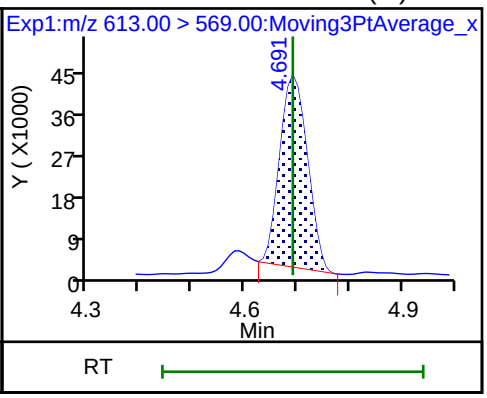
D 46 d7-N-MeFOSE-M



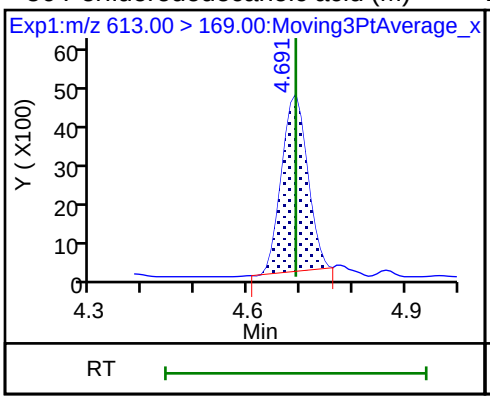
47 2-(N-methylperfluoro-1-octanesulfo



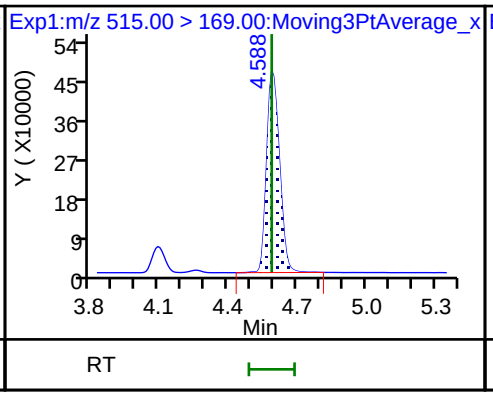
56 Perfluorododecanoic acid (M)



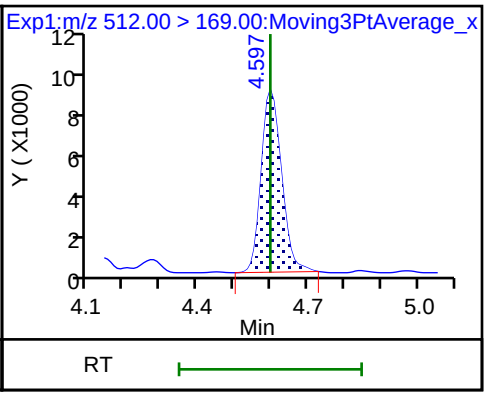
56 Perfluorododecanoic acid (M)



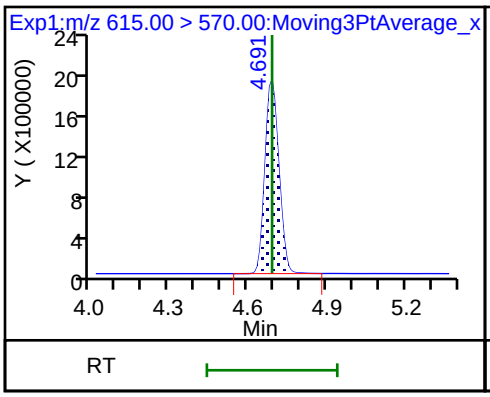
D 48 d-N-MeFOSA-M



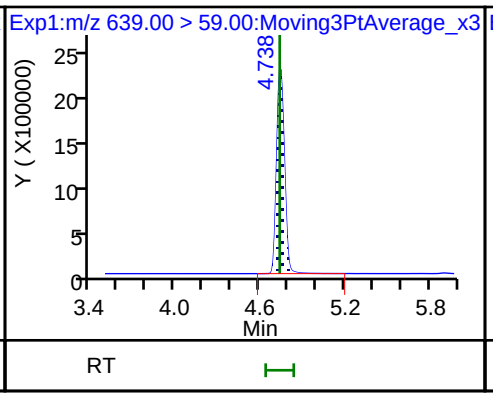
49 NMeFOSA



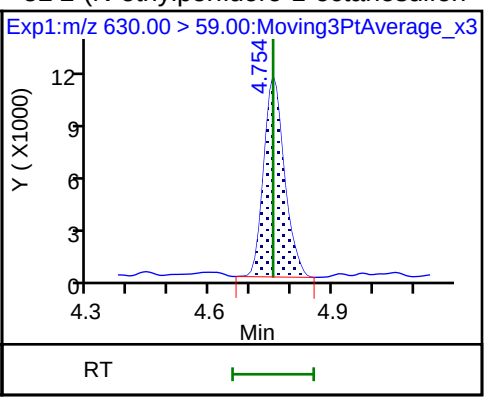
D 55 13C2 PFDoA



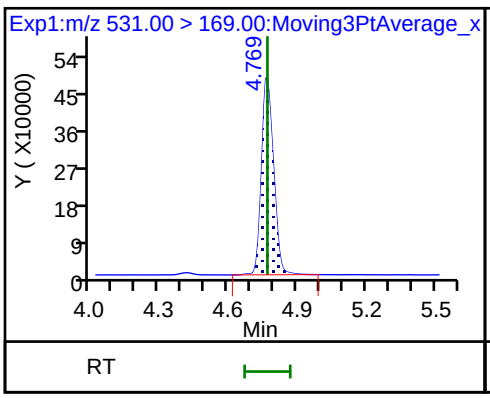
D 51 d9-N-EtFOSE-M



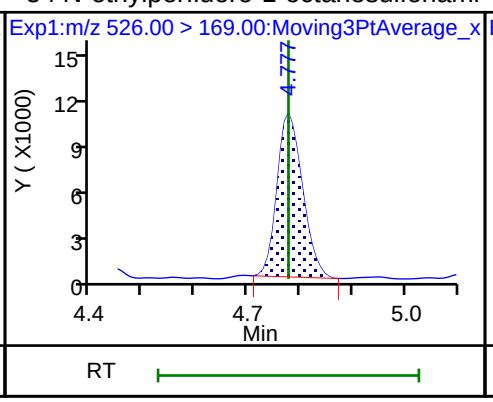
52 2-(N-ethylperfluoro-1-octanesulfon



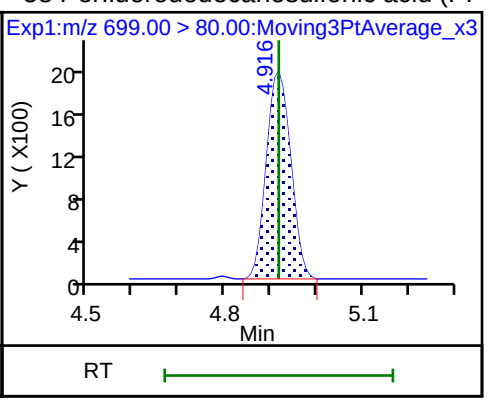
D 53 d-N-EtFOSA-M



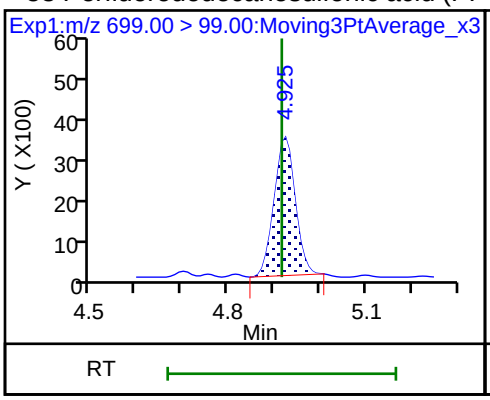
54 N-ethylperfluoro-1-octanesulfonami



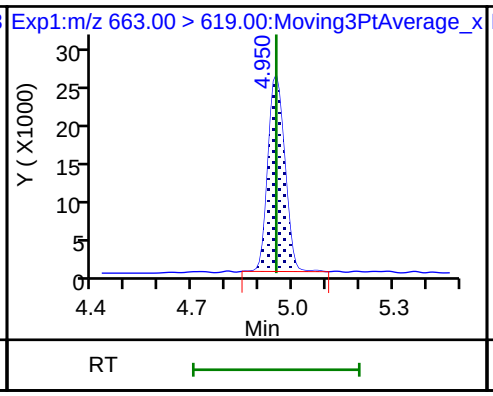
58 Perfluorododecanesulfonic acid (PF



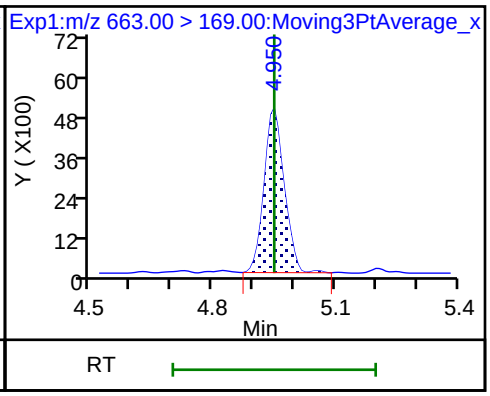
58 Perfluorododecanesulfonic acid (PF



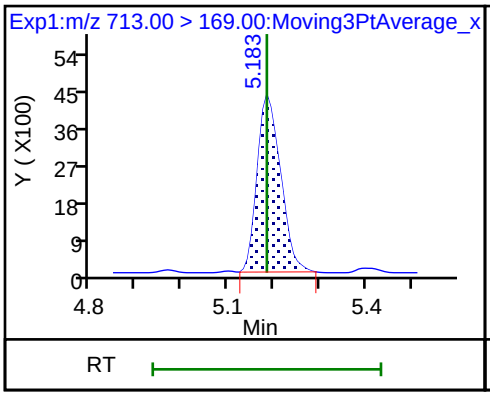
59 Perfluorotridecanoic acid



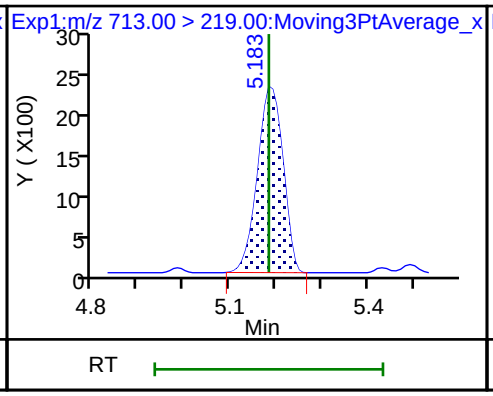
59 Perfluorotridecanoic acid



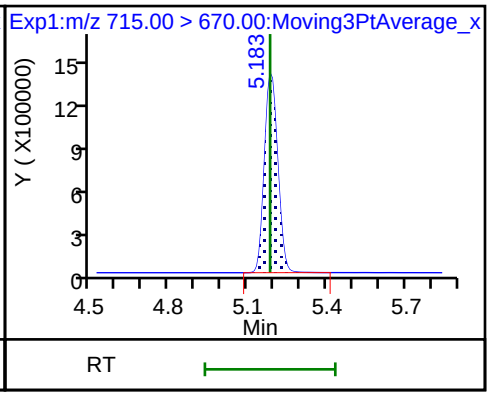
61 Perfluorotetradecanoic acid



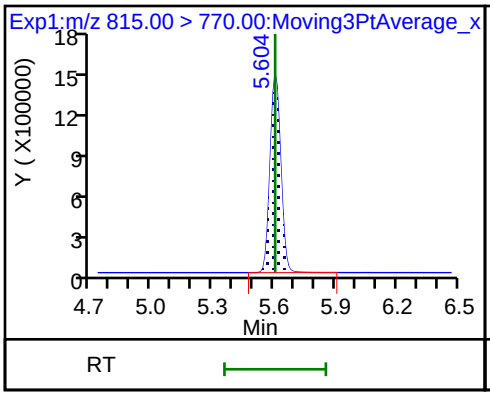
61 Perfluorotetradecanoic acid



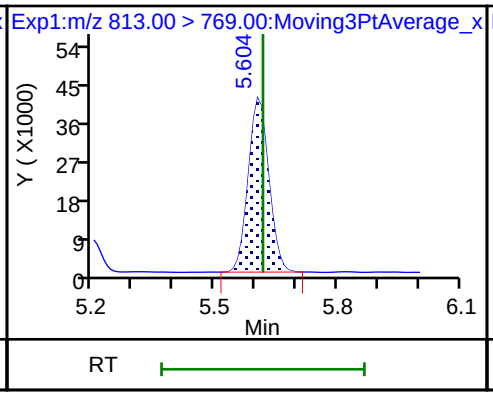
D 60 13C2 PFTeDA



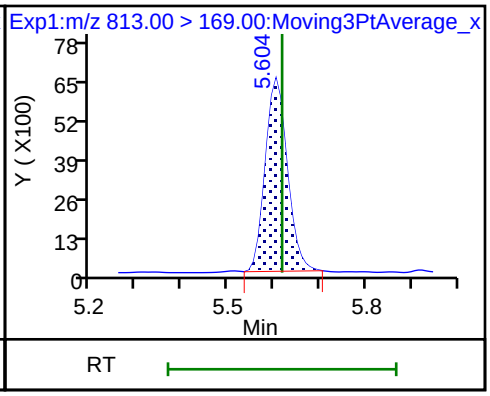
D 62 13C2 PFHxDA



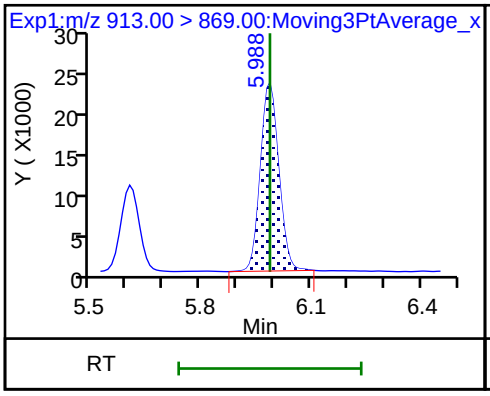
63 Perfluorohexadecanoic acid



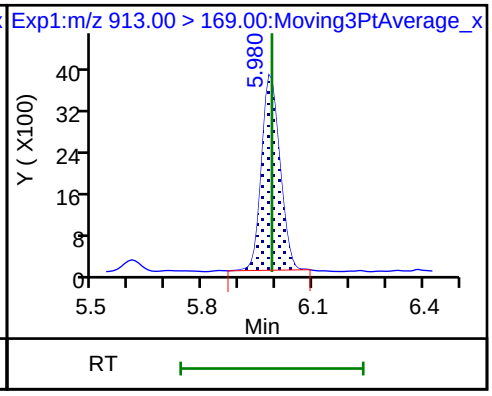
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

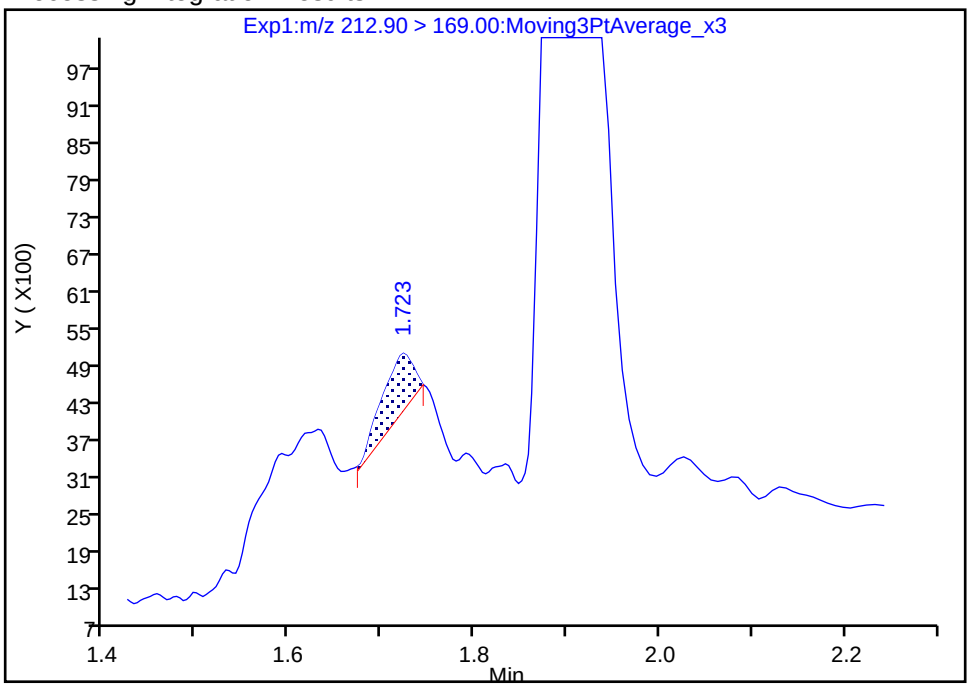
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

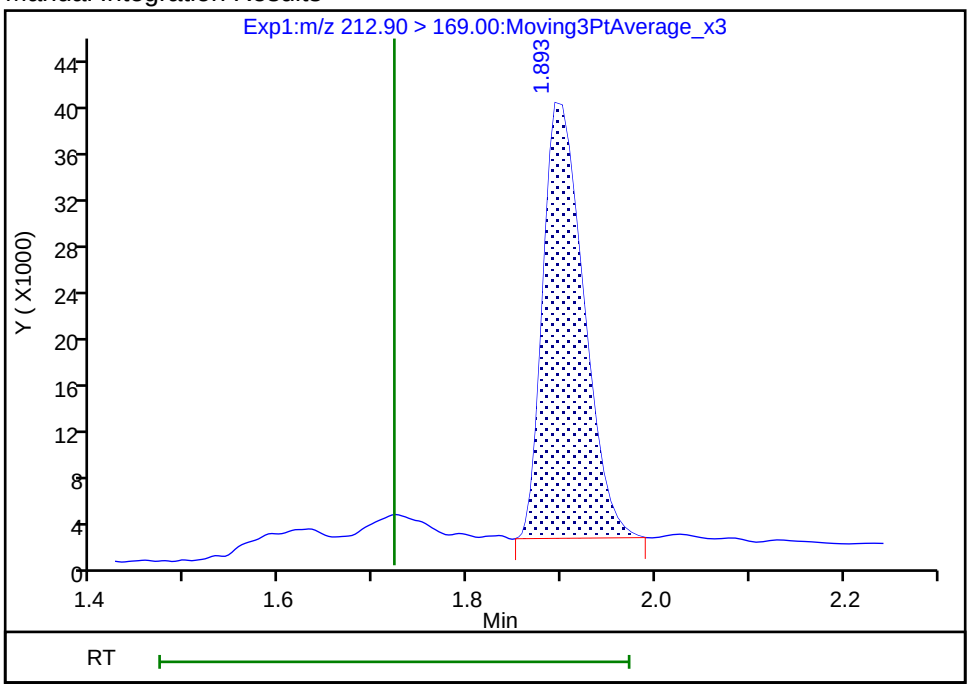
Processing Integration Results

RT: 1.72
Area: 2313
Amount: 0.001085
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 111012
Amount: 0.052091
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:26
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

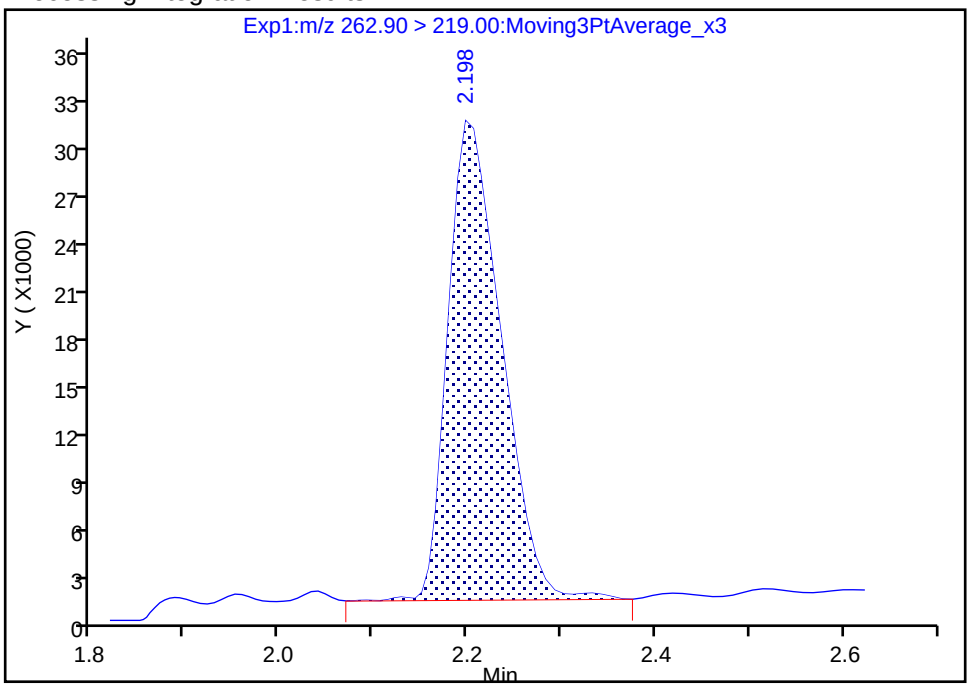
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

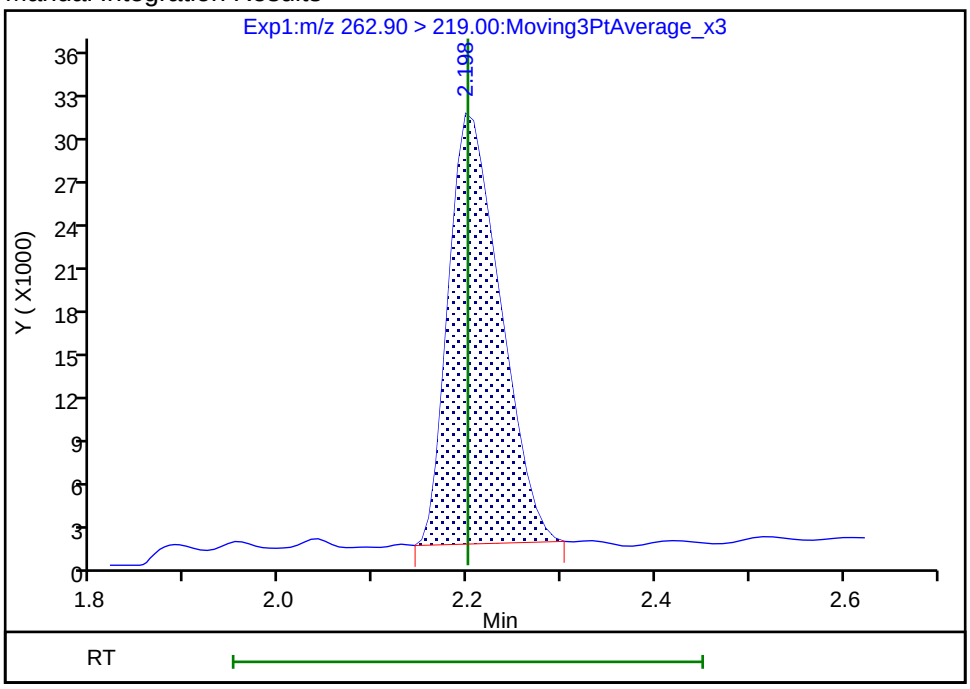
Processing Integration Results

RT: 2.20
Area: 118474
Amount: 0.057408
Amount Units: ng/ml



Manual Integration Results

RT: 2.20
Area: 114657
Amount: 0.055558
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:32
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

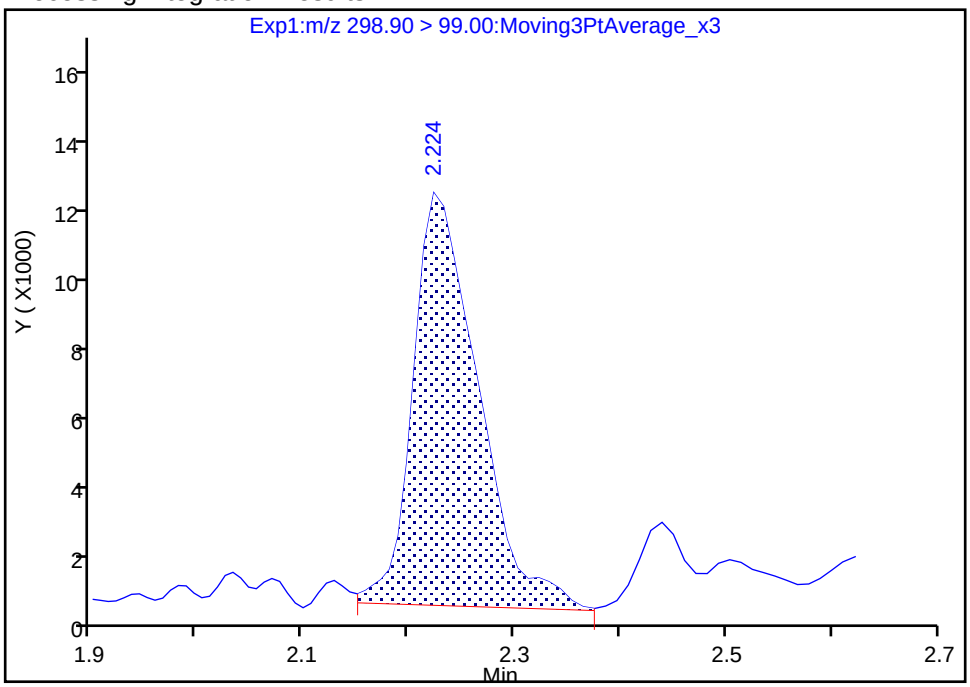
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

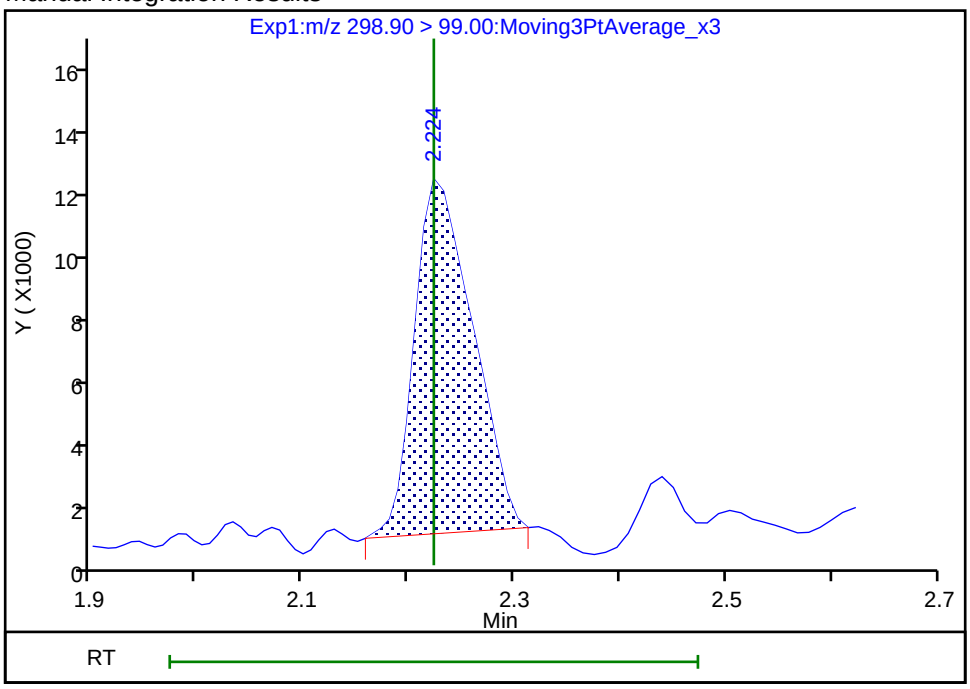
Processing Integration Results

RT: 2.22
Area: 49430
Amount: 0.056561
Amount Units: ng/ml



Manual Integration Results

RT: 2.22
Area: 41986
Amount: 0.043781
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

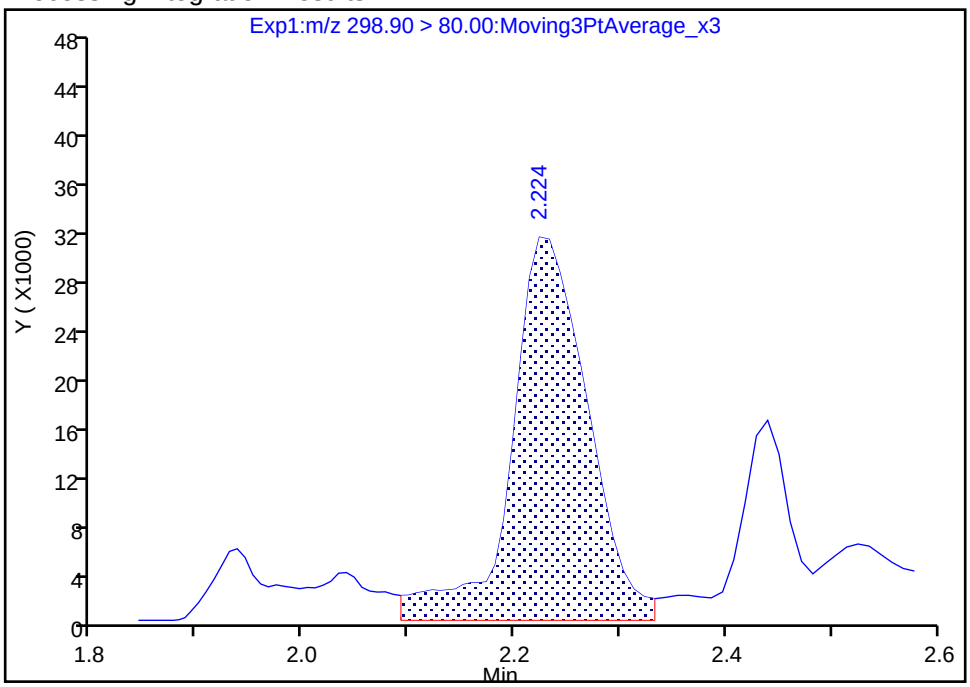
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

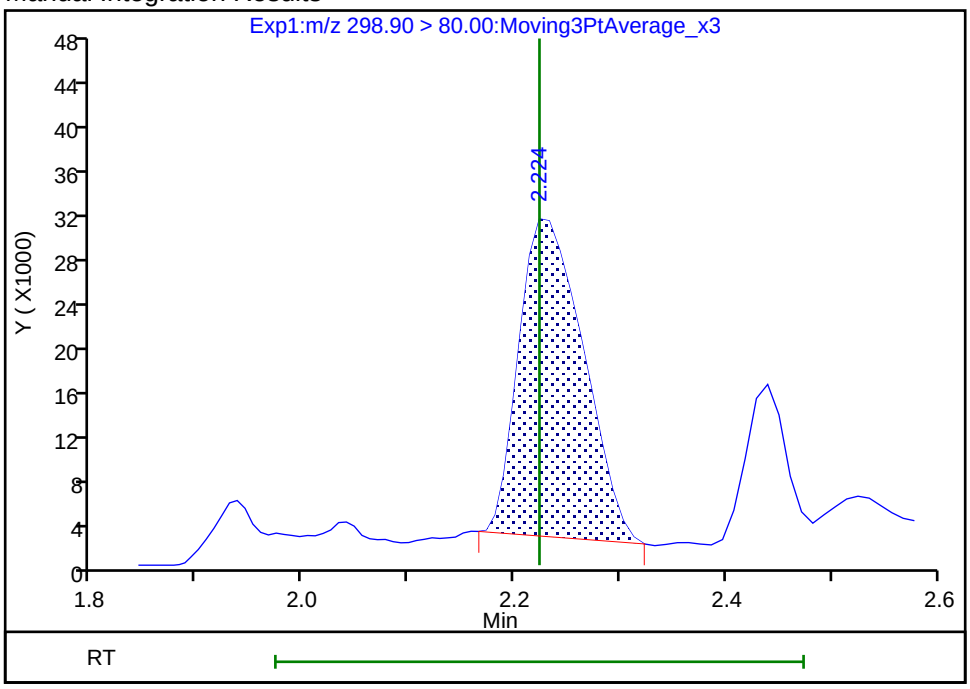
Processing Integration Results

RT: 2.22
Area: 157958
Amount: 0.056561
Amount Units: ng/ml



Manual Integration Results

RT: 2.22
Area: 122265
Amount: 0.043781
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:40
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

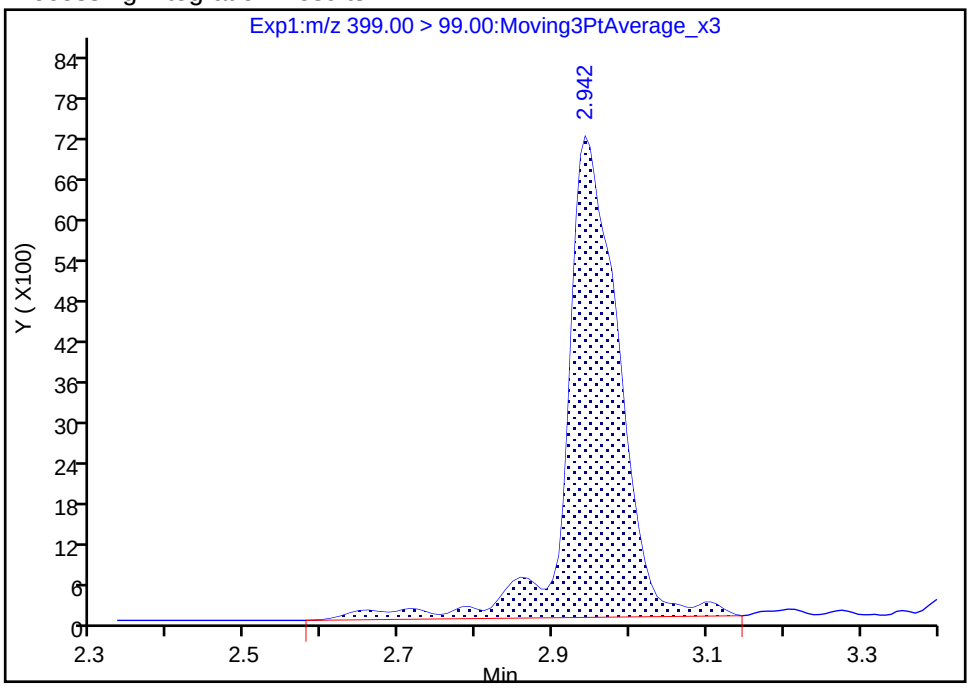
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

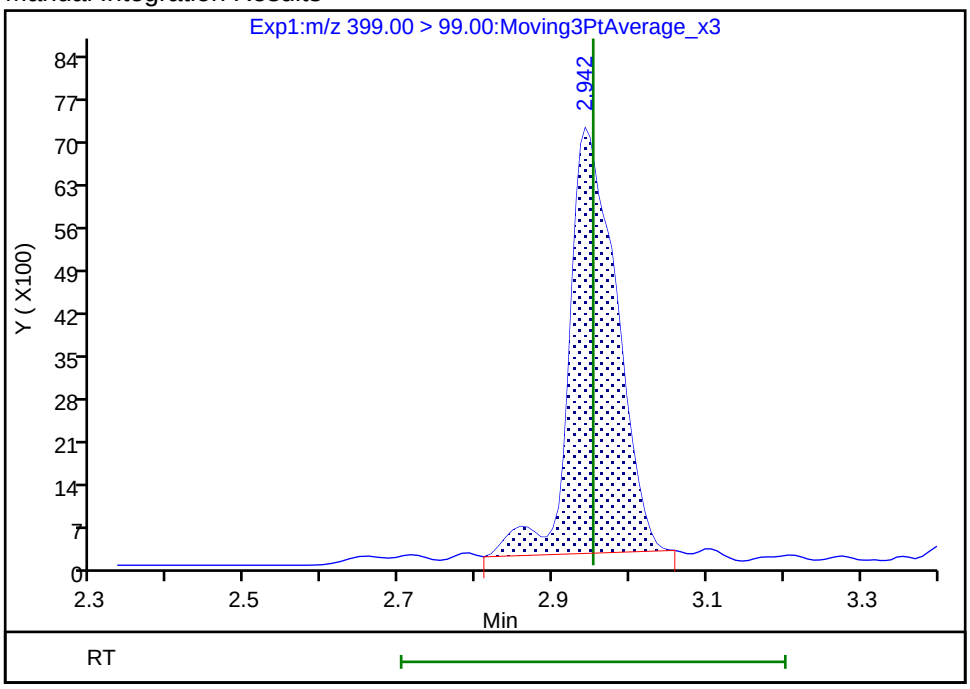
Processing Integration Results

RT: 2.94
Area: 34160
Amount: 0.052809
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 29890
Amount: 0.050923
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:53
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

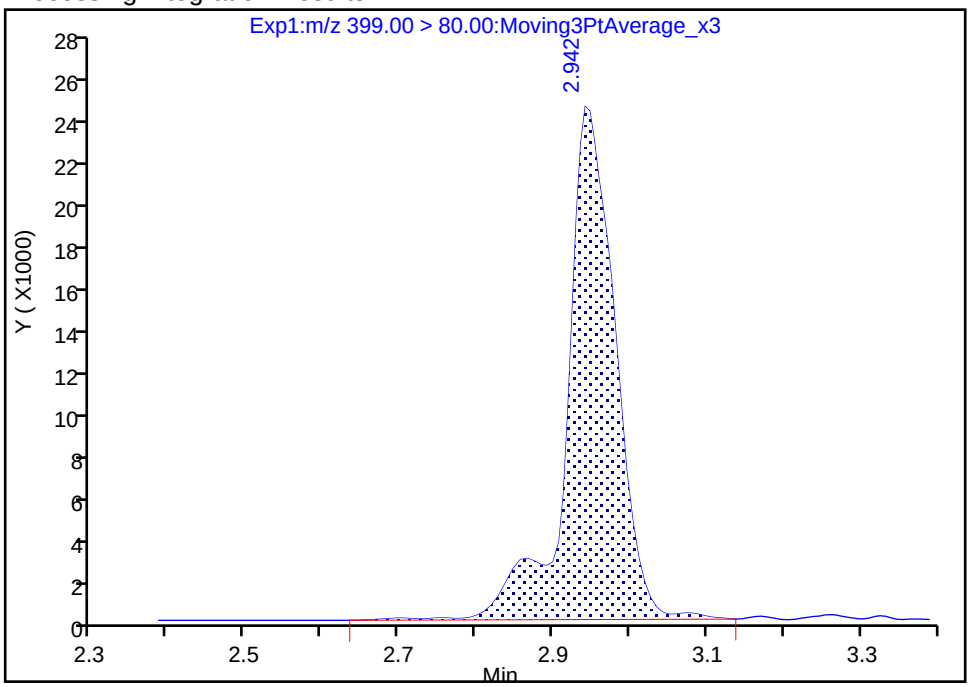
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

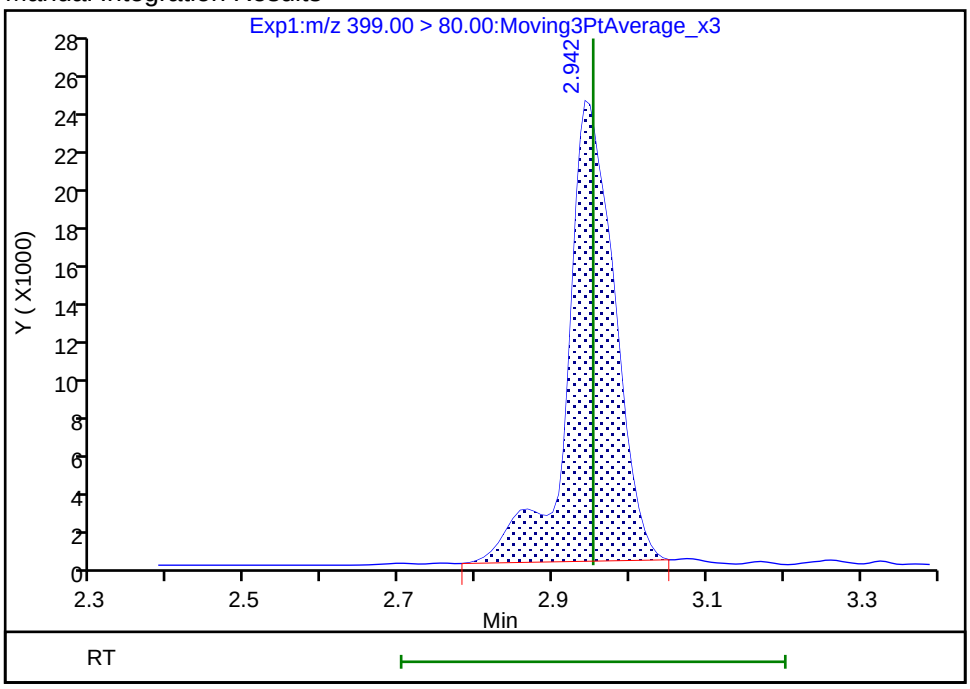
Processing Integration Results

RT: 2.94
Area: 106430
Amount: 0.052809
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 102628
Amount: 0.050923
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:44:57
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

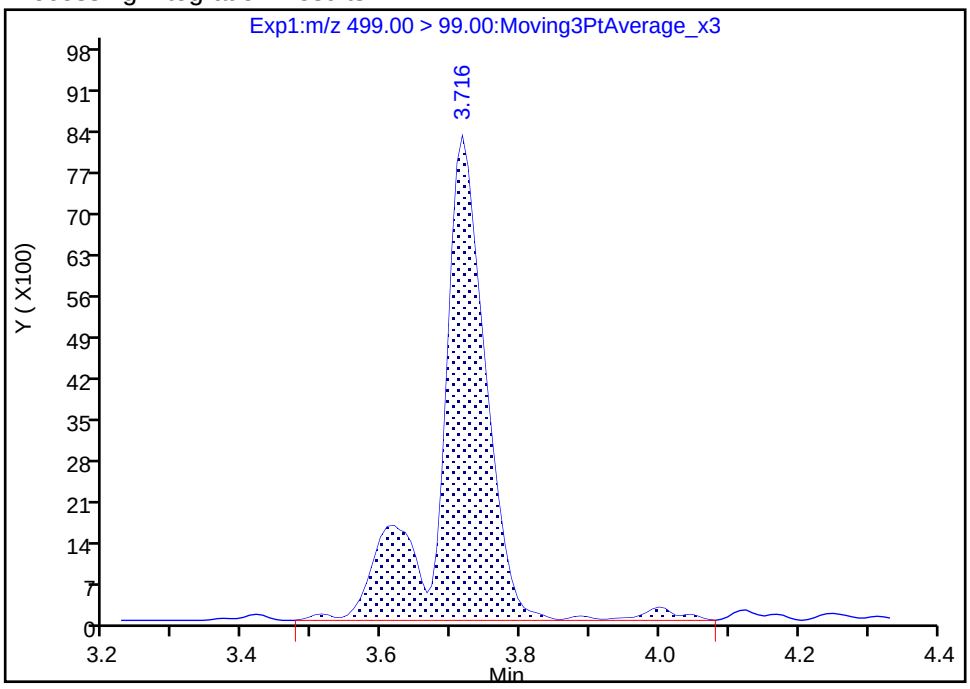
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

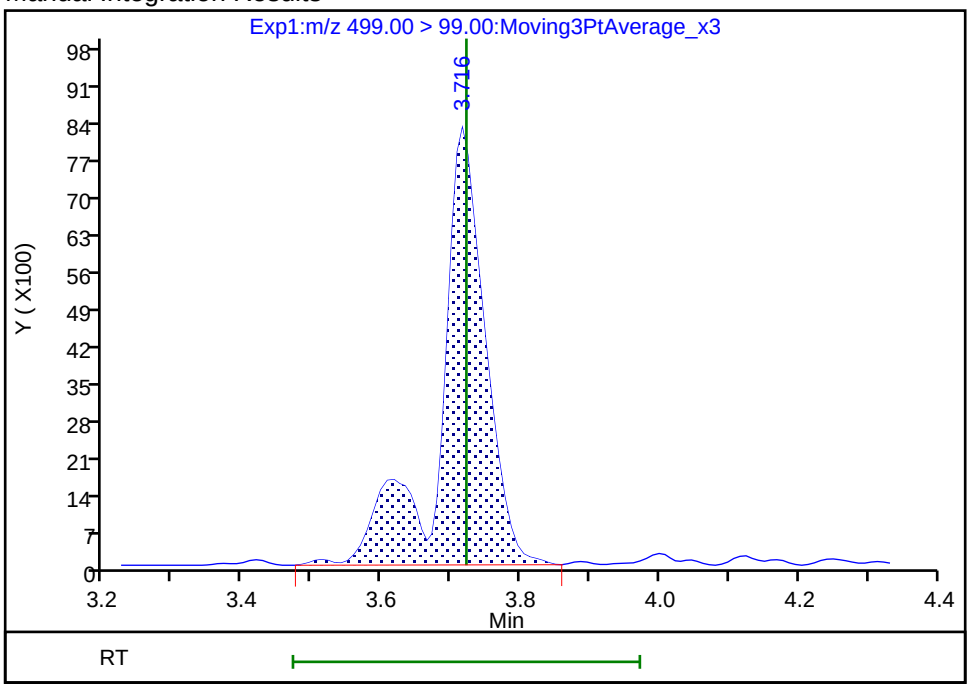
Processing Integration Results

RT: 3.72
Area: 38743
Amount: 0.072080
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 37662
Amount: 0.069176
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:05
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

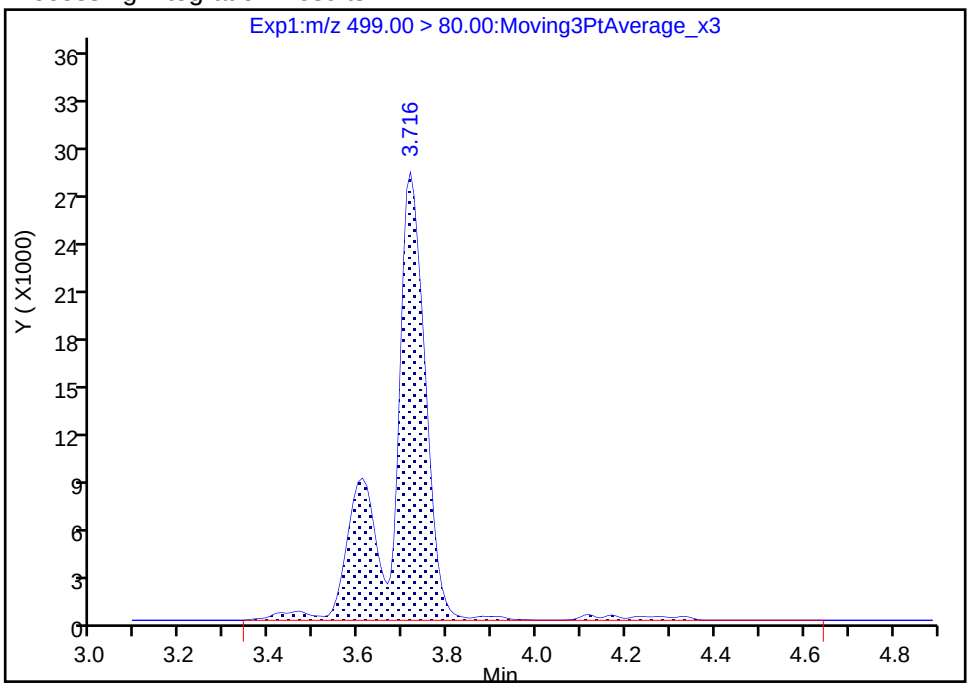
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d				
Injection Date:	09-Oct-2019 00:14:22	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	38	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

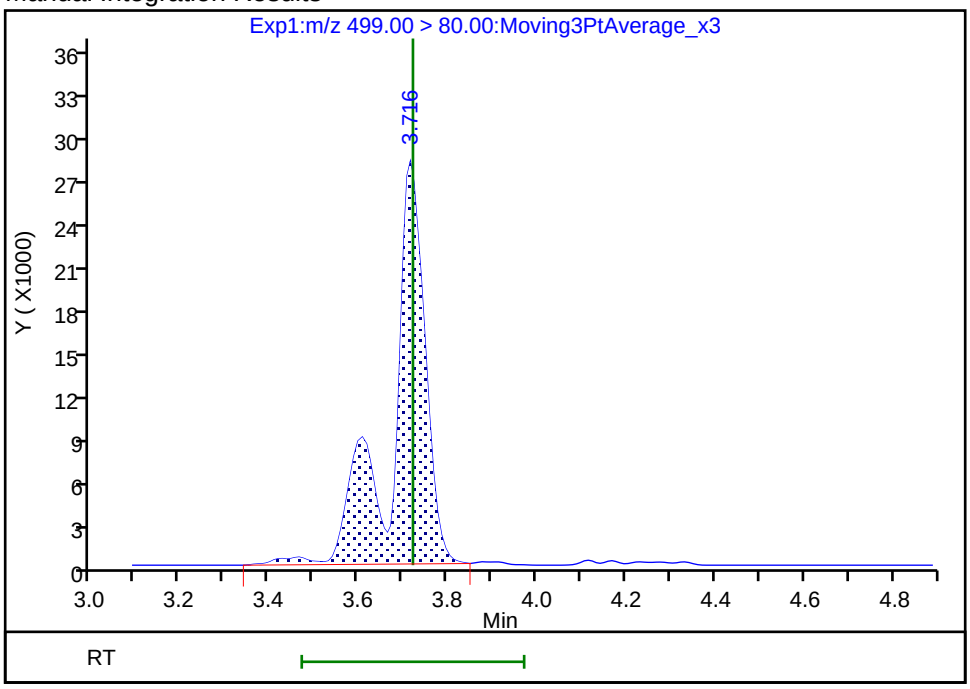
Processing Integration Results

RT: 3.72
Area: 151607
Amount: 0.072080
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 145498
Amount: 0.069176
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:10
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

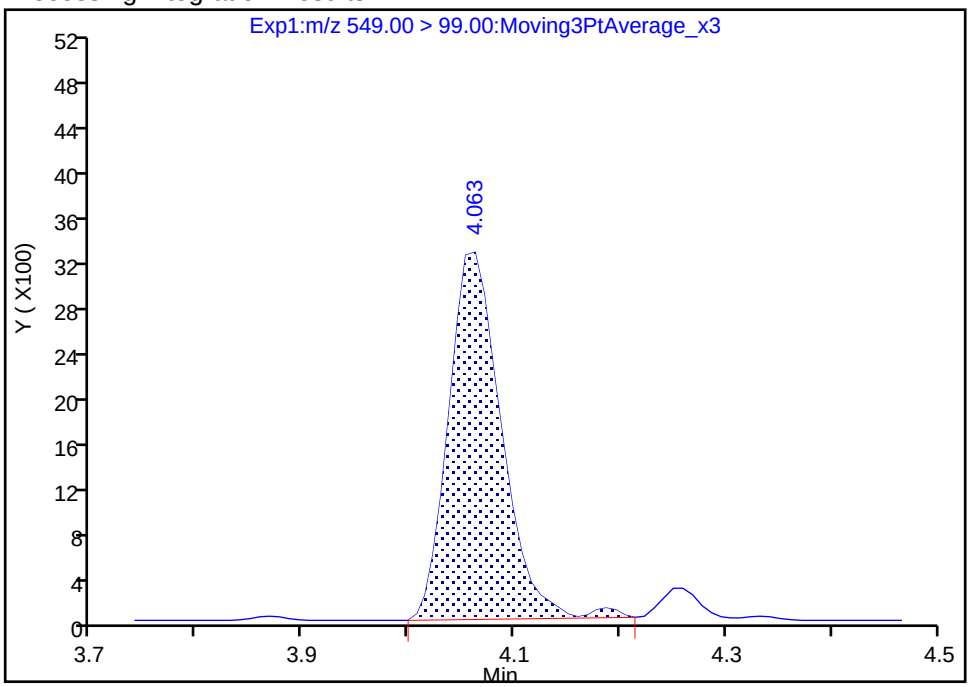
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

34 Perfluorononanesulfonic acid, CAS: 68259-12-1

Signal: 2

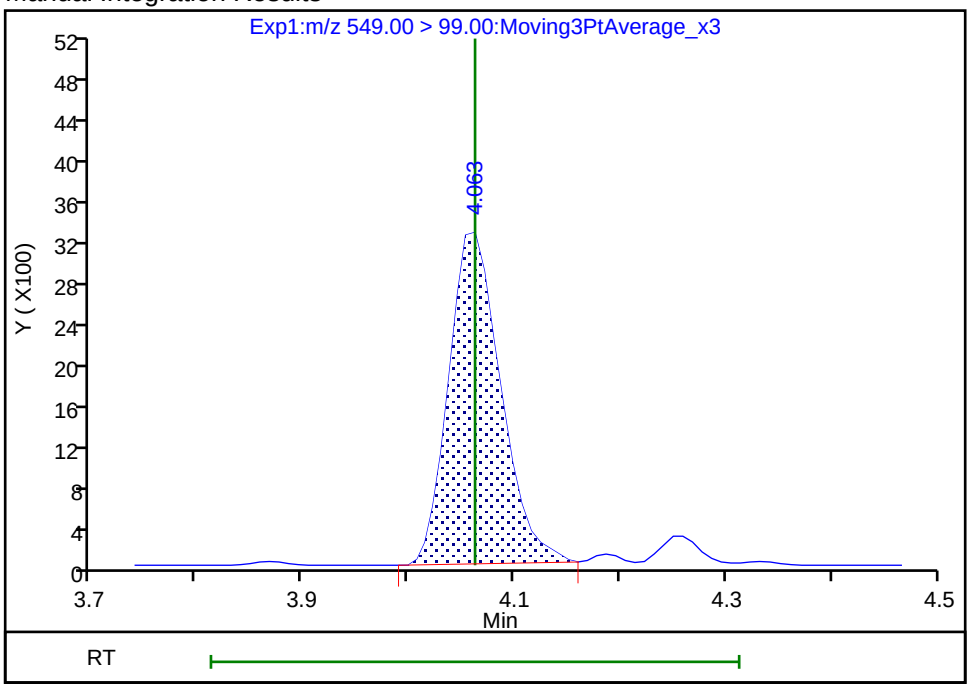
Processing Integration Results

RT: 4.06
Area: 11380
Amount: 0.047101
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 11164
Amount: 0.047101
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:19
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

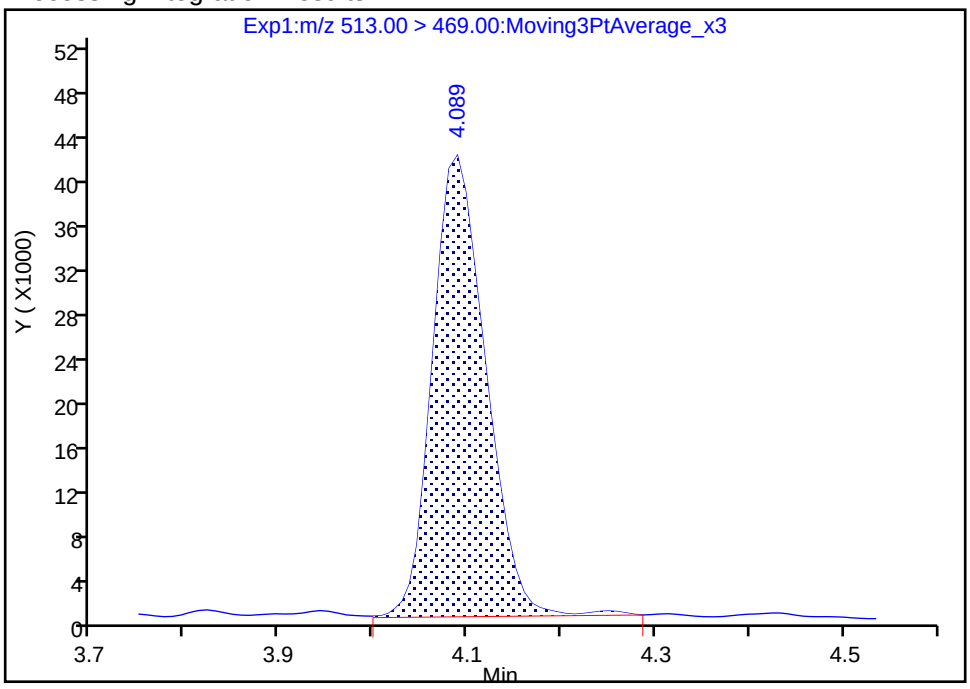
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

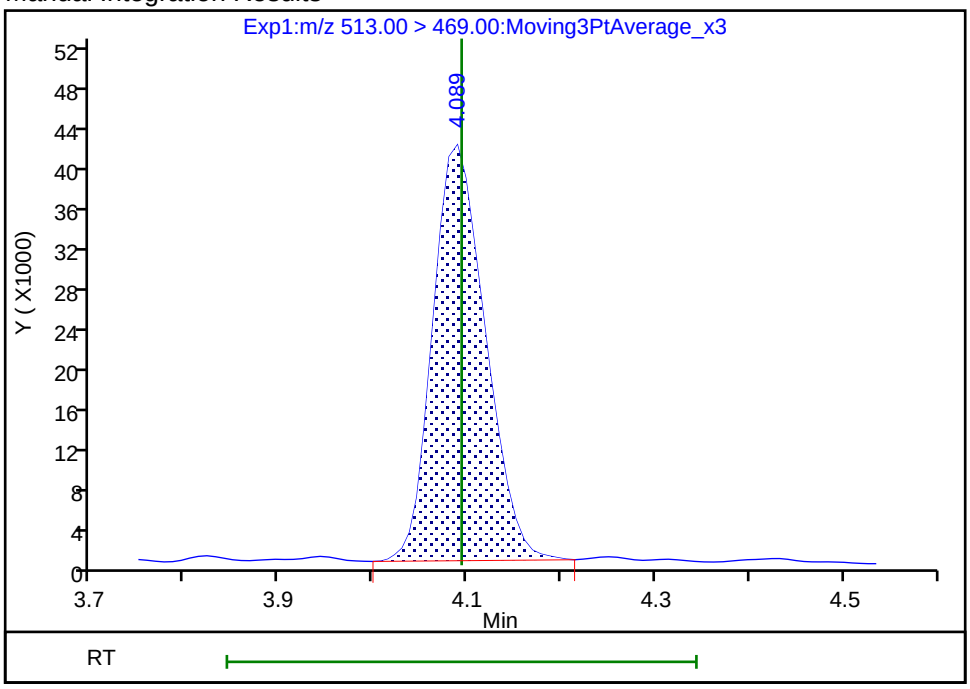
Processing Integration Results

RT: 4.09
Area: 165267
Amount: 0.057727
Amount Units: ng/ml



Manual Integration Results

RT: 4.09
Area: 162583
Amount: 0.056790
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:25
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

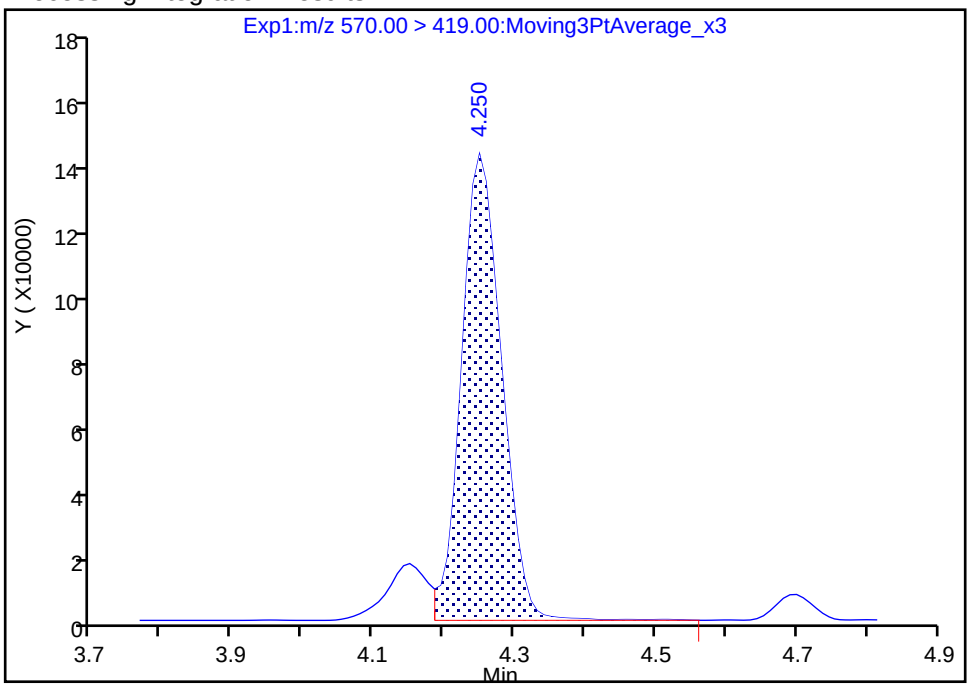
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

40 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

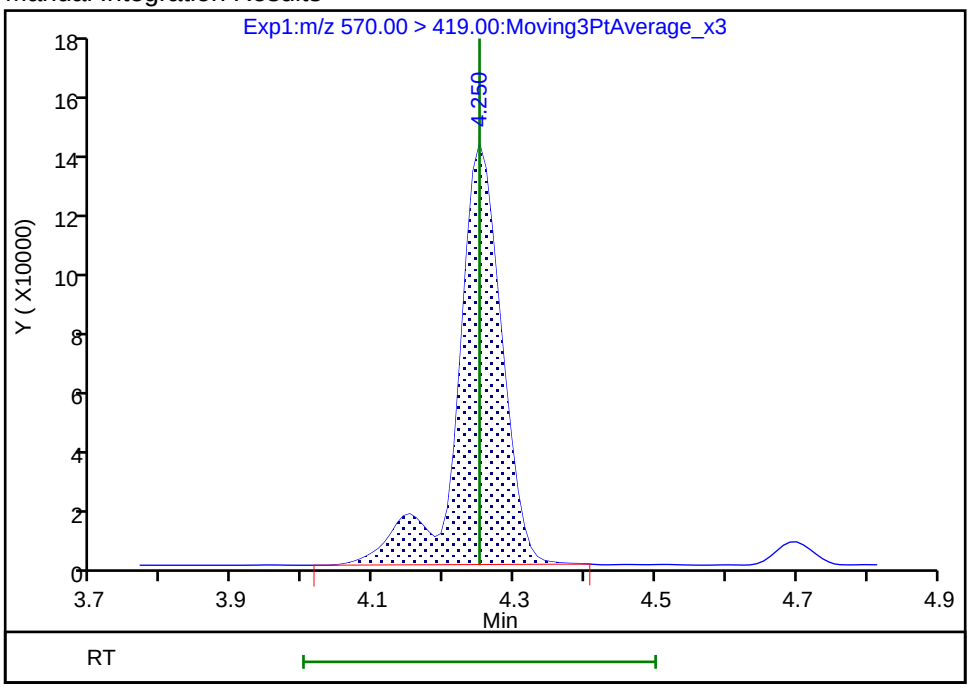
Processing Integration Results

RT: 4.25
Area: 566193
Amount: 0.465413
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 629889
Amount: 0.517771
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:34
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

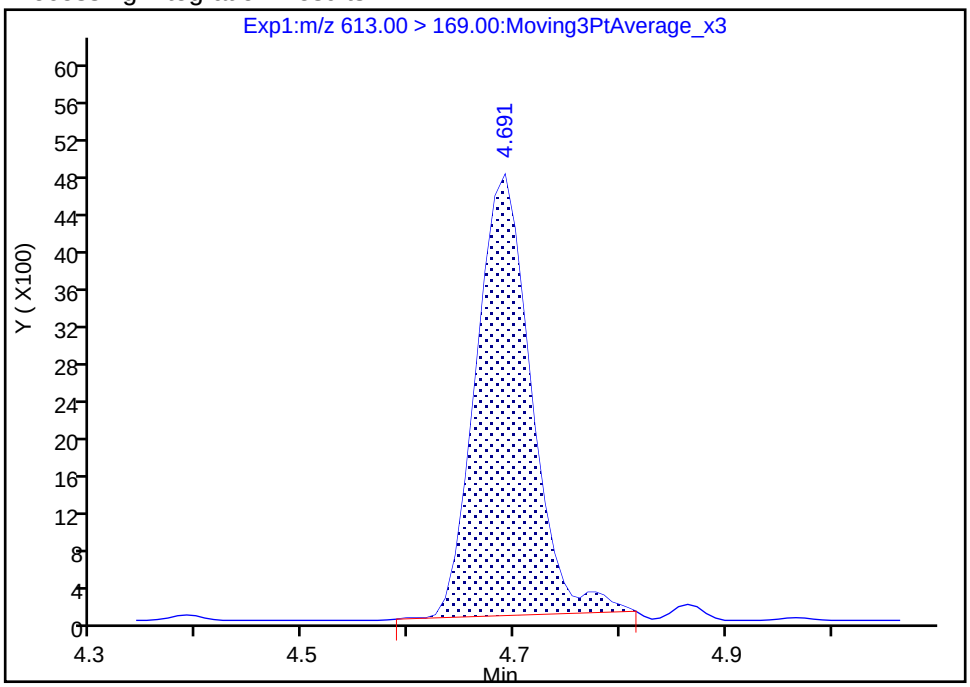
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

56 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

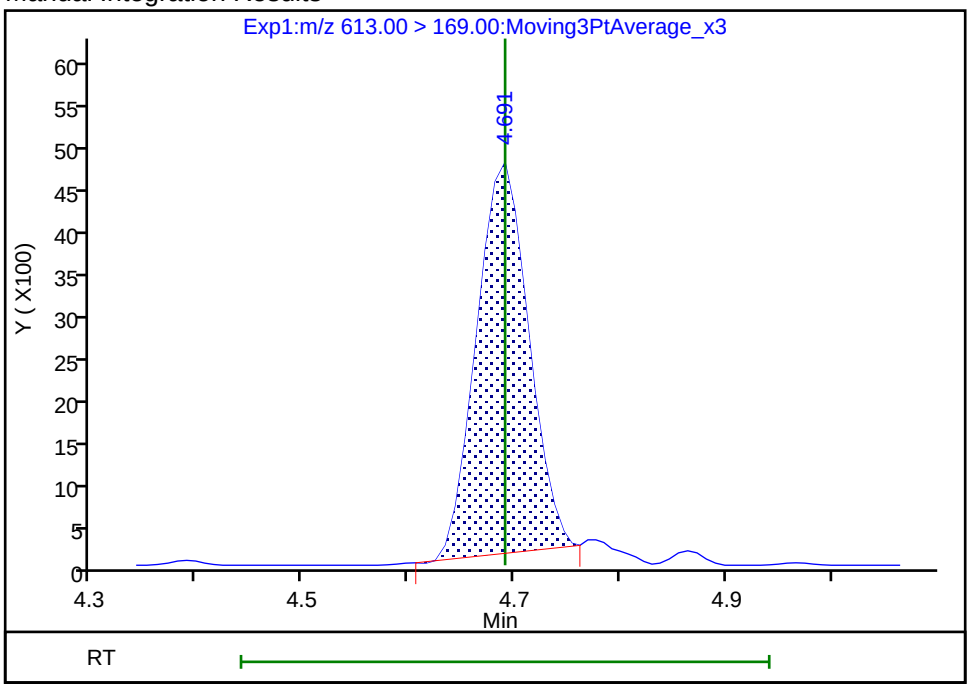
Processing Integration Results

RT: 4.69
Area: 17064
Amount: 0.058795
Amount Units: ng/ml



Manual Integration Results

RT: 4.69
Area: 15858
Amount: 0.054487
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:51
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

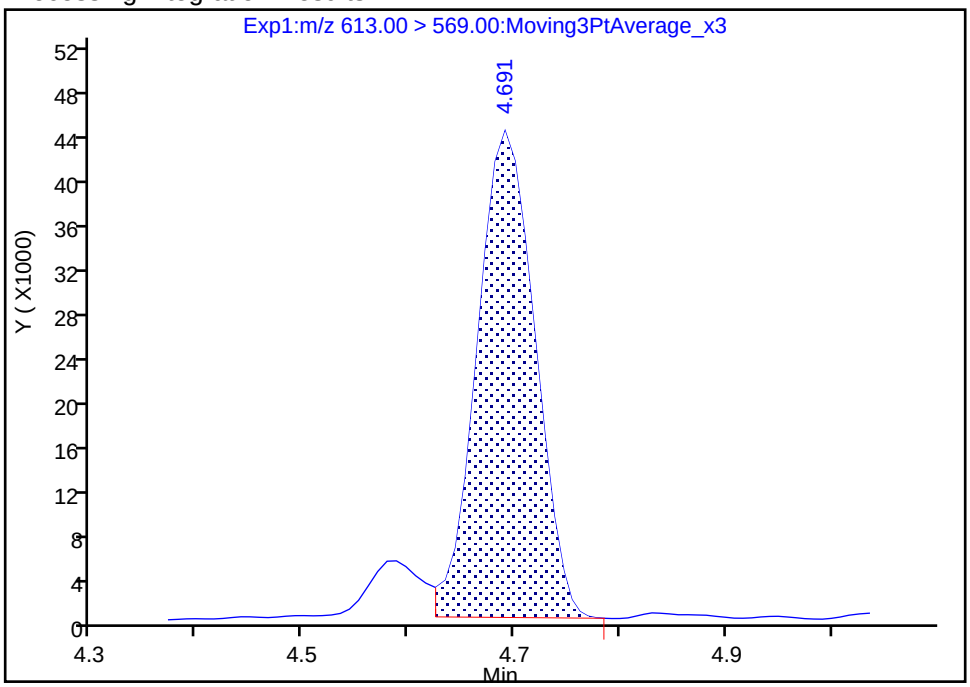
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._005.d
Injection Date: 09-Oct-2019 00:14:22 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

56 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

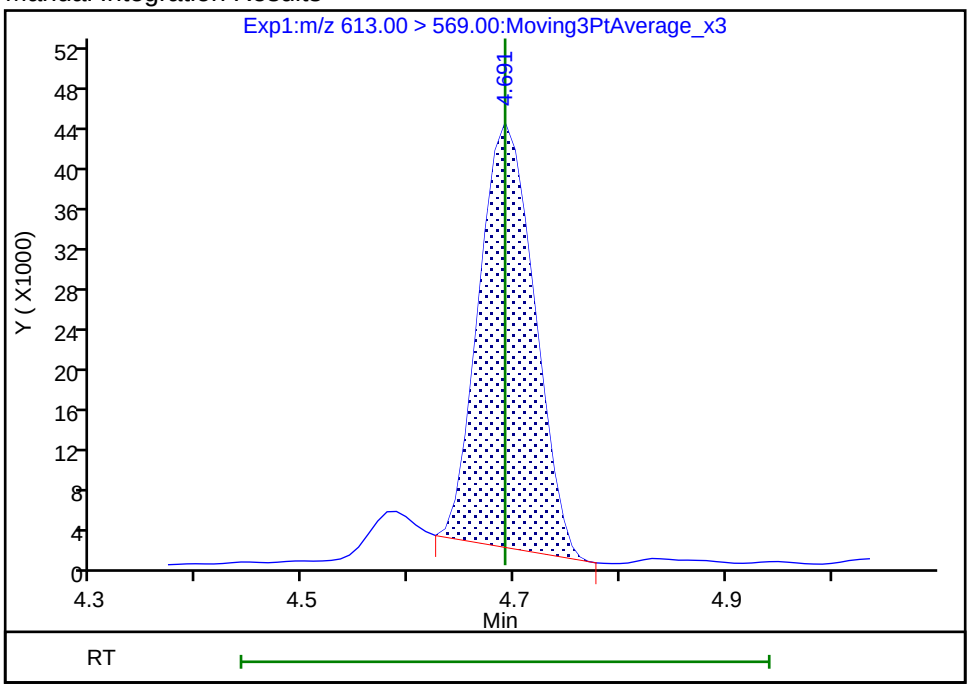
Processing Integration Results

RT: 4.69
Area: 167441
Amount: 0.058795
Amount Units: ng/ml



Manual Integration Results

RT: 4.69
Area: 155170
Amount: 0.054487
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:45:56
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/3 Calibration Date: 10/09/2019 00:23

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8855		2.61	2.50	4.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.009		2.46	2.50	-1.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.774		2.31	2.21	4.6	50.0
4:2 FTS	AveID	2.563	2.499		2.28	2.34	-2.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.8919		2.40	2.50	-4.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9312		2.46	2.35	5.0	50.0
HFPO-DA (GenX)	AveID	1.515	1.364		2.25	2.50	-10.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.150		2.56	2.50	2.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.175		2.19	2.28	-4.0	40.0
DONA	AveID	2.582	2.759		2.52	2.36	6.9	50.0
6:2 FTS	AveID	2.329	2.134		2.17	2.37	-8.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	1.018		2.45	2.38	2.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.046		2.31	2.50	-7.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.009		2.18	2.32	-6.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	0.9931		2.41	2.50	-3.6	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7317		2.41	2.33	3.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6326		2.49	2.40	3.8	50.0
8:2 FTS	AveID	2.215	2.343		2.53	2.40	5.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	0.9371		2.46	2.50	-1.4	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.925		2.66	2.50	6.5	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8310		2.54	2.50	1.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8591		2.55	2.41	5.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.7688		2.44	2.50	-2.3	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.7204		2.26	2.50	-9.7	40.0
F-53B Minor	AveID	1.870	1.923		2.42	2.36	2.8	50.0
NMeFOSE	AveID	1.042	1.014		2.43	2.50	-2.7	40.0
NMeFOSA	AveID	0.8723	0.8888		2.55	2.50	1.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.045		2.54	2.50	1.4	40.0
10:2 FTS	AveID	1.705	1.616		2.28	2.41	-5.2	50.0
NEtFOSE	AveID	1.054	1.075		2.55	2.50	2.0	40.0
NEtFOSA	AveID	1.005	1.051		2.61	2.50	4.6	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0864		2.50	2.42	3.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/3 Calibration Date: 10/09/2019 00:23

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6547		2.54	2.50	1.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1418		2.51	2.50	0.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8998		2.57	2.50	2.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7201		2.50	2.50	-0.2	50.0
13C4 PFBA	Ave	0.7371	0.7247		2.46	2.50	-1.7	50.0
13C5 PFPeA	Ave	0.6168	0.6083		2.47	2.50	-1.4	50.0
M2-4:2 FTS	Ave	0.1177	0.0809		1.61	2.34	-31.2	50.0
13C2 PFHxA	Ave	0.7105	0.6948		2.45	2.50	-2.2	50.0
13C3 HFPO-DA	Ave	0.1236	0.1378		2.79	2.50	11.5	50.0
13C4 PFHpA	Ave	0.8130	0.7780		2.39	2.50	-4.3	50.0
18O2 PFHxS	Ave	0.5224	0.4819		2.18	2.37	-7.7	50.0
M2-6:2 FTS	Ave	0.1134	0.0769		1.61	2.38	-32.2	50.0
13C8 PFOA	Ave	0.8884	0.8205		2.31	2.50	-7.6	50.0
13C4 PFOA	Ave	0.9372	0.9134		2.44	2.50	-2.5	50.0
13C4 PFOS	Ave	0.6062	0.5649		2.23	2.39	-6.8	50.0
13C8 PFOS	Ave	0.1318	0.1282		2.43	2.50	-2.8	50.0
13C5 PFNA	Ave	0.8344	0.8254		2.47	2.50	-1.1	50.0
13C2 PFDA	Ave	0.9417	0.8912		2.37	2.50	-5.4	50.0
M2-8:2 FTS	Ave	0.1066	0.0676		1.52	2.40	-36.6	50.0
13C8 FOSA	Ave	0.3127	0.3040		2.43	2.50	-2.8	50.0
d3-NMeFOSAA	Ave	0.4441	0.4375		2.46	2.50	-1.5	50.0
13C2 PFUnA	Ave	0.8035	0.7926		2.47	2.50	-1.4	50.0
d5-NEtFOSAA	Ave	0.3818	0.4048		2.65	2.50	6.0	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2013		12.3	12.5	-1.5	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2186		2.45	2.50	-2.1	50.0
13C2 PFDoA	Ave	0.8846	0.8284		2.34	2.50	-6.4	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2044		12.0	12.5	-4.0	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2052		2.39	2.50	-4.6	50.0
13C2 PFTeDA	Ave	0.6272	0.5870		2.34	2.50	-6.4	50.0
13C2 PFHxDA	Ave	0.6893	0.6412		2.33	2.50	-7.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCVIS
Inject. Date: 09-Oct-2019 00:23:55 ALS Bottle#: 40 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 14:46:52 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0316

First Level Reviewer: nadonp Date: 18-Oct-2019 14:46:52
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.900	1.900	0.0	1.000	5441034	2.61		104	849	M
D 1 13C4 PFBA										
217.00 > 172.00	1.900	1.900	0.0	0.568	6144802	2.46		98.3	5082	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.205	2.205	0.0	1.000	5201881	2.46		98.5	745	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.205	0.0	0.659	5157739	2.47		98.6	2885	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.232	2.232	0.0	0.756	6407157	2.31	Target=2.62	105	370	
298.90 > 99.00	2.232	2.232	0.0	0.756	2351407		2.72(1.31-3.93)		355	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.524	2.524	0.0	1.000	1601703	2.28		97.5	2812	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.524	2.524	0.0	0.754	640893	1.61		68.8	1322	
D 9 13C2 PFHxA										
315.00 > 270.00	2.567	2.567	0.0	0.767	5890909	2.44		97.8	2787	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.556	2.556	0.0	0.996	5254203	2.40	Target=14.83	96.0	897	
313.00 > 119.00	2.556	2.556	0.0	0.996	346508		15.16(7.41-22.24)		472	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.578	0.0	0.873	3568884	2.46	Target=1.98	105	3786	
349.00 > 99.00	2.578	2.578	0.0	0.873	1788518		2.00(0.99-2.97)		2649	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.685	2.685	0.0	0.803	1168723	2.79		112	1626	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.685	2.685	0.0	1.000	1594285	2.25		90.0	1015	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.941	0.0	0.879	6596246	2.39		95.7	3027	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.947	2.947	0.0	1.002	7586123	2.56	Target=4.24	102	1494	
363.00 > 169.00	2.947	2.947	0.0	1.002	1731571		4.38(2.12-6.36)		1744	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.947	2.947	0.0	0.998	4368305	2.18	Target=3.27	96.0	1923	
399.00 > 99.00	2.952	2.947	0.005	1.000	1327998		3.29(1.64-4.91)		2176	
D 16 18O2 PFHxS										
403.00 > 84.00	2.952	2.952	0.0	0.882	3865402	2.18		92.3	4123	
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	12447918	2.52	Target=2.25	107	5209	
377.00 > 85.00	2.995	2.995	0.0	0.806	5519419		2.26(1.12-3.37)		2829	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.325	0.0	0.994	619650	1.61		67.8	2355	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.325	0.0	1.000	1319608	2.17		91.6	2204	
D 21 13C8 PFOA										
421.00 > 376.00	3.339	3.339	0.0	0.998	6956474	2.31		92.4	5806	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.339	3.339	0.0	0.899	4639884	2.45	Target=3.58	103	3925	
449.00 > 99.00	3.339	3.339	0.0	0.899	1245952		3.72(1.79-5.37)		1643	
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.346	0.0	1.000	7744813	2.44		97.5	3710	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.346	0.0		8478864	2.50			3927	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.346	3.346	0.0	1.000	8098604	2.31	Target=2.79	92.5	1020	
413.00 > 169.00	3.346	3.346	0.0	1.000	2786753		2.91(1.40-4.19)		2014	
D 26 13C8 PFOS										
507.00 > 99.00	3.714	3.714	0.0	1.110	1086936	2.43		97.2	2024	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.110	4578910	2.23		93.2	3458	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.722	3.722	0.0	1.002	4484251	2.18	Target=3.83	94.0	1982	
499.00 > 99.00	3.722	3.722	0.0	1.002	1147847		3.91(1.92-5.75)		1304	
29 Perfluorononanoic acid										
463.00 > 419.00	3.737	3.737	0.0	1.002	6949839	2.41	Target=5.58	96.4	2014	
463.00 > 169.00	3.729	3.737	-0.008	1.000	1250119		5.56(2.79-8.37)		1748	
D 30 13C5 PFNA										
468.00 > 423.00	3.729	3.729	0.0	1.114	6998420	2.47		98.9	5402	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.930	3.930	0.0	1.058	3266064	2.41		103	2642	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.068	4.068	0.0	1.095	2908944	2.49	Target=4.51	104	3085	
549.00 > 99.00	4.068	4.068	0.0	1.095	615730		4.72(2.25-6.76)		2041	
D 36 13C2 PFDA										
515.00 > 470.00	4.086	4.086	0.0	1.221	7556670	2.37		94.6	4824	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.095	4.095	0.0	1.224	549258	1.52		63.4	2118	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.095	4.095	0.0	1.002	7081065	2.46	Target=15.45	98.6	2102	
513.00 > 169.00	4.086	4.095	-0.009	1.000	457550		15.48(7.73-23.18)		228	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.095	4.095	0.0	1.000	1287086	2.53		106	2561	
D 32 13C8 FOSA										
506.00 > 78.00	4.113	4.113	0.0	1.229	2577820	2.43		97.2	2513	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.113	4.113	0.0	1.000	7541266	2.66		106	2246	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.247	4.247	0.0	1.269	3709850	2.46		98.5	2040	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.256	4.256	0.0	1.002	3082984	2.54		101	387	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.387	4.387	0.0	1.181	3966428	2.54	Target=4.64	106	3232	
599.00 > 99.00	4.387	4.387	0.0	1.181	801973		4.95(2.32-6.96)		2433	
D 42 13C2 PFUnA										
565.00 > 520.00	4.404	4.404	0.0	1.316	6719979	2.47		98.6	6119	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.413	0.0	1.319	3432047	2.65		106	1603	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.413	4.413	0.0	1.002	5166400	2.44	Target=9.27	97.7	2257	
563.00 > 169.00	4.404	4.413	-0.009	1.000	508489		10.16(4.63-13.90)		1338	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.421	4.421	0.0	1.002	2472518	2.26		90.3	1596	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.550	4.550	0.0	1.225	8676547	2.42		103	4564	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.567	4.567	0.0		8535559	12.3		98.5	3268	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.585	4.585	0.0	1.004	1730399	2.43		97.3	2592	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.594	4.594	0.0		1853140	2.45		97.9	288	
49 NMeFOSA										
512.00 > 169.00	4.603	4.603	0.0	1.002	1647009	2.55		102	1503	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.697	4.697	0.0	1.000	7341922	2.54	Target=9.58	101	2793	
613.00 > 169.00	4.697	4.697	0.0	1.000	748617		9.81(4.79-14.36)		1746	
D 55 13C2 PFDoA										
615.00 > 570.00	4.697	4.697	0.0	1.404	7023834	2.34		93.6	4623	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.707	4.707	0.0	1.149	892972	2.28		94.8	2944	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.744	4.744	0.0		8663604	12.0		96.0	4202	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.751	4.751	0.0	1.002	1862132	2.55		102	2190	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.766	4.766	0.0		1739883	2.38		95.4	1419	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.774	4.774	0.0	1.002	1828261	2.61		105	801	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.913	4.913	0.0	1.323	400371	2.50	Target=0.64	103	3128	
699.00 > 99.00	4.922	4.913	0.009	1.325	607850		0.66(0.32-0.96)		2731	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.947	4.947	0.0	1.053	4598382	2.54	Target=5.94	102	3132	
663.00 > 169.00	4.955	4.947	0.008	1.055	781023		5.89(2.97-8.91)		1921	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.189	5.189	0.0	1.000	705856	2.51	Target=1.42	100	2026	
713.00 > 219.00	5.189	5.189	0.0	1.000	523715		1.35(0.71-2.13)		2721	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.189	5.189	0.0	1.551	4977452	2.34		93.6	2810	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.609	5.609	0.0	1.000	4891778	2.56	Target=6.39	103	2048	
813.00 > 169.00	5.609	5.609	0.0	1.000	750794		6.52(3.19-9.58)		3121	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.609	5.609	0.0	1.676	5436559	2.33		93.0	6529	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.993	5.993	0.0	1.068	3914916	2.50	Target=6.02	99.8	1928	
913.00 > 169.00	5.985	5.993	-0.008	1.067	666623		5.87(3.01-9.03)		2369	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

Report Date: 18-Oct-2019 14:46:53 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Injection Date: 09-Oct-2019 00:23:55 Instrument ID: A9

Lims ID: CCV L5

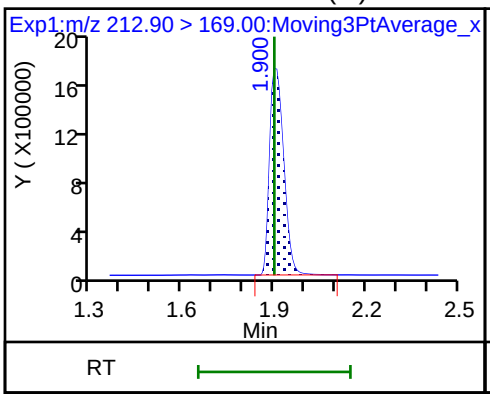
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 40 Worklist Smp#: 3

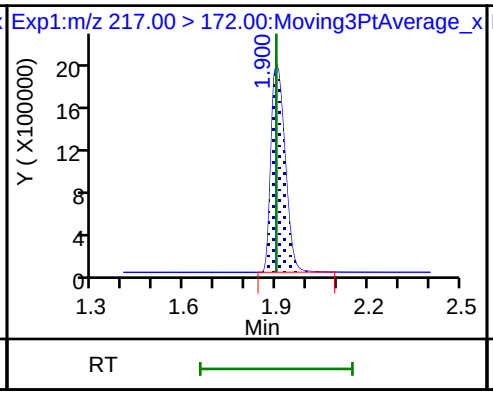
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

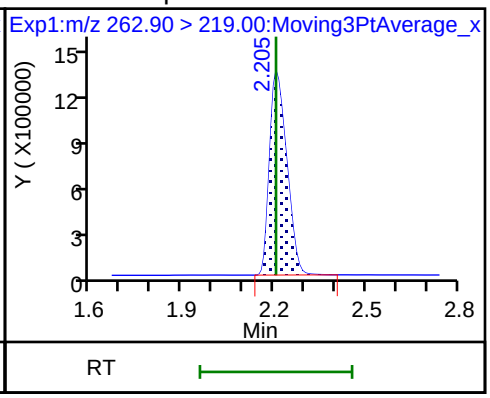
2 Perfluorobutanoic acid (M)



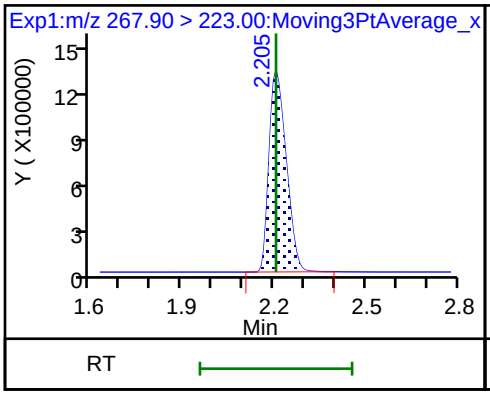
D 1 13C4 PFBA



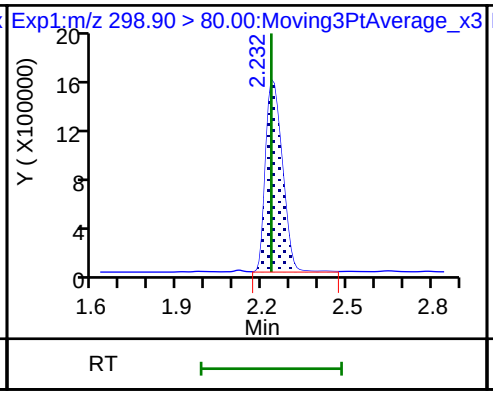
3 Perfluoropentanoic acid



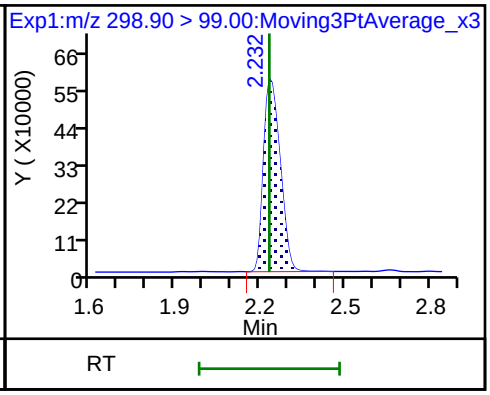
D 4 13C5 PFPeA



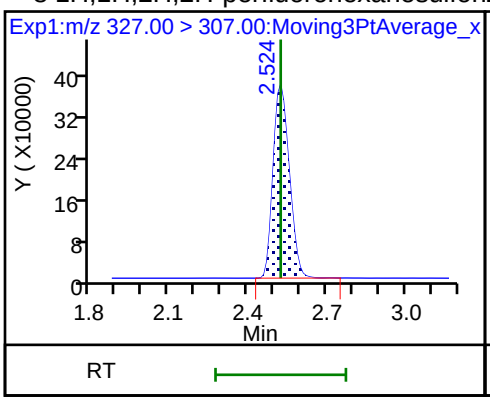
5 Perfluorobutanesulfonic acid



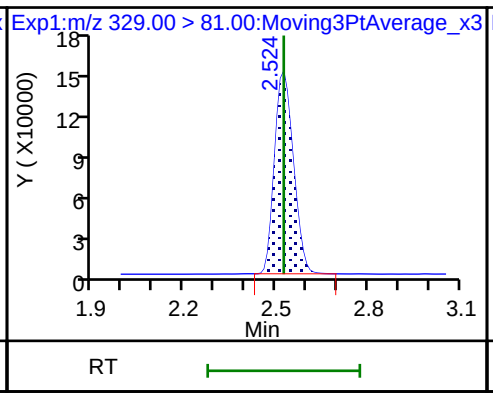
5 Perfluorobutanesulfonic acid



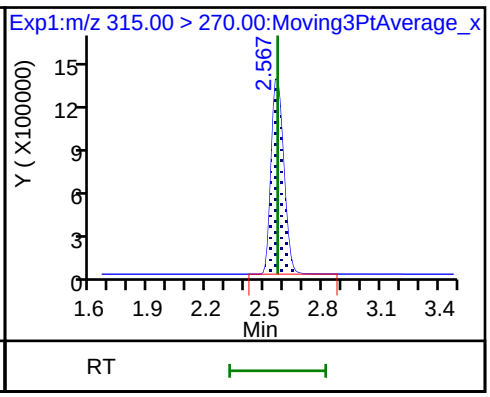
8 1H,1H,2H,2H-perfluorohexanesulfon



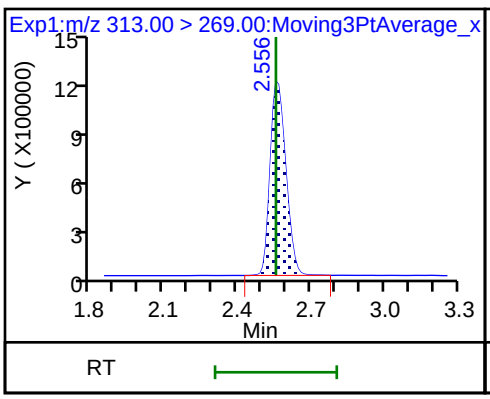
D 7 M2-4:2 FTS



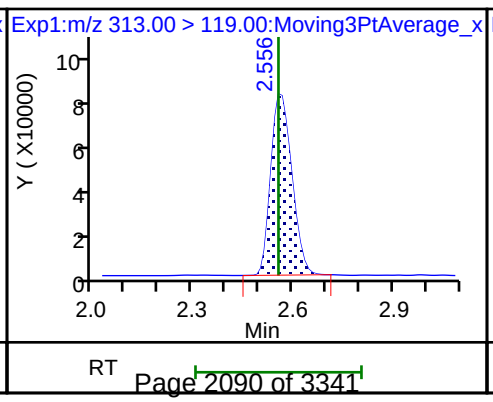
D 9 13C2 PFHxA



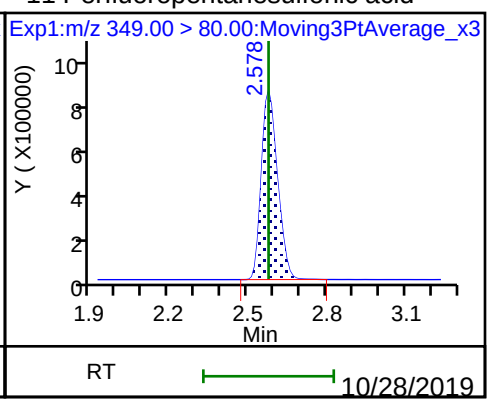
10 Perfluorohexanoic acid



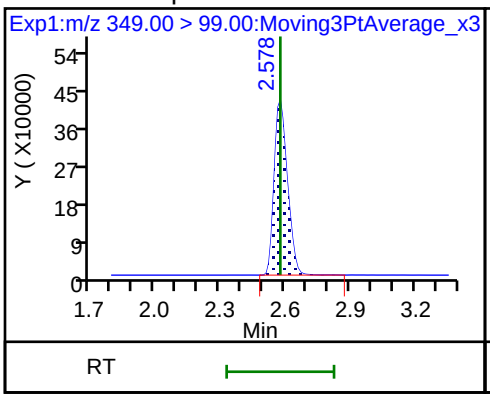
10 Perfluorohexanoic acid



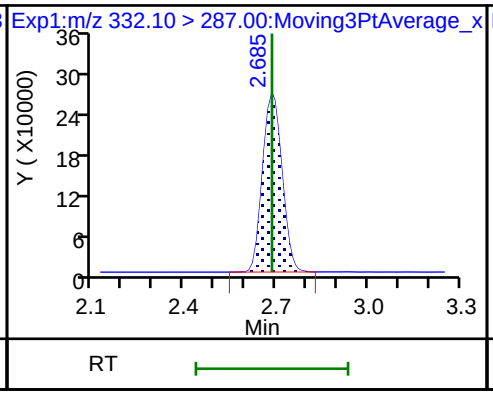
11 Perfluoropentanesulfonic acid



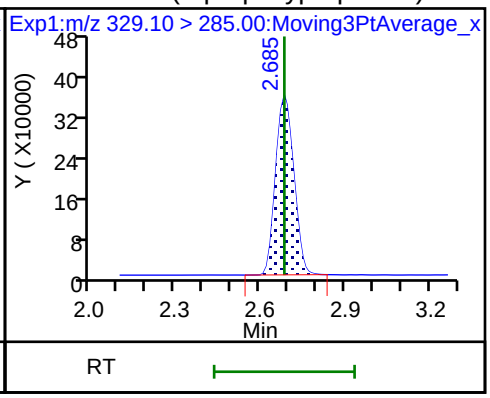
11 Perfluoropentanesulfonic acid



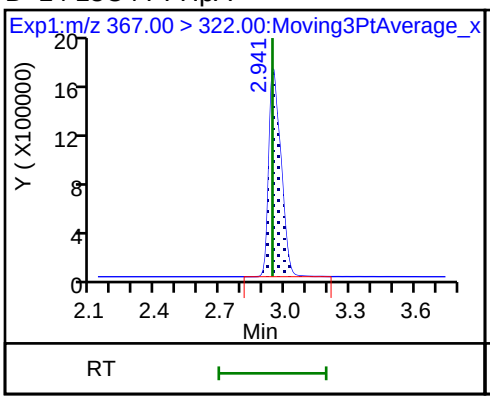
D 12 13C3 HFPO-DA



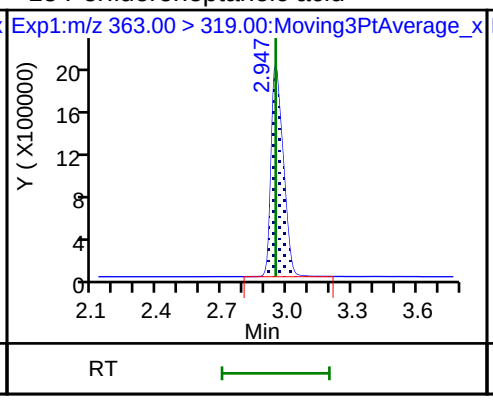
13 Perfluoro(2-propoxypropanoic) acid



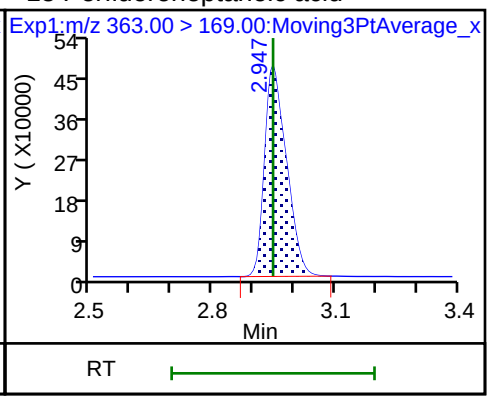
D 14 13C4 PFHpA



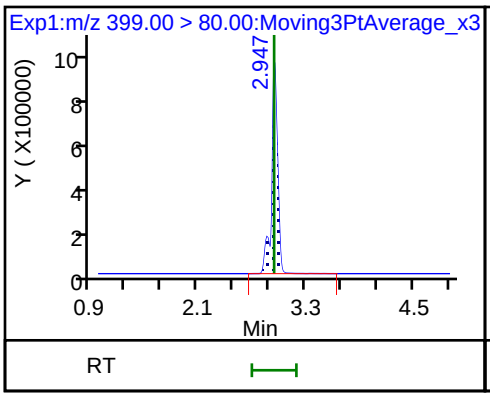
15 Perfluoroheptanoic acid



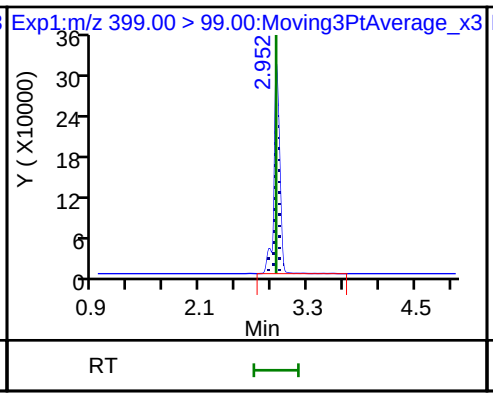
15 Perfluoroheptanoic acid



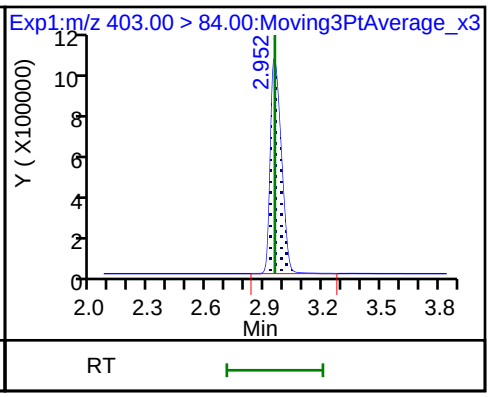
17 Perfluorohexanesulfonic acid



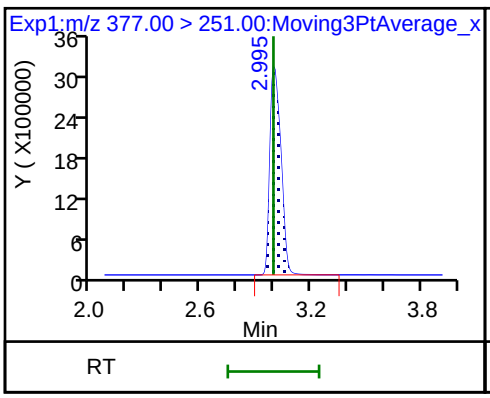
17 Perfluorohexanesulfonic acid



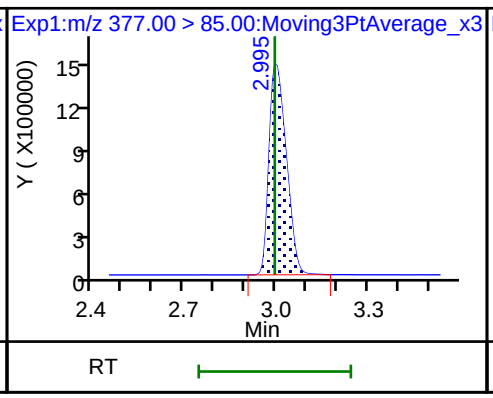
D 16 18O2 PFHxS



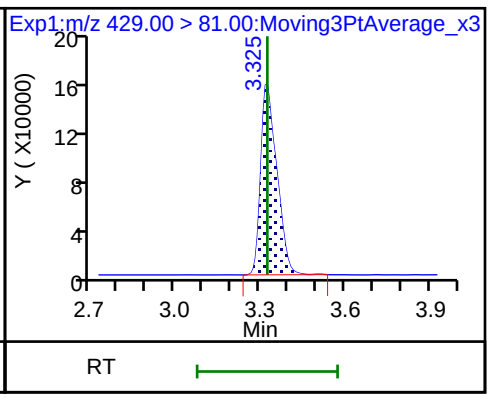
18 DONA



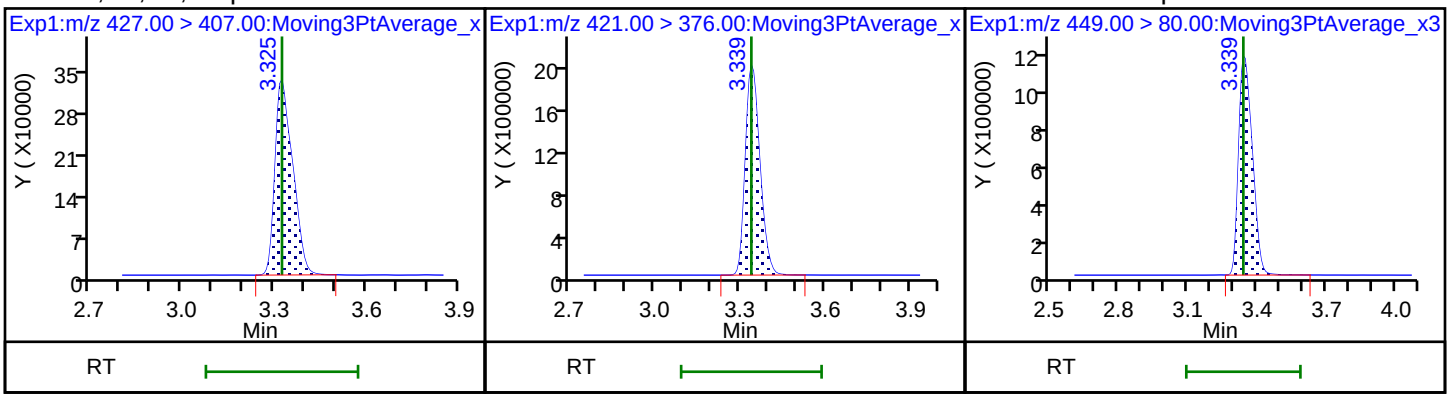
18 DONA



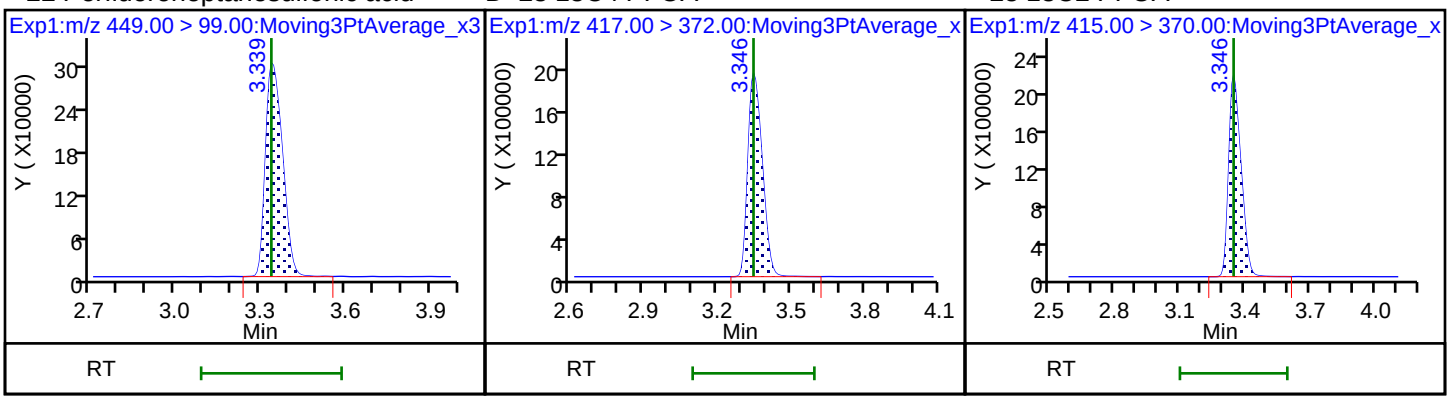
D 20 M2-6:2 FTS



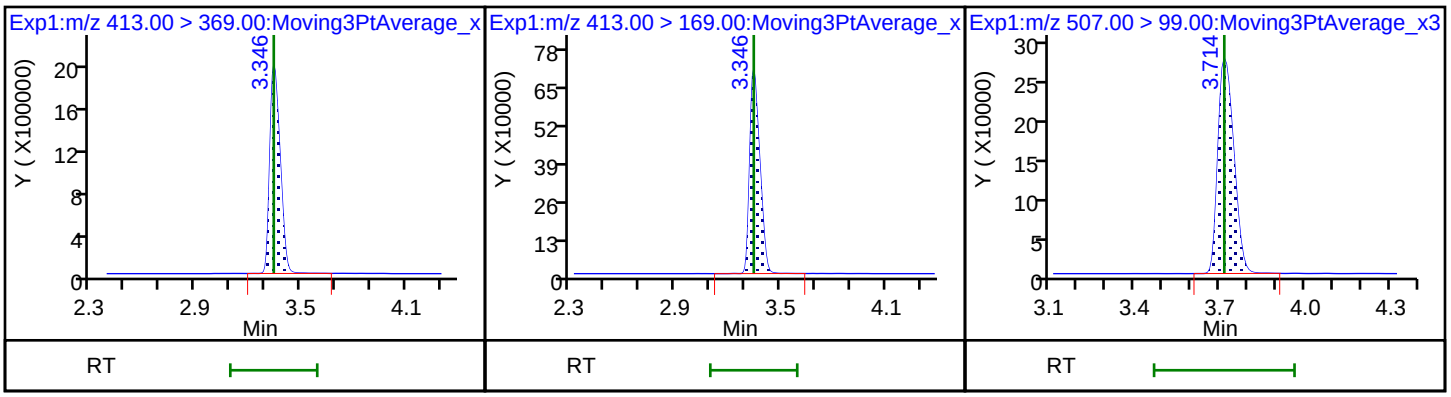
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA 22 Perfluoroheptanesulfonic acid



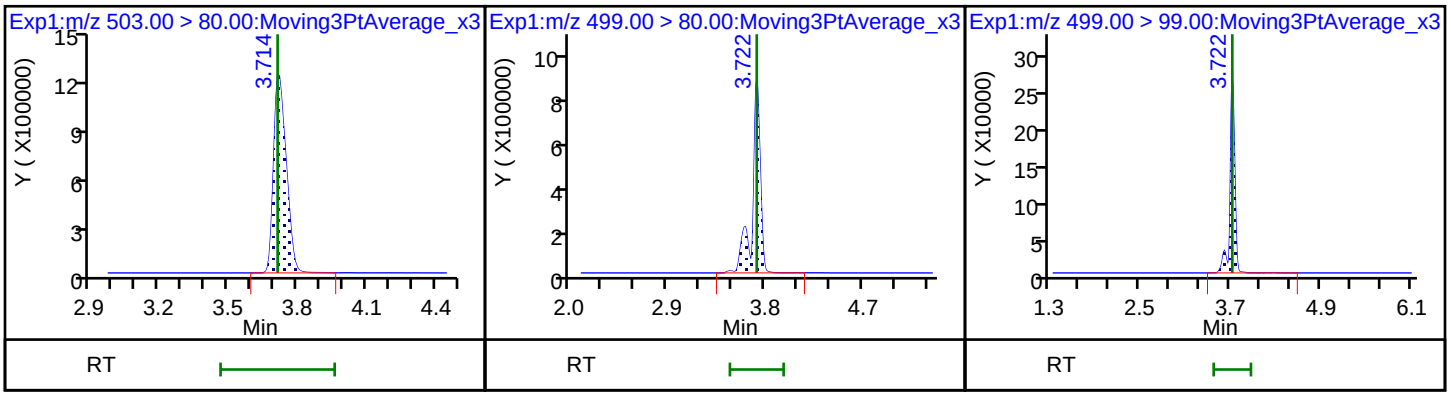
22 Perfluoroheptanesulfonic acid D 23 13C4 PFOA * 25 13C2 PFOA



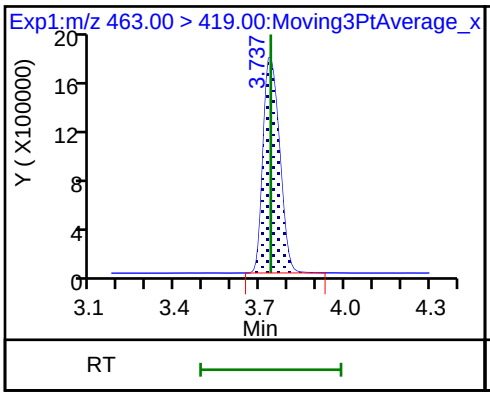
24 Perfluorooctanoic acid 24 Perfluorooctanoic acid D 26 13C8 PFOS



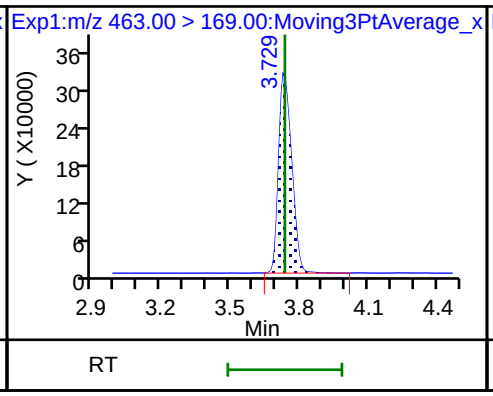
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid 28 Perfluorooctanesulfonic acid



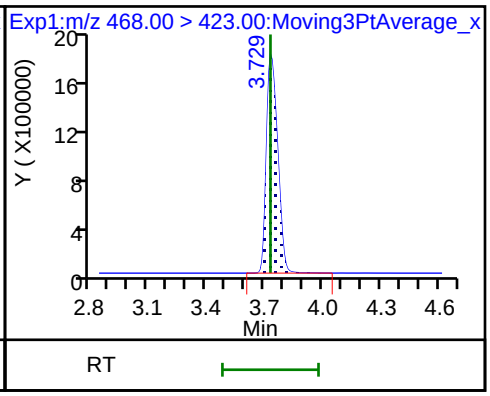
29 Perfluorononanoic acid



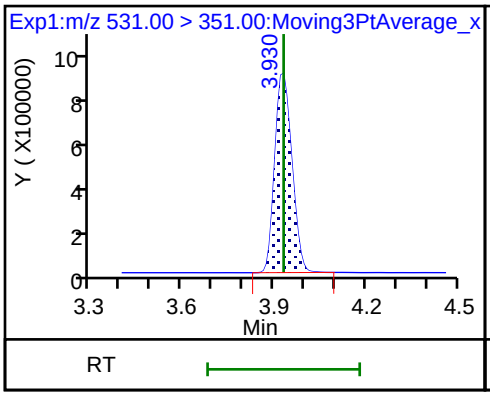
29 Perfluorononanoic acid



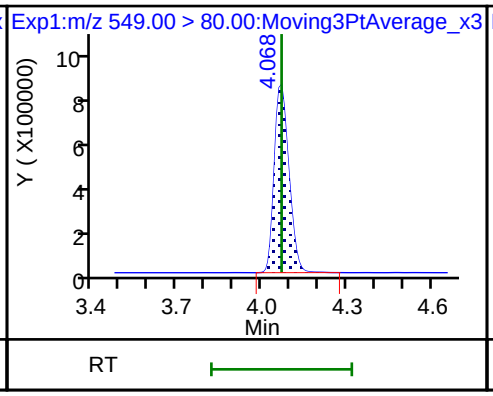
D 30 13C5 PFNA



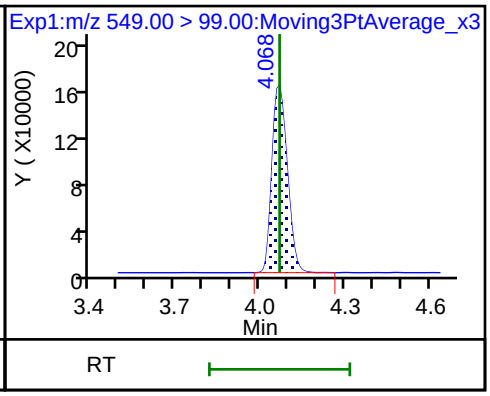
31 9-Chlorohexadecafluoro-3-oxanonane



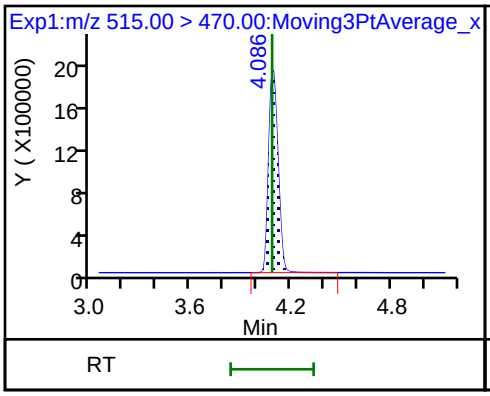
34 Perfluorononanesulfonic acid



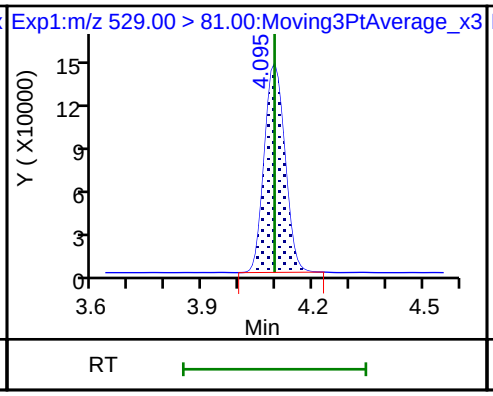
34 Perfluorononanesulfonic acid



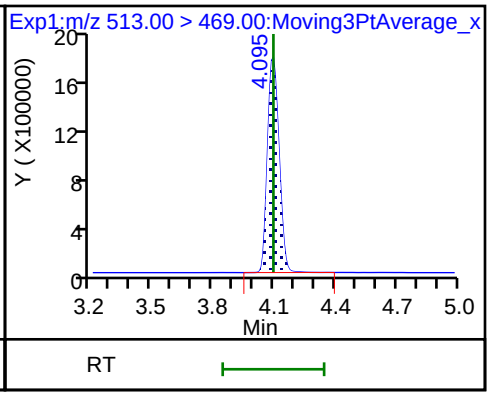
D 36 13C2 PFDA



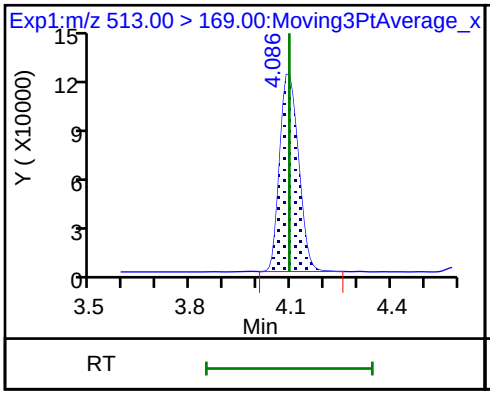
D 35 M2-8:2 FTS



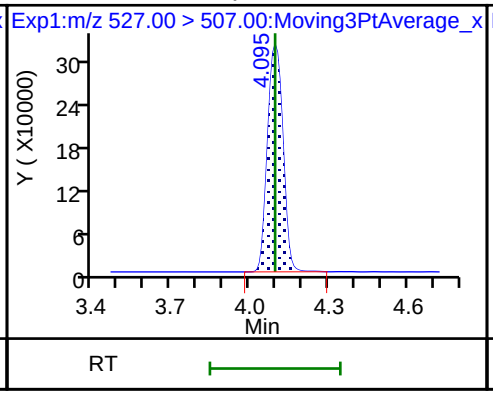
37 Perfluorodecanoic acid



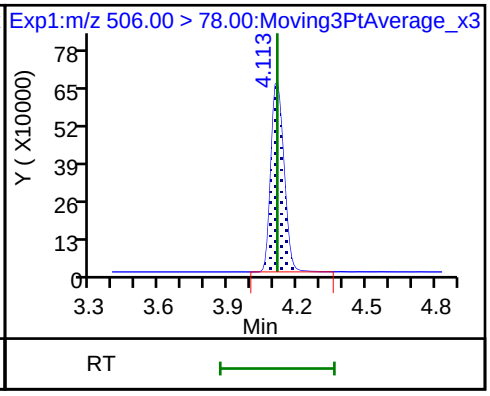
37 Perfluorodecanoic acid



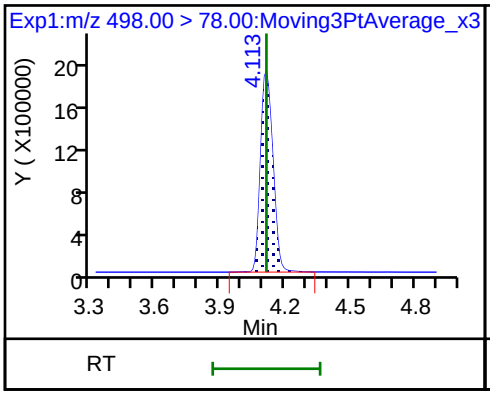
38 1H,1H,2H,2H-perfluorodecanesulfon



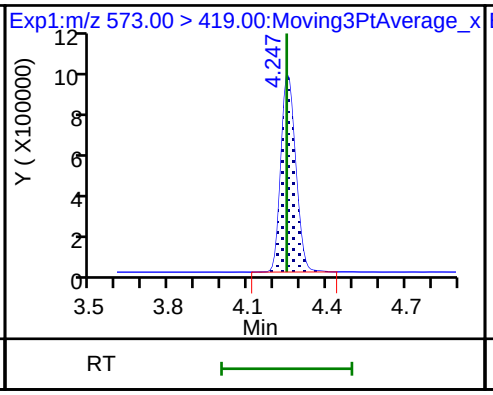
D 32 13C8 FOSA



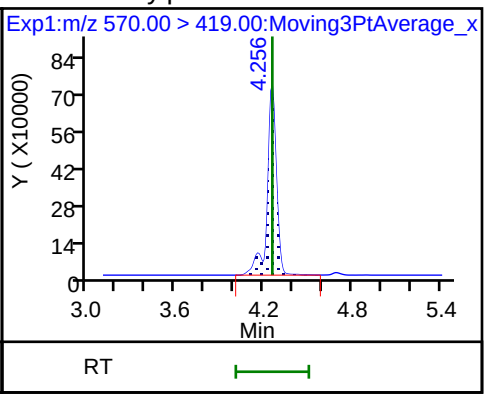
33 Perfluorooctanesulfonamide



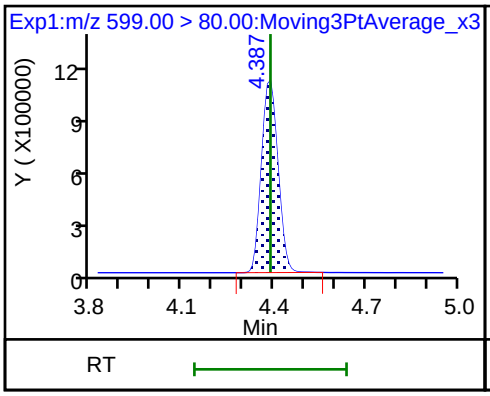
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido



41 Perfluorodecanesulfonic acid



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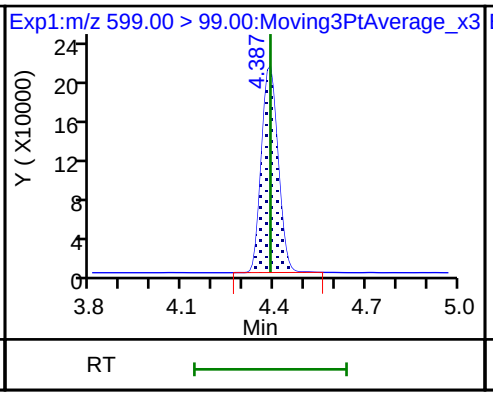
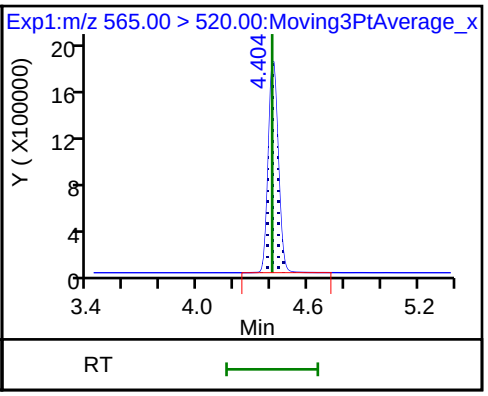
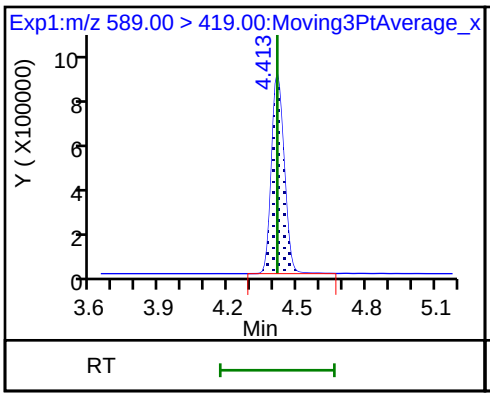


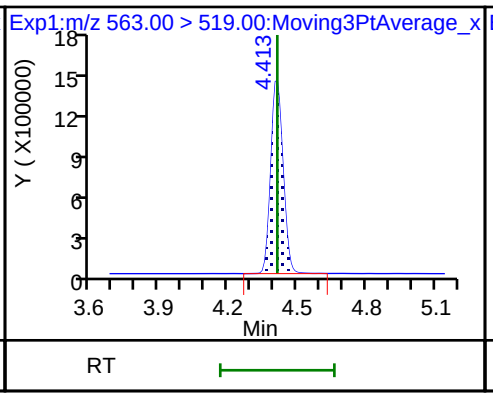
D 42 13C2 PFUnA



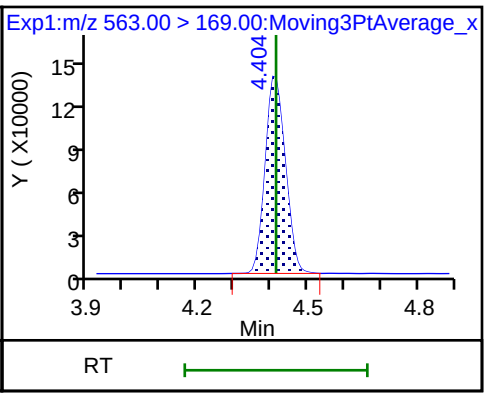
D 44 d5-NEtFOSAA



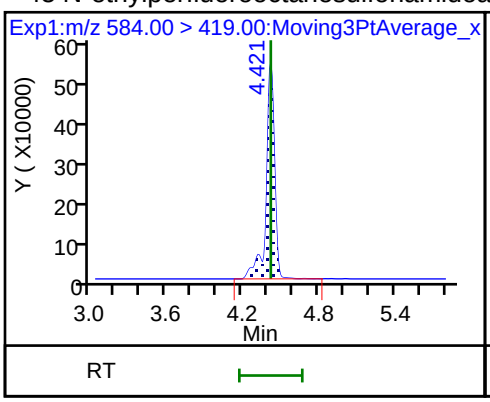
43 Perfluoroundecanoic acid



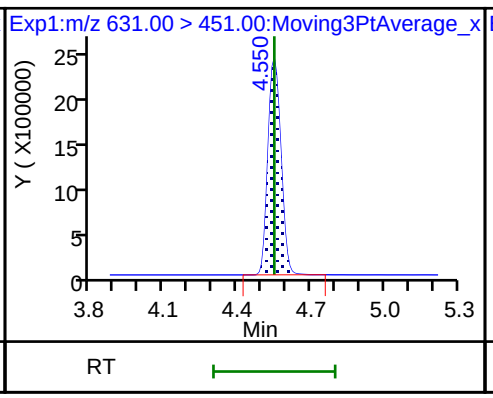
43 Perfluoroundecanoic acid



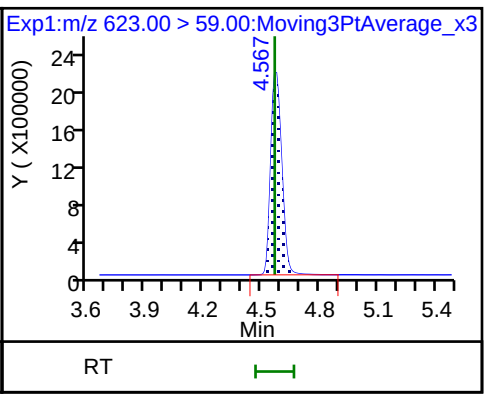
45 N-ethylperfluorooctanesulfonamidoa



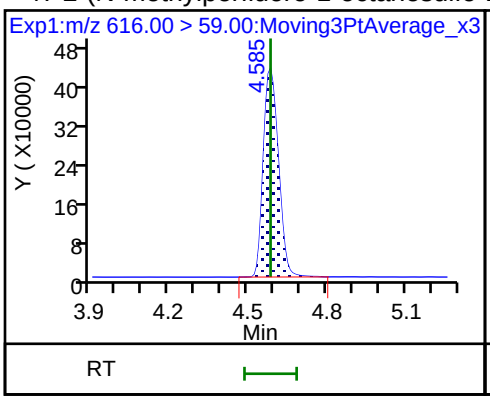
50 11-Chloroeicosafluoro-3-oxaundecan



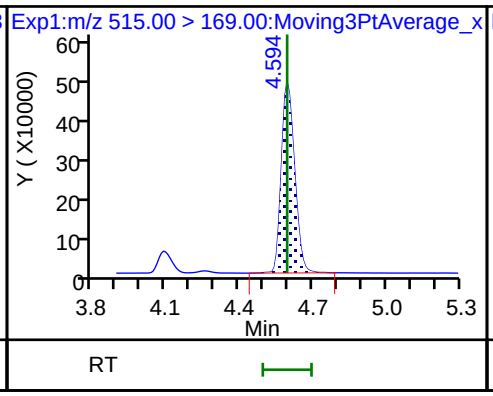
D 46 d7-N-MeFOSE-M



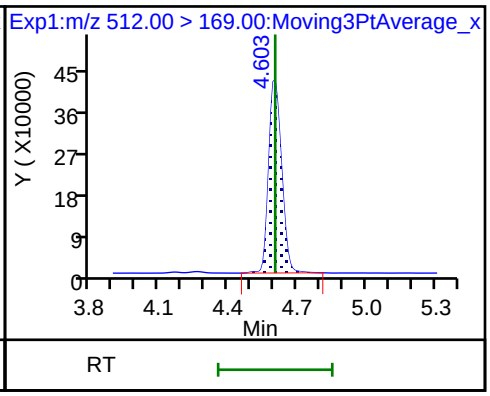
47 2-(N-methylperfluoro-1-octanesulfo



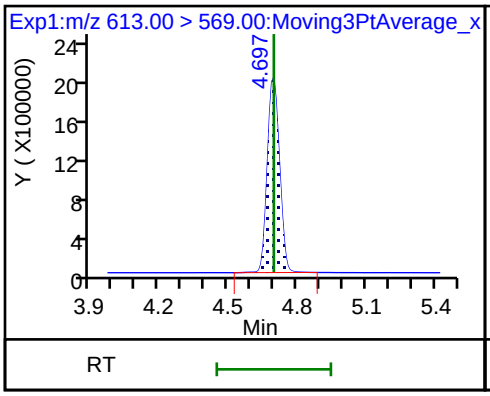
D 48 d-N-MeFOSA-M



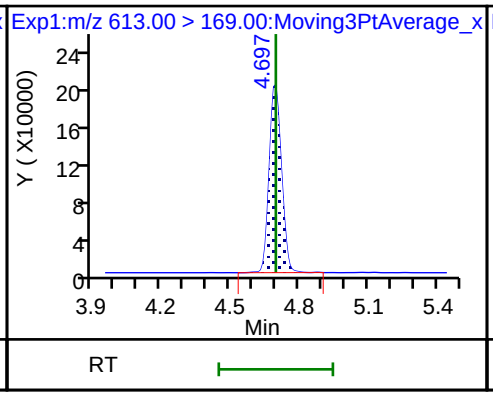
49 NMeFOSA



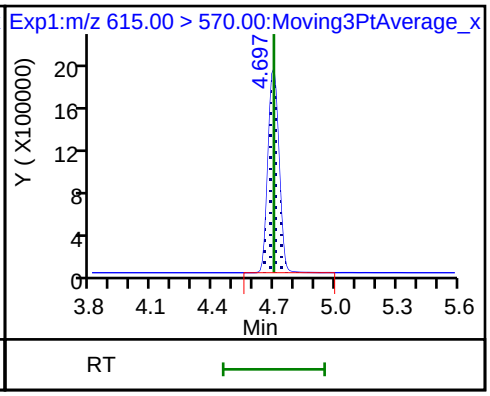
56 Perfluorododecanoic acid



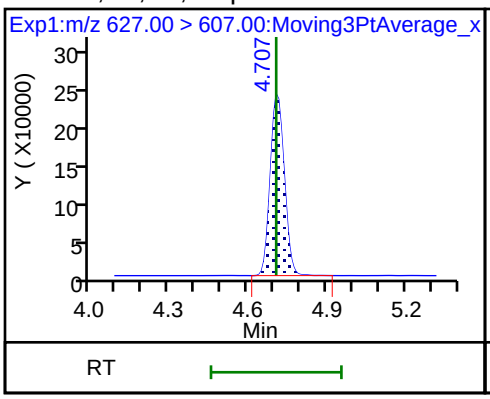
56 Perfluorododecanoic acid



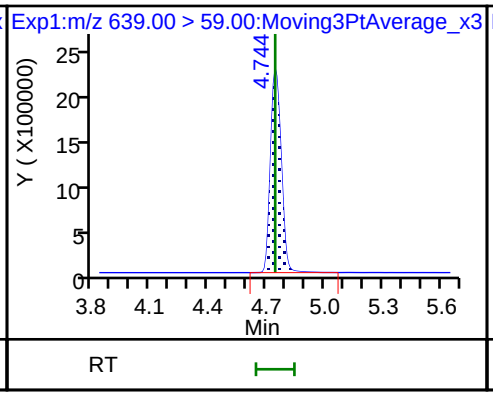
D 55 13C2 PFDoA



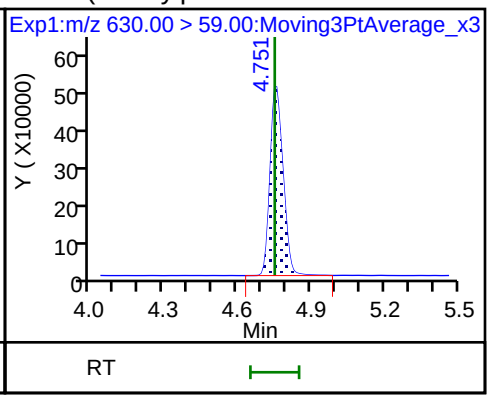
57 1H,1H,2H,2H-perfluorododecanesulfo



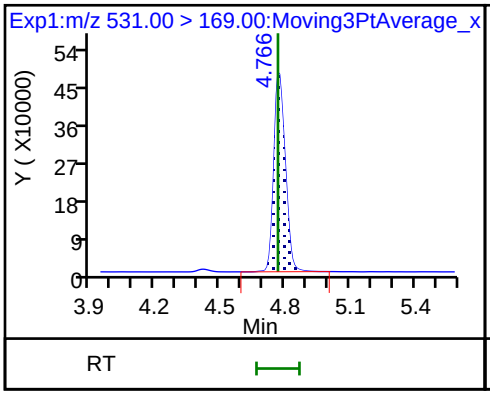
D 51 d9-N-EtFOSE-M



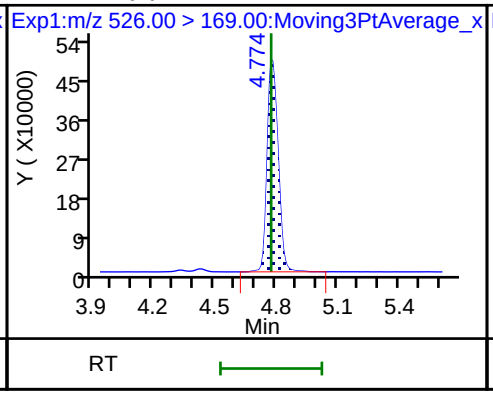
52 2-(N-ethylperfluoro-1-octanesulfon



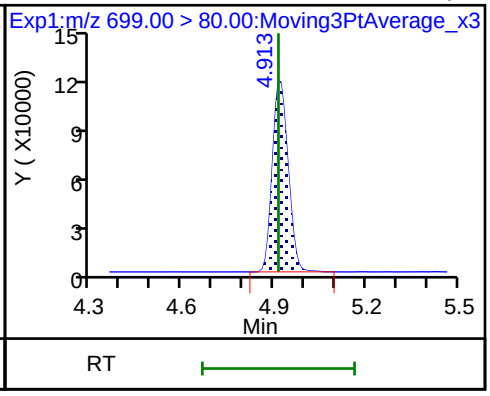
D 53 d-N-EtFOSA-M



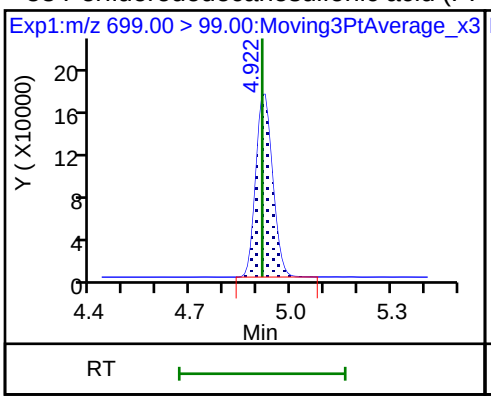
54 N-ethylperfluoro-1-octanesulfonami



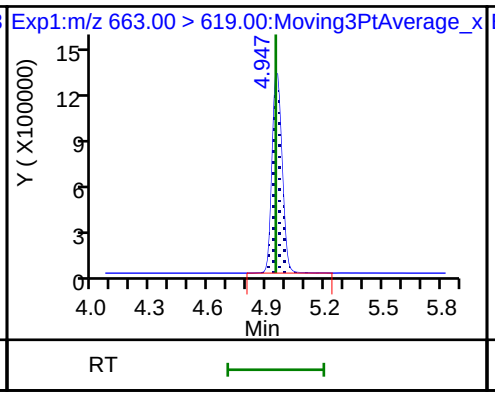
58 Perfluorododecanesulfonic acid (PF



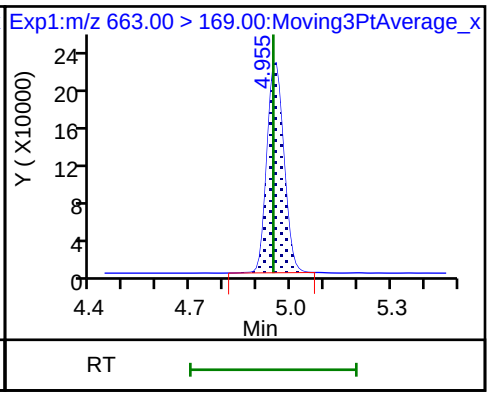
58 Perfluorododecanesulfonic acid (PF



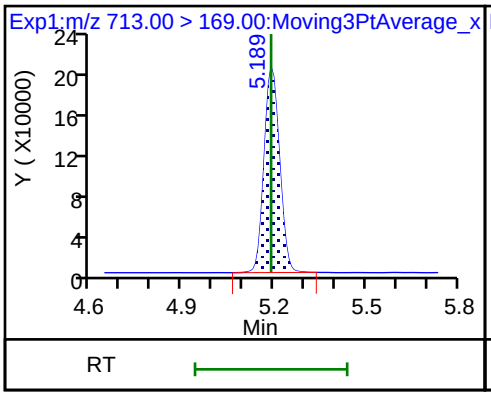
59 Perfluorotridecanoic acid



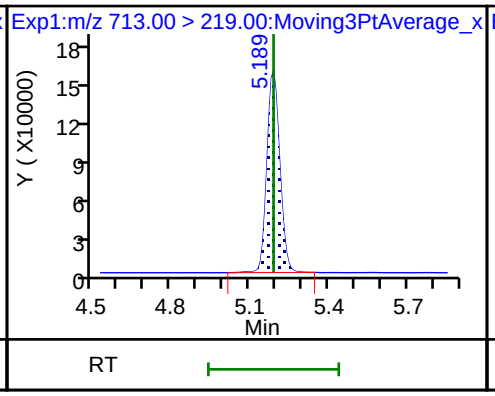
59 Perfluorotridecanoic acid



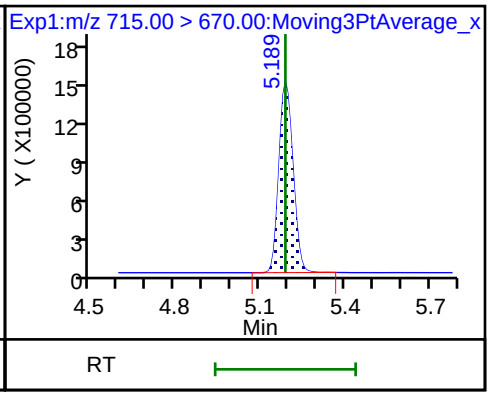
61 Perfluorotetradecanoic acid



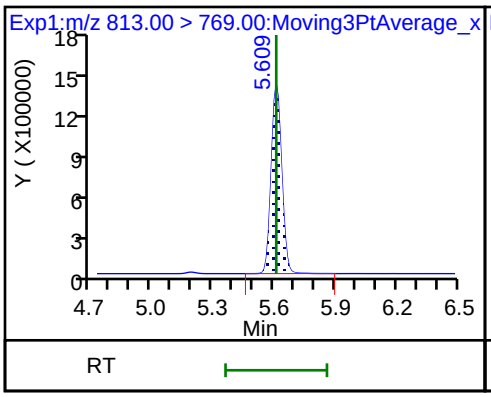
61 Perfluorotetradecanoic acid



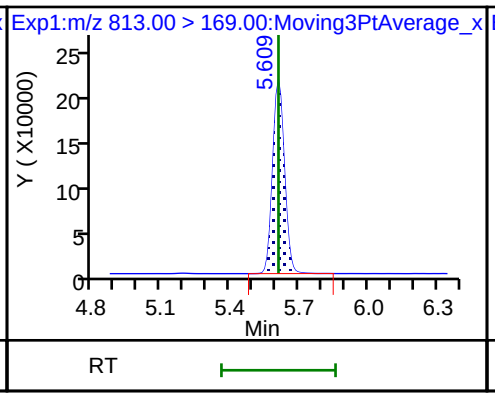
D 60 13C2 PFTeDA



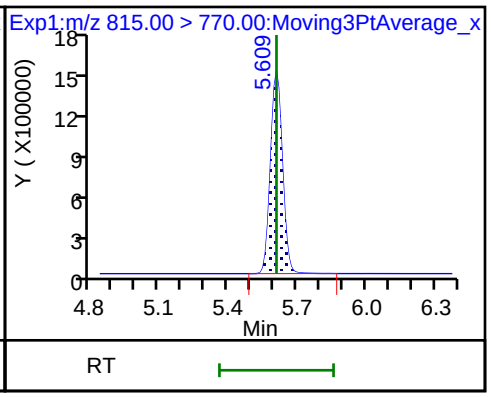
63 Perfluorohexadecanoic acid



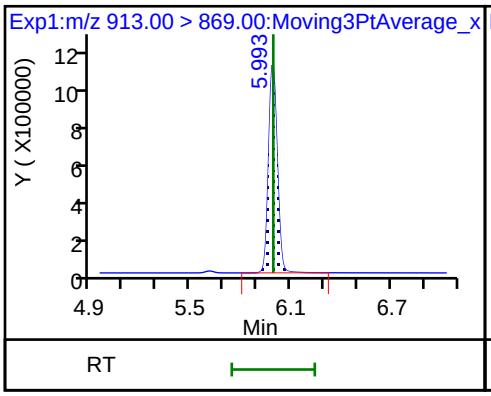
63 Perfluorohexadecanoic acid



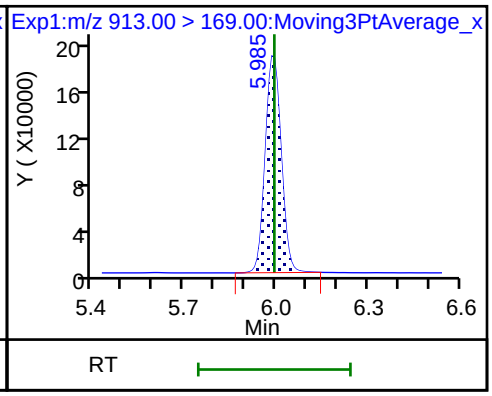
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

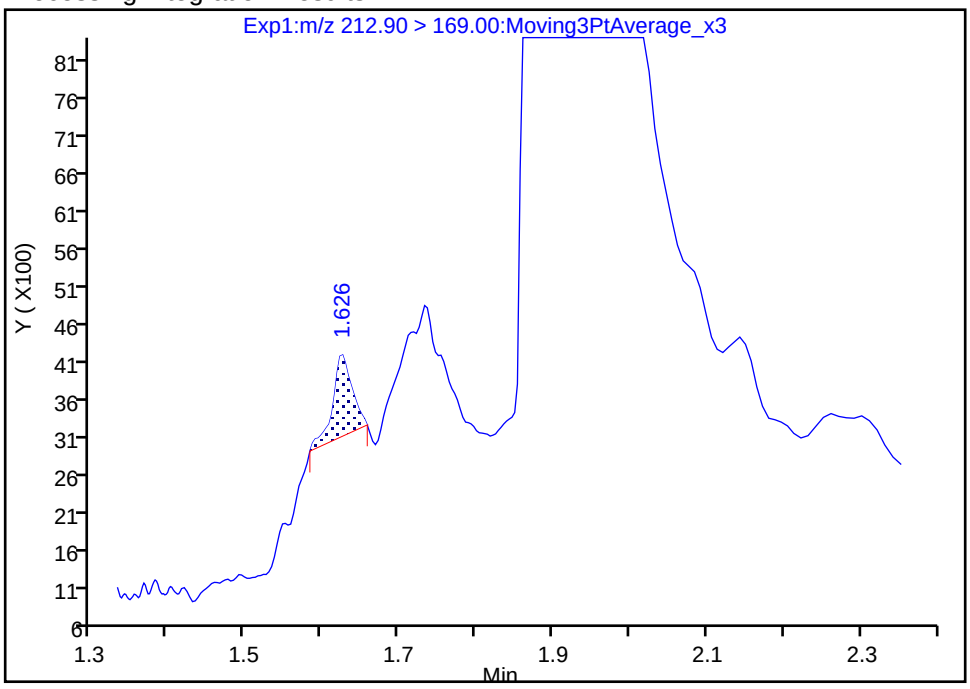
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d
Injection Date: 09-Oct-2019 00:23:55 Instrument ID: A9
Lims ID: CCV L5
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 40 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

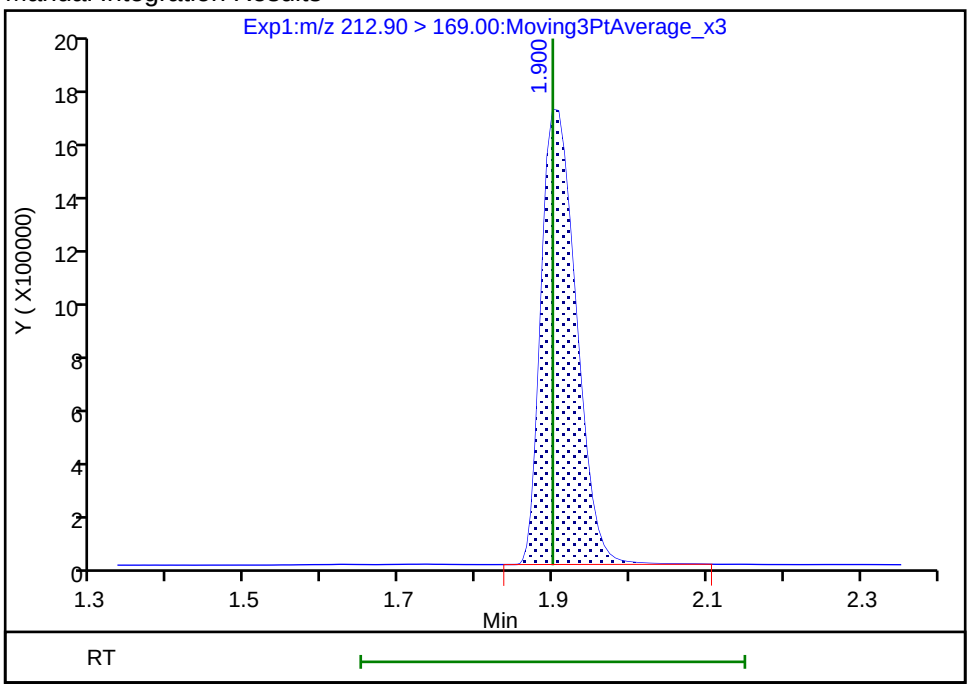
Processing Integration Results

RT: 1.63
Area: 1872
Amount: 0.000896
Amount Units: ng/ml



Manual Integration Results

RT: 1.90
Area: 5441034
Amount: 2.605644
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:46:39
Audit Action: Manually Integrated Audit Reason: Wrong peak

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/14 Calibration Date: 10/09/2019 02:09

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8960		1.06	1.00	5.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.019		0.995	1.00	-0.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.754		0.915	0.884	3.5	50.0
4:2 FTS	AveID	2.563	2.560		0.933	0.934	-0.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.9236		0.994	1.00	-0.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9242		0.977	0.938	4.2	50.0
HFPO-DA (GenX)	AveID	1.515	1.293		0.853	1.00	-14.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.143		1.02	1.00	1.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.131		0.842	0.910	-7.5	40.0
DONA	AveID	2.582	2.998		1.09	0.942	16.1	50.0
6:2 FTS	AveID	2.329	2.466		1.00	0.948	5.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	0.9609		0.925	0.952	-2.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.133		1.00	1.00	0.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.033		0.893	0.928	-3.8	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.036		1.01	1.00	0.5	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7362		0.969	0.932	3.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6062		0.955	0.960	-0.5	50.0
8:2 FTS	AveID	2.215	2.446		1.06	0.958	10.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	0.9746		1.03	1.00	2.5	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.962		1.08	1.00	7.8	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8092		0.988	1.00	-1.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8493		1.01	0.964	4.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.7714		0.981	1.00	-1.9	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.7578		0.950	1.00	-5.0	40.0
F-53B Minor	AveID	1.870	2.061		1.04	0.942	10.2	50.0
NMeFOSE	AveID	1.042	1.045		1.00	1.00	0.3	40.0
NMeFOSA	AveID	0.8723	0.8672		0.994	1.00	-0.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.057		1.03	1.00	2.5	40.0
10:2 FTS	AveID	1.705	1.778		1.01	0.964	4.3	50.0
NEtFOSE	AveID	1.054	1.028		0.975	1.00	-2.5	40.0
NEtFOSA	AveID	1.005	0.9530		100	1.00	-5.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0854		0.990	0.968	2.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/14 Calibration Date: 10/09/2019 02:09

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._028.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6474		1.00	1.00	0.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1417		1.00	1.00	0.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9309		1.05	1.00	4.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7183		0.996	1.00	-0.4	50.0
13C4 PFBA	Ave	0.7371	0.7370		2.50	2.50	-0.0	50.0
13C5 PFPeA	Ave	0.6168	0.6165		2.50	2.50	-0.0	50.0
M2-4:2 FTS	Ave	0.1177	0.0805		1.60	2.34	-31.6	50.0
13C2 PFHxA	Ave	0.7105	0.7180		2.53	2.50	1.1	50.0
13C3 HFPO-DA	Ave	0.1236	0.1477		2.99	2.50	19.5	50.0
13C4 PFHpA	Ave	0.8130	0.8051		2.48	2.50	-1.0	50.0
18O2 PFHxS	Ave	0.5224	0.4902		2.22	2.37	-6.2	50.0
M2-6:2 FTS	Ave	0.1134	0.0792		1.66	2.38	-30.2	50.0
13C8 PFOA	Ave	0.8884	0.8583		2.42	2.50	-3.4	50.0
13C4 PFOA	Ave	0.9372	0.9224		2.46	2.50	-1.6	50.0
13C4 PFOS	Ave	0.6062	0.5644		2.23	2.39	-6.9	50.0
13C8 PFOS	Ave	0.1318	0.1213		2.30	2.50	-8.0	50.0
13C5 PFNA	Ave	0.8344	0.8092		2.42	2.50	-3.0	50.0
13C2 PFDA	Ave	0.9417	0.8902		2.36	2.50	-5.5	50.0
M2-8:2 FTS	Ave	0.1066	0.0672		1.51	2.40	-37.0	50.0
13C8 FOSA	Ave	0.3127	0.3154		2.52	2.50	0.9	50.0
d3-NMeFOSAA	Ave	0.4441	0.4454		2.51	2.50	0.3	50.0
13C2 PFUnA	Ave	0.8035	0.7612		2.37	2.50	-5.3	50.0
d5-NEtFOSAA	Ave	0.3818	0.3884		2.54	2.50	1.7	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2090		12.8	12.5	2.2	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2254		2.52	2.50	0.9	50.0
13C2 PFDoA	Ave	0.8846	0.8390		2.37	2.50	-5.2	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2128		12.5	12.5	0.0	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2203		2.56	2.50	2.4	50.0
13C2 PFTeDA	Ave	0.6272	0.6208		2.47	2.50	-1.0	50.0
13C2 PFHxDA	Ave	0.6893	0.6288		2.28	2.50	-8.8	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 09-Oct-2019 02:09:17 ALS Bottle#: 39 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:31:40 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:31:40
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.896	1.893	0.003	1.000	2242321	1.05		105	411	
D 1 13C4 PFBA										
217.00 > 172.00	1.896	1.896	0.0	0.567	6256467	2.50		100.0	6093	
D 4 13C5 PFPeA										
267.90 > 223.00	2.201	2.201	0.0	0.658	5233165	2.50		100.0	3972	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.201	2.206	-0.006	1.000	2134073	1.00		99.5	350	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.235	2.242	-0.007	0.759	2580589	0.9146	Target=2.62	103	192	
298.90 > 99.00	2.226	2.242	-0.016	0.755	948809		2.72(1.31-3.93)		159	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.517	2.517	0.0	0.752	637856	1.60		68.4	969	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.517	2.524	-0.007	1.000	653061	0.9327		99.9	2357	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.560	2.556	0.004	1.000	2251604	0.99	Target=14.83	99.4	480	
313.00 > 119.00	2.560	2.556	0.004	1.000	146247		15.40(7.41-22.24)		237	
D 9 13C2 PFHxA										
315.00 > 270.00	2.560	2.560	0.0	0.765	6094811	2.53		101	2273	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.570	2.578	-0.008	0.872	1443005	0.9771	Target=1.98	104	2430	
349.00 > 99.00	2.570	2.578	-0.008	0.872	679584		2.12(0.99-2.97)		1370	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.688	2.685	0.003	1.000	648161	0.8532		85.3	711	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.688	2.688	0.0	0.803	1253436	2.99		119	2281	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.947	2.942	0.005	1.000	1713519	0.8415	Target=3.27	92.5	2195	
399.00 > 99.00	2.947	2.942	0.005	1.000	526741		3.25(1.64-4.91)		780	
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.941	0.0	0.879	6834519	2.48		99.0	3266	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.941	2.942	-0.001	1.000	3123705	1.02	Target=4.24	102	724	
363.00 > 169.00	2.941	2.942	-0.001	1.000	693178		4.51(2.12-6.36)		920	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.947	0.0	0.881	3936720	2.22		93.8	3603	
18 DONA										
377.00 > 251.00	2.995	2.995	0.0	0.806	5411787	1.09	Target=2.25	116	5880	
377.00 > 85.00	2.995	2.995	0.0	0.806	2238909		2.42(1.12-3.37)		2981	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.311	0.014	1.000	628234	1.00		106	968	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.325	0.0	0.994	638257	1.66		69.8	1808	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.339	3.339	0.0	0.899	1753150	0.9248	Target=3.58	97.1	2194	
449.00 > 99.00	3.339	3.339	0.0	0.899	478653		3.66(1.79-5.37)		826	
D 21 13C8 PFOA										
421.00 > 376.00	3.339	3.339	0.0	0.998	7286010	2.42		96.6	8664	
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.346	0.0	1.000	7829647	2.46		98.4	3405	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.340	0.006		8488833	2.50			4669	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.346	3.347	-0.001	1.000	3548189	1.00	Target=2.79	100	570	
413.00 > 169.00	3.346	3.347	-0.001	1.000	1161196		3.06(1.40-4.19)		1503	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.715	-0.001	1.000	1837533	0.8931	Target=3.83	96.2	1588	
499.00 > 99.00	3.722	3.715	0.007	1.002	445286		4.13(1.92-5.75)		1553	
D 26 13C8 PFOS										
507.00 > 99.00	3.714	3.714	0.0	1.110	1029586	2.30		92.0	2485	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.110	4580467	2.23		93.1	3698	
D 30 13C5 PFNA										
468.00 > 423.00	3.730	3.730	0.0	1.115	6869077	2.42		97.0	3633	
29 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.737	-0.007	1.000	2845678	1.01	Target=5.58	101	1090	
463.00 > 169.00	3.730	3.737	-0.007	1.000	509049		5.59(2.79-8.37)		660	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.921	3.930	-0.009	1.056	1314941	0.9688		104	2243	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.060	4.068	-0.008	1.093	1115285	0.9552	Target=4.51	99.5	2934	
549.00 > 99.00	4.060	4.068	-0.008	1.093	250936		4.44(2.25-6.76)		861	
D 36 13C2 PFDA										
515.00 > 470.00	4.086	4.086	0.0	1.221	7556601	2.36		94.5	4033	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.086	4.086	0.0	1.221	546704	1.51		63.0	758	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.095	-0.009	1.000	2945979	1.03	Target=15.45	103	1251	
513.00 > 169.00	4.095	4.095	0.0	1.002	173325		17.00(7.73-23.18)		180	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.086	4.095	-0.009	1.000	534846	1.06		110	2701	
D 32 13C8 FOSA										
506.00 > 78.00	4.104	4.104	0.0	1.226	2677015	2.52		101	2045	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.106	-0.002	1.000	3171262	1.08		108	2173	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.247	4.247	0.0	1.269	3780525	2.51		100	2272	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.256	4.256	0.0	1.002	1223709	0.9881		98.8	187	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.387	-0.009	1.179	1569013	1.01	Target=4.64	104	2858	
599.00 > 99.00	4.378	4.387	-0.009	1.179	336349		4.66(2.32-6.96)		1316	
D 42 13C2 PFUnA										
565.00 > 520.00	4.404	4.404	0.0	1.316	6461314	2.37		94.7	4888	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.413	0.0	1.319	3296874	2.54		102	1872	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.404	4.406	-0.002	1.000	1993627	0.9806	Target=9.27	98.1	1118	
563.00 > 169.00	4.404	4.406	-0.002	1.000	206321		9.66(4.63-13.90)		766	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.413	4.421	-0.008	1.000	999358	0.9499		95.0	1026	
57 1H,1H,2H,2H-perfluorododecanesulfo										a
627.00 > 607.00	4.707	4.707	0.0	1.152	391295	1.01		104	934	a
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.541	4.543	-0.002	1.223	3721623	1.04		110	3820	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.567	4.567	0.0		8870892	12.8		102	3609	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.585	4.585	0.0	1.004	741476	1.00		100	1619	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.594	4.594	0.0		1913646	2.52		101	276	
49 NMeFOSA										
512.00 > 169.00	4.594	4.603	-0.009	1.000	663809	0.99		99.4	981	
D 55 13C2 PFDoA										
615.00 > 570.00	4.688	4.688	0.0	1.401	7121820	2.37		94.8	4734	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.688	4.697	-0.009	1.000	3010233	1.03	Target=9.58	103	1254	
613.00 > 169.00	4.688	4.697	-0.009	1.000	316962		9.50(4.79-14.36)		1799	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.744	4.744	0.0		9033361	12.5		100	5238	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.751	4.751	0.0	1.002	742701	0.9750		97.5	977	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.767	4.767	0.0		1869821	2.56		102	1662	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.774	4.774	0.0	1.002	712760	0.9484		94.8	777	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.913	4.913	0.0	1.323	158366	0.9899	Target=0.64	102	949	
699.00 > 99.00	4.913	4.913	0.0	1.323	244258		0.65(0.32-0.96)		1500	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.947	4.947	0.0	1.055	1844207	1.00	Target=5.94	100	2147	
663.00 > 169.00	4.947	4.947	0.0	1.055	304518		6.06(2.97-8.91)		1172	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.189	5.189	0.0	1.551	5269682	2.47		99.0	4387	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.189	5.208	-0.019	1.000	298651	1.00	Target=1.42	100	1355	
713.00 > 219.00	5.189	5.208	-0.019	1.000	197658		1.51(0.71-2.13)		745	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.609	5.609	0.0	1.676	5337375	2.28		91.2	6181	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.609	5.604	0.005	1.000	1987400	1.04	Target=6.39	104	890	
813.00 > 169.00	5.609	5.604	0.005	1.000	309103		6.43(3.19-9.58)		1457	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.985	5.993	-0.008	1.067	1533459	1.00	Target=6.02	99.6	1006	
913.00 > 169.00	5.985	5.993	-0.008	1.067	258175		5.94(3.01-9.03)		1722	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 18-Oct-2019 15:31:41 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d

Injection Date: 09-Oct-2019 02:09:17 Instrument ID: A9

Lims ID: CCV L4

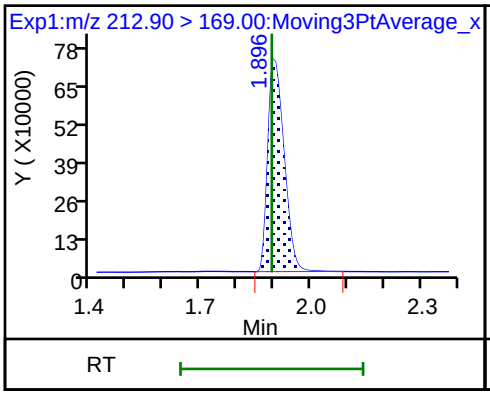
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 39 Worklist Smp#: 14

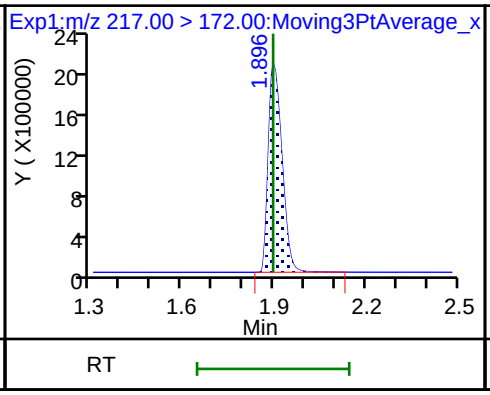
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

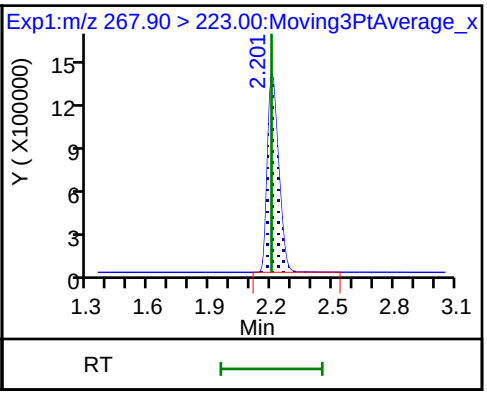
2 Perfluorobutanoic acid



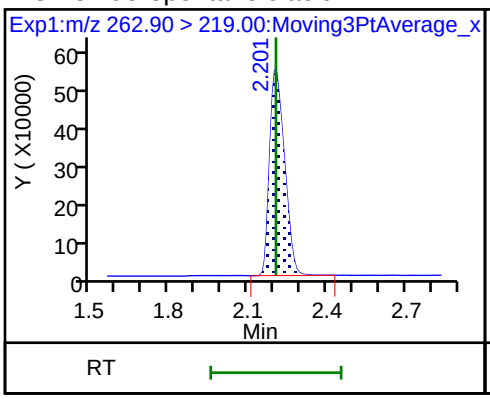
D 1 13C4 PFBA



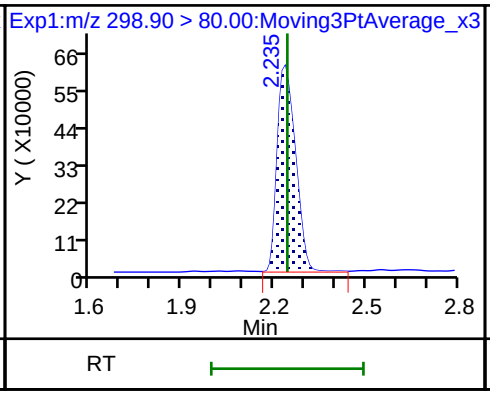
D 4 13C5 PFPeA



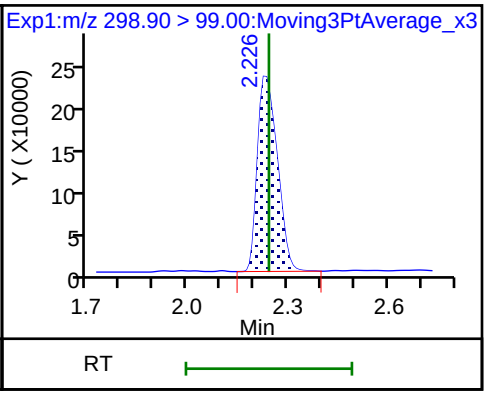
3 Perfluoropentanoic acid



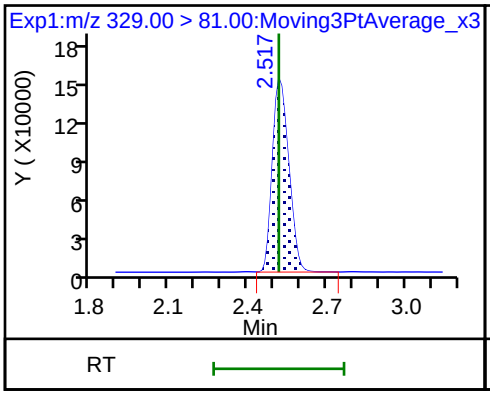
5 Perfluorobutanesulfonic acid



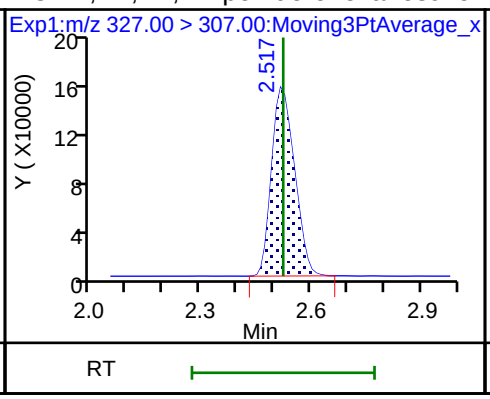
5 Perfluorobutanesulfonic acid



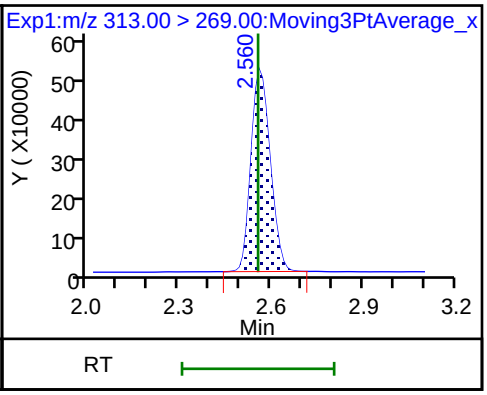
D 7 M2-4:2 FTS



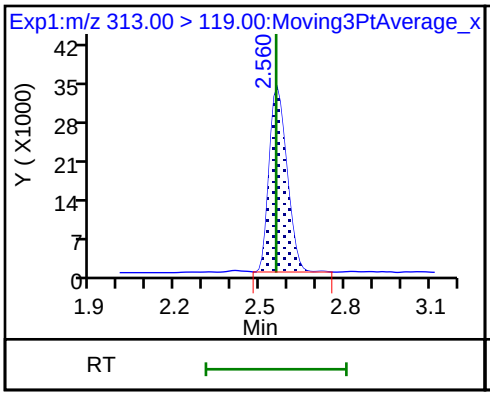
8 1H,1H,2H,2H-perfluorohexanesulfoni



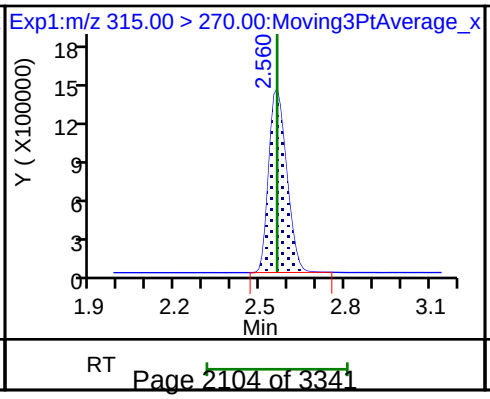
10 Perfluorohexanoic acid



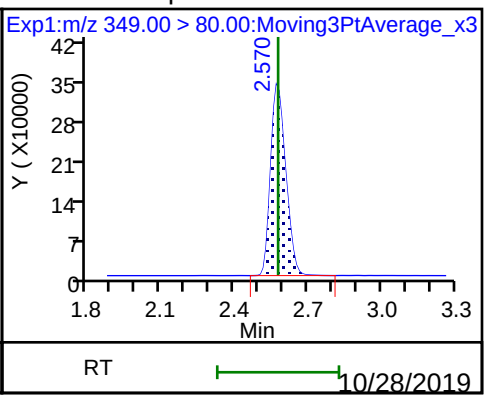
10 Perfluorohexanoic acid



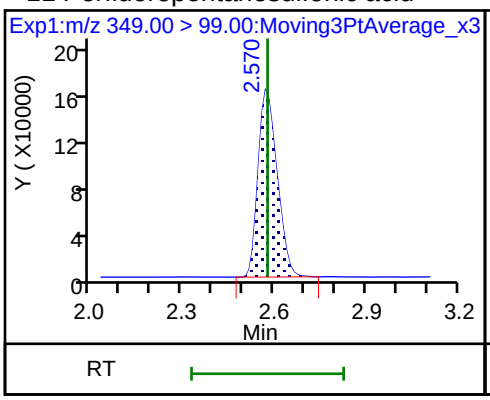
D 9 13C2 PFHxA



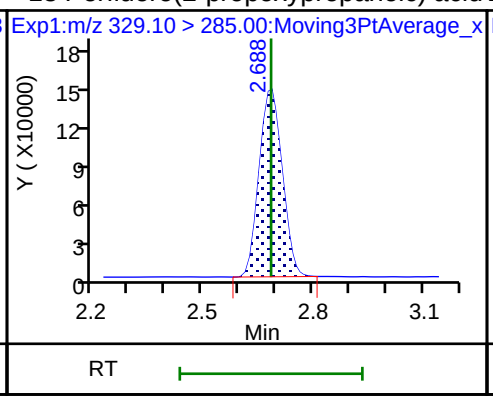
11 Perfluoropentanesulfonic acid



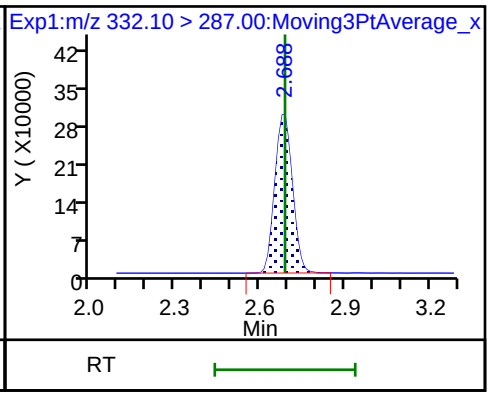
11 Perfluoropentanesulfonic acid



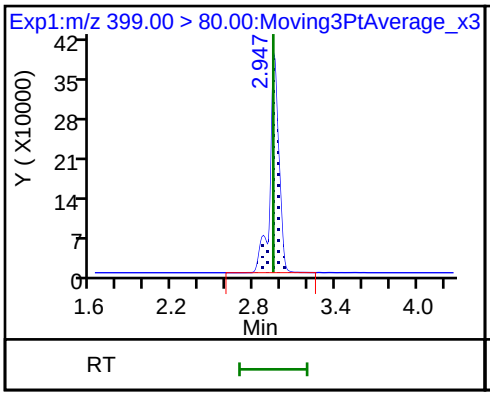
13 Perfluoro(2-propoxypropanoic) acid



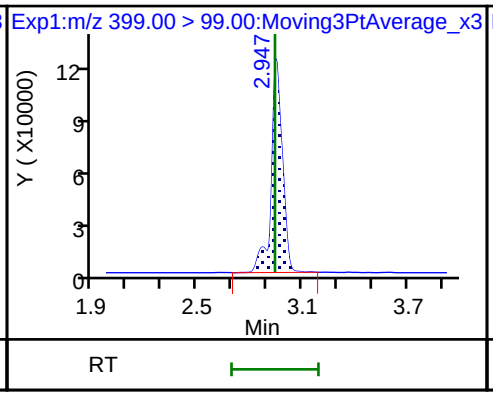
D 12 13C3 HFPO-DA



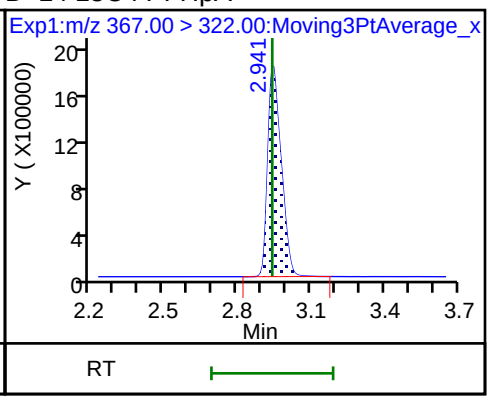
17 Perfluorohexanesulfonic acid



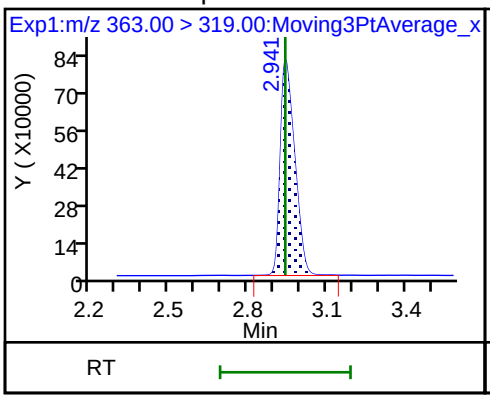
17 Perfluorohexanesulfonic acid



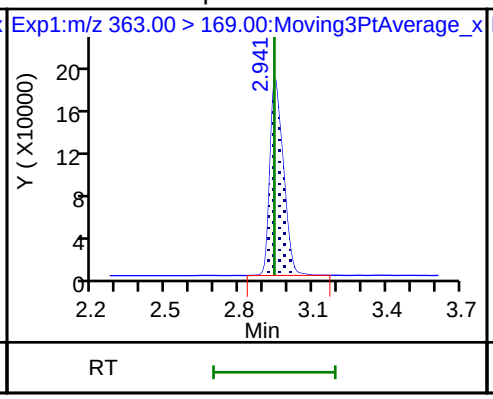
D 14 13C4 PFHpA



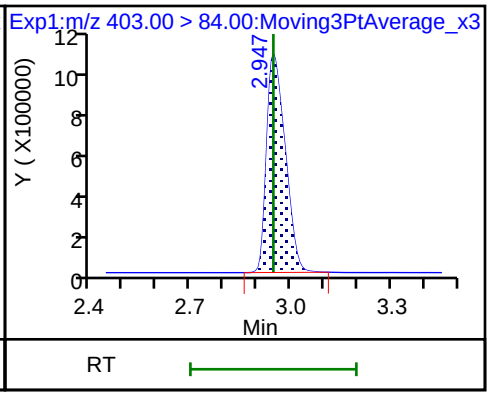
15 Perfluoroheptanoic acid



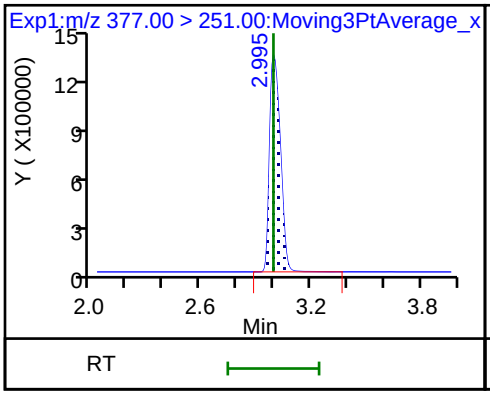
15 Perfluoroheptanoic acid



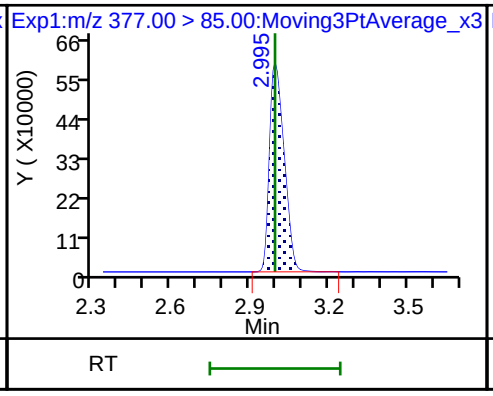
D 16 18O2 PFHxS



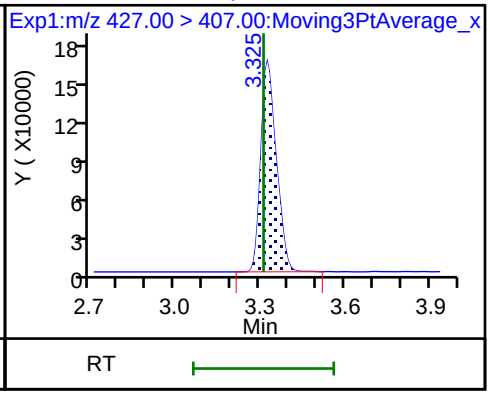
18 DONA



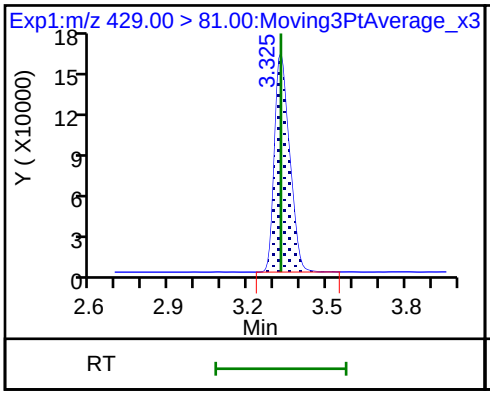
18 DONA



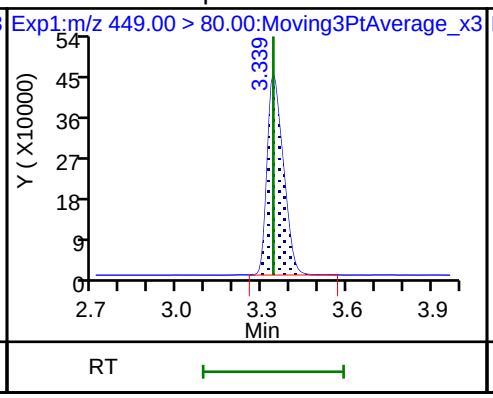
19 1H,1H,2H,2H-perfluorooctanesulfoni



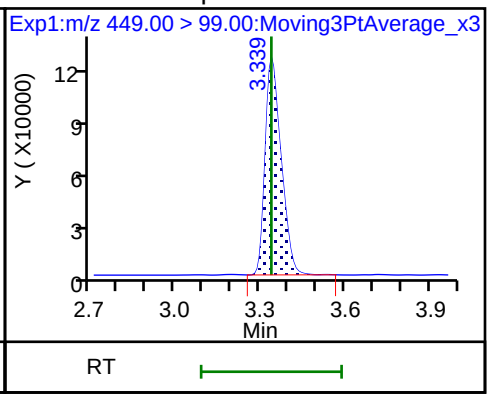
D 20 M2-6:2 FTS



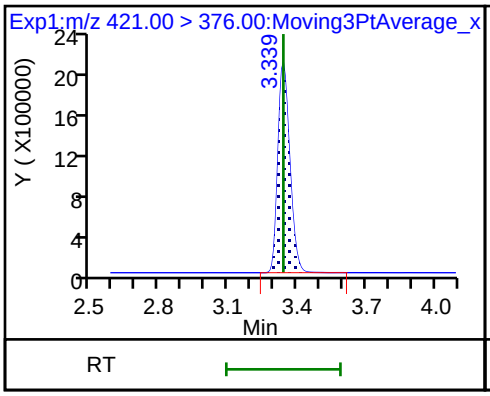
22 Perfluoroheptanesulfonic acid



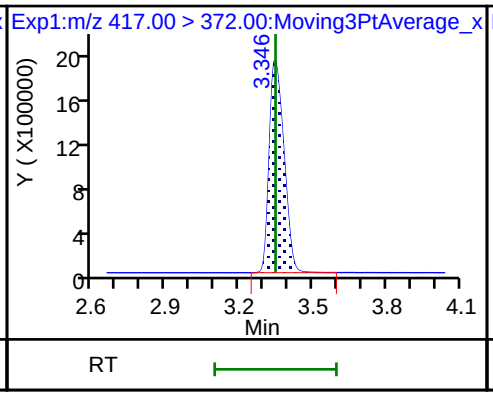
22 Perfluoroheptanesulfonic acid



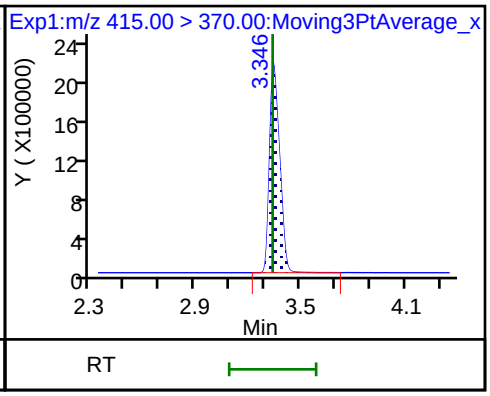
D 21 13C8 PFOA



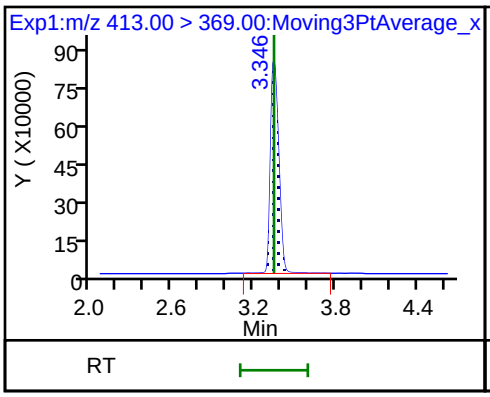
D 23 13C4 PFOA



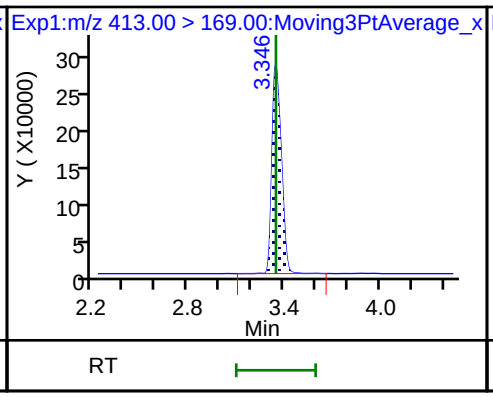
* 25 13C2 PFOA



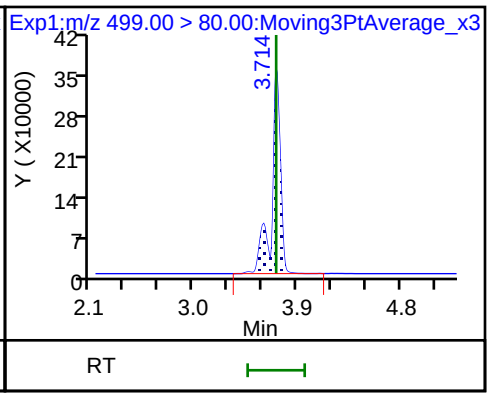
24 Perfluorooctanoic acid



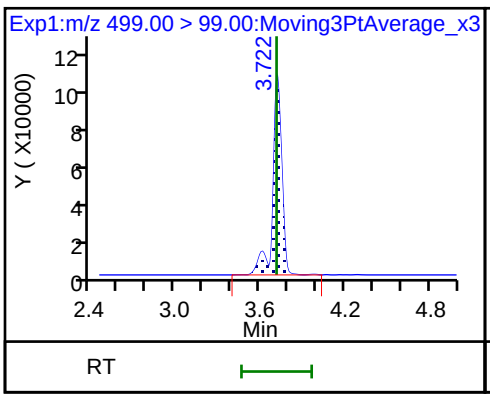
24 Perfluorooctanoic acid



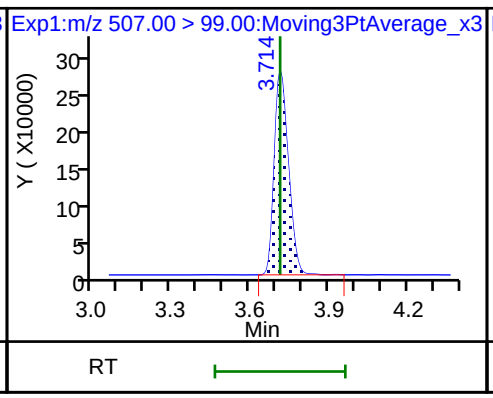
28 Perfluorooctanesulfonic acid



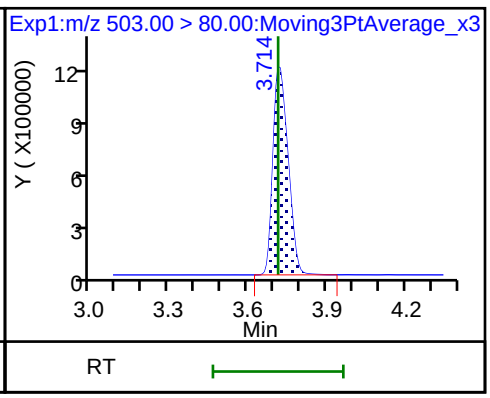
28 Perfluorooctanesulfonic acid



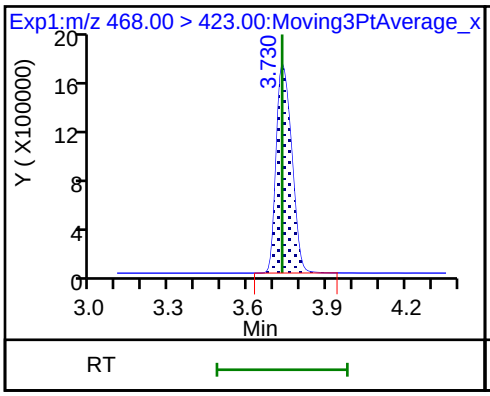
D 26 13C8 PFOS



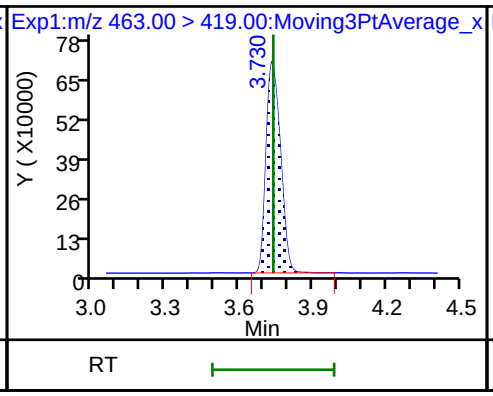
D 27 13C4 PFOS



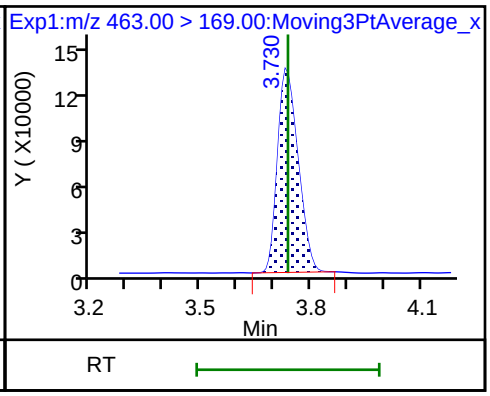
D 30 13C5 PFNA



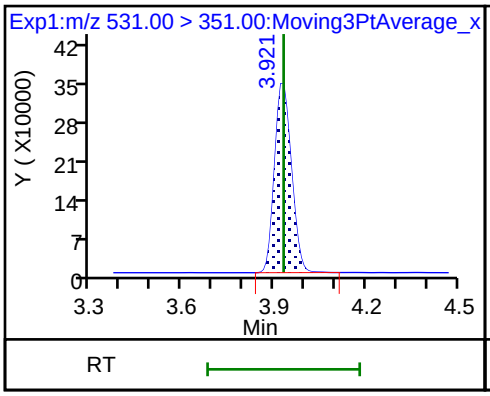
29 Perfluorononanoic acid



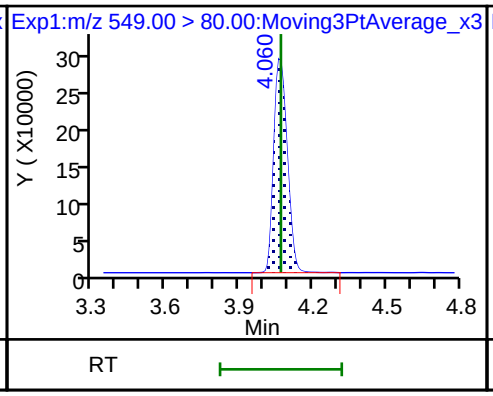
29 Perfluorononanoic acid



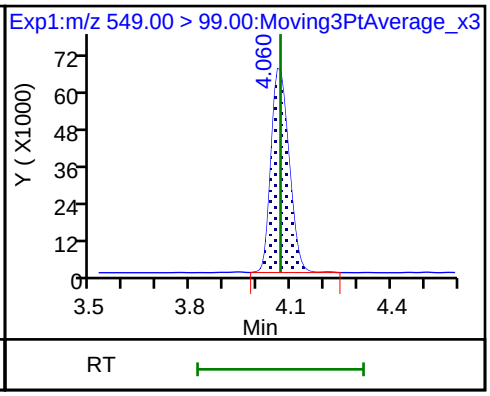
31 9-Chlorohexadecafluoro-3-oxanonane



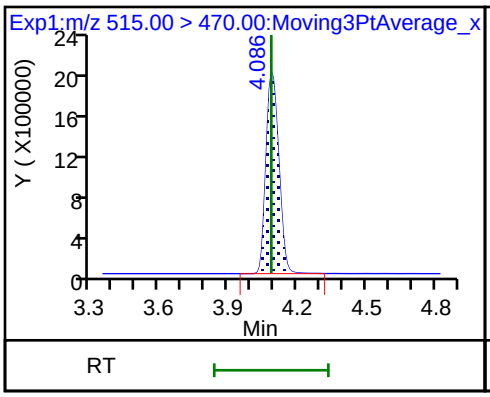
34 Perfluorononanesulfonic acid



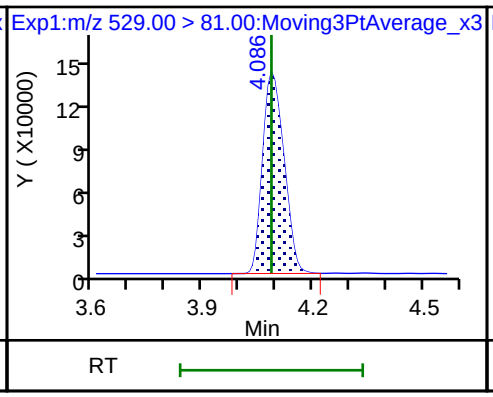
34 Perfluorononanesulfonic acid



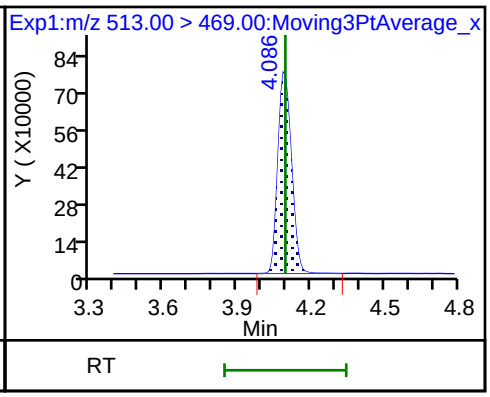
D 36 13C2 PFDA



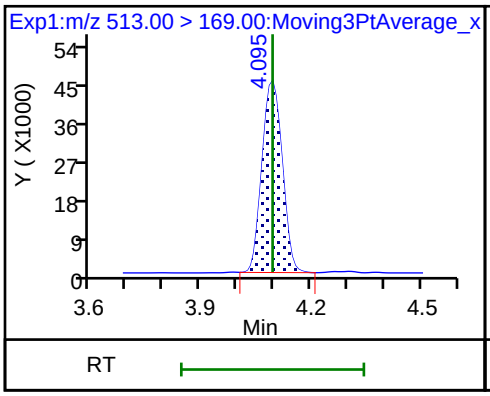
D 35 M2-8:2 FTS



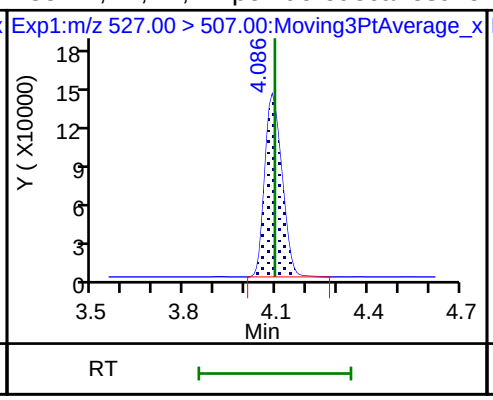
37 Perfluorodecanoic acid



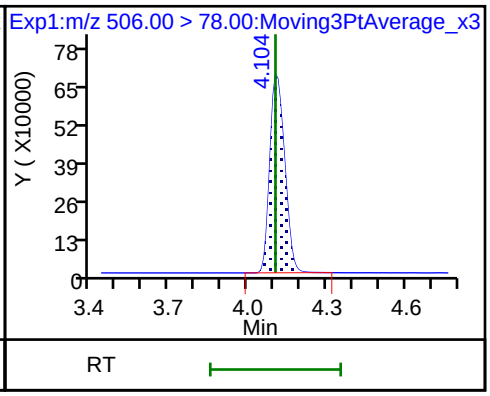
37 Perfluorodecanoic acid



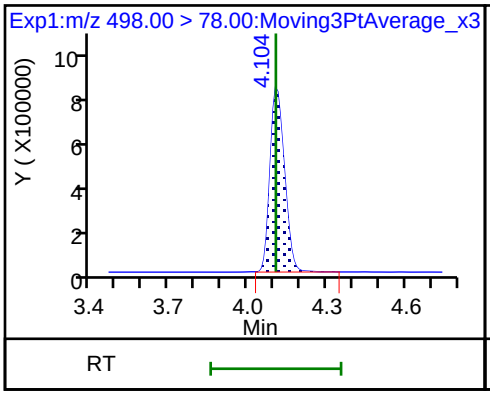
38 1H,1H,2H,2H-perfluorodecanesulfon



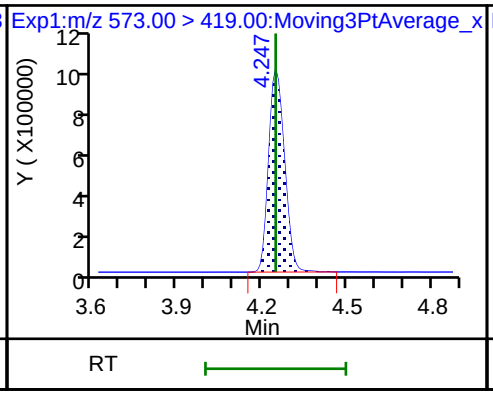
D 32 13C8 FOSA



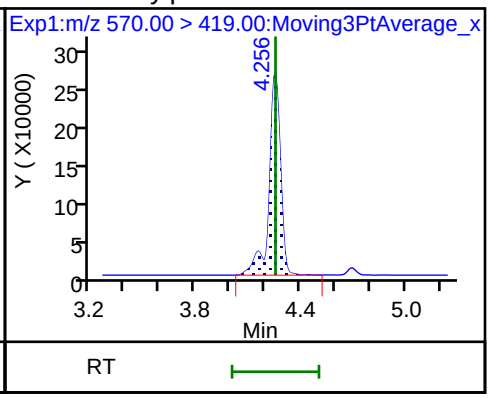
33 Perfluorooctanesulfonamide



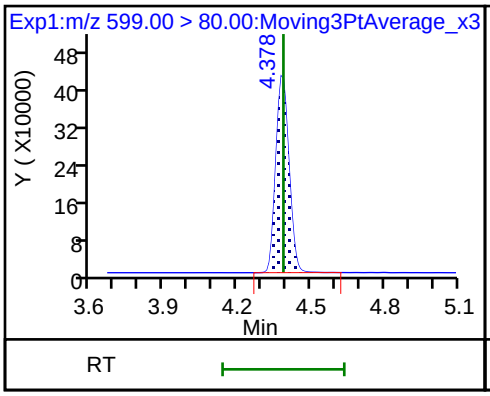
D 39 d3-NMeFOSAA



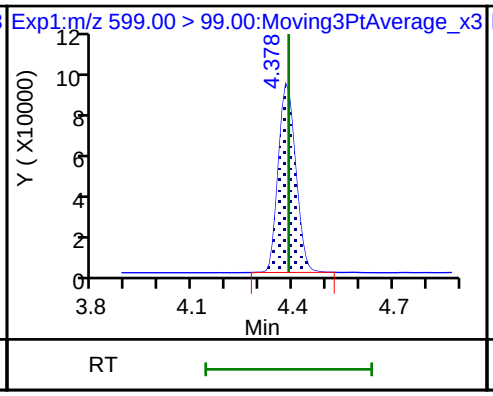
40 N-methylperfluorooctanesulfonamido



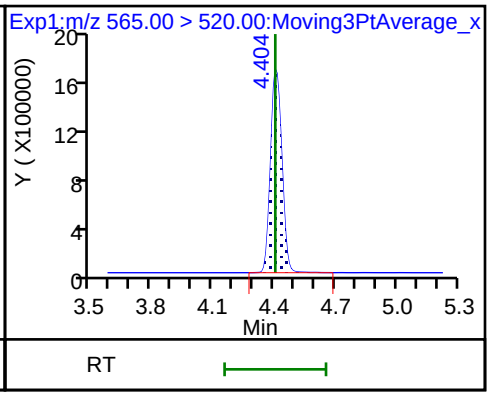
41 Perfluorodecanesulfonic acid



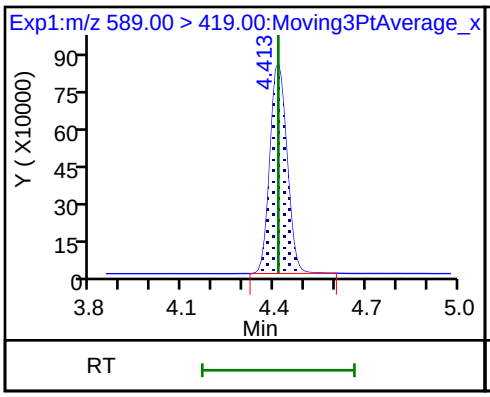
41 Perfluorodecanesulfonic acid



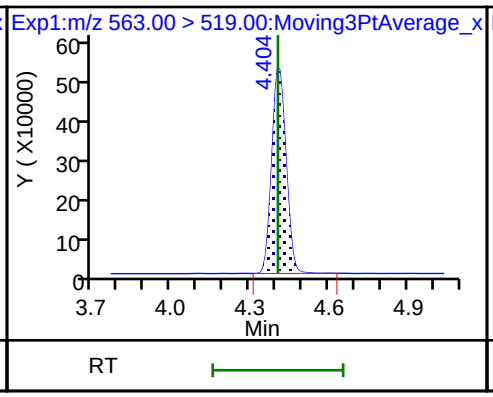
D 42 13C2 PFUnA



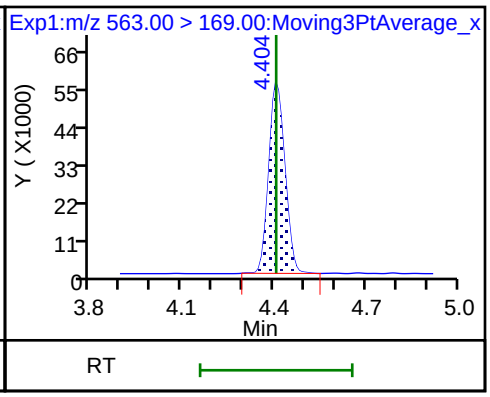
D 44 d5-NEtFOSAA



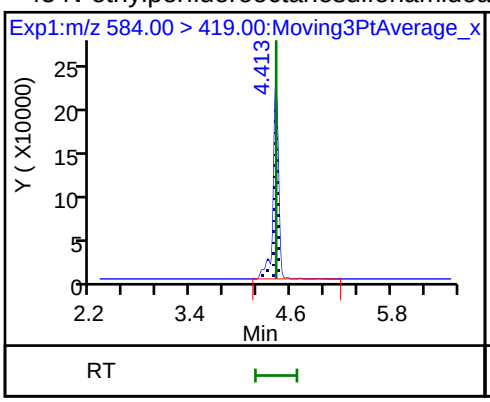
43 Perfluoroundecanoic acid



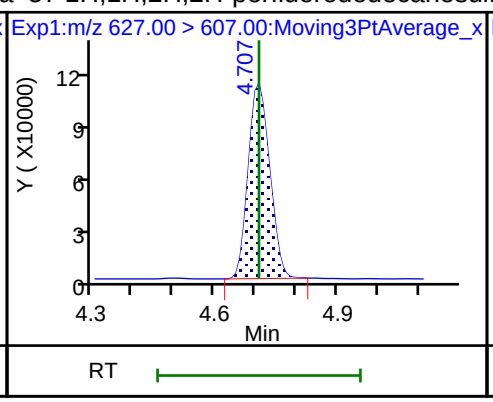
43 Perfluoroundecanoic acid



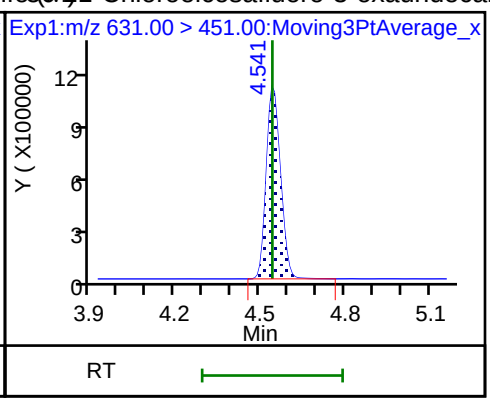
45 N-ethylperfluorooctanesulfonamidoa



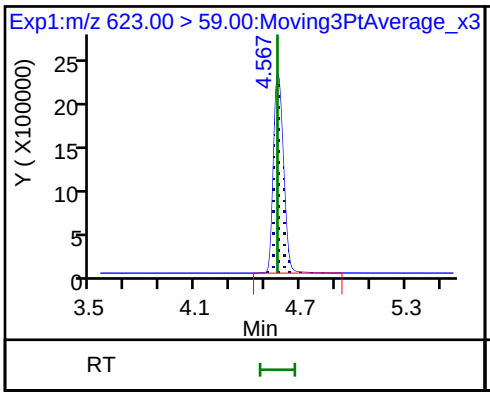
57 1H,1H,2H,2H-perfluorododecanesulfonic



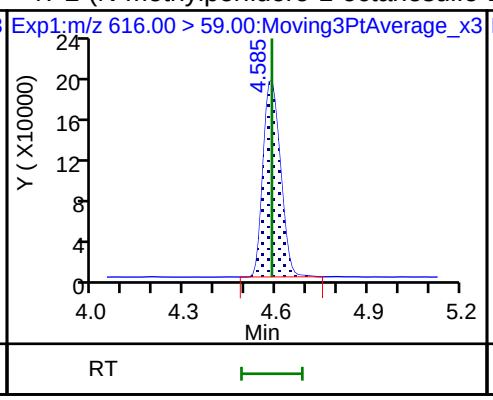
59 11-Chloroeicosafluoro-3-oxaundecan



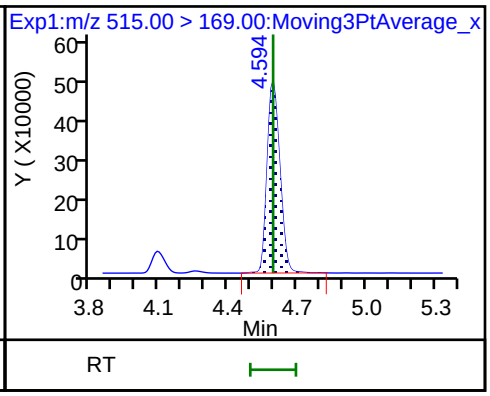
D 46 d7-N-MeFOSE-M



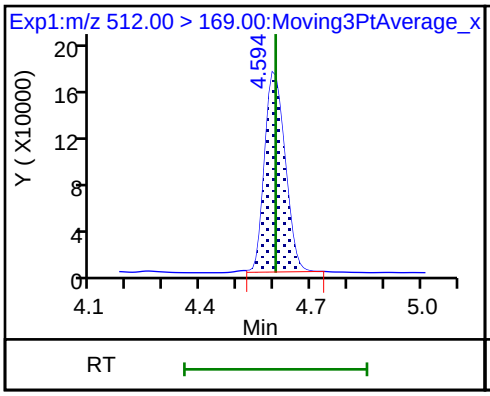
47 2-(N-methylperfluoro-1-octanesulfo



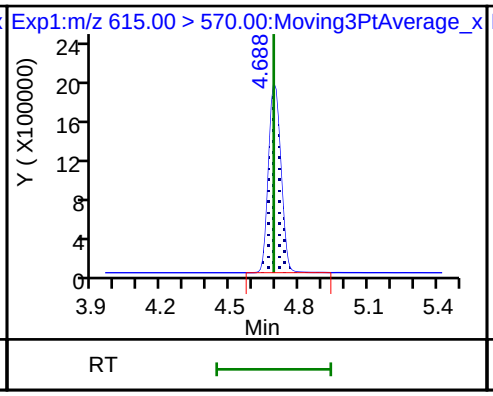
D 48 d-N-MeFOSA-M



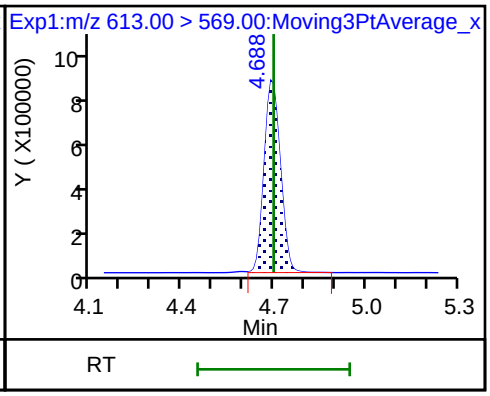
49 NMeFOSA



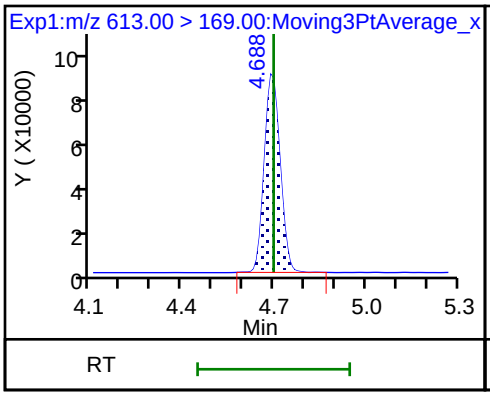
D 55 13C2 PFDoA



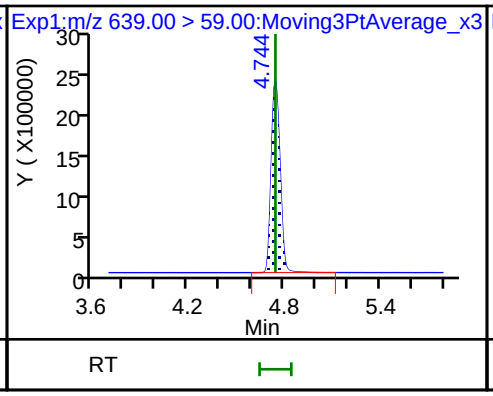
56 Perfluorododecanoic acid



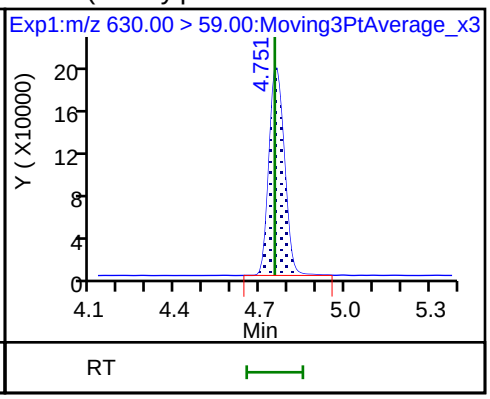
56 Perfluorododecanoic acid



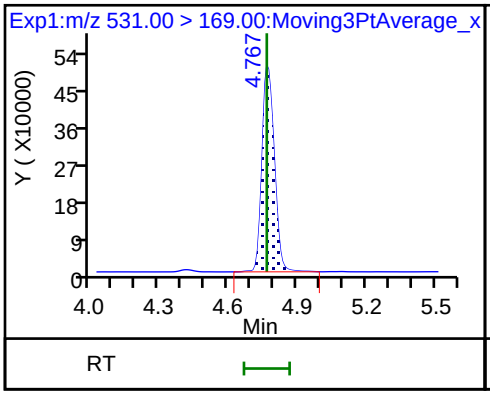
D 51 d9-N-EtFOSE-M



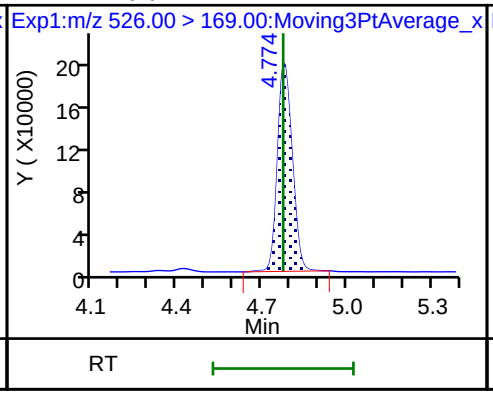
52 2-(N-ethylperfluoro-1-octanesulfon



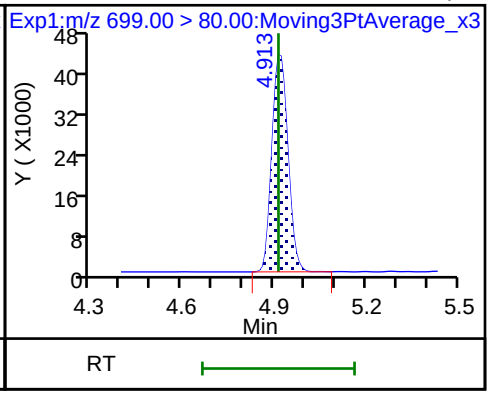
D 53 d-N-EtFOSA-M



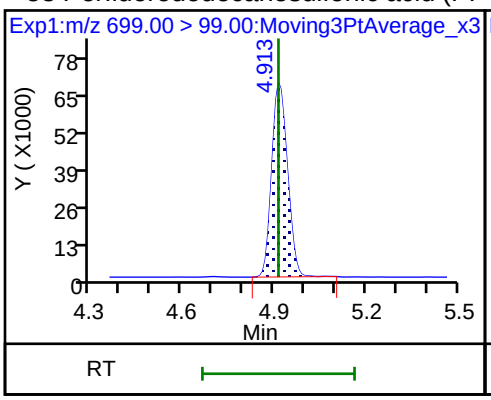
54 N-ethylperfluoro-1-octanesulfonami



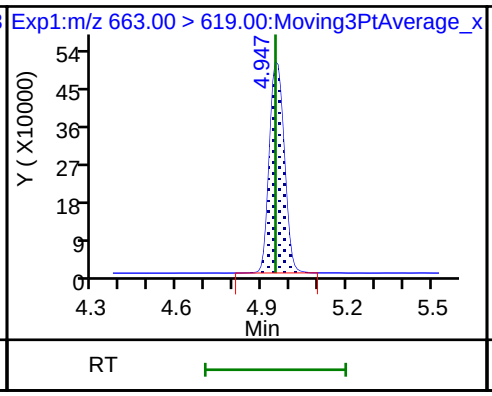
58 Perfluorododecanesulfonic acid (PF



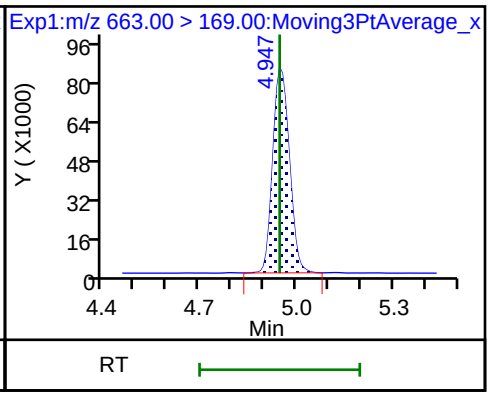
58 Perfluorododecanesulfonic acid (PF



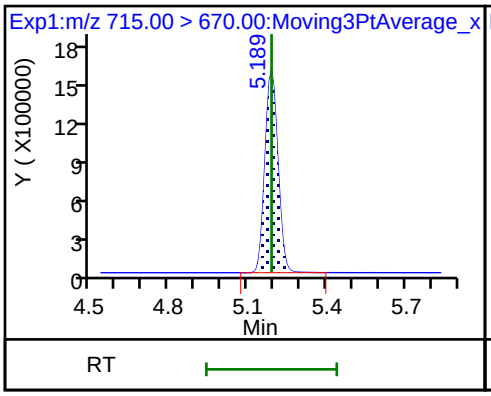
59 Perfluorotridecanoic acid



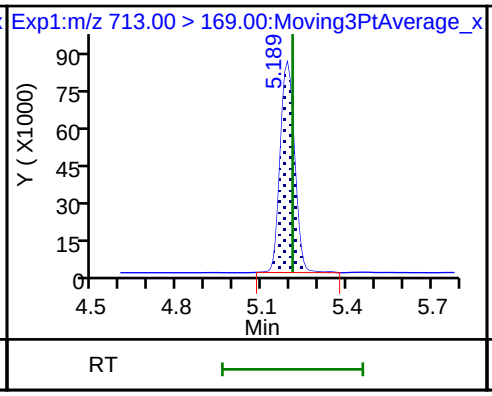
59 Perfluorotridecanoic acid



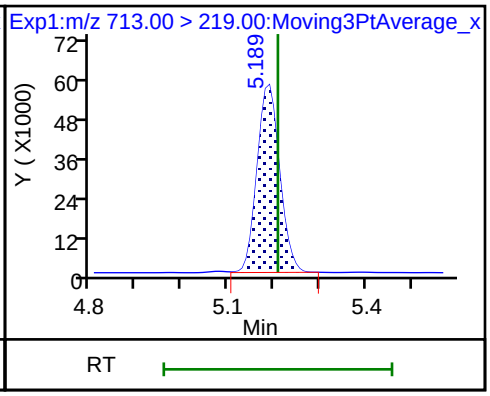
D 60 13C2 PFTeDA



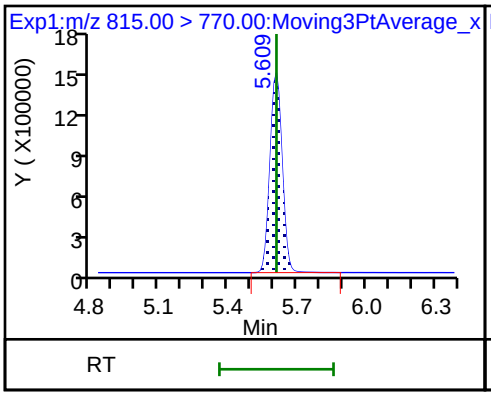
61 Perfluorotetradecanoic acid



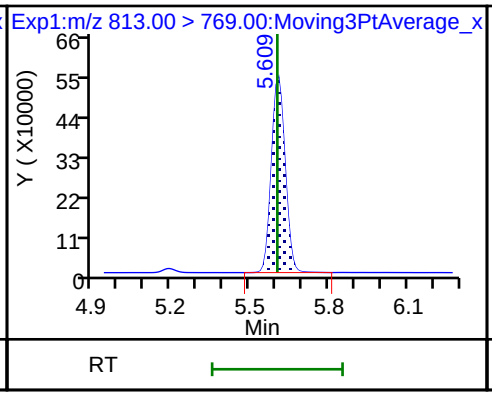
61 Perfluorotetradecanoic acid



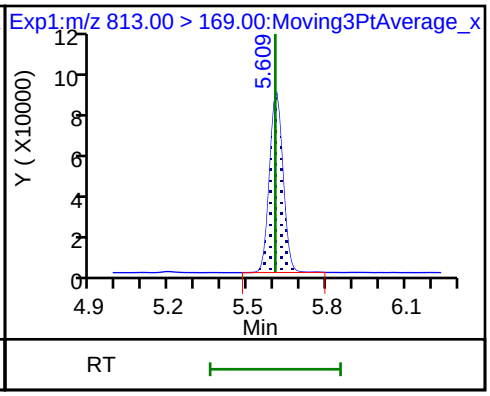
D 62 13C2 PFHxDA



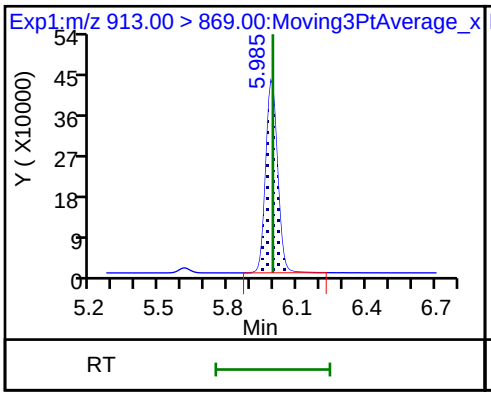
63 Perfluorohexadecanoic acid



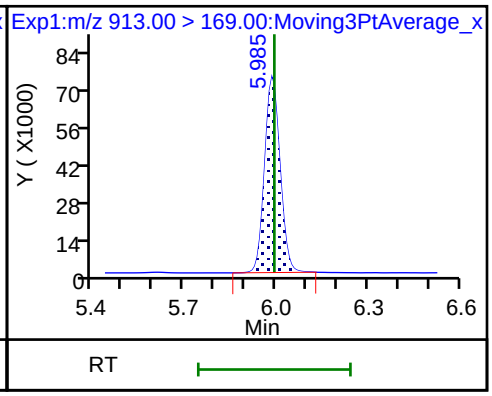
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

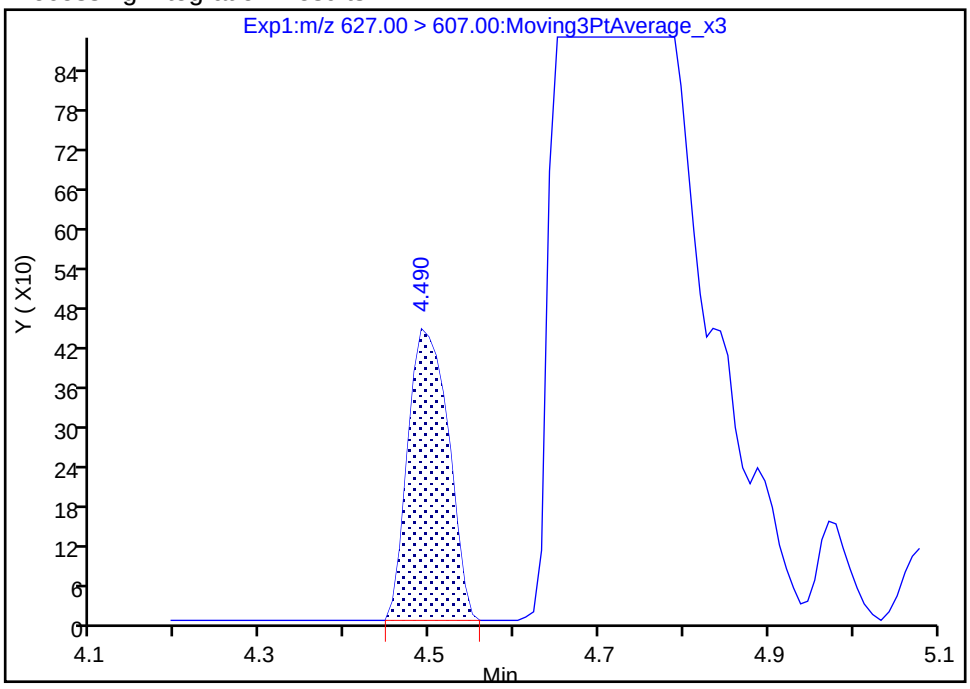
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._028.d
Injection Date: 09-Oct-2019 02:09:17 Instrument ID: A9
Lims ID: CCV L4
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 39 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

57 1H,1H,2H,2H-perfluorododecanesulfonic acid (, CAS: 120226-60-0

Signal: 1

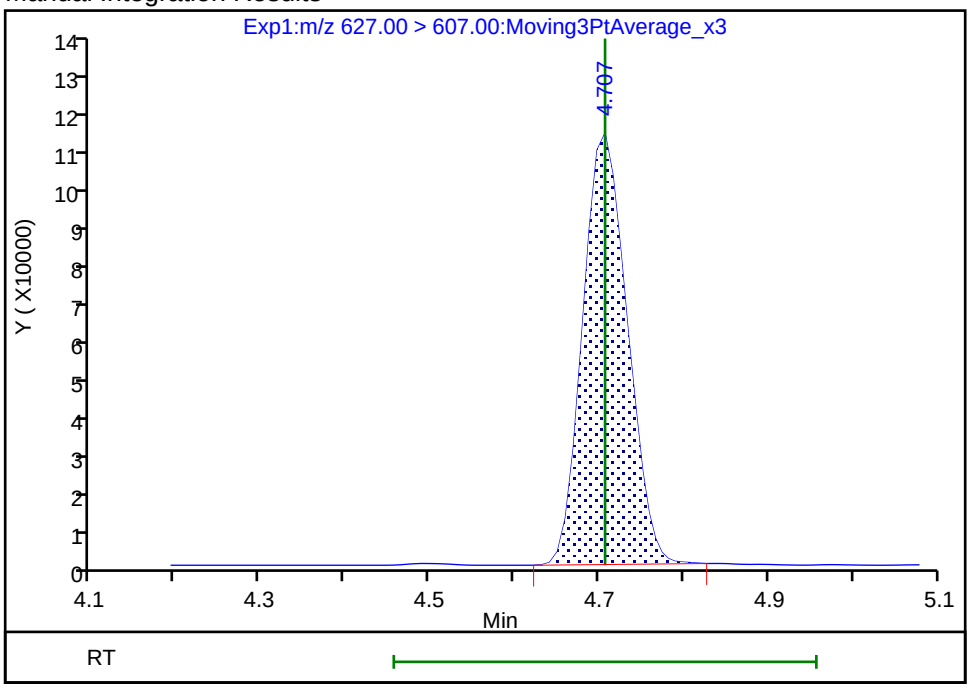
Processing Integration Results

RT: 4.49
Area: 1461
Amount: 0.003754
Amount Units: ng/ml



Manual Integration Results

RT: 4.71
Area: 391295
Amount: 1.005337
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:31:25
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/23 Calibration Date: 10/09/2019 03:35

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8602		2.53	2.50	1.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.002		2.45	2.50	-2.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.860		2.43	2.21	9.7	50.0
4:2 FTS	AveID	2.563	2.497		2.28	2.34	-2.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.9316		2.51	2.50	0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9629		2.55	2.35	8.5	50.0
HFPO-DA (GenX)	AveID	1.515	1.318		2.18	2.50	-13.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.126		2.51	2.50	0.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.183		2.20	2.28	-3.3	40.0
DONA	AveID	2.582	2.710		2.47	2.36	5.0	50.0
6:2 FTS	AveID	2.329	2.254		2.29	2.37	-3.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	0.9636		2.32	2.38	-2.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.072		2.37	2.50	-5.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	0.9783		2.11	2.32	-8.9	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.001		2.43	2.50	-2.8	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.6957		2.29	2.33	-1.8	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.5734		2.26	2.40	-5.9	50.0
8:2 FTS	AveID	2.215	2.208		2.39	2.40	-0.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	0.9314		2.45	2.50	-2.0	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	3.001		2.73	2.50	9.2	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.7547		2.30	2.50	-7.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8119		2.41	2.41	-0.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.7711		2.45	2.50	-2.0	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.7360		2.31	2.50	-7.7	40.0
F-53B Minor	AveID	1.870	1.981		2.49	2.36	5.9	50.0
NMeFOSE	AveID	1.042	1.003		2.41	2.50	-3.7	40.0
NMeFOSA	AveID	0.8723	0.8607		2.47	2.50	-1.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.023		2.48	2.50	-0.7	40.0
10:2 FTS	AveID	1.705	1.792		2.53	2.41	5.1	50.0
NEtFOSE	AveID	1.054	1.057		2.51	2.50	0.2	40.0
NEtFOSA	AveID	1.005	1.063		2.64	2.50	5.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0856		2.48	2.42	2.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329447/23 Calibration Date: 10/09/2019 03:35

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.08LLBB._037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6687		2.59	2.50	3.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1499		2.65	2.50	6.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9515		2.71	2.50	8.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7122		2.47	2.50	-1.3	50.0
13C4 PFBA	Ave	0.7371	0.7772		2.64	2.50	5.4	50.0
13C5 PFPeA	Ave	0.6168	0.6317		2.56	2.50	2.4	50.0
M2-4:2 FTS	Ave	0.1177	0.0893		1.77	2.34	-24.1	50.0
13C2 PFHxA	Ave	0.7105	0.7156		2.52	2.50	0.7	50.0
13C3 HFPO-DA	Ave	0.1236	0.1569		3.17	2.50	26.9	50.0
13C4 PFHpA	Ave	0.8130	0.8387		2.58	2.50	3.2	50.0
18O2 PFHxS	Ave	0.5224	0.4981		2.26	2.37	-4.6	50.0
M2-6:2 FTS	Ave	0.1134	0.0749		1.57	2.38	-33.9	50.0
13C8 PFOA	Ave	0.8884	0.9051		2.55	2.50	1.9	50.0
13C4 PFOA	Ave	0.9372	0.9322		2.49	2.50	-0.5	50.0
13C4 PFOS	Ave	0.6062	0.5942		2.34	2.39	-2.0	50.0
13C8 PFOS	Ave	0.1318	0.1289		2.45	2.50	-2.2	50.0
13C5 PFNA	Ave	0.8344	0.8697		2.61	2.50	4.2	50.0
M2-8:2 FTS	Ave	0.1066	0.0716		1.61	2.40	-32.8	50.0
13C2 PFDA	Ave	0.9417	0.9564		2.54	2.50	1.6	50.0
13C8 FOSA	Ave	0.3127	0.3047		2.44	2.50	-2.5	50.0
d3-NMeFOSAA	Ave	0.4441	0.4662		2.62	2.50	5.0	50.0
13C2 PFUnA	Ave	0.8035	0.8023		2.50	2.50	-0.1	50.0
d5-NEtFOSAA	Ave	0.3818	0.4074		2.67	2.50	6.7	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2123		13.0	12.5	3.8	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2296		2.57	2.50	2.8	50.0
13C2 PFDoA	Ave	0.8846	0.8457		2.39	2.50	-4.4	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2110		12.4	12.5	-0.8	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2155		2.50	2.50	0.2	50.0
13C2 PFTeDA	Ave	0.6272	0.6047		2.41	2.50	-3.6	50.0
13C2 PFHxDA	Ave	0.6893	0.6623		2.40	2.50	-3.9	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._037.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 09-Oct-2019 03:35:25 ALS Bottle#: 40 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:32:44 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:32:44
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.895	1.896	-0.001	1.003	5383014	2.53		101	673	a
D 1 13C4 PFBA										
217.00 > 172.00	1.890	1.896	-0.006	0.566	6258230	2.64		105	5934	
D 4 13C5 PFPeA										
267.90 > 223.00	2.200	2.201	0.0	0.659	5086868	2.56		102	3033	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.200	2.201	0.0	1.000	5096187	2.44		97.8	469	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.226	2.235	-0.009	0.757	6594196	2.42	Target=2.62	110	451	
298.90 > 99.00	2.226	2.235	-0.009	0.757	2366944		2.79(1.31-3.93)		274	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.517	2.517	0.0	0.754	671563	1.77		75.9	1135	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.517	2.517	0.0	1.000	1676985	2.27		97.4	4655	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.549	2.560	-0.011	1.000	5368328	2.51	Target=14.83	100	766	
313.00 > 119.00	2.549	2.560	-0.011	1.000	348184		15.42(7.41-22.24)		486	
D 9 13C2 PFHxA										
315.00 > 270.00	2.549	2.560	-0.011	0.763	5762417	2.52		101	2579	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.570	2.570	0.0	0.874	3622861	2.55	Target=1.98	109	3592	
349.00 > 99.00	2.570	2.570	0.0	0.874	1683830		2.15(0.99-2.97)		2504	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.678	2.688	-0.010	1.000	1665440	2.17		87.0	762	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.678	2.688	-0.010	0.802	1263444	3.17		127	2362	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.935	2.941	-0.006	0.879	6753694	2.58		103	3298	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.935	2.941	-0.006	1.000	7607464	2.51	Target=4.24	100	1287	
363.00 > 169.00	2.941	2.941	0.0	1.002	1747940		4.35(2.12-6.36)		1769	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.941	2.947	-0.006	1.000	4317262	2.20	Target=3.27	96.7	3226	
399.00 > 99.00	2.941	2.947	-0.006	1.000	1279599		3.37(1.64-4.91)		1228	
D 16 18O2 PFHxS										
403.00 > 84.00	2.941	2.947	-0.006	0.881	3794620	2.26		95.4	3786	
18 DONA										
377.00 > 251.00	2.988	2.995	-0.007	0.806	12216795	2.47	Target=2.25	105	4118	
377.00 > 85.00	2.988	2.995	-0.007	0.806	5561804		2.20(1.12-3.37)		3162	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.325	-0.007	1.000	1289260	2.29		96.8	1577	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.325	-0.007	0.994	573279	1.57		66.1	1650	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.332	3.339	-0.007	0.899	4389480	2.32	Target=3.58	97.4	2996	
449.00 > 99.00	3.332	3.339	-0.007	0.899	1189828		3.69(1.79-5.37)		2160	
D 21 13C8 PFOA										
421.00 > 376.00	3.332	3.339	-0.007	0.998	7288503	2.55		102	6928	
D 23 13C4 PFOA										
417.00 > 372.00	3.339	3.346	-0.007	1.000	7506393	2.49		99.5	3902	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.346	-0.007		8052691	2.50			3801	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.339	3.346	-0.007	1.000	8045733	2.37	Target=2.79	94.8	1014	
413.00 > 169.00	3.339	3.346	-0.007	1.000	2768815		2.91(1.40-4.19)		1607	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.714	0.0	1.002	4344163	2.11	Target=3.83	91.1	3000	
499.00 > 99.00	3.714	3.714	0.0	1.002	1100210		3.95(1.92-5.75)		1552	
D 26 13C8 PFOS										
507.00 > 99.00	3.707	3.714	-0.007	1.110	1038046	2.44		97.8	1641	
D 27 13C4 PFOS										
503.00 > 80.00	3.707	3.714	-0.007	1.110	4574647	2.34		98.0	5326	
D 30 13C5 PFNA										
468.00 > 423.00	3.722	3.730	-0.008	1.115	7003034	2.61		104	3674	
29 Perfluorononanoic acid										
463.00 > 419.00	3.722	3.730	-0.008	1.000	7009491	2.43	Target=5.58	97.2	1895	
463.00 > 169.00	3.730	3.730	0.0	1.002	1186593		5.91(2.79-8.37)		1182	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.921	3.921	0.0	1.058	3102842	2.29		98.2	3691	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.051	4.060	-0.009	1.093	2633955	2.26	Target=4.51	94.1	4007	
549.00 > 99.00	4.060	4.060	0.0	1.095	611846		4.30(2.25-6.76)		2099	
D 36 13C2 PFDA										
515.00 > 470.00	4.086	4.086	0.0	1.224	7701215	2.54		102	4065	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.077	4.086	-0.009	1.221	552630	1.61		67.2	1865	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.086	0.0	1.000	7173237	2.45	Target=15.45	98.0	1938	
513.00 > 169.00	4.086	4.086	0.0	1.000	457178		15.69(7.73-23.18)		225	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.077	4.086	-0.009	1.000	1220143	2.39		99.7	2287	
D 32 13C8 FOSA										
506.00 > 78.00	4.104	4.104	0.0	1.229	2453684	2.44		97.5	3092	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.104	0.0	1.000	7363071	2.73		109	2258	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.238	4.247	-0.009	1.269	3754209	2.62		105	2412	
40 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	4.247	4.256	-0.009	1.002	2833122	2.30		92.1	481	M
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.378	0.0	1.181	3745289	2.40	Target=4.64	99.8	3104	
599.00 > 99.00	4.378	4.378	0.0	1.181	809403		4.63(2.32-6.96)		1561	
D 42 13C2 PFUnA										
565.00 > 520.00	4.396	4.404	-0.008	1.316	6460641	2.50		99.9	4790	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.404	4.404	0.0	1.002	4981512	2.45	Target=9.27	98.0	2361	
563.00 > 169.00	4.404	4.404	0.0	1.002	534310		9.32(4.63-13.90)		1820	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.404	4.413	-0.009	1.319	3280962	2.67		107	2440	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.413	4.413	0.0	1.002	2414912	2.31		92.3	2019	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.541	4.541	0.0	1.225	8929402	2.49		106	4862	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.567	4.567	0.0		8546123	13.0		104	3503	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.576	4.585	-0.009	1.002	1715099	2.41		96.3	2333	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.585	4.594	-0.009		1848773	2.57		103	289	
49 NMeFOSA										
512.00 > 169.00	4.594	4.594	0.0	1.002	1591257	2.47		98.7	1375	
D 55 13C2 PFDoA										
615.00 > 570.00	4.688	4.688	0.0	1.404	6809962	2.39		95.6	4265	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.688	4.688	0.0	1.000	6965659	2.48	Target=9.58	99.3	2633	
613.00 > 169.00	4.688	4.688	0.0	1.000	735295		9.47(4.79-14.36)		1575	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.707	4.707	0.0	1.154	996518	2.53		105	3521	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.735	4.744	-0.009		8496124	12.4		99.2	3185	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.751	4.751	0.0	1.004	1795474	2.51		100	2107	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.766	4.767	-0.001		1735260	2.50		100	1471	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.774	4.774	0.0	1.002	1843726	2.64		106	790	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.905	4.913	-0.008	1.323	396497	2.48	Target=0.64	103	1700	
699.00 > 99.00	4.905	4.913	-0.008	1.323	592040		0.67(0.32-0.96)		2591	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.938	4.947	-0.009	1.053	4553532	2.59	Target=5.94	104	3214	
663.00 > 169.00	4.947	4.947	0.0	1.055	745798		6.11(2.97-8.91)		2253	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.181	5.189	-0.009	1.551	4869418	2.41		96.4	3795	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.181	5.189	-0.009	1.000	729931	2.65	Target=1.42	106	2349	
713.00 > 219.00	5.181	5.189	-0.009	1.000	481733		1.52(0.71-2.13)		2377	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.599	5.609	-0.010	1.000	5074637	2.71	Target=6.39	109	2104	
813.00 > 169.00	5.599	5.609	-0.010	1.000	718917		7.06(3.19-9.58)		2676	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.599	5.609	-0.010	1.677	5333063	2.40		96.1	7176	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.977	5.985	-0.008	1.067	3798341	2.47	Target=6.02	98.7	1962	
913.00 > 169.00	5.977	5.985	-0.008	1.067	639968		5.94(3.01-9.03)		2512	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

Report Date: 18-Oct-2019 15:32:45 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._037.d

Injection Date: 09-Oct-2019 03:35:25 Instrument ID: A9

Lims ID: CCV L5

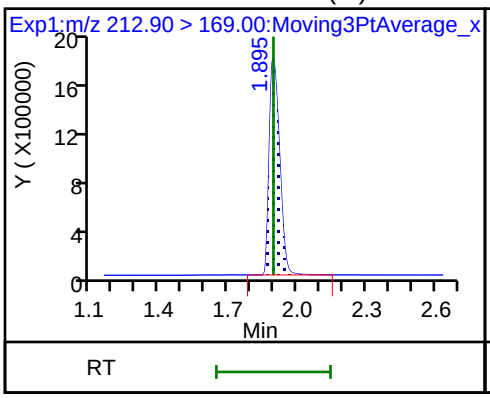
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 40 Worklist Smp#: 23

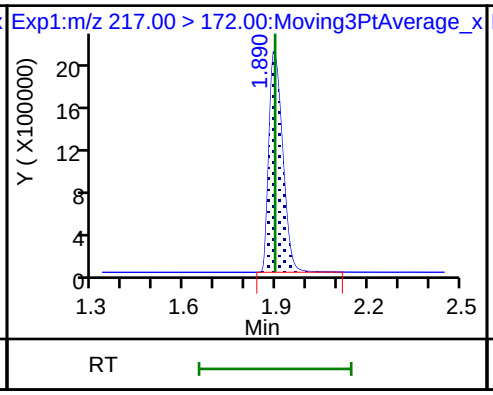
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

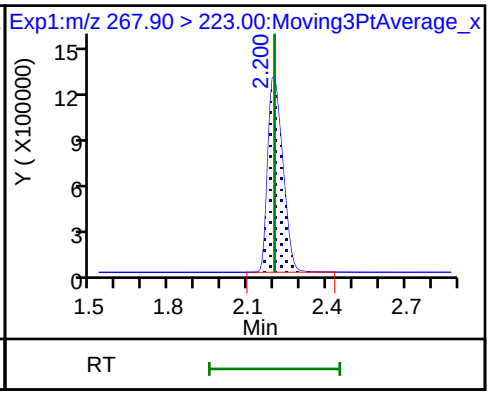
2 Perfluorobutanoic acid (M)



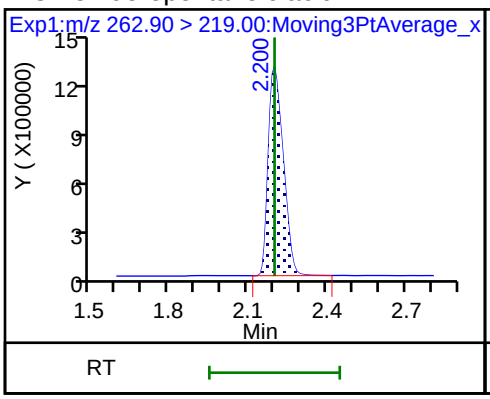
D 1 13C4 PFBA



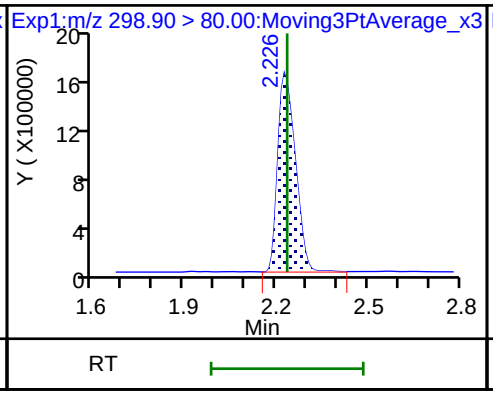
D 4 13C5 PFPeA



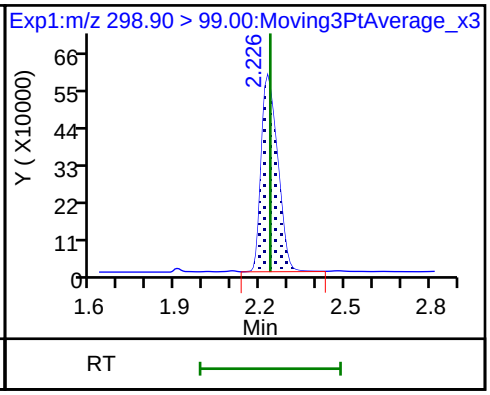
3 Perfluoropentanoic acid



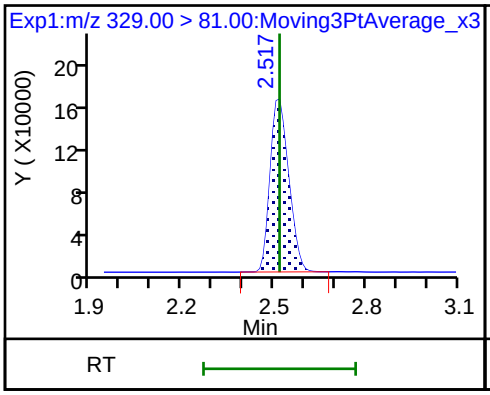
5 Perfluorobutanesulfonic acid



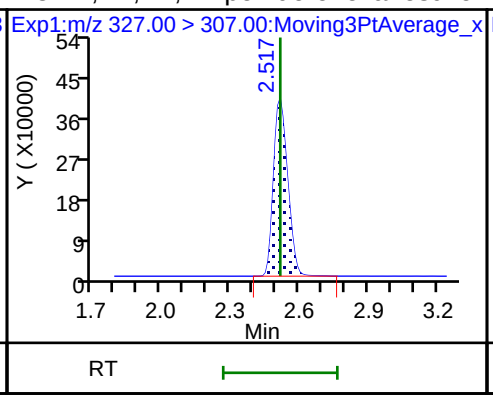
5 Perfluorobutanesulfonic acid



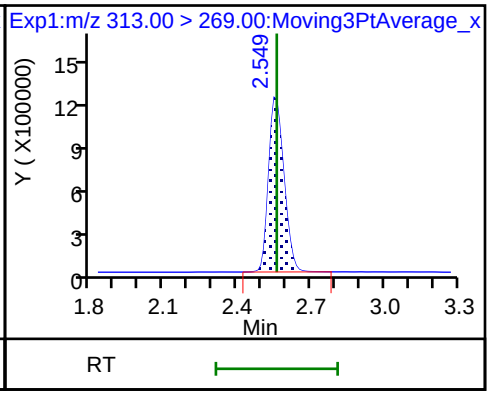
D 7 M2-4:2 FTS



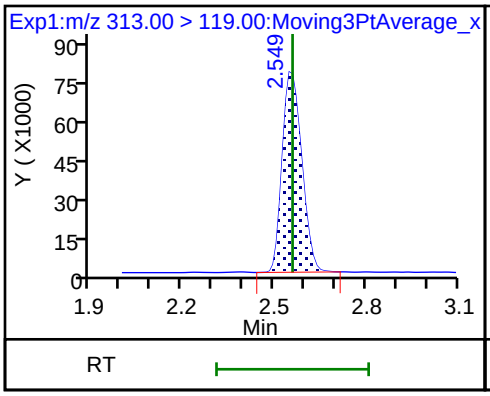
8 1H,1H,2H,2H-perfluorohexanesulfoni



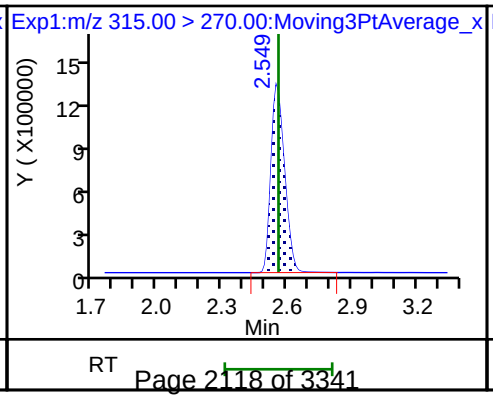
10 Perfluorohexanoic acid



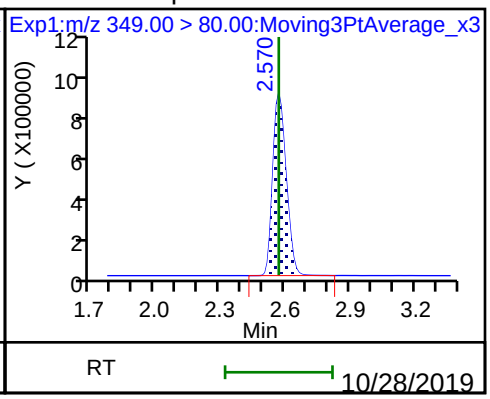
10 Perfluorohexanoic acid



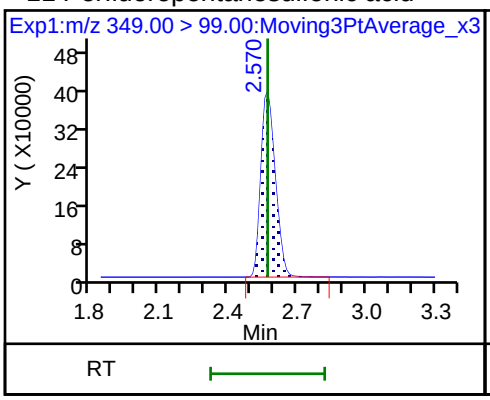
D 9 13C2 PFHxA



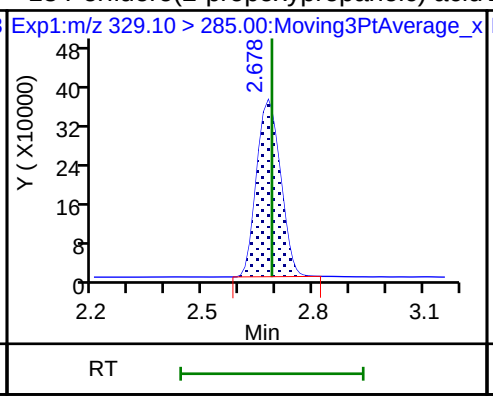
11 Perfluoropentanesulfonic acid



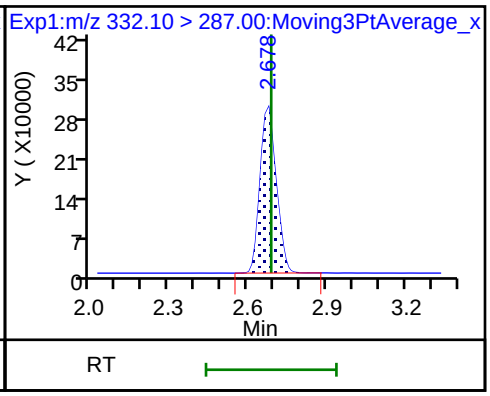
11 Perfluoropentanesulfonic acid



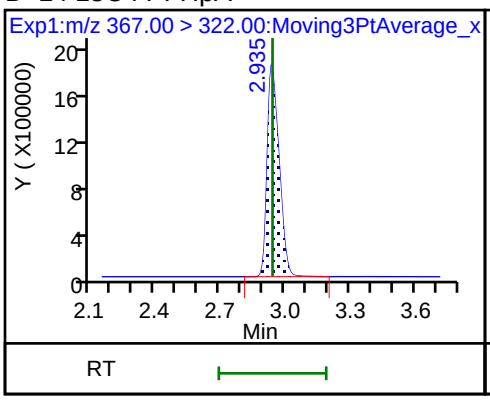
13 Perfluoro(2-propoxypropanoic) acid



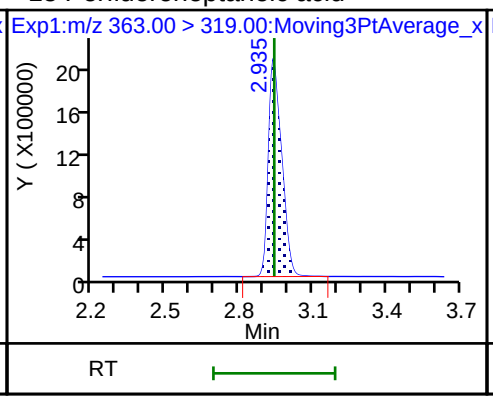
D 12 13C3 HFPO-DA



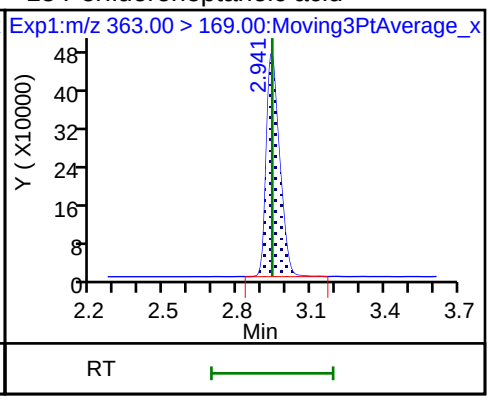
D 14 13C4 PFHpA



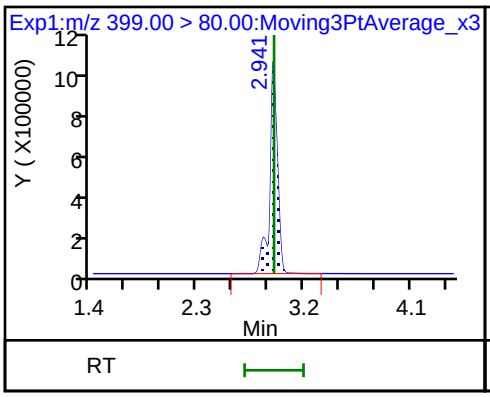
15 Perfluoroheptanoic acid



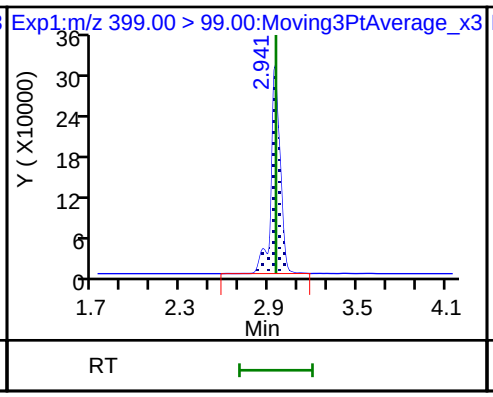
15 Perfluoroheptanoic acid



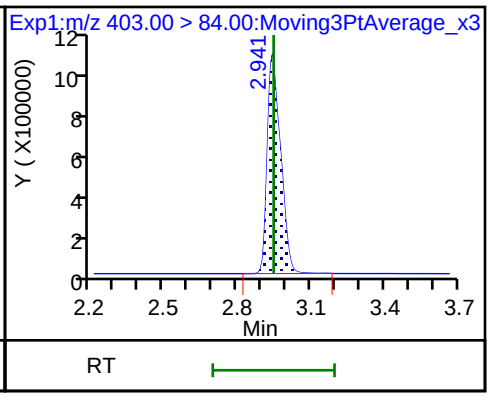
17 Perfluorohexanesulfonic acid



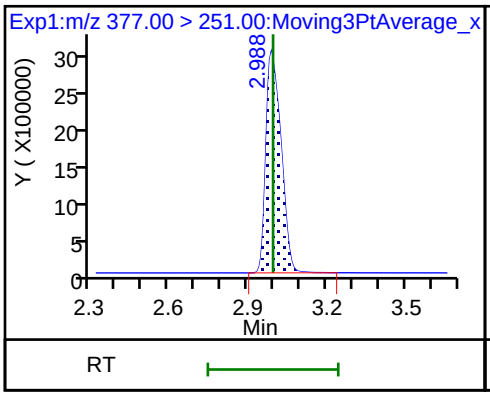
17 Perfluorohexanesulfonic acid



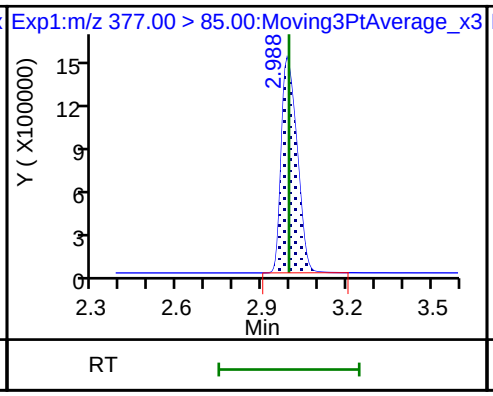
D 16 18O2 PFHxS



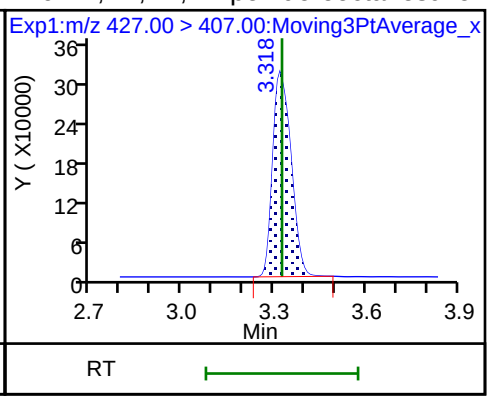
18 DONA



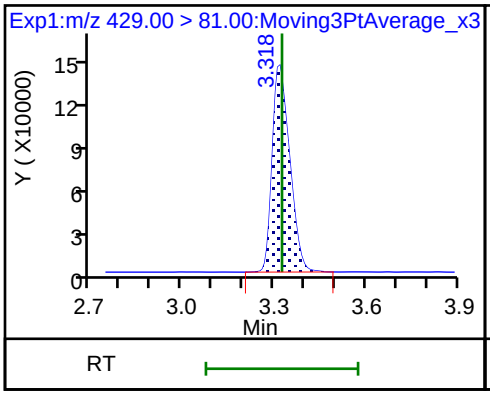
18 DONA



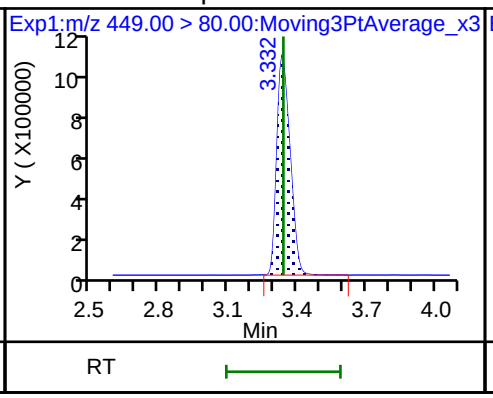
19 1H,1H,2H,2H-perfluorooctanesulfoni



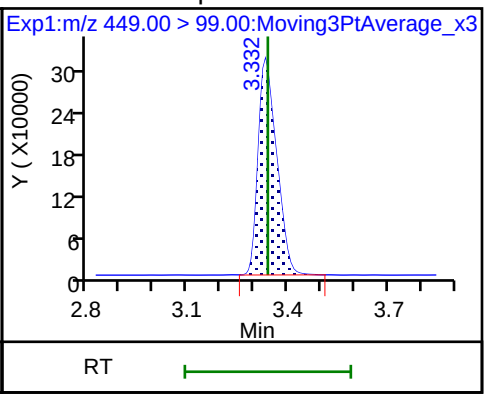
D 20 M2-6:2 FTS



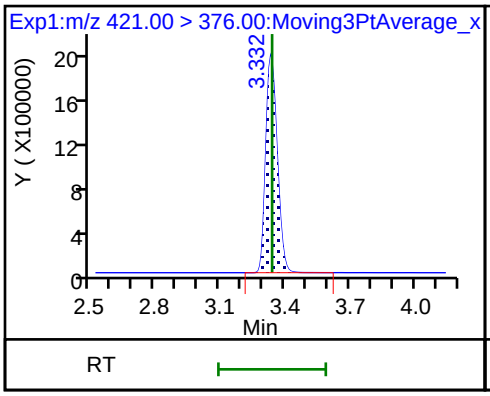
22 Perfluoroheptanesulfonic acid



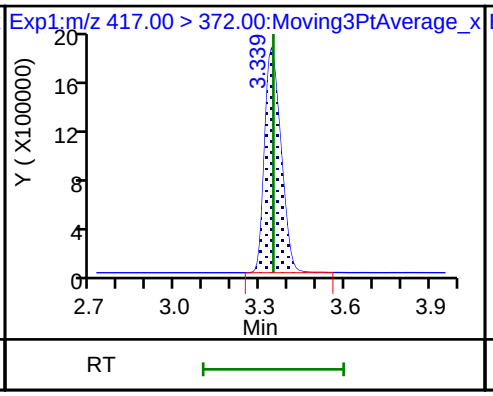
22 Perfluoroheptanesulfonic acid



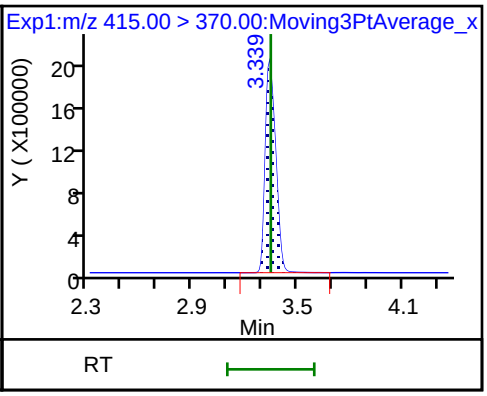
D 21 13C8 PFOA



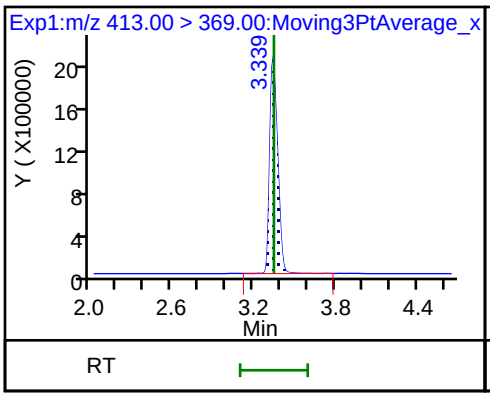
D 23 13C4 PFOA



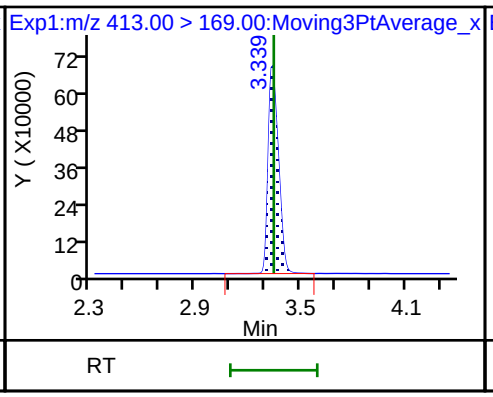
* 25 13C2 PFOA



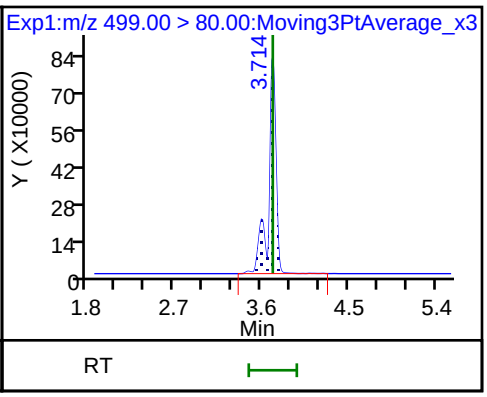
24 Perfluorooctanoic acid



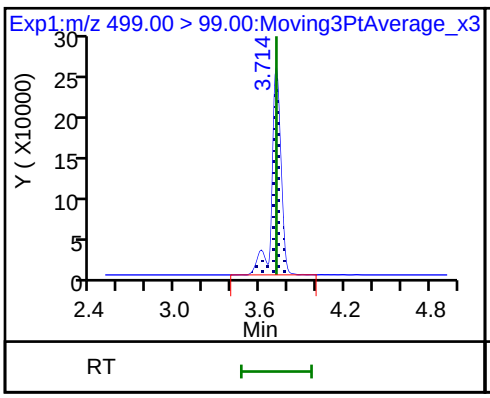
24 Perfluorooctanoic acid



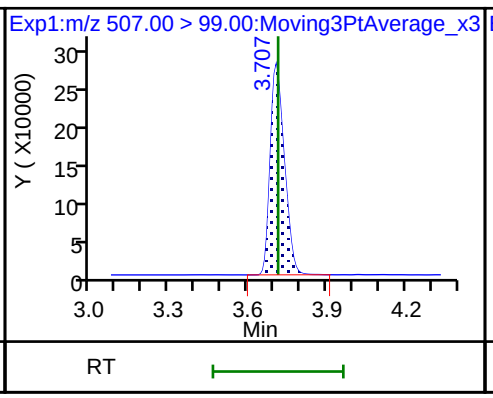
28 Perfluorooctanesulfonic acid



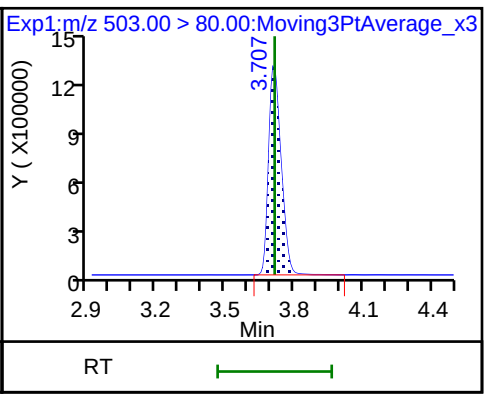
28 Perfluorooctanesulfonic acid



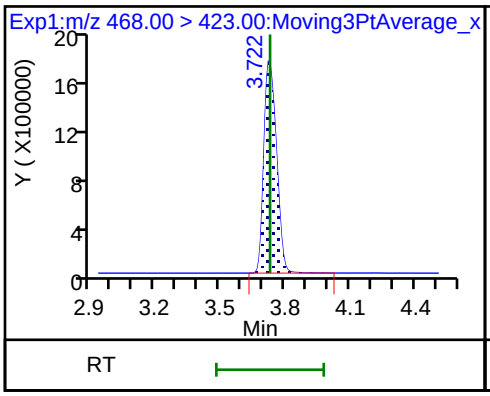
D 26 13C8 PFOS



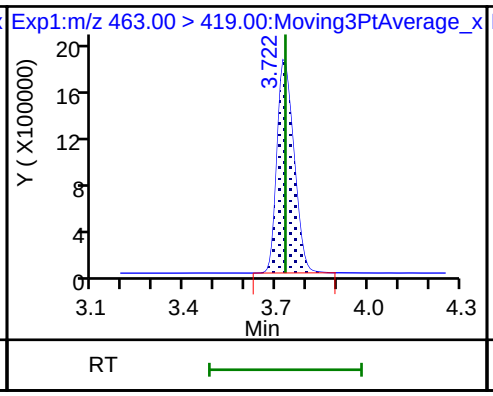
D 27 13C4 PFOS



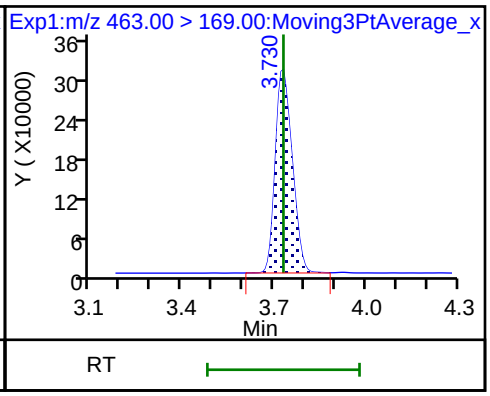
D 30 13C5 PFNA



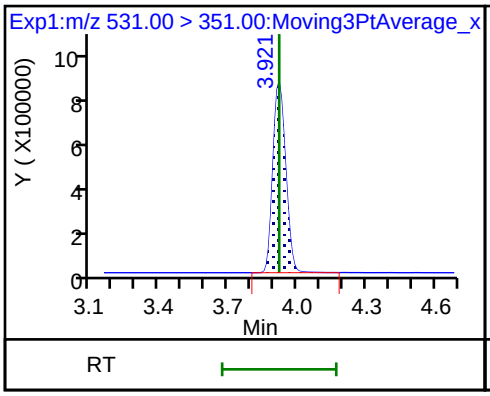
29 Perfluorononanoic acid



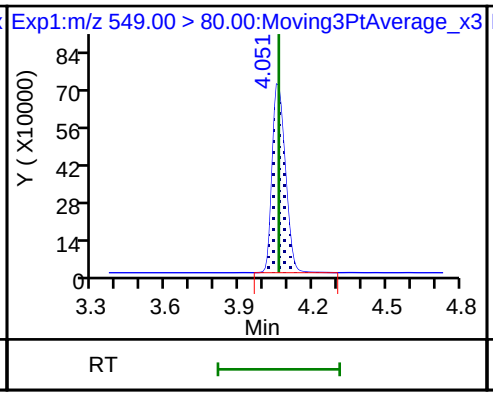
29 Perfluorononanoic acid



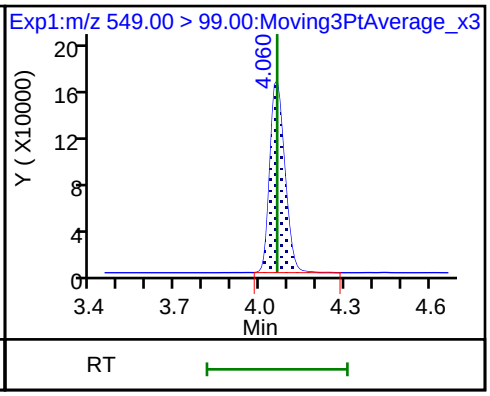
31 9-Chlorohexadecafluoro-3-oxanonane



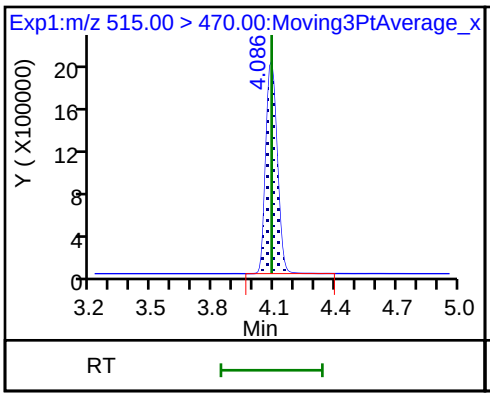
34 Perfluorononanesulfonic acid



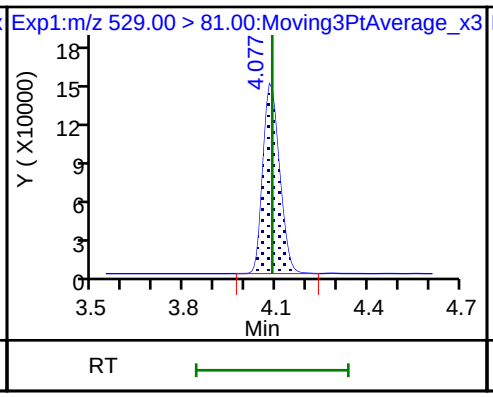
34 Perfluorononanesulfonic acid



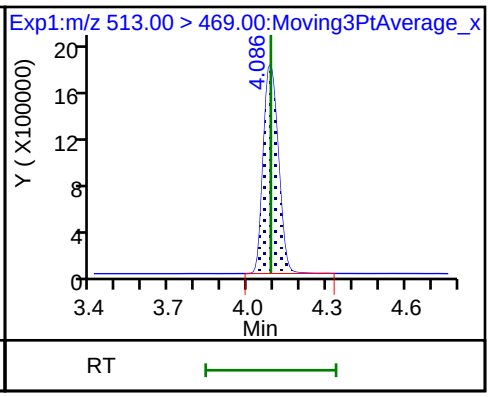
D 36 13C2 PFDA



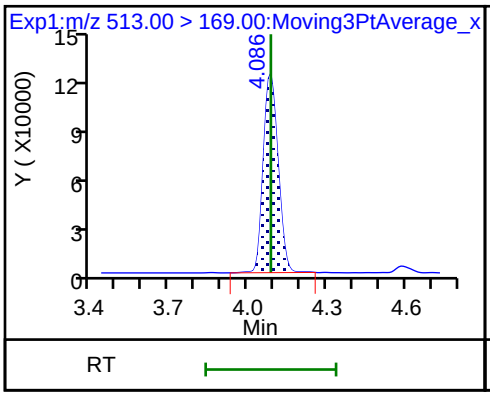
D 35 M2-8:2 FTS



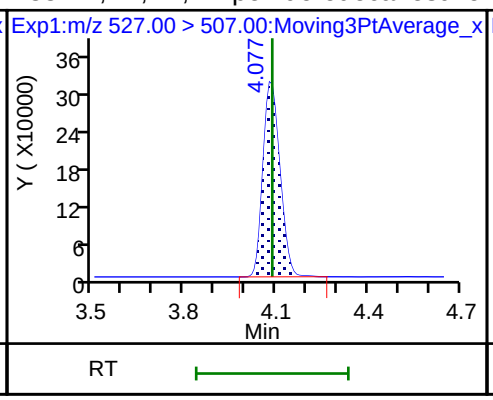
37 Perfluorodecanoic acid



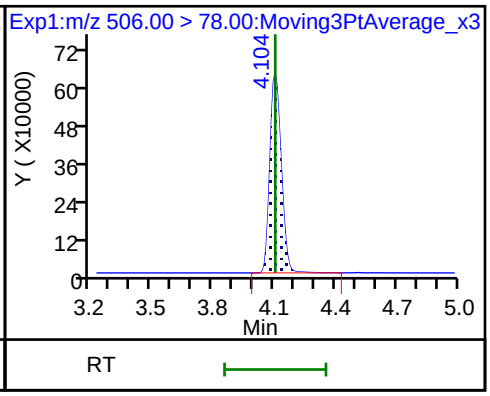
37 Perfluorodecanoic acid



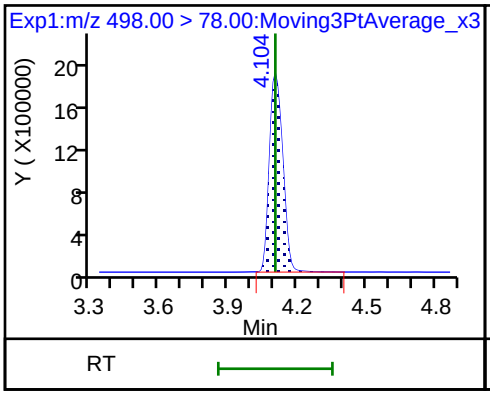
38 1H,1H,2H,2H-perfluorodecanesulfon



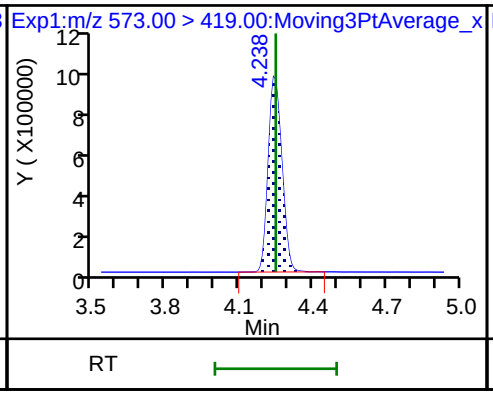
D 32 13C8 FOSA



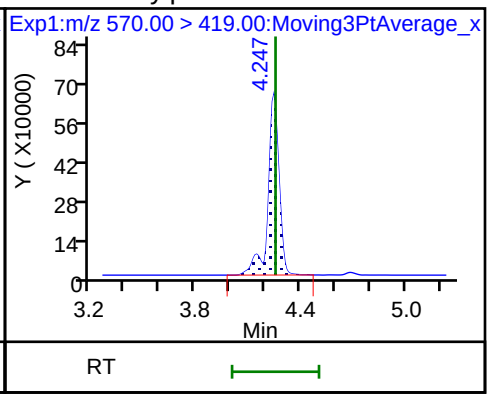
33 Perfluorooctanesulfonamide



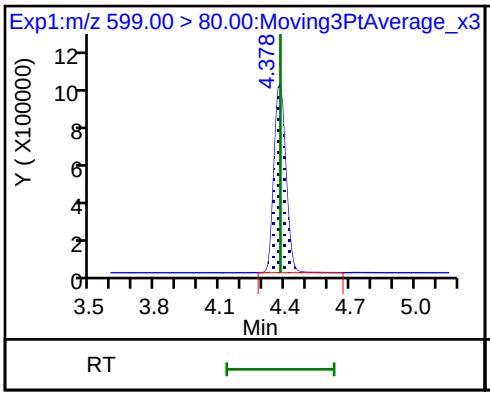
D 39 d3-NMeFOSAA



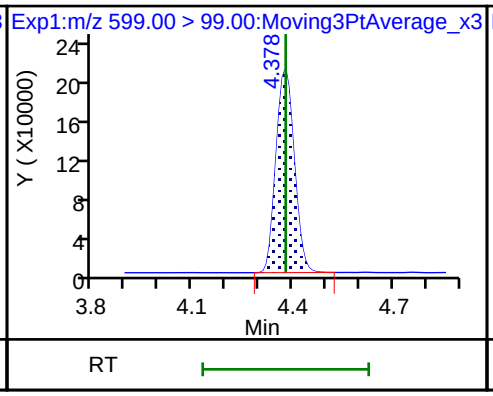
40 N-methylperfluorooctanesulfonamido (M)



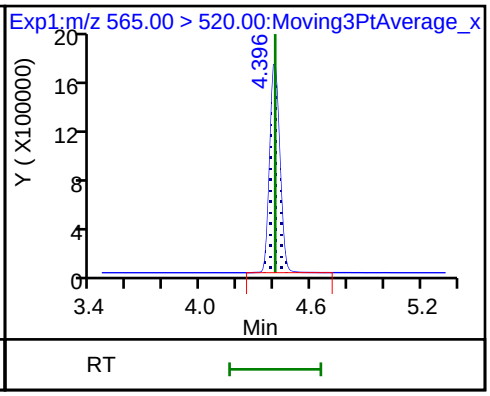
41 Perfluorodecanesulfonic acid



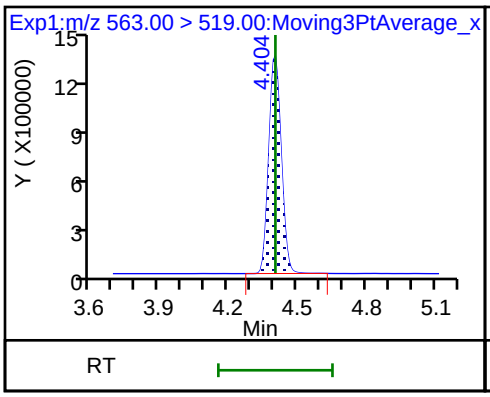
41 Perfluorodecanesulfonic acid



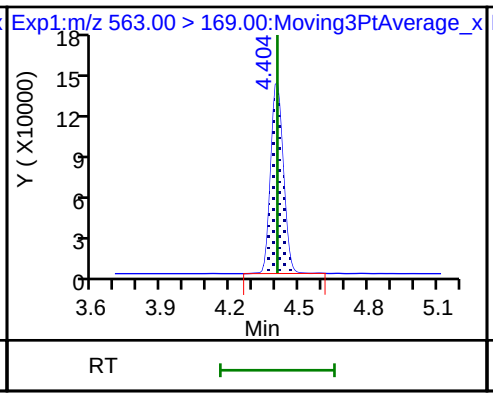
D 42 13C2 PFUnA



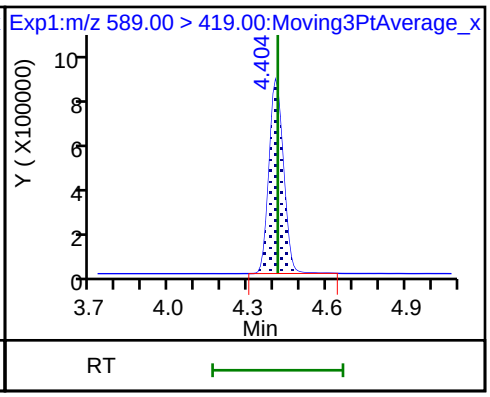
43 Perfluoroundecanoic acid



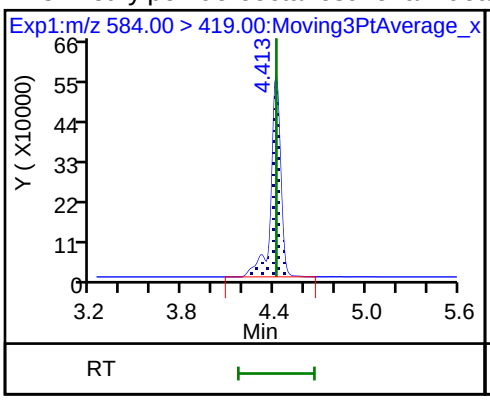
43 Perfluoroundecanoic acid



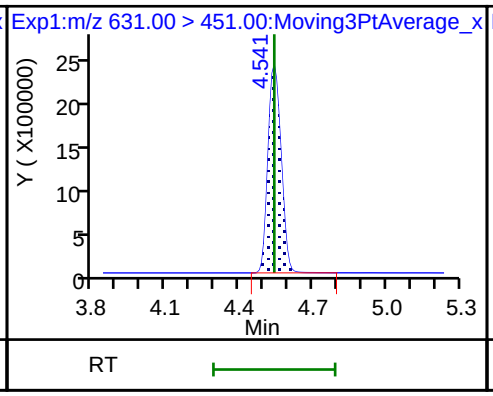
D 44 d5-NEtFOSAA



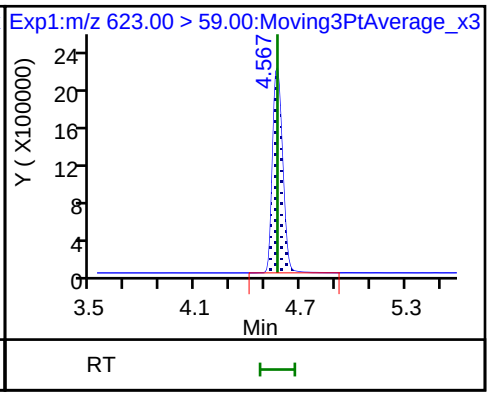
45 N-ethylperfluorooctanesulfonamidoa



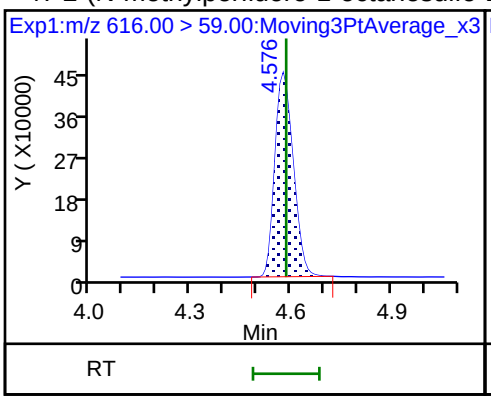
50 11-Chloroeicosafluoro-3-oxaundecan



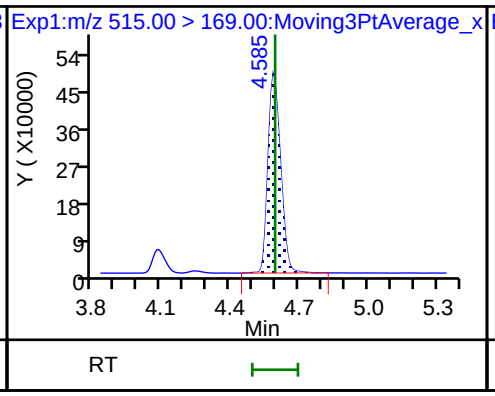
D 46 d7-N-MeFOSE-M



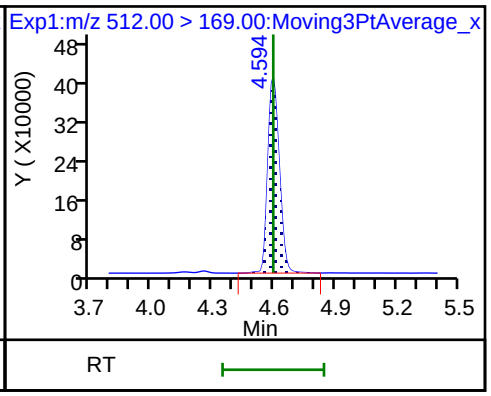
47 2-(N-methylperfluoro-1-octanesulfo



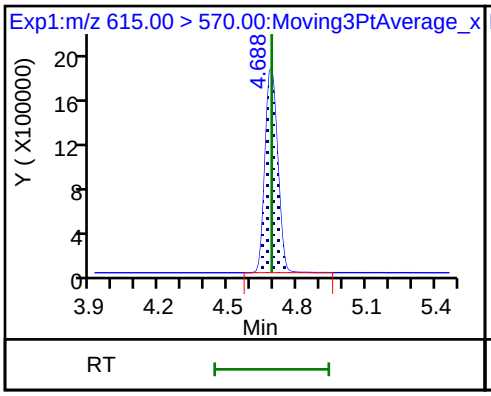
D 48 d-N-MeFOSA-M



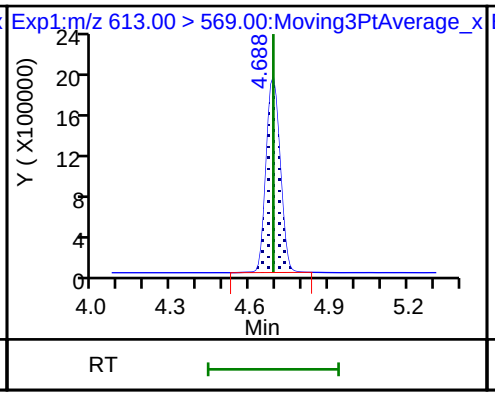
49 NMeFOSA



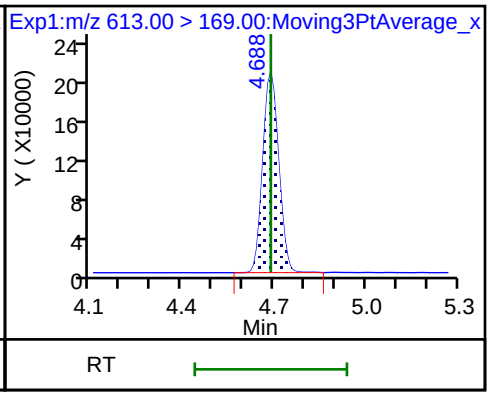
D 55 13C2 PFDoA



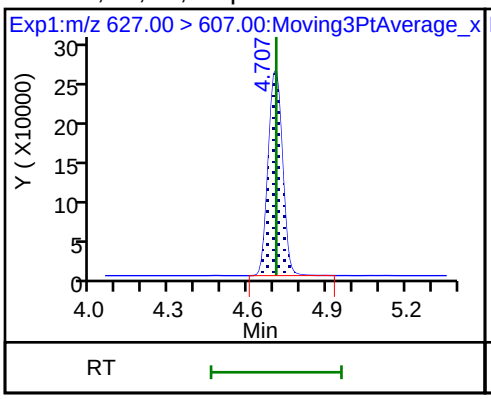
56 Perfluorododecanoic acid



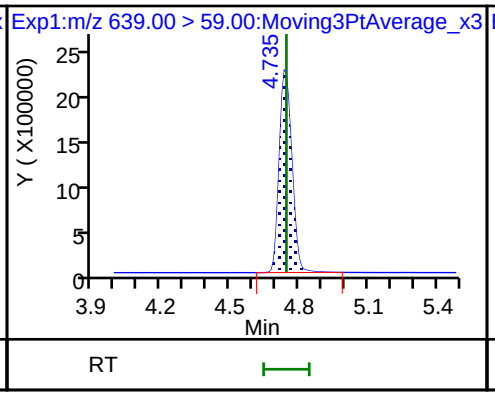
56 Perfluorododecanoic acid



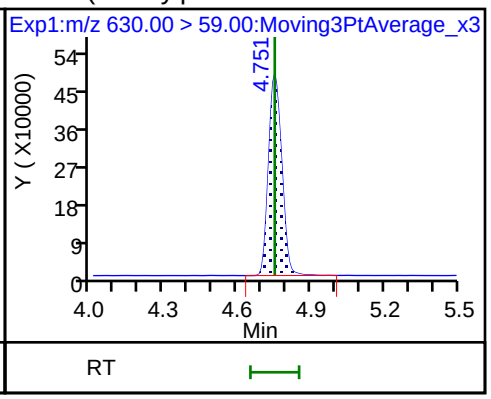
57 1H,1H,2H,2H-perfluorododecanesulfo



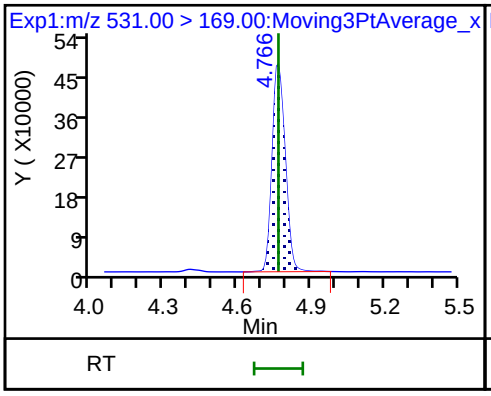
D 51 d9-N-EtFOSE-M



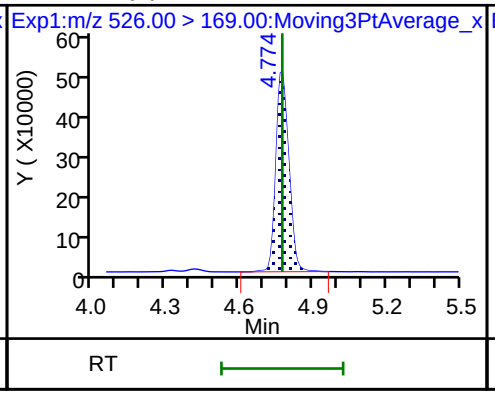
52 2-(N-ethylperfluoro-1-octanesulfon



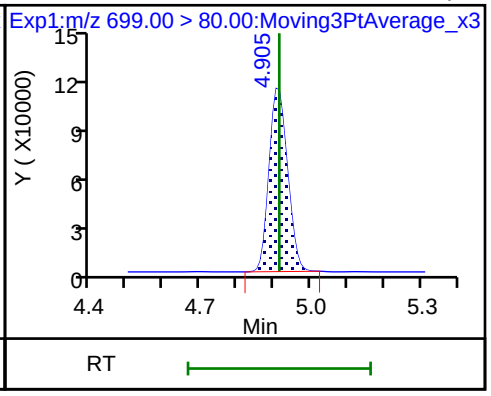
D 53 d-N-EtFOSA-M



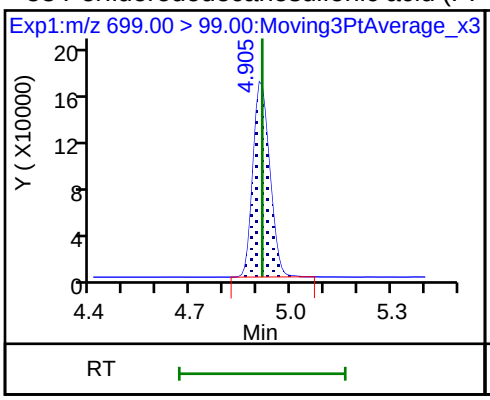
54 N-ethylperfluoro-1-octanesulfonami



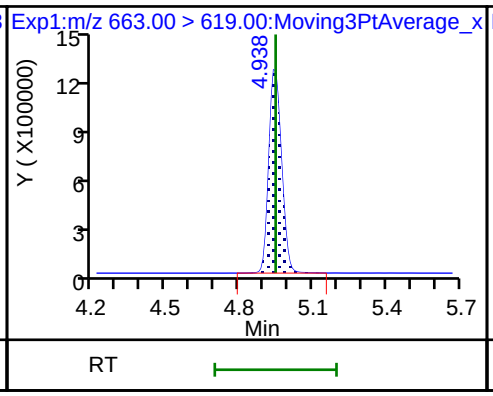
58 Perfluorododecanesulfonic acid (PF



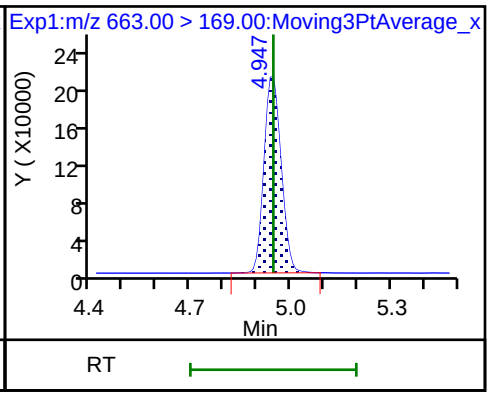
58 Perfluorododecanesulfonic acid (PF



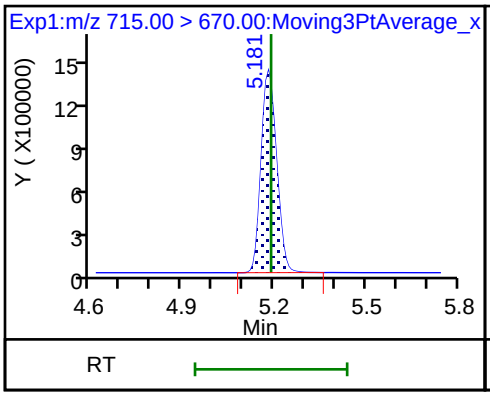
59 Perfluorotridecanoic acid



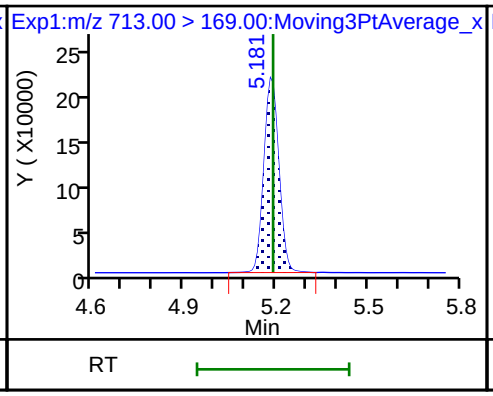
59 Perfluorotridecanoic acid



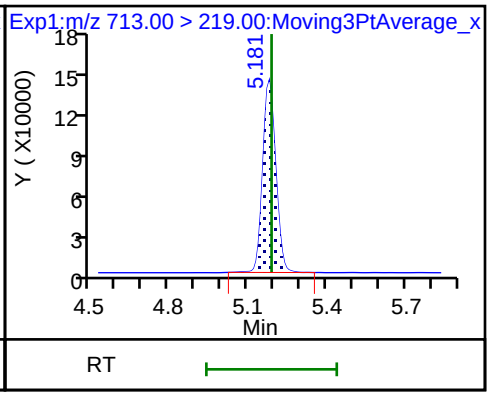
D 60 13C2 PFTeDA



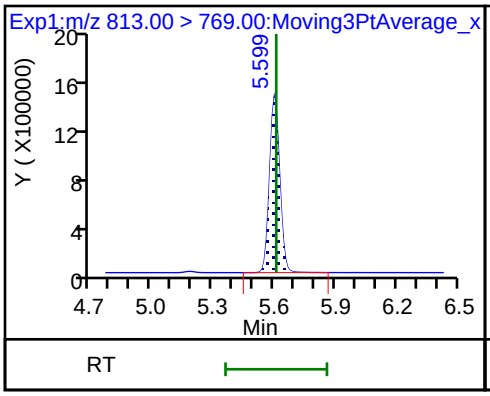
61 Perfluorotetradecanoic acid



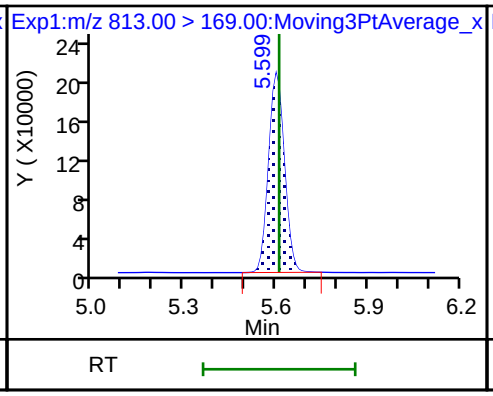
61 Perfluorotetradecanoic acid



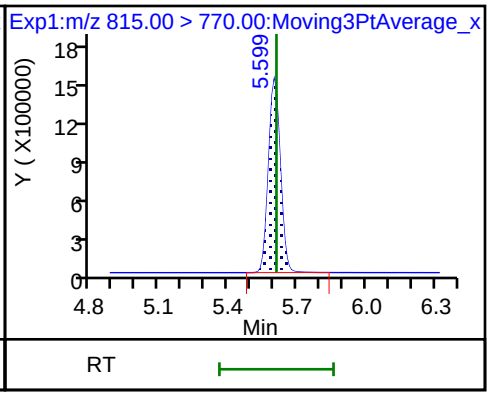
63 Perfluorohexadecanoic acid



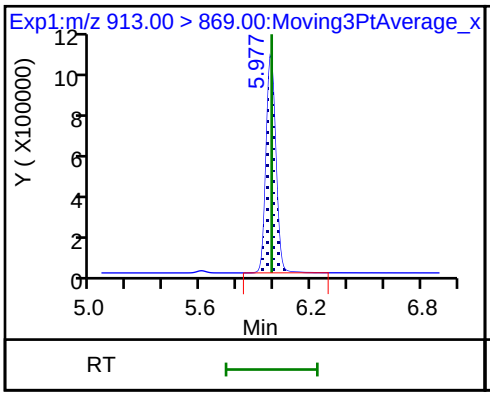
63 Perfluorohexadecanoic acid



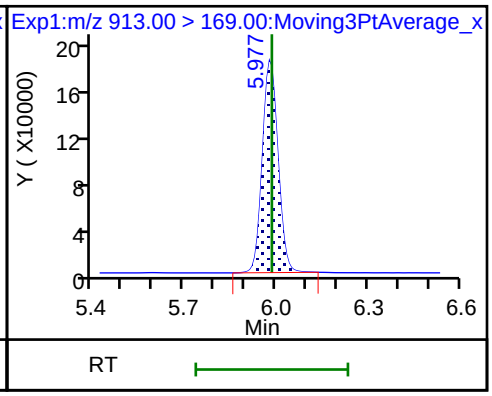
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

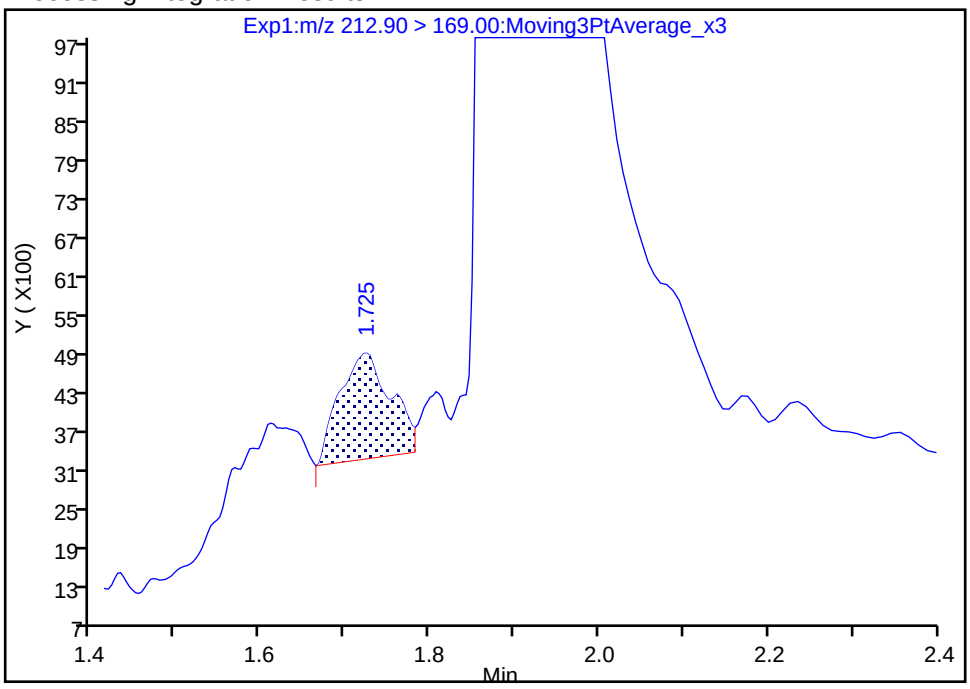
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._037.d
Injection Date: 09-Oct-2019 03:35:25 Instrument ID: A9
Lims ID: CCV L5
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 40 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

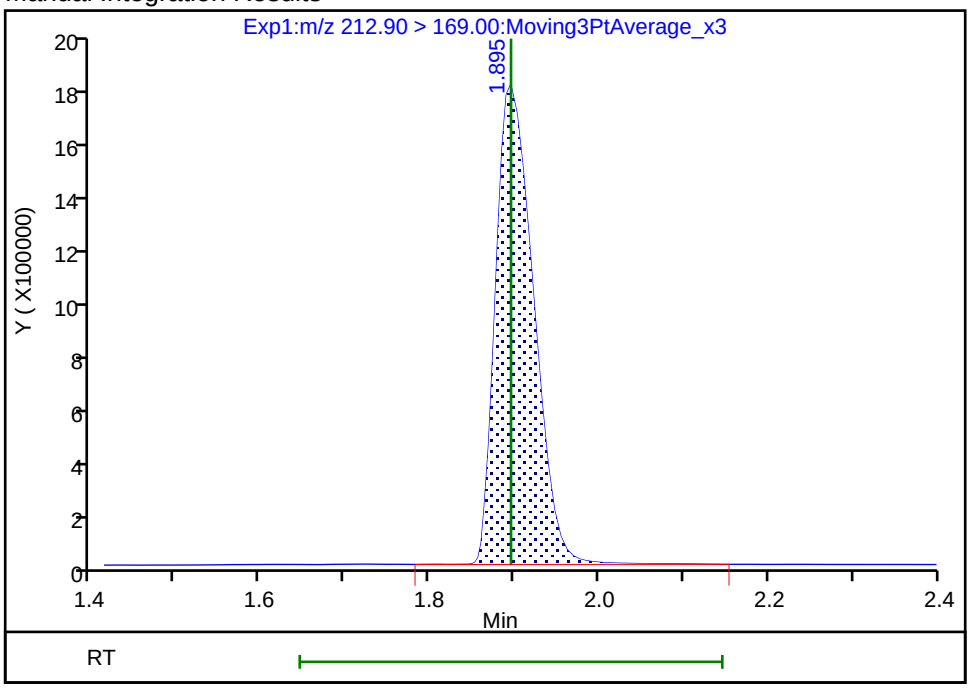
Processing Integration Results

RT: 1.73
Area: 6878
Amount: 0.003234
Amount Units: ng/ml



Manual Integration Results

RT: 1.90
Area: 5383014
Amount: 2.531136
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:31:59
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

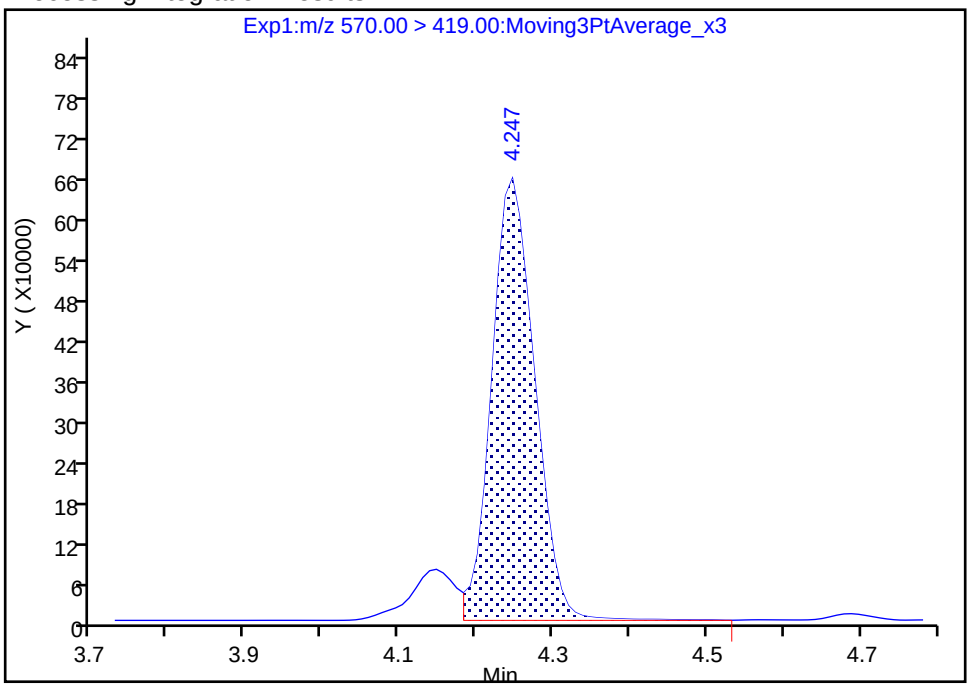
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._037.d
Injection Date: 09-Oct-2019 03:35:25 Instrument ID: A9
Lims ID: CCV L5
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 40 Worklist Smp#: 23
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

40 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

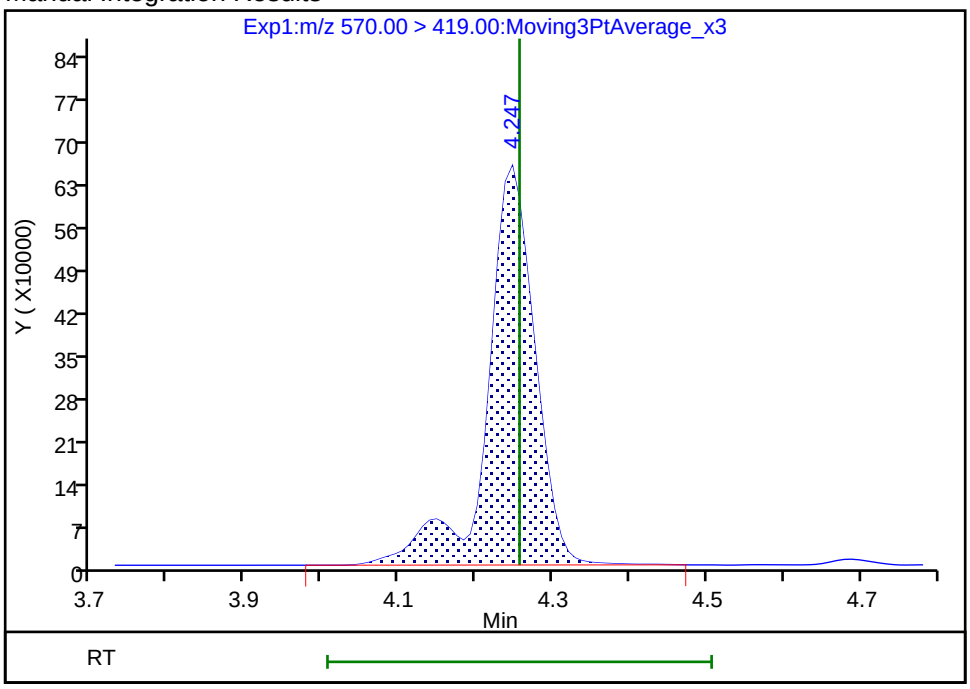
Processing Integration Results

RT: 4.25
Area: 2539412
Amount: 2.064776
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 2833122
Amount: 2.303589
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:32:29
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-329754/2 Calibration Date: 10/10/2019 05:08

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	1.064		0.0626	0.0500	25.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.039		0.0507	0.0500	1.4	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	2.111		0.0550	0.0442	24.5	50.0
4:2 FTS	AveID	2.563	2.837		0.517	0.467	10.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	1.061		0.0571	0.0500	14.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9184		0.0485	0.0469	3.5	50.0
HFPO-DA (GenX)	AveID	1.515	1.772		0.0585	0.0500	16.9	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.148		0.0511	0.0500	2.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.390		0.0517	0.0455	13.6	50.0
DONA	AveID	2.582	2.947		0.0538	0.0471	14.2	50.0
6:2 FTS	AveID	2.329	2.651		0.539	0.474	13.8	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	1.000		0.0481	0.0476	1.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.422		0.0629	0.0500	25.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.236		0.0534	0.0464	15.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.088		0.0528	0.0500	5.6	50.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7084		0.0466	0.0466	0.0	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6576		0.0518	0.0480	7.9	50.0
8:2 FTS	AveID	2.215	2.500		0.541	0.479	12.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	1.054		0.0554	0.0500	10.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.951		0.0537	0.0500	7.4	50.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8529		0.521	0.500	4.1	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.7770		0.0460	0.0482	-4.5	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.9174		0.0583	0.0500	16.6	50.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.8041		0.504	0.500	0.8	50.0
F-53B Minor	AveID	1.870	1.895		0.0477	0.0471	1.3	50.0
NMeFOSE	AveID	1.042	1.044		0.0501	0.0500	0.2	50.0
NMeFOSA	AveID	0.8723	0.8660		100	0.0500	-0.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.222		0.0593	0.0500	18.6	50.0
10:2 FTS	AveID	1.705	2.161		0.0611	0.0482	26.7	50.0
NEtFOSE	AveID	1.054	1.099		0.0521	0.0500	4.3	50.0
NEtFOSA	AveID	1.005	1.093		100	0.0500	8.8	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0853		0.0494	0.0484	2.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCVL 320-329754/2 Calibration Date: 10/10/2019 05:08

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6833		0.0530	0.0500	6.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1833		0.0649	0.0500	29.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.441		0.0545	0.0500	9.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.8267		0.0573	0.0500	14.6	50.0
13C4 PFBA	Ave	0.7371	0.7242		2.46	2.50	-1.8	50.0
13C5 PFPeA	Ave	0.6168	0.6211		2.52	2.50	0.7	50.0
M2-4:2 FTS	Ave	0.1177	0.0864		1.72	2.34	-26.6	50.0
13C2 PFHxA	Ave	0.7105	0.7076		2.49	2.50	-0.4	50.0
13C3 HFPO-DA	Ave	0.1236	0.1241		2.51	2.50	0.4	50.0
13C4 PFHpA	Ave	0.8130	0.8204		2.52	2.50	0.9	50.0
18O2 PFHxS	Ave	0.5224	0.5067		2.29	2.37	-3.0	50.0
M2-6:2 FTS	Ave	0.1134	0.0852		1.78	2.38	-24.9	50.0
13C8 PFOA	Ave	0.8884	0.8171		2.30	2.50	-8.0	50.0
13C4 PFOA	Ave	0.9372	0.9396		2.51	2.50	0.3	50.0
13C8 PFOS	Ave	0.1318	0.1281		2.43	2.50	-2.9	50.0
13C4 PFOS	Ave	0.6062	0.5808		2.29	2.39	-4.2	50.0
13C5 PFNA	Ave	0.8344	0.8317		2.49	2.50	-0.3	50.0
13C2 PFDA	Ave	0.9417	0.9256		2.46	2.50	-1.7	50.0
M2-8:2 FTS	Ave	0.1066	0.0703		1.58	2.40	-34.1	50.0
13C8 FOSA	Ave	0.3127	0.3061		2.45	2.50	-2.1	50.0
d3-NMeFOSAA	Ave	0.4441	0.4678		2.63	2.50	5.3	50.0
13C2 PFUnA	Ave	0.8035	0.7902		2.46	2.50	-1.7	50.0
d5-NEtFOSAA	Ave	0.3818	0.4196		2.75	2.50	9.9	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2180		13.3	12.5	6.6	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2254		2.52	2.50	0.9	50.0
13C2 PFDoA	Ave	0.8846	0.8678		2.45	2.50	-1.9	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2285		13.4	12.5	7.4	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2180		2.53	2.50	1.3	50.0
13C2 PFTeDA	Ave	0.6272	0.6310		2.52	2.50	0.6	50.0
13C2 PFHxDA	Ave	0.6893	0.6940		2.52	2.50	0.7	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 10-Oct-2019 05:08:36 ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:16:03 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:16:03
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.907	1.907	0.0	1.000	132323	0.0626		125	22.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.907	1.907	0.0	0.569	6218592	2.46		98.2	5552	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.205	0.0	0.658	5333278	2.52		101	3027	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.214	2.214	0.0	1.004	110788	0.0507		101	4.4	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.242	2.242	0.0	0.759	162413	0.0550	Target=2.62	125	15.6	
298.90 > 99.00	2.242	2.242	0.0	0.759	46725		3.48(1.31-3.93)		12.1	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.524	2.524	0.0	1.000	393379	0.5170		111	1616	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.524	2.524	0.0	0.753	693212	1.71		73.4	1045	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.567	2.567	0.0	1.000	128904	0.0571	Target=14.83	114	11.8	
313.00 > 119.00	2.567	2.567	0.0	1.000	7589		16.99(7.41-22.24)		9.6	
D 9 13C2 PFHxA										
315.00 > 270.00	2.567	2.567	0.0	0.765	6076459	2.49		99.6	2407	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.588	2.588	0.0	0.877	74971	0.0485	Target=1.98	104	225	
349.00 > 99.00	2.578	2.588	-0.010	0.873	37437		2.00(0.99-2.97)		111	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.695	2.695	0.0	1.004	37755	0.0585		117	22.2	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.686	0.0	0.801	1065576	2.51		100	1756	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.953	2.953	0.0	0.880	7044753	2.52		101	2877	
D 16 18O2 PFHxS										
403.00 > 84.00	2.953	2.953	0.0	0.880	4116539	2.29		97.0	3830	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.953	2.953	0.0	1.000	161816	0.0511	Target=4.24	102	24.8	
363.00 > 169.00	2.947	2.953	-0.006	0.998	37758		4.29(2.12-6.36)		101	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.953	2.953	0.0	1.000	110086	0.0517	Target=3.27	114	171	
399.00 > 99.00	2.958	2.953	0.005	1.002	32884		3.35(1.64-4.91)		70.3	
18 DONA										
377.00 > 251.00	3.003	3.003	0.0	0.805	276917	0.0538	Target=2.25	114	555	
377.00 > 85.00	3.003	3.003	0.0	0.805	118048		2.35(1.12-3.37)		447	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.332	3.332	0.0	0.993	694699	1.78		75.1	2083	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.332	3.332	0.0	1.000	367540	0.5395		114	1879	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.347	3.347	0.0	0.897	94990	0.0481	Target=3.58	101	255	
449.00 > 99.00	3.347	3.347	0.0	0.897	24379		3.90(1.79-5.37)		57.1	
D 21 13C8 PFOA										
421.00 > 376.00	3.347	3.347	0.0	0.998	7016490	2.30		92.0	7725	
D 23 13C4 PFOA										
417.00 > 372.00	3.354	3.354	0.0	1.000	8068805	2.51		100	4465	
* 25 13C2 PFOA										
415.00 > 370.00	3.354	3.354	0.0		8587439	2.50			4936	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.354	3.354	0.0	1.000	229436	0.0629	Target=2.79	126	23.6	
413.00 > 169.00	3.354	3.354	0.0	1.000	72805		3.15(1.40-4.19)		180	
D 26 13C8 PFOS										
507.00 > 99.00	3.722	3.722	0.0	1.110	1099782	2.43		97.1	1655	
D 27 13C4 PFOS										
503.00 > 80.00	3.730	3.730	0.0	1.112	4767717	2.29		95.8	4900	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.730	3.730	0.0	1.000	114380	0.0534	Target=3.83	115	217	
499.00 > 99.00	3.737	3.730	0.007	1.002	29871		3.83(1.92-5.75)		87.5	
D 30 13C5 PFNA										
468.00 > 423.00	3.737	3.737	0.0	1.114	7142388	2.49		99.7	3715	
29 Perfluorononanoic acid										
463.00 > 419.00	3.737	3.737	0.0	1.000	155403	0.0528	Target=5.58	106	51.8	
463.00 > 169.00	3.737	3.737	0.0	1.000	24986		6.22(2.79-8.37)		54.5	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.940	3.940	0.0	1.056	65852	0.0466		100	431	
34 Perfluorononanesulfonic acid										R
549.00 > 80.00	4.067	4.067	0.0	1.091	62968	0.0518	Target=4.51	108	170	R
549.00 > 99.00	4.076	4.067	0.009	1.093	9178		6.86(2.25-6.76)		40.2	
D 36 13C2 PFDA										
515.00 > 470.00	4.094	4.094	0.0	1.221	7048374	2.46		98.3	3132	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.094	4.094	0.0	1.221	577987	1.58		65.9	3131	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.094	4.094	0.0	1.000	288986	0.5407		113	1144	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.094	4.094	0.0	1.000	167481	0.0554	Target=15.45	111	76.1	
513.00 > 169.00	4.112	4.094	0.018	1.004	10237		16.36(7.73-23.18)		24.7	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.112	4.112	0.0	1.000	155127	0.0537		107	293	
D 32 13C8 FOSA										
506.00 > 78.00	4.112	4.112	0.0	1.226	2628394	2.45		97.9	1632	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.255	4.255	0.0	1.269	4016837	2.63		105	1834	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.264	4.264	0.0	1.002	685195	0.5207		104	117	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.386	4.386	0.0	1.176	74712	0.0460	Target=4.64	95.5	190	
599.00 > 99.00	4.386	4.386	0.0	1.176	17886		4.18(2.32-6.96)		69.4	
D 42 13C2 PFUnA										
565.00 > 520.00	4.412	4.412	0.0	1.315	6785590	2.46		98.3	5808	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.412	4.412	0.0	1.000	124498	0.0583	Target=9.27	117	72.5	
563.00 > 169.00	4.412	4.412	0.0	1.000	10628		11.71(4.63-13.90)		49.1	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.420	4.420	0.0	1.318	3602993	2.75		110	1953	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.420	4.420	0.0	1.000	579396	0.5039		101	762	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.549	4.549	0.0	1.220	178089	0.0477		101	549	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.575	4.575	0.0		9359928	13.3		107	3373	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.584	4.584	0.0	1.002	39086	0.0501		100	112	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.593	4.593	0.0		1935990	2.52		101	263	
49 NMeFOSA										
512.00 > 169.00	4.603	4.603	0.0	1.002	33532	0.0496		99.3	105	
D 55 13C2 PFDoA										
615.00 > 570.00	4.697	4.697	0.0	1.400	7452551	2.45		98.1	7443	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.697	4.697	0.0	1.000	182133	0.0593	Target=9.58	119	76.0	
613.00 > 169.00	4.706	4.697	0.009	1.002	17182		10.60(4.79-14.36)		80.6	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.715	4.715	0.0	1.152	25139	0.0611		127	109	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.750	4.750	0.0		9810915	13.4		107	5165	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.758	4.758	0.0	1.002	43124	0.0521		104	63.2	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.773	4.773	0.0		1871708	2.53		101	1536	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.781	4.781	0.0	1.002	40910	0.0544		109	88.9	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.921	4.921	0.0	1.319	8234	0.0494	Target=0.64	102	44.3	
699.00 > 99.00	4.929	4.921	0.008	1.322	11655		0.71(0.32-0.96)		130	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.954	4.954	0.0	1.055	101853	0.0530	Target=5.94	106	148	
663.00 > 169.00	4.963	4.954	0.009	1.057	16090		6.33(2.97-8.91)		184	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.197	5.197	0.0	1.000	19863	0.0649	Target=1.42	130	157	
713.00 > 219.00	5.197	5.197	0.0	1.000	9898		2.01(0.71-2.13)		93.4	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.197	5.197	0.0	1.549	5418498	2.52		101	4474	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.617	5.617	0.0	1.675	5959855	2.52		101	5705	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.617	5.617	0.0	1.000	171795	0.0545	Target=6.39	109	72.0	
813.00 > 169.00	5.617	5.617	0.0	1.000	24815		6.92(3.19-9.58)		179	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	6.000	6.000	0.0	1.068	98538	0.0573	Target=6.02	115	63.2	
913.00 > 169.00	5.992	6.000	-0.008	1.067	15899		6.20(3.01-9.03)		245	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

LCPFC_LLCCVL_00009 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2019 14:16:05 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_005.d

Injection Date: 10-Oct-2019 05:08:36 Instrument ID: A9

Lims ID: CCVL

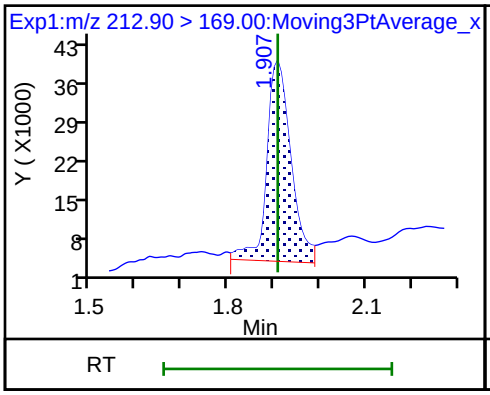
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2

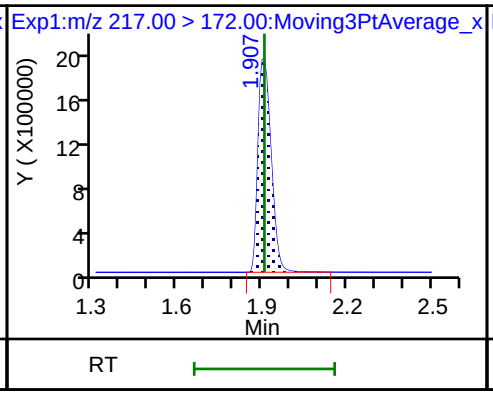
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

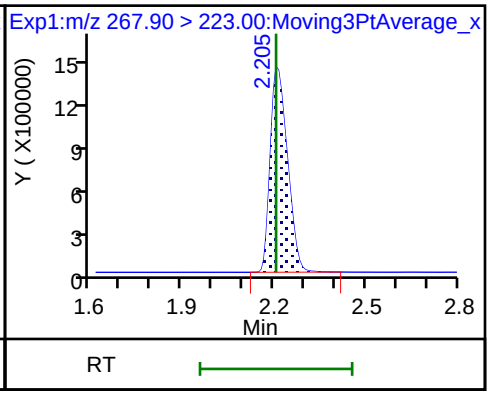
2 Perfluorobutanoic acid



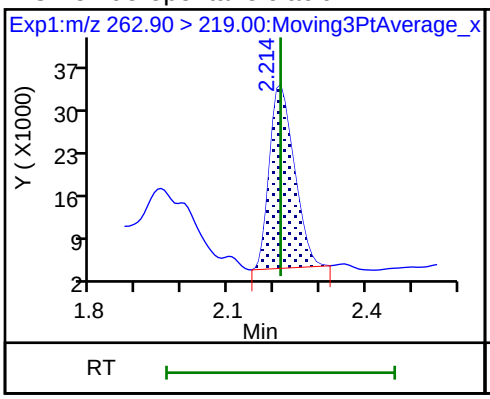
D 1 13C4 PFBA



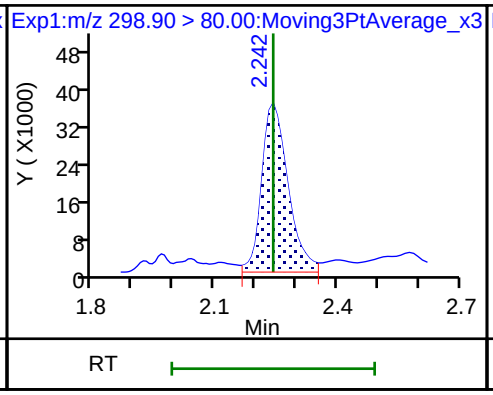
D 4 13C5 PFPeA



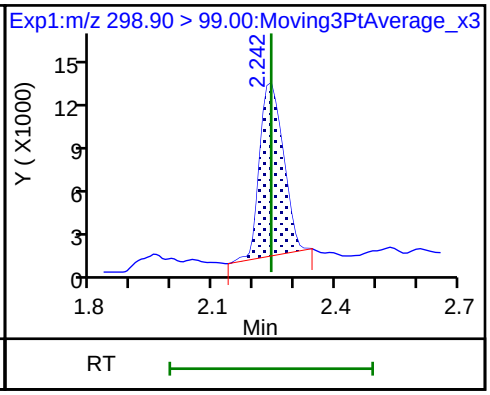
3 Perfluoropentanoic acid



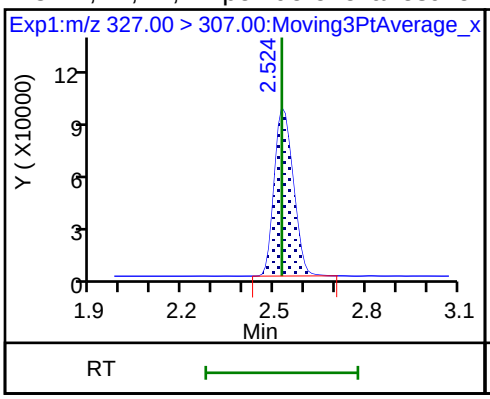
5 Perfluorobutanesulfonic acid



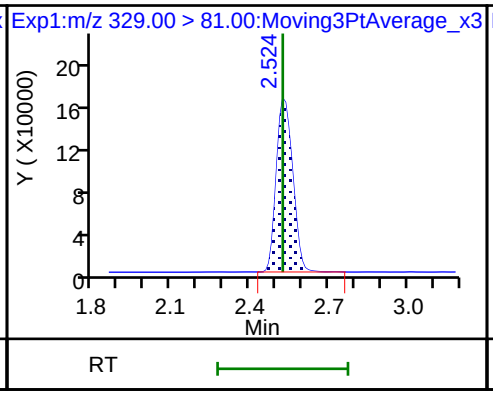
5 Perfluorobutanesulfonic acid



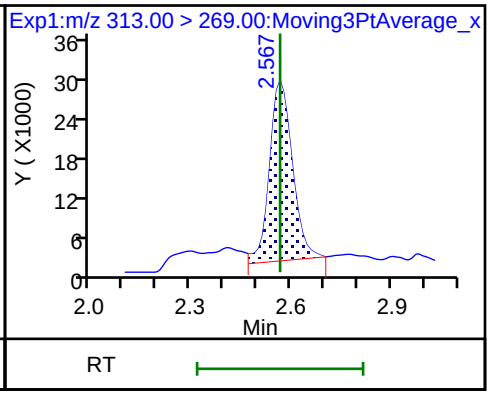
8 1H,1H,2H,2H-perfluorohexanesulfon



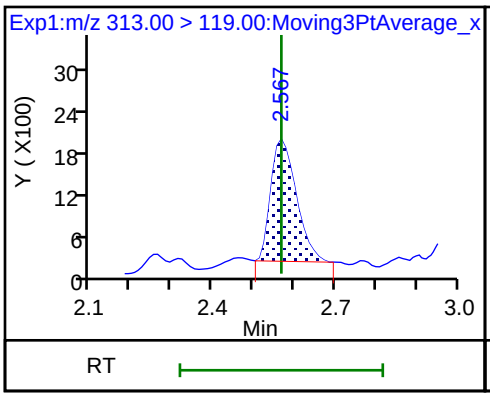
D 7 M2-4:2 FTS



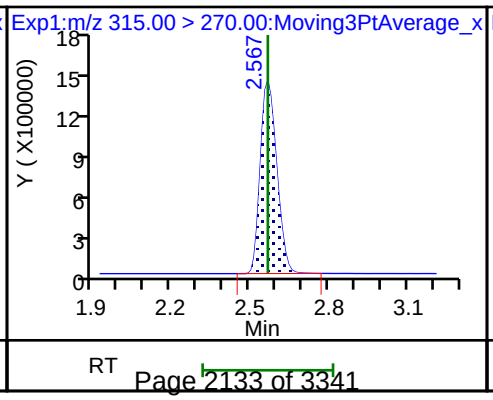
10 Perfluorohexanoic acid



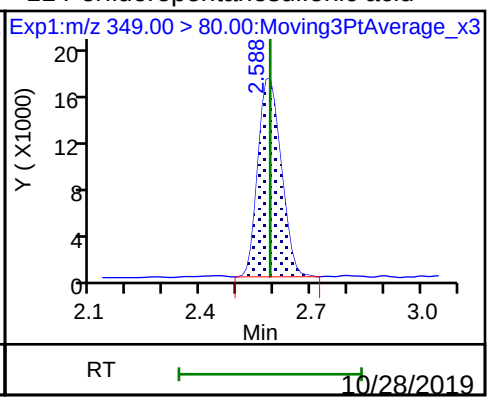
10 Perfluorohexanoic acid



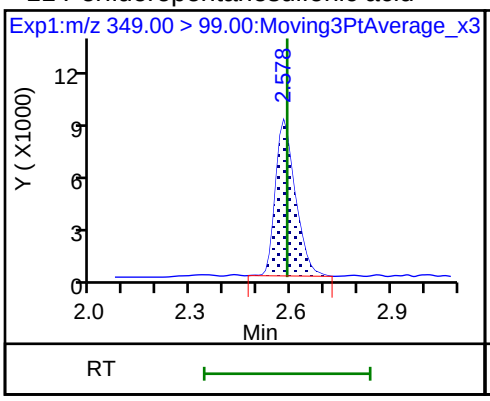
D 9 13C2 PFHxA



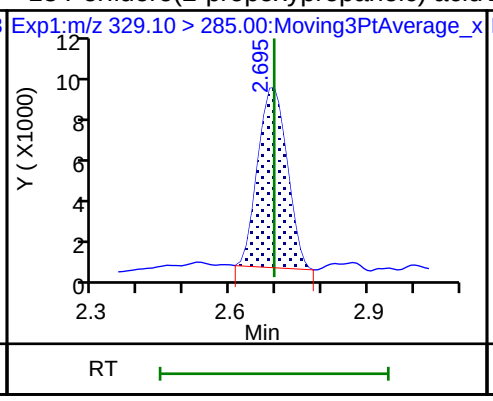
11 Perfluoropentanesulfonic acid



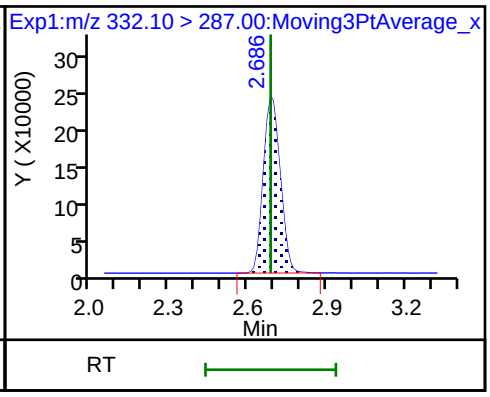
11 Perfluoropentanesulfonic acid



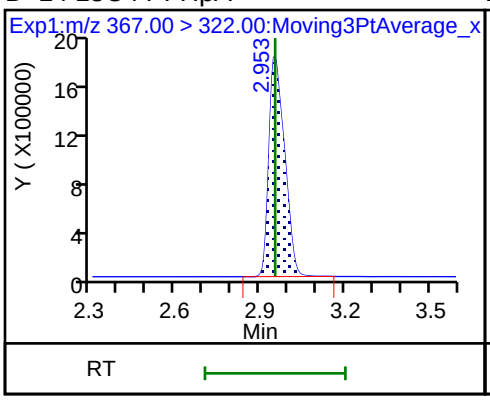
13 Perfluoro(2-propoxypropanoic) acid



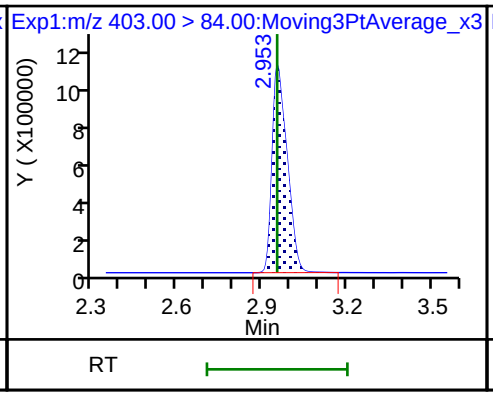
D 12 13C3 HFPO-DA



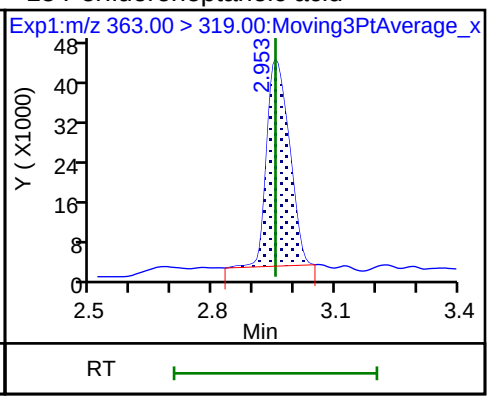
D 14 13C4 PFHpA



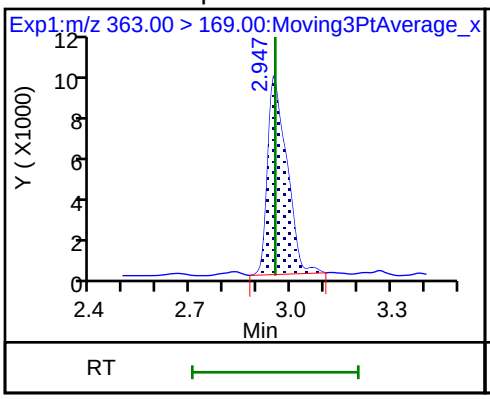
D 16 18O2 PFHxS



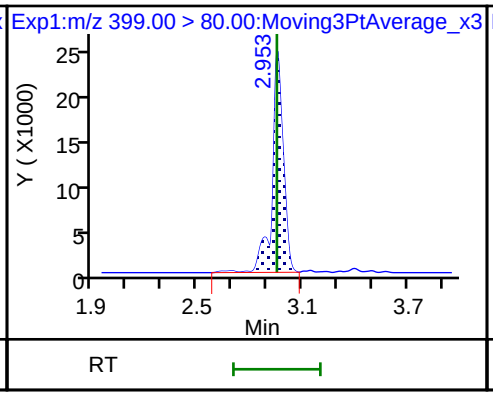
15 Perfluoroheptanoic acid



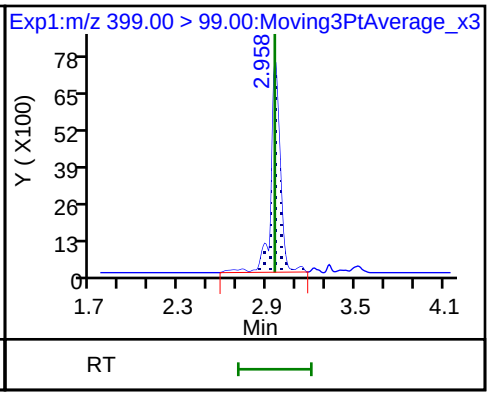
15 Perfluoroheptanoic acid



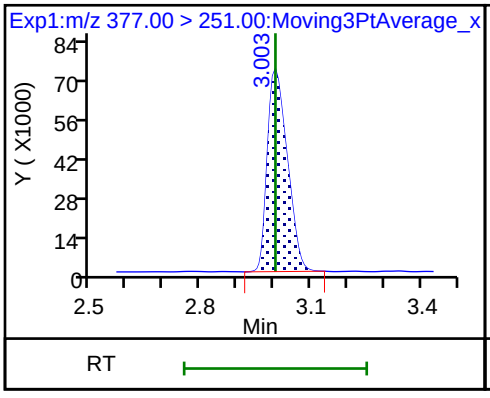
17 Perfluorohexanesulfonic acid



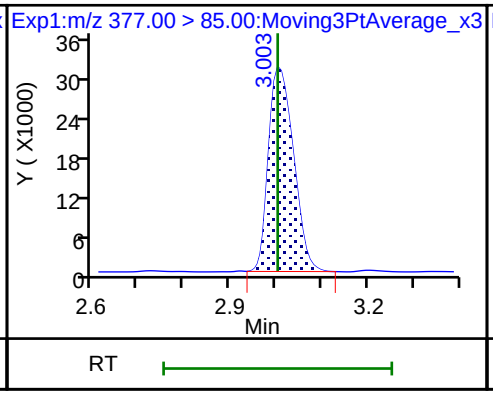
17 Perfluorohexanesulfonic acid



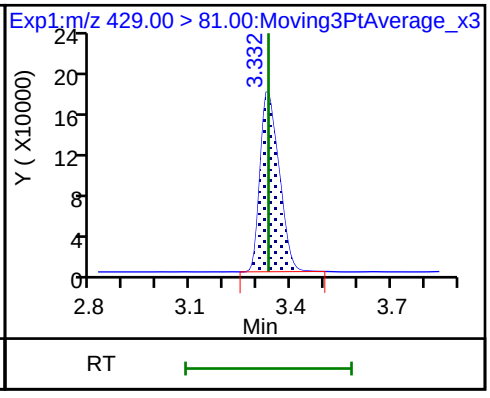
18 DONA



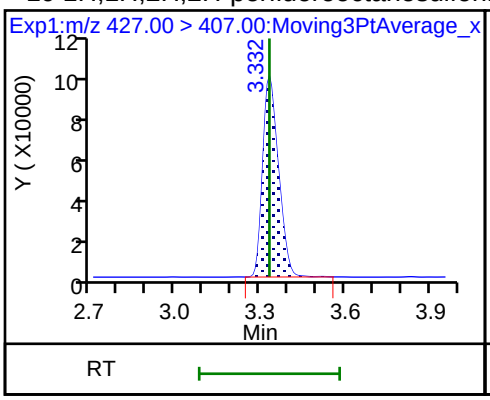
18 DONA



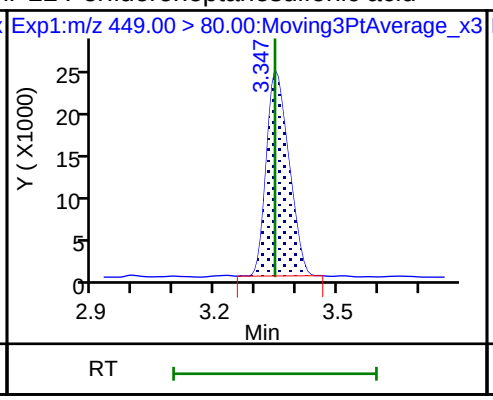
D 20 M2-6:2 FTS



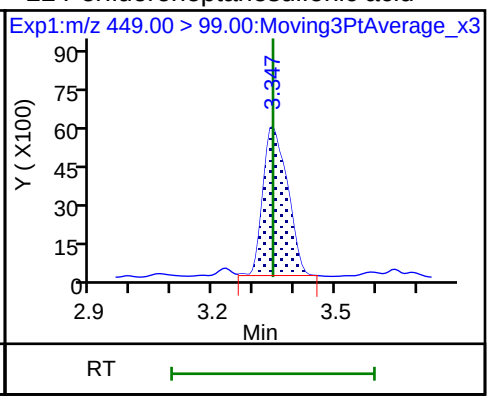
19 1H,1H,2H,2H-perfluorooctanesulfoni



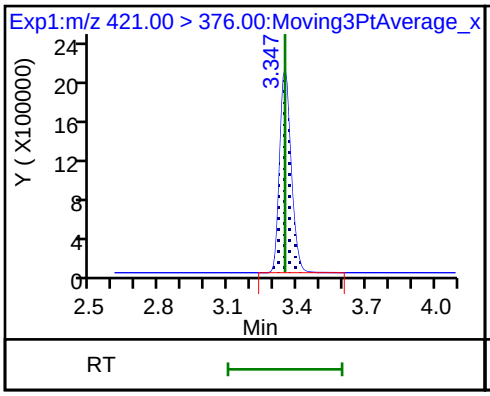
22 Perfluoroheptanesulfonic acid



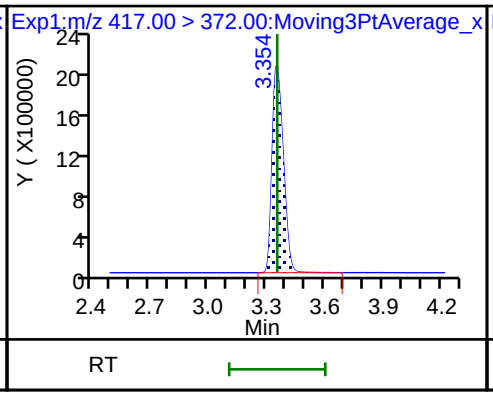
22 Perfluoroheptanesulfonic acid



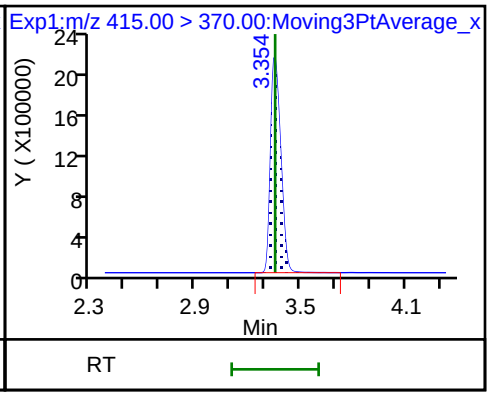
D 21 13C8 PFOA



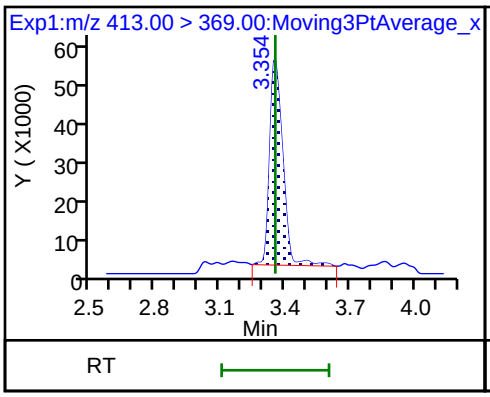
D 23 13C4 PFOA



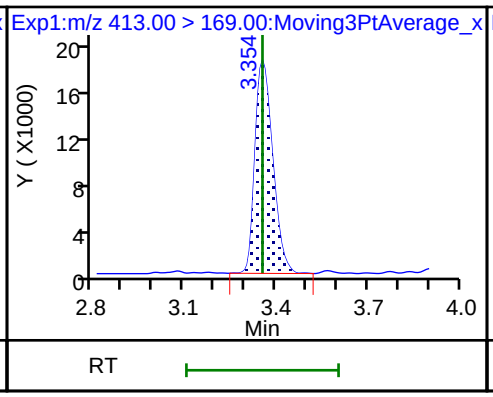
* 25 13C2 PFOA



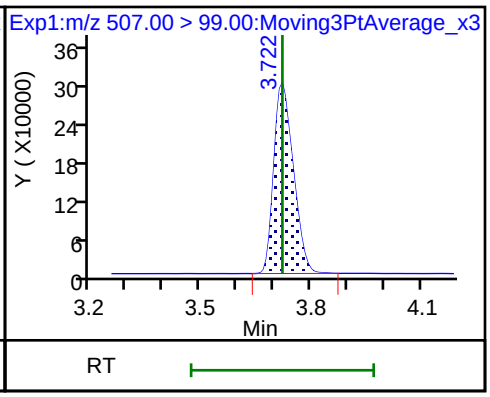
24 Perfluorooctanoic acid



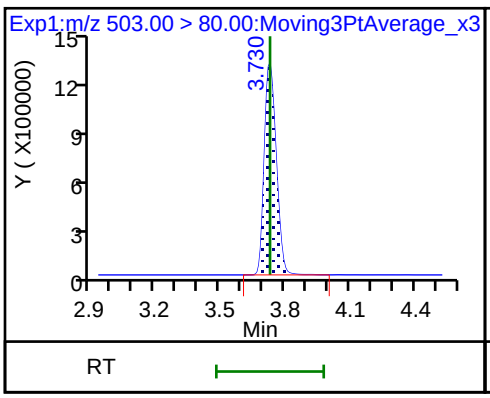
24 Perfluorooctanoic acid



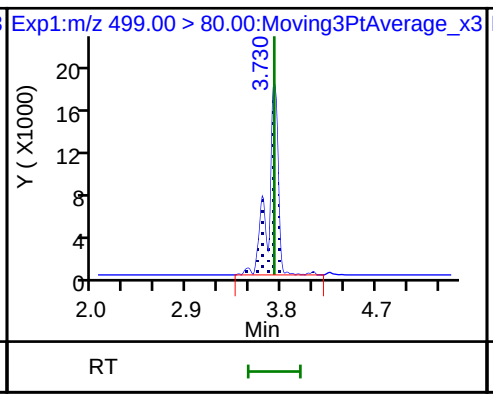
D 26 13C8 PFOS



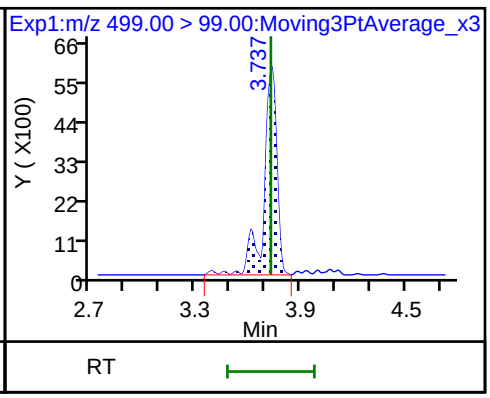
D 27 13C4 PFOS



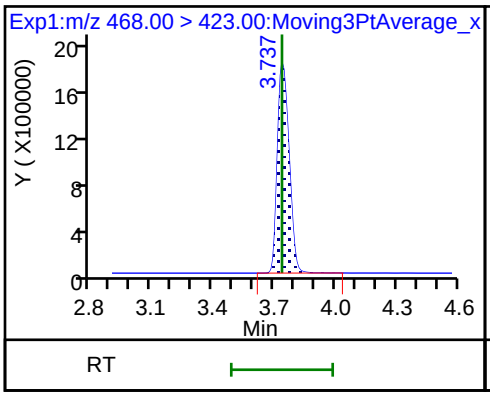
28 Perfluorooctanesulfonic acid



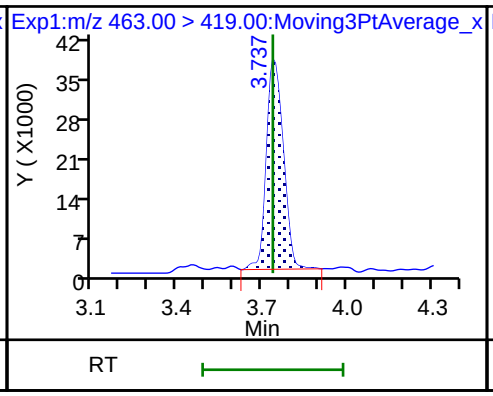
28 Perfluorooctanesulfonic acid



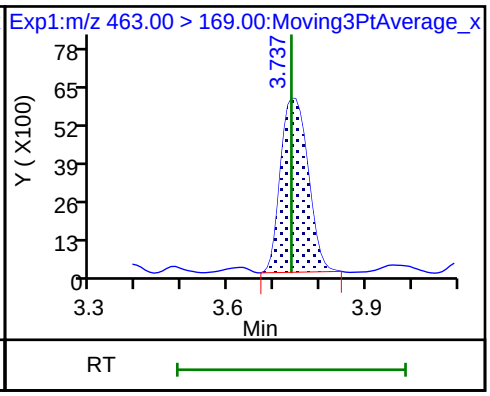
D 30 13C5 PFNA



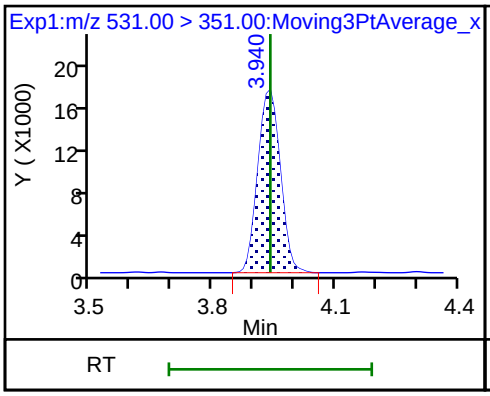
29 Perfluorononanoic acid



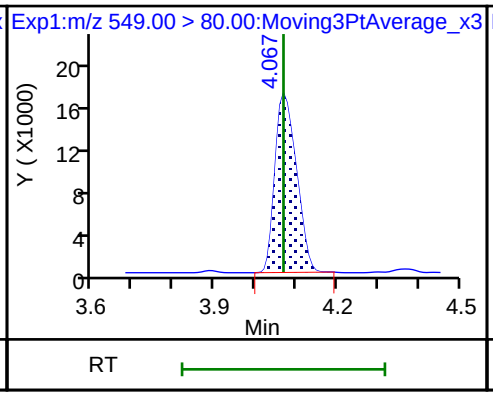
29 Perfluorononanoic acid



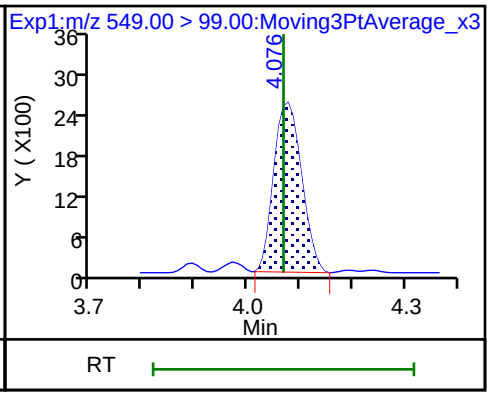
31 9-Chlorohexadecafluoro-3-oxanonane



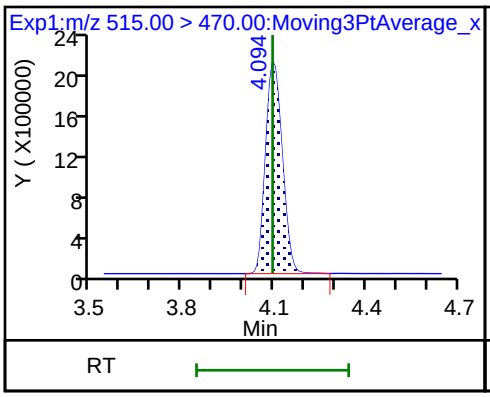
34 Perfluorononanesulfonic acid



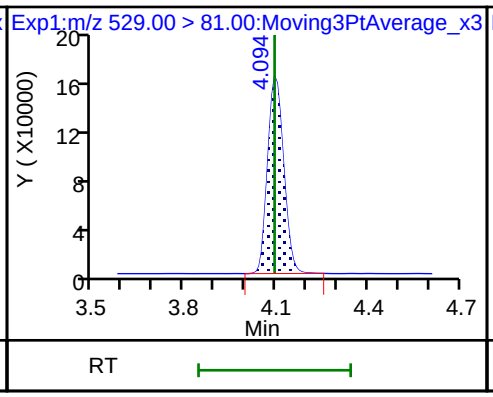
34 Perfluorononanesulfonic acid



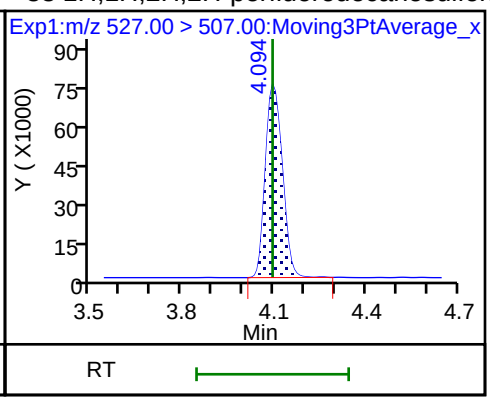
D 36 13C2 PFDA



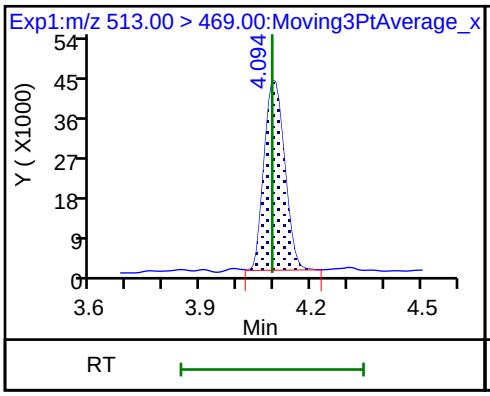
D 35 M2-8:2 FTS



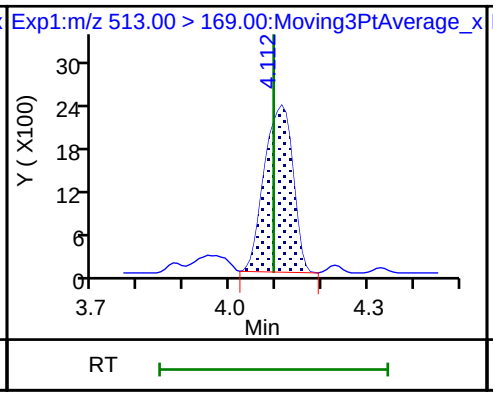
38 1H,1H,2H,2H-perfluorodecanesulfoni



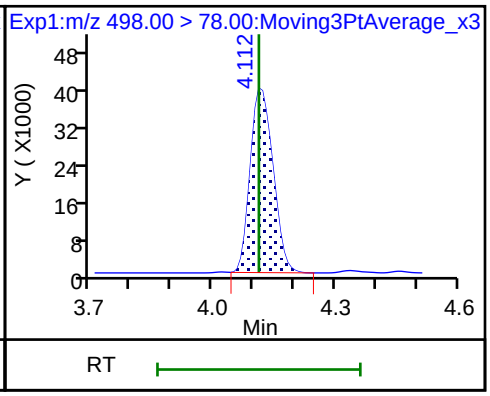
37 Perfluorodecanoic acid



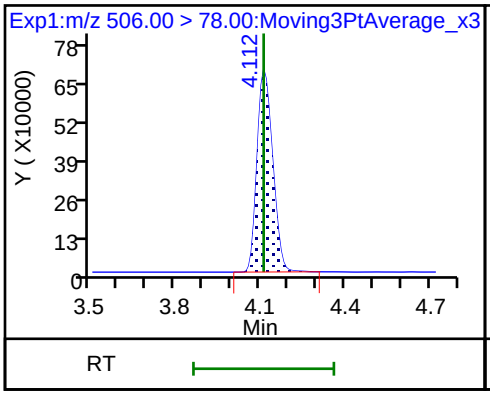
37 Perfluorodecanoic acid



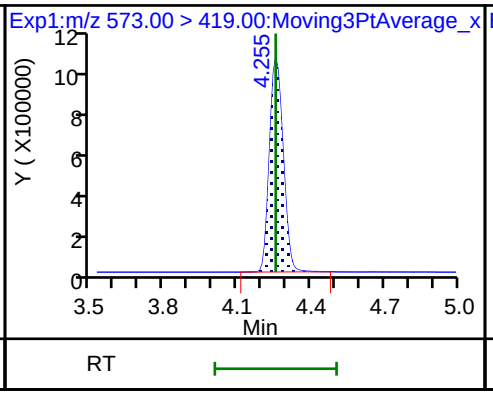
33 Perfluorooctanesulfonamide



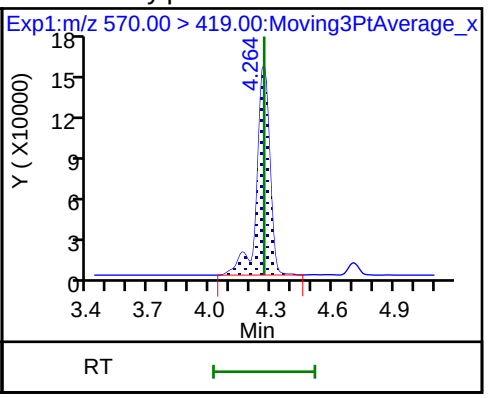
D 32 13C8 FOSA



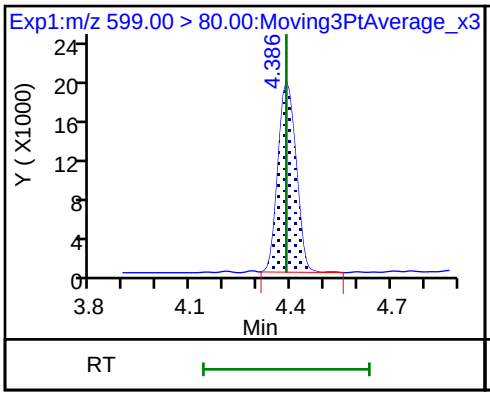
D 39 d3-NMeFOSAA



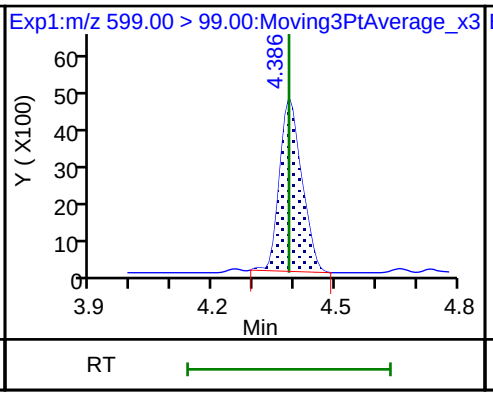
40 N-methylperfluorooctanesulfonamido



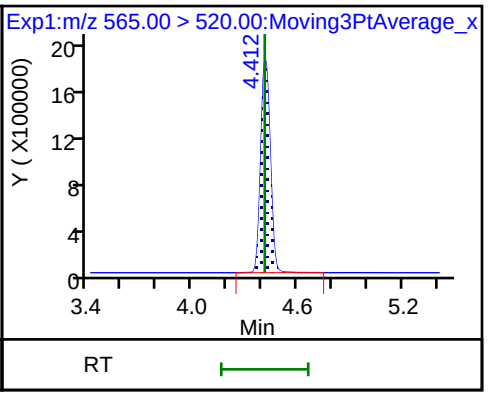
41 Perfluorodecanesulfonic acid



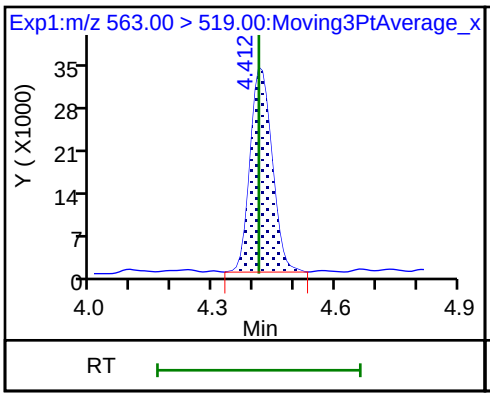
41 Perfluorodecanesulfonic acid



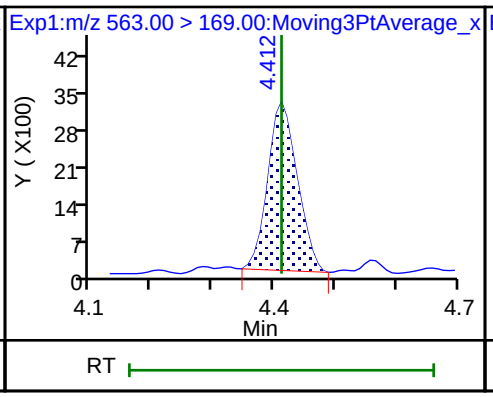
D 42 13C2 PFUnA



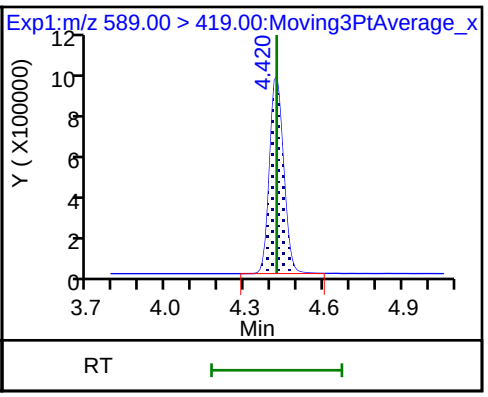
43 Perfluoroundecanoic acid



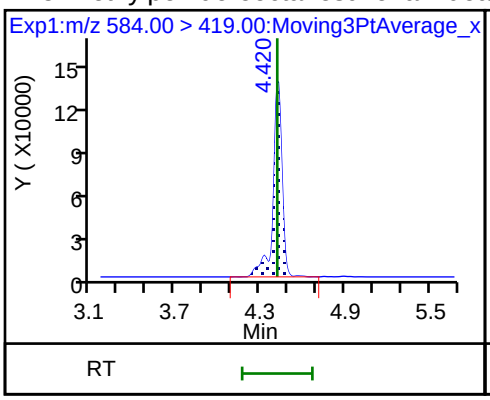
43 Perfluoroundecanoic acid



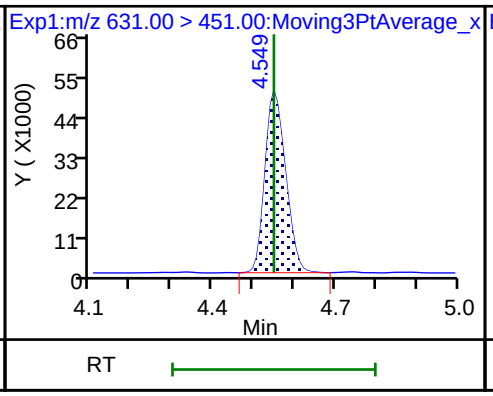
D 44 d5-NEtFOSAA



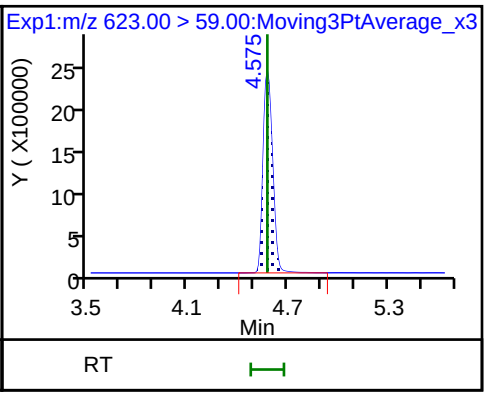
45 N-ethylperfluorooctanesulfonamidoa



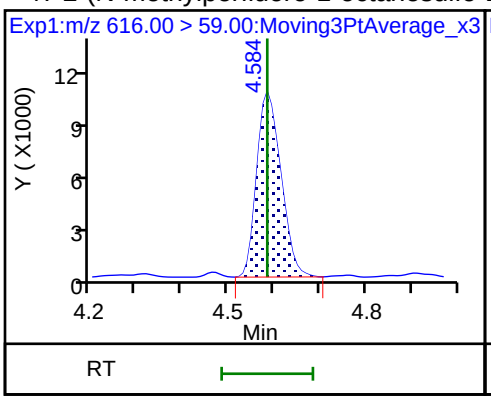
50 11-Chloroeicosafluoro-3-oxaundecan



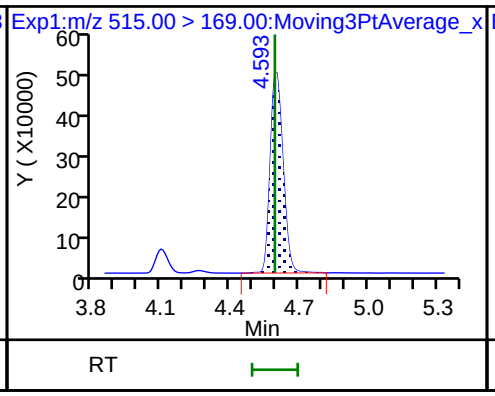
D 46 d7-N-MeFOSE-M



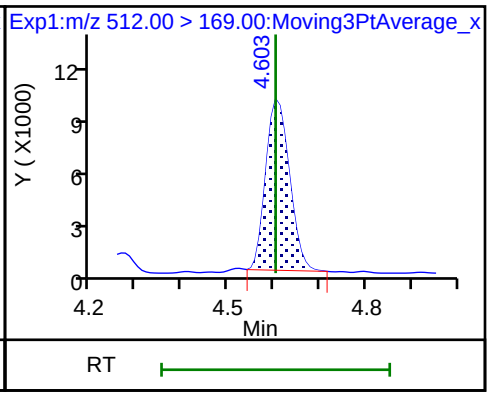
47 2-(N-methylperfluoro-1-octanesulfo



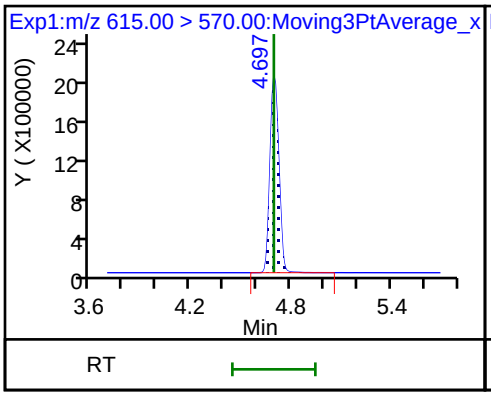
D 48 d-N-MeFOSA-M



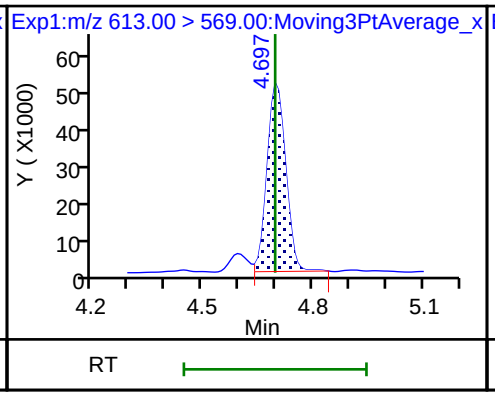
49 NMeFOSA



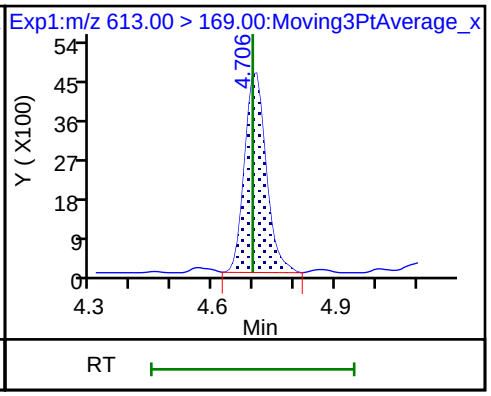
D 55 13C2 PFDoA



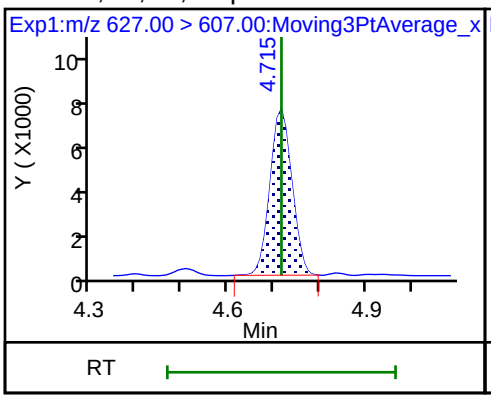
56 Perfluorododecanoic acid



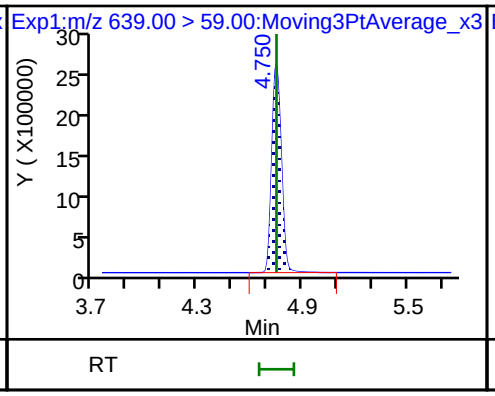
56 Perfluorododecanoic acid



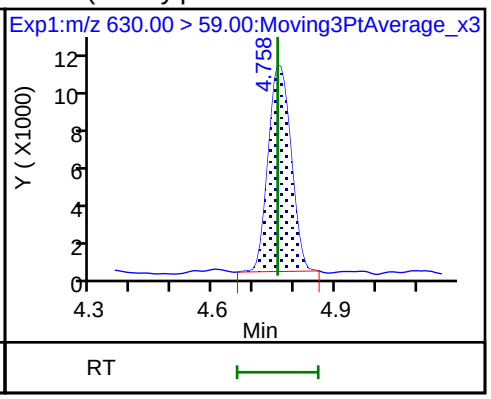
57 1H,1H,2H,2H-perfluorododecanesulfo



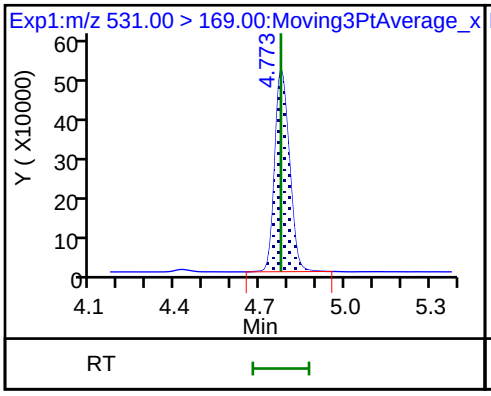
D 51 d9-N-EtFOSE-M



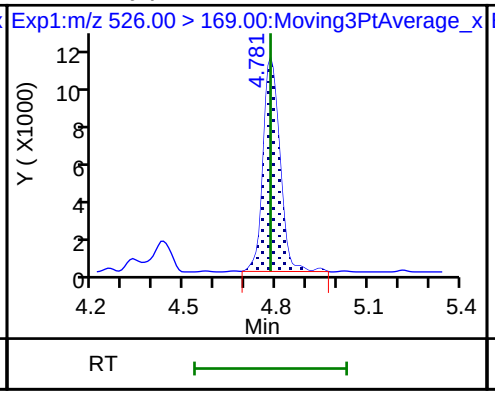
52 2-(N-ethylperfluoro-1-octanesulfon



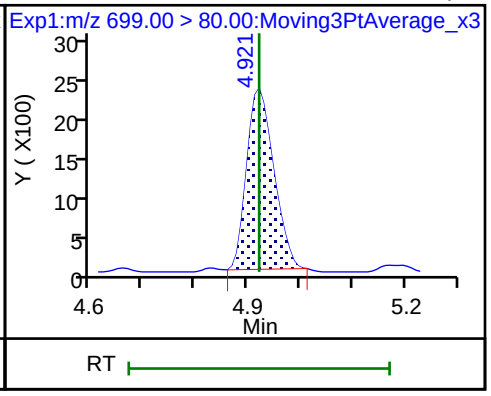
D 53 d-N-EtFOSA-M



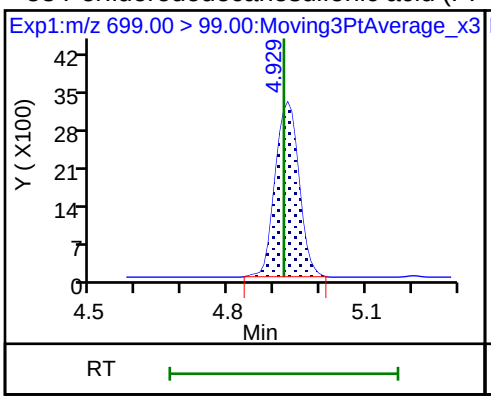
54 N-ethylperfluoro-1-octanesulfonami



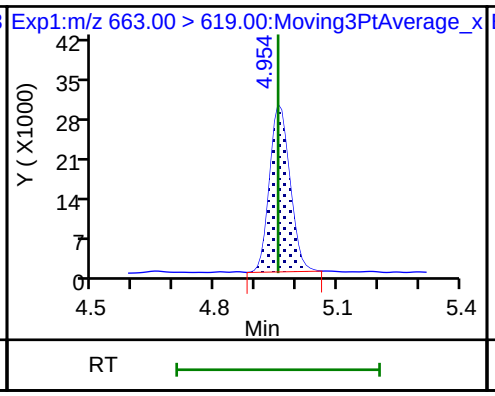
58 Perfluorododecanesulfonic acid (PF



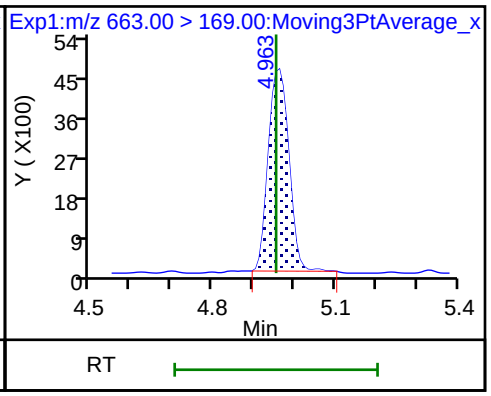
58 Perfluorododecanesulfonic acid (PF



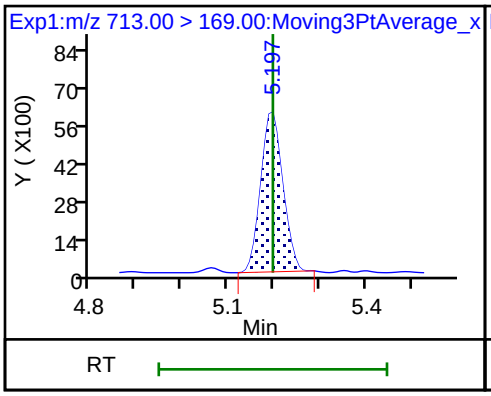
59 Perfluorotridecanoic acid



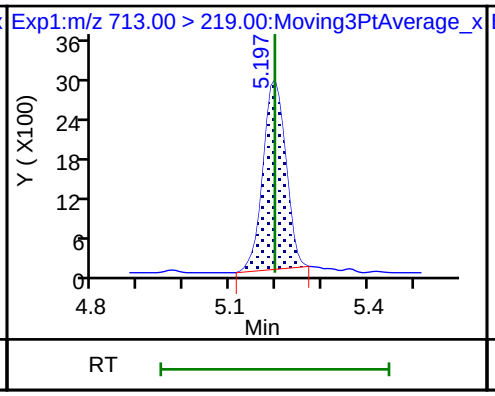
59 Perfluorotridecanoic acid



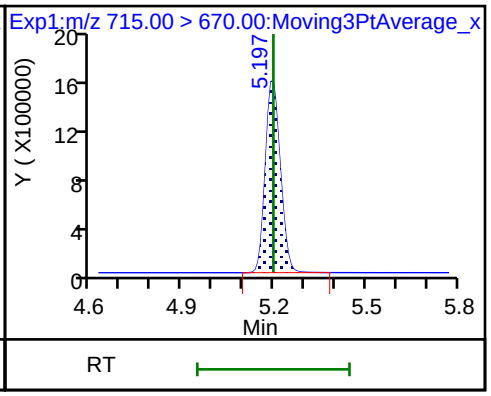
61 Perfluorotetradecanoic acid



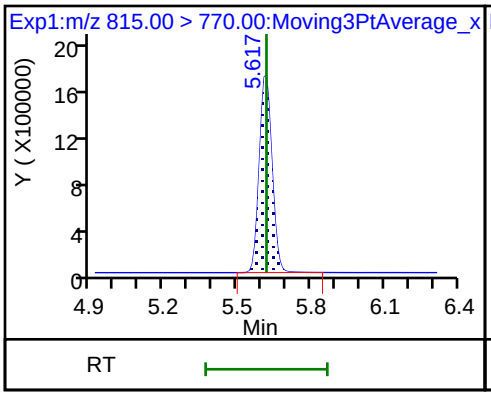
61 Perfluorotetradecanoic acid



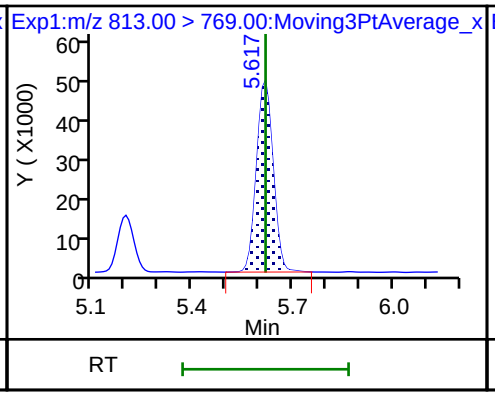
D 60 13C2 PFTeDA



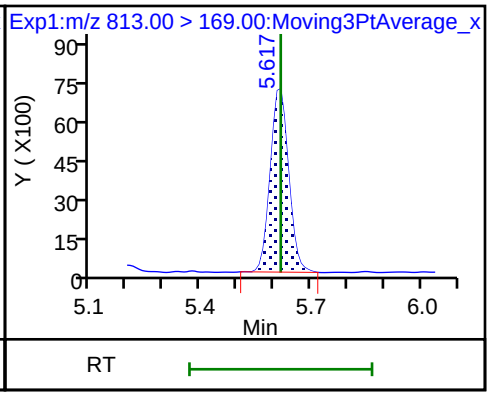
D 62 13C2 PFHxDA



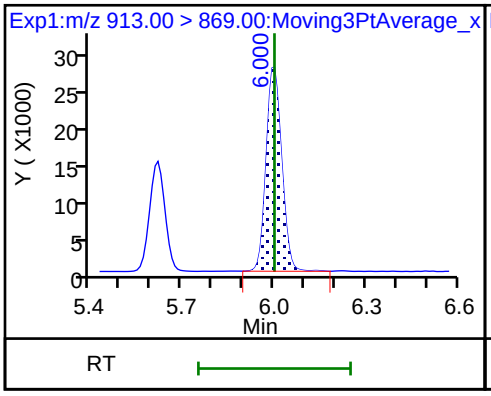
63 Perfluorohexadecanoic acid



63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



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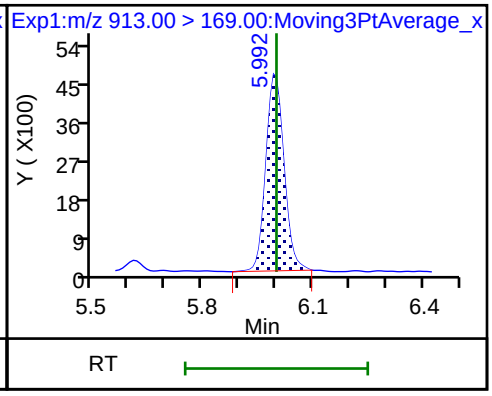


FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329754/3 Calibration Date: 10/10/2019 05:18

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8825		1.04	1.00	3.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	1.006		0.982	1.00	-1.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.697		0.885	0.884	0.1	50.0
4:2 FTS	AveID	2.563	2.754		1.00	0.934	7.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.9228		0.993	1.00	-0.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.8983		0.950	0.938	1.3	50.0
HFPO-DA (GenX)	AveID	1.515	1.444		0.953	1.00	-4.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.115		0.993	1.00	-0.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.151		0.856	0.910	-5.9	40.0
DONA	AveID	2.582	2.939		1.07	0.942	13.9	50.0
6:2 FTS	AveID	2.329	2.237		0.910	0.948	-4.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	1.000		0.963	0.952	1.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.112		0.984	1.00	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.018		0.880	0.928	-5.2	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	0.9851		0.956	1.00	-4.4	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7316		0.963	0.932	3.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6215		0.979	0.960	2.0	50.0
8:2 FTS	AveID	2.215	2.245		0.971	0.958	1.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	0.9894		1.04	1.00	4.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.812		1.02	1.00	2.3	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8132		0.993	1.00	-0.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.8482		1.01	0.964	4.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.7611		0.968	1.00	-3.2	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.8001		1.00	1.00	0.3	40.0
F-53B Minor	AveID	1.870	2.045		1.03	0.942	9.3	50.0
NMeFOSE	AveID	1.042	1.028		0.987	1.00	-1.3	40.0
NMeFOSA	AveID	0.8723	0.8909		1.02	1.00	2.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	1.012		0.982	1.00	-1.8	40.0
10:2 FTS	AveID	1.705	1.817		1.03	0.964	6.6	50.0
NEtFOSE	AveID	1.054	1.013		0.961	1.00	-3.9	40.0
NEtFOSA	AveID	1.005	0.9772		100	1.00	-2.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0885		1.03	0.968	6.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329754/3 Calibration Date: 10/10/2019 05:18

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6089		0.945	1.00	-5.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1486		1.05	1.00	5.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9060		1.02	1.00	1.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7608		1.05	1.00	5.4	50.0
13C4 PFBA	Ave	0.7371	0.7230		2.45	2.50	-1.9	50.0
13C5 PFPeA	Ave	0.6168	0.6054		2.45	2.50	-1.8	50.0
M2-4:2 FTS	Ave	0.1177	0.0798		1.58	2.34	-32.2	50.0
13C2 PFHxA	Ave	0.7105	0.6938		2.44	2.50	-2.3	50.0
13C3 HFPO-DA	Ave	0.1236	0.1353		2.74	2.50	9.5	50.0
13C4 PFHpA	Ave	0.8130	0.8090		2.49	2.50	-0.5	50.0
18O2 PFHxS	Ave	0.5224	0.5006		2.27	2.37	-4.2	50.0
M2-6:2 FTS	Ave	0.1134	0.0918		1.92	2.38	-19.1	50.0
13C8 PFOA	Ave	0.8884	0.8345		2.35	2.50	-6.1	50.0
13C4 PFOA	Ave	0.9372	0.9325		2.49	2.50	-0.5	50.0
13C8 PFOS	Ave	0.1318	0.1319		2.50	2.50	0.0	50.0
13C4 PFOS	Ave	0.6062	0.5556		2.19	2.39	-8.3	50.0
13C5 PFNA	Ave	0.8344	0.8208		2.46	2.50	-1.6	50.0
13C2 PFDA	Ave	0.9417	0.9104		2.42	2.50	-3.3	50.0
M2-8:2 FTS	Ave	0.1066	0.0704		1.58	2.40	-34.0	50.0
13C8 FOSA	Ave	0.3127	0.3196		2.56	2.50	2.2	50.0
d3-NMeFOSAA	Ave	0.4441	0.4815		2.71	2.50	8.4	50.0
13C2 PFUnA	Ave	0.8035	0.8070		2.51	2.50	0.4	50.0
d5-NEtFOSAA	Ave	0.3818	0.4236		2.77	2.50	10.9	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2140		13.1	12.5	4.7	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2208		2.47	2.50	-1.1	50.0
13C2 PFDoA	Ave	0.8846	0.9232		2.61	2.50	4.4	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2216		13.0	12.5	4.1	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2166		2.52	2.50	0.7	50.0
13C2 PFTeDA	Ave	0.6272	0.5794		2.31	2.50	-7.6	50.0
13C2 PFHxDA	Ave	0.6893	0.6479		2.35	2.50	-6.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 10-Oct-2019 05:18:10 ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:21:02 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:21:02
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.903	1.903	0.0	0.567	6204023	2.45		98.1	5614	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.903	1.903	0.0	1.000	2189956	1.04		104	475	
D 4 13C5 PFPeA										
267.90 > 223.00	2.208	2.208	0.0	0.659	5194774	2.45		98.2	3651	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.208	2.208	0.0	1.000	2089643	0.9817		98.2	87.1	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.245	2.245	0.0	0.759	2577383	0.8849	Target=2.62	100	198	
298.90 > 99.00	2.245	2.245	0.0	0.759	950677		2.71(1.31-3.93)		195	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.527	2.527	0.0	1.000	704654	1.00		107	2578	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.527	2.527	0.0	0.754	639753	1.58		67.8	1075	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.570	2.570	0.0	1.000	2197488	0.99	Target=14.83	99.3	213	
313.00 > 119.00	2.570	2.570	0.0	1.000	133552		16.45(7.41-22.24)		190	
D 9 13C2 PFHxA										
315.00 > 270.00	2.570	2.570	0.0	0.766	5953632	2.44		97.7	2882	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.580	2.580	0.0	0.872	1447790	0.9497	Target=1.98	101	2199	
349.00 > 99.00	2.580	2.580	0.0	0.872	706974		2.05(0.99-2.97)		1266	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.687	2.687	0.0	0.801	1161361	2.74		109	2067	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.687	2.687	0.0	1.000	670941	0.9532		95.3	319	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.952	2.952	0.0	1.000	3095452	0.99	Target=4.24	99.3	508	
363.00 > 169.00	2.952	2.952	0.0	1.000	708450		4.37(2.12-6.36)		982	
D 14 13C4 PFHpA										
367.00 > 322.00	2.952	2.952	0.0	0.880	6942417	2.49		99.5	3653	
D 16 18O2 PFHxS										
403.00 > 84.00	2.957	2.957	0.0	0.882	4063684	2.27		95.8	4999	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.957	2.957	0.0	1.000	1799950	0.8563	Target=3.27	94.1	1585	
399.00 > 99.00	2.957	2.957	0.0	1.000	519732		3.46(1.64-4.91)		663	
18 DONA										
377.00 > 251.00	3.001	3.001	0.0	0.805	5281108	1.07	Target=2.25	114	4265	
377.00 > 85.00	3.001	3.001	0.0	0.805	2221665		2.38(1.12-3.37)		2999	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.331	3.331	0.0	0.993	748136	1.92		80.9	2567	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.331	3.331	0.0	1.000	667903	0.9103		96.0	1844	
D 21 13C8 PFOA										
421.00 > 376.00	3.345	3.345	0.0	0.998	7160909	2.35		93.9	5072	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.345	3.345	0.0	0.898	1816216	0.9628	Target=3.58	101	2667	
449.00 > 99.00	3.345	3.345	0.0	0.898	484130		3.75(1.79-5.37)		1260	
D 23 13C4 PFOA										
417.00 > 372.00	3.353	3.353	0.0	1.000	8002121	2.49		99.5	5029	
* 25 13C2 PFOA										
415.00 > 370.00	3.353	3.353	0.0		8581269	2.50			3848	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.353	3.353	0.0	1.000	3560437	0.9839	Target=2.79	98.4	422	
413.00 > 169.00	3.353	3.353	0.0	1.000	1180927		3.01(1.40-4.19)		1629	
D 26 13C8 PFOS										
507.00 > 99.00	3.719	3.719	0.0	1.109	1132175	2.50		100	3459	
D 27 13C4 PFOS										
503.00 > 80.00	3.727	3.727	0.0	1.112	4558269	2.19		91.7	5240	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.727	3.727	0.0	1.000	1801067	0.8797	Target=3.83	94.8	1562	
499.00 > 99.00	3.727	3.727	0.0	1.000	452747		3.98(1.92-5.75)		1129	
D 30 13C5 PFNA										
468.00 > 423.00	3.744	3.744	0.0	1.117	7043150	2.46		98.4	3826	
29 Perfluorononanoic acid										
463.00 > 419.00	3.744	3.744	0.0	1.000	2775140	0.9563	Target=5.58	95.6	858	
463.00 > 169.00	3.735	3.744	-0.009	0.998	501753		5.53(2.79-8.37)		805	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.937	3.937	0.0	1.056	1300447	0.9627		103	2364	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.073	4.073	0.0	1.093	1137899	0.9793	Target=4.51	102	3025	
549.00 > 99.00	4.073	4.073	0.0	1.093	256058		4.44(2.25-6.76)		825	
D 36 13C2 PFDA										
515.00 > 470.00	4.100	4.100	0.0	1.223	7812304	2.42		96.7	3650	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.100	4.100	0.0	1.223	579001	1.58		66.0	1459	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.100	4.100	0.0	1.000	519868	0.9711		101	2008	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.100	4.100	0.0	1.000	3091831	1.04	Target=15.45	104	1043	
513.00 > 169.00	4.100	4.100	0.0	1.000	189013		16.36(7.73-23.18)		172	
D 32 13C8 FOSA										
506.00 > 78.00	4.118	4.118	0.0	1.228	2742752	2.56		102	2444	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.118	4.118	0.0	1.000	3084591	1.02		102	2286	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.252	4.252	0.0	1.268	4131728	2.71		108	2292	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.261	4.261	0.0	1.002	1343993	0.99		99.3	229	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.391	4.391	0.0	1.178	1559379	1.00	Target=4.64	104	2594	
599.00 > 99.00	4.391	4.391	0.0	1.178	328683		4.74(2.32-6.96)		1381	
D 42 13C2 PFUnA										
565.00 > 520.00	4.409	4.409	0.0	1.315	6924789	2.51		100	4058	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.417	4.417	0.0	1.002	2108212	0.9675	Target=9.27	96.8	1209	
563.00 > 169.00	4.417	4.417	0.0	1.002	214812		9.81(4.63-13.90)		682	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.417	4.417	0.0	1.317	3634877	2.77		111	2069	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.426	4.426	0.0	1.002	1163330	1.00		100	4601	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.554	4.554	0.0	1.222	3673580	1.03		109	3868	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.572	4.572	0.0		9183509	13.1		105	2732	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.590	4.590	0.0	1.004	755487	0.9869		98.7	1291	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.599	4.599	0.0		1894924	2.47		98.9	290	
49 NMeFOSA										
512.00 > 169.00	4.599	4.599	0.0	1.000	675273	1.02		102	1161	
D 55 13C2 PFDoA										
615.00 > 570.00	4.702	4.702	0.0	1.402	7921926	2.61		104	6175	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.702	4.702	0.0	1.000	3205939	0.9817	Target=9.58	98.2	1131	
613.00 > 169.00	4.702	4.702	0.0	1.000	341255		9.39(4.79-14.36)		1475	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.721	4.721	0.0	1.151	423519	1.03		107	1724	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.748	4.748	0.0		9507071	13.0		104	1784	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.763	4.763	0.0	1.003	770455	0.9611		96.1	975	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.778	4.778	0.0		1858400	2.52		101	1522	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.778	4.778	0.0	1.000	726390	0.9725		97.2	669	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.927	4.927	0.0	1.322	163331	1.03	Target=0.64	106	1064	
699.00 > 99.00	4.927	4.927	0.0	1.322	242162		0.67(0.32-0.96)		1387	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.960	4.960	0.0	1.055	1929453	0.9447	Target=5.94	94.5	2214	
663.00 > 169.00	4.960	4.960	0.0	1.055	319386		6.04(2.97-8.91)		2039	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.194	5.194	0.0	1.549	4972371	2.31		92.4	3689	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.194	5.194	0.0	1.000	295578	1.05	Target=1.42	105	1530	
713.00 > 219.00	5.194	5.194	0.0	1.000	189132		1.56(0.71-2.13)		1185	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.615	5.615	0.0	1.675	5559449	2.35		94.0	6784	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.615	5.615	0.0	1.000	2014730	1.02	Target=6.39	102	793	
813.00 > 169.00	5.615	5.615	0.0	1.000	298698		6.75(3.19-9.58)		1398	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.998	5.998	0.0	1.068	1691820	1.05	Target=6.02	105	966	
913.00 > 169.00	5.998	5.998	0.0	1.068	267935		6.31(3.01-9.03)		1687	

Reagents:

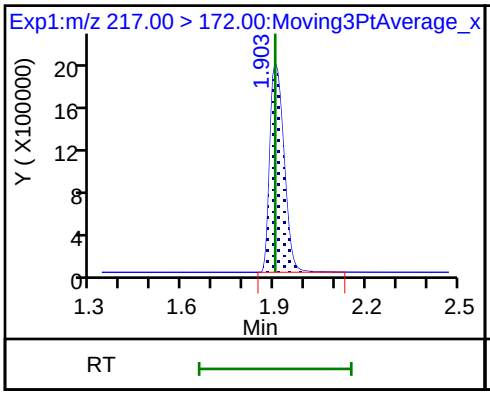
LCPFC_LL4_00018 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2019 14:21:03 Chrom Revision: 2.3 09-Oct-2019 11:13:36

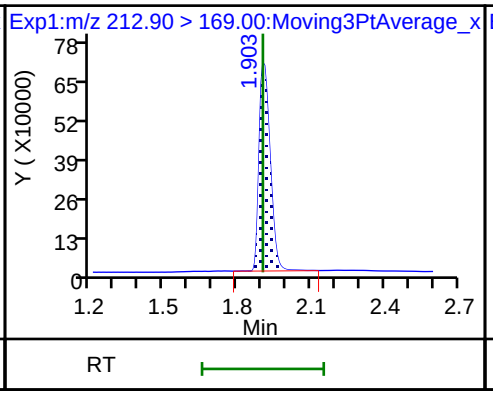
Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d
Injection Date: 10-Oct-2019 05:18:10 Instrument ID: A9
Lims ID: CCV L4
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 13 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL

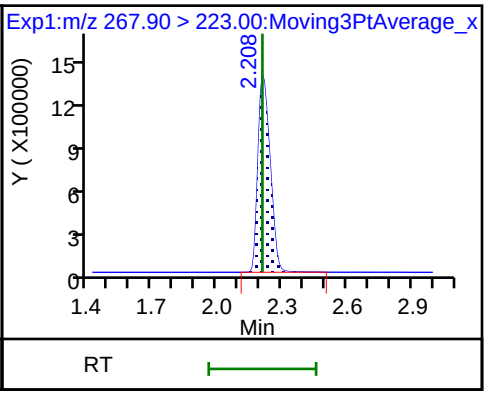
D 1 13C4 PFBA



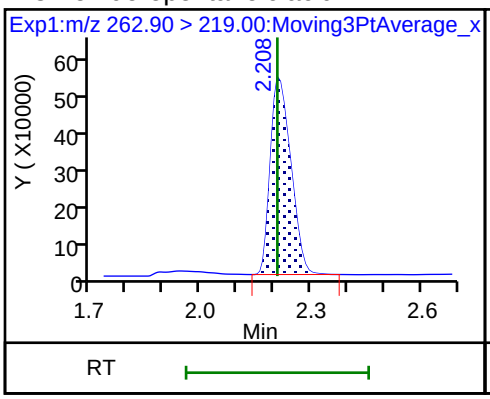
2 Perfluorobutanoic acid



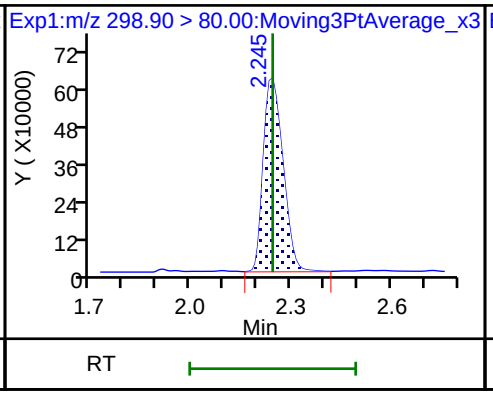
D 4 13C5 PFPeA



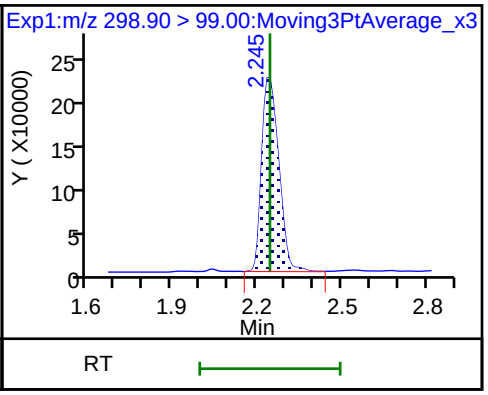
3 Perfluoropentanoic acid



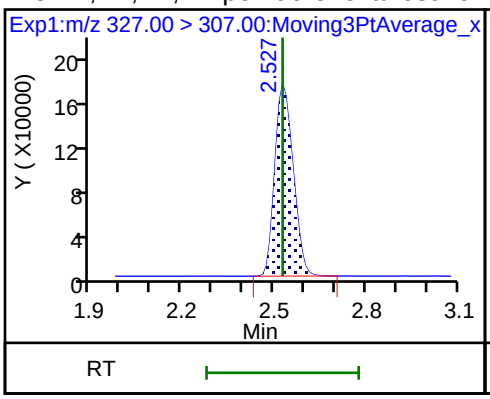
5 Perfluorobutanesulfonic acid



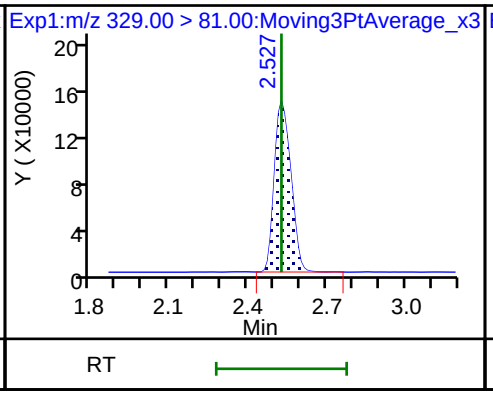
5 Perfluorobutanesulfonic acid



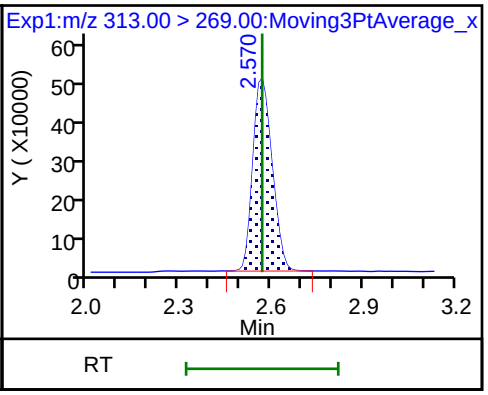
8 1H,1H,2H,2H-perfluorohexanesulfon



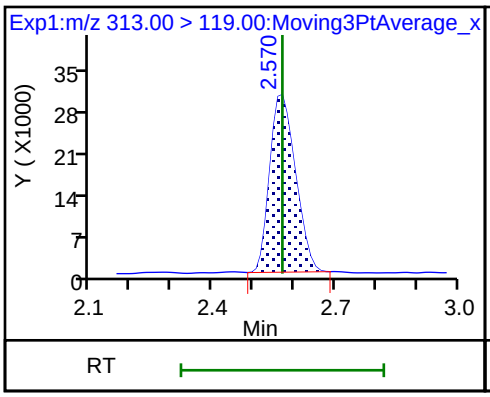
D 7 M2-4:2 FTS



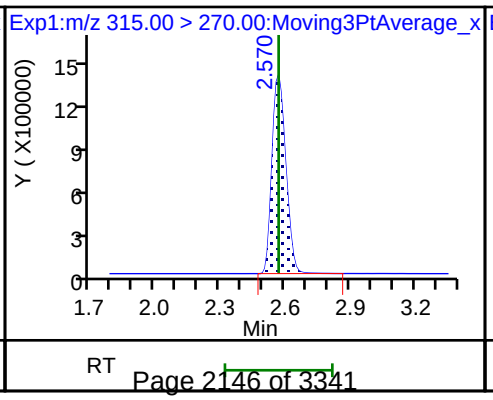
10 Perfluorohexanoic acid



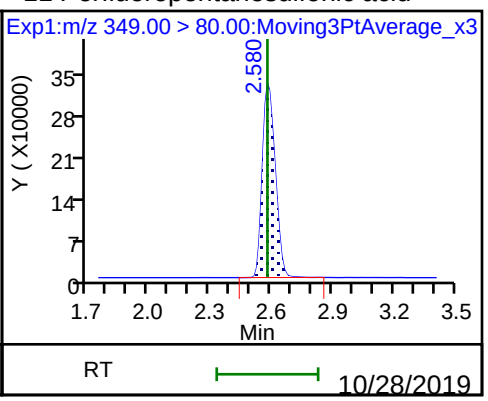
10 Perfluorohexanoic acid



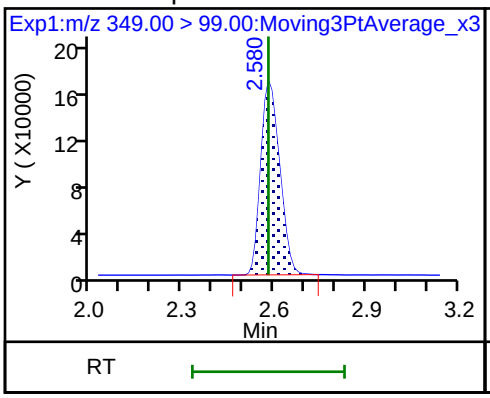
D 9 13C2 PFHxA



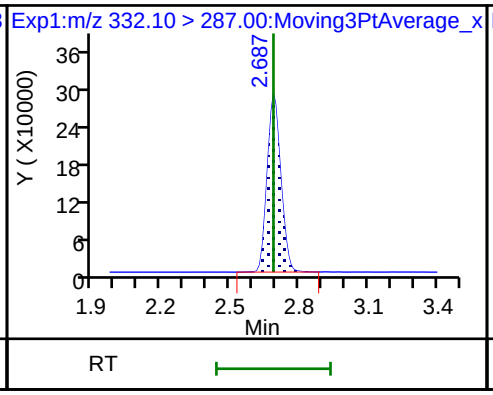
11 Perfluoropentanesulfonic acid



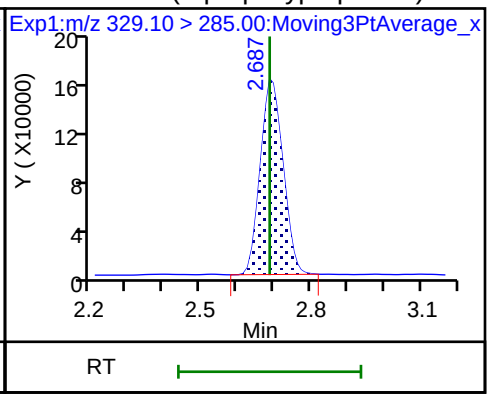
11 Perfluoropentanesulfonic acid



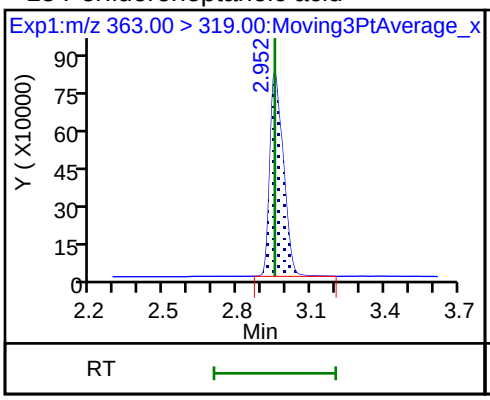
D 12 13C3 HFPO-DA



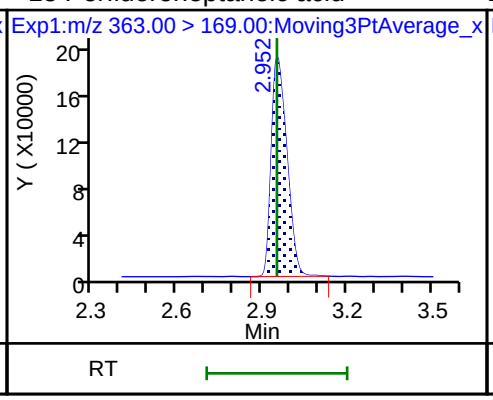
13 Perfluoro(2-propoxypropanoic) acid



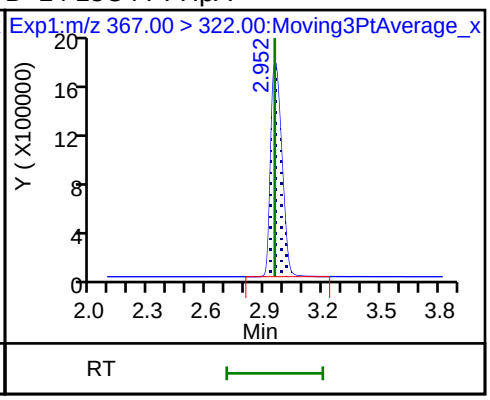
15 Perfluoroheptanoic acid



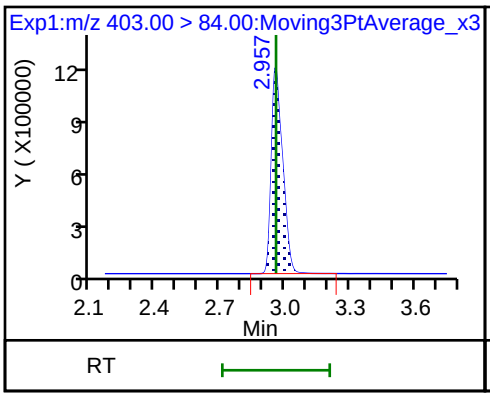
15 Perfluoroheptanoic acid



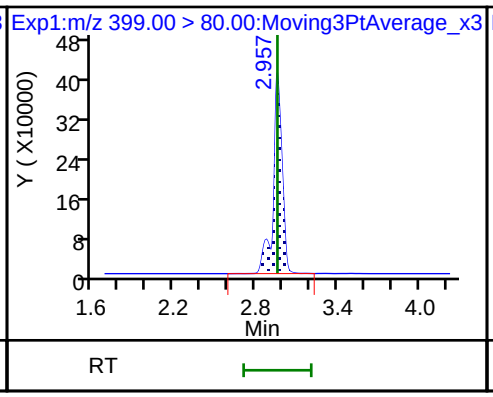
D 14 13C4 PFHpA



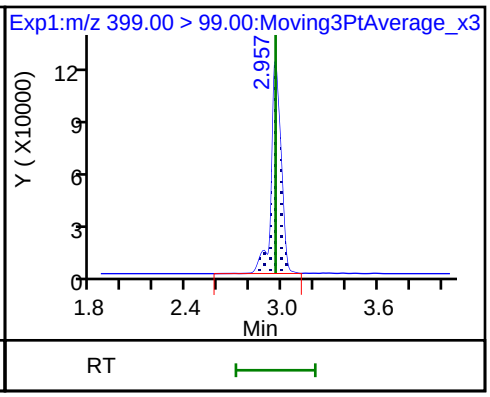
D 16 18O2 PFHxS



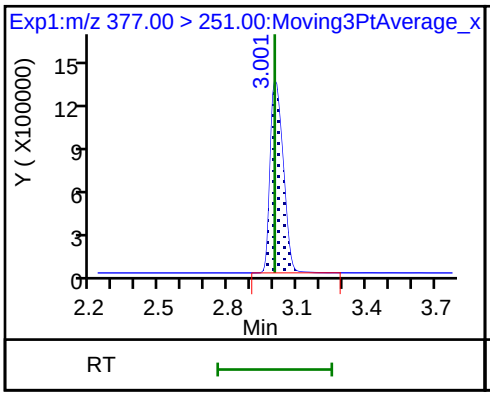
17 Perfluorohexanesulfonic acid



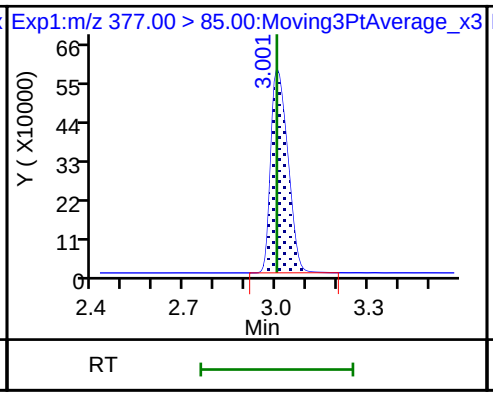
17 Perfluorohexanesulfonic acid



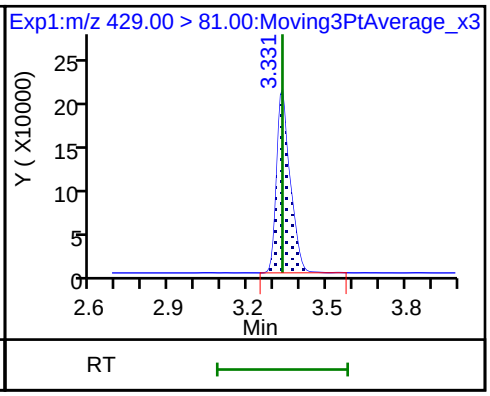
18 DONA



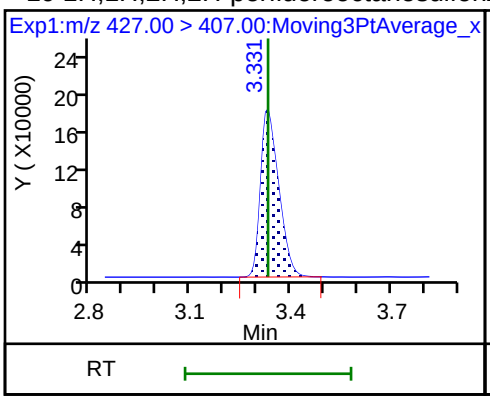
18 DONA



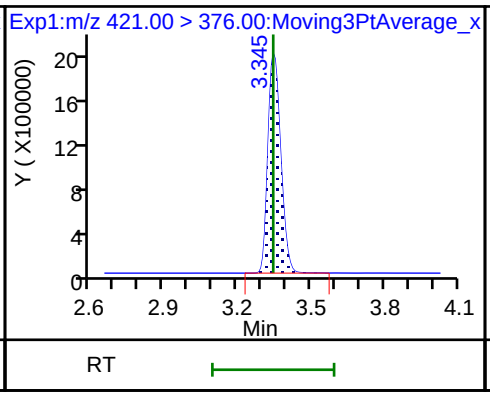
D 20 M2-6:2 FTS



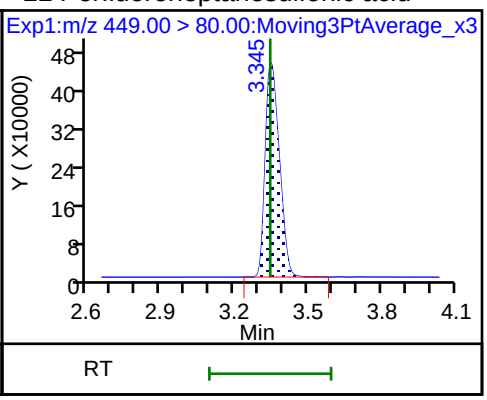
19 1H,1H,2H,2H-perfluorooctanesulfon



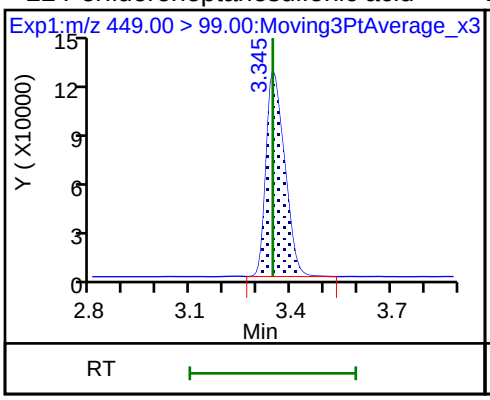
D 21 13C8 PFOA



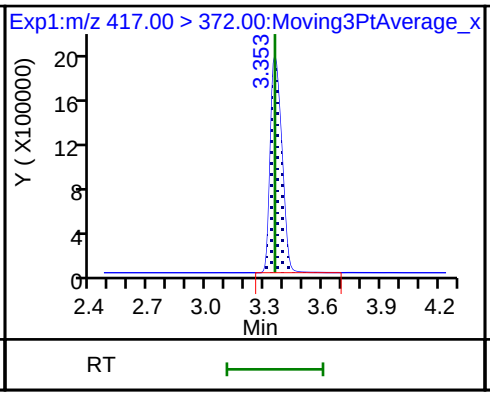
22 Perfluoroheptanesulfonic acid



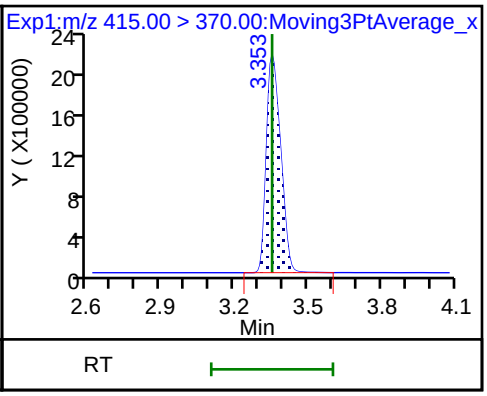
22 Perfluoroheptanesulfonic acid



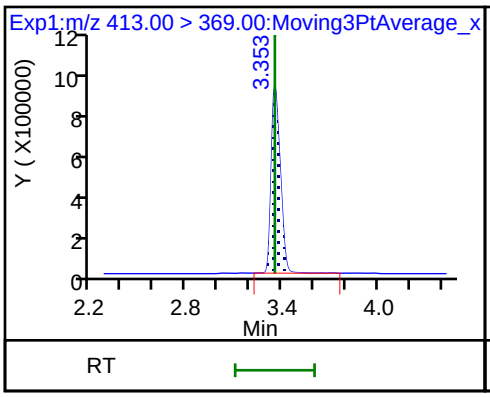
D 23 13C4 PFOA



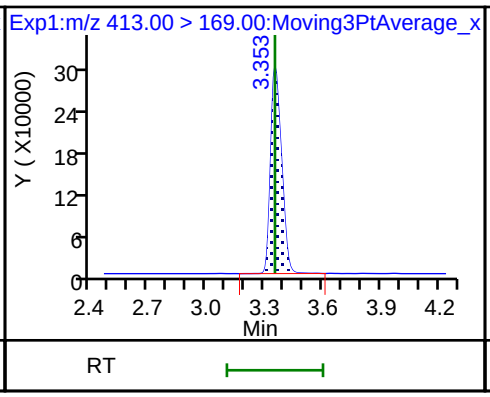
* 25 13C2 PFOA



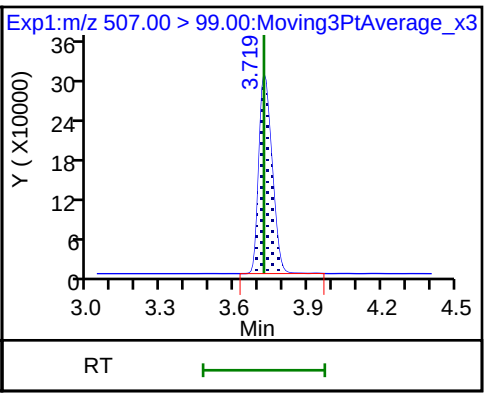
24 Perfluorooctanoic acid



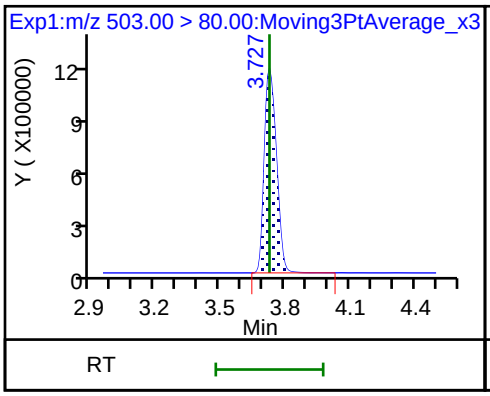
24 Perfluorooctanoic acid



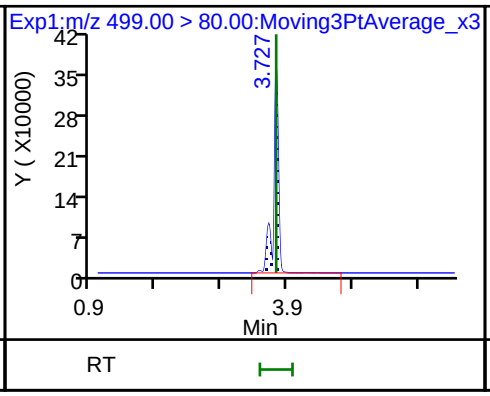
D 26 13C8 PFOS



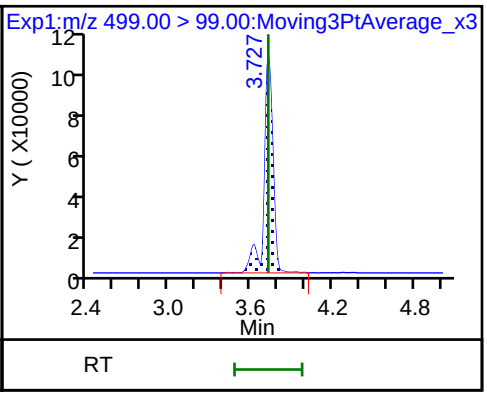
D 27 13C4 PFOS



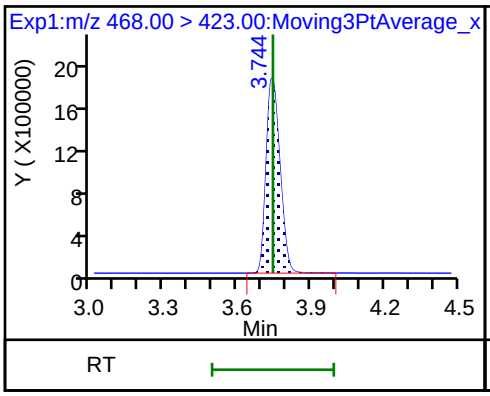
28 Perfluorooctanesulfonic acid



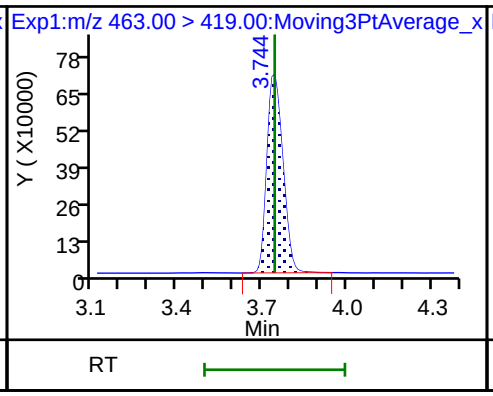
28 Perfluorooctanesulfonic acid



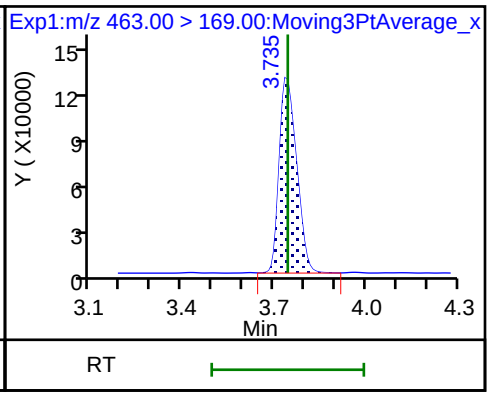
D 30 13C5 PFNA



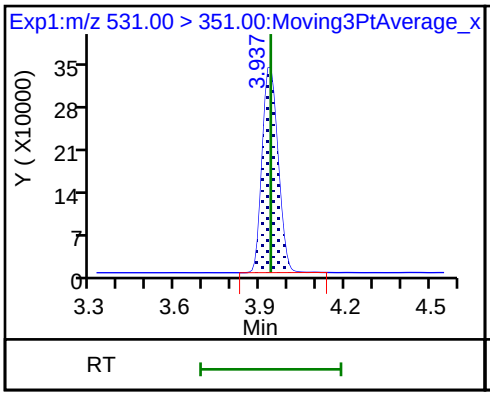
29 Perfluorononanoic acid



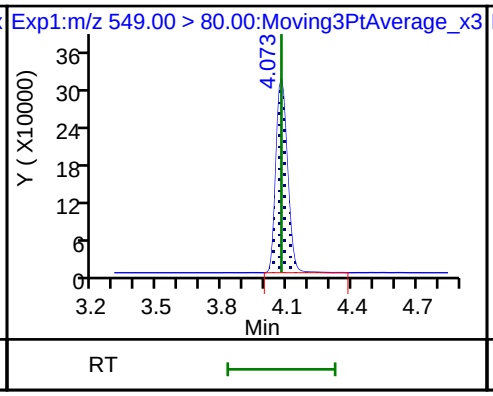
29 Perfluorononanoic acid



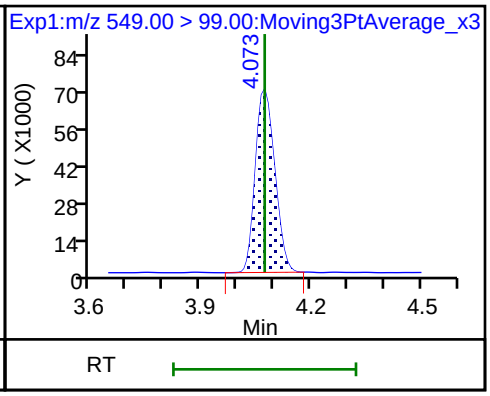
31 9-Chlorohexadecafluoro-3-oxanonane



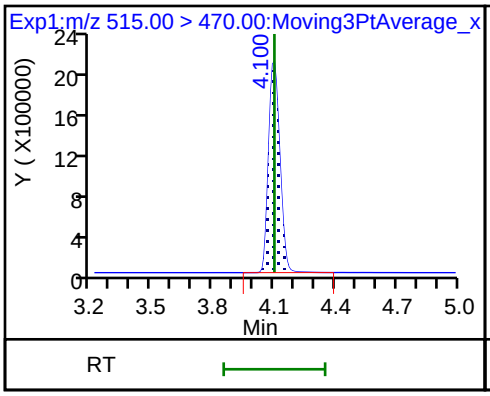
34 Perfluorononanesulfonic acid



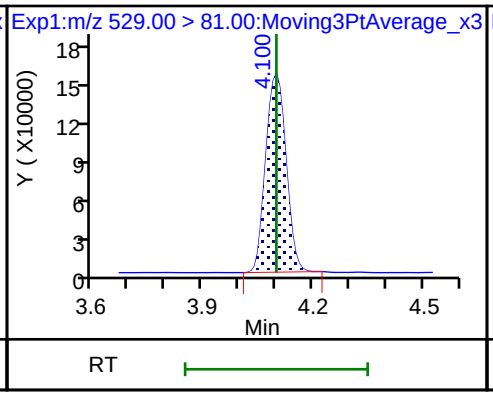
34 Perfluorononanesulfonic acid



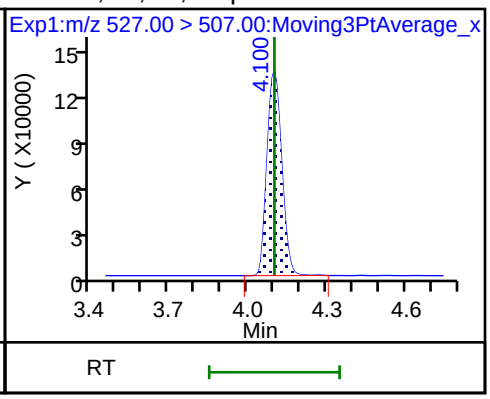
D 36 13C2 PFDA



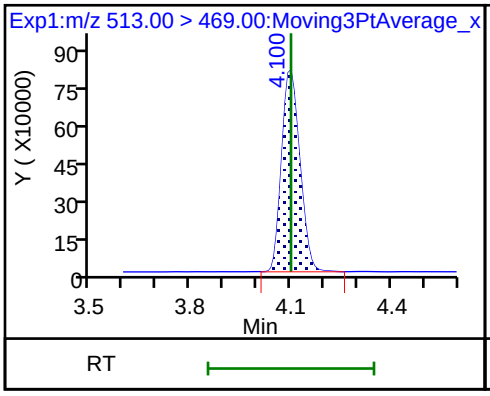
D 35 M2-8:2 FTS



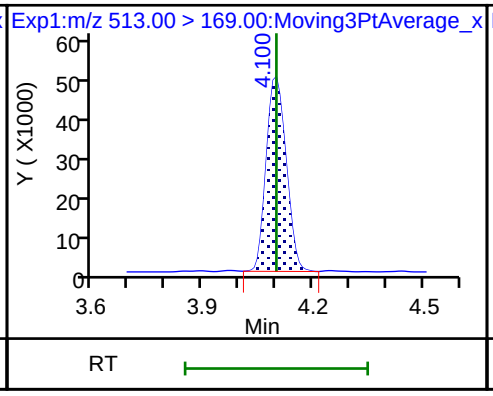
38 1H,1H,2H,2H-perfluorodecanesulfoni



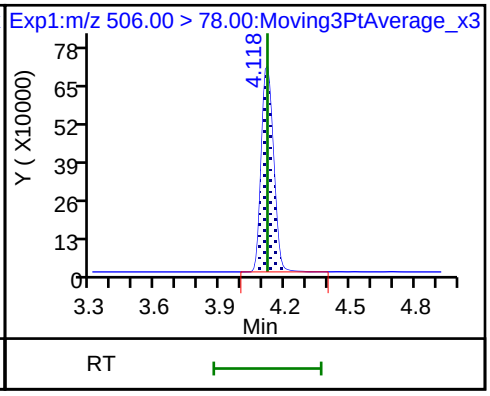
37 Perfluorodecanoic acid



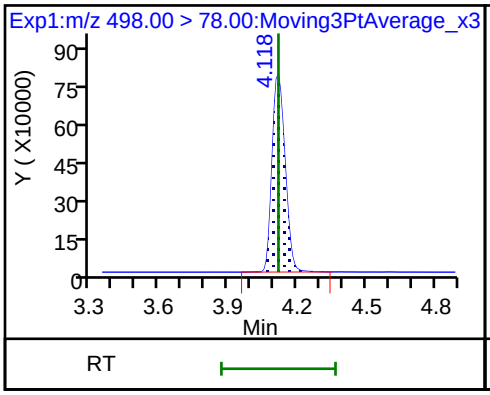
37 Perfluorodecanoic acid



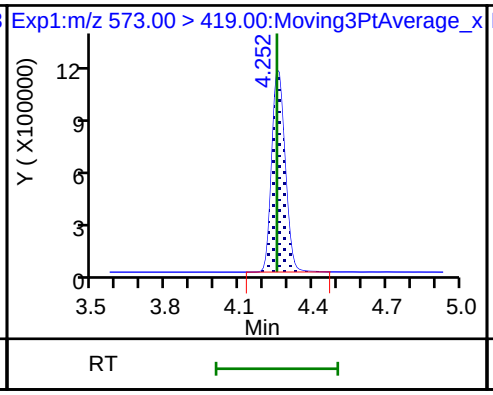
D 32 13C8 FOSA



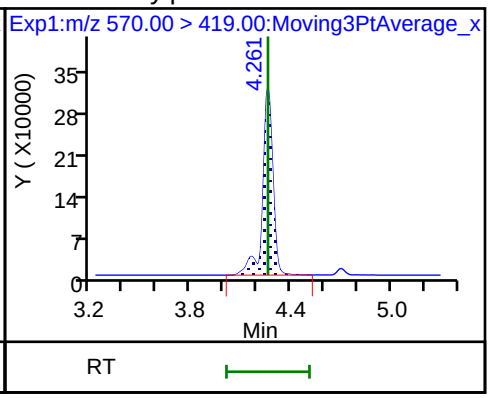
33 Perfluorooctanesulfonamide



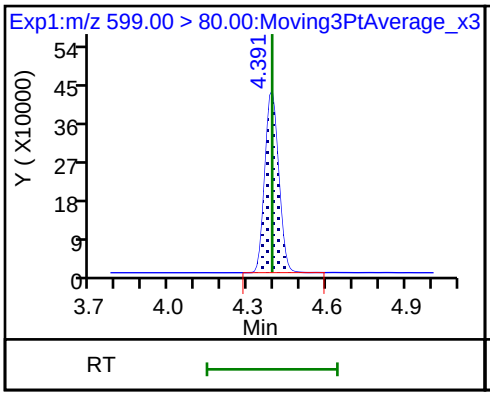
D 39 d3-NMeFOSAA



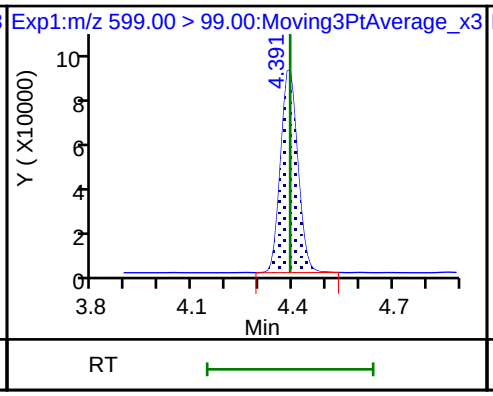
40 N-methylperfluorooctanesulfonamido



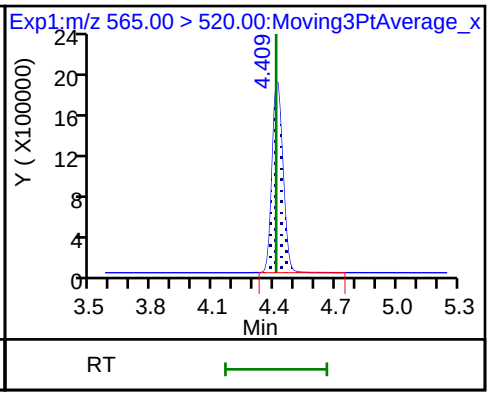
41 Perfluorodecanesulfonic acid



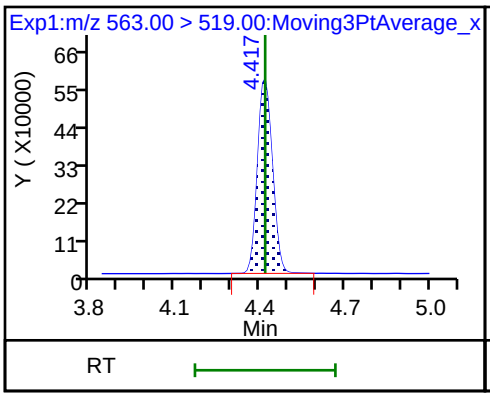
41 Perfluorodecanesulfonic acid



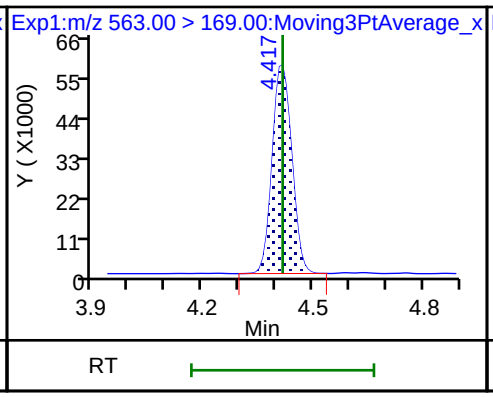
D 42 13C2 PFUnA



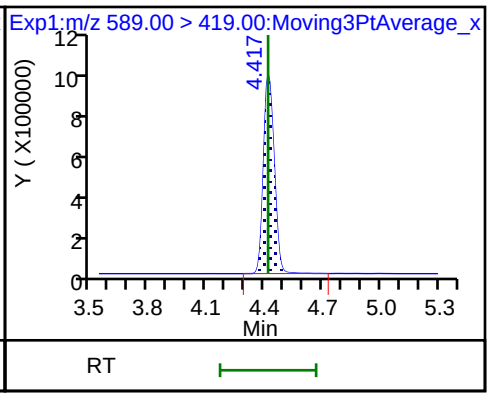
43 Perfluoroundecanoic acid



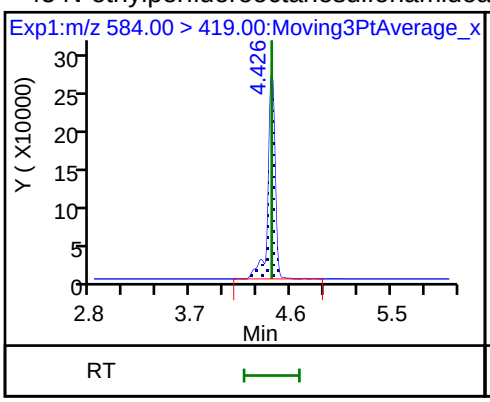
43 Perfluoroundecanoic acid



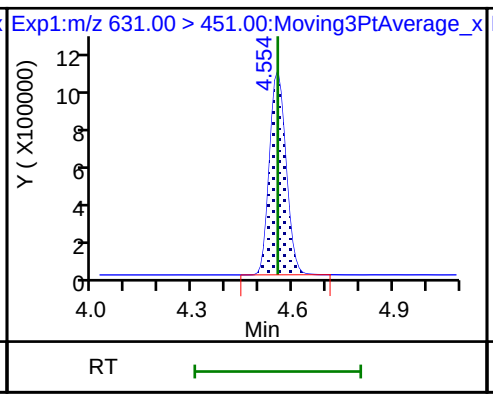
D 44 d5-NEtFOSAA



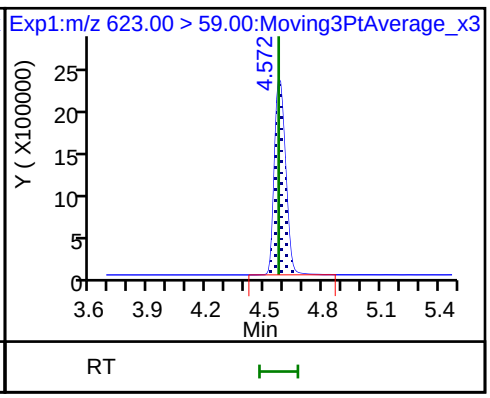
45 N-ethylperfluorooctanesulfonamidoa



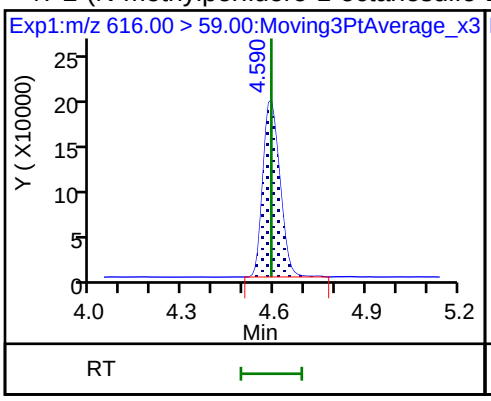
50 11-Chloroeicosafluoro-3-oxaundecan



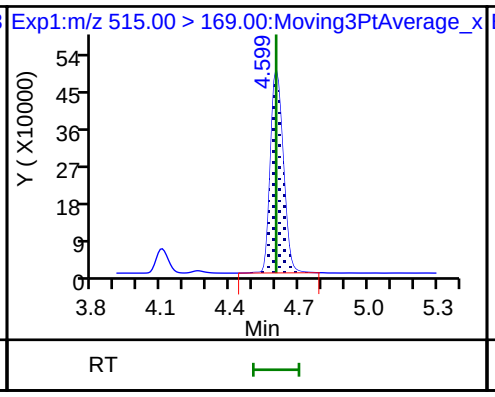
D 46 d7-N-MeFOSE-M



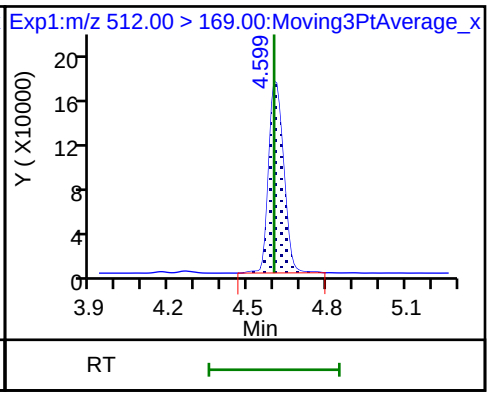
47 2-(N-methylperfluoro-1-octanesulfo



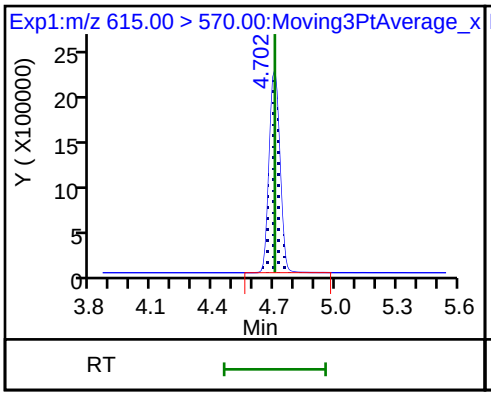
D 48 d-N-MeFOSA-M



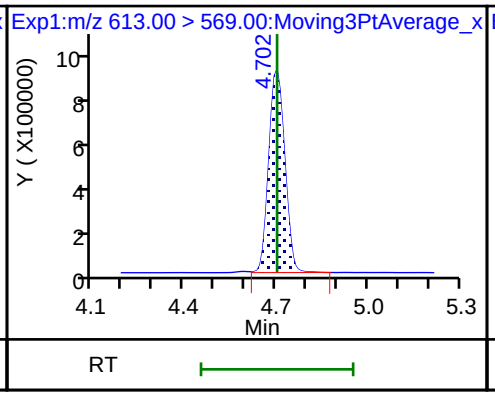
49 NMeFOSA



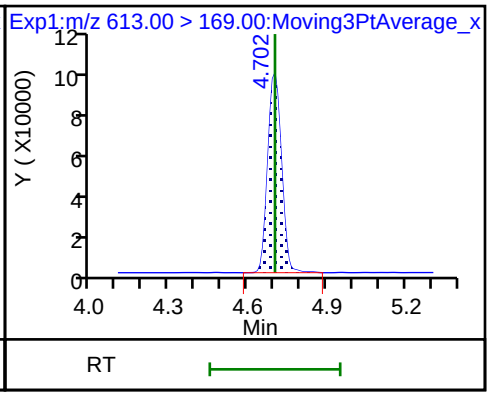
D 55 13C2 PFDoA



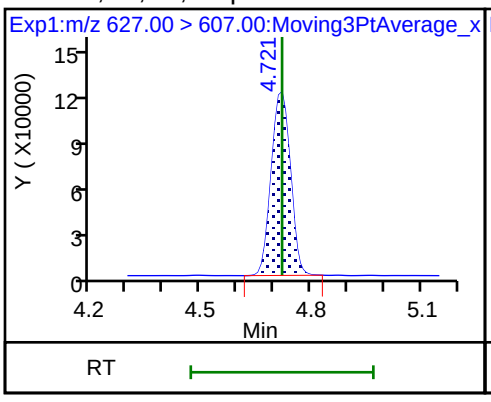
56 Perfluorododecanoic acid



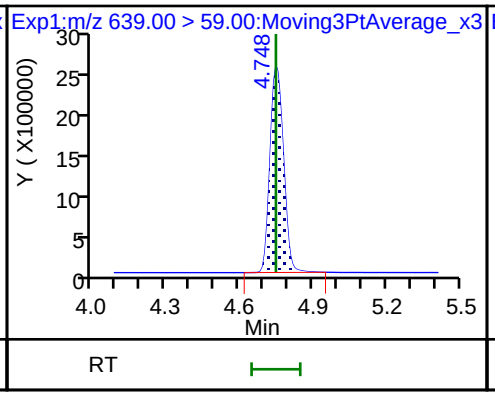
56 Perfluorododecanoic acid



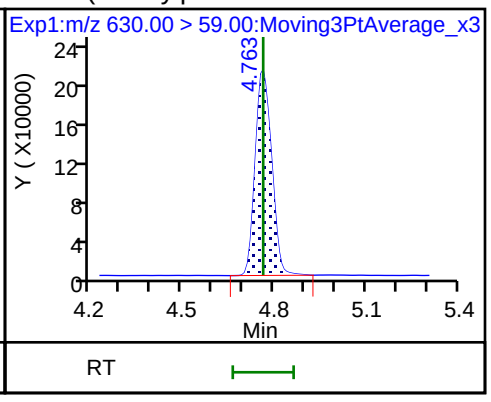
57 1H,1H,2H,2H-perfluorododecanesulfo



D 51 d9-N-EtFOSE-M



52 2-(N-ethylperfluoro-1-octanesulfon



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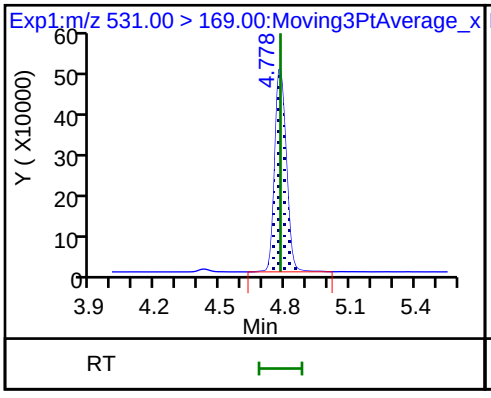
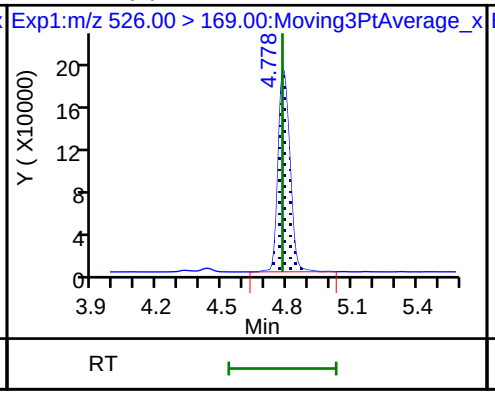
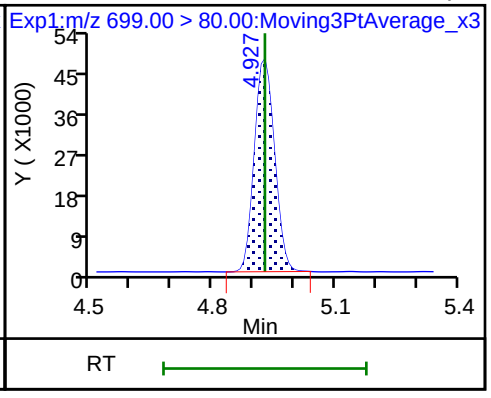


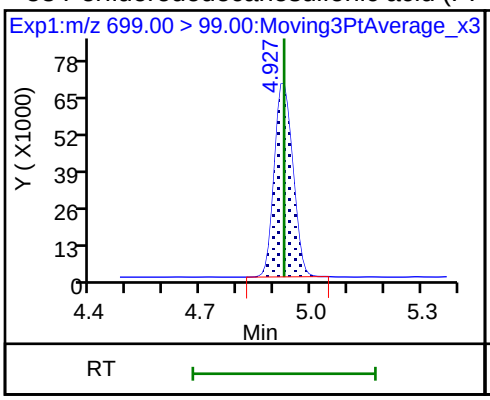
54 N-ethylperfluoro-1-octanesulfonami



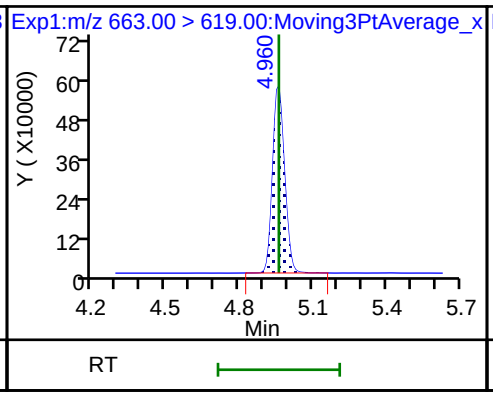
58 Perfluorododecanesulfonic acid (PF



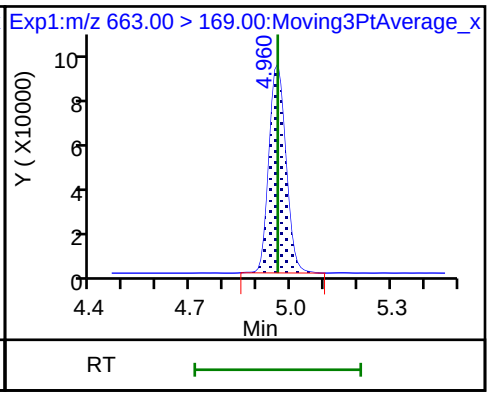
58 Perfluorododecanesulfonic acid (PF



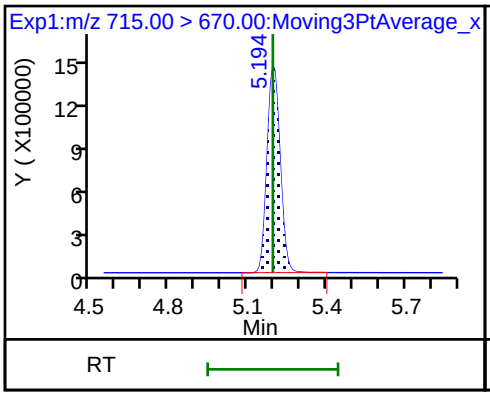
59 Perfluorotridecanoic acid



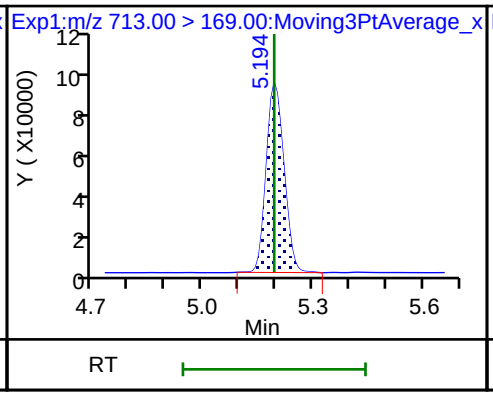
59 Perfluorotridecanoic acid



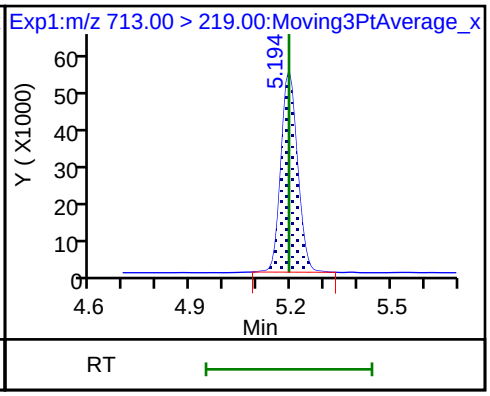
D 60 13C2 PFTeDA



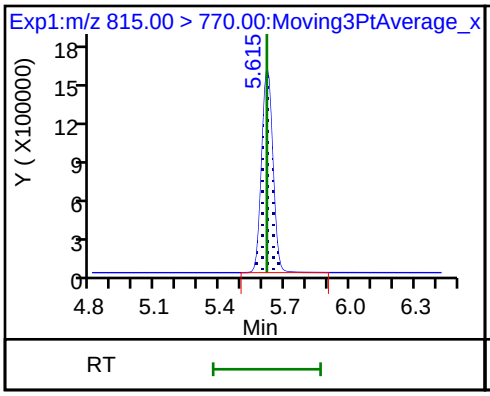
61 Perfluorotetradecanoic acid



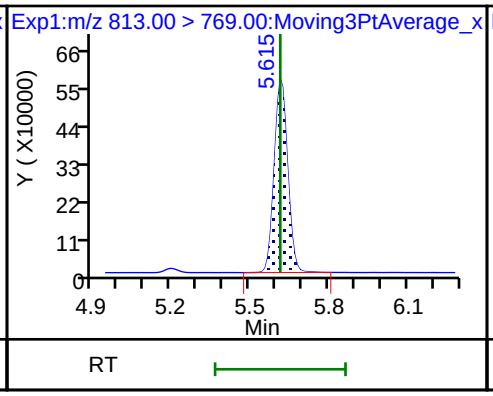
61 Perfluorotetradecanoic acid



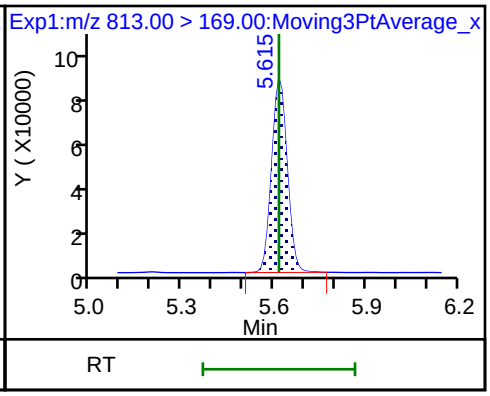
D 62 13C2 PFHxDA



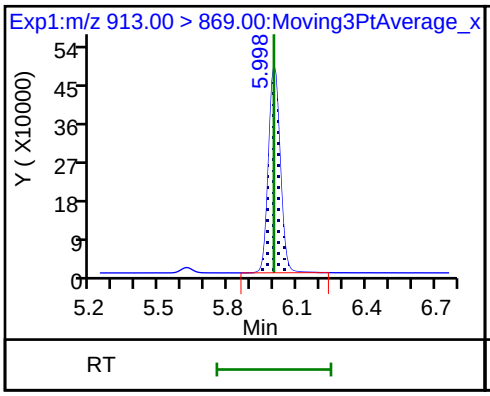
63 Perfluorohexadecanoic acid



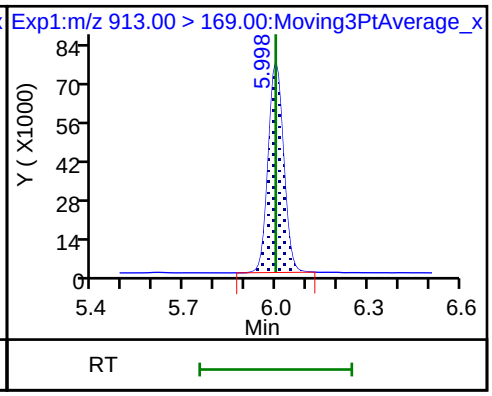
63 Perfluorohexadecanoic acid



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329754/14 Calibration Date: 10/10/2019 07:03

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8496	0.8612		2.53	2.50	1.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.024	0.997		2.43	2.50	-2.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.695	1.718		2.24	2.21	1.4	50.0
4:2 FTS	AveID	2.563	2.856		2.60	2.34	11.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9288	0.9105		2.45	2.50	-2.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8872	0.9343		2.47	2.35	5.3	50.0
HFPO-DA (GenX)	AveID	1.515	1.307		2.16	2.50	-13.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.123	1.102		2.45	2.50	-1.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.223	1.116		2.08	2.28	-8.8	40.0
DONA	AveID	2.582	2.749		2.51	2.36	6.5	50.0
6:2 FTS	AveID	2.329	2.625		2.67	2.37	12.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	0.9891	0.9899		2.38	2.38	0.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.131	1.047		2.32	2.50	-7.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.074	1.030		2.23	2.32	-4.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.030	1.047		2.54	2.50	1.7	40.0
9-Chlorohexadecafluoro-3-oxa nonane-1-sulfonic acid	AveID	0.7082	0.7261		2.39	2.33	2.5	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6092	0.6174		2.43	2.40	1.3	50.0
8:2 FTS	AveID	2.215	2.343		2.53	2.40	5.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9506	0.9111		2.40	2.50	-4.2	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.747	2.782		2.53	2.50	1.3	40.0
N-methylperfluorooctanesulfo namidoacetic acid (NMeFOSAA)	AveID	0.8190	0.8036		2.45	2.50	-1.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8136	0.9185		2.72	2.41	12.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7866	0.8204		2.61	2.50	4.3	40.0
N-ethylperfluorooctanesulfon amidoacetic acid (NEtFOSAA)	AveID	0.7978	0.7404		2.32	2.50	-7.2	40.0
F-53B Minor	AveID	1.870	1.973		2.48	2.36	5.5	50.0
NMeFOSE	AveID	1.042	0.9880		2.37	2.50	-5.2	40.0
NMeFOSA	AveID	0.8723	0.8774		2.52	2.50	0.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.031	0.996		2.42	2.50	-3.4	40.0
10:2 FTS	AveID	1.705	2.299		3.25	2.41	34.8	50.0
NEtFOSE	AveID	1.054	1.017		2.41	2.50	-3.6	40.0
NEtFOSA	AveID	1.005	1.049		2.61	2.50	4.4	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0835	0.0897		2.60	2.42	7.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Lab Sample ID: CCV 320-329754/14 Calibration Date: 10/10/2019 07:03

Instrument ID: A9 Calib Start Date: 10/05/2019 18:03

GC Column: Acquity ID: 2.10(mm) Calib End Date: 10/05/2019 19:10

Lab File ID: 2019.10.10_LLA_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.6446	0.6811		2.64	2.50	5.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1413	0.1366		2.42	2.50	-3.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9159		2.61	2.50	4.4	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7215	0.7047		2.44	2.50	-2.3	50.0
13C4 PFBA	Ave	0.7371	0.7303		2.48	2.50	-0.9	50.0
13C5 PFPeA	Ave	0.6168	0.5984		2.43	2.50	-3.0	50.0
M2-4:2 FTS	Ave	0.1177	0.0815		1.62	2.34	-30.7	50.0
13C2 PFHxA	Ave	0.7105	0.6901		2.43	2.50	-2.9	50.0
13C3 HFPO-DA	Ave	0.1236	0.1442		2.92	2.50	16.7	50.0
13C4 PFHpA	Ave	0.8130	0.8165		2.51	2.50	0.4	50.0
18O2 PFHxS	Ave	0.5224	0.5153		2.33	2.37	-1.3	50.0
M2-6:2 FTS	Ave	0.1134	0.0793		1.66	2.38	-30.1	50.0
13C4 PFOA	Ave	0.9372	0.9464		2.53	2.50	1.0	50.0
13C8 PFOA	Ave	0.8884	0.8502		2.39	2.50	-4.3	50.0
13C8 PFOS	Ave	0.1318	0.1264		2.40	2.50	-4.1	50.0
13C4 PFOS	Ave	0.6062	0.5839		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.8344	0.8322		2.49	2.50	-0.3	50.0
13C2 PFDA	Ave	0.9417	0.9685		2.57	2.50	2.8	50.0
M2-8:2 FTS	Ave	0.1066	0.0717		1.61	2.40	-32.8	50.0
13C8 FOSA	Ave	0.3127	0.3317		2.65	2.50	6.1	50.0
d3-NMeFOSAA	Ave	0.4441	0.4948		2.79	2.50	11.4	50.0
13C2 PFUnA	Ave	0.8035	0.8178		2.55	2.50	1.8	50.0
d5-NEtFOSAA	Ave	0.3818	0.4486		2.94	2.50	17.5	50.0
d7-N-MeFOSE-M	Ave	0.2045	0.2128		13.0	12.5	4.1	50.0
d-N-MeFOSA-M	Ave	0.2233	0.2296		2.57	2.50	2.8	50.0
13C2 PFDoA	Ave	0.8846	0.9122		2.58	2.50	3.1	50.0
d9-N-EtFOSE-M	Ave	0.2128	0.2230		13.1	12.5	4.8	50.0
d-N-EtFOSA-M	Ave	0.2151	0.2152		2.50	2.50	0.0	50.0
13C2 PFTeDA	Ave	0.6272	0.7011		2.80	2.50	11.8	50.0
13C2 PFHxDA	Ave	0.6893	0.7582		2.75	2.50	10.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 10-Oct-2019 07:03:44 ALS Bottle#: 14 Worklist Smp#: 14
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: A9\Administrator Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:41:58 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:41:58
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.903	1.903	0.0	1.000	5237224	2.53		101	1253	
D 1 13C4 PFBA										
217.00 > 172.00	1.903	1.903	0.0	0.569	6081524	2.48		99.1	6855	
D 4 13C5 PFPeA										
267.90 > 223.00	2.208	2.208	0.0	0.660	4983560	2.43		97.0	3901	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.208	2.208	0.0	1.000	4968347	2.43		97.3	466	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.245	2.245	0.0	0.760	6518045	2.24	Target=2.62	101	658	
298.90 > 99.00	2.235	2.245	-0.010	0.757	2372086		2.75(1.31-3.93)		495	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.527	2.527	0.0	0.755	634186	1.62		69.3	1257	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.527	2.527	0.0	1.000	1811305	2.60		111	3034	
D 9 13C2 PFHxA										
315.00 > 270.00	2.560	2.570	-0.010	0.765	5747332	2.43		97.1	3210	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.570	2.570	0.0	1.004	5233200	2.45	Target=14.83	98.0	706	
313.00 > 119.00	2.570	2.570	0.0	1.004	346350		15.11(7.41-22.24)		482	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.581	2.580	0.001	0.874	3761137	2.47	Target=1.98	105	4033	
349.00 > 99.00	2.581	2.580	0.001	0.874	1708913		2.20(0.99-2.97)		2776	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.688	2.687	0.001	0.803	1201044	2.92		117	2459	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.688	2.687	0.001	1.000	1569787	2.16		86.3	1047	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.952	2.952	0.0	1.002	7496659	2.45	Target=4.24	98.2	1220	
363.00 > 169.00	2.947	2.952	-0.005	1.000	1751670		4.28(2.12-6.36)		2223	
D 14 13C4 PFHpA										
367.00 > 322.00	2.947	2.952	-0.005	0.881	6799731	2.51		100	3571	
D 16 18O2 PFHxS										
403.00 > 84.00	2.952	2.957	-0.005	0.882	4059874	2.33		98.7	3466	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.952	2.957	-0.005	1.000	4356698	2.07	Target=3.27	91.2	2455	
399.00 > 99.00	2.952	2.957	-0.005	1.000	1290986		3.37(1.64-4.91)		1271	
18 DONA										
377.00 > 251.00	3.003	3.001	0.002	0.807	12590445	2.51	Target=2.25	106	6099	
377.00 > 85.00	3.003	3.001	0.002	0.807	5660455		2.22(1.12-3.37)		3468	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.331	-0.006	1.000	1642690	2.67		113	2629	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.331	-0.006	0.994	627092	1.66		69.9	1810	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.346	3.345	0.001	0.899	4582536	2.38	Target=3.58	100	3261	
449.00 > 99.00	3.346	3.345	0.001	0.899	1210462		3.79(1.79-5.37)		2055	
D 21 13C8 PFOA										
421.00 > 376.00	3.346	3.345	0.001	1.000	7080574	2.39		95.7	5930	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.353	-0.007		8328057	2.50			3329	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.346	3.353	-0.007	1.000	8251049	2.31	Target=2.79	92.6	851	
413.00 > 169.00	3.346	3.353	-0.007	1.000	2920377		2.83(1.40-4.19)		4242	
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.353	-0.007	1.000	7881913	2.52		101	4473	
D 26 13C8 PFOS										
507.00 > 99.00	3.714	3.719	-0.005	1.110	1052932	2.40		95.9	2113	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.722	3.727	-0.005	1.000	4648080	2.23	Target=3.83	96.0	2297	
499.00 > 99.00	3.722	3.727	-0.005	1.000	1148816		4.05(1.92-5.75)		1598	
D 27 13C4 PFOS										
503.00 > 80.00	3.722	3.727	-0.005	1.112	4648610	2.30		96.3	3125	
D 30 13C5 PFNA										
468.00 > 423.00	3.737	3.744	-0.007	1.117	6930334	2.49		99.7	4438	
29 Perfluorononanoic acid										
463.00 > 419.00	3.737	3.744	-0.007	1.000	7257647	2.54	Target=5.58	102	2172	
463.00 > 169.00	3.737	3.744	-0.007	1.000	1286620		5.64(2.79-8.37)		1626	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.930	3.937	-0.007	1.056	3290623	2.39		103	5040	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.067	4.073	-0.006	1.093	2882051	2.43	Target=4.51	101	1471	
549.00 > 99.00	4.067	4.073	-0.006	1.093	629150		4.58(2.25-6.76)		2018	
D 36 13C2 PFDA										
515.00 > 470.00	4.094	4.100	-0.006	1.223	8065473	2.57		103	5617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 35 M2-8:2 FTS										
529.00 > 81.00	4.094	4.100	-0.006	1.223	572163	1.61		67.2	2033	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.094	4.100	-0.006	1.000	1340432	2.53		106	2116	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.094	4.100	-0.006	1.000	7348081	2.40	Target=15.45	95.8	1701	
513.00 > 169.00	4.094	4.100	-0.006	1.000	468502		15.68(7.73-23.18)		268	
D 32 13C8 FOSA										
506.00 > 78.00	4.112	4.118	-0.006	1.229	2762318	2.65		106	2076	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.112	4.118	-0.006	1.000	7684517	2.53		101	2620	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.255	4.252	0.003	1.272	4121090	2.79		111	1674	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.255	4.261	-0.006	1.000	3311642	2.45		98.1	348	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.386	4.391	-0.005	1.178	4305393	2.72	Target=4.64	113	1630	
599.00 > 99.00	4.386	4.391	-0.005	1.178	852164		5.05(2.32-6.96)		1814	
D 42 13C2 PFUnA										
565.00 > 520.00	4.412	4.409	0.004	1.318	6810992	2.54		102	2903	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.412	4.417	-0.005	1.000	5588021	2.61	Target=9.27	104	1585	
563.00 > 169.00	4.412	4.417	-0.005	1.000	551377		10.13(4.63-13.90)		1447	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.412	4.417	-0.005	1.318	3736190	2.94		118	2339	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.420	4.426	-0.006	1.002	2766227	2.32		92.8	1236	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.549	4.554	-0.006	1.222	9036273	2.48		105	6027	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.575	4.572	0.003		8861953	13.0		104	2050	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.584	4.590	-0.006	1.002	1751029	2.37		94.8	1547	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.593	4.599	-0.006		1912082	2.57		103	272	
49 NMeFOSA										
512.00 > 169.00	4.602	4.599	0.003	1.002	1677744	2.51		101	1302	
D 55 13C2 PFDoA										
615.00 > 570.00	4.696	4.702	-0.006	1.403	7597213	2.58		103	6260	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.696	4.702	-0.006	1.000	7563189	2.41	Target=9.58	96.6	1603	
613.00 > 169.00	4.696	4.702	-0.006	1.000	849907		8.90(4.79-14.36)		2422	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.706	4.721	-0.015	1.149	1323575	3.25		135	2484	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.743	4.748	-0.005		9287515	13.1		105	1767	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.758	4.763	-0.005	1.003	1888359	2.41		96.4	1186	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.773	4.778	-0.005		1792411	2.50		100	1409	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.780	4.778	0.002	1.002	1879954	2.61		104	781	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.920	4.927	-0.007	1.322	422416	2.60	Target=0.64	108	484	
699.00 > 99.00	4.920	4.927	-0.007	1.322	633170		0.67(0.32-0.96)		2398	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.954	4.960	-0.006	1.055	5174500	2.64	Target=5.94	106	2572	
663.00 > 169.00	4.954	4.960	-0.006	1.055	835039		6.20(2.97-8.91)		3035	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.196	5.194	0.002	1.002	797426	2.42	Target=1.42	96.7	2344	
713.00 > 219.00	5.188	5.194	-0.006	1.000	586314		1.36(0.71-2.13)		2747	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.188	5.194	-0.006	1.550	5839076	2.79		112	6282	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.617	5.615	0.002	1.000	5783150	2.61	Target=6.39	104	1691	
813.00 > 169.00	5.617	5.615	0.002	1.000	859263		6.73(3.19-9.58)		3066	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.617	5.615	0.002	1.679	6314387	2.75		110	6455	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	6.000	5.998	0.002	1.068	4449544	2.44	Target=6.02	97.7	2035	
913.00 > 169.00	5.992	5.998	-0.006	1.067	741626		6.00(3.01-9.03)		2492	

Reagents:

LCPFC_LL5_00019 Amount Added: 1.00 Units: mL

Report Date: 10-Oct-2019 14:41:59 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_017.d

Injection Date: 10-Oct-2019 07:03:44 Instrument ID: A9

Lims ID: CCV L5

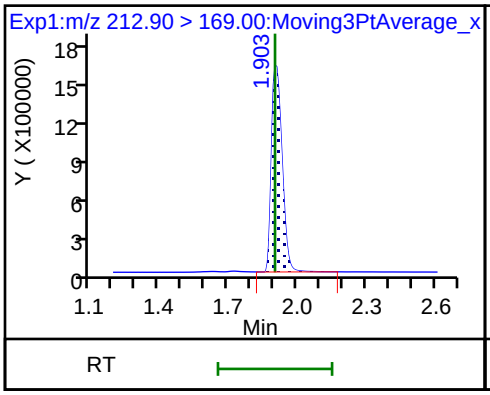
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 14

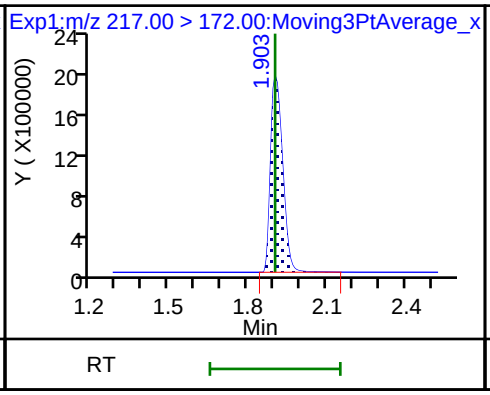
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

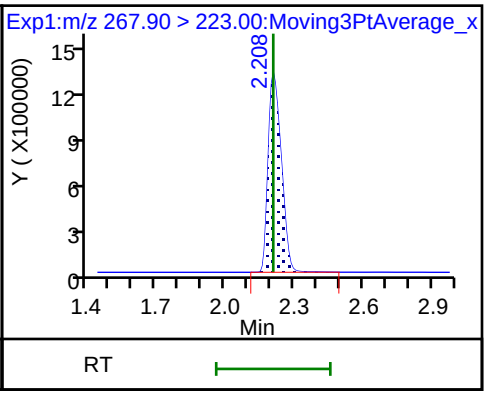
2 Perfluorobutanoic acid



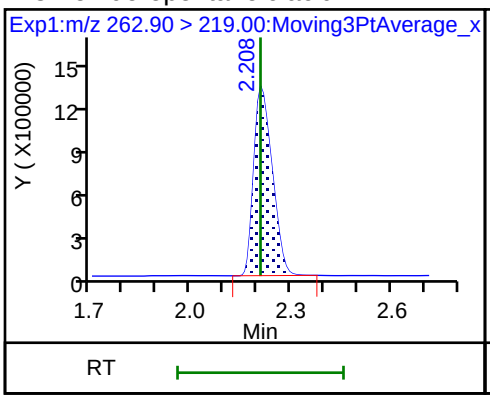
D 1 13C4 PFBA



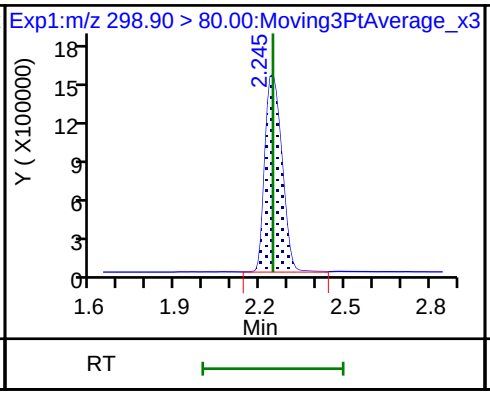
D 4 13C5 PFPeA



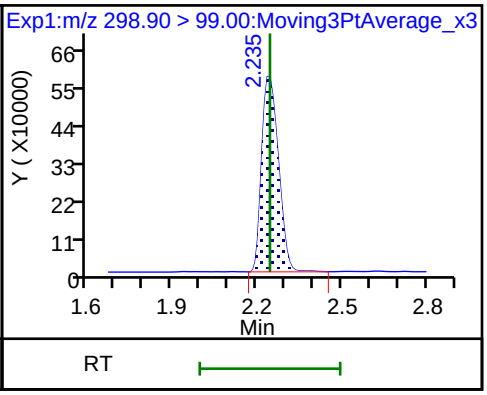
3 Perfluoropentanoic acid



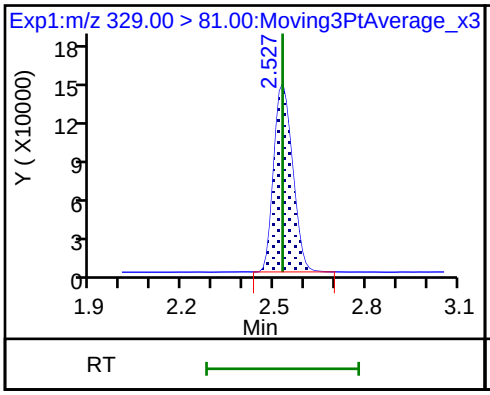
5 Perfluorobutanesulfonic acid



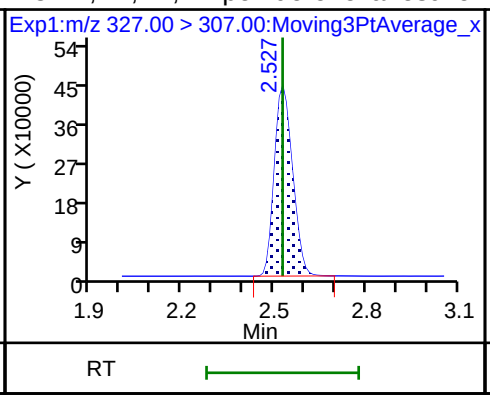
5 Perfluorobutanesulfonic acid



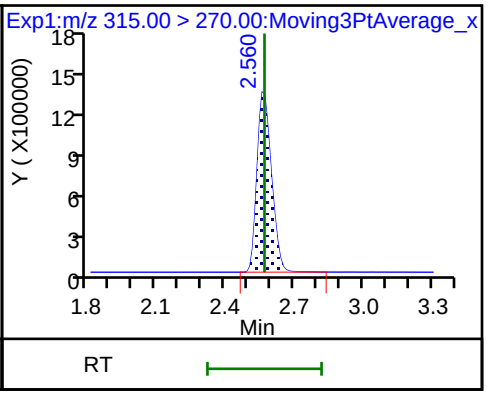
D 7 M2-4:2 FTS



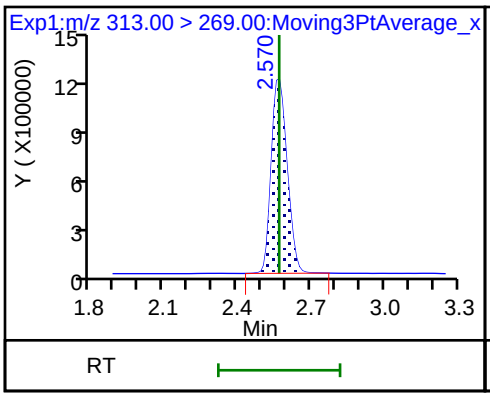
8 1H,1H,2H,2H-perfluorohexanesulfon



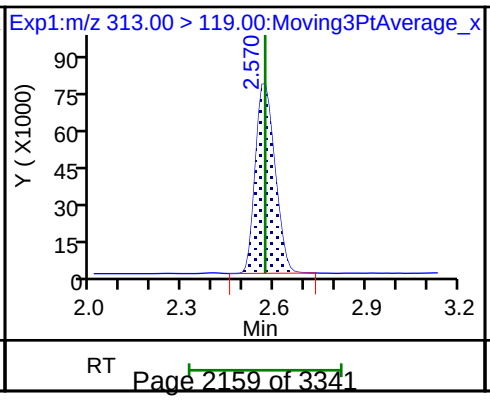
D 9 13C2 PFHxA



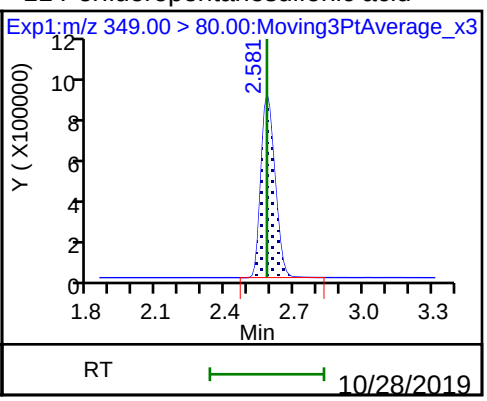
10 Perfluorohexanoic acid



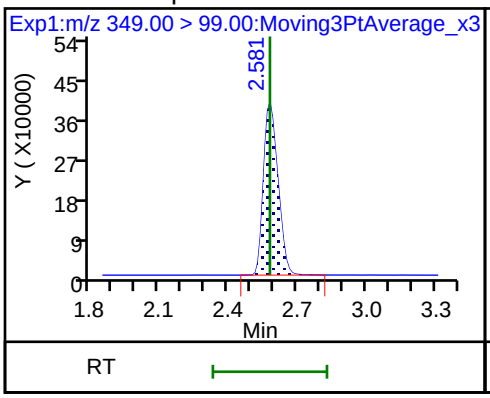
10 Perfluorohexanoic acid



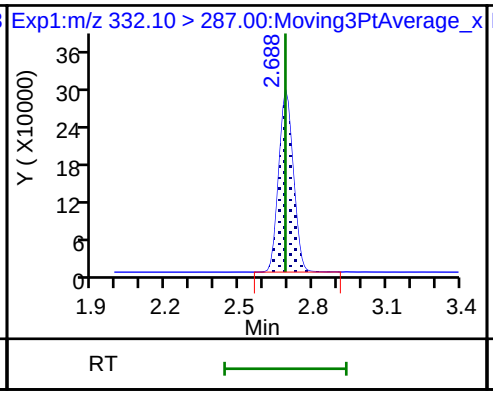
11 Perfluoropentanesulfonic acid



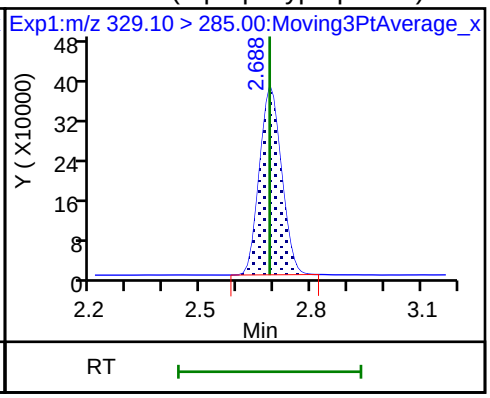
11 Perfluoropentanesulfonic acid



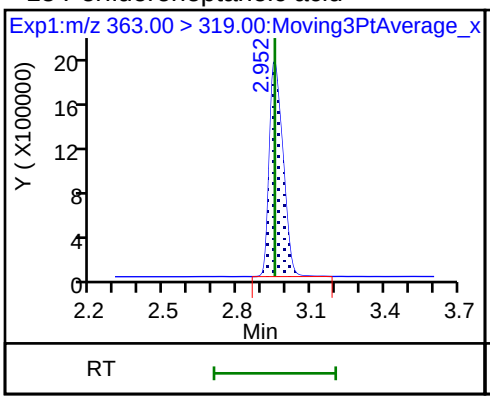
D 12 13C3 HFPO-DA



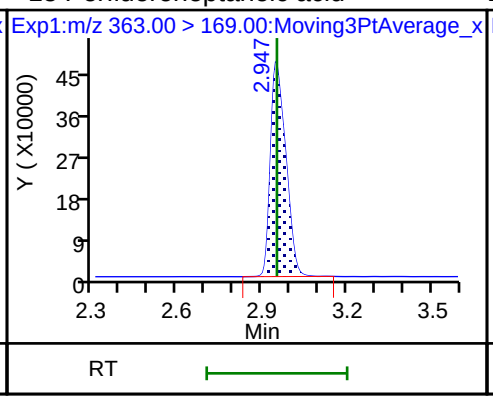
13 Perfluoro(2-propoxypropanoic) acid



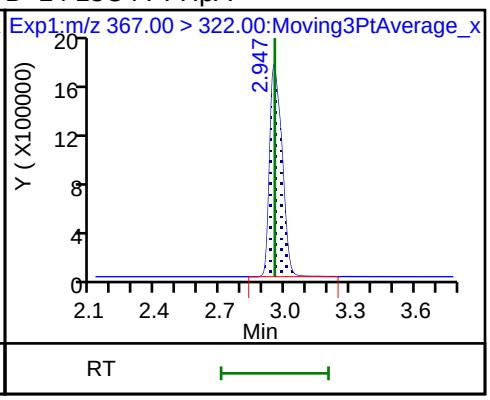
15 Perfluoroheptanoic acid



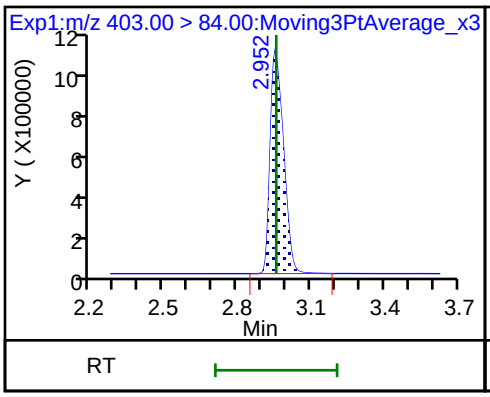
15 Perfluoroheptanoic acid



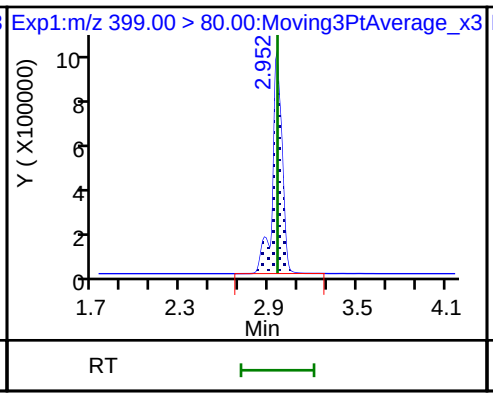
D 14 13C4 PFHpA



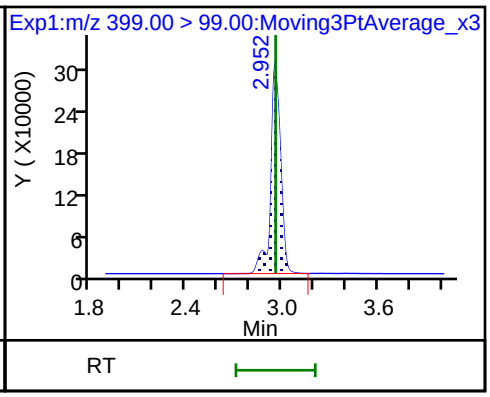
D 16 18O2 PFHxS



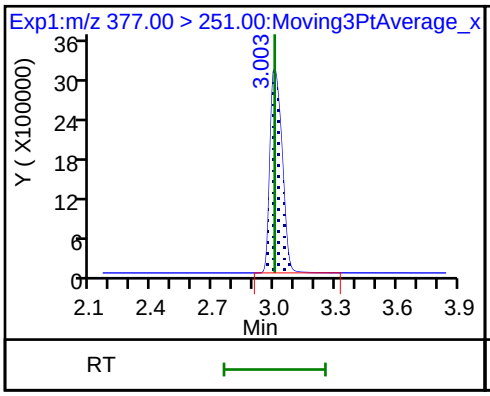
17 Perfluorohexanesulfonic acid



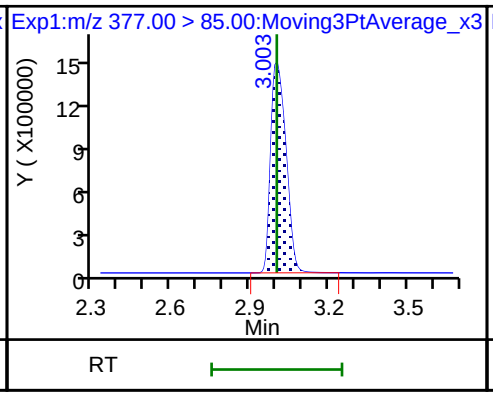
17 Perfluorohexanesulfonic acid



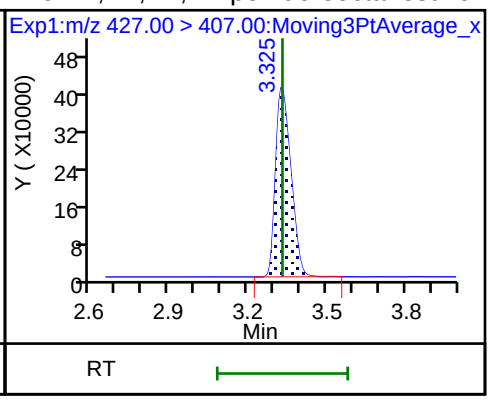
18 DONA



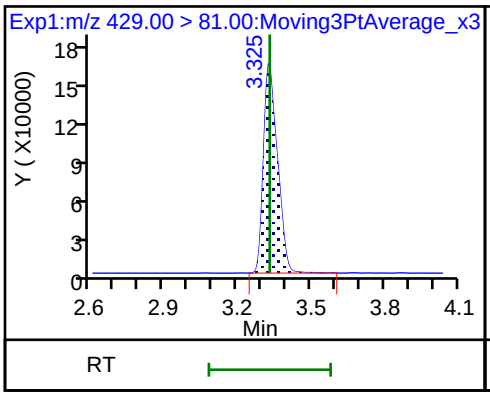
18 DONA



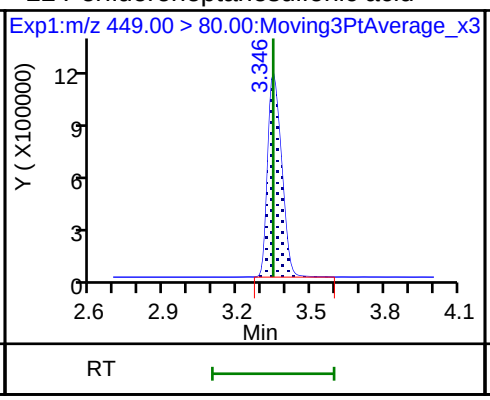
19 1H,1H,2H,2H-perfluorooctanesulfoni



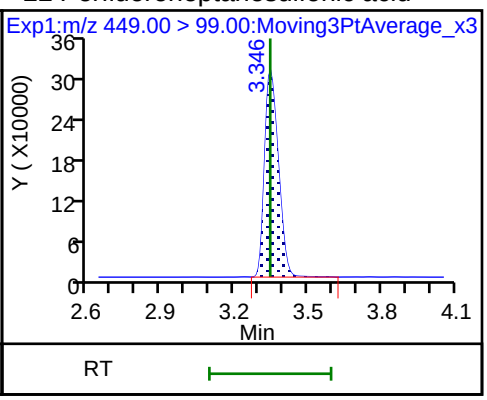
D 20 M2-6:2 FTS



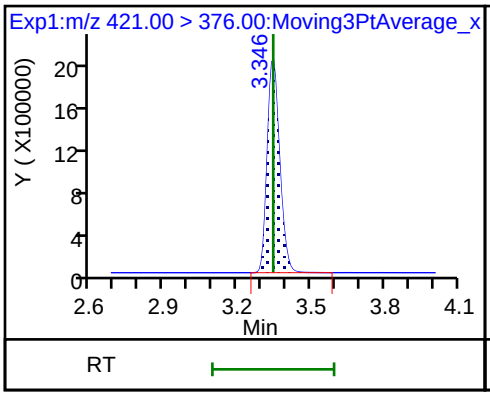
22 Perfluoroheptanesulfonic acid



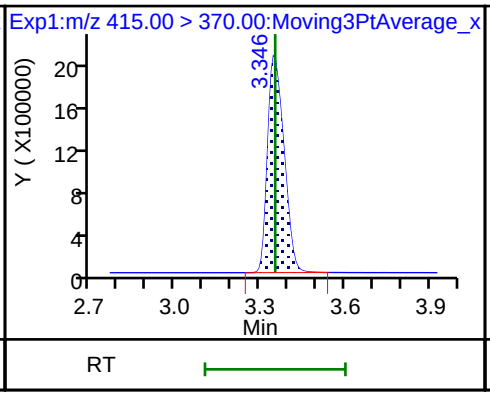
22 Perfluoroheptanesulfonic acid



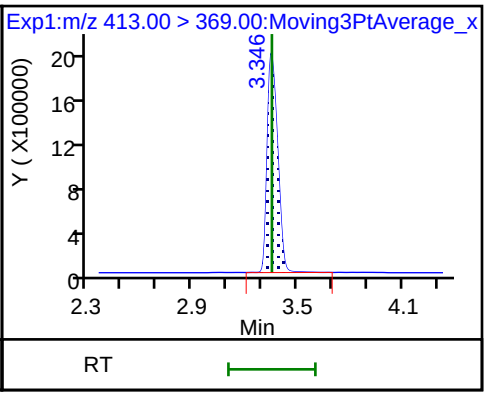
D 21 13C8 PFOA



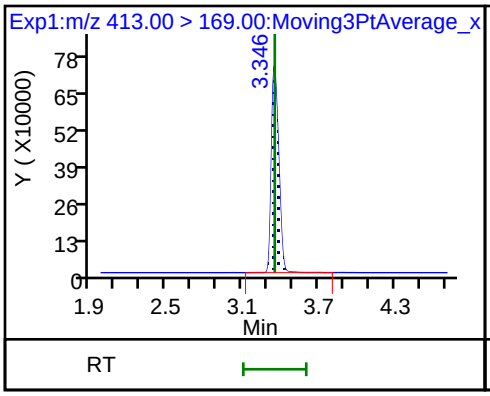
* 25 13C2 PFOA



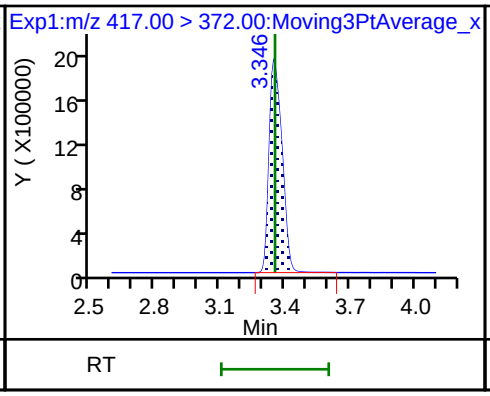
24 Perfluorooctanoic acid



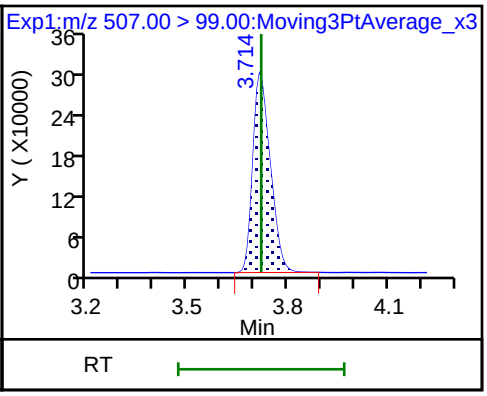
24 Perfluorooctanoic acid



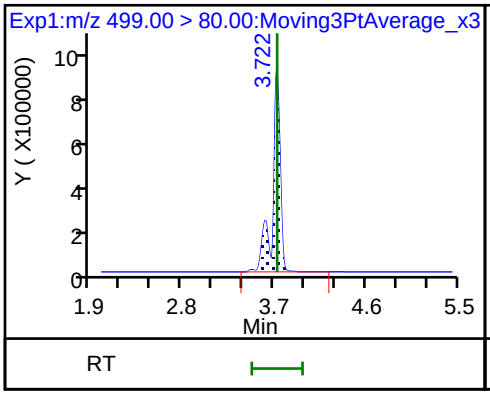
D 23 13C4 PFOA



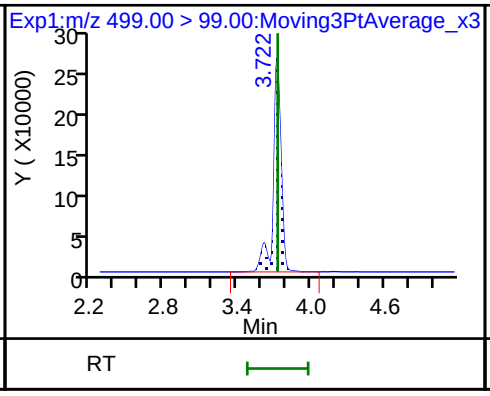
D 26 13C8 PFOS



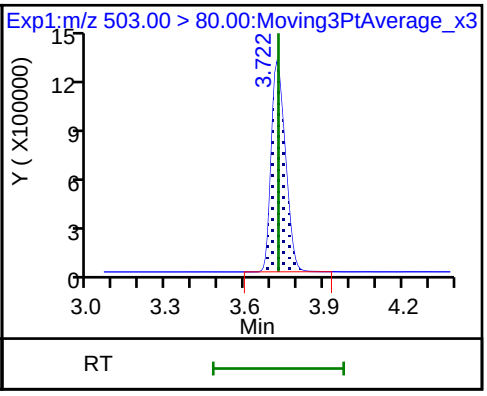
28 Perfluorooctanesulfonic acid



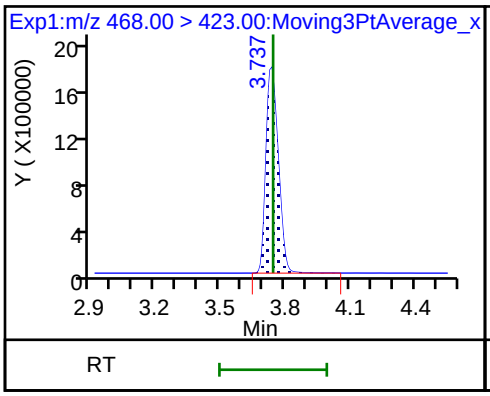
28 Perfluorooctanesulfonic acid



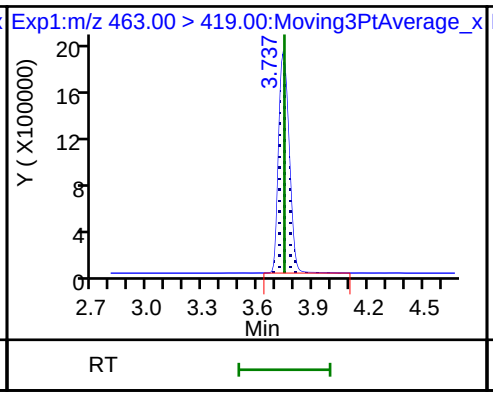
D 27 13C4 PFOS



D 30 13C5 PFNA



29 Perfluorononanoic acid



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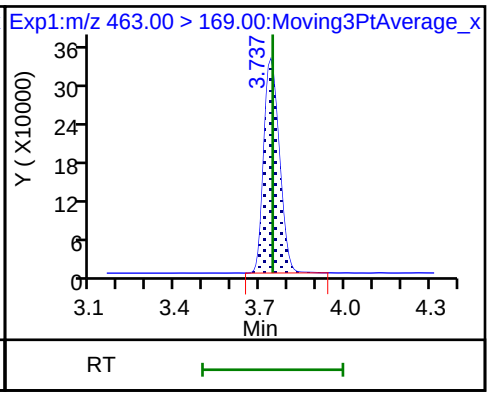
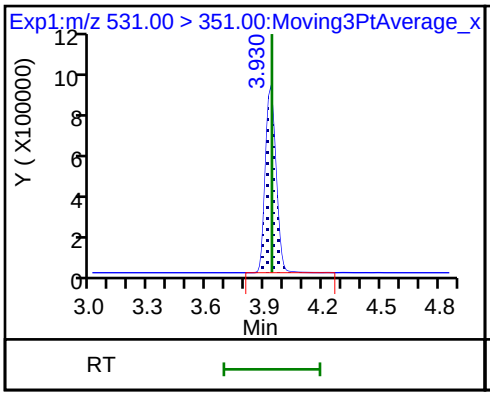
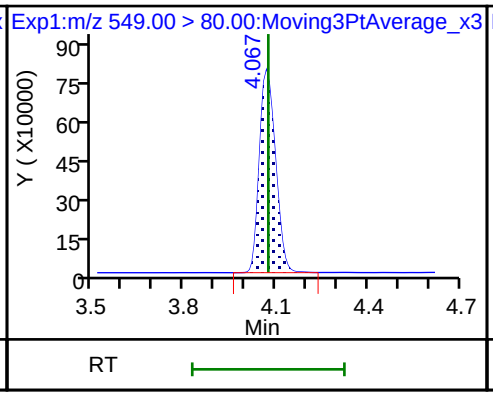


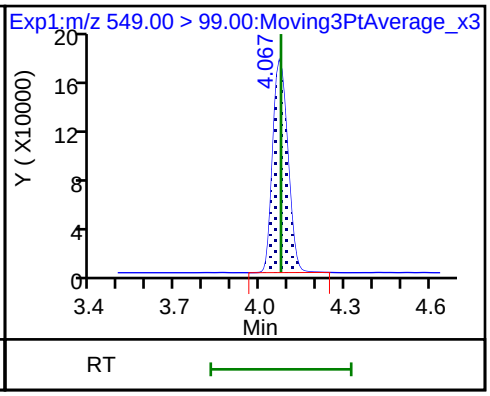
31 9-Chlorohexadecafluoro-3-oxanonane



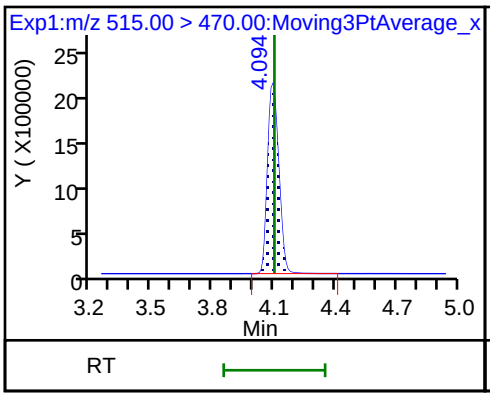
34 Perfluorononanesulfonic acid



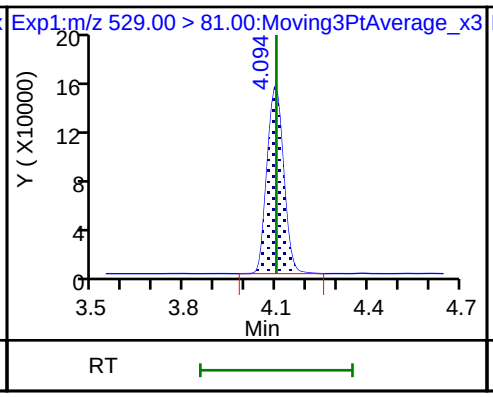
34 Perfluorononanesulfonic acid



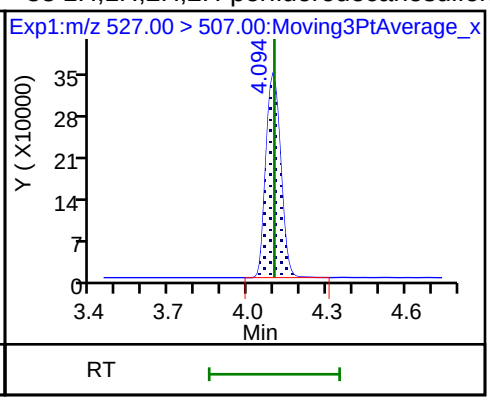
D 36 13C2 PFDA



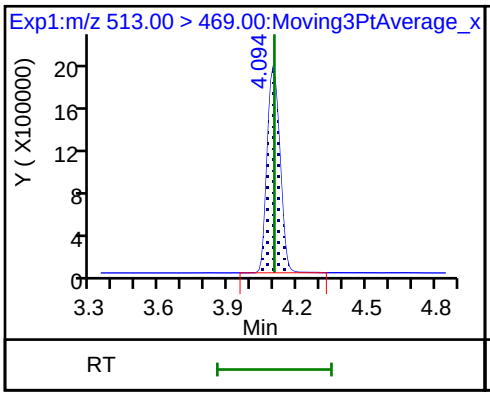
D 35 M2-8:2 FTS



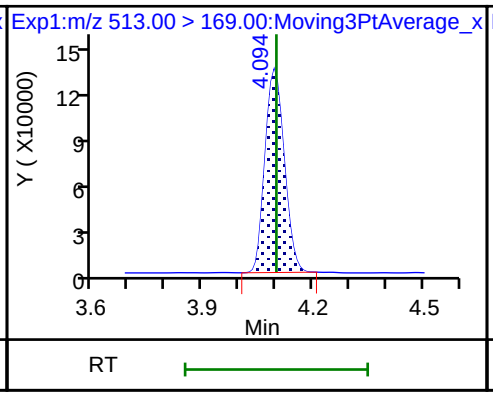
38 1H,1H,2H,2H-perfluorodecanesulfoni



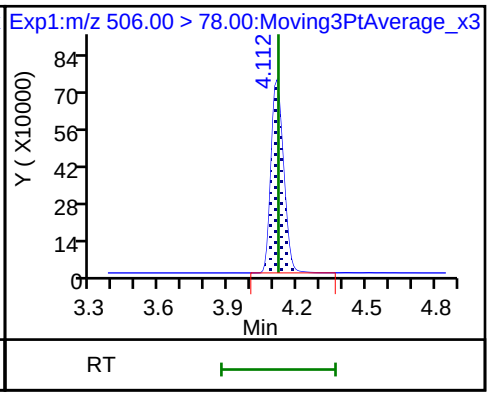
37 Perfluorodecanoic acid



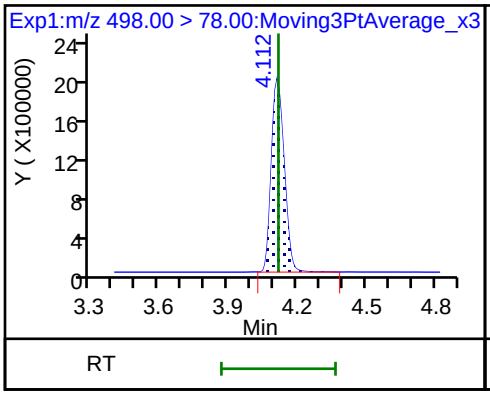
37 Perfluorodecanoic acid



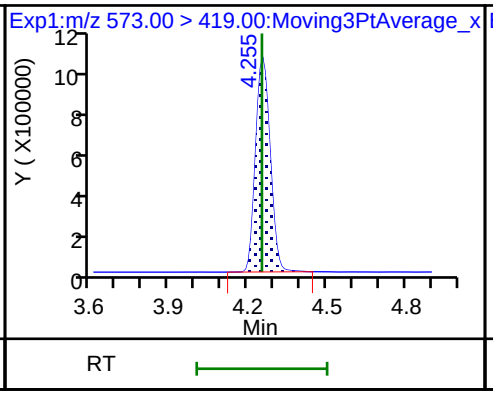
D 32 13C8 FOSA



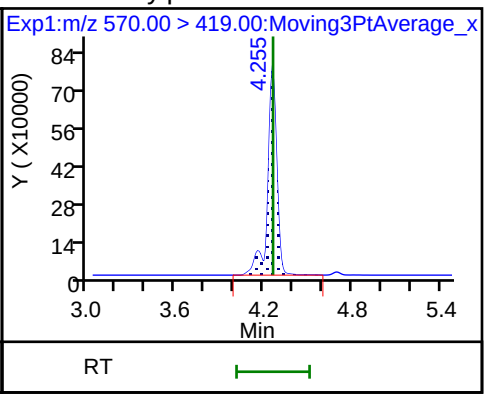
33 Perfluorooctanesulfonamide



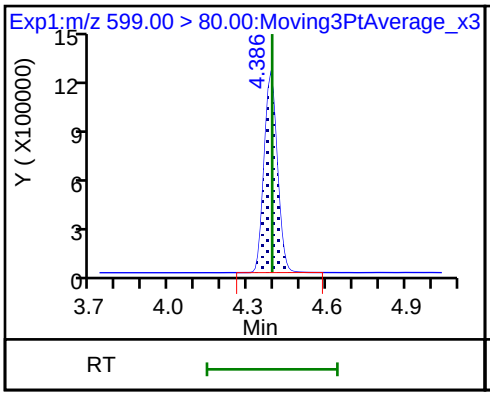
D 39 d3-NMeFOSAA



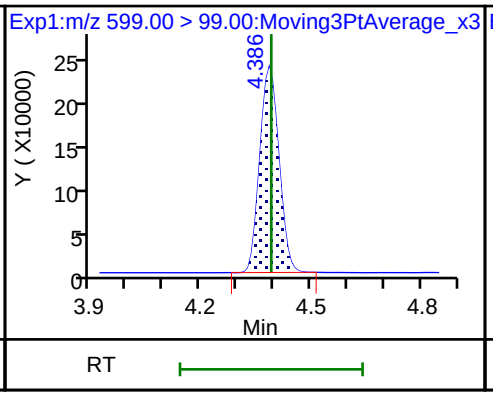
40 N-methylperfluorooctanesulfonamido



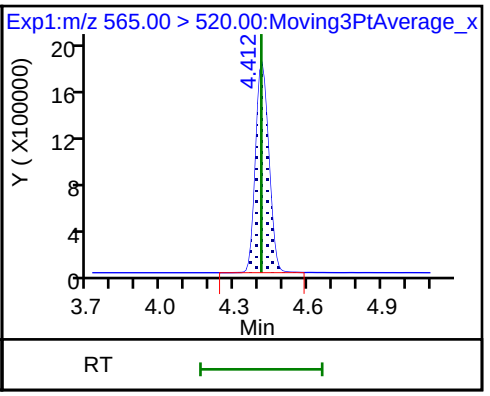
41 Perfluorodecanesulfonic acid



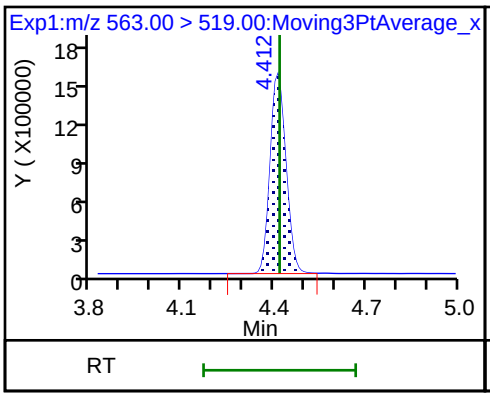
41 Perfluorodecanesulfonic acid



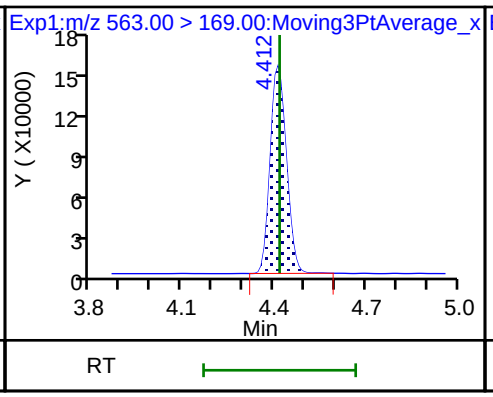
D 42 13C2 PFUnA



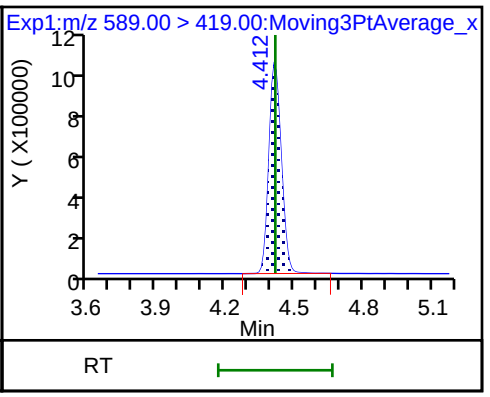
43 Perfluoroundecanoic acid



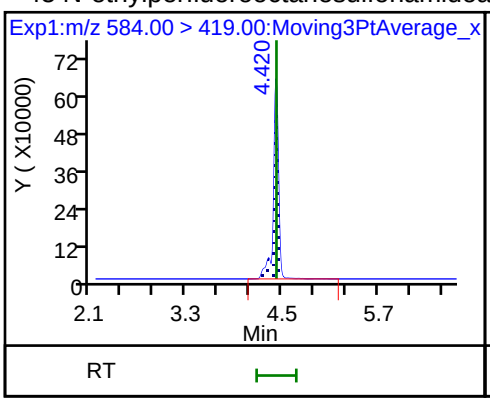
43 Perfluoroundecanoic acid



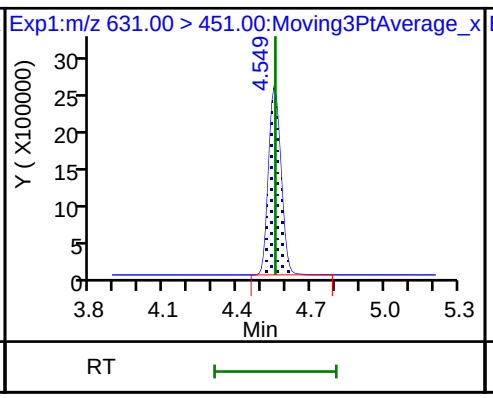
D 44 d5-NEtFOSAA



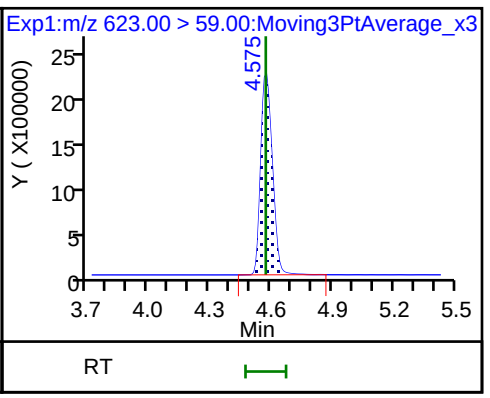
45 N-ethylperfluorooctanesulfonamidoa



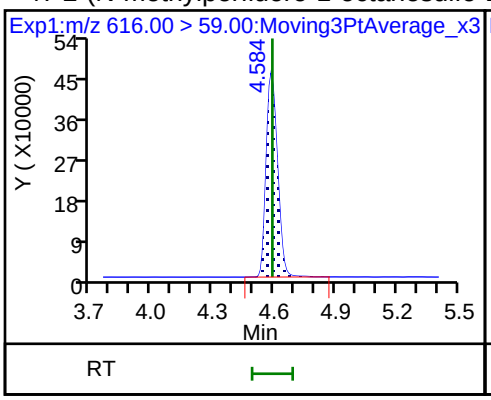
50 11-Chloroeicosafluoro-3-oxaundecan



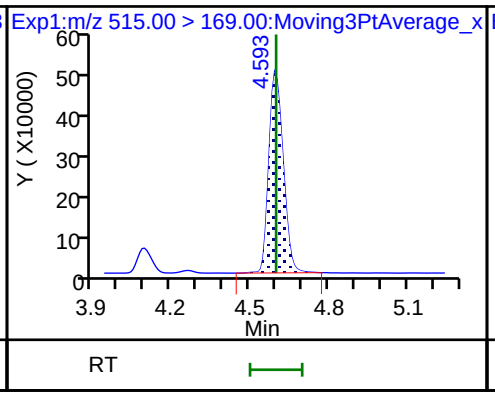
D 46 d7-N-MeFOSE-M



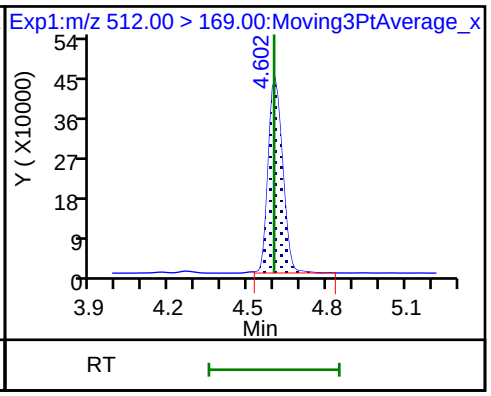
47 2-(N-methylperfluoro-1-octanesulfo



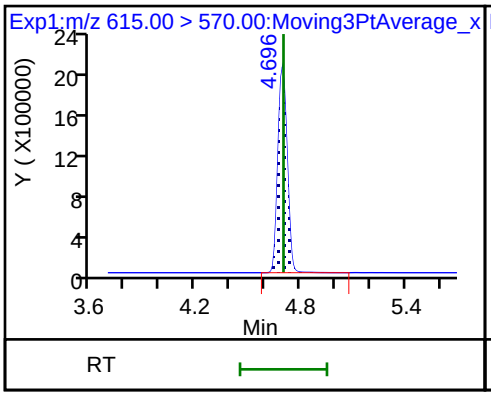
D 48 d-N-MeFOSA-M



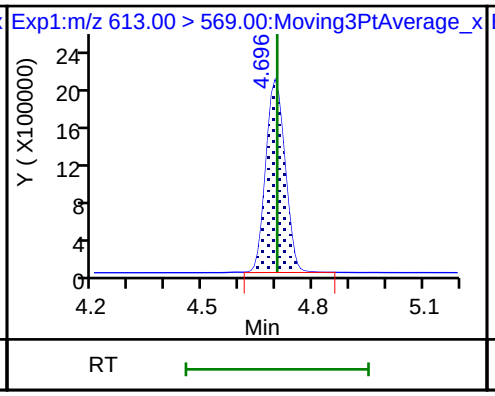
49 NMeFOSA



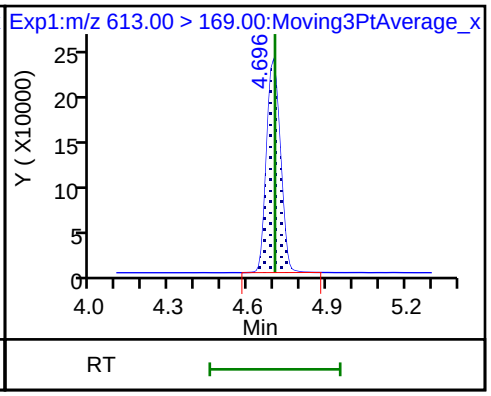
D 55 13C2 PFDoA



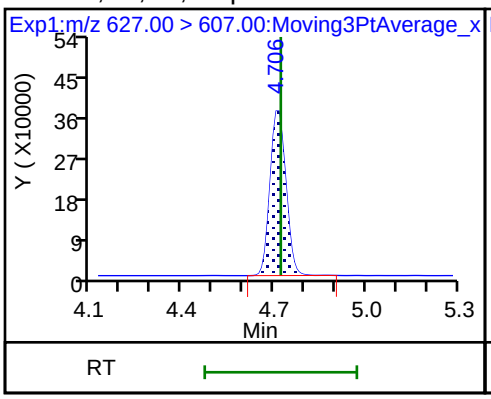
56 Perfluorododecanoic acid



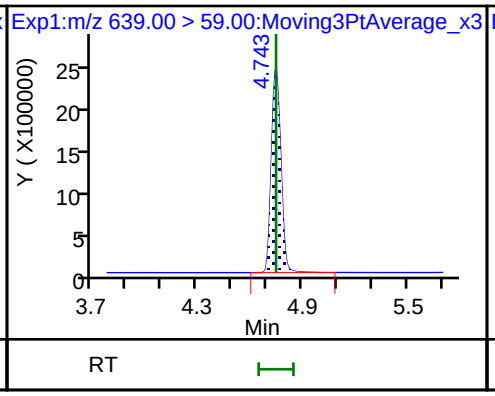
56 Perfluorododecanoic acid



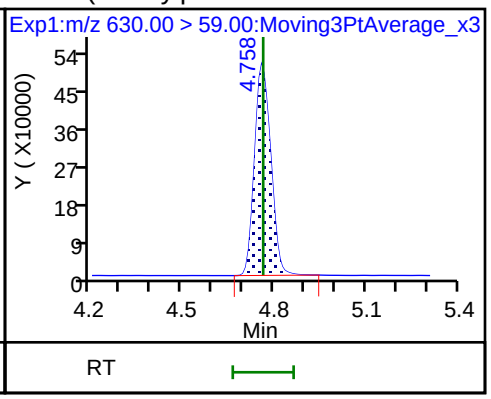
57 1H,1H,2H,2H-perfluorododecanesulfo



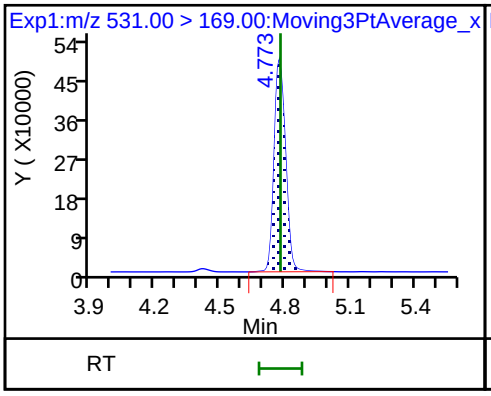
D 51 d9-N-EtFOSE-M



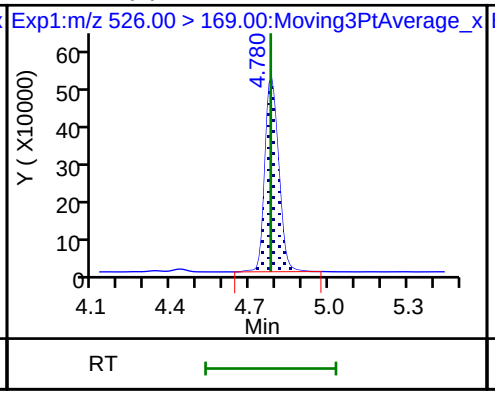
52 2-(N-ethylperfluoro-1-octanesulfon



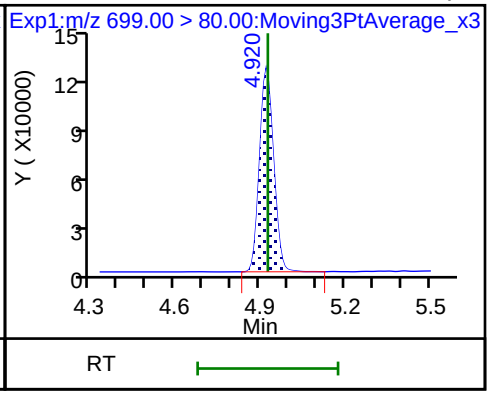
D 53 d-N-EtFOSA-M



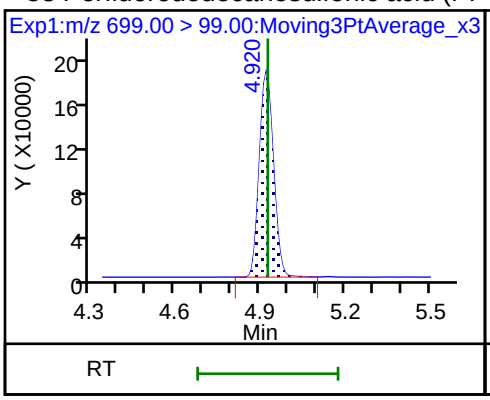
54 N-ethylperfluoro-1-octanesulfonami



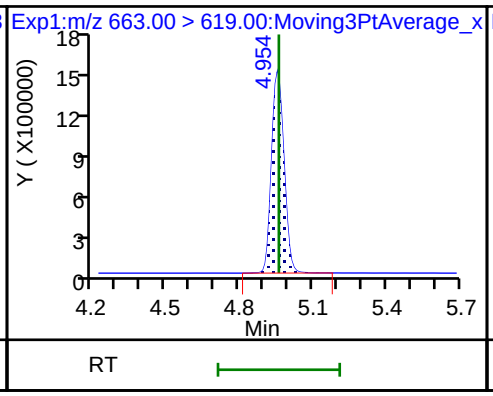
58 Perfluorododecanesulfonic acid (PF



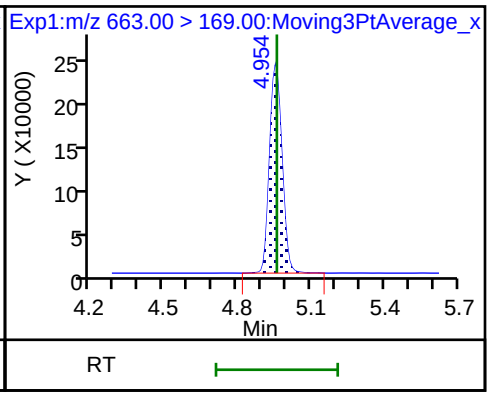
58 Perfluorododecanesulfonic acid (PF



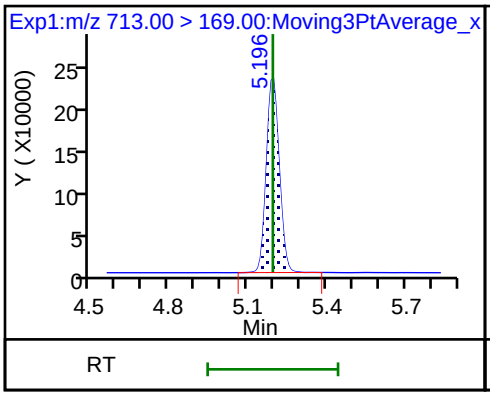
59 Perfluorotridecanoic acid



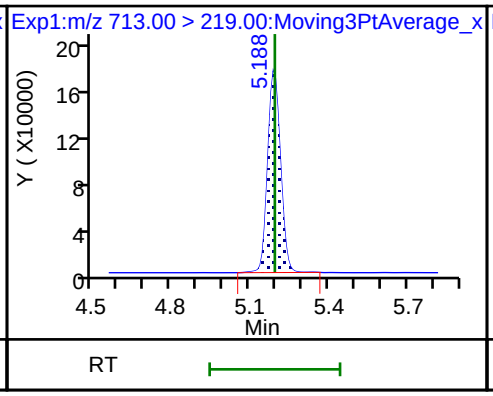
59 Perfluorotridecanoic acid



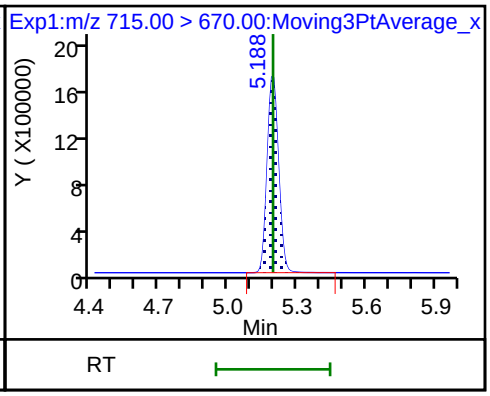
61 Perfluorotetradecanoic acid



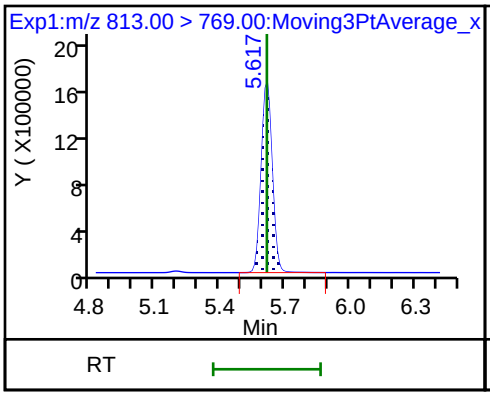
61 Perfluorotetradecanoic acid



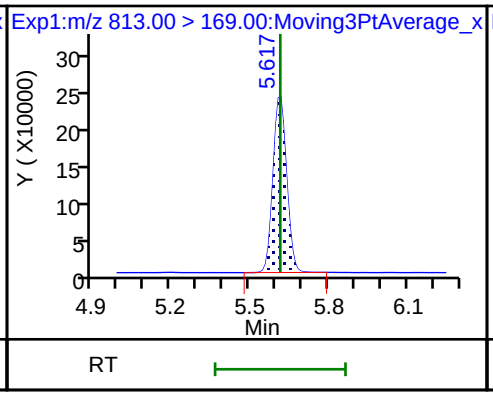
D 60 13C2 PFTeDA



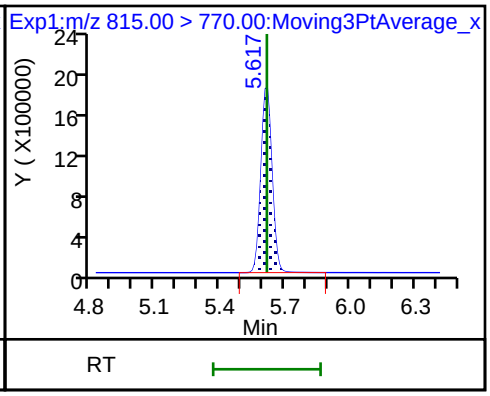
63 Perfluorohexadecanoic acid



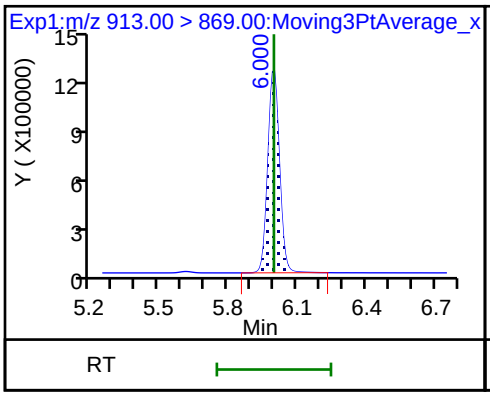
63 Perfluorohexadecanoic acid



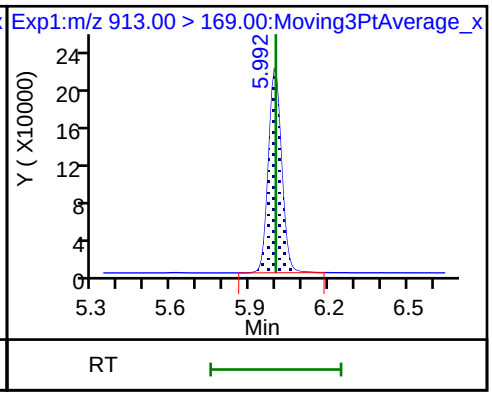
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-326624/1-A

Matrix: Solid Lab File ID: 2019.10.03.LLA_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.00(g) Date Analyzed: 10/03/2019 12:09

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.20		0.20	0.028
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.20		0.20	0.077
307-24-4	Perfluorohexanoic acid (PFHxA)	0.20		0.20	0.042
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.20		0.20	0.029
335-67-1	Perfluorooctanoic acid (PFOA)	0.20		0.20	0.086
375-95-1	Perfluorononanoic acid (PFNA)	0.20		0.20	0.036
335-76-2	Perfluorodecanoic acid (PFDA)	0.20		0.20	0.022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	0.20		0.20	0.036
307-55-1	Perfluorododecanoic acid (PFDoA)	0.20		0.20	0.067
72629-94-8	Perfluorotridecanoic acid (PFTriA)	0.20		0.20	0.051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.20		0.20	0.054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.20		0.20	0.025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.20		0.20	0.031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.20		0.20	0.035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.50		0.50	0.20
335-77-3	Perfluorodecanesulfonic acid (PFDS)	0.20		0.20	0.039
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.20		0.20	0.082
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00		2.00	0.39
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00		2.00	0.37
27619-97-2	6:2 FTS	2.00		2.00	0.15
39108-34-4	8:2 FTS	2.00		2.00	0.25

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-326624/1-A

Matrix: Solid Lab File ID: 2019.10.03.LLA_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.00(g) Date Analyzed: 10/03/2019 12:09

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 328148 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	79		25-150
STL00993	13C2 PFHxA	79		25-150
STL00990	13C4 PFOA	82		25-150
STL00995	13C5 PFNA	81		25-150
STL00996	13C2 PFDA	77		25-150
STL01892	13C4 PFHpA	84		25-150
STL00997	13C2 PFUnA	75		25-150
STL01893	13C5 PFPeA	80		25-150
STL00998	13C2 PFDoA	69		25-150
STL02116	13C2 PFTeDA	71		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	80		25-150
STL01056	13C8 FOSA	71		25-150
STL02118	d3-NMeFOSAA	73		25-150
STL02117	d5-NEtFOSAA	75		25-150
STL02279	M2-6:2 FTS	78		25-150
STL02280	M2-8:2 FTS	74		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_007.d
Lims ID: MB 320-326624/1-A
Client ID:
Sample Type: MB
Inject. Date: 03-Oct-2019 12:09:28 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-326624/1-a
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTLCMS01 Instrument ID: A13

Method: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\PFAS_A13.m
Limit Group: LC PFC ICAL
Last Update: 09-Oct-2019 11:32:40 Calib Date: 26-Sep-2019 22:27:54
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\ChromNA\Sacramento\ChromData\A13\20190927-83866.b\2019.09.26.ICAL_011.d

Column 1 : Det: EXP1
Process Host: CTX0336

First Level Reviewer: melnikv Date: 09-Oct-2019 11:32:40
Ratio Calibration: CCV Sample: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 2 13C4 PFBA										
217.00 > 172.00	2.187	2.186	0.001	0.589	4799343	1.97		78.8	5244	
3 Perfluorobutanoic acid										
212.90 > 169.00	2.187	2.194	-0.007	1.000	16871	0.0101			4.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.523	2.522	0.001	0.680	4366150	2.01		80.2	6674	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.523	2.534	-0.011	1.000	12822	0.006947			2.9	M
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.865	2.865	0.0	1.003	2009	0.002118			22.2	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.855	2.865	-0.010	0.769	815881	1.72		73.8	1068	
9 Perfluorohexanoic acid										
313.00 > 269.00	2.908	2.908	0.0	1.004	12620	0.006912	Target=11.19		4.0	
313.00 > 119.00	2.897	2.908	-0.011	1.000	1515		8.33(5.60-16.79)		4.4	
D 10 13C2 PFHxA										
315.00 > 270.00	2.897	2.908	-0.011	0.781	4809215	1.98		79.1	11305	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	3.026	3.036	-0.010	1.000	1172	0.0122			5.2	
D 12 13C3 HFPO-DA										
332.10 > 287.00	3.026	3.036	-0.010	0.815	86697	1.68		67.2	1403	
14 Perfluoroheptanoic acid										
363.00 > 319.00	3.312	3.312	0.0	1.000	9666	0.004935	Target=3.75		4.8	
363.00 > 169.00	3.312	3.312	0.0	1.000	2453		3.94(1.88-5.63)		5.8	
D 17 13C4 PFHpA										
367.00 > 322.00	3.312	3.312	0.0	0.892	4695353	2.11		84.3	9261	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.312	3.322	-0.010	1.000	12631	0.007025	Target=2.92		49.3	
399.00 > 99.00	3.312	3.322	-0.010	1.000	4481		2.82(1.46-4.38)		18.4	
D 15 18O2 PFHxS										
403.00 > 84.00	3.312	3.322	-0.010	0.892	3327165	2.22		94.1	56638	
18 DONA										
377.00 > 251.00	3.363	3.362	0.001	0.823	4573	0.000856	Target=2.98		7.7	
377.00 > 85.00	3.372	3.362	0.010	0.825	1875		2.44(1.49-4.48)		11.6	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.686	3.694	-0.008	1.000	6527	0.007397			29.9	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.686	3.694	-0.008	0.993	1027890	1.85		77.8	5251	
D 23 13C8 PFOA										
421.00 > 376.00	3.703	3.711	-0.008	0.998	8779	0.003876		0.0	53.7	
D 25 13C4 PFOA										
417.00 > 372.00	3.712	3.711	0.001	1.000	5351608	2.05		82.1	19887	
* 24 13C2 PFOA										
415.00 > 370.00	3.712	3.720	-0.008		7142352	2.50			28467	
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.712	3.720	-0.008	1.000	26185	0.0118	Target=2.83		11.0	
413.00 > 169.00	3.712	3.720	-0.008	1.000	7496		3.49(1.41-4.24)		27.7	M
26 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.085	4.085	0.0	1.000	40431	0.0360	Target=4.25		297	
499.00 > 99.00	4.085	4.085	0.0	1.000	10845		3.73(2.13-6.38)		74.5	
D 27 13C8 PFOS										
507.00 > 99.00	4.077	4.085	-0.008	1.098	3692	0.005595		0.0	28.9	
D 28 13C4 PFOS										
503.00 > 80.00	4.085	4.085	0.0	1.101	2467618	1.91		79.8	31879	
D 29 13C5 PFNA										
468.00 > 423.00	4.102	4.102	0.0	1.105	4643967	2.03		81.3	21114	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	4.289	4.294	-0.005	1.050	3640	0.001393			18.4	
32 Perfluorooctanesulfonamide										
498.00 > 78.00	4.434	4.434	0.0	1.000	7961	0.006374			39.6	
D 33 13C8 FOSA										
506.00 > 78.00	4.434	4.434	0.0	1.195	3129375	1.78		71.3	16332	
35 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.461	4.460	0.001	1.000	1871	0.001993			21.8	
D 36 13C2 PFDA										
515.00 > 470.00	4.461	4.460	0.001	1.202	4699508	1.93		77.1	27672	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.461	4.460	0.001	1.202	1172604	1.78		74.1	6987	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.624	4.623	0.001	1.246	2935771	1.82		72.8	5094	
41 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.624	4.633	-0.009	1.000	8123	0.008774			6.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFUnA										
565.00 > 520.00	4.787	4.787	0.0	1.290	4284264	1.87		75.0	14832	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.787	4.787	0.0	1.290	3015525	1.87		74.6	19671	
42 Perfluoroundecanoic acid										
563.00 > 519.00	4.778	4.787	-0.009	0.998	10043	0.007043	Target=7.70		21.3	
563.00 > 169.00	4.787	4.787	0.0	1.000	1151		8.73(3.85-11.55)		8.8	
45 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	4.797	4.797	0.0	1.002	7914	0.008699			29.9	M
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.894	4.893	0.001	1.319	382557	1.02		8.2	950	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.925	4.925	0.0	1.327	765382	0.7991		32.0	30.5	
51 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.925	4.925	0.0	1.206	7013	0.001419			46.6	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.072	5.071	0.001	1.366	478248	1.22		9.7	1100	
D 57 13C2 PFDoA										
615.00 > 570.00	5.080	5.080	0.0	1.369	4128925	1.74		69.4	33186	
D 55 d-N-EtFOSA-M										
531.00 > 169.00	5.098	5.097	0.001	1.374	751871	0.7572		30.3	135	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	5.107	5.106	0.001	1.002	1725	0.005794			10.1	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.345	5.345	0.0	1.052	3962	0.002614	Target=6.94		17.6	
663.00 > 169.00	5.354	5.345	0.009	1.054	1051		3.77(3.47-10.40)		6.1	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.587	5.592	-0.005	1.000	940	0.006706	Target=0.92		14.8	
713.00 > 219.00	5.581	5.592	-0.011	0.999	1264		0.74(0.46-1.38)		41.0	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.587	5.593	-0.006	1.505	3705156	1.77		70.6	16043	
D 63 13C2 PFHxDA										
815.00 > 770.00	6.047	6.041	0.006	1.629	3207616	1.91		76.4	11308	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	6.047	6.047	0.0	1.000	33926	0.006679	Target=7.96		159	
813.00 > 169.00	6.047	6.047	0.0	1.000	4732		7.17(3.98-11.93)		76.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Oct-2019 11:32:41 Chrom Revision: 2.3 08-Oct-2019 19:07:00

Eurofins TestAmerica, Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_007.d

Injection Date: 03-Oct-2019 12:09:28 Instrument ID: A13

Lims ID: MB 320-326624/1-A

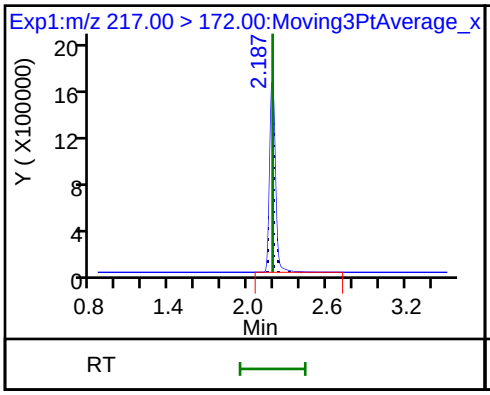
Client ID:

Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 4

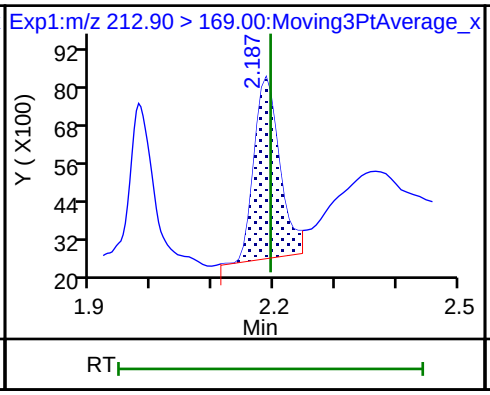
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A13 Limit Group: LC PFC ICAL

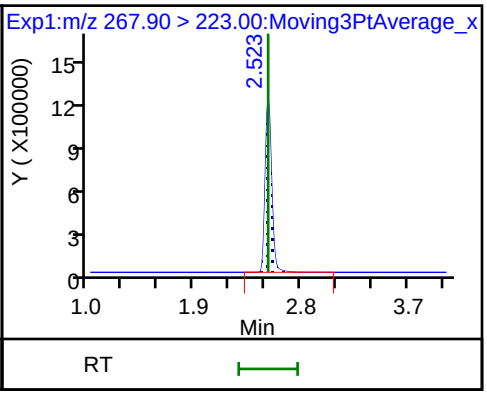
D 2 13C4 PFBA



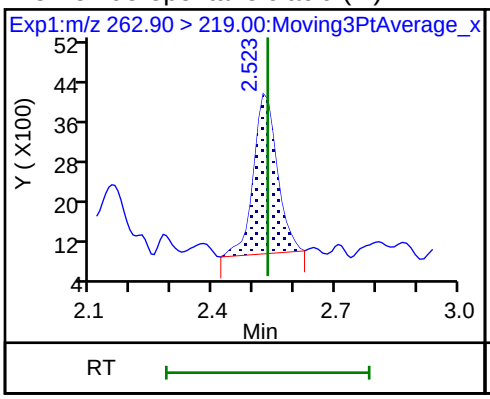
3 Perfluorobutanoic acid



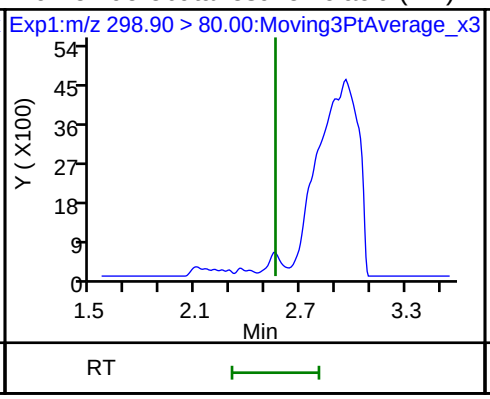
D 4 13C5 PFPeA



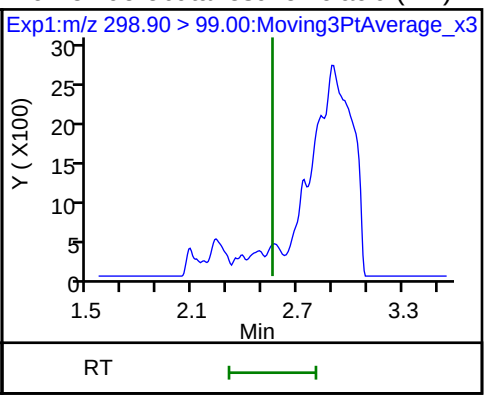
5 Perfluoropentanoic acid (M)



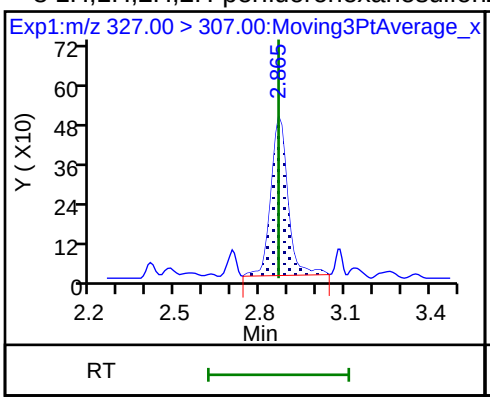
6 Perfluorobutanesulfonic acid (ND)



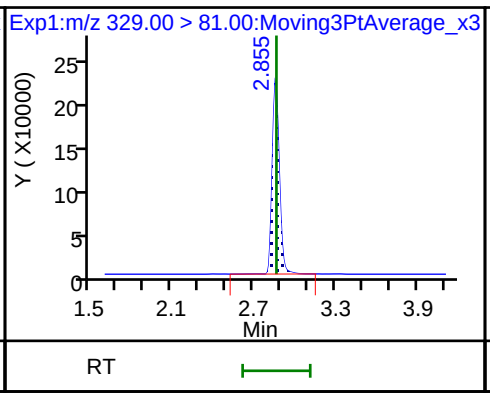
6 Perfluorobutanesulfonic acid (ND)



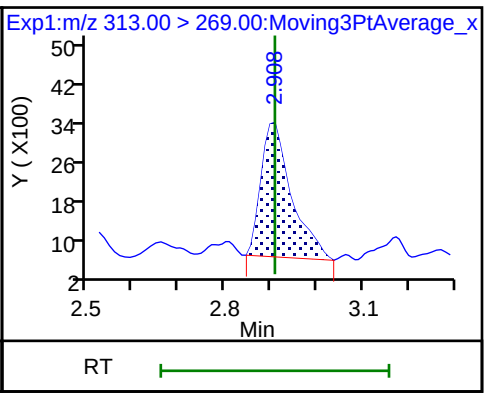
8 1H,1H,2H,2H-perfluorohexanesulfon



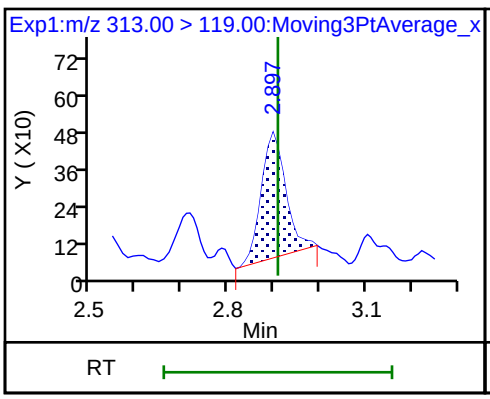
D 7 M2-4:2 FTS



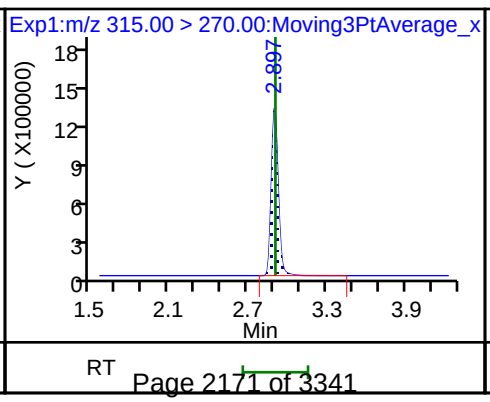
9 Perfluorohexanoic acid



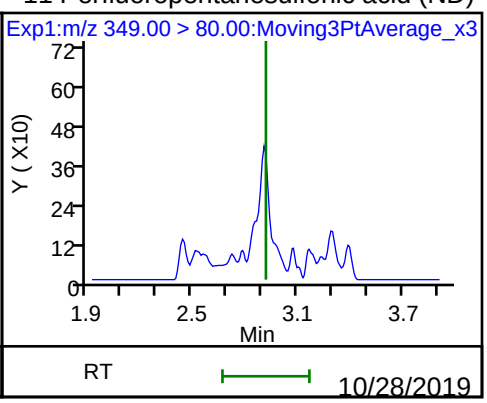
9 Perfluorohexanoic acid



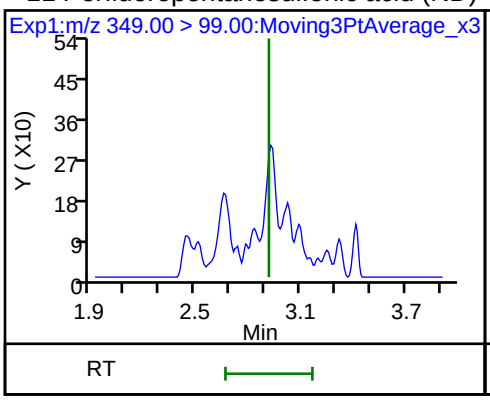
D 10 13C2 PFHxA



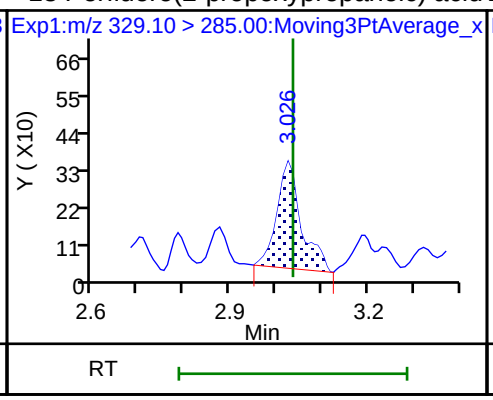
11 Perfluoropentanesulfonic acid (ND)



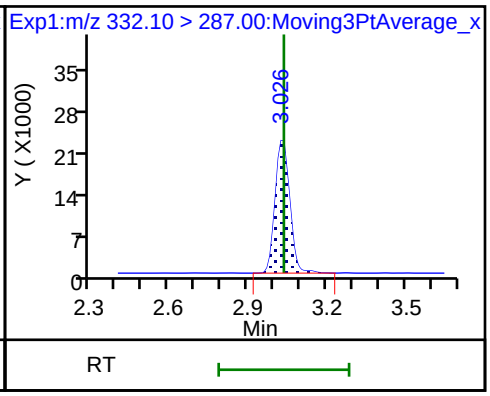
11 Perfluoropentanesulfonic acid (ND)



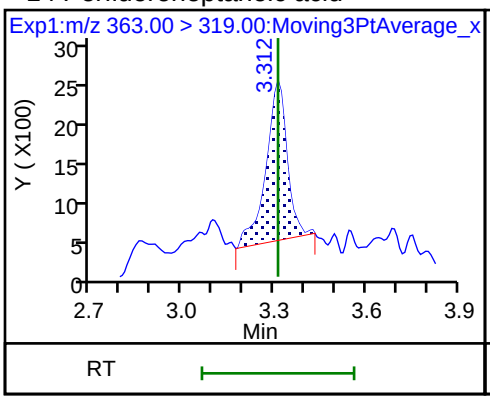
13 Perfluoro(2-propoxypropanoic) acid



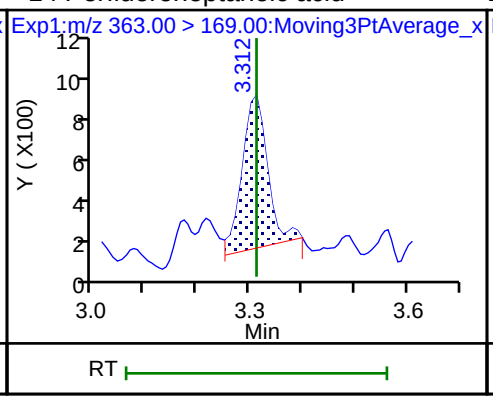
D 12 13C3 HFPO-DA



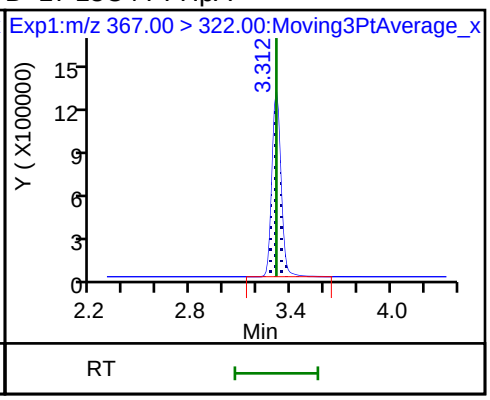
14 Perfluoroheptanoic acid



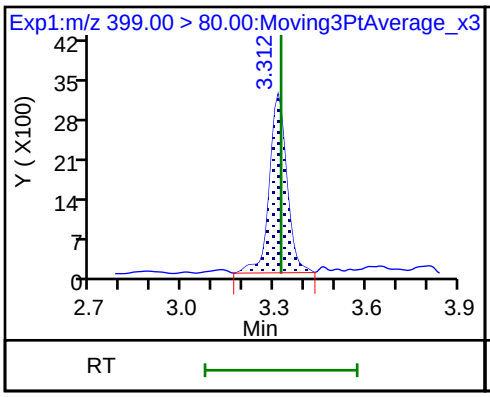
14 Perfluoroheptanoic acid



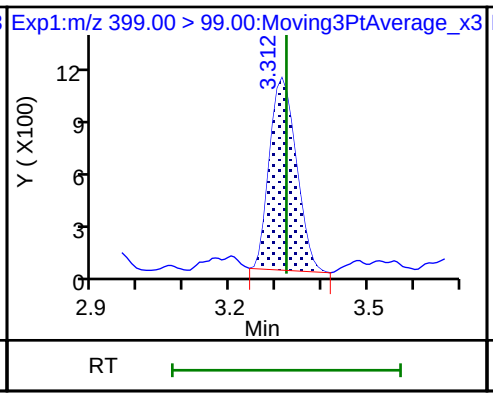
D 17 13C4 PFHpA



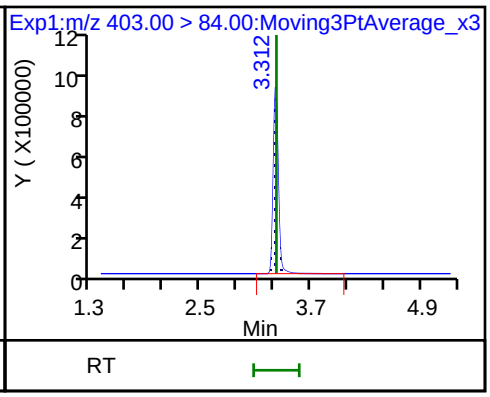
16 Perfluorohexanesulfonic acid



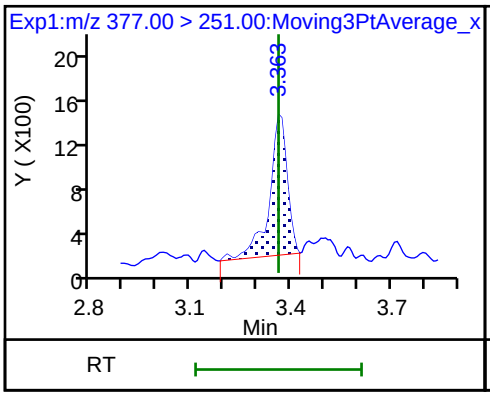
16 Perfluorohexanesulfonic acid



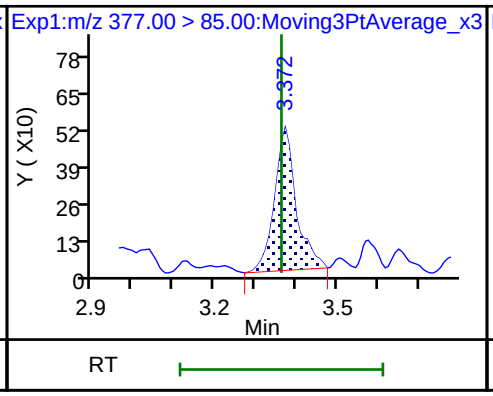
D 15 18O2 PFHxS



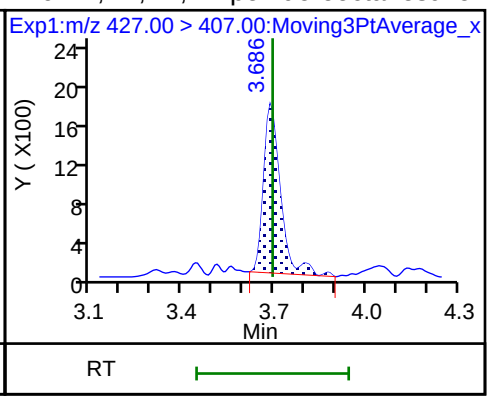
18 DONA



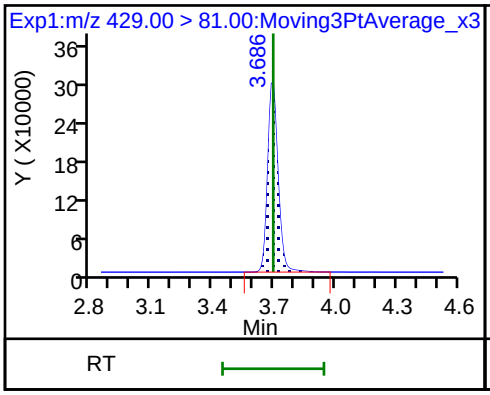
18 DONA



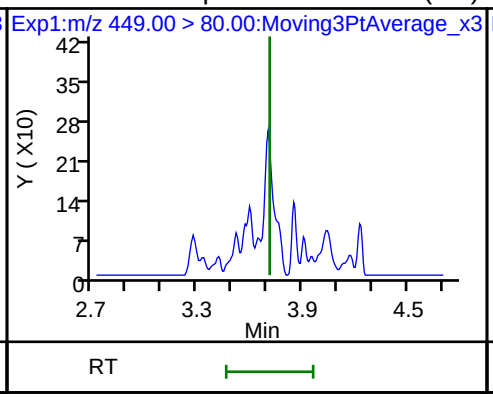
19 1H,1H,2H,2H-perfluorooctanesulfoni



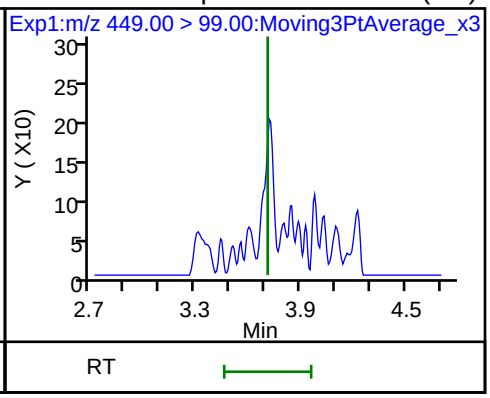
D 20 M2-6:2 FTS



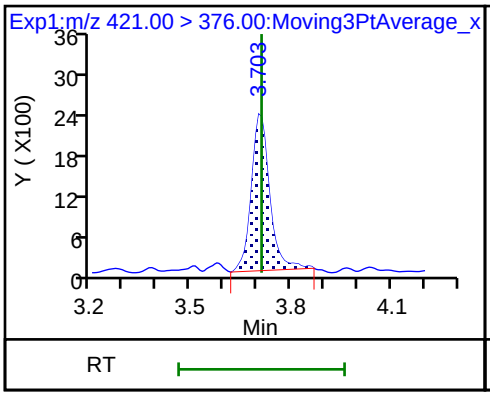
21 Perfluoroheptanesulfonic acid (ND)



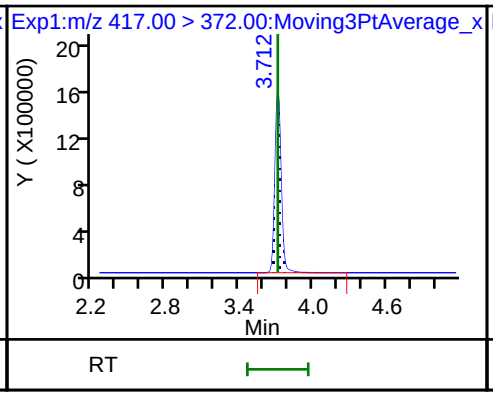
21 Perfluoroheptanesulfonic acid (ND)



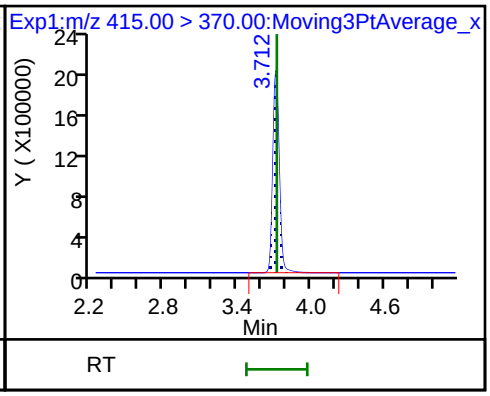
D 23 13C8 PFOA



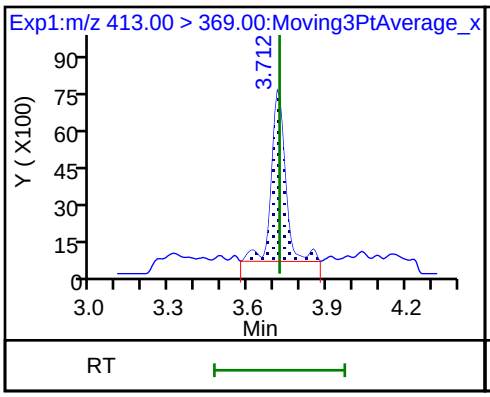
D 25 13C4 PFOA



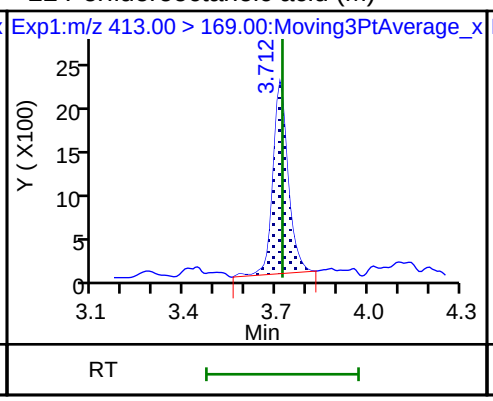
* 24 13C2 PFOA



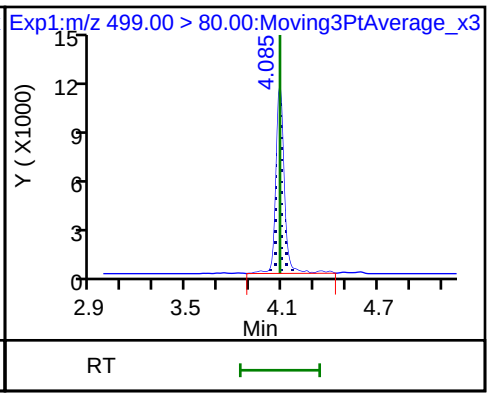
22 Perfluorooctanoic acid



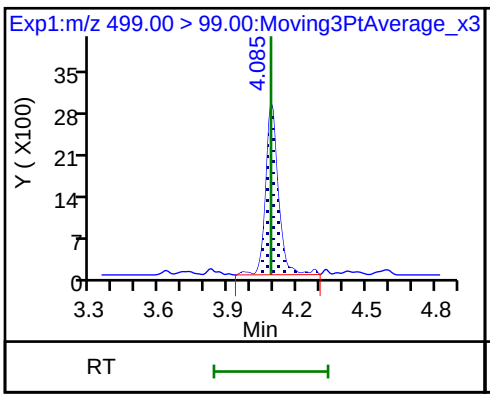
22 Perfluorooctanoic acid (M)



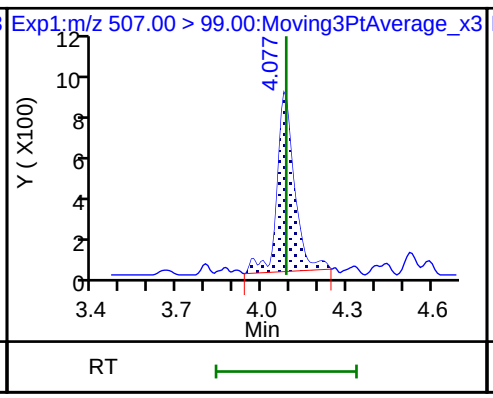
26 Perfluorooctanesulfonic acid



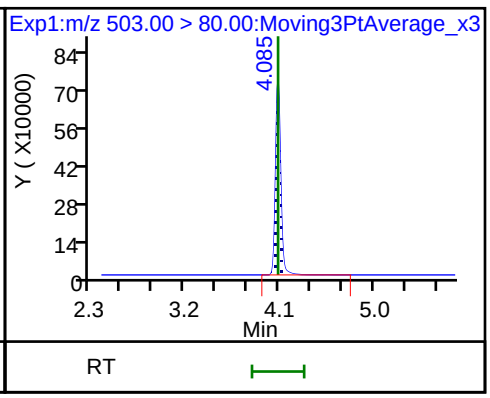
26 Perfluorooctanesulfonic acid



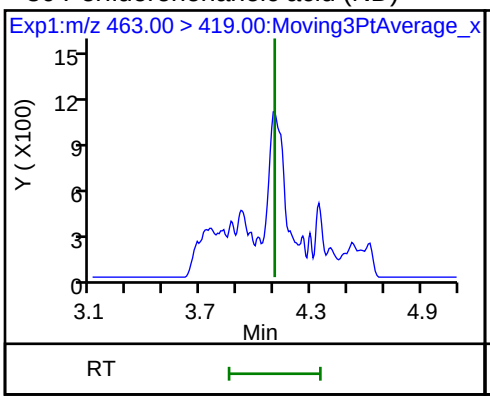
D 27 13C8 PFOS



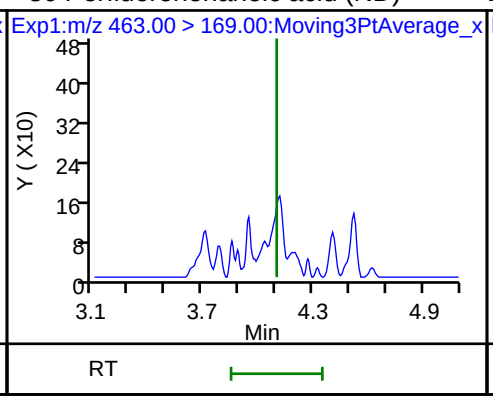
D 28 13C4 PFOS



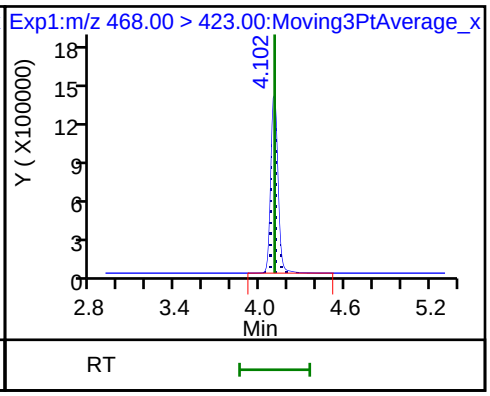
30 Perfluorononanoic acid (ND)



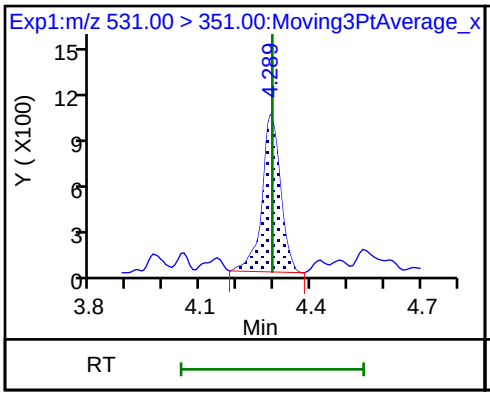
30 Perfluorononanoic acid (ND)



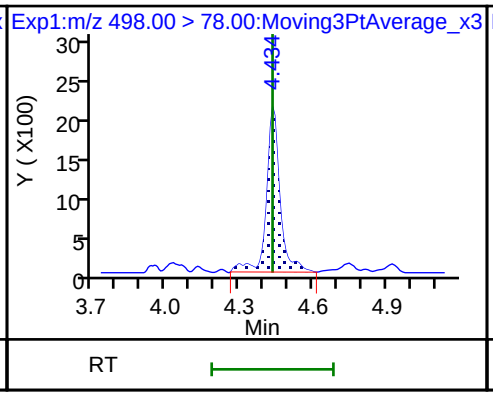
D 29 13C5 PFNA



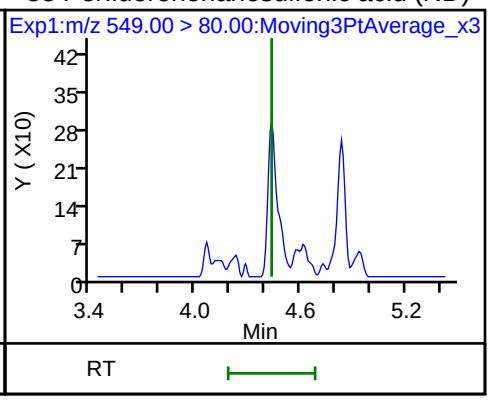
31 9-Chlorohexadecafluoro-3-oxanonane



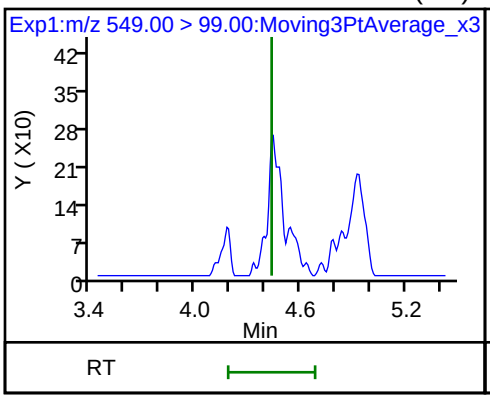
32 Perfluorooctanesulfonamide



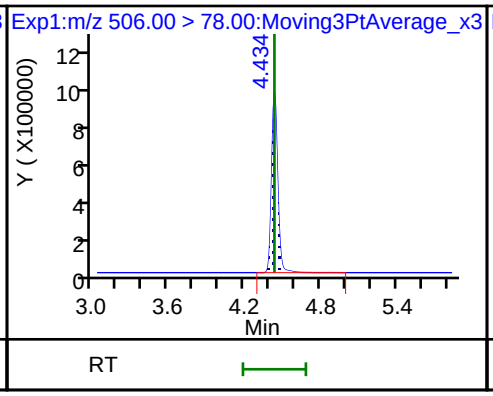
38 Perfluorononanesulfonic acid (ND)



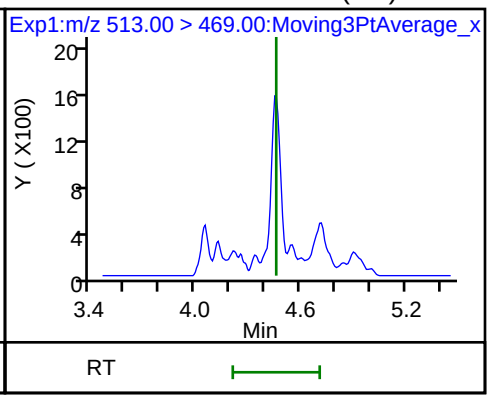
38 Perfluorononanesulfonic acid (ND)



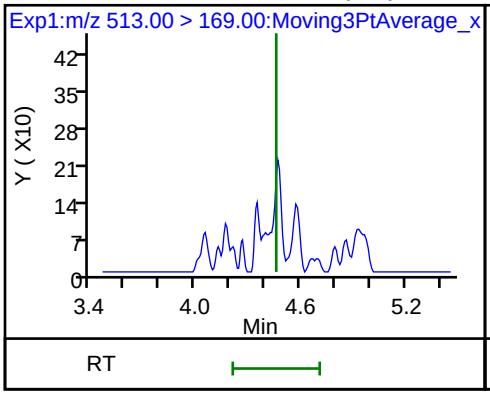
D 33 13C8 FOSA



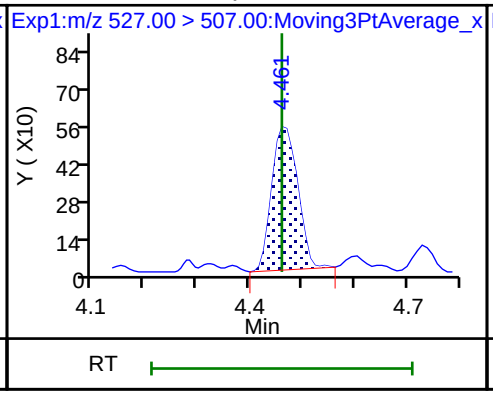
34 Perfluorodecanoic acid (ND)



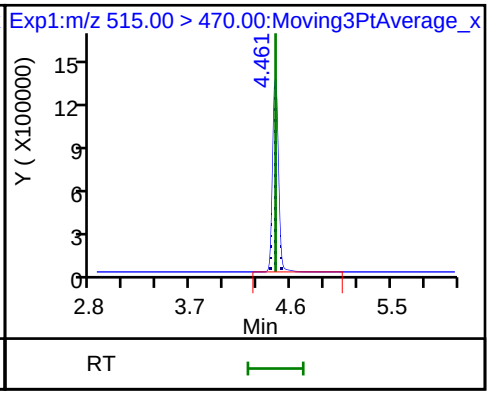
34 Perfluorodecanoic acid (ND)



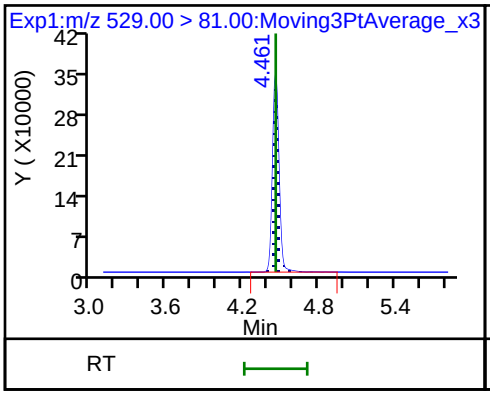
35 1H,1H,2H,2H-perfluorodecanesulfon



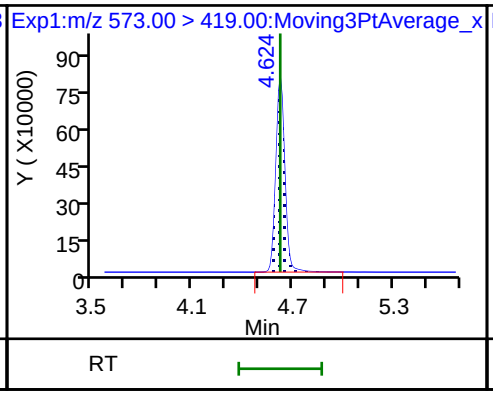
D 36 13C2 PFDA



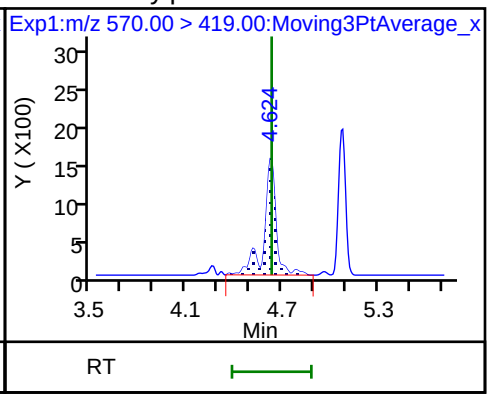
D 37 M2-8:2 FTS



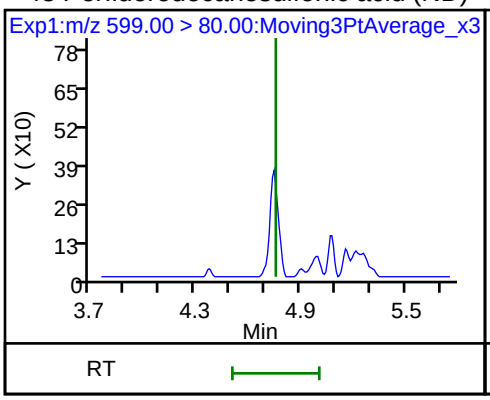
D 40 d3-NMeFOSAA



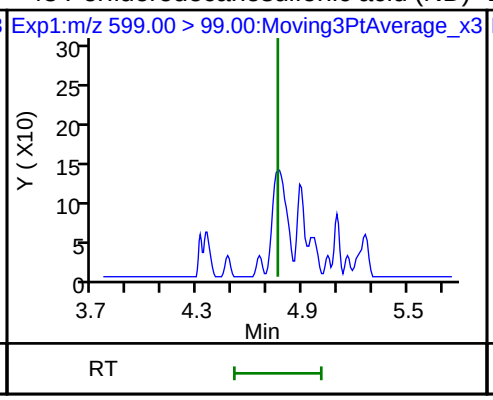
41 N-methylperfluorooctanesulfonamido



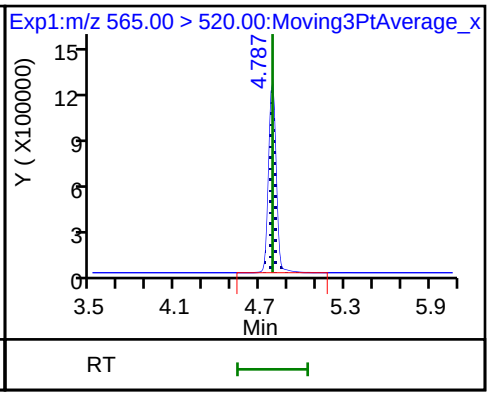
48 Perfluorodecanesulfonic acid (ND)



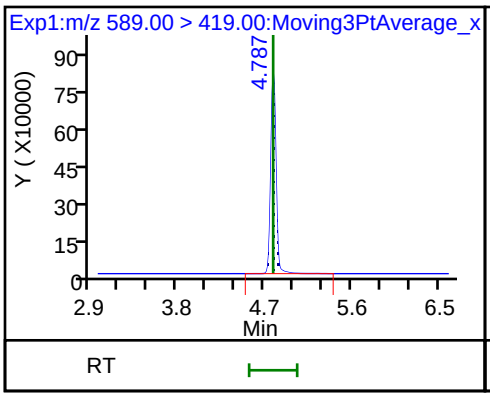
48 Perfluorodecanesulfonic acid (ND)



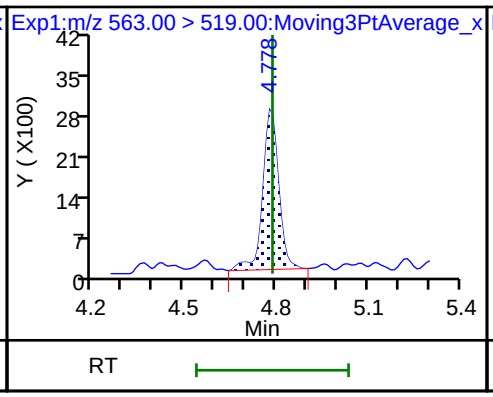
D 43 13C2 PFUnA



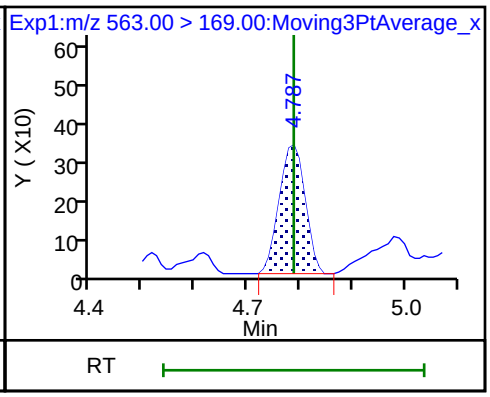
D 44 d5-NEtFOSAA



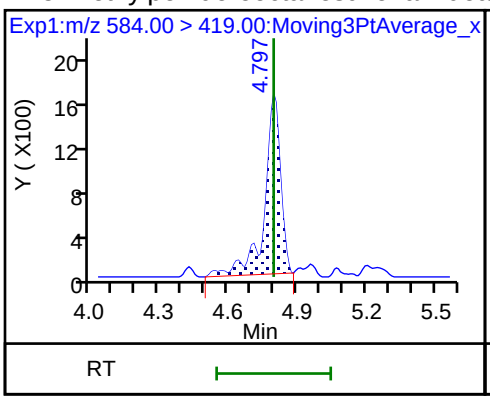
42 Perfluoroundecanoic acid



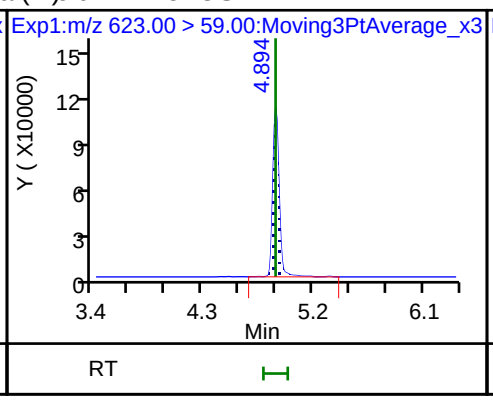
42 Perfluoroundecanoic acid



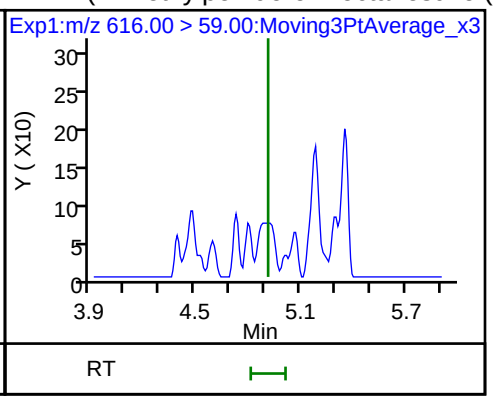
45 N-ethylperfluorooctanesulfonamidoa



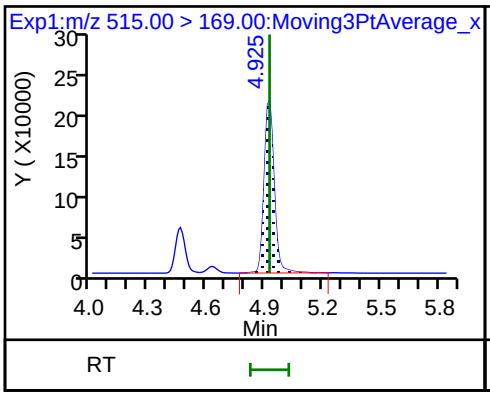
D 46 d7-N-MeFOSE-M



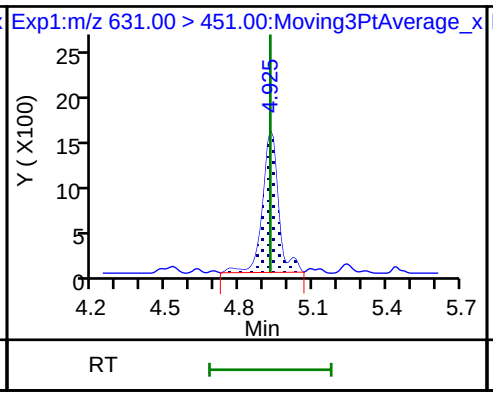
47 2-(N-methylperfluoro-1-octanesulfo (ND)



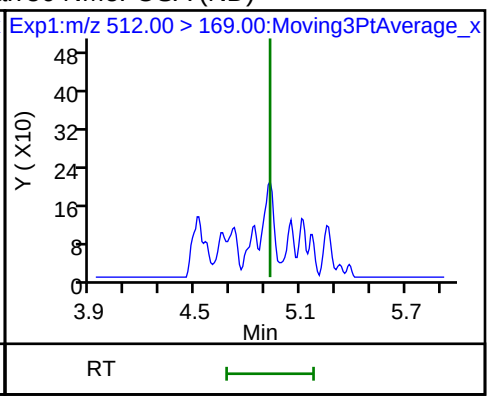
D 49 d-N-MeFOSA-M



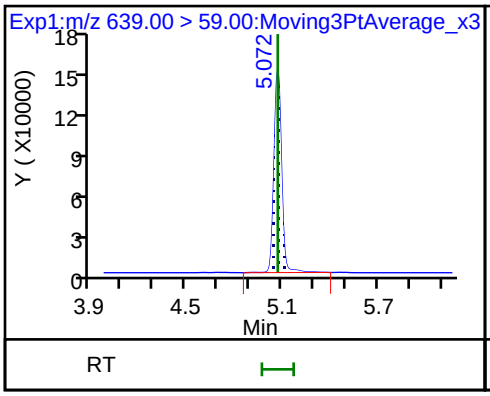
51 11-Chloroeicosafluoro-3-oxaundecan



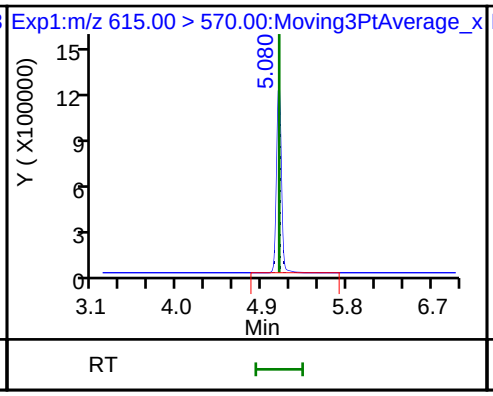
50 NMeFOSA (ND)



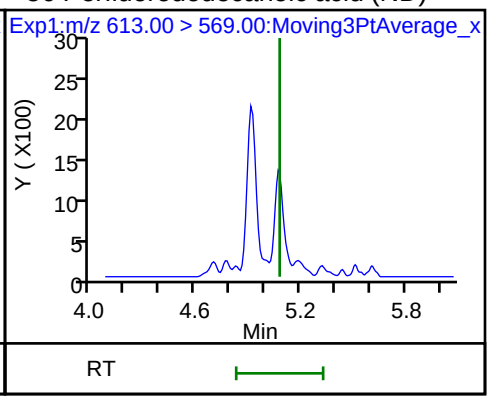
D 52 d9-N-EtFOSE-M



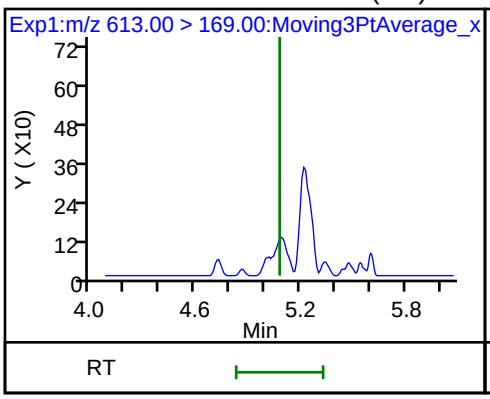
D 57 13C2 PFDoA



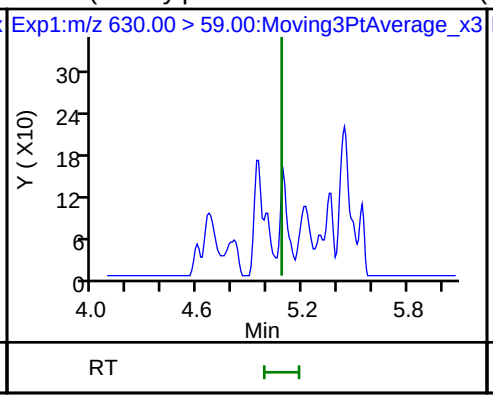
56 Perfluorododecanoic acid (ND)



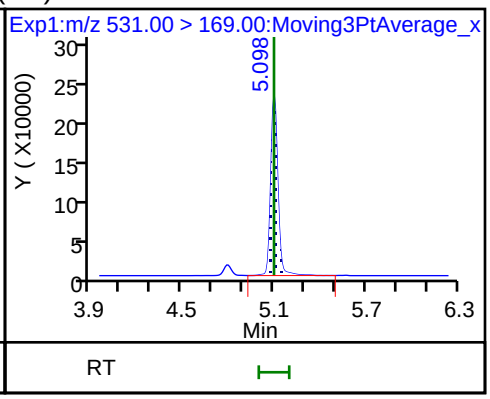
56 Perfluorododecanoic acid (ND)



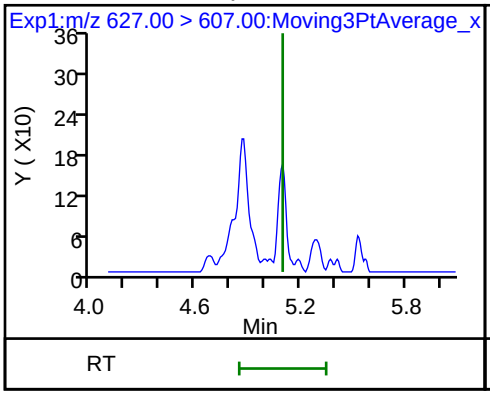
53 2-(N-ethylperfluoro-1-octanesulfon (ND)



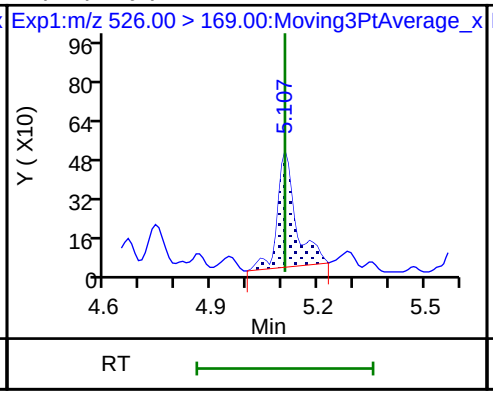
55 d-N-EtFOSA-M



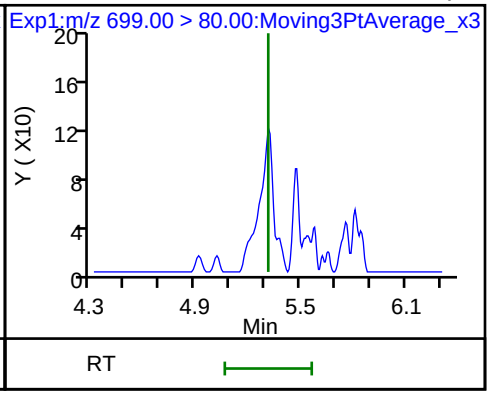
58 1H,1H,2H,2H-perfluorododecanesulfo (ND)



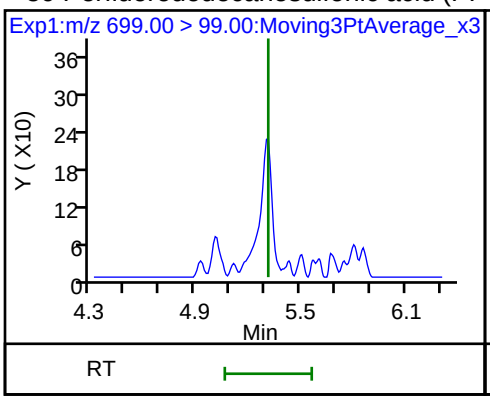
54 (N-ethylperfluoro-1-octanesulfonami



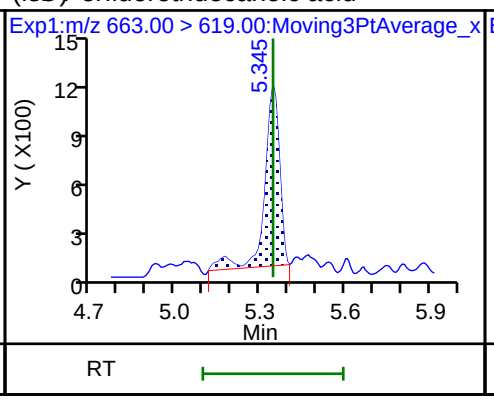
59 Perfluorododecanesulfonic acid (PF (ND)



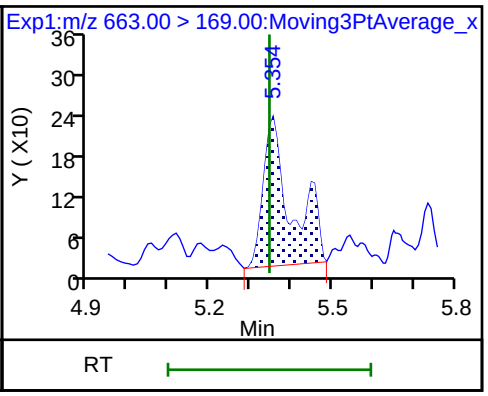
59 Perfluorododecanesulfonic acid (PF (ND)



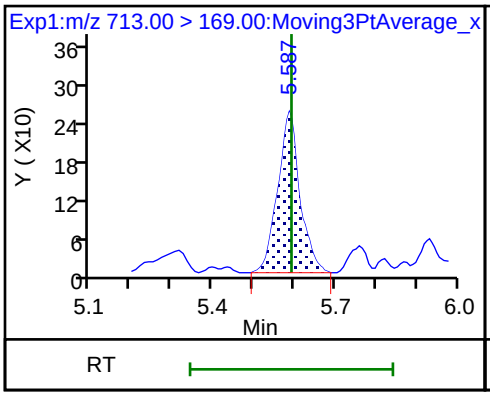
60 Perfluorotridecanoic acid



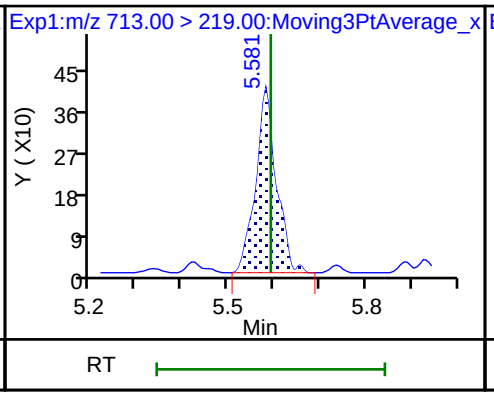
60 Perfluorotridecanoic acid



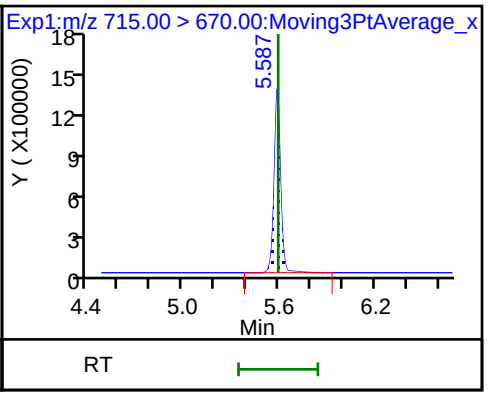
62 Perfluorotetradecanoic acid



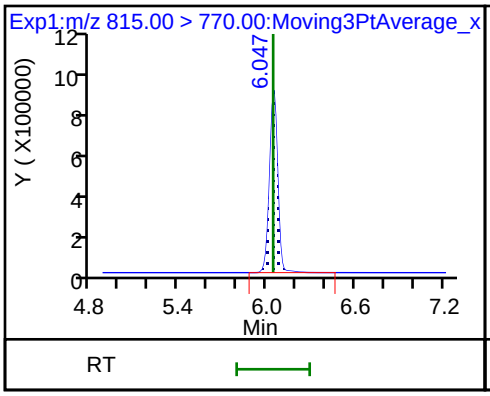
62 Perfluorotetradecanoic acid



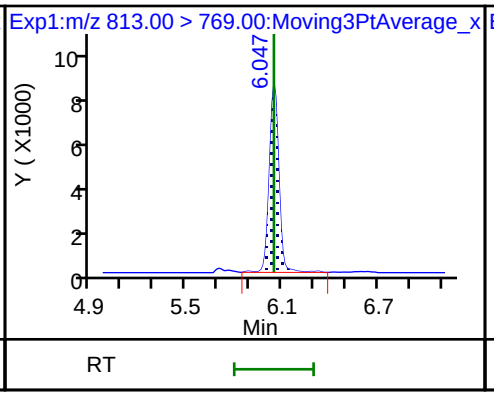
D 61 13C2 PFTeDA



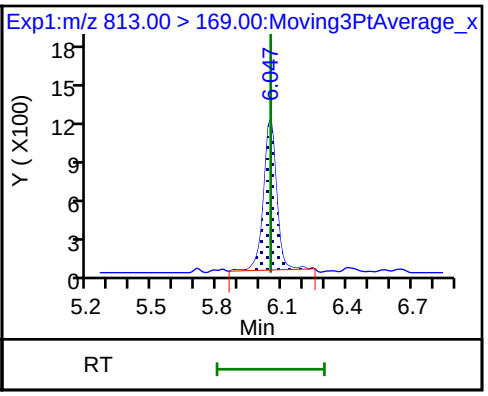
D 63 13C2 PFHxDA



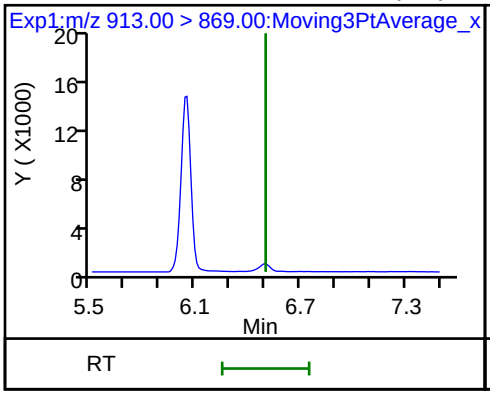
64 Perfluorohexadecanoic acid



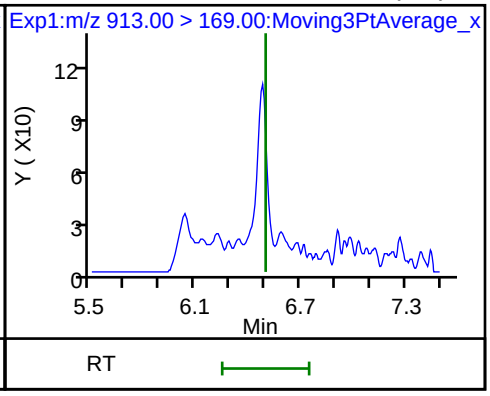
64 Perfluorohexadecanoic acid



39 Perfluorooctadecanoic acid (ND)



39 Perfluorooctadecanoic acid (ND)



Eurofins TestAmerica, Sacramento

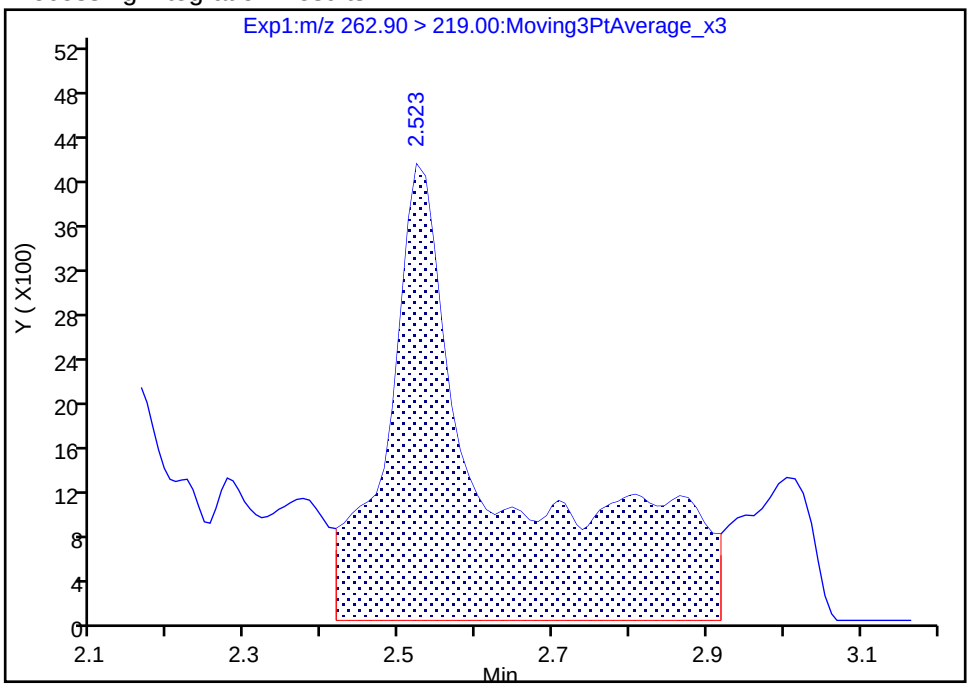
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_007.d				
Injection Date:	03-Oct-2019 12:09:28	Instrument ID:	A13		
Lims ID:	MB 320-326624/1-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

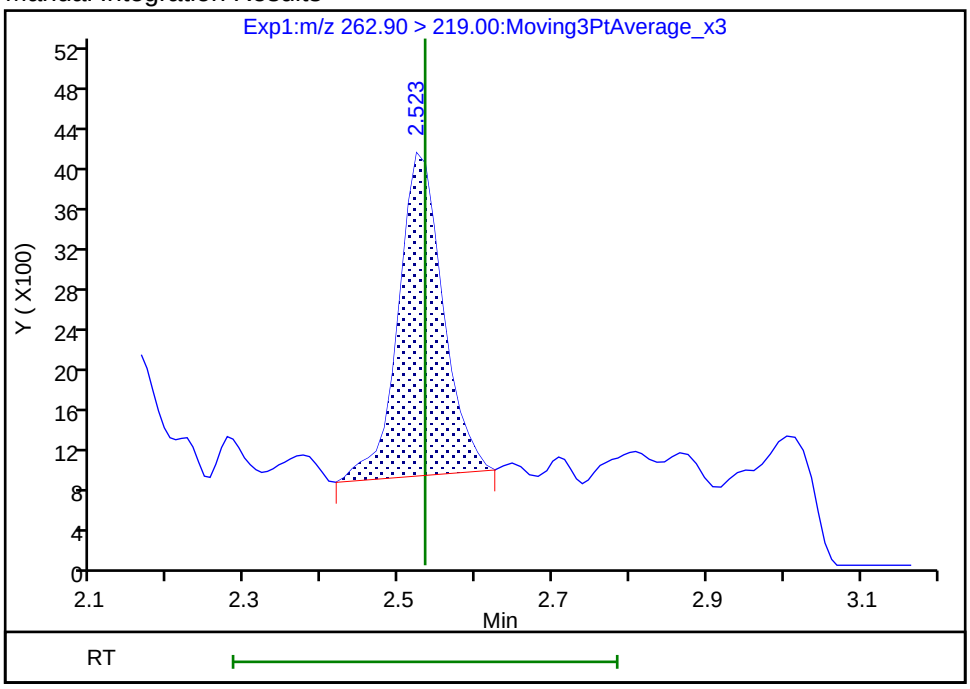
Processing Integration Results

RT: 2.52
Area: 41094
Amount: 0.022263
Amount Units: ng/ml



Manual Integration Results

RT: 2.52
Area: 12822
Amount: 0.006947
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 11:29:45
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

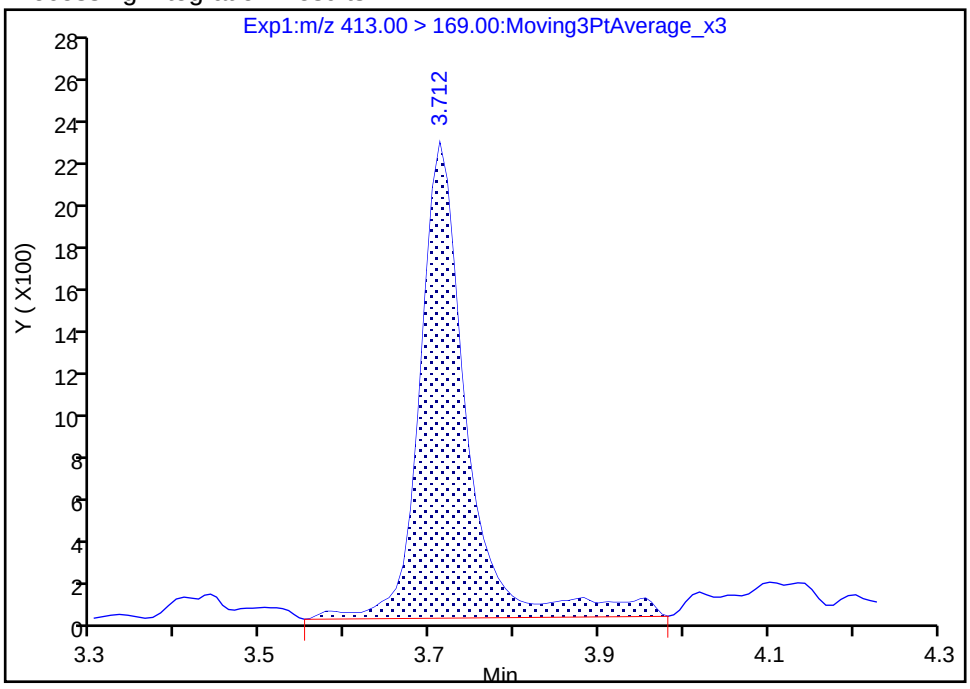
Data File: \\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_007.d
Injection Date: 03-Oct-2019 12:09:28 Instrument ID: A13
Lims ID: MB 320-326624/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A13 Limit Group: LC PFC ICAL
Column: Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

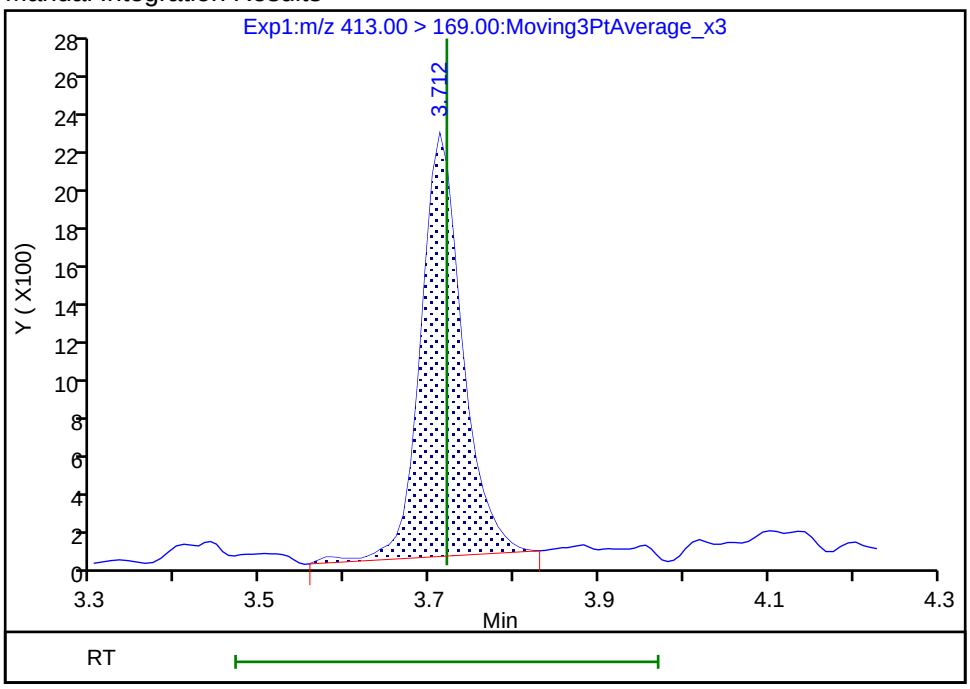
Processing Integration Results

RT: 3.71
Area: 8616
Amount: 0.011764
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 7496
Amount: 0.011764
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 11:30:11
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

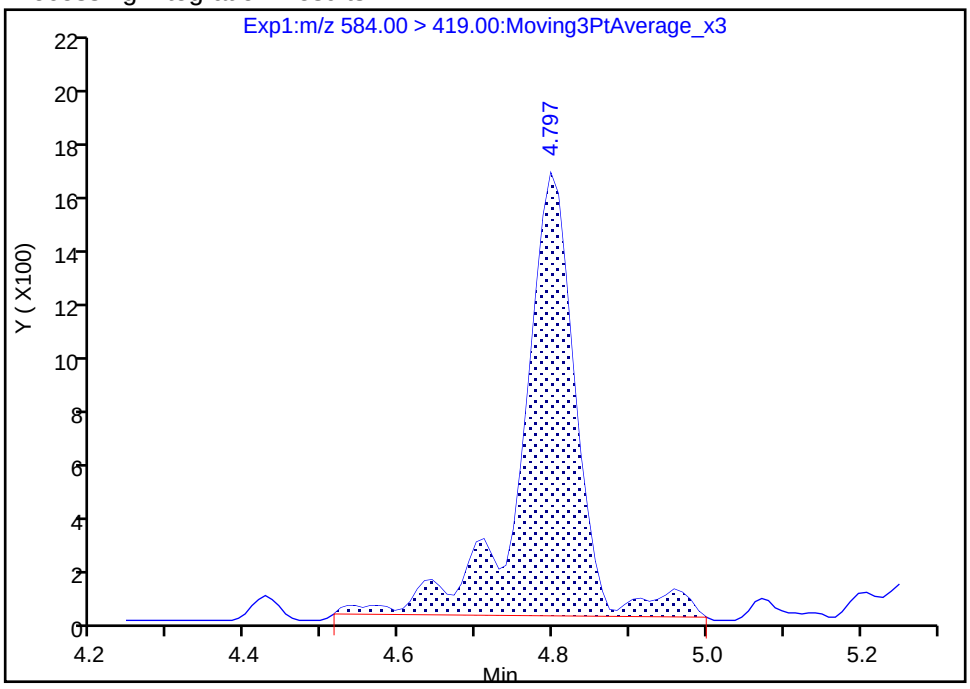
Data File:	\\ChromNA\Sacramento\ChromData\A13\20191003-84265.b\2019.10.03.LLA_007.d				
Injection Date:	03-Oct-2019 12:09:28	Instrument ID:	A13		
Lims ID:	MB 320-326624/1-A				
Client ID:					
Operator ID:	SACINSTLCMS01	ALS Bottle#:	1	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A13	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

45 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

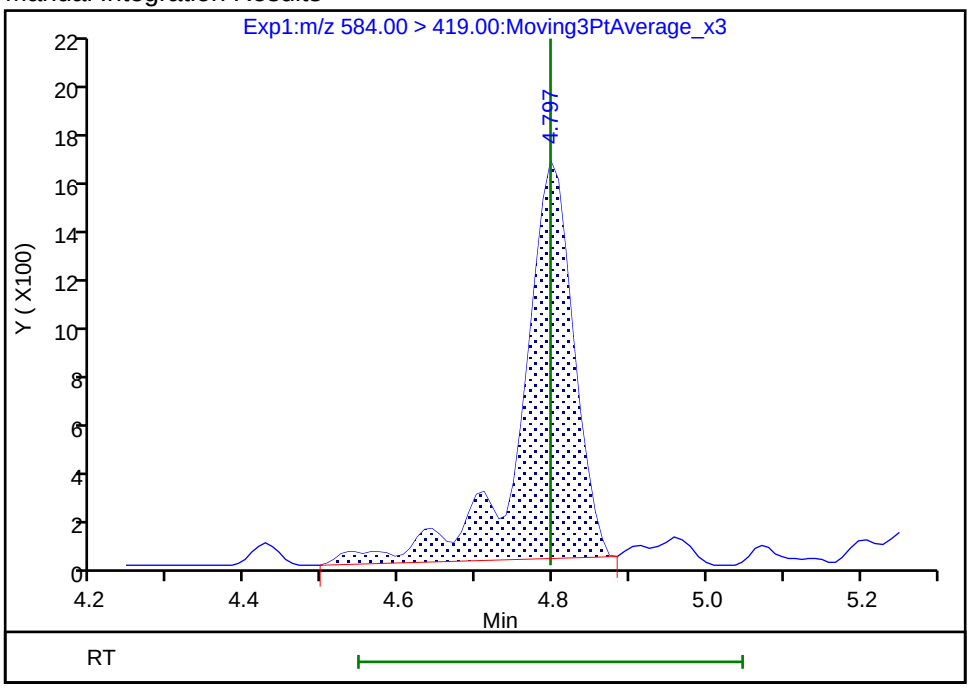
Processing Integration Results

RT: 4.80
Area: 8319
Amount: 0.009144
Amount Units: ng/ml



Manual Integration Results

RT: 4.80
Area: 7914
Amount: 0.008699
Amount Units: ng/ml



Reviewer: melnikv, 09-Oct-2019 11:30:36
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-328853/1-A

Matrix: Solid Lab File ID: 2019.10.08LLBB._018.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 250(mL) Date Analyzed: 10/09/2019 00:33

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.00		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.319	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00		2.00	0.32

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	111		25-150
STL00993	13C2 PFHxA	109		25-150
STL00990	13C4 PFOA	106		25-150
STL00995	13C5 PFNA	107		25-150
STL00996	13C2 PFDA	109		25-150
STL01892	13C4 PFHpA	112		25-150
STL00997	13C2 PFUnA	109		25-150
STL01893	13C5 PFPeA	110		25-150
STL00998	13C2 PFDoA	108		25-150
STL02116	13C2 PFTeDA	111		25-150
STL00994	18O2 PFHxS	111		25-150
STL00991	13C4 PFOS	104		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d
Lims ID: MB 320-328853/1-A
Client ID:
Sample Type: MB
Inject. Date: 09-Oct-2019 00:33:28 ALS Bottle#: 8 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-328853/1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 14:49:02 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0316

First Level Reviewer: nadonp Date: 18-Oct-2019 14:49:01
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.890	1.900	-0.010	0.566	6501909	2.76		111	6392	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.192	2.205	-0.013	1.000	7582	0.003427			1.5	
D 4 13C5 PFPeA										
267.90 > 223.00	2.192	2.205	-0.013	0.657	5399199	2.74		110	3377	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.516	2.524	-0.008	0.754	655385	1.74		74.7	1080	
D 9 13C2 PFHxA										
315.00 > 270.00	2.548	2.567	-0.019	0.763	6177259	2.72		109	2662	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.677	2.685	-0.008	0.802	1163120	2.95		118	1412	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.677	2.685	-0.008	1.000	14774	0.0210			16.6	
D 14 13C4 PFHpA										
367.00 > 322.00	2.935	2.941	-0.006	0.879	7253769	2.80		112	3000	
15 Perfluoroheptanoic acid										M
363.00 > 319.00	2.940	2.947	-0.007	1.002	5409	0.001660	Target=4.38		2.2	M
363.00 > 169.00	2.946	2.947	-0.001	1.004	1565		3.46(2.19-6.57)		2.7	M
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.935	2.947	-0.012	0.998	18107	0.007983	Target=3.29		38.6	M
399.00 > 99.00	2.935	2.947	-0.012	0.998	5854		3.09(1.64-4.93)		14.5	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.940	2.952	-0.012	0.881	4385075	2.63		111	3258	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.325	-0.008	0.994	716146	1.98		83.3	3799	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.331	3.325	0.006	1.004	10991	0.0156			45.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.346	-0.008	1.000	7960083	2.66		106	3669	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.346	-0.008		7978346	2.50			4230	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.338	3.346	-0.008	1.000	36465	0.0101	Target=2.91		4.9	M
413.00 > 169.00	3.345	3.346	-0.001	1.002	14544		2.51(1.45-4.36)		22.0	M
D 27 13C4 PFOS										
503.00 > 80.00	3.712	3.714	-0.002	1.112	4829538	2.50		104	4003	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.712	3.722	-0.010	1.000	24556	0.0113	Target=3.91		51.5	M
499.00 > 99.00	3.697	3.722	-0.025	0.996	6227		3.94(1.95-5.86)		18.9	M
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.729	-0.002	1.117	7119634	2.67		107	4098	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.086	-0.004	1.223	8190929	2.73		109	3617	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.095	-0.013	1.223	657715	1.93		80.7	1139	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.095	-0.013	1.000	1571	0.002583			31.1	
D 32 13C8 FOSA										
506.00 > 78.00	4.100	4.113	-0.013	1.228	2612127	2.62		105	2294	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.100	4.113	-0.013	1.000	17974	0.006262			43.6	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.247	-0.004	1.271	3827577	2.70		108	2811	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.252	4.256	-0.004	1.002	6656	0.005308			1.4	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.404	-0.004	1.318	6955368	2.71		109	4073	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.400	4.413	-0.013	1.318	3243267	2.66		106	1662	
45 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	4.409	4.421	-0.012	1.002	5931	0.005731			22.1	M
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.537	4.550	-0.013	1.222	2911	0.000770			11.5	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.563	4.567	-0.004		2605871	3.99		31.9	1343	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.590	4.594	-0.004		1173698	1.65		65.9	176	
D 55 13C2 PFDoA										
615.00 > 570.00	4.684	4.697	-0.013	1.403	7641993	2.71		108	4366	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.739	4.744	-0.005		2486744	3.66		29.3	1728	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.763	4.751	0.012	1.005	1568	0.007478			1.7	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.763	4.766	-0.003		802696	1.17		46.8	833	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.786	4.774	0.012	1.005	1443	0.004473			9.3	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.177	5.189	-0.012	1.000	1549	0.004955	Target=1.35		15.4	
713.00 > 219.00	5.177	5.189	-0.012	1.000	1571		0.99(0.67-2.02)		17.4	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.177	5.189	-0.012	1.551	5531403	2.76		111	4769	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.596	5.609	-0.013	1.000	53303	0.000616	Target=6.52		28.9	
813.00 > 169.00	5.596	5.609	-0.013	1.000	8256		6.46(3.26-9.77)		67.0	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.596	5.609	-0.013	1.676	5263619	2.39		95.7	5709	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 18-Oct-2019 14:49:02 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d

Injection Date: 09-Oct-2019 00:33:28 Instrument ID: A9

Lims ID: MB 320-328853/1-A

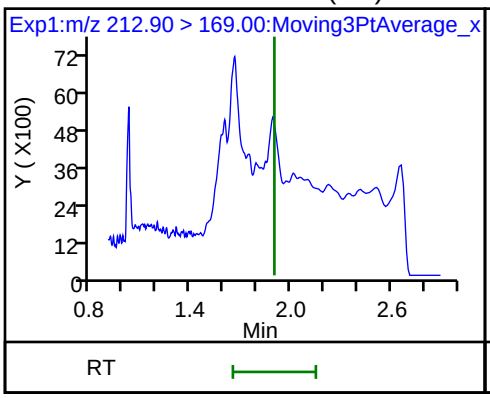
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 4

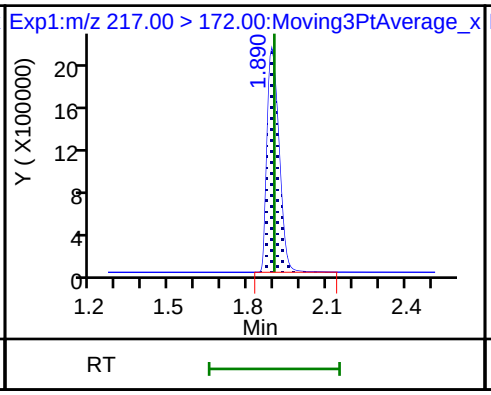
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

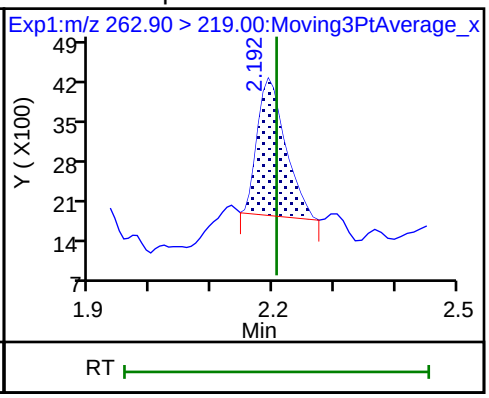
2 Perfluorobutanoic acid (ND)



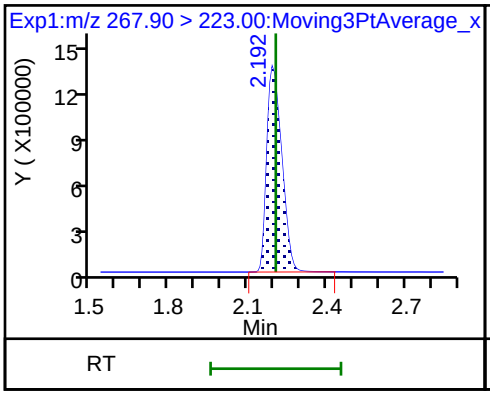
D 1 13C4 PFBA



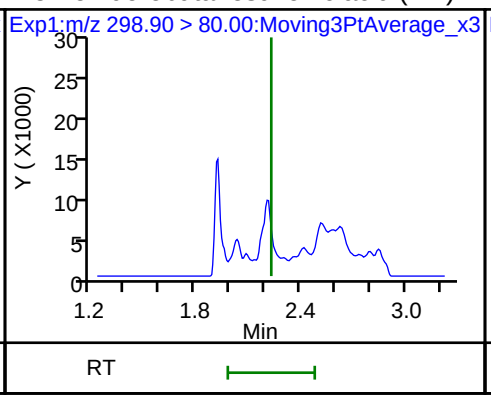
3 Perfluoropentanoic acid



D 4 13C5 PFPeA



5 Perfluorobutanesulfonic acid (ND)



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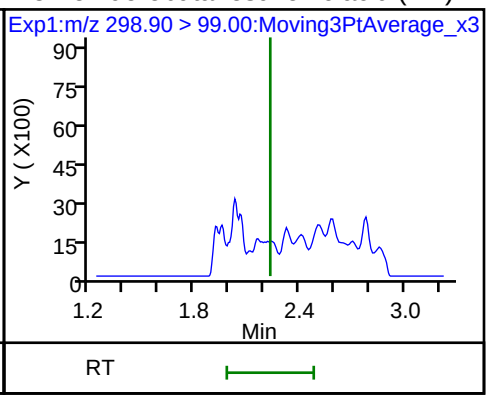
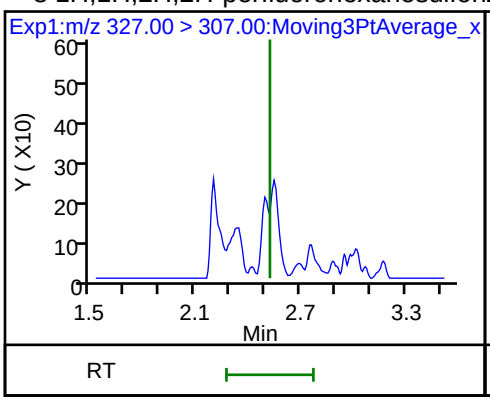
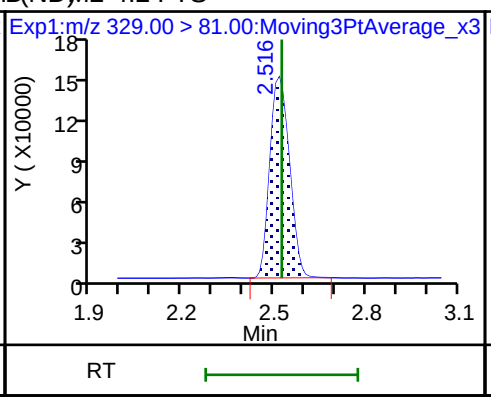


8 1H,1H,2H,2H-perfluorohexanesulfonic acid (ND)



D 7 M2-4:2 FTS



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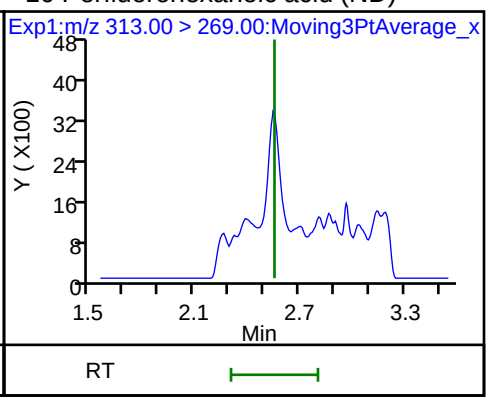

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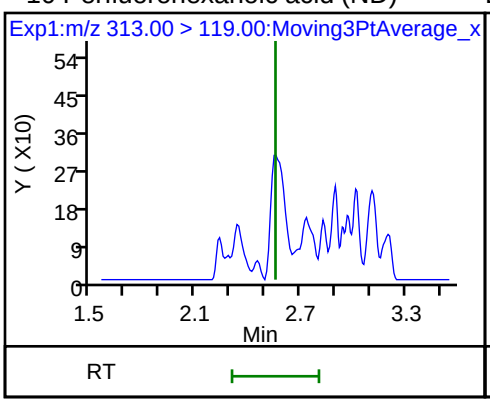
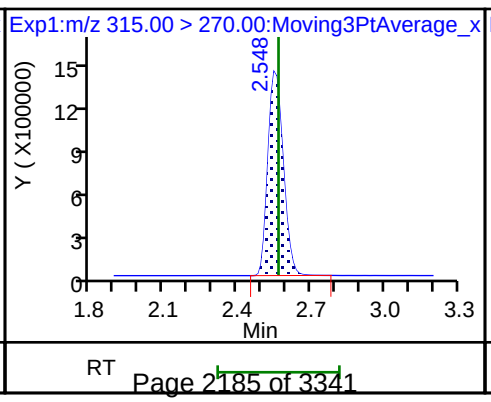
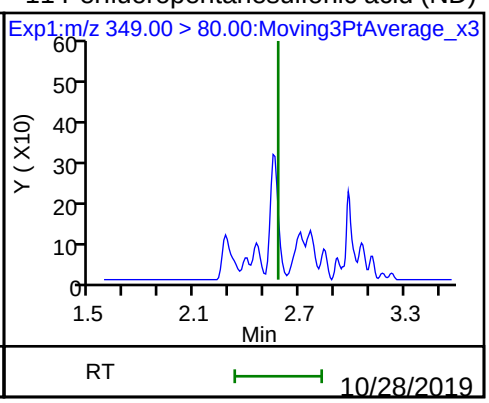


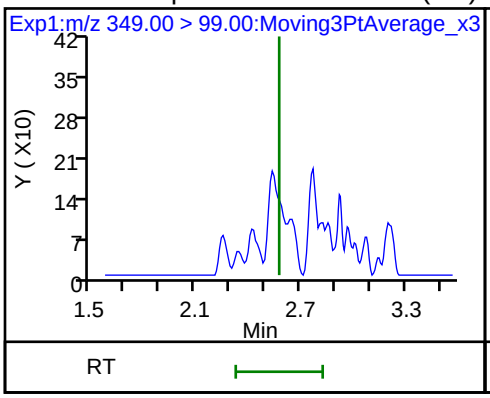
D 9 13C2 PFHxA



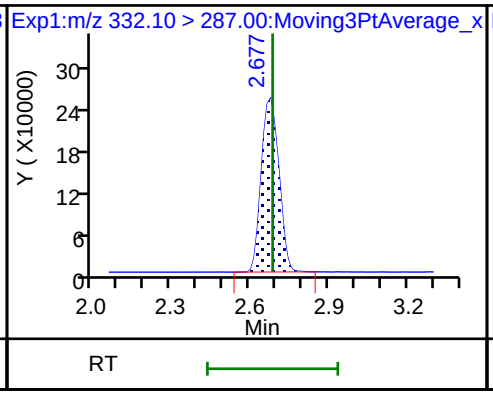
11 Perfluoropentanesulfonic acid (ND)



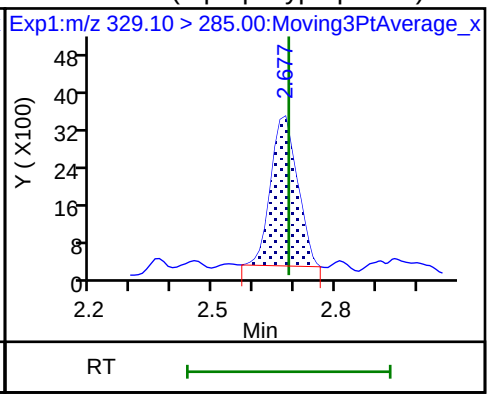
11 Perfluoropentanesulfonic acid (ND)



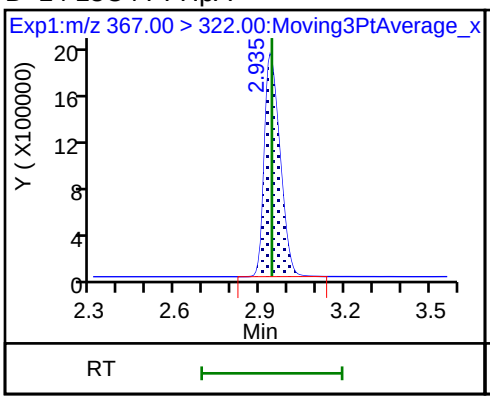
D 12 13C3 HFPO-DA



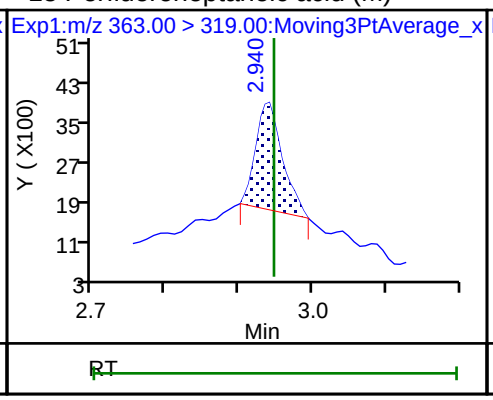
13 Perfluoro(2-propoxypropanoic) acid



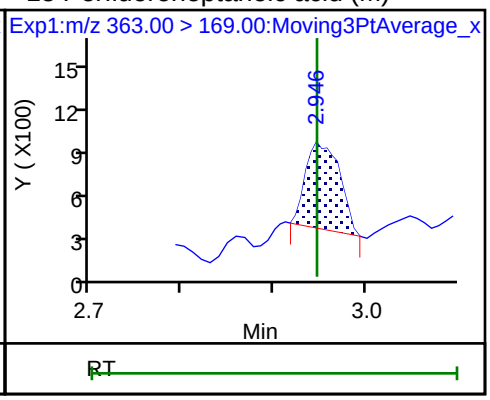
D 14 13C4 PFHpA



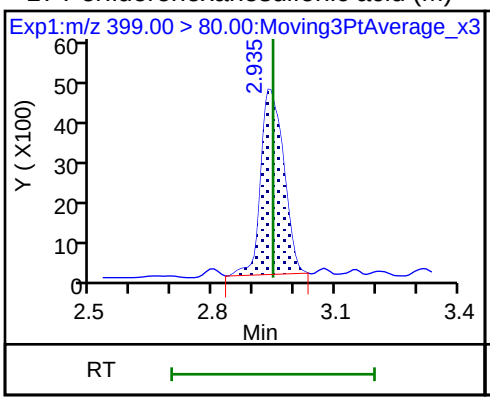
15 Perfluoroheptanoic acid (M)



15 Perfluoroheptanoic acid (M)



17 Perfluorohexanesulfonic acid (M)



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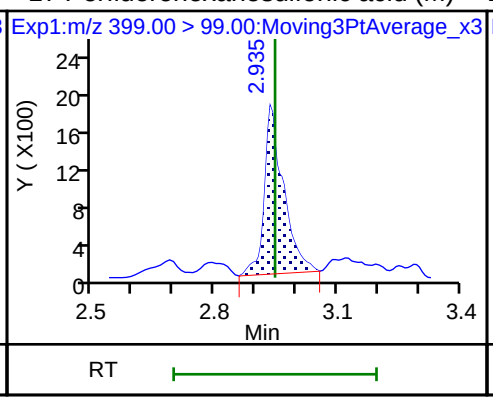
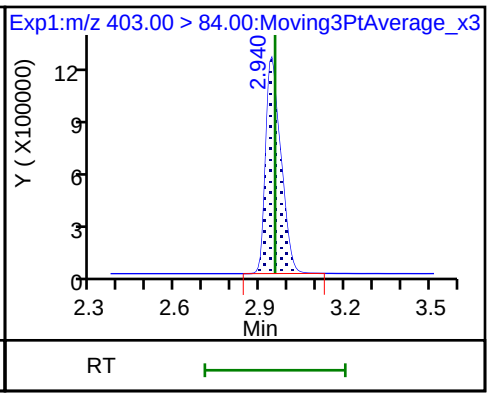
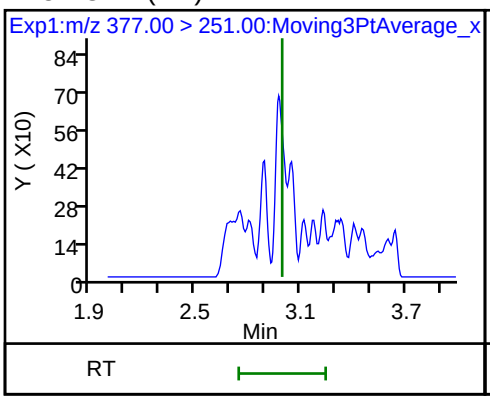


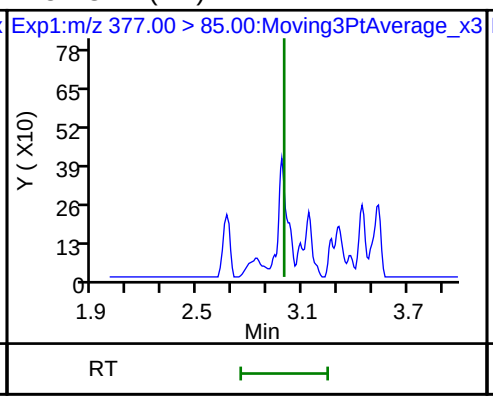
D 16 18O2 PFHxS



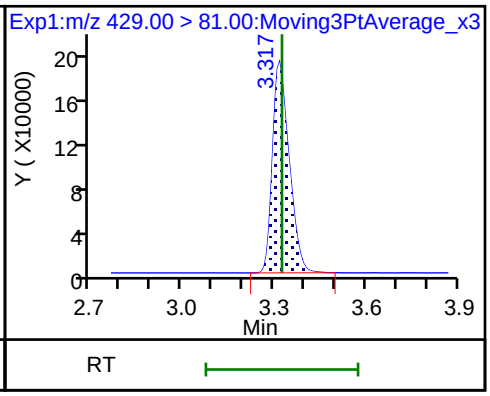
18 DONA (ND)



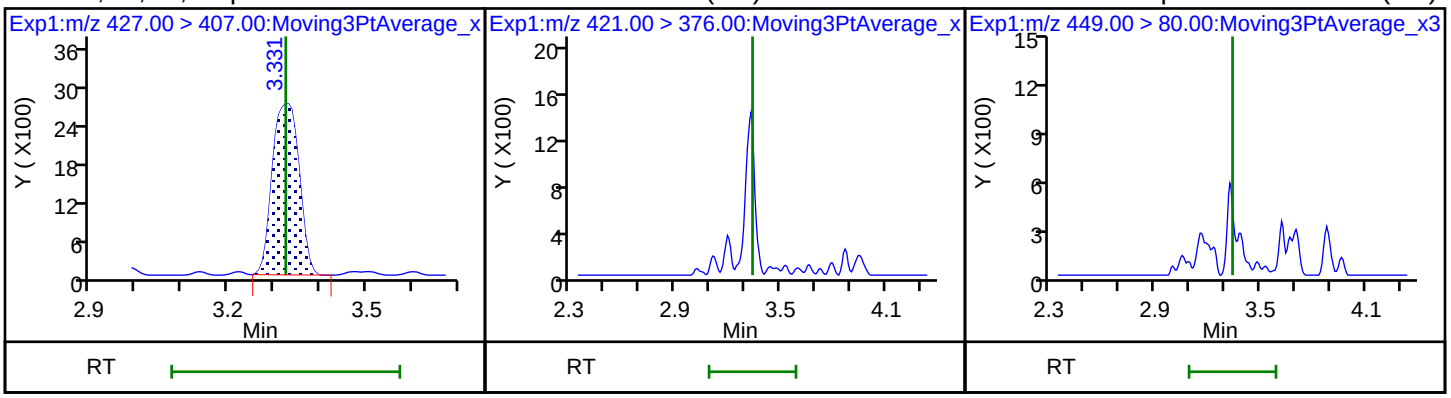
18 DONA (ND)



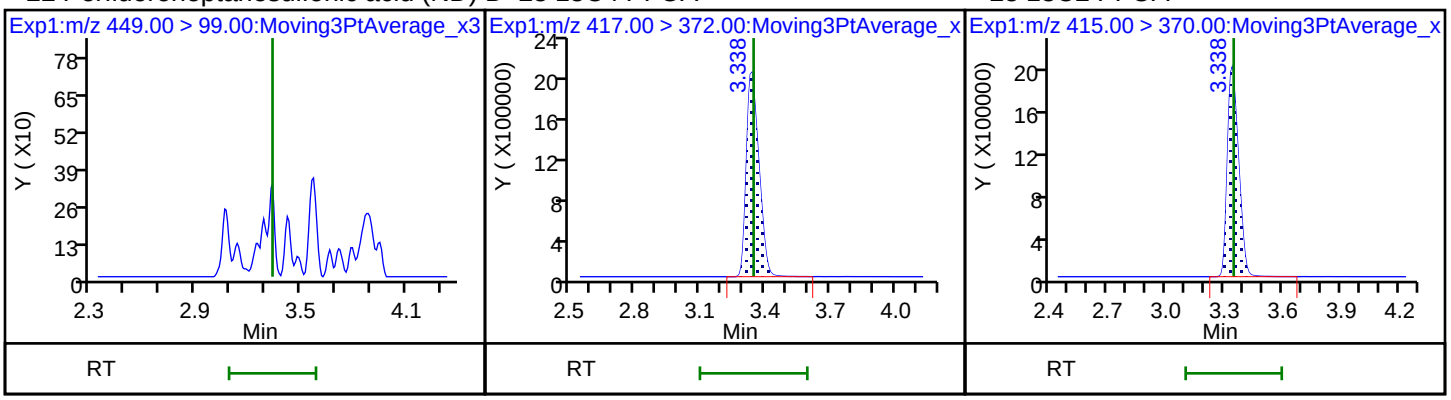
D 20 M2-6:2 FTS



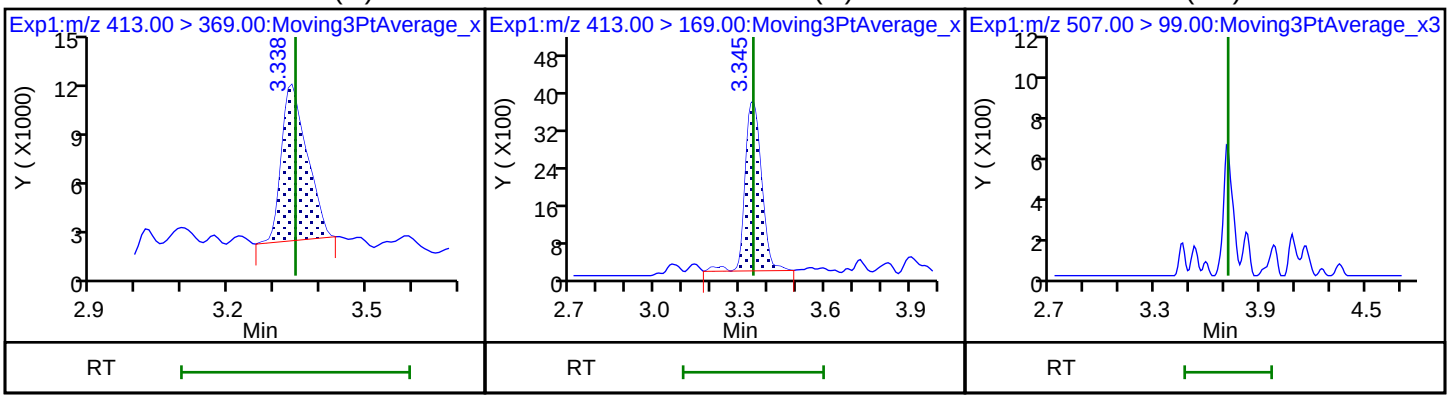
19 1H,1H,2H,2H-perfluorooctanesulfonD 21 13C8 PFOA (ND) 22 Perfluoroheptanesulfonic acid (ND)



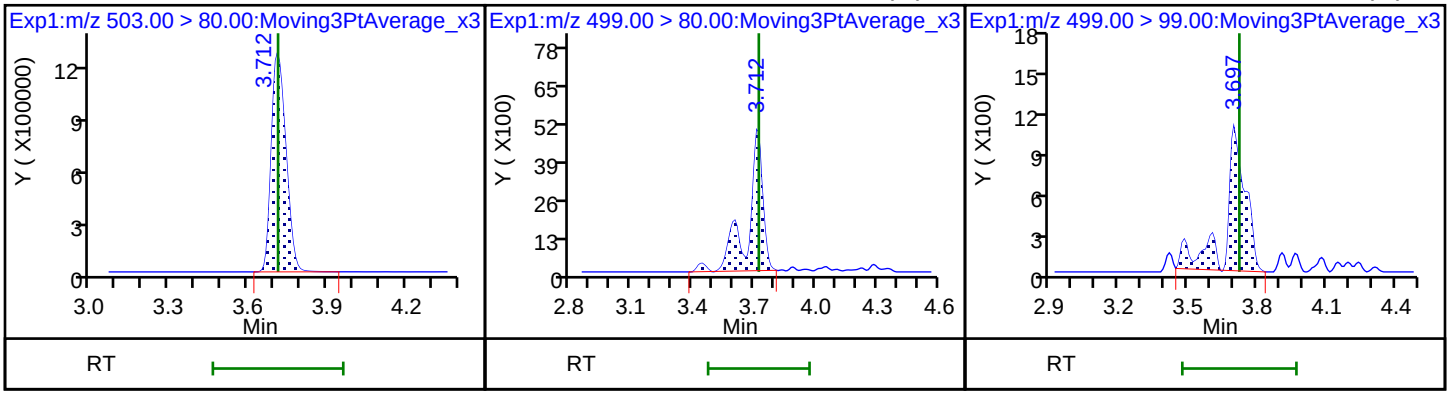
22 Perfluoroheptanesulfonic acid (ND) D 23 13C4 PFOA * 25 13C2 PFOA



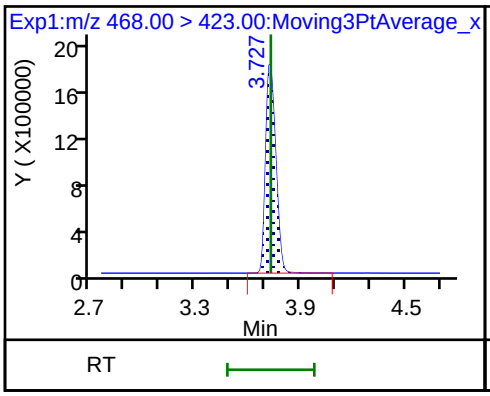
24 Perfluorooctanoic acid (M) 24 Perfluorooctanoic acid (M) D 26 13C8 PFOS (ND)



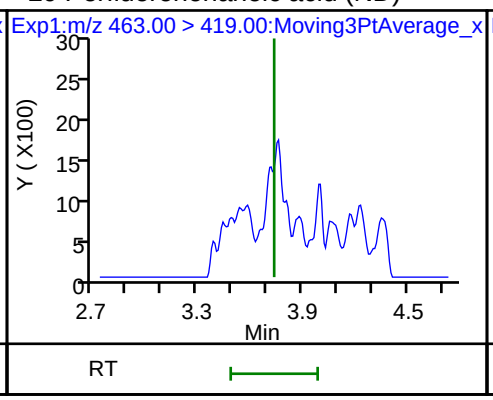
D 27 13C4 PFOS 28 Perfluorooctanesulfonic acid (M) 28 Perfluorooctanesulfonic acid (M)



D 30 13C5 PFNA



29 Perfluorononanoic acid (ND)



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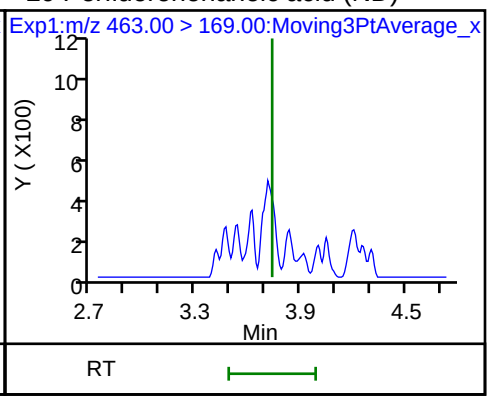
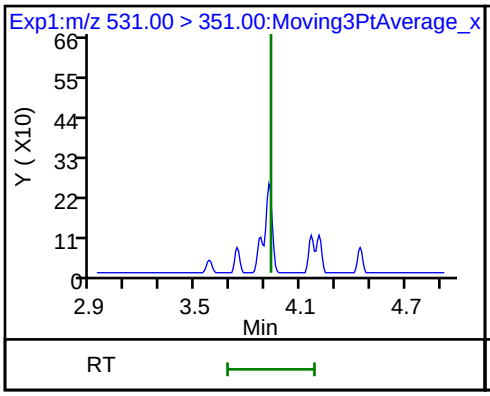
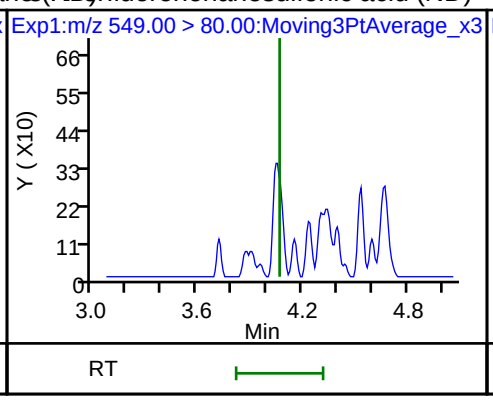


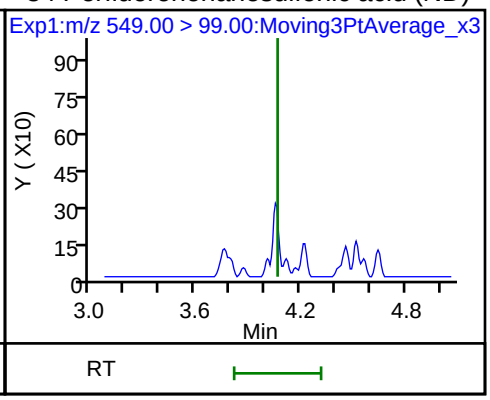
31 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (ND)



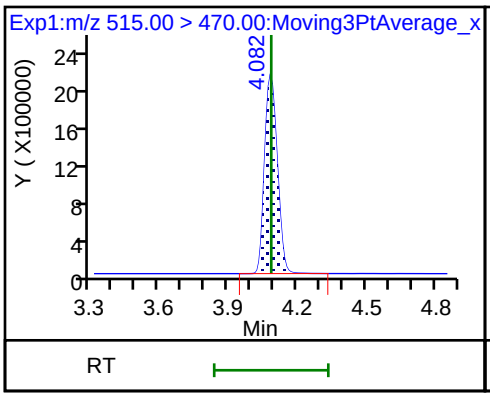
34 Perfluorononanesulfonic acid (ND)



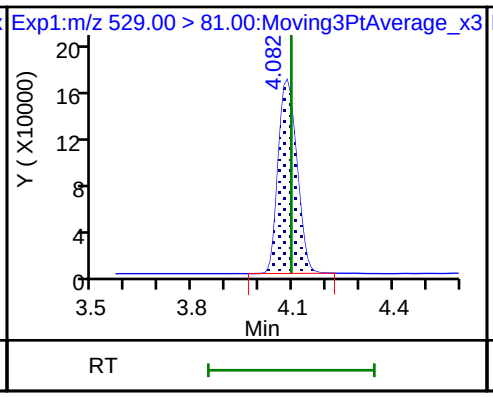
34 Perfluorononanesulfonic acid (ND)



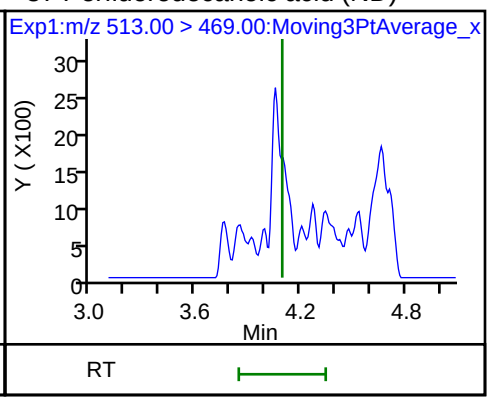
D 36 13C2 PFDA



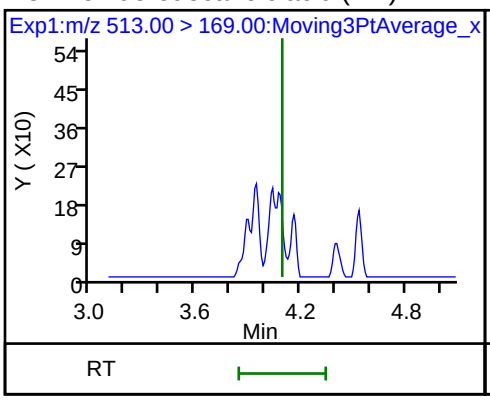
D 35 M2-8:2 FTS



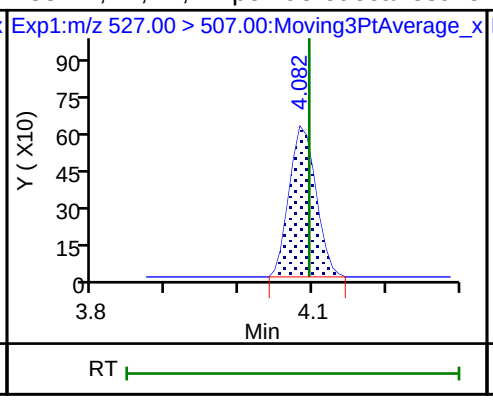
37 Perfluorodecanoic acid (ND)



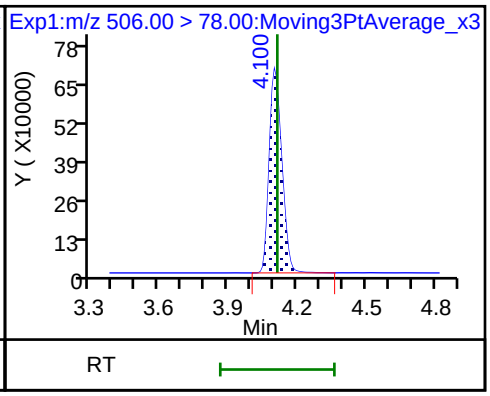
37 Perfluorodecanoic acid (ND)



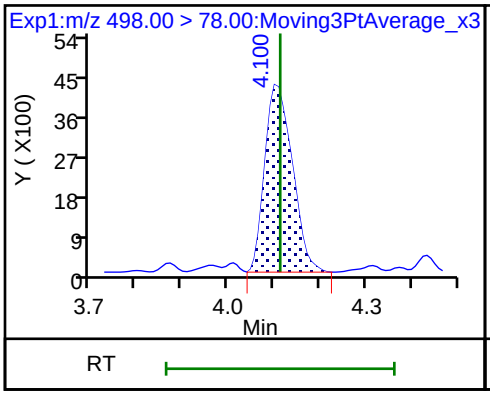
38 1H,1H,2H,2H-perfluorodecanesulfonic



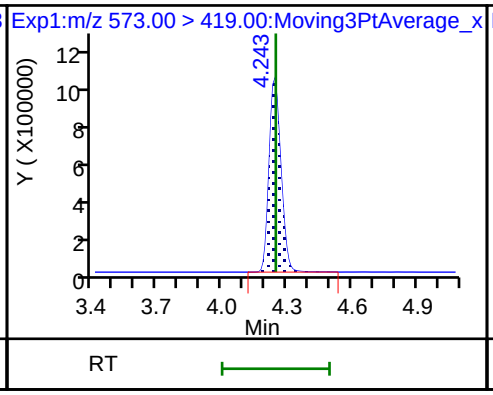
D 32 13C8 FOSA



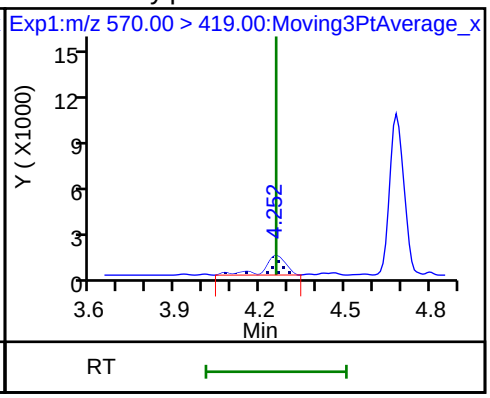
33 Perfluorooctanesulfonamide



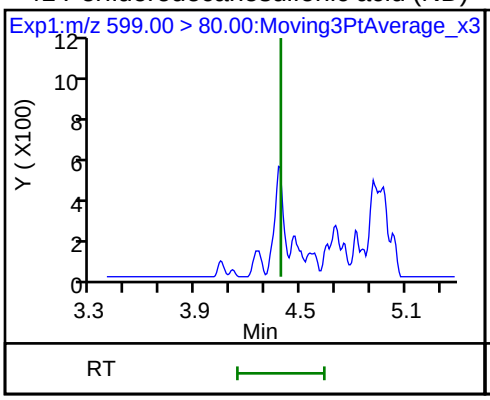
D 39 d3-NMeFOSAA



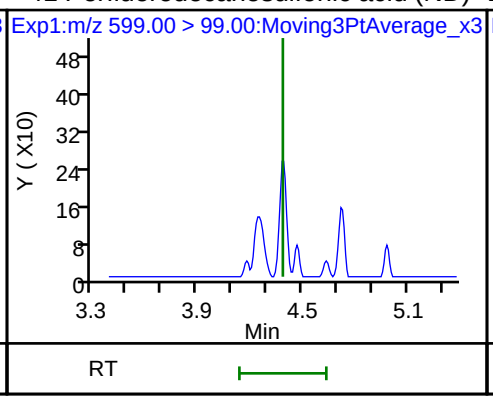
40 N-methylperfluorooctanesulfonamido



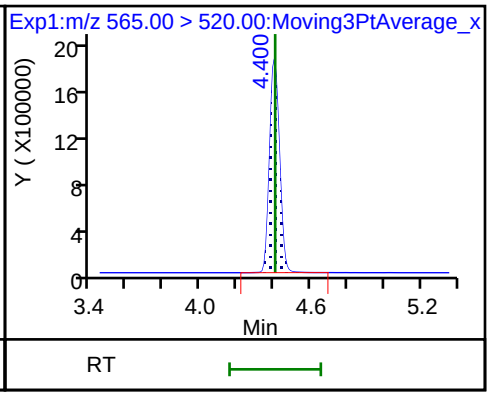
41 Perfluorodecanesulfonic acid (ND)



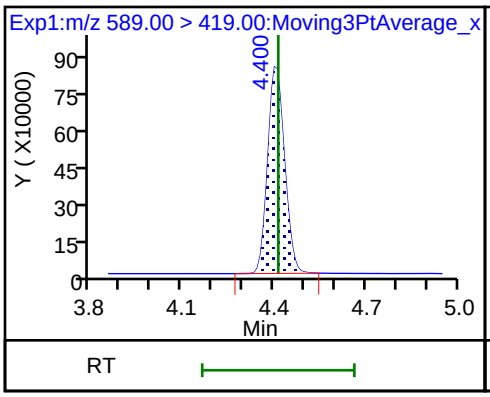
41 Perfluorodecanesulfonic acid (ND)



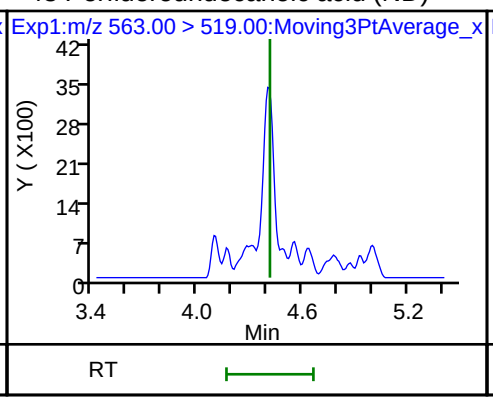
D 42 13C2 PFUnA



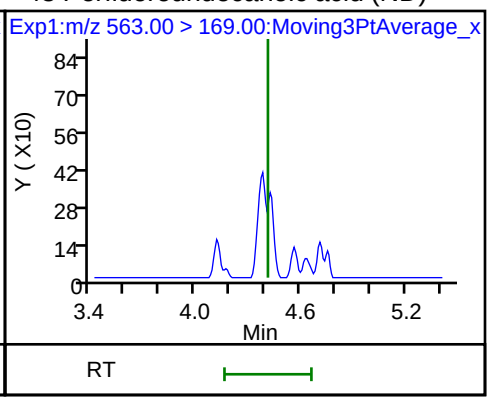
D 44 d5-NEtFOSAA



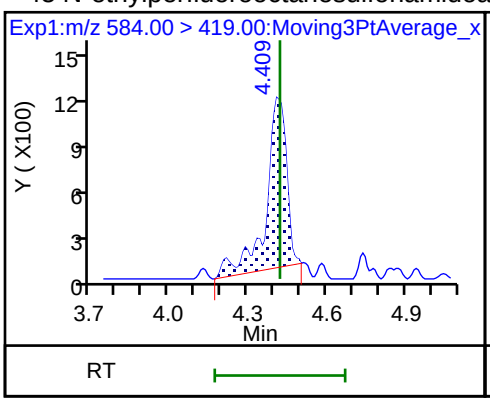
43 Perfluoroundecanoic acid (ND)



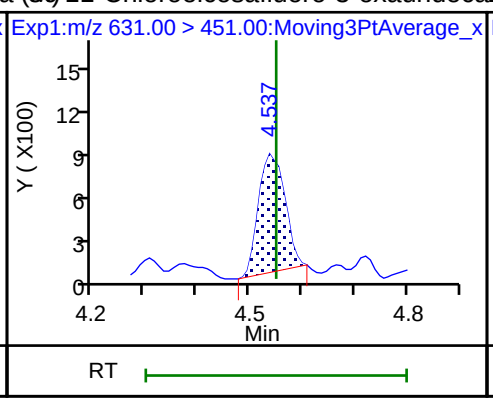
43 Perfluoroundecanoic acid (ND)



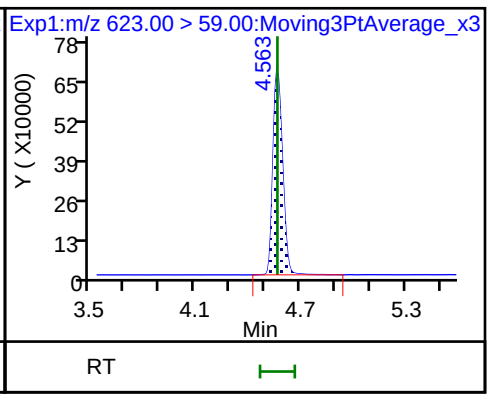
45 N-ethylperfluorooctanesulfonamidoa (ND)



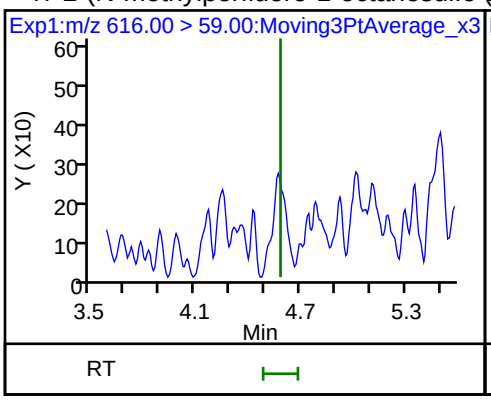
50 11-Chloroeicosafluoro-3-oxaundecan



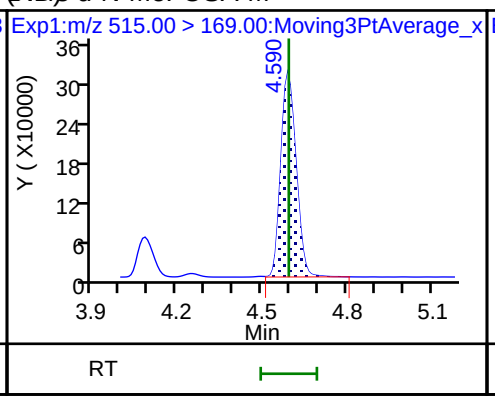
D 46 d7-N-MeFOSE-M



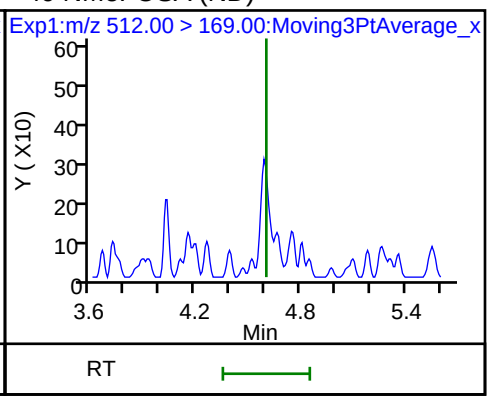
47 2-(N-methylperfluoro-1-octanesulfo (ND)



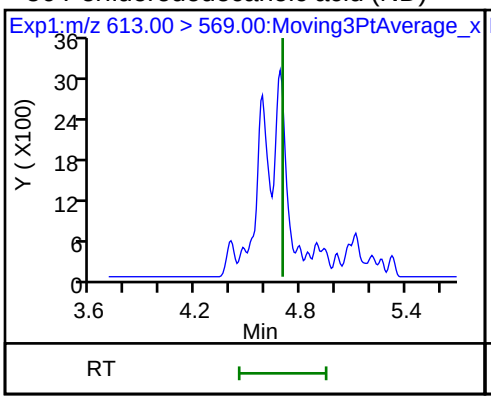
D 48 d-N-MeFOSA-M



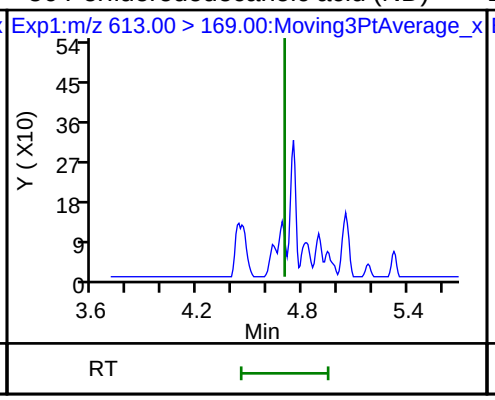
49 NMeFOSA (ND)



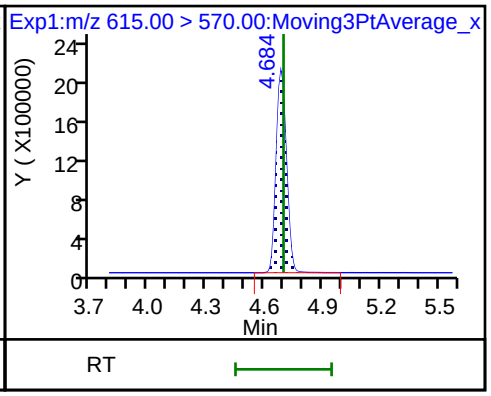
56 Perfluorododecanoic acid (ND)



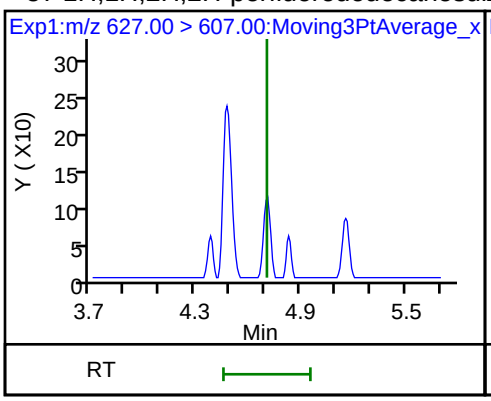
56 Perfluorododecanoic acid (ND)



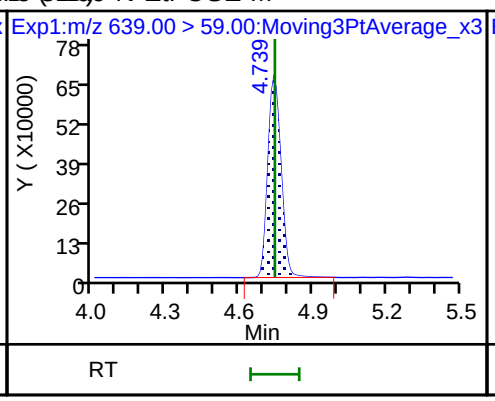
D 55 13C2 PFDoA



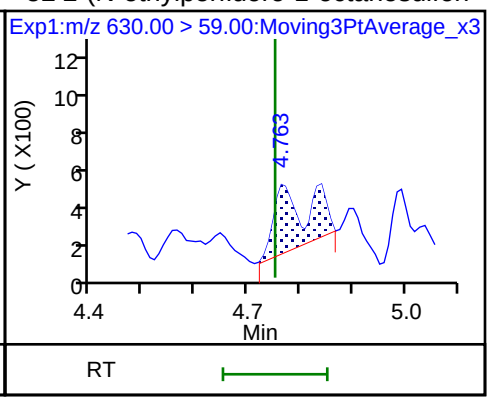
57 1H,1H,2H,2H-perfluorododecanesulfo (ND)



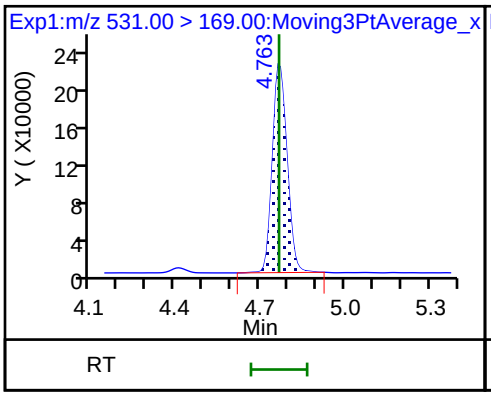
D 51 d9-N-EtFOSE-M



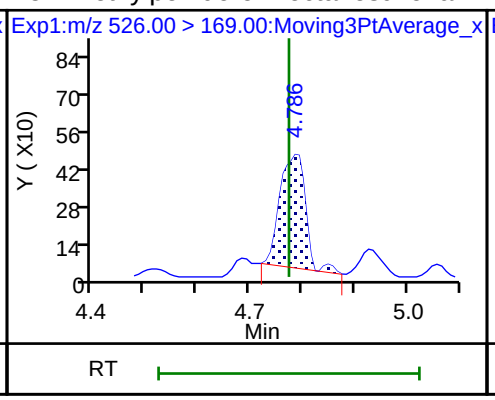
52 2-(N-ethylperfluoro-1-octanesulfon



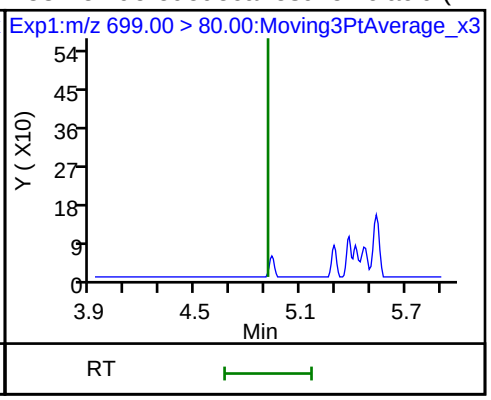
D 53 d-N-EtFOSA-M



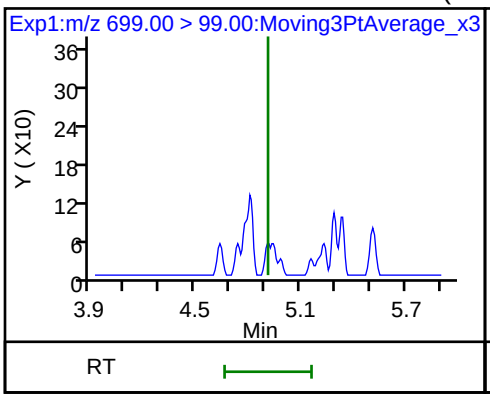
54 N-ethylperfluoro-1-octanesulfonami



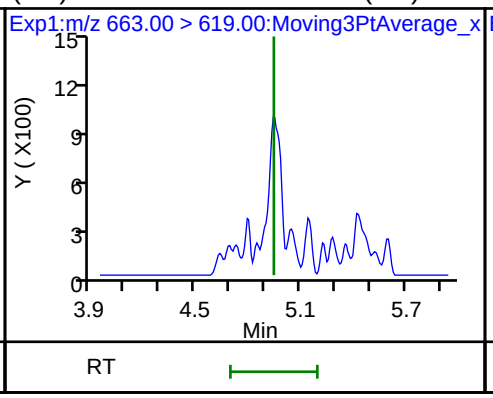
58 Perfluorododecanesulfonic acid (PF (ND)



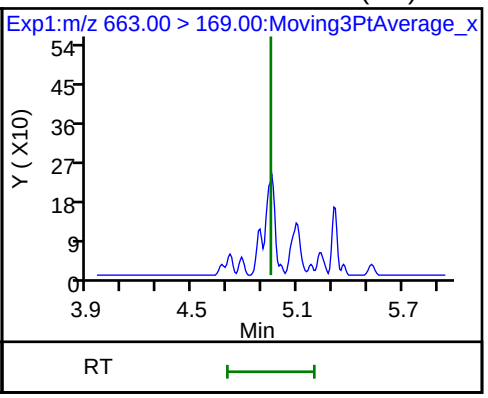
58 Perfluorododecanesulfonic acid (PF (ND)



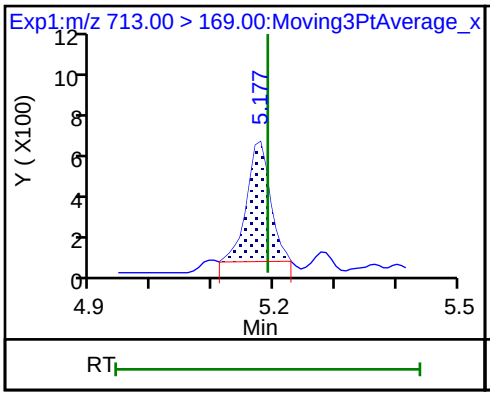
59 Perfluorotridecanoic acid (ND)



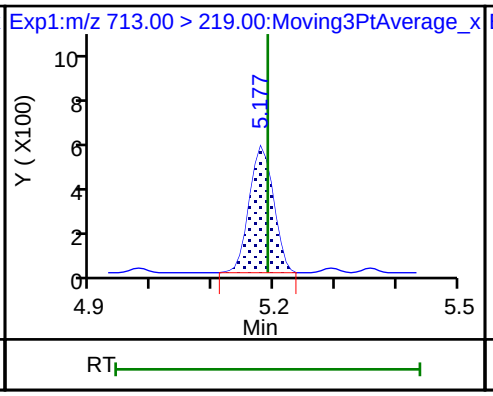
59 Perfluorotridecanoic acid (ND)



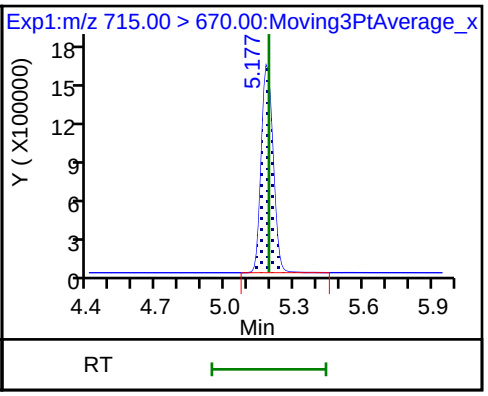
61 Perfluorotetradecanoic acid



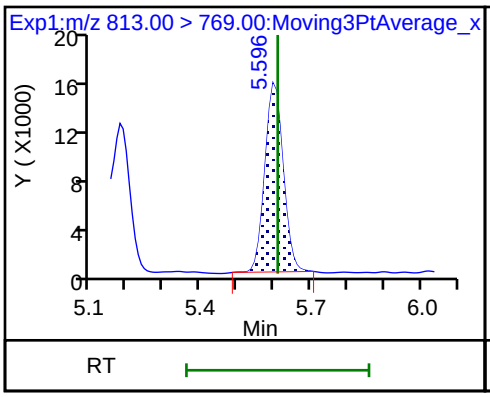
61 Perfluorotetradecanoic acid



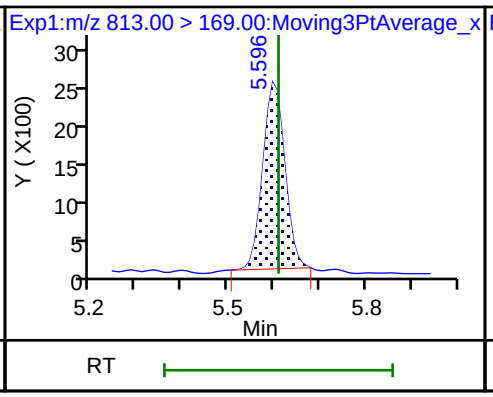
D 60 13C2 PFTeDA



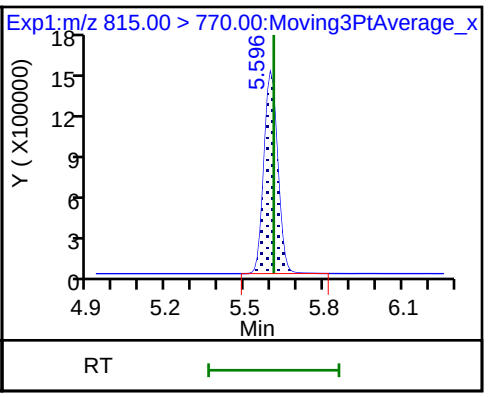
63 Perfluorohexadecanoic acid



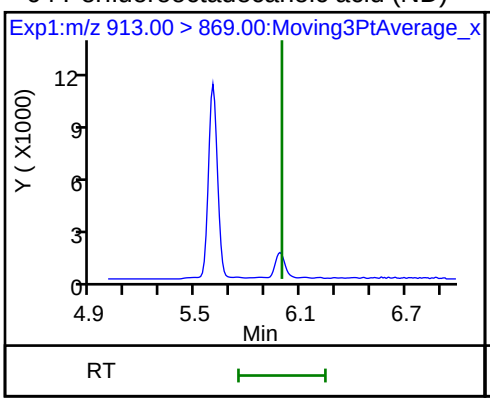
63 Perfluorohexadecanoic acid



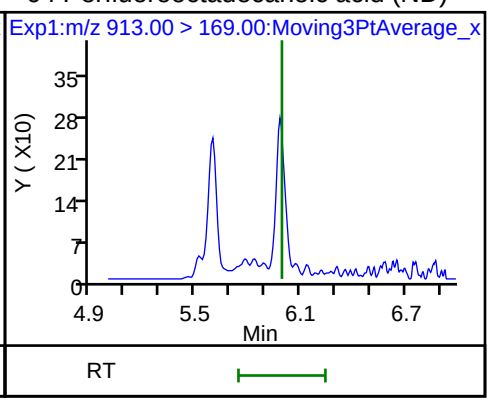
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid (ND)



64 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

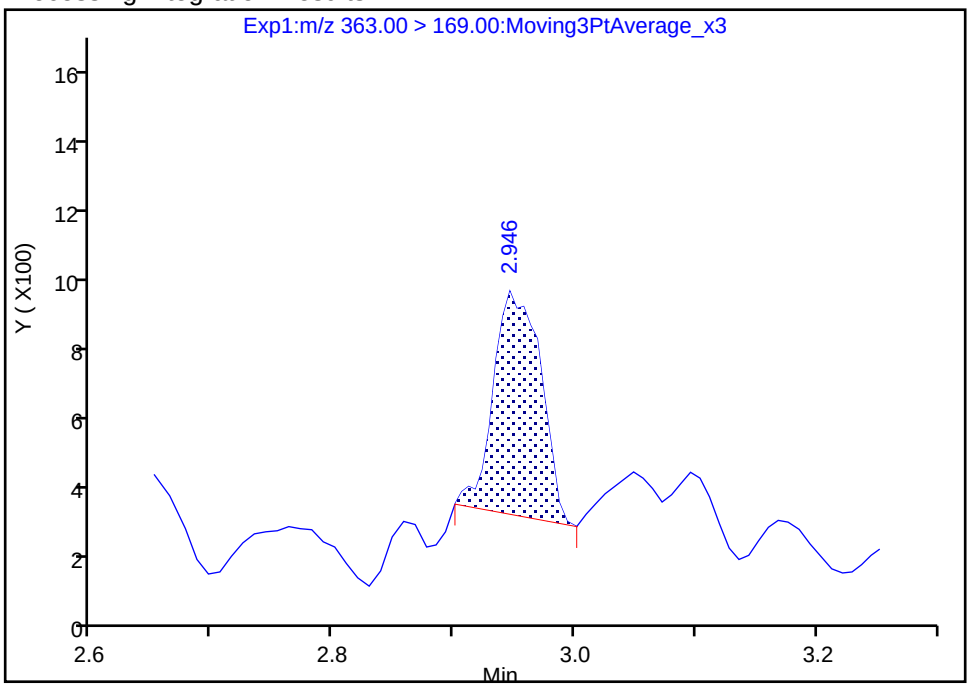
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d				
Injection Date:	09-Oct-2019 00:33:28	Instrument ID:	A9		
Lims ID:	MB 320-328853/1-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

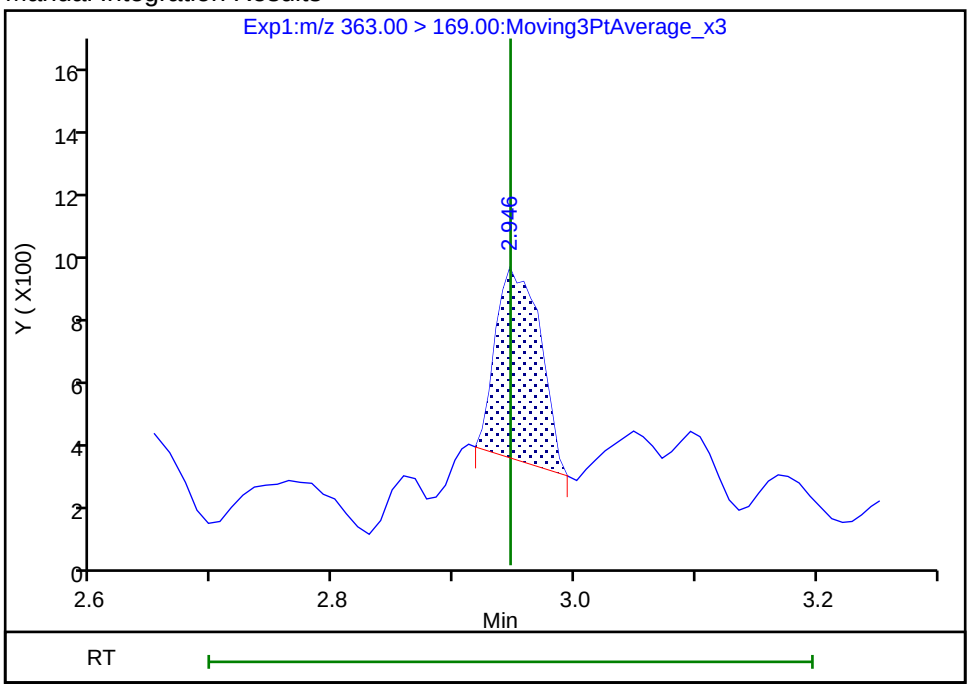
Processing Integration Results

RT: 2.95
Area: 1753
Amount: 0.003482
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 1565
Amount: 0.001660
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:47:39

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

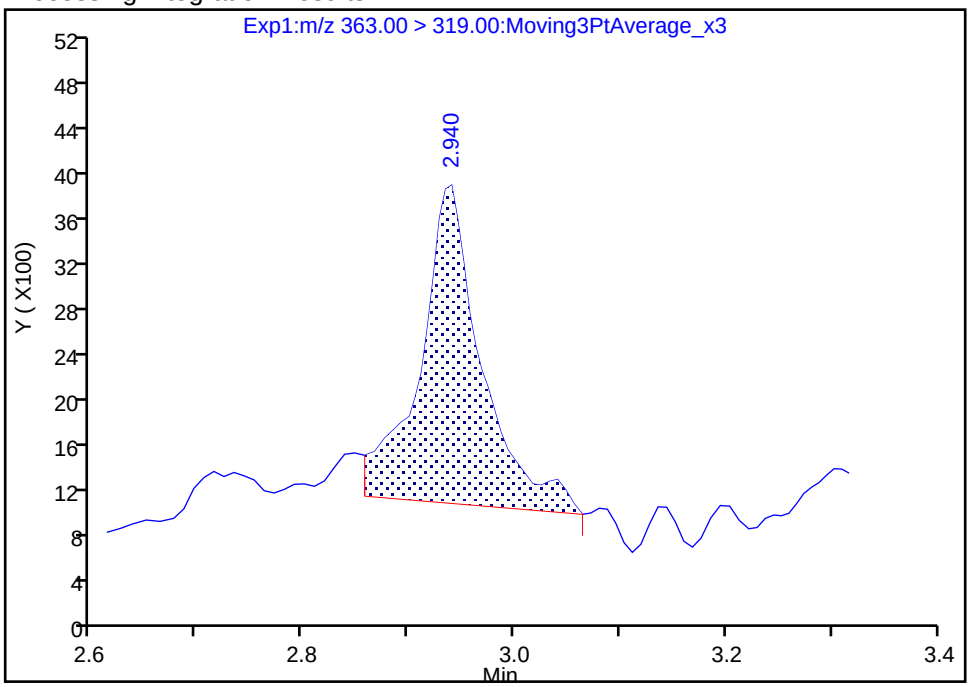
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d				
Injection Date:	09-Oct-2019 00:33:28	Instrument ID:	A9		
Lims ID:	MB 320-328853/1-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

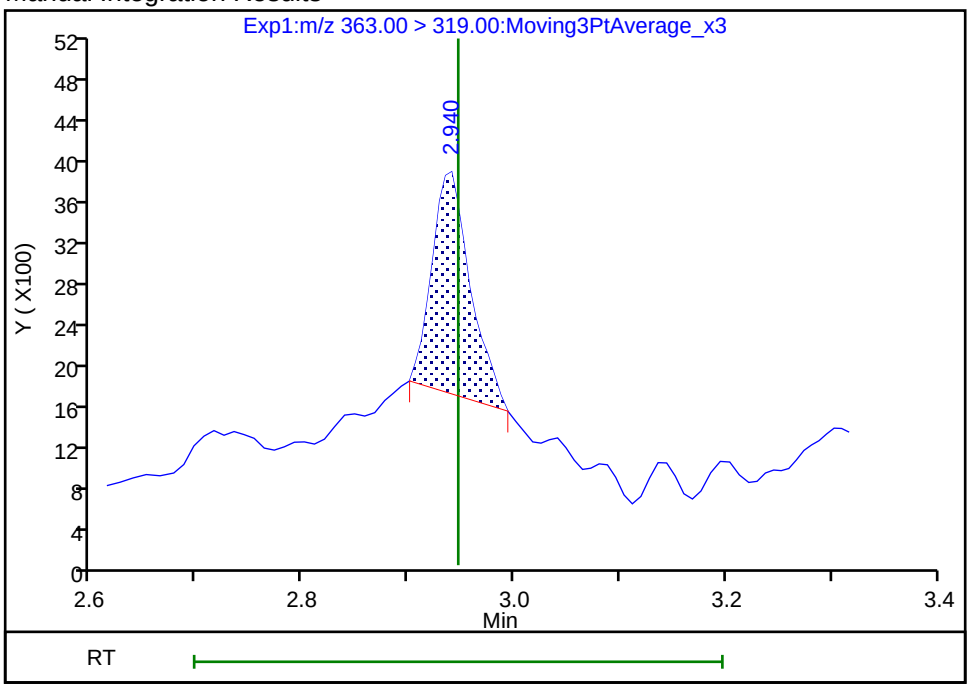
Processing Integration Results

RT: 2.94
Area: 11347
Amount: 0.003482
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 5409
Amount: 0.001660
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:47:42
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

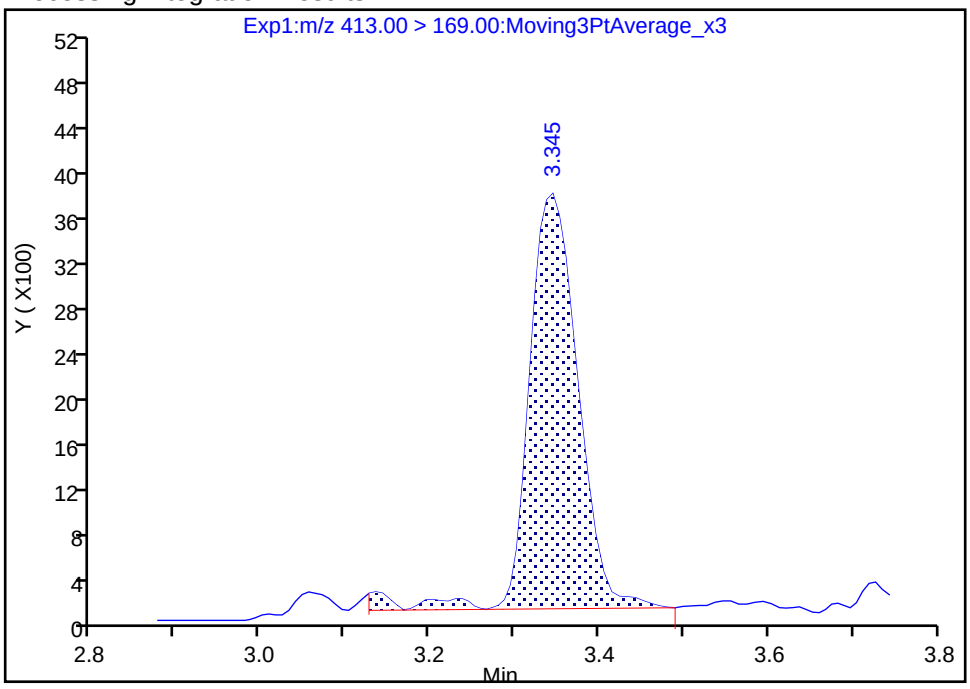
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d
Injection Date: 09-Oct-2019 00:33:28 Instrument ID: A9
Lims ID: MB 320-328853/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

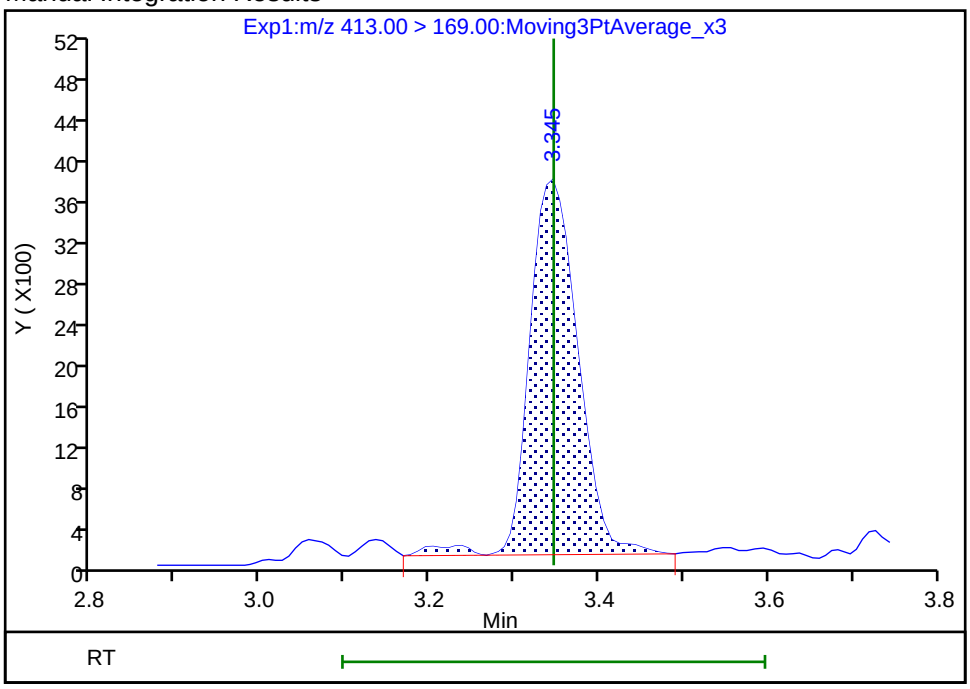
Processing Integration Results

RT: 3.35
Area: 14815
Amount: 0.014741
Amount Units: ng/ml



Manual Integration Results

RT: 3.35
Area: 14544
Amount: 0.010130
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:48:03
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

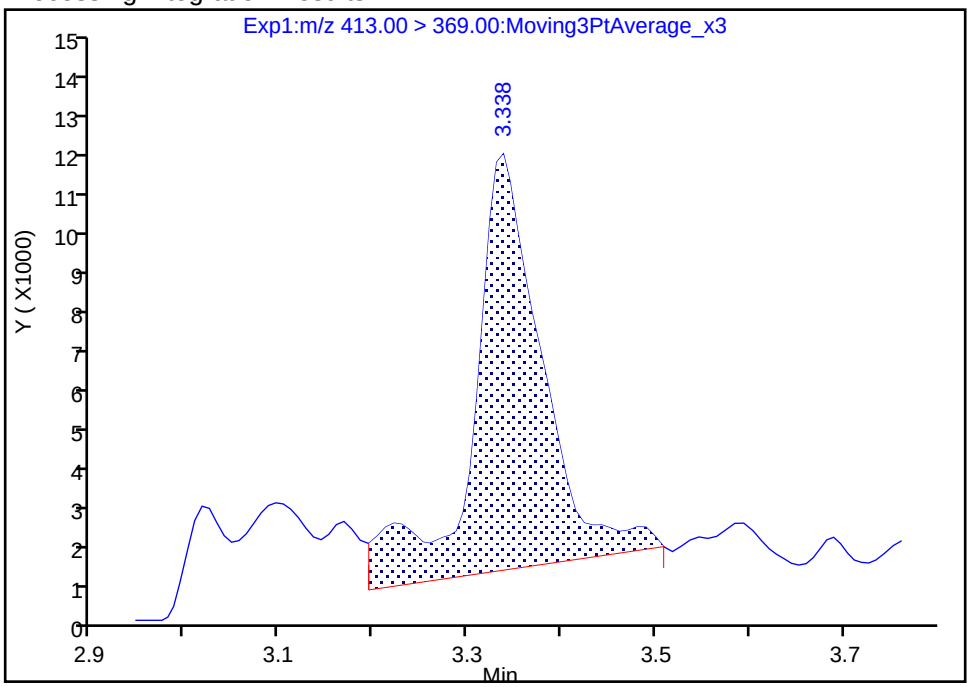
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d				
Injection Date:	09-Oct-2019 00:33:28	Instrument ID:	A9		
Lims ID:	MB 320-328853/1-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

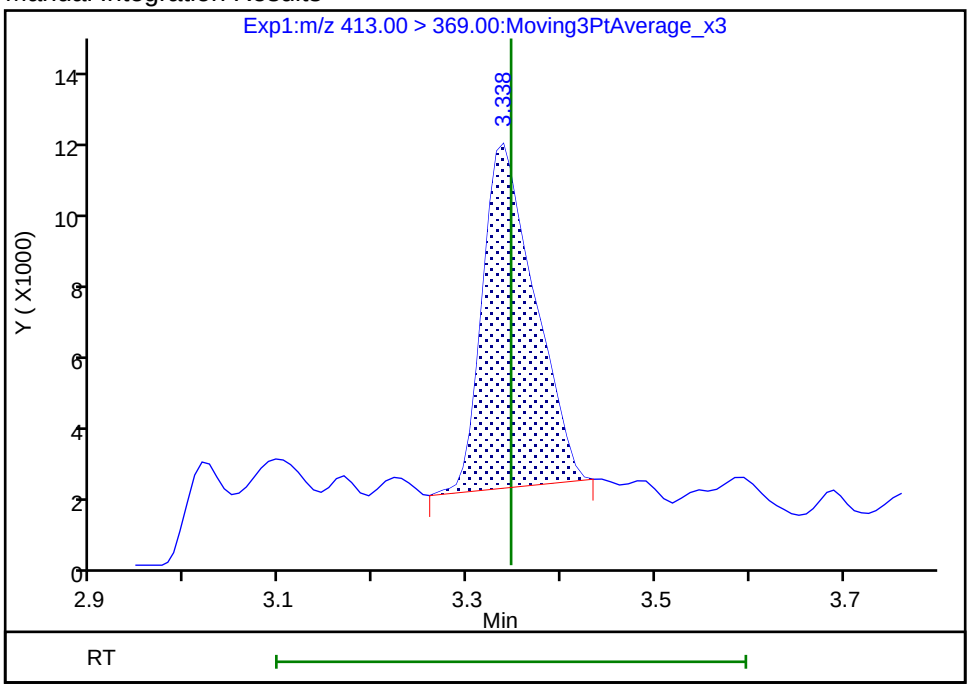
Processing Integration Results

RT: 3.34
Area: 53064
Amount: 0.014741
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 36465
Amount: 0.010130
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:48:19
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

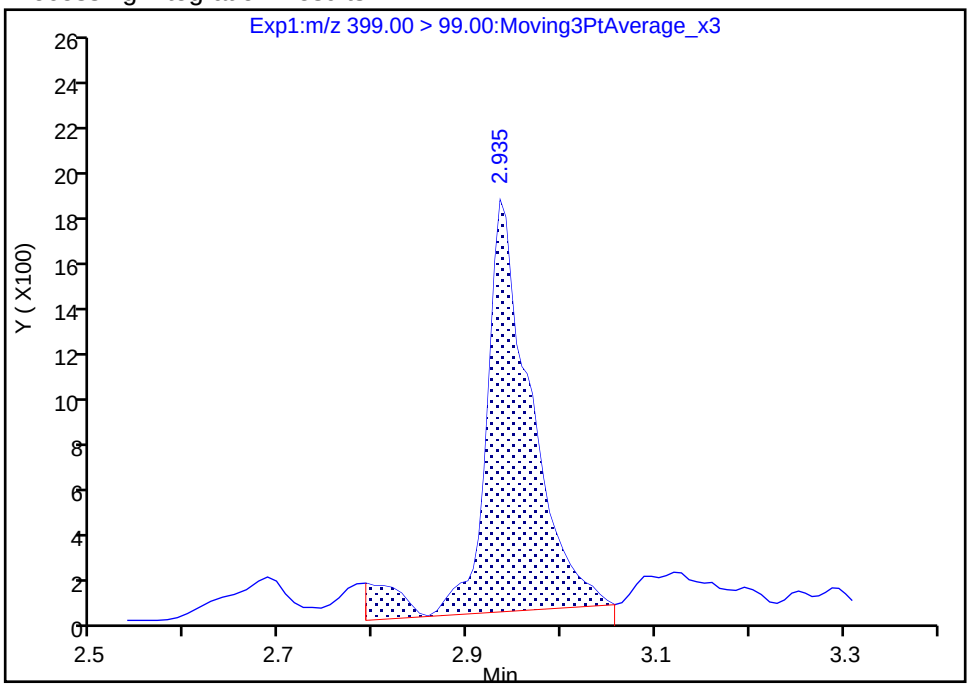
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d
Injection Date: 09-Oct-2019 00:33:28 Instrument ID: A9
Lims ID: MB 320-328853/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

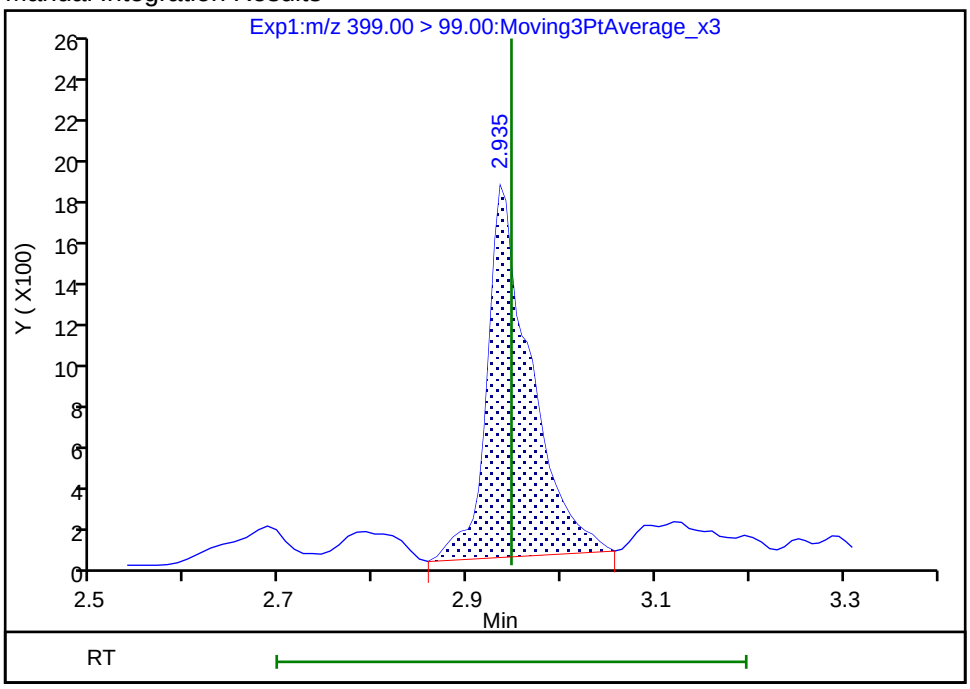
Processing Integration Results

RT: 2.93
Area: 6258
Amount: 0.008718
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 5854
Amount: 0.007983
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:47:48
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

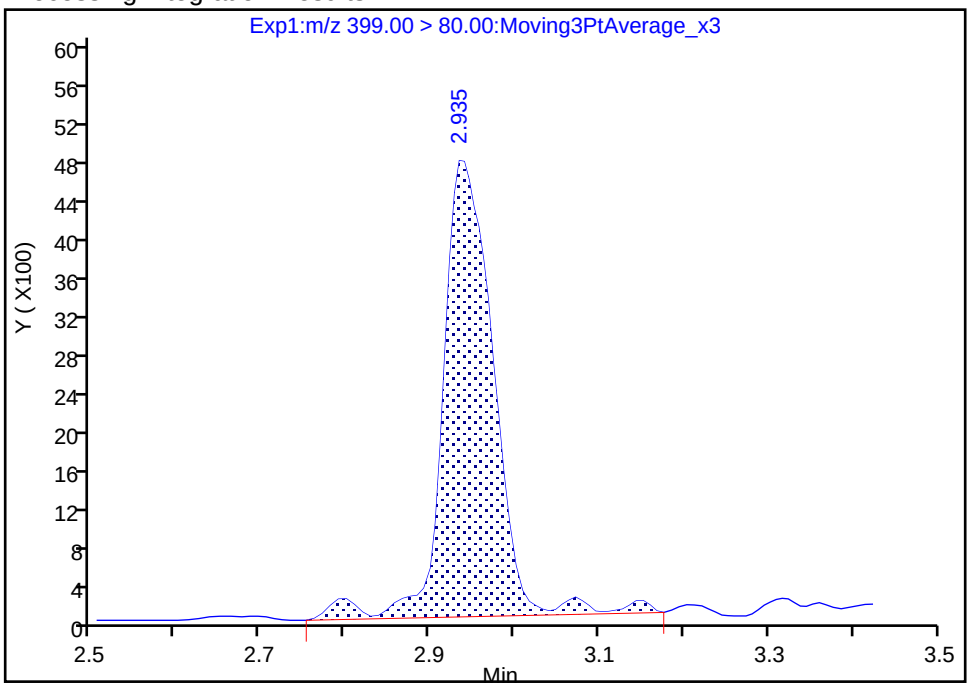
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d				
Injection Date:	09-Oct-2019 00:33:28	Instrument ID:	A9		
Lims ID:	MB 320-328853/1-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

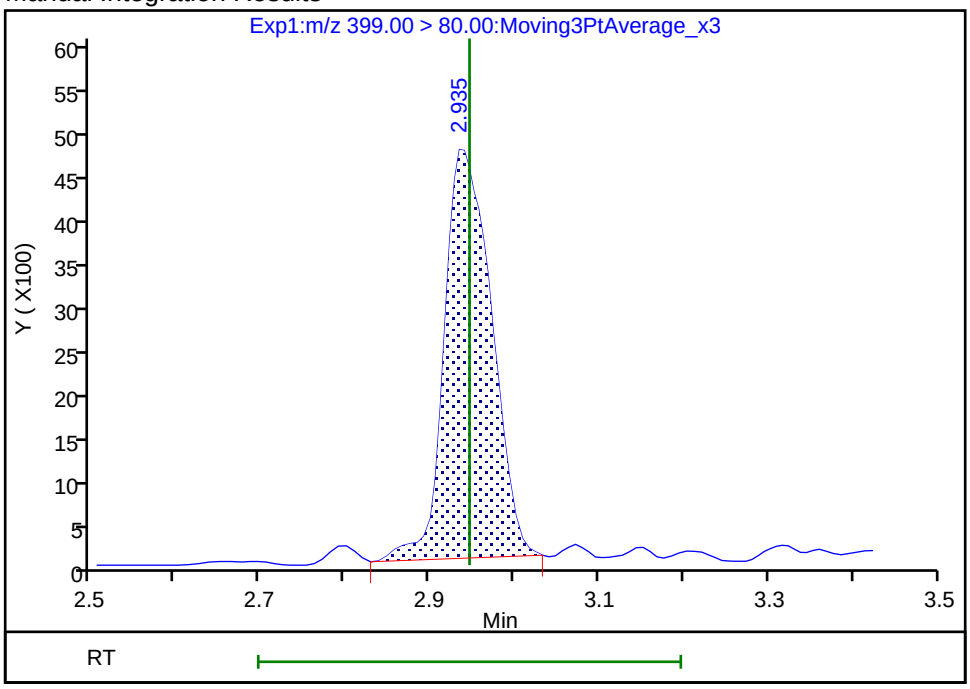
Processing Integration Results

RT: 2.93
Area: 19773
Amount: 0.008718
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 18107
Amount: 0.007983
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:47:52
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

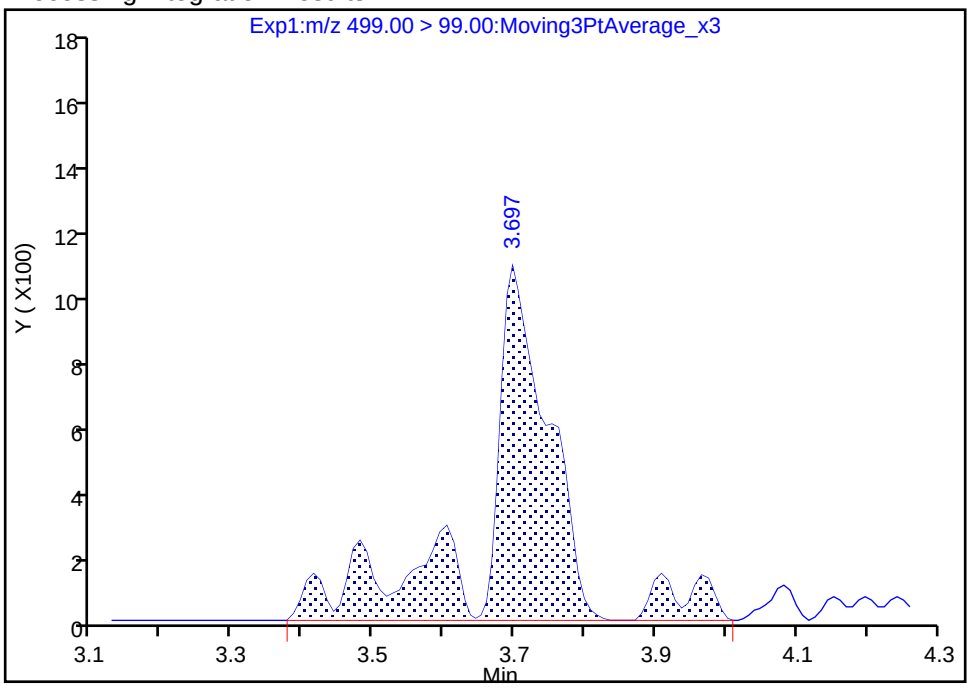
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d
Injection Date: 09-Oct-2019 00:33:28 Instrument ID: A9
Lims ID: MB 320-328853/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

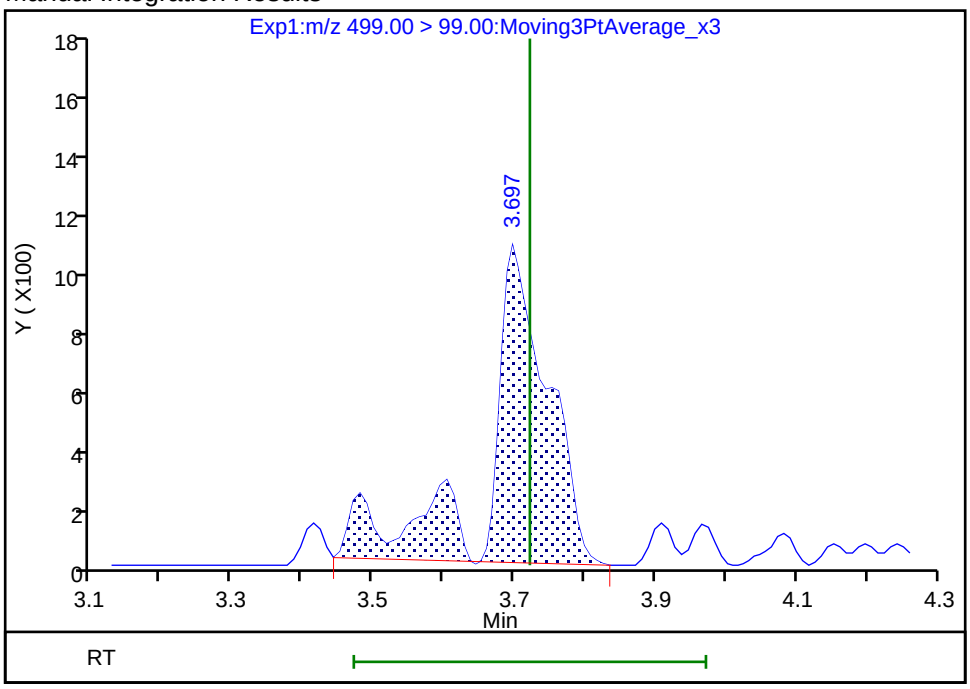
Processing Integration Results

RT: 3.70
Area: 7422
Amount: 0.011367
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 6227
Amount: 0.011320
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:48:27
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

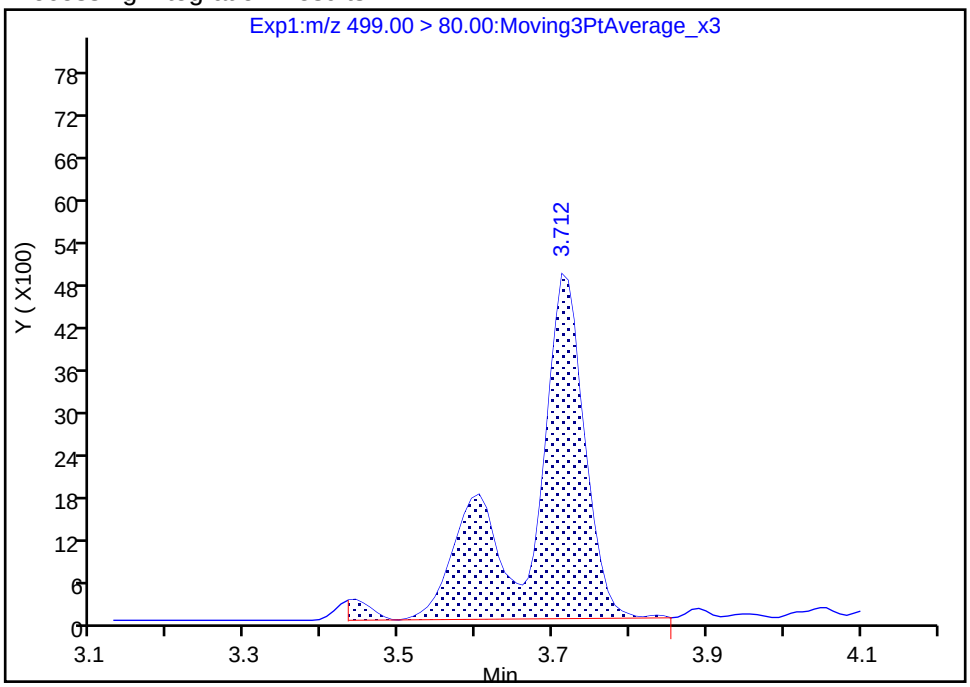
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._018.d				
Injection Date:	09-Oct-2019 00:33:28	Instrument ID:	A9		
Lims ID:	MB 320-328853/1-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

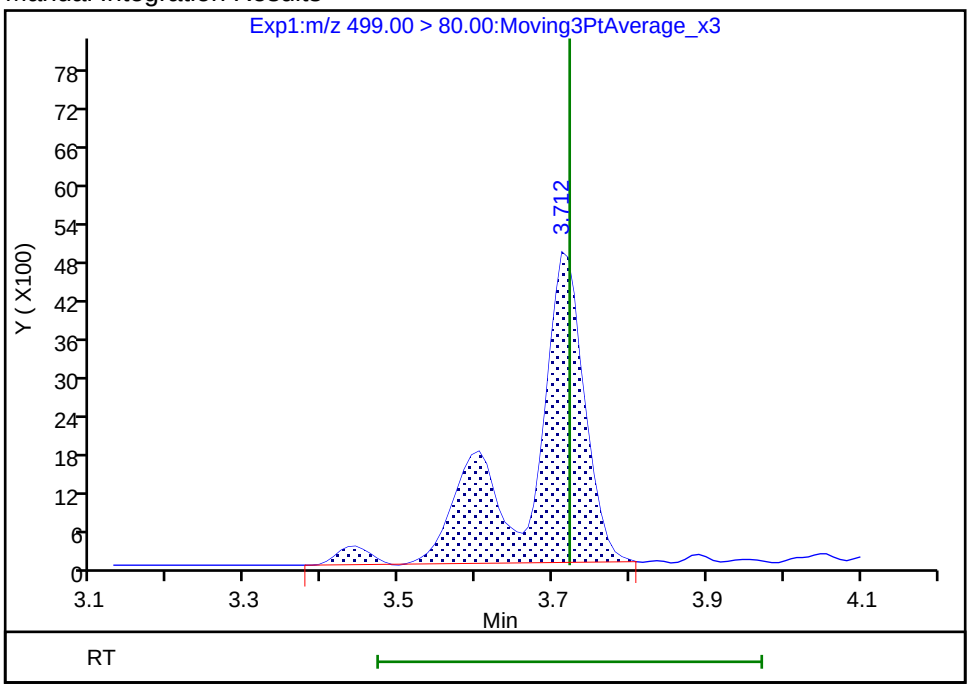
Processing Integration Results

RT: 3.71
Area: 24657
Amount: 0.011367
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 24556
Amount: 0.011320
Amount Units: ng/ml



Reviewer: nadonp, 18-Oct-2019 14:48:32

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LB 320-326292/1-B

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._021.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 276.7(mL) Date Analyzed: 10/09/2019 01:02

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.81		1.81	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.81		1.81	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.81		1.81	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.81		1.81	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.81		1.81	0.77
375-95-1	Perfluorononanoic acid (PFNA)	1.81		1.81	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.81		1.81	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.81		1.81	0.99
307-55-1	Perfluorododecanoic acid (PFDoA)	1.81		1.81	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.81		1.81	1.17
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.81		1.81	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.81		1.81	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.275	J	1.81	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.81		1.81	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.570	J	1.81	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.81		1.81	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	107		25-150
STL00993	13C2 PFHxA	105		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	105		25-150
STL00996	13C2 PFDA	104		25-150
STL01892	13C4 PFHpA	108		25-150
STL00997	13C2 PFUnA	104		25-150
STL01893	13C5 PFPeA	107		25-150
STL00998	13C2 PFDoA	103		25-150
STL02116	13C2 PFTeDA	104		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	100		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d
Lims ID: LB 320-326292/1-B
Client ID:
Sample Type: LB
Inject. Date: 09-Oct-2019 01:02:12 ALS Bottle#: 11 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-326292/1-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:34:36 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:34:36
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.896	-0.003	0.567	6244302	2.68		107	5710	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.201	-0.002	0.658	5206528	2.67		107	3216	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.201	-0.002	1.000	12577	0.005895			1.7	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.517	-0.003	0.753	663974	1.79		76.5	880	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.560	-0.003	0.766	5919963	2.64		105	2619	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.673	2.688	-0.015	0.995	23571	0.0328			23.3	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.688	-0.002	0.805	1186153	3.04		121	2179	
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.941	-0.001	0.881	6906685	2.69		108	3765	
17 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.940	2.947	-0.007	0.998	16922	0.007613	Target=3.29		37.6	M
399.00 > 99.00	2.940	2.947	-0.007	0.998	6721		2.52(1.64-4.93)		6.2	M
D 16 18O2 PFHxS										
403.00 > 84.00	2.945	2.947	-0.002	0.883	4297128	2.60		110	4652	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.316	3.325	-0.009	1.000	11546	0.0192			39.5	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.325	-0.009	0.994	613433	1.71		72.1	1759	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.346	-0.008	1.000	7775360	2.63		105	3680	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.346	-0.008		7898400	2.50			4160	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.338	3.346	-0.008	1.000	40068	0.0114	Target=2.91		5.2	M
413.00 > 169.00	3.338	3.346	-0.008	1.000	13248		3.02(1.45-4.36)		20.4	M
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.711	3.714	-0.003	1.000	32568	0.0158	Target=3.91		21.2	M
499.00 > 99.00	3.704	3.714	-0.010	0.998	7690		4.24(1.95-5.86)		21.6	M
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.714	-0.003	1.112	4593426	2.40		100	3747	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.730	-0.003	1.117	6915121	2.62		105	4617	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.086	-0.004	1.223	7744992	2.60		104	4062	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.086	-0.004	1.223	576293	1.71		71.4	1771	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.104	0.004	1.231	2500506	2.53		101	2277	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.109	4.104	0.004	1.000	9798	0.003566			23.6	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.247	-0.004	1.271	3405569	2.43		97.1	2002	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.252	4.256	-0.004	1.002	3342	0.002996			0.4	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.404	-0.004	1.318	6615973	2.61		104	3636	
43 Perfluoroundecanoic acid										R
563.00 > 519.00	4.400	4.404	-0.004	1.000	16820	0.008080	Target=10.16		13.2	R
563.00 > 169.00	4.400	4.404	-0.004	1.000	770		21.84(5.08-15.24)		6.3	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.408	4.413	-0.005	1.321	3124696	2.59		104	2310	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.408	4.413	-0.005	1.000	4074	0.004086			12.6	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.528	4.541	-0.013	1.220	5105	0.001420			31.0	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.572	4.567	0.005		2849907	4.41		35.3	1391	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.590	4.594	-0.004		975324	1.38		55.3	155	
D 55 13C2 PFDoA										
615.00 > 570.00	4.693	4.688	0.005	1.406	7204880	2.58		103	4327	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.693	4.688	0.005	1.000	9794	0.003298	Target=9.81		4.8	
613.00 > 169.00	4.683	4.688	-0.005	0.998	820		11.94(4.90-14.71)		7.0	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.748	4.744	0.004		2950045	4.39		35.1	2237	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.771	4.767	0.004		764180	1.12		45.0	764	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.186	5.189	-0.003	1.554	5142444	2.60		104	4767	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.606	5.609	-0.003	1.002	52967	0.000455	Target=6.52		29.9	
813.00 > 169.00	5.606	5.609	-0.003	1.002	8680		6.10(3.26-9.77)		63.2	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.596	5.609	-0.013	1.677	5259386	2.41		96.6	5538	

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Review Flags
M - Manually Integrated

Report Date: 18-Oct-2019 15:34:37 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d

Injection Date: 09-Oct-2019 01:02:12 Instrument ID: A9

Lims ID: LB 320-326292/1-B

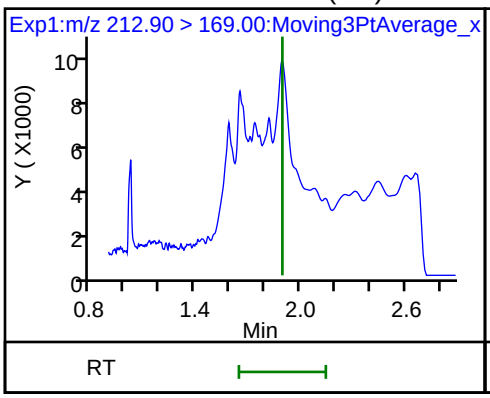
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 7

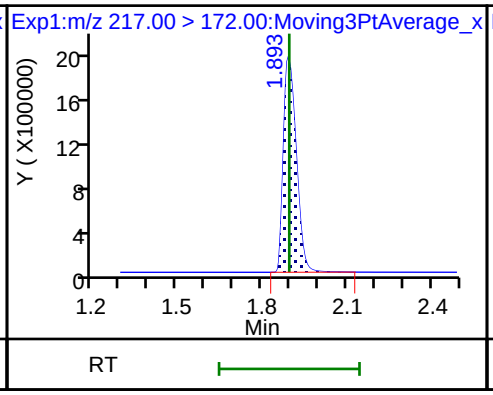
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

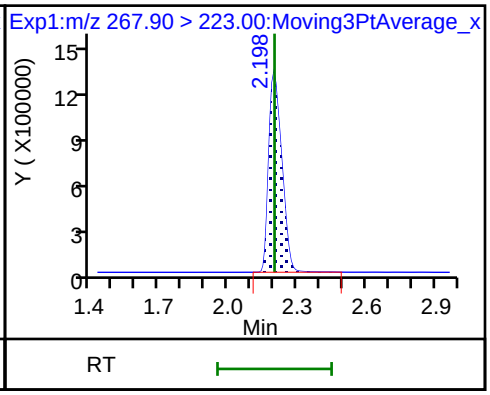
2 Perfluorobutanoic acid (ND)



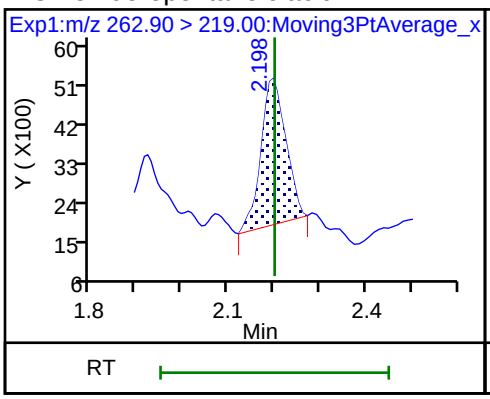
D 1 13C4 PFBA



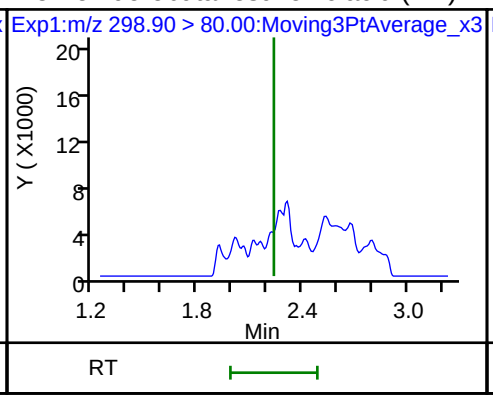
D 4 13C5 PFPeA



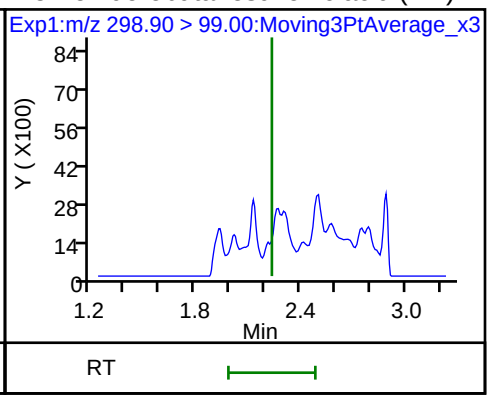
3 Perfluoropentanoic acid



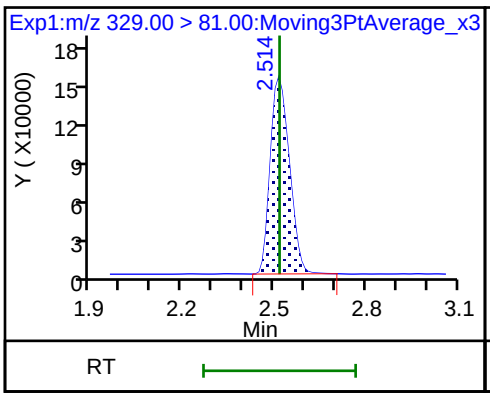
5 Perfluorobutanesulfonic acid (ND)



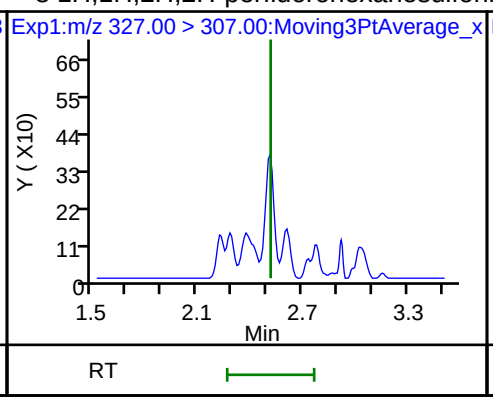
5 Perfluorobutanesulfonic acid (ND)



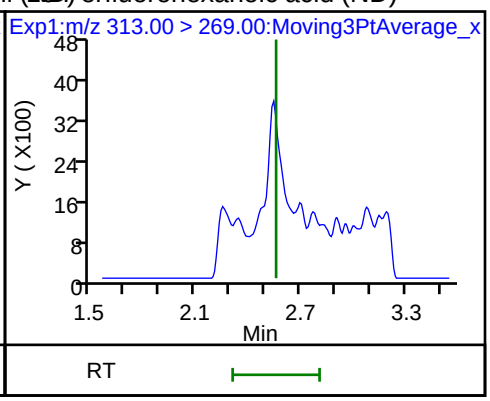
D 7 M2-4:2 FTS



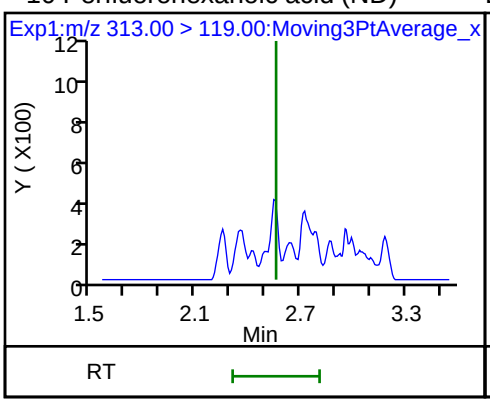
8 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



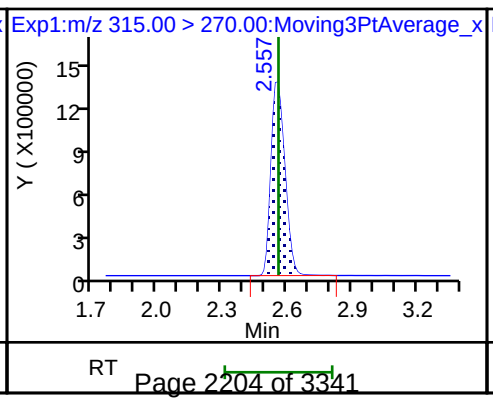
10 Perfluorohexanoic acid (ND)



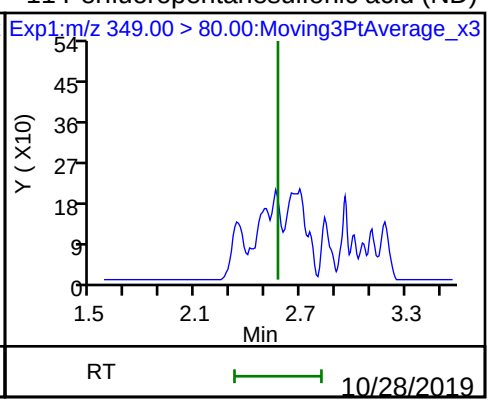
10 Perfluorohexanoic acid (ND)



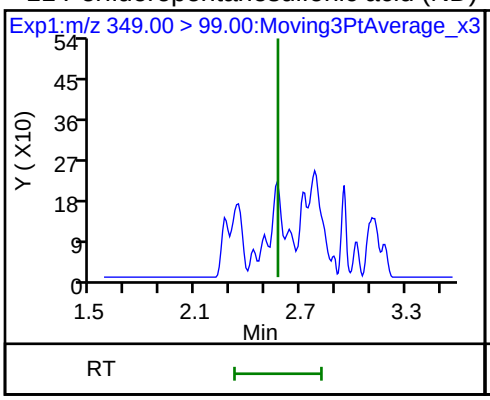
D 9 13C2 PFHxA



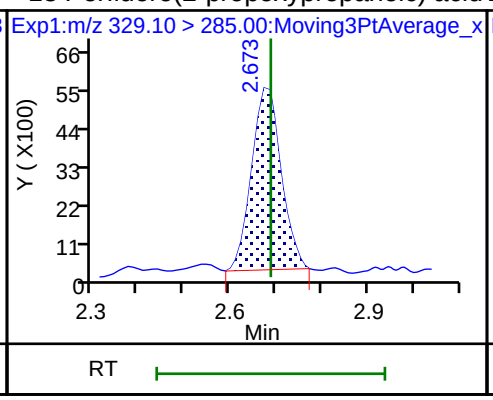
11 Perfluoropentanesulfonic acid (ND)



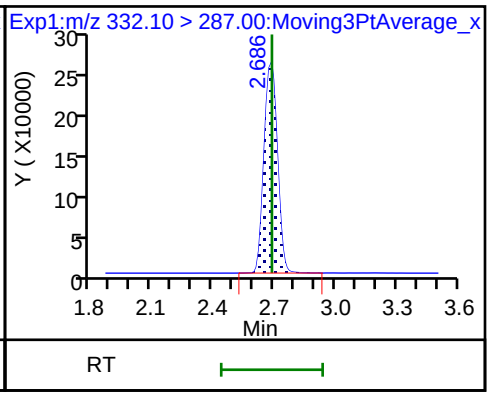
11 Perfluoropentanesulfonic acid (ND)



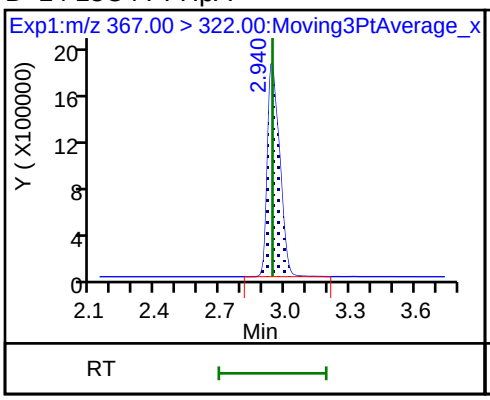
13 Perfluoro(2-propoxypropanoic) acid



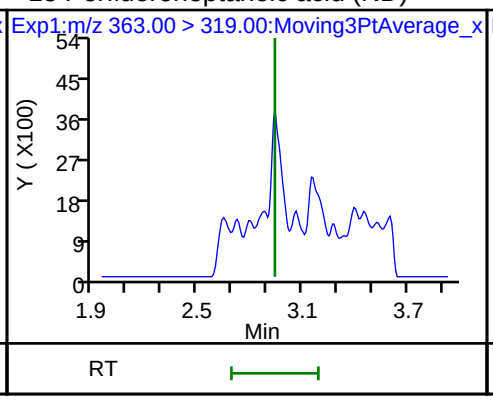
D 12 13C3 HFPO-DA



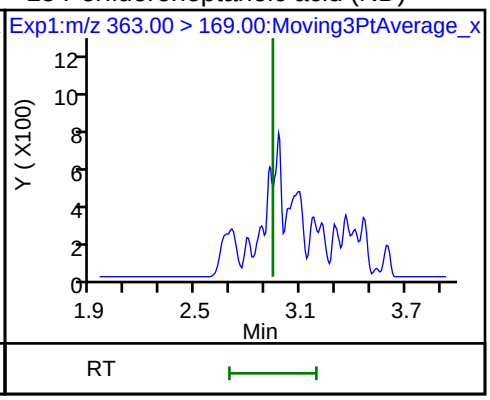
D 14 13C4 PFHpA



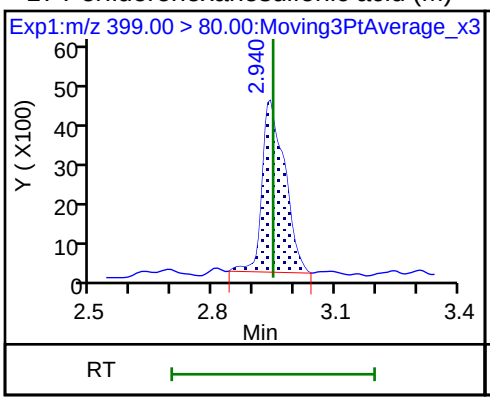
15 Perfluoroheptanoic acid (ND)



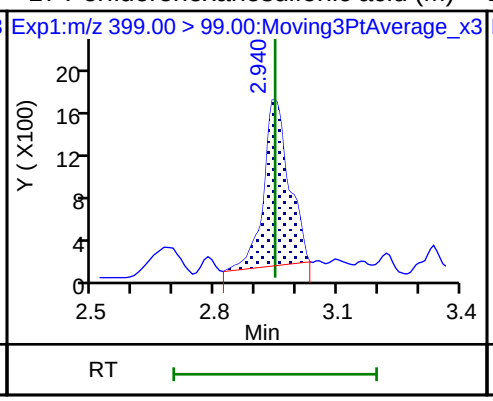
15 Perfluoroheptanoic acid (ND)



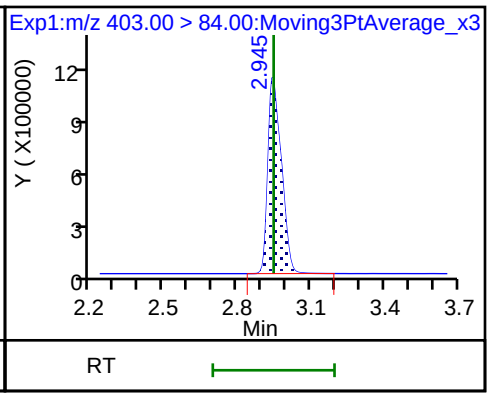
17 Perfluorohexanesulfonic acid (M)



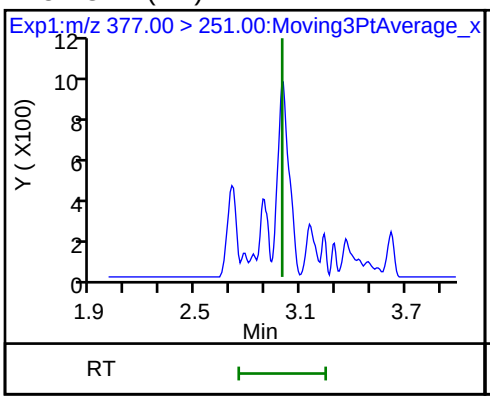
17 Perfluorohexanesulfonic acid (M)



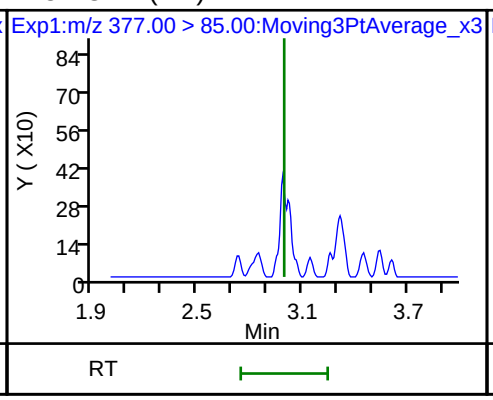
D 16 18O2 PFHxS



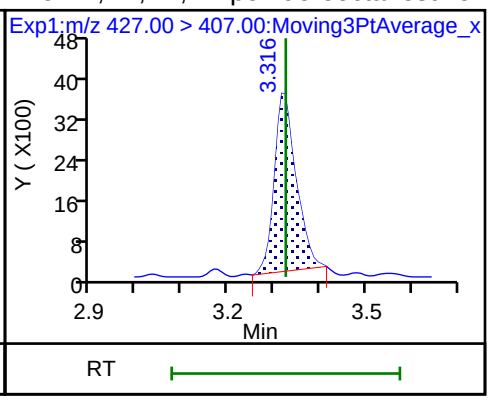
18 DONA (ND)



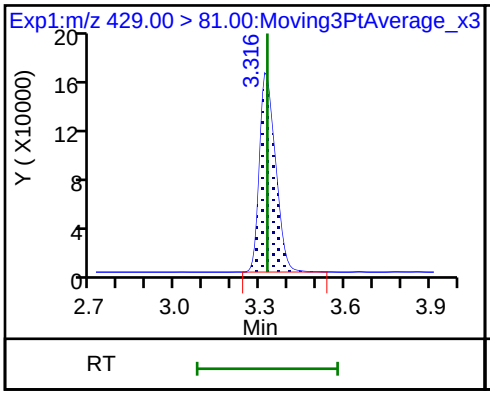
18 DONA (ND)



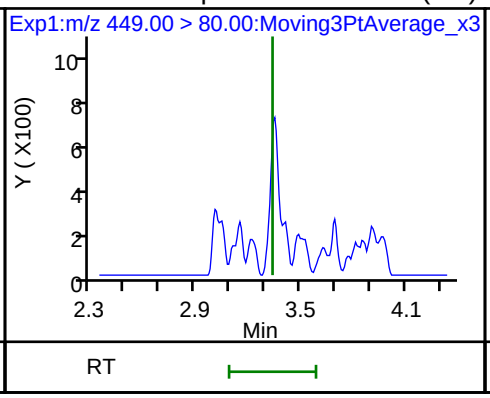
19 1H,1H,2H,2H-perfluorooctanesulfoni



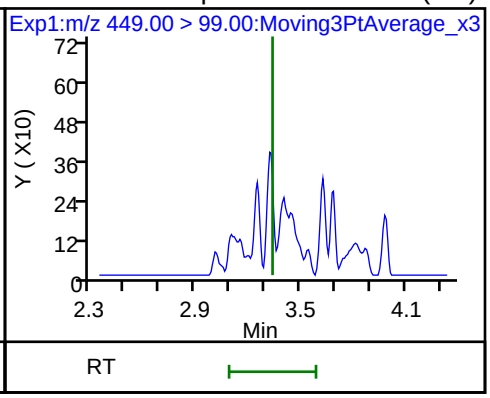
D 20 M2-6:2 FTS



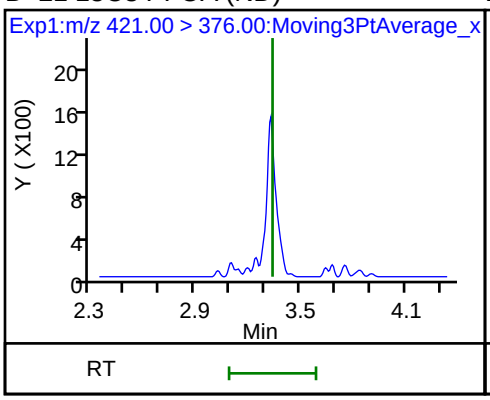
22 Perfluoroheptanesulfonic acid (ND)



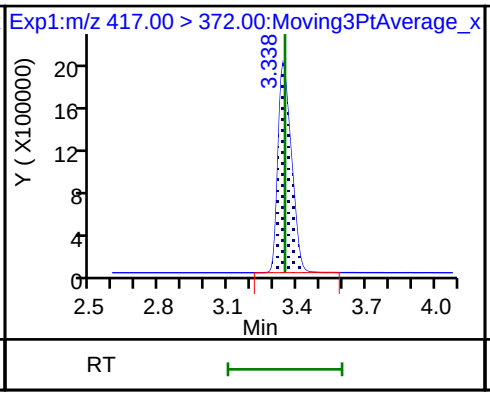
22 Perfluoroheptanesulfonic acid (ND)



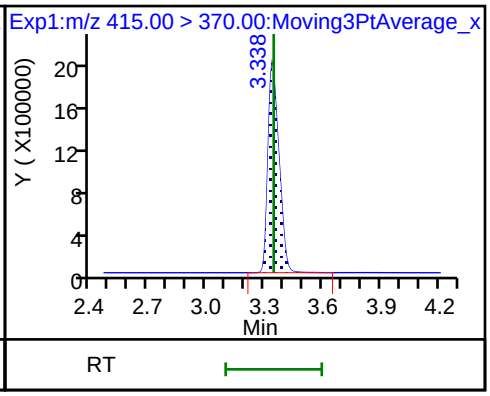
D 21 13C8 PFOA (ND)



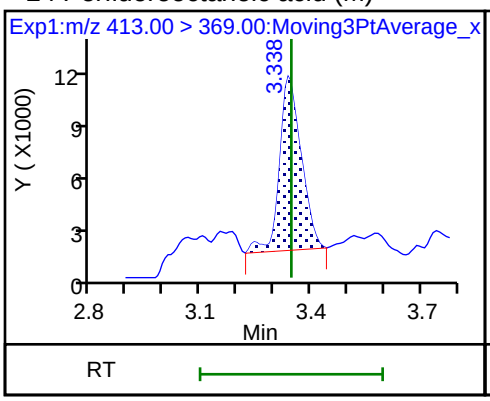
D 23 13C4 PFOA



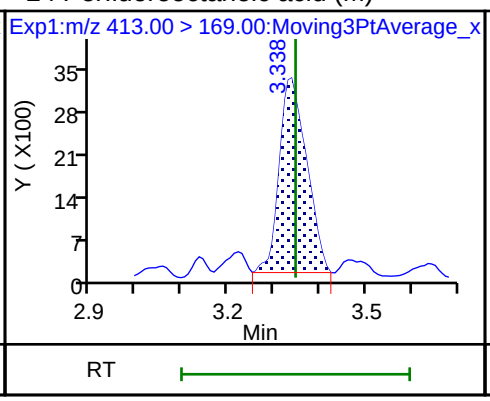
* 25 13C2 PFOA



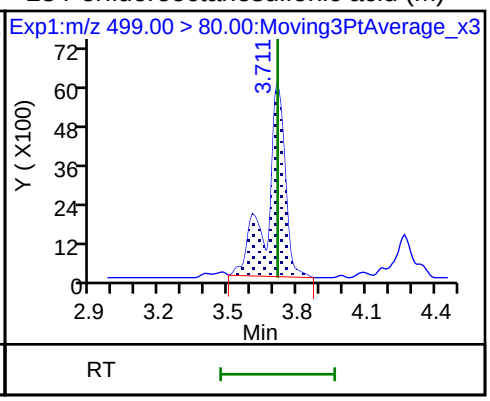
24 Perfluorooctanoic acid (M)



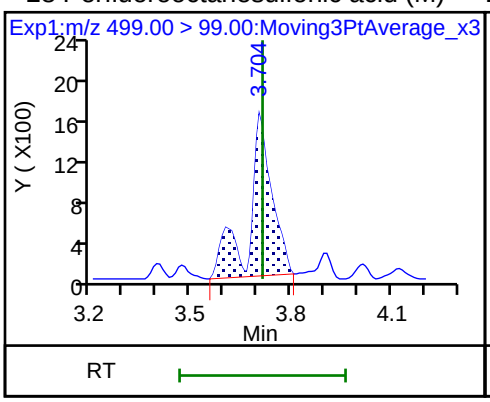
24 Perfluorooctanoic acid (M)



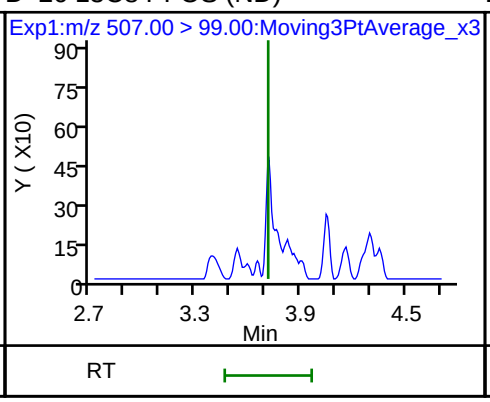
28 Perfluorooctanesulfonic acid (M)



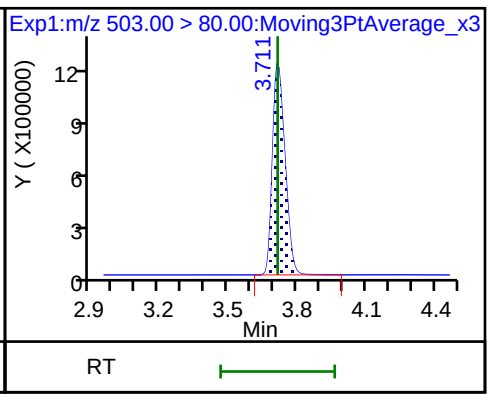
28 Perfluorooctanesulfonic acid (M)



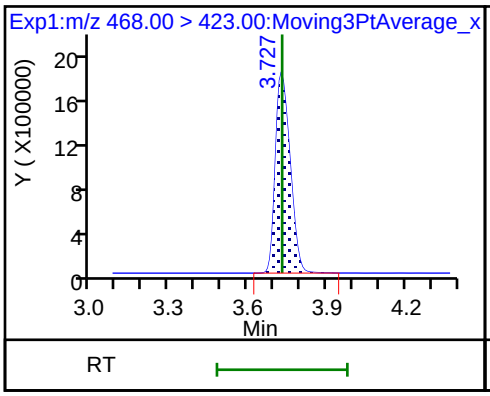
D 26 13C8 PFOS (ND)



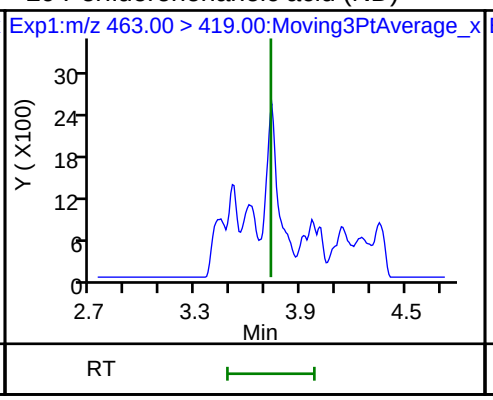
D 27 13C4 PFOS



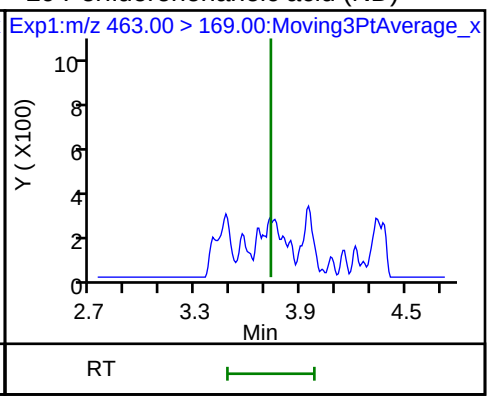
D 30 13C5 PFNA



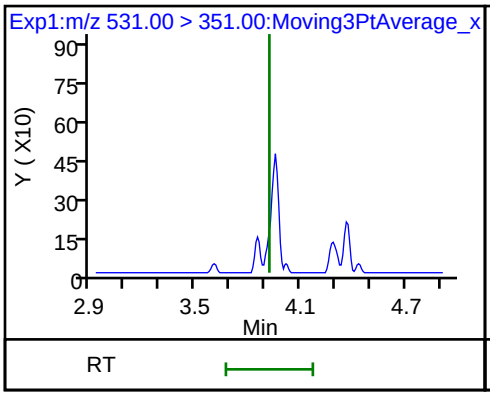
29 Perfluorononanoic acid (ND)



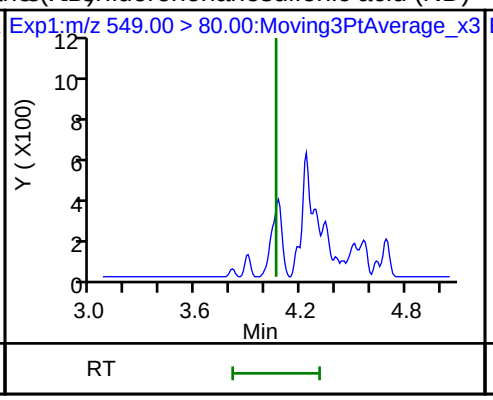
29 Perfluorononanoic acid (ND)



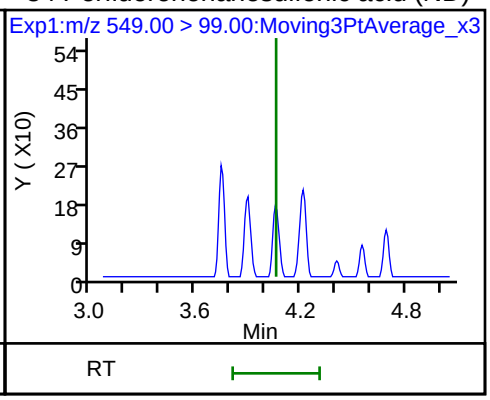
31 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (ND)



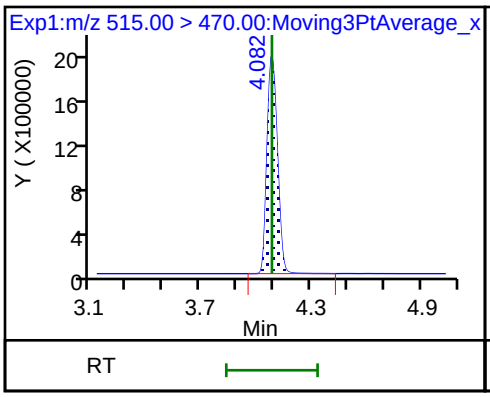
34 Perfluorononanesulfonic acid (ND)



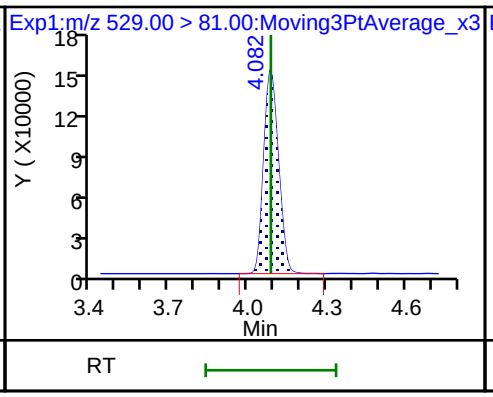
34 Perfluorononanesulfonic acid (ND)



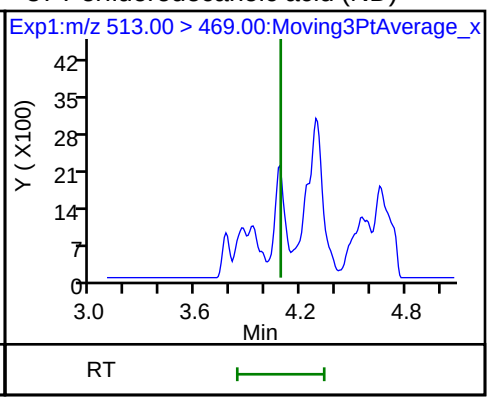
D 36 13C2 PFDA



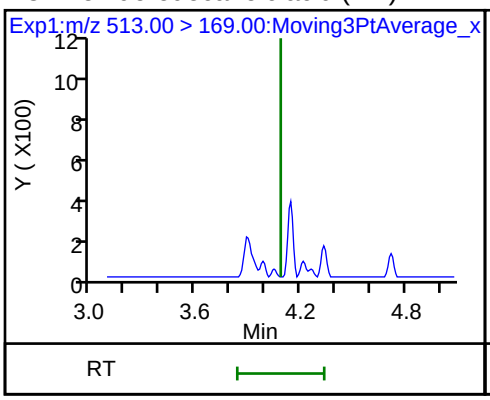
D 35 M2-8:2 FTS



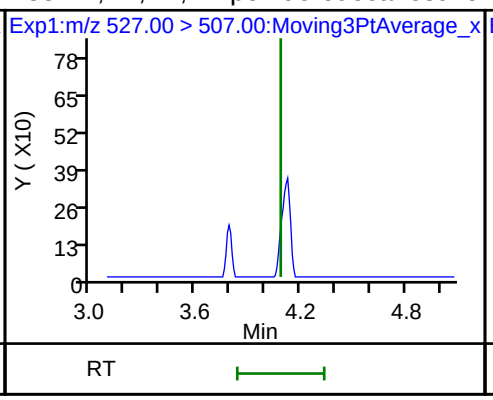
37 Perfluorodecanoic acid (ND)



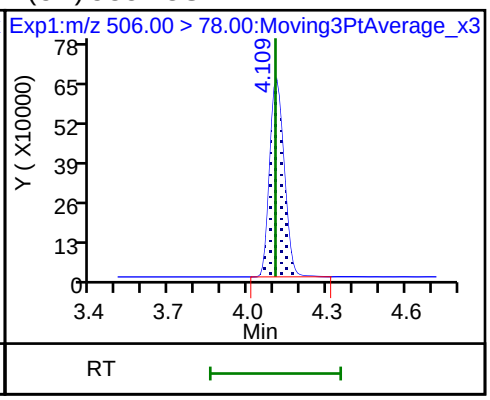
37 Perfluorodecanoic acid (ND)



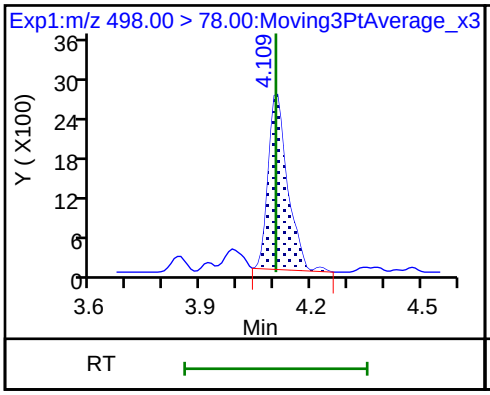
38 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)



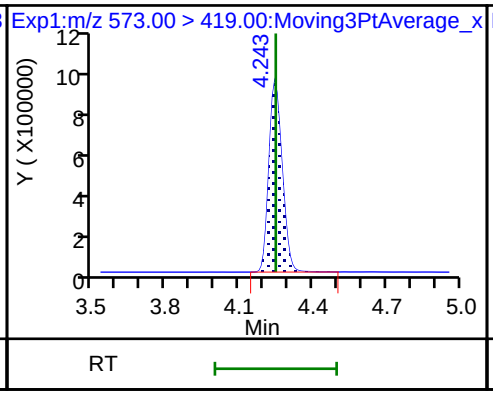
D 32 13C8 FOSA



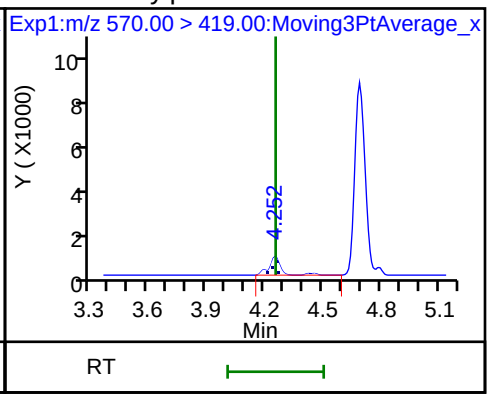
33 Perfluorooctanesulfonamide



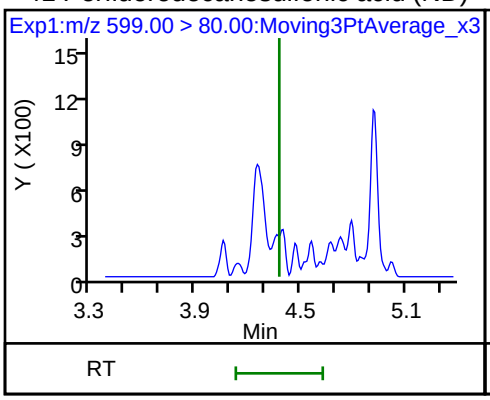
D 39 d3-NMeFOSAA



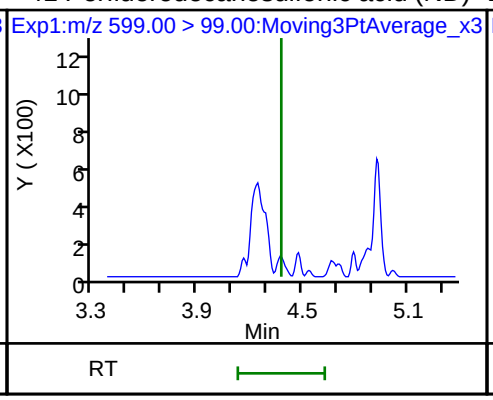
40 N-methylperfluorooctanesulfonamido



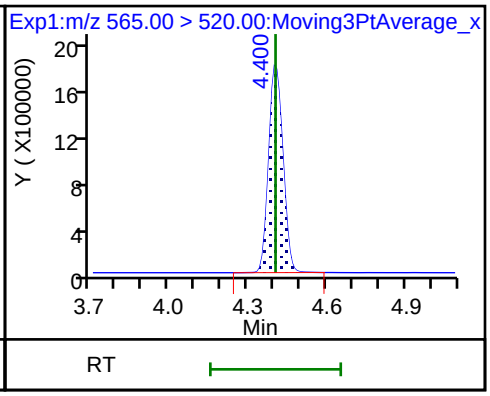
41 Perfluorodecanesulfonic acid (ND)



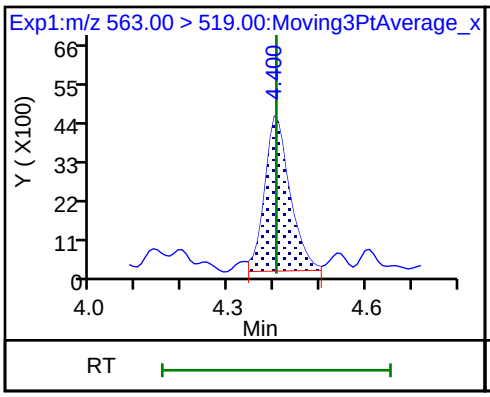
41 Perfluorodecanesulfonic acid (ND)



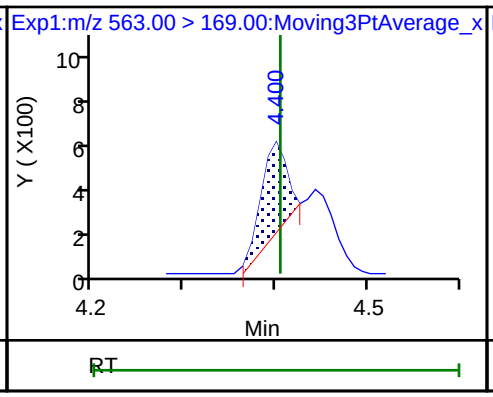
D 42 13C2 PFUnA



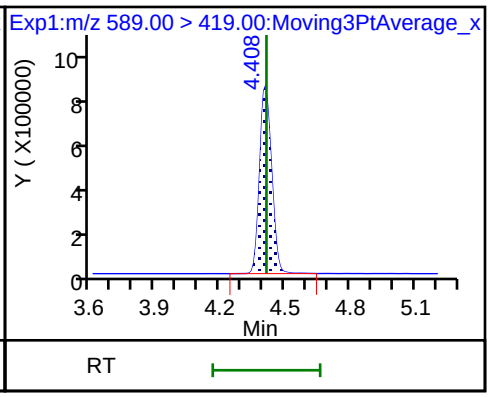
43 Perfluoroundecanoic acid



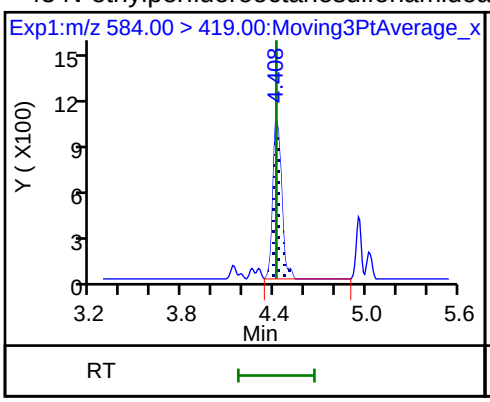
43 Perfluoroundecanoic acid



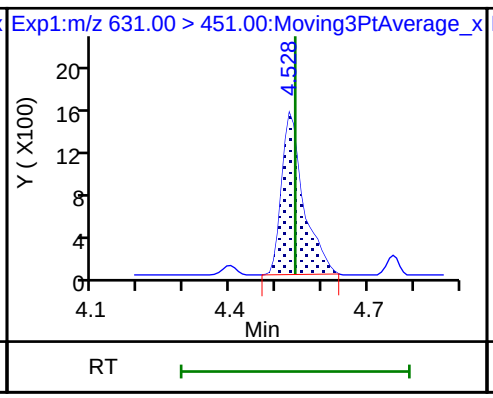
D 44 d5-NEtFOSAA



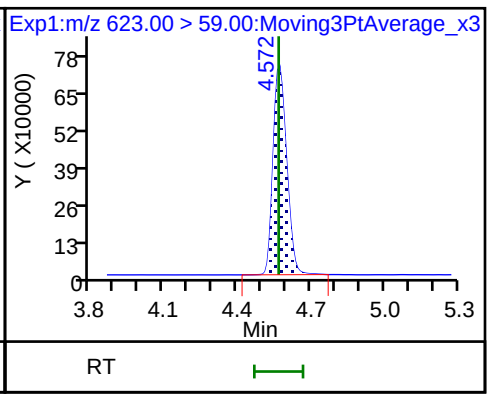
45 N-ethylperfluorooctanesulfonamidoa



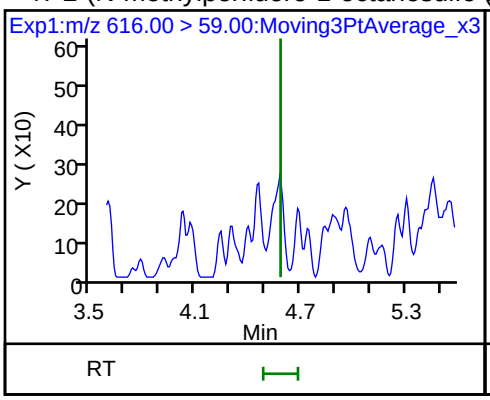
50 11-Chloroeicosafluoro-3-oxaundecan



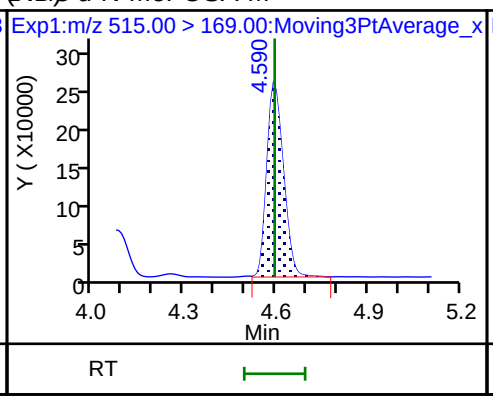
D 46 d7-N-MeFOSE-M



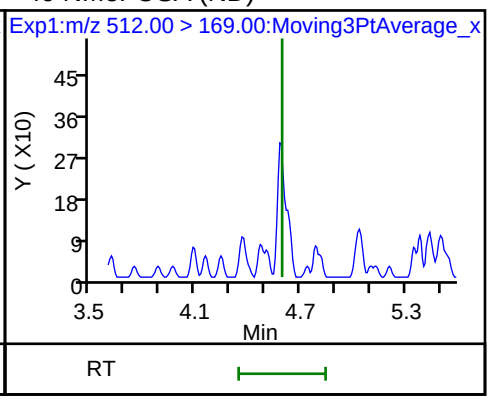
47 2-(N-methylperfluoro-1-octanesulfo (ND)



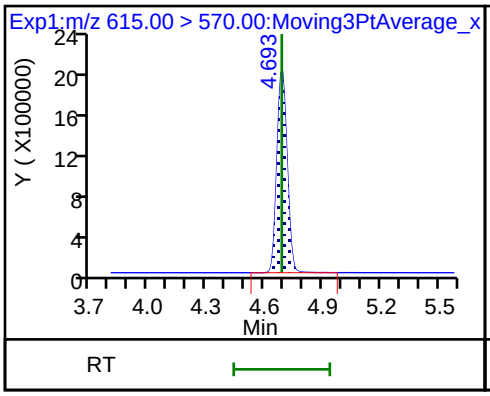
D 48 d-N-MeFOSA-M



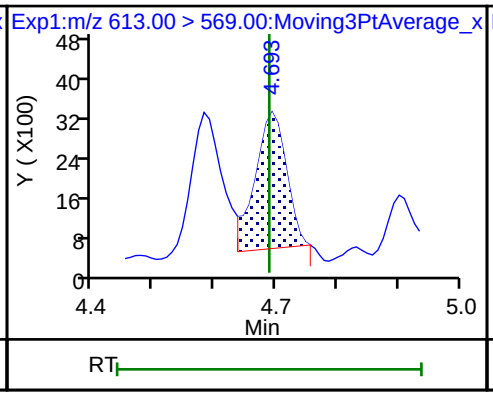
49 NMeFOSA (ND)



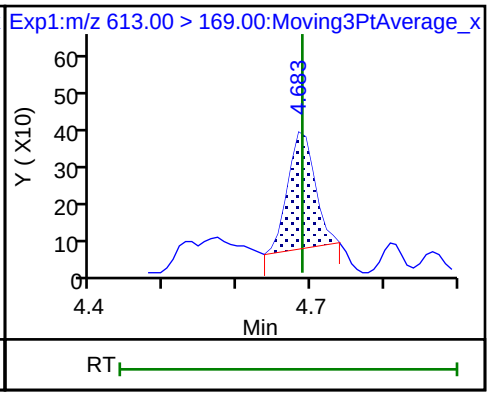
D 55 13C2 PFDoA



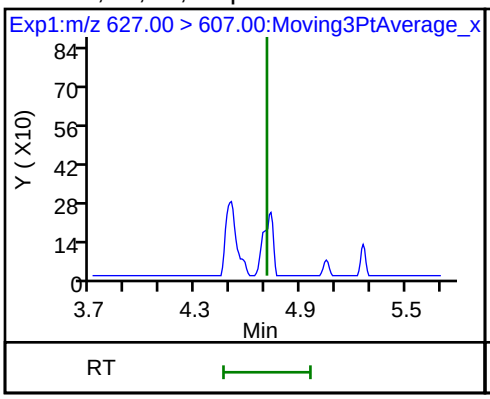
56 Perfluorododecanoic acid



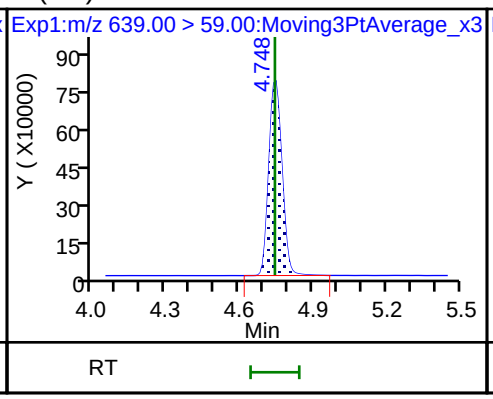
56 Perfluorododecanoic acid



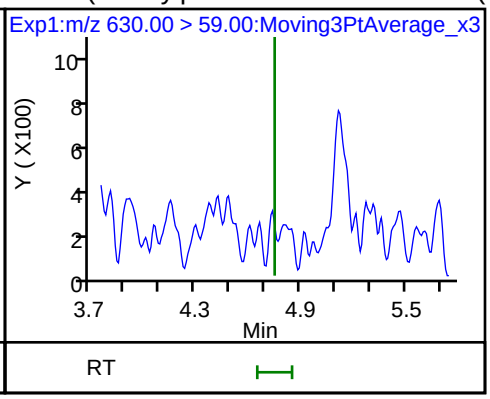
57 1H,1H,2H,2H-perfluorododecanesulfo (ND)



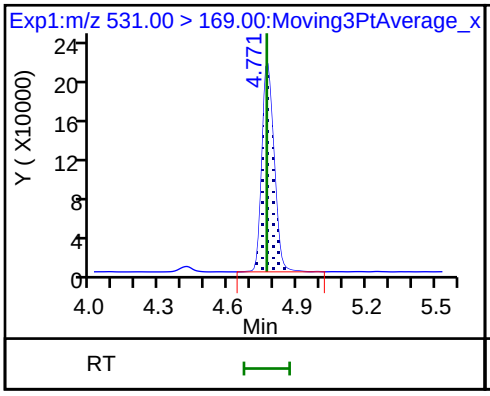
D 51 d9-N-EtFOSE-M



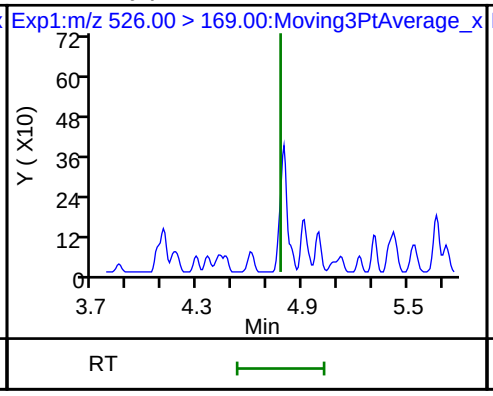
52 2-(N-ethylperfluoro-1-octanesulfon (ND)



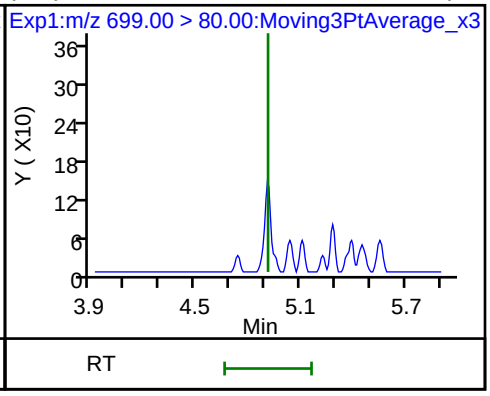
D 53 d-N-EtFOSA-M



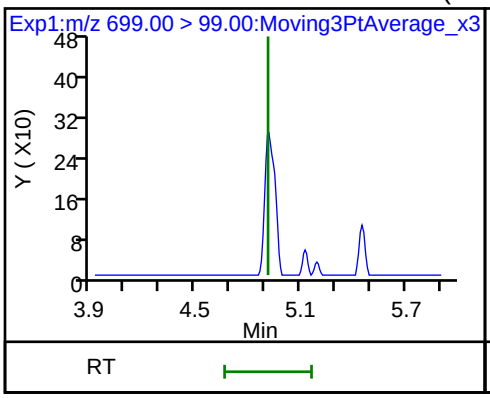
54 N-ethylperfluoro-1-octanesulfonami (ND)



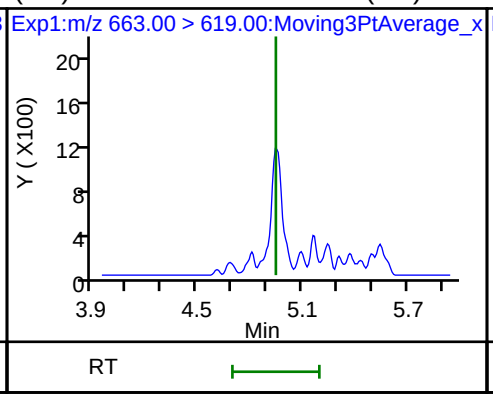
55 Perfluorododecanesulfonic acid (PF (ND)



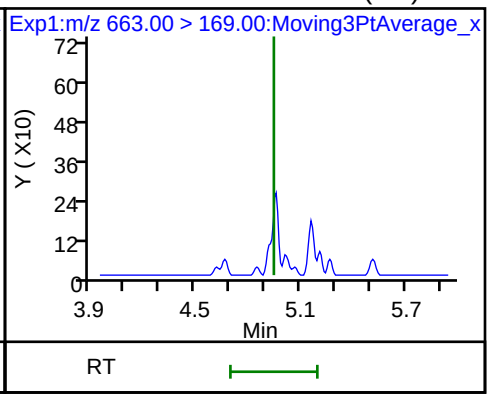
58 Perfluorododecanesulfonic acid (PF (ND)



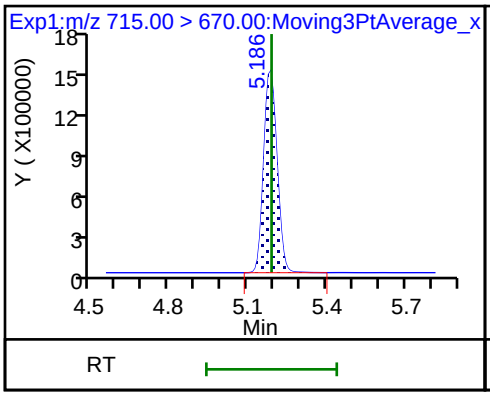
59 Perfluorotridecanoic acid (ND)



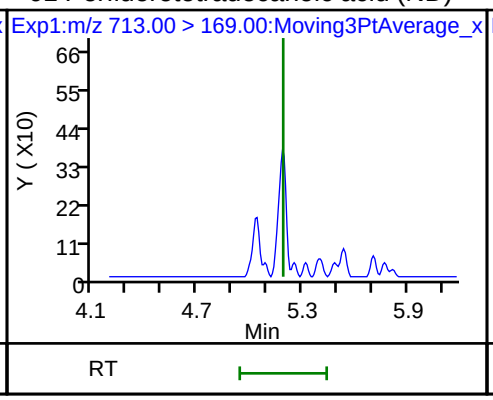
59 Perfluorotridecanoic acid (ND)



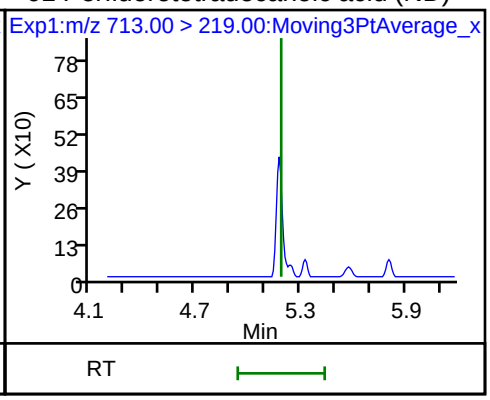
D 60 13C2 PFTeDA



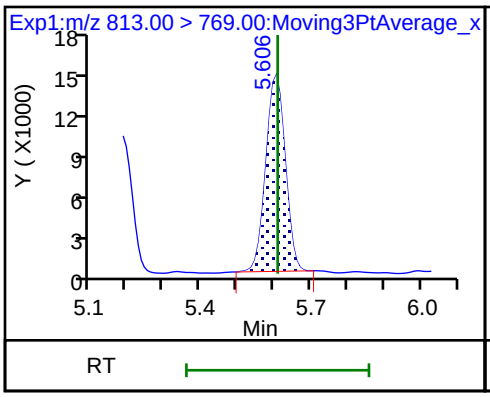
61 Perfluorotetradecanoic acid (ND)



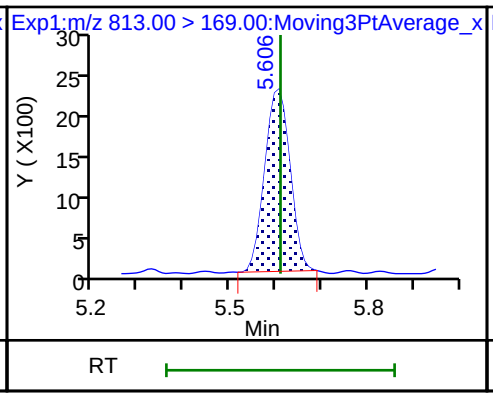
61 Perfluorotetradecanoic acid (ND)



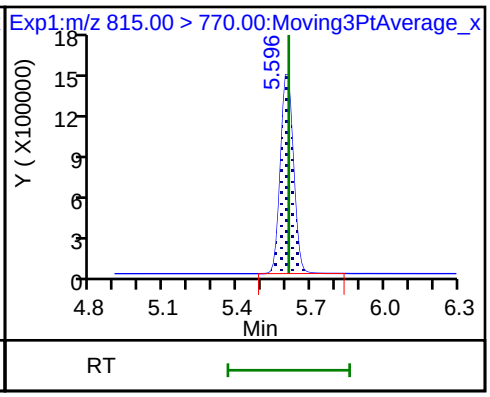
63 Perfluorohexadecanoic acid



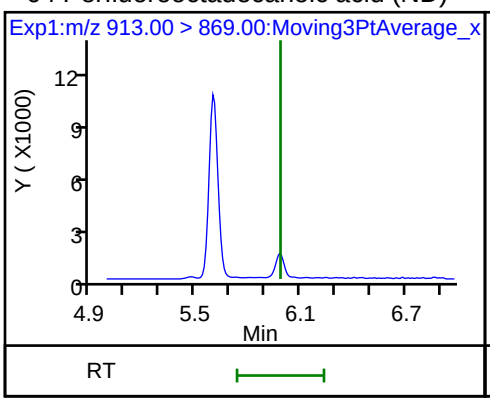
63 Perfluorohexadecanoic acid



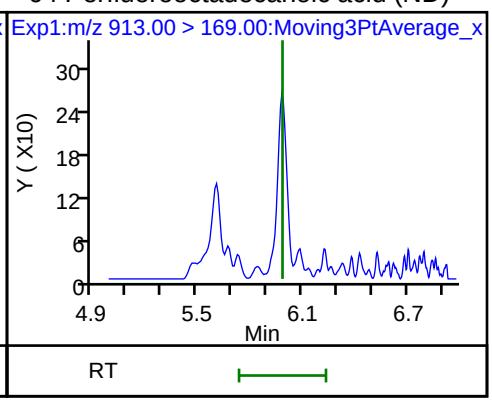
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid (ND)



64 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

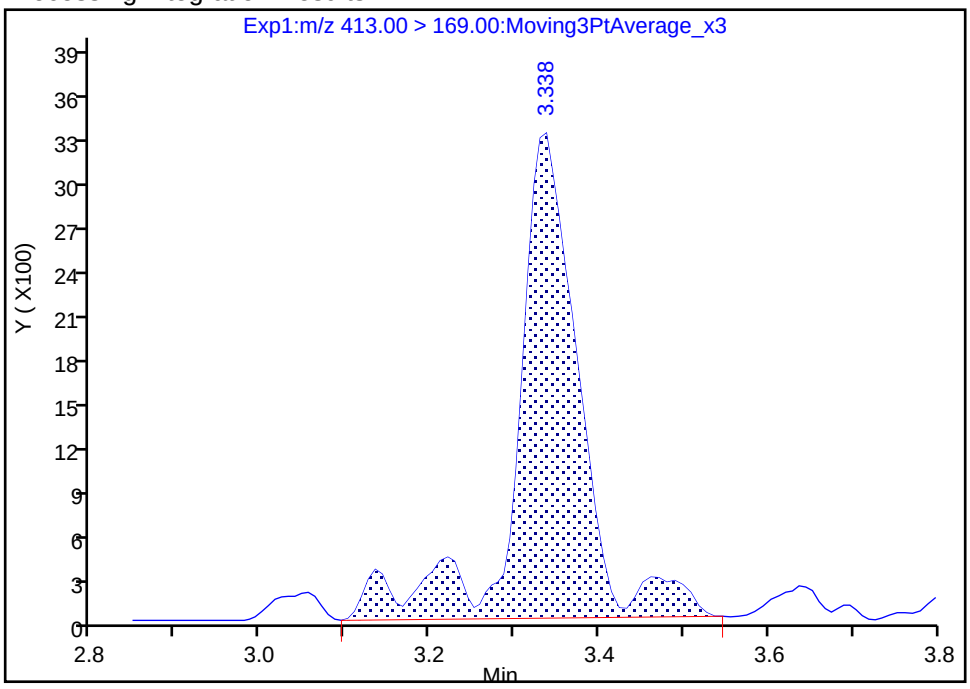
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d				
Injection Date:	09-Oct-2019 01:02:12	Instrument ID:	A9		
Lims ID:	LB 320-326292/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

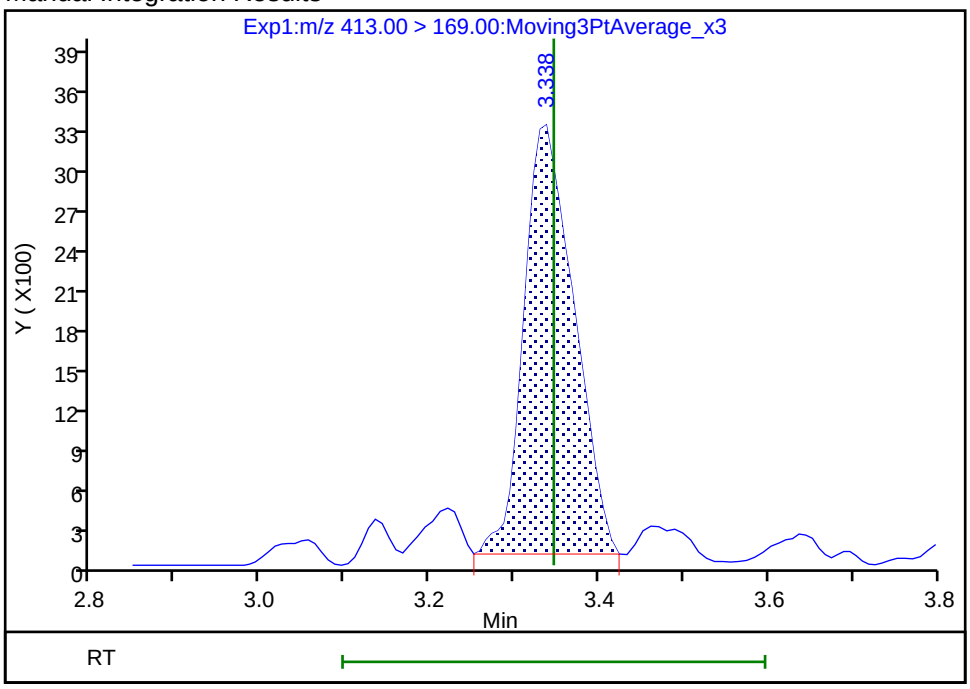
Processing Integration Results

RT: 3.34
Area: 17157
Amount: 0.014664
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 13248
Amount: 0.011395
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:33:42

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

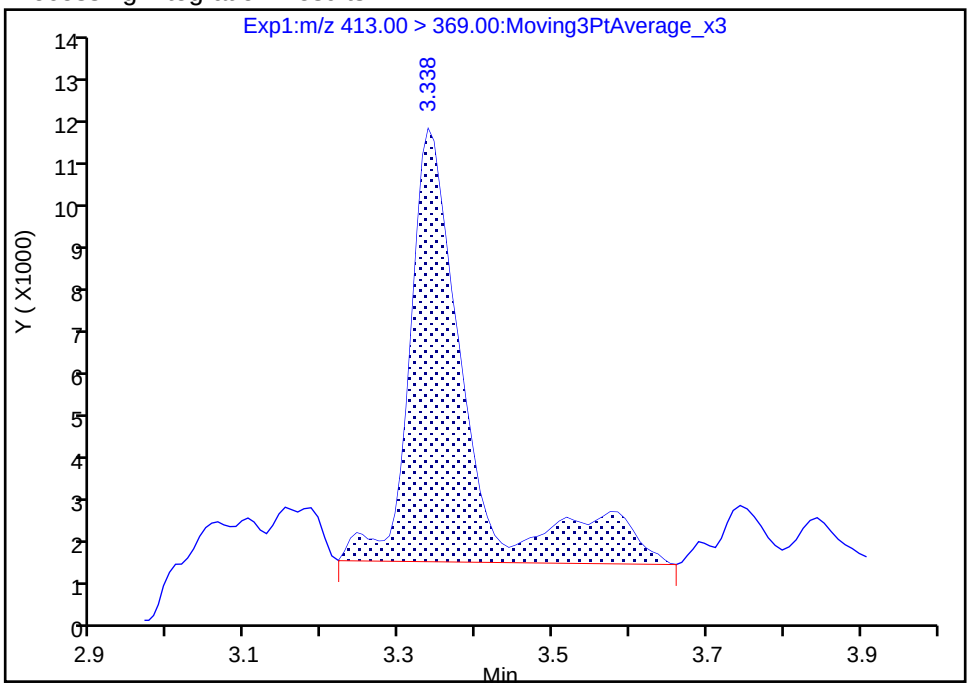
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d				
Injection Date:	09-Oct-2019 01:02:12	Instrument ID:	A9		
Lims ID:	LB 320-326292/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

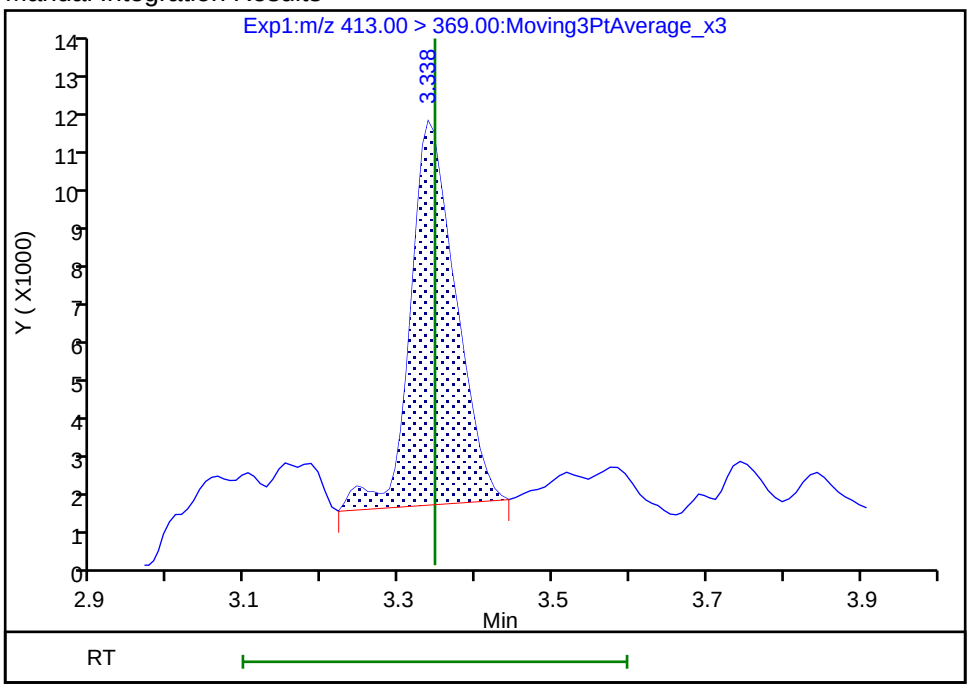
Processing Integration Results

RT: 3.34
Area: 51562
Amount: 0.014664
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 40068
Amount: 0.011395
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:33:47
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

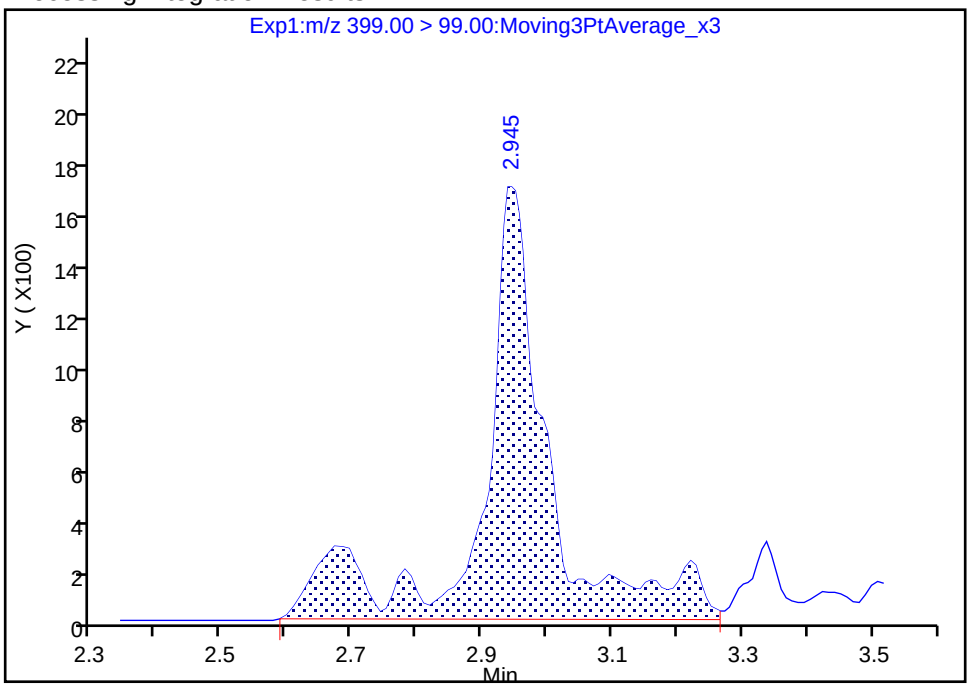
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d
Injection Date: 09-Oct-2019 01:02:12 Instrument ID: A9
Lims ID: LB 320-326292/1-B
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

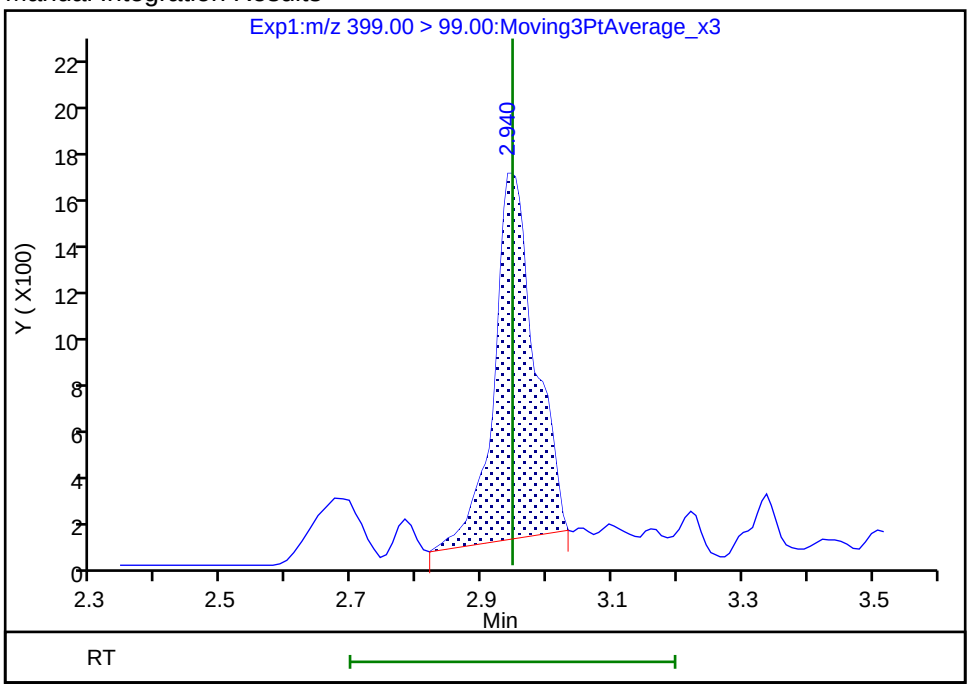
Processing Integration Results

RT: 2.95
Area: 11862
Amount: 0.008809
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 6721
Amount: 0.007613
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:33:28
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

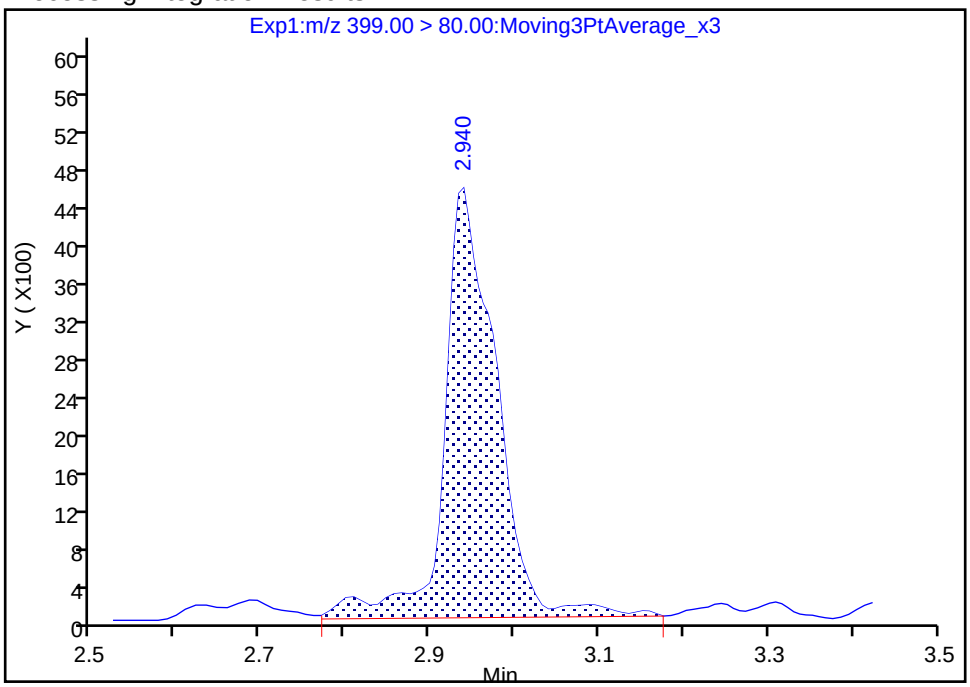
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d
Injection Date: 09-Oct-2019 01:02:12 Instrument ID: A9
Lims ID: LB 320-326292/1-B
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

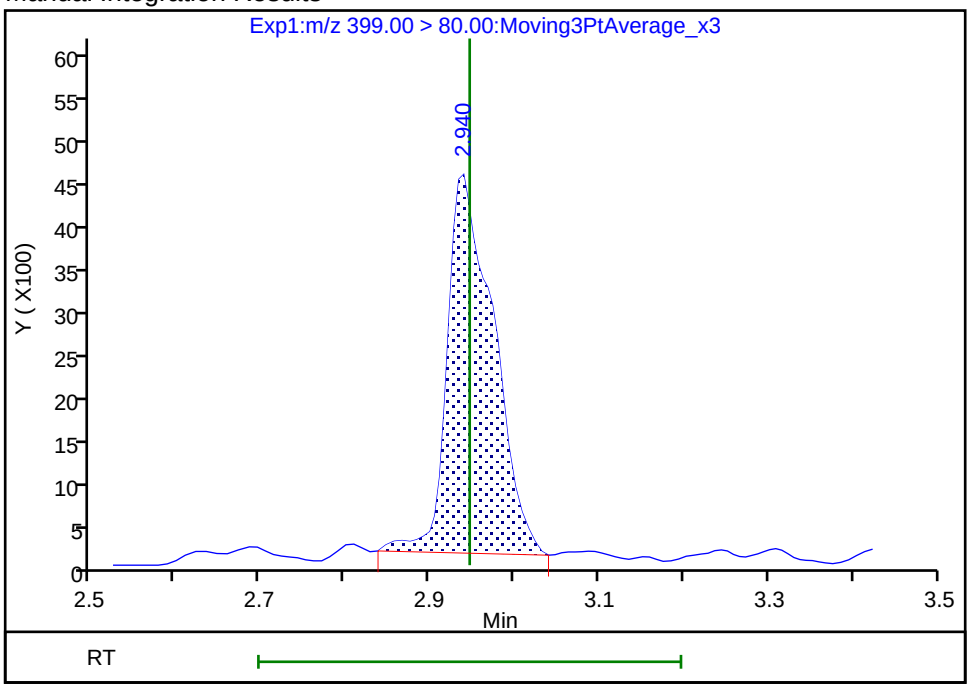
Processing Integration Results

RT: 2.94
Area: 19579
Amount: 0.008809
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 16922
Amount: 0.007613
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:33:33
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

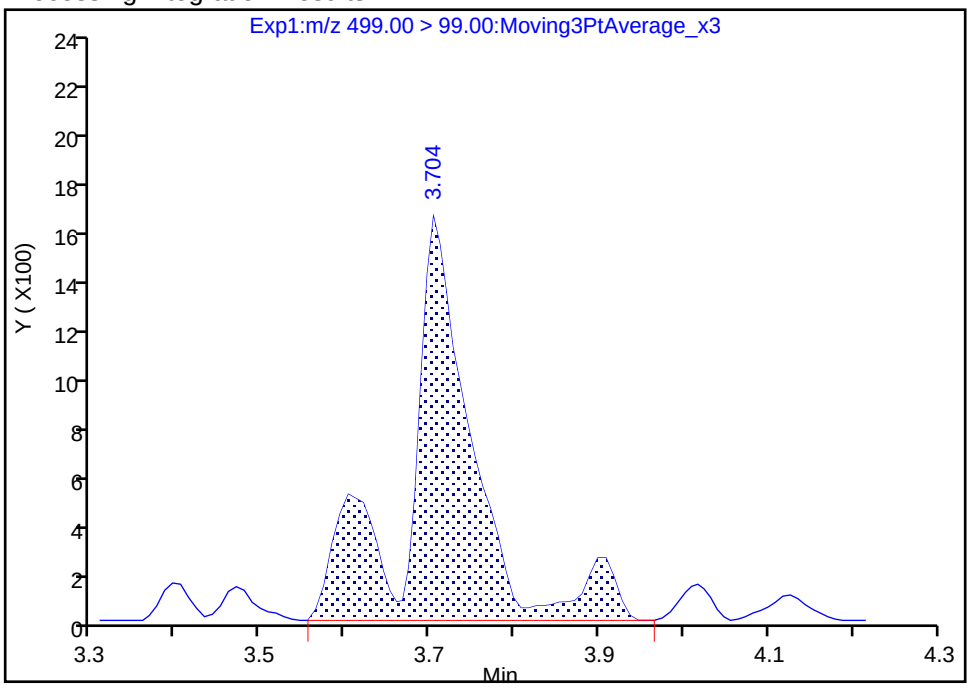
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d				
Injection Date:	09-Oct-2019 01:02:12	Instrument ID:	A9		
Lims ID:	LB 320-326292/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

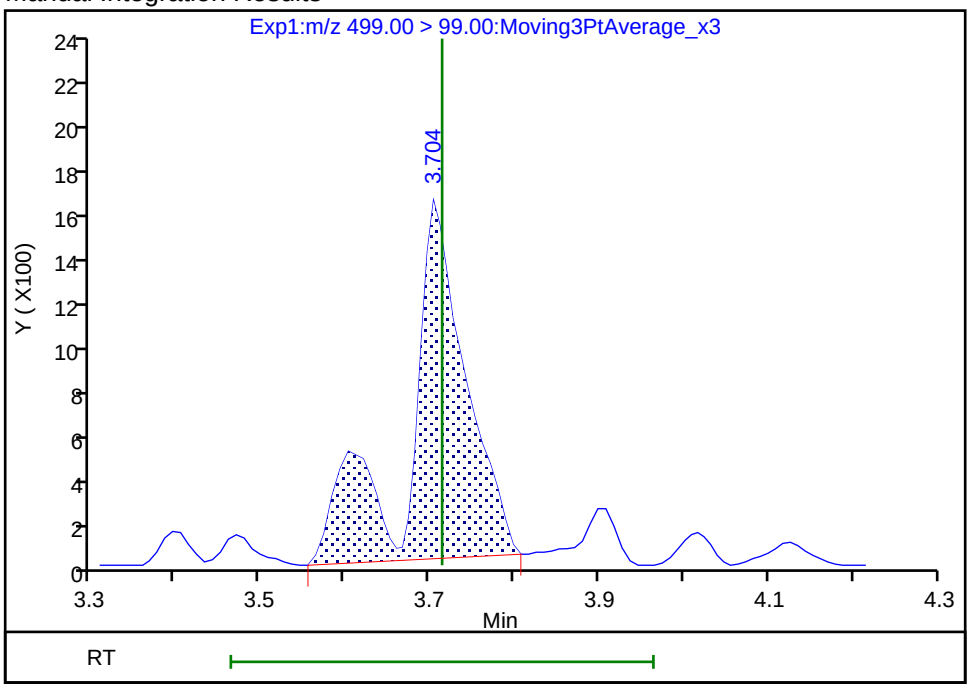
Processing Integration Results

RT: 3.70
Area: 8943
Amount: 0.020848
Amount Units: ng/ml



Manual Integration Results

RT: 3.70
Area: 7690
Amount: 0.015785
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:33:55

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

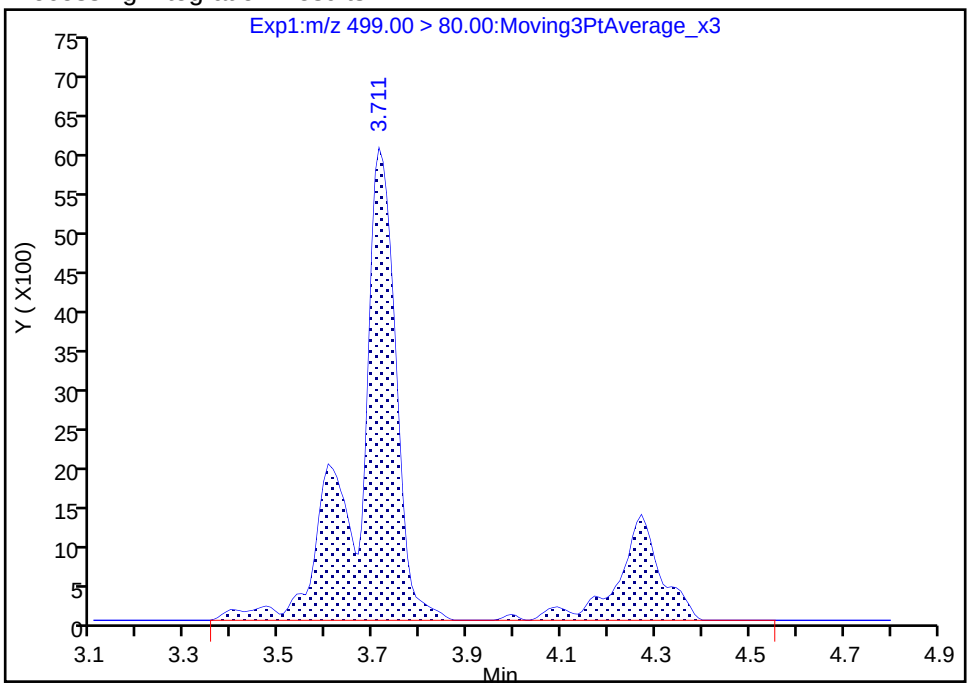
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._021.d				
Injection Date:	09-Oct-2019 01:02:12	Instrument ID:	A9		
Lims ID:	LB 320-326292/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	11	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

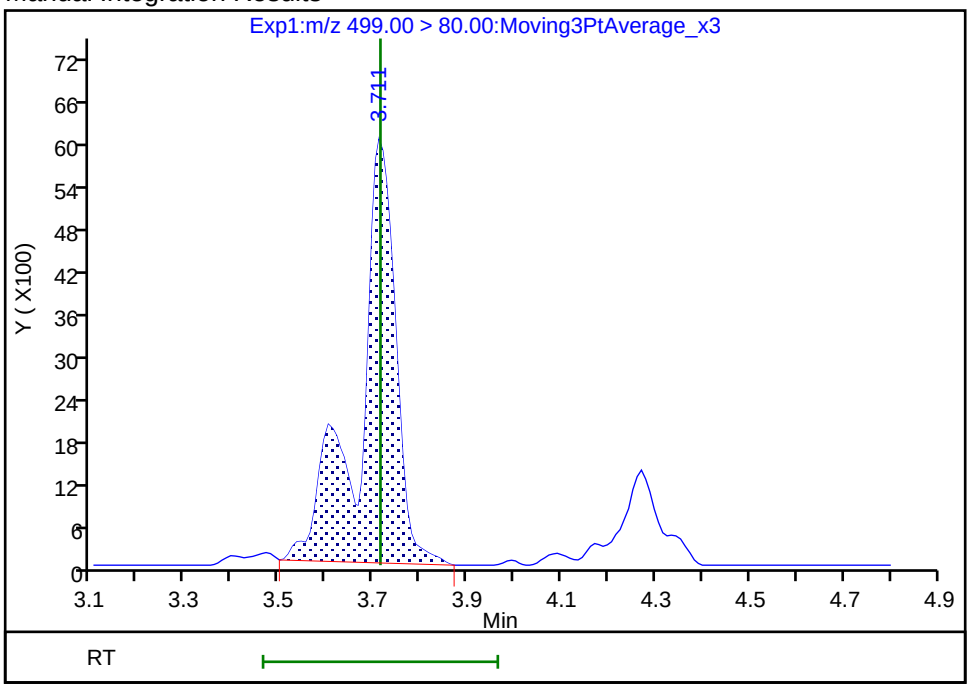
Processing Integration Results

RT: 3.71
Area: 43013
Amount: 0.020848
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 32568
Amount: 0.015785
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:34:00

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LB 320-327145/1-B

Matrix: Solid (SPLP East) Lab File ID: 2019.10.08LLBB._022.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 284.3(mL) Date Analyzed: 10/09/2019 01:11

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.76		1.76	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.76		1.76	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	1.76		1.76	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.76		1.76	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	1.76		1.76	0.75
375-95-1	Perfluorononanoic acid (PFNA)	1.76		1.76	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.76		1.76	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.76		1.76	0.97
307-55-1	Perfluorododecanoic acid (PFDoA)	1.76		1.76	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.76		1.76	1.14
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.76		1.76	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.76		1.76	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.279	J	1.76	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.76		1.76	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.76		1.76	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.76		1.76	0.28

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	113		25-150
STL00993	13C2 PFHxA	107		25-150
STL00990	13C4 PFOA	108		25-150
STL00995	13C5 PFNA	107		25-150
STL00996	13C2 PFDA	106		25-150
STL01892	13C4 PFHpA	112		25-150
STL00997	13C2 PFUnA	109		25-150
STL01893	13C5 PFPeA	111		25-150
STL00998	13C2 PFDoA	108		25-150
STL02116	13C2 PFTeDA	109		25-150
STL00994	18O2 PFHxS	113		25-150
STL00991	13C4 PFOS	101		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._022.d
Lims ID: LB 320-327145/1-B
Client ID:
Sample Type: LB
Inject. Date: 09-Oct-2019 01:11:47 ALS Bottle#: 12 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lb 320-327145/1-b
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:35:52 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:35:52
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.893	1.896	-0.003	1.003	13775	0.006312			2.3	a
D 1 13C4 PFBA										
217.00 > 172.00	1.887	1.896	-0.009	0.565	6422212	2.83		113	6125	
D 4 13C5 PFPeA										
267.90 > 223.00	2.189	2.201	-0.011	0.656	5285624	2.78		111	2707	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.197	2.201	-0.003	1.004	8511	0.003930			1.2	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.517	-0.003	0.753	668672	1.84		79.0	1045	
D 9 13C2 PFHxA										
315.00 > 270.00	2.546	2.560	-0.014	0.762	5836051	2.67		107	2643	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.673	2.688	-0.015	0.995	26488	0.0371			24.5	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.688	-0.002	0.804	1179258	3.10		124	2313	
D 14 13C4 PFHpA										
367.00 > 322.00	2.936	2.941	-0.005	0.879	7014886	2.80		112	3503	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.941	2.947	-0.006	1.002	17691	0.007940	Target=3.29		36.8	
399.00 > 99.00	2.959	2.947	0.012	1.008	9141		1.94(1.64-4.93)		2.0	
D 16 18O2 PFHxS										
403.00 > 84.00	2.936	2.947	-0.011	0.879	4307839	2.68		113	4535	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.325	0.0	1.000	5388	0.008681			23.4	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.325	0.0	0.996	632915	1.81		76.3	1740	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C4 PFOA										
417.00 > 372.00	3.333	3.346	-0.013	0.998	7831823	2.71		108	3958	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.346	-0.006		7704025	2.50			3917	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.333	3.346	-0.013	1.000	45516	0.0129	Target=2.91		6.8	M
413.00 > 169.00	3.340	3.346	-0.006	1.002	13784		3.30(1.45-4.36)		23.0	M
D 27 13C4 PFOS										
503.00 > 80.00	3.715	3.714	0.001	1.112	4518749	2.42		101	4029	
D 30 13C5 PFNA										
468.00 > 423.00	3.723	3.730	-0.007	1.115	6905110	2.69		107	3887	
D 36 13C2 PFDA										
515.00 > 470.00	4.079	4.086	-0.007	1.221	7676805	2.65		106	3877	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.079	4.086	-0.007	1.221	637384	1.94		81.0	1879	
D 32 13C8 FOSA										
506.00 > 78.00	4.096	4.104	-0.008	1.227	2585254	2.68		107	2357	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.114	4.104	0.010	1.004	22075	0.007771			53.7	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.240	4.247	-0.007	1.269	3602463	2.63		105	2023	
D 42 13C2 PFUnA										
565.00 > 520.00	4.397	4.404	-0.007	1.317	6741756	2.72		109	2617	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.406	4.413	-0.007	1.319	3311807	2.81		113	1548	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.534	4.541	-0.007	1.220	3844	0.001087			26.0	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.569	4.567	0.002		2920262	4.63		37.1	1445	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.578	4.585	-0.007	1.002	1060	0.004355			3.4	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.587	4.594	-0.007		1211965	1.76		70.4	179	
D 55 13C2 PFDoA										
615.00 > 570.00	4.681	4.688	-0.007	1.402	7390646	2.71		108	4277	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.690	4.707	-0.017	1.150	1465	0.003228			12.5	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.737	4.744	-0.007		2969651	4.53		36.2	2429	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.768	4.767	0.001		978630	1.48		59.0	968	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.182	5.189	-0.007	1.552	5274238	2.73		109	4007	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.600	5.609	-0.009	1.000	46547	-0.002490	Target=6.52		24.2	
813.00 > 169.00	5.600	5.609	-0.009	1.000	7870		5.91(3.26-9.77)		52.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 62 13C2 PFHxDA										
815.00 > 770.00	5.600	5.609	-0.009	1.677	5143868	2.42		96.9	5528	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 18-Oct-2019 15:35:53 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._022.d

Injection Date: 09-Oct-2019 01:11:47 Instrument ID: A9

Lims ID: LB 320-327145/1-B

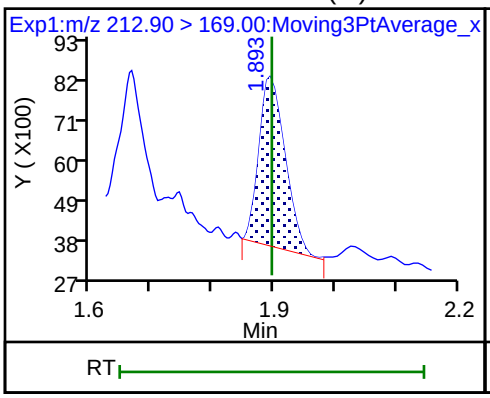
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 8

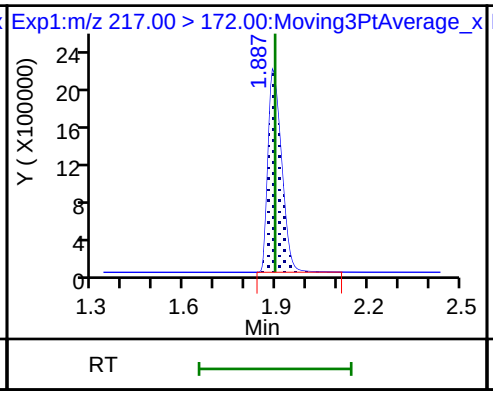
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

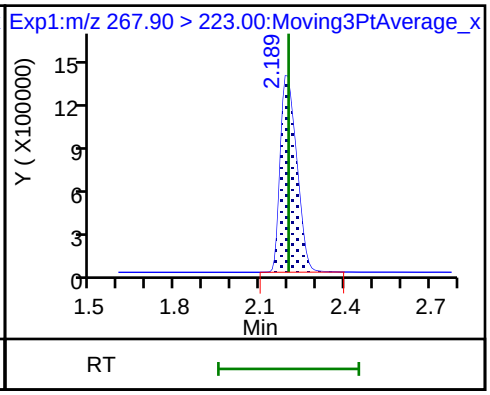
2 Perfluorobutanoic acid (M)



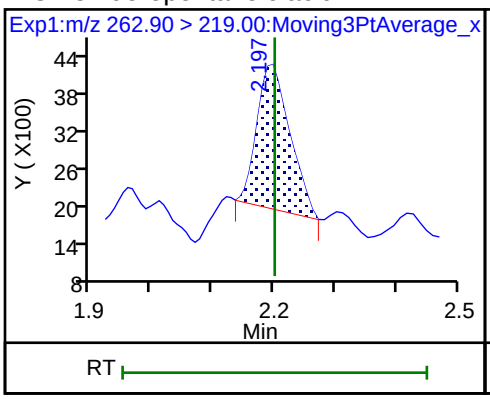
D 1 13C4 PFBA



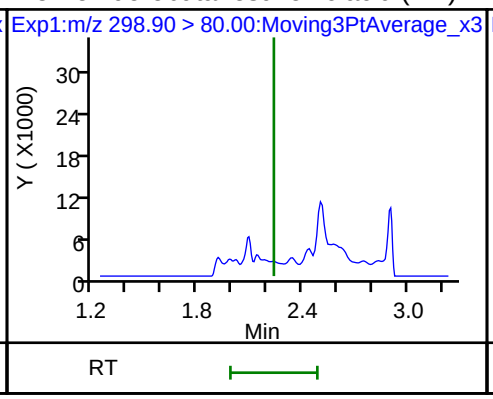
D 4 13C5 PFPeA



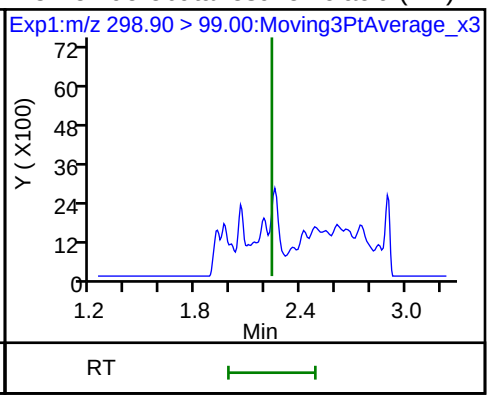
3 Perfluoropentanoic acid



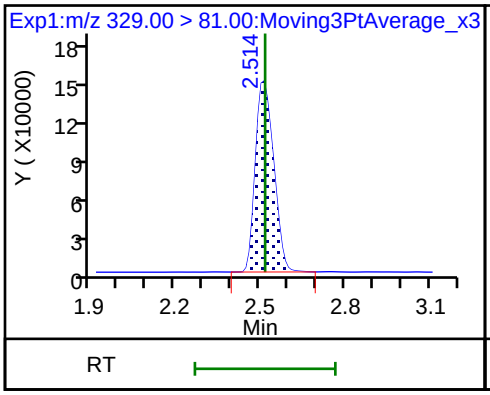
5 Perfluorobutanesulfonic acid (ND)



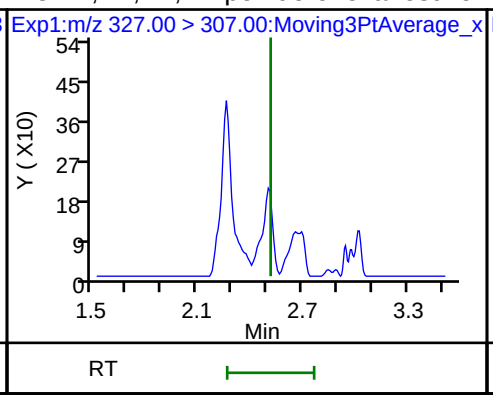
5 Perfluorobutanesulfonic acid (ND)



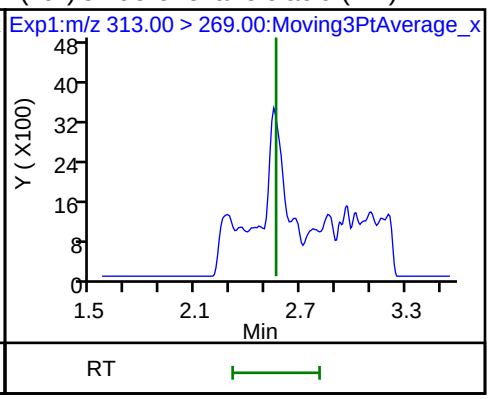
D 7 M2-4:2 FTS



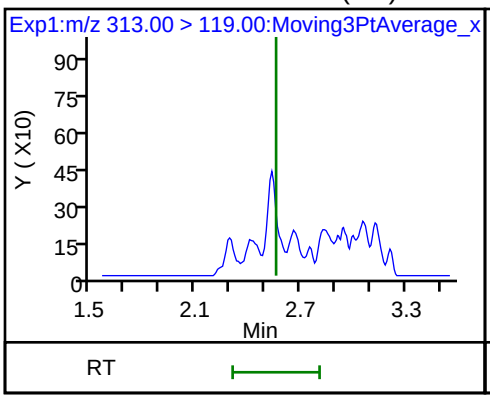
8 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



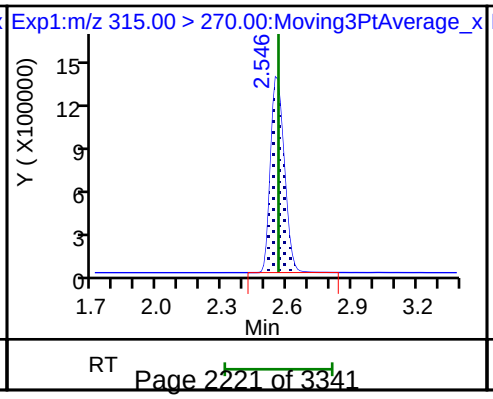
11 Perfluorohexanoic acid (ND)



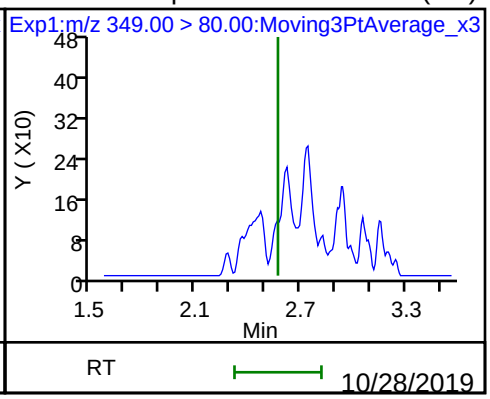
10 Perfluorohexanoic acid (ND)



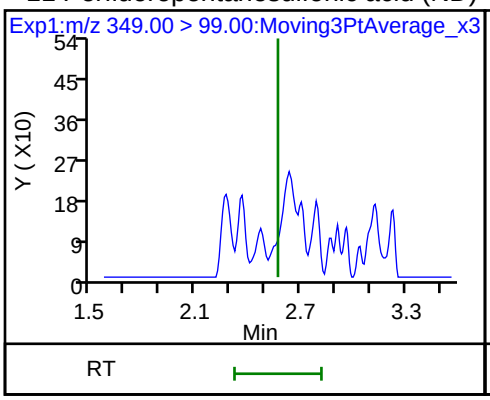
D 9 13C2 PFHxA



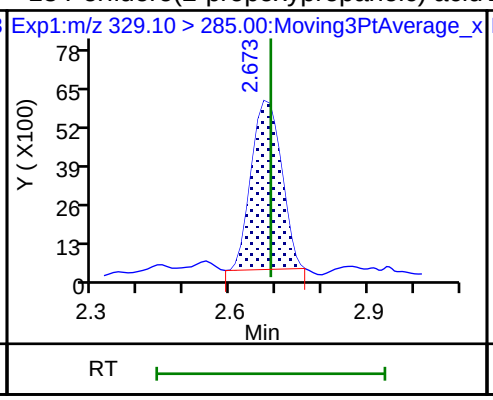
11 Perfluoropentanesulfonic acid (ND)



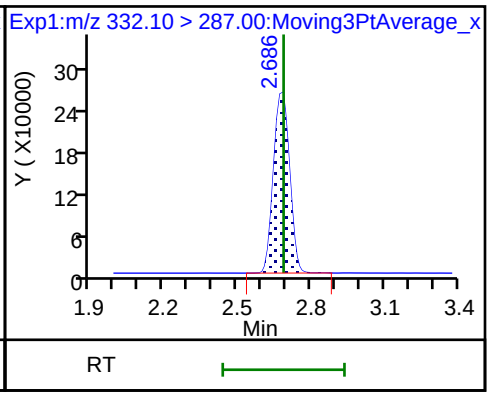
11 Perfluoropentanesulfonic acid (ND)



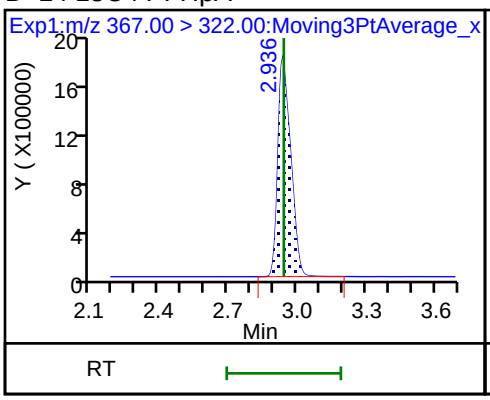
13 Perfluoro(2-propoxypropanoic) acid



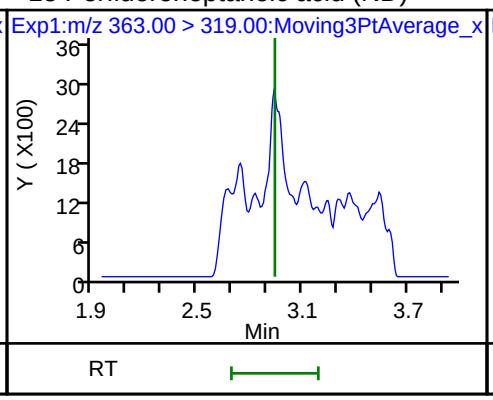
D 12 13C3 HFPO-DA



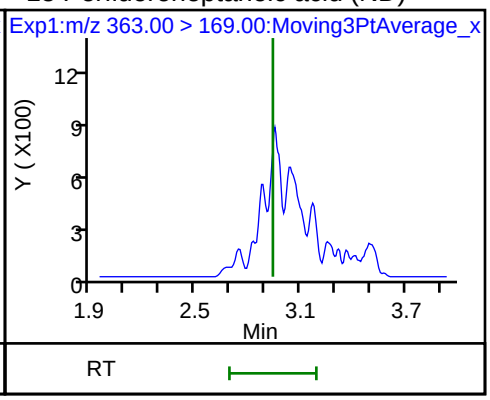
D 14 13C4 PFHpA



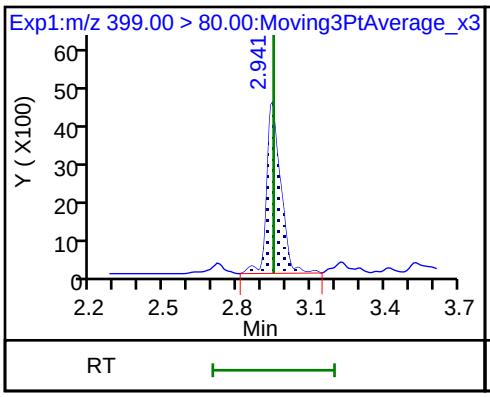
15 Perfluoroheptanoic acid (ND)



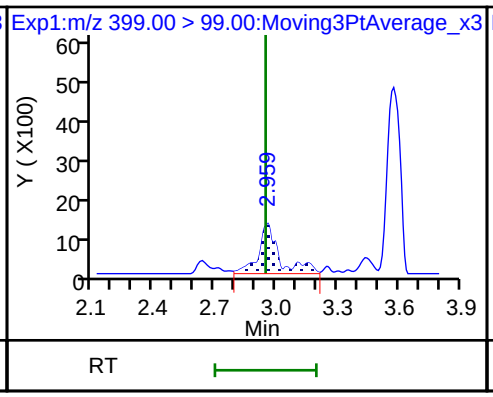
15 Perfluoroheptanoic acid (ND)



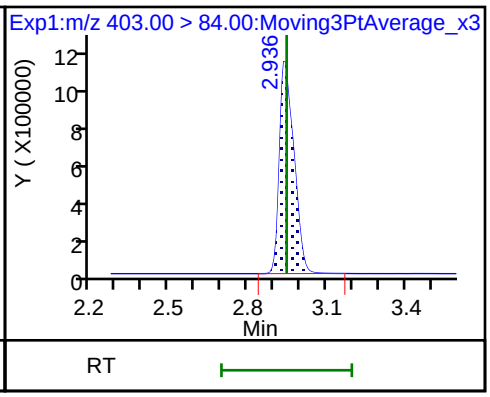
17 Perfluorohexanesulfonic acid



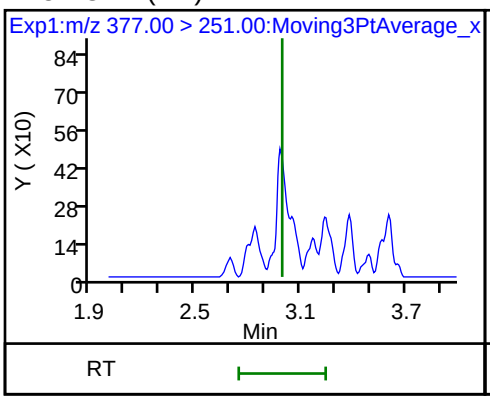
17 Perfluorohexanesulfonic acid



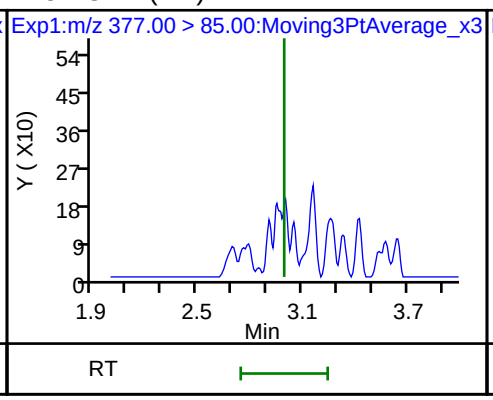
D 16 18O2 PFHxS



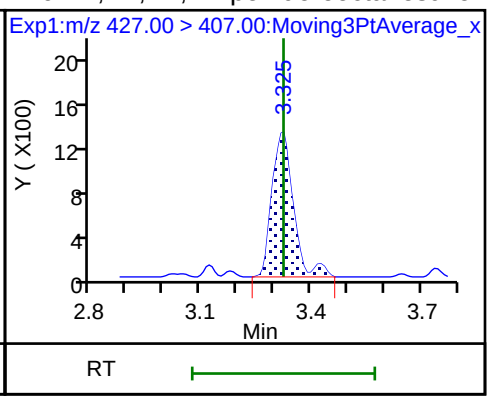
18 DONA (ND)



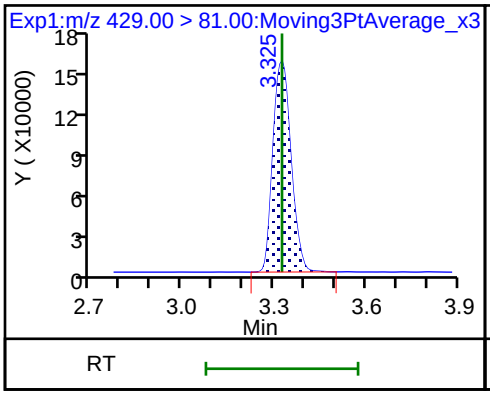
18 DONA (ND)



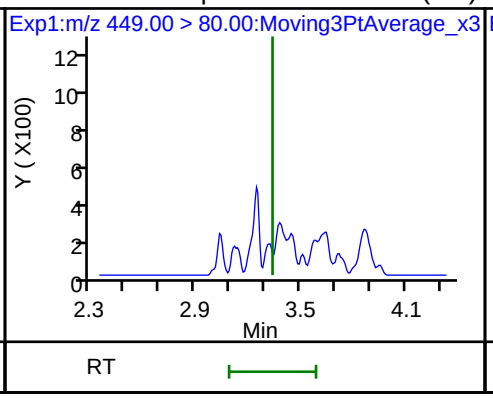
19 1H,1H,2H,2H-perfluorooctanesulfoni



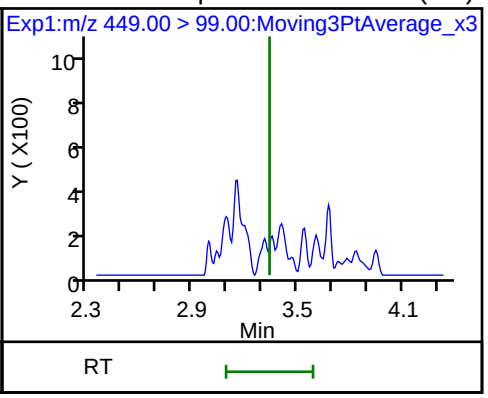
D 20 M2-6:2 FTS



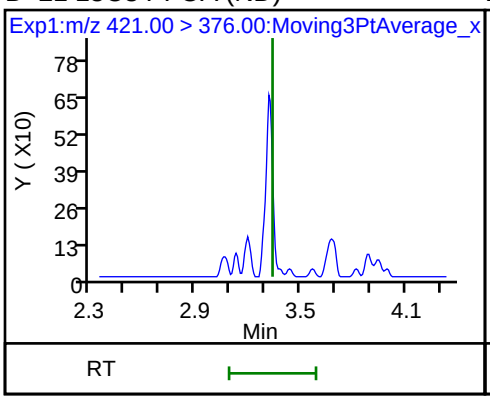
22 Perfluoroheptanesulfonic acid (ND)



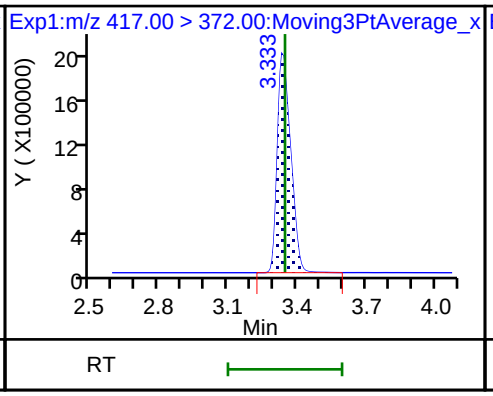
22 Perfluoroheptanesulfonic acid (ND)



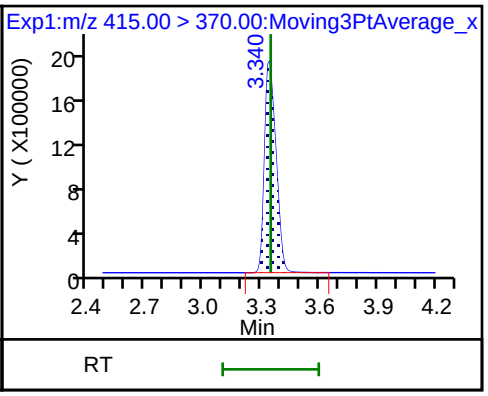
D 21 13C8 PFOA (ND)



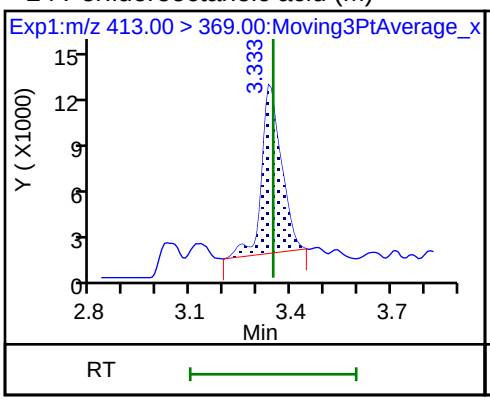
D 23 13C4 PFOA



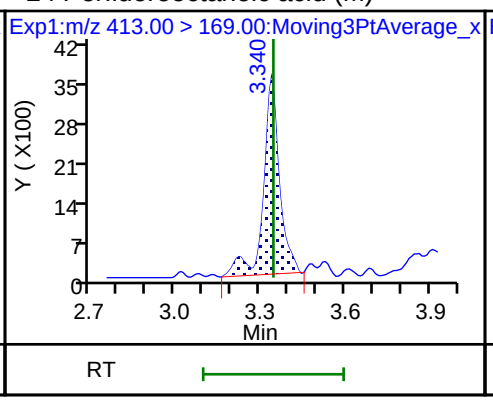
* 25 13C2 PFOA



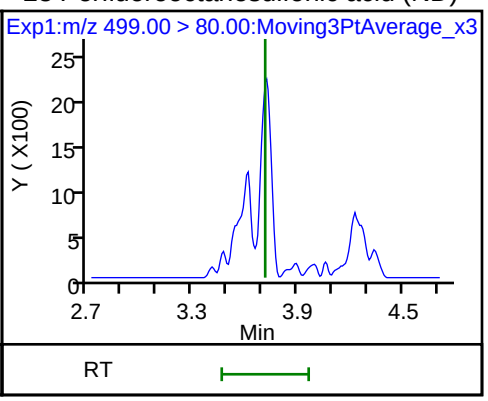
24 Perfluorooctanoic acid (M)



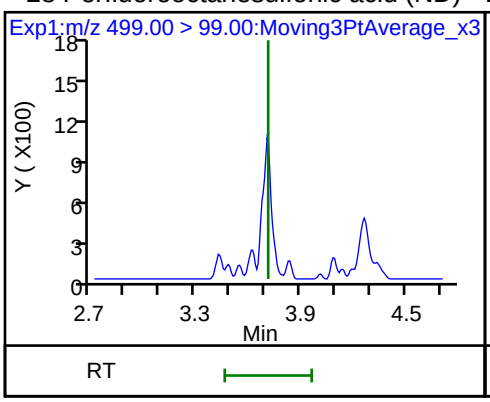
24 Perfluorooctanoic acid (M)



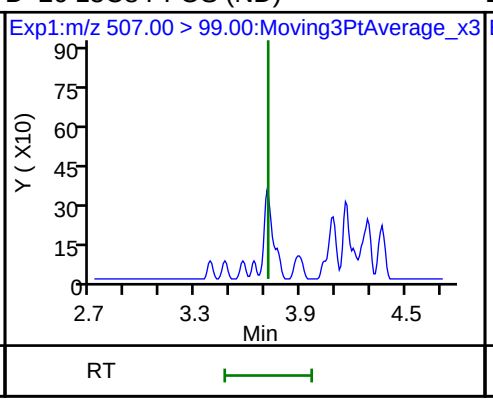
28 Perfluorooctanesulfonic acid (ND)



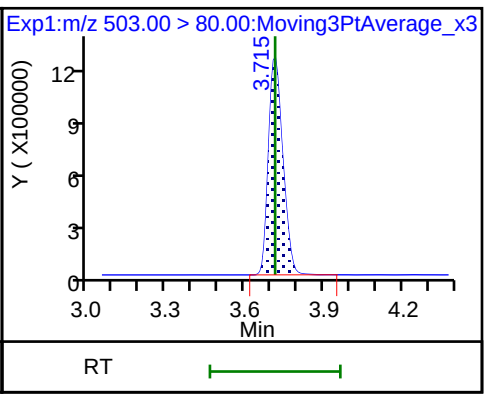
28 Perfluorooctanesulfonic acid (ND)



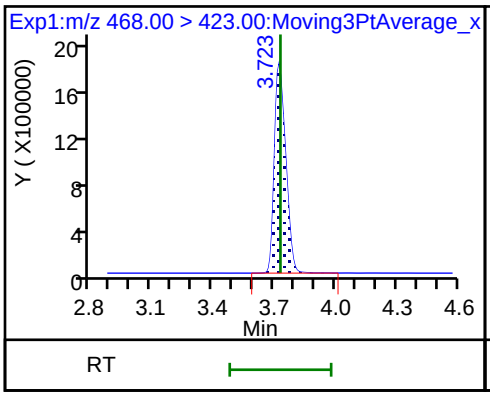
D 26 13C8 PFOS (ND)



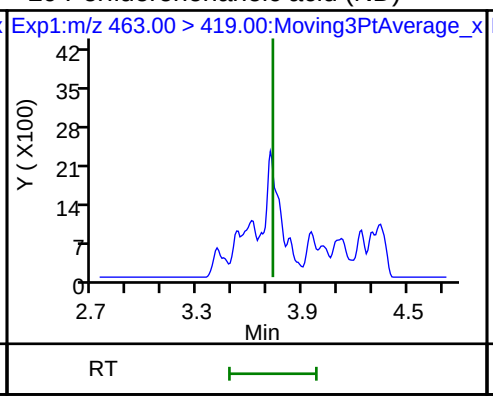
D 27 13C4 PFOS



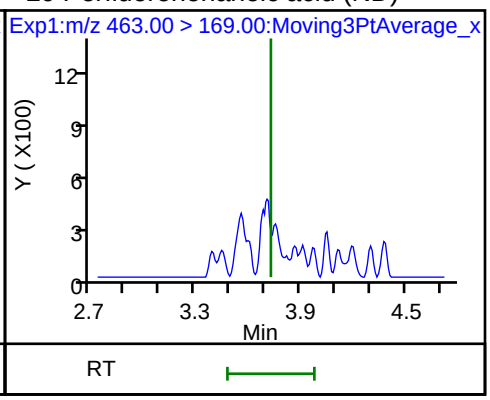
D 30 13C5 PFNA



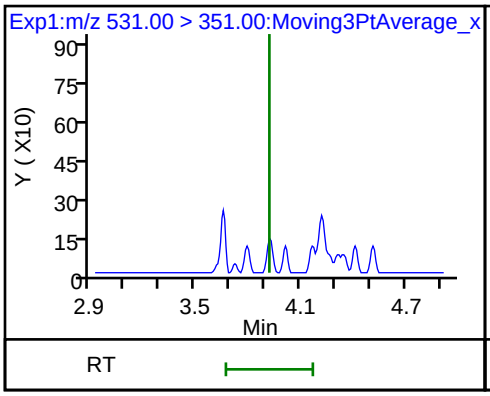
29 Perfluorononanoic acid (ND)



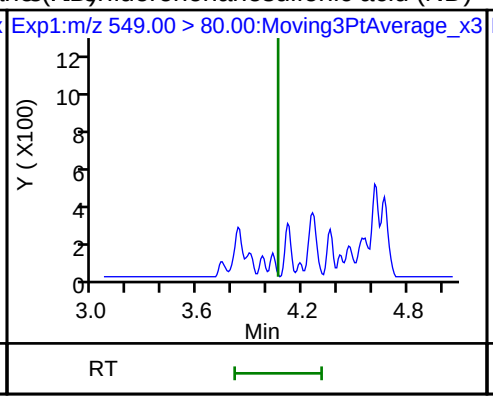
29 Perfluorononanoic acid (ND)



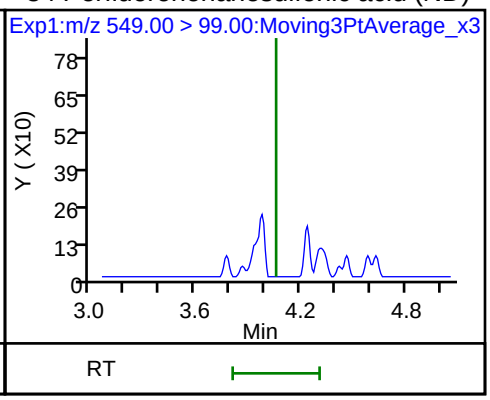
31 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (ND)



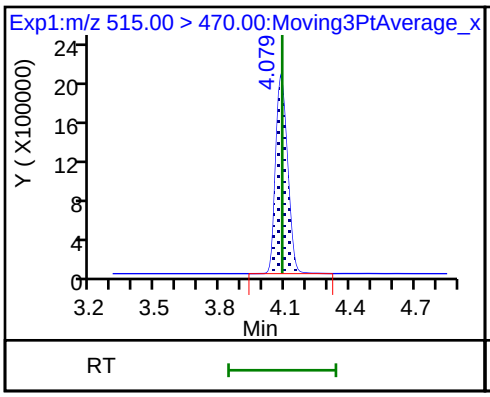
34 Perfluorononanesulfonic acid (ND)



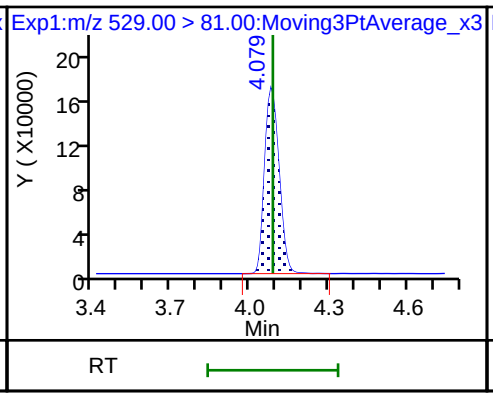
34 Perfluorononanesulfonic acid (ND)



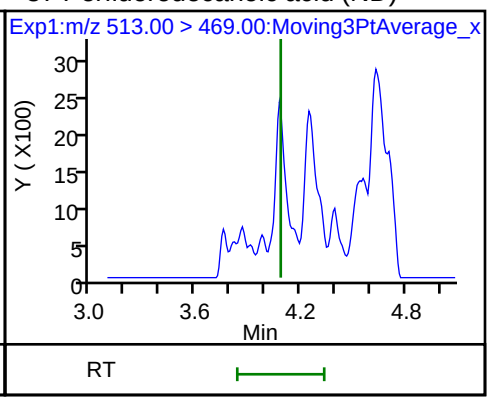
D 36 13C2 PFDA



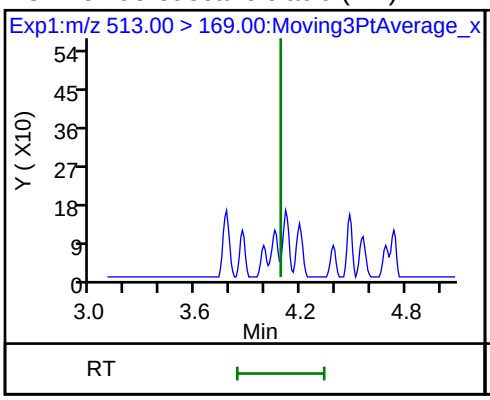
D 35 M2-8:2 FTS



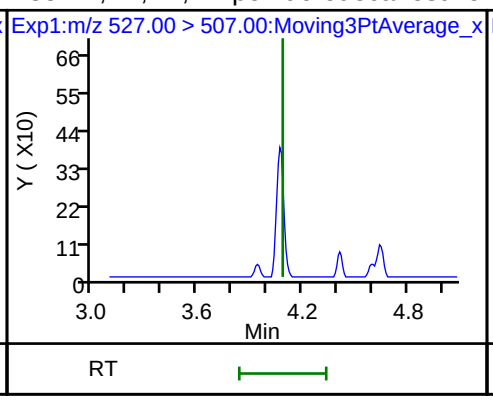
37 Perfluorodecanoic acid (ND)



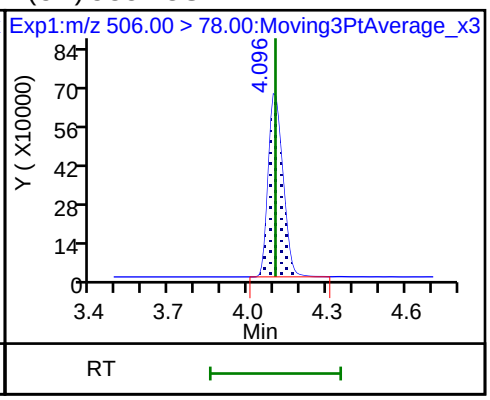
37 Perfluorodecanoic acid (ND)



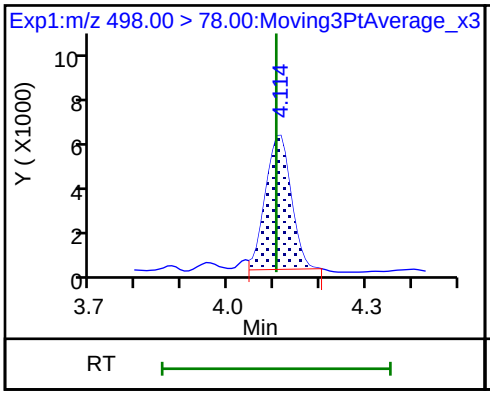
38 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)



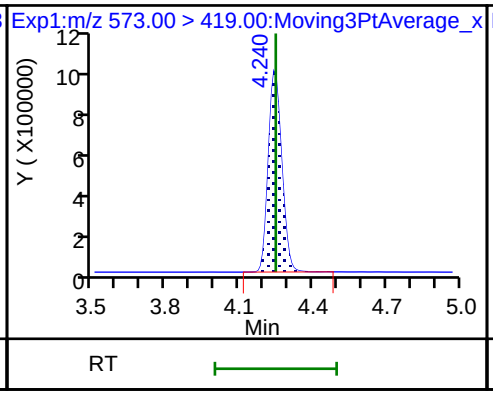
D 32 13C8 FOSA



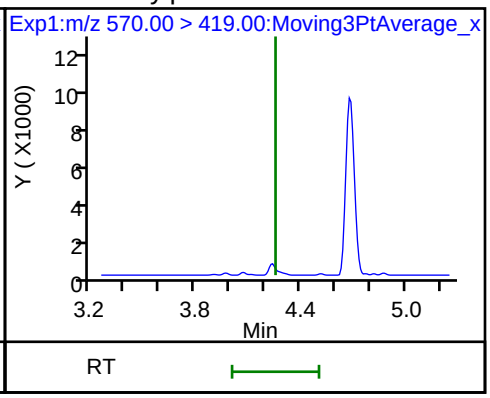
33 Perfluorooctanesulfonamide



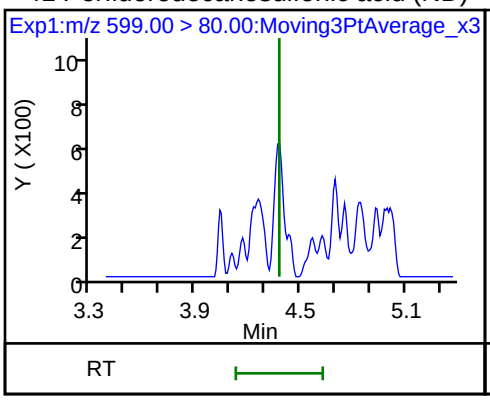
D 39 d3-NMeFOSAA



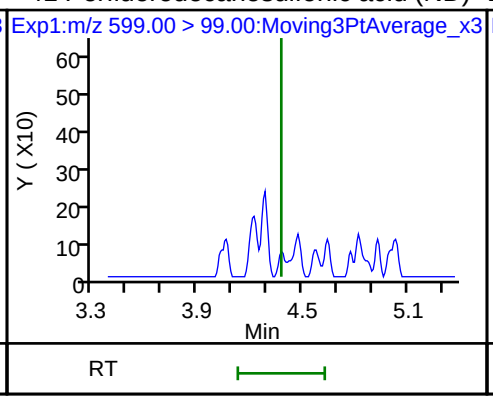
40 N-methylperfluorooctanesulfonamido (ND)



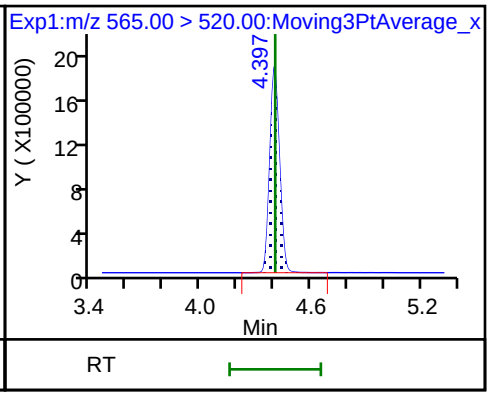
41 Perfluorodecanesulfonic acid (ND)



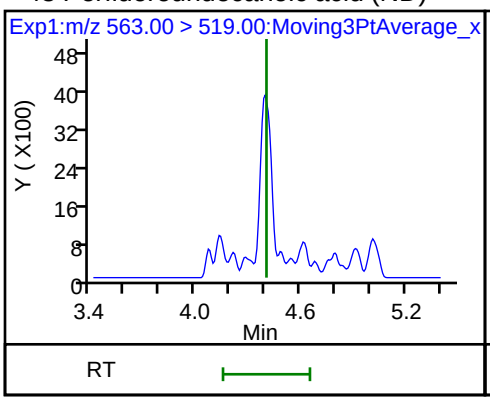
41 Perfluorodecanesulfonic acid (ND)



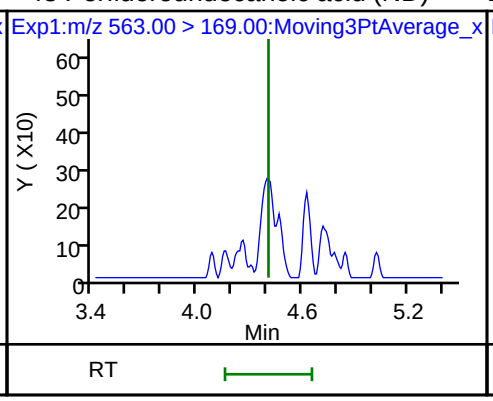
D 42 13C2 PFUnA



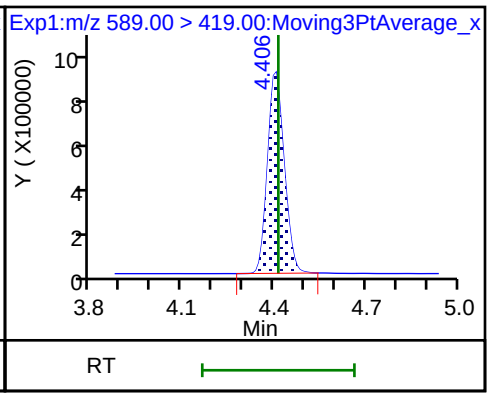
43 Perfluoroundecanoic acid (ND)



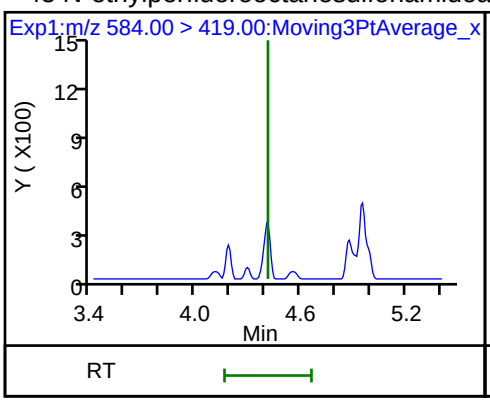
43 Perfluoroundecanoic acid (ND)



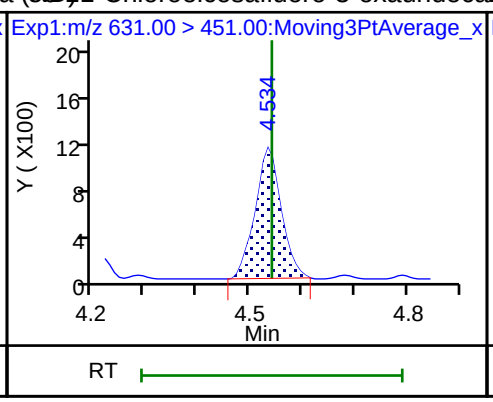
D 44 d5-NEtFOSAA



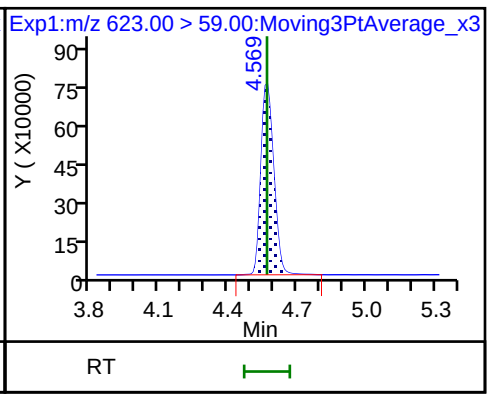
45 N-ethylperfluorooctanesulfonamidoa (ND)



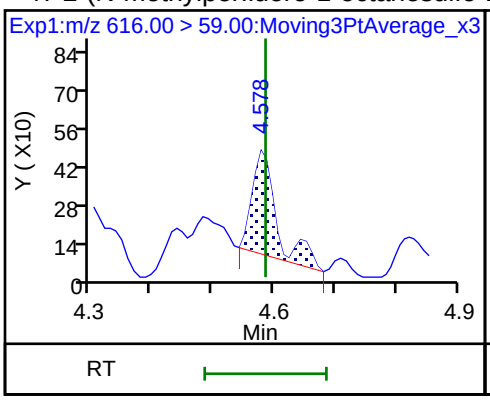
11-Chloroeicosafluoro-3-oxaundecan



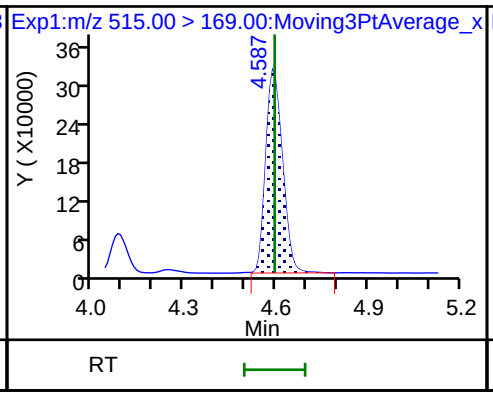
D 46 d7-N-MeFOSE-M



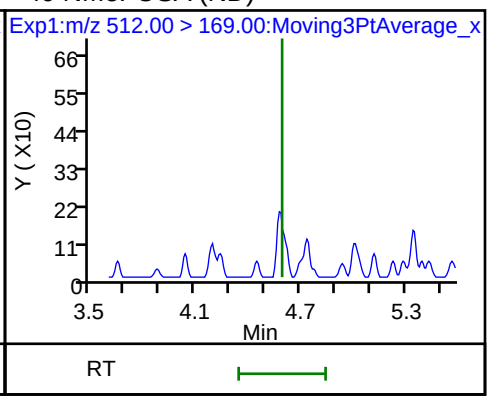
47 2-(N-methylperfluoro-1-octanesulfo



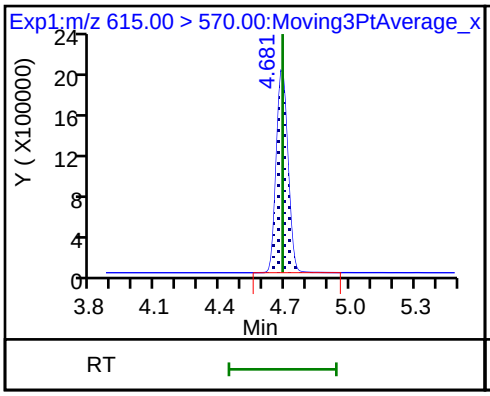
D 48 d-N-MeFOSA-M



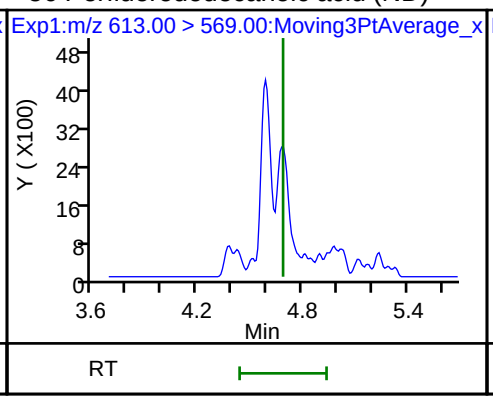
49 NMeFOSA (ND)



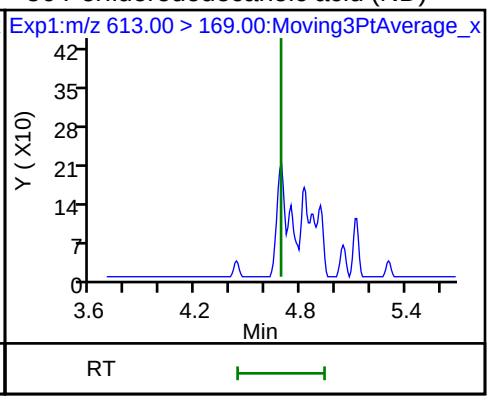
D 55 13C2 PFDoA



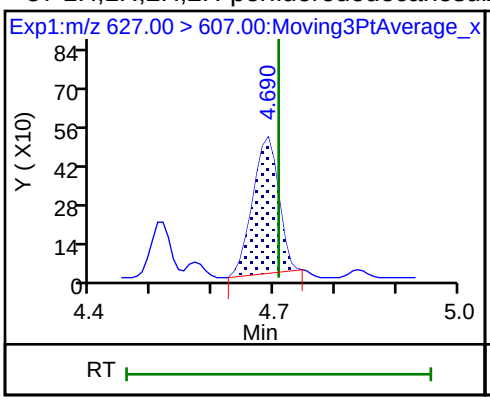
56 Perfluorododecanoic acid (ND)



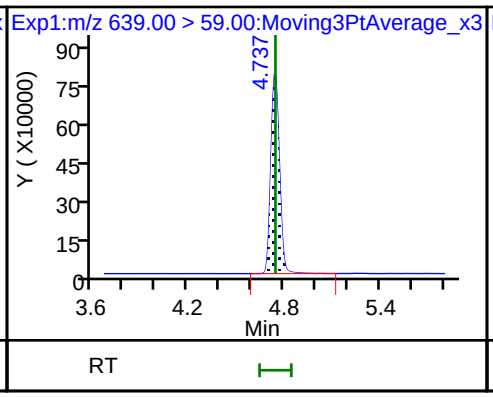
56 Perfluorododecanoic acid (ND)



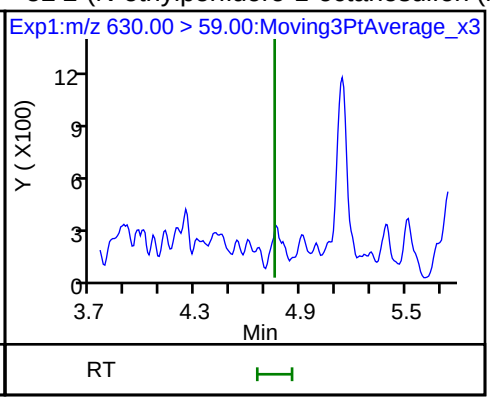
57 1H,1H,2H,2H-perfluorododecanesulfo



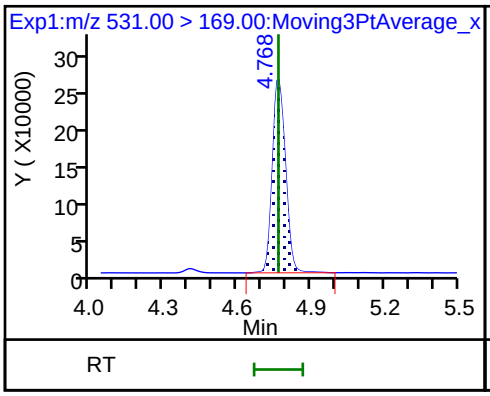
D 51 d9-N-EtFOSE-M



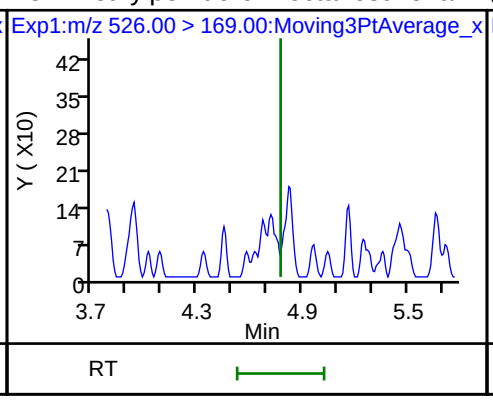
52 2-(N-ethylperfluoro-1-octanesulfon (ND)



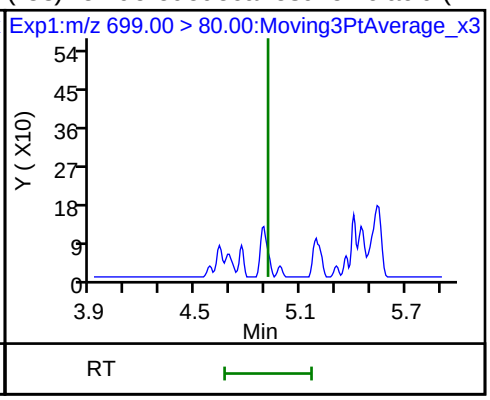
D 53 d-N-EtFOSA-M



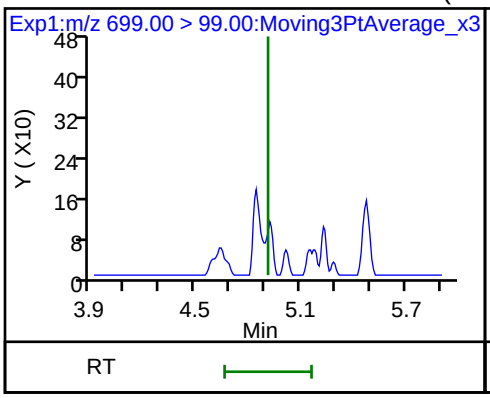
54 N-ethylperfluoro-1-octanesulfonami (ND)



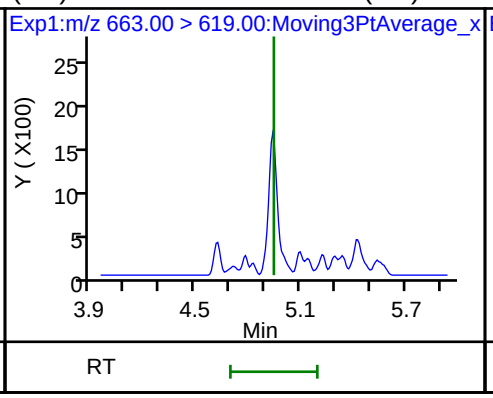
55 Perfluorododecanesulfonic acid (PF (ND)



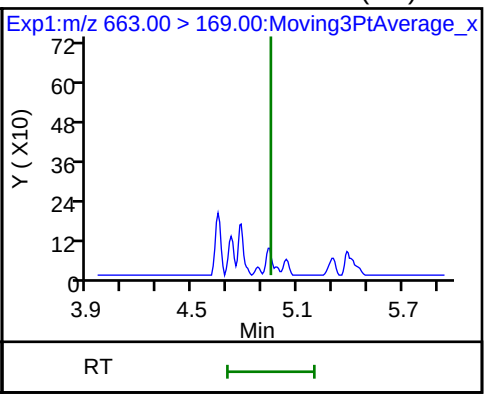
58 Perfluorododecanesulfonic acid (PF (ND)



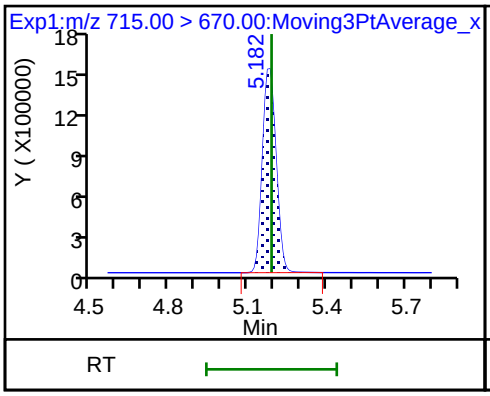
59 Perfluorotridecanoic acid (ND)



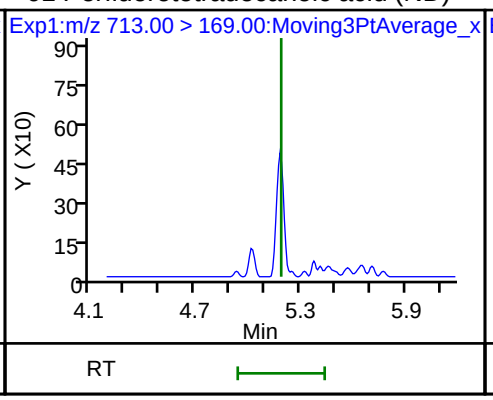
59 Perfluorotridecanoic acid (ND)



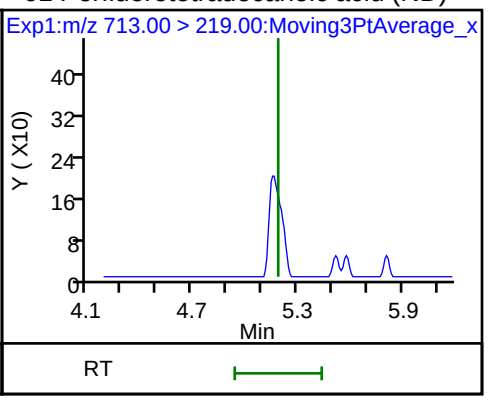
D 60 13C2 PFTeDA



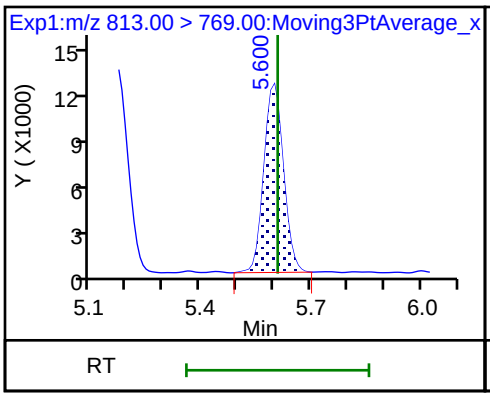
61 Perfluorotetradecanoic acid (ND)



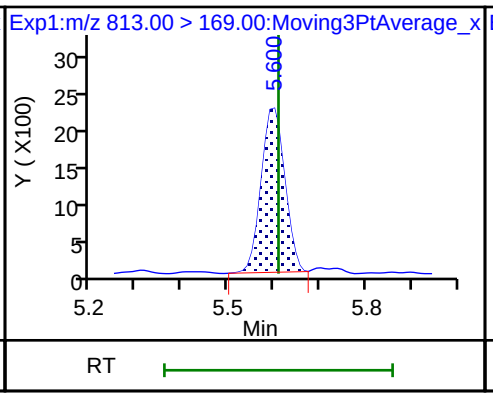
61 Perfluorotetradecanoic acid (ND)



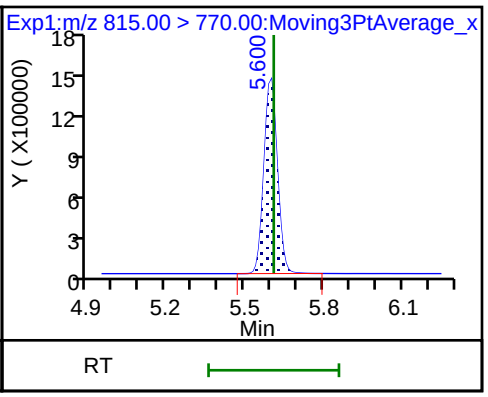
63 Perfluorohexadecanoic acid



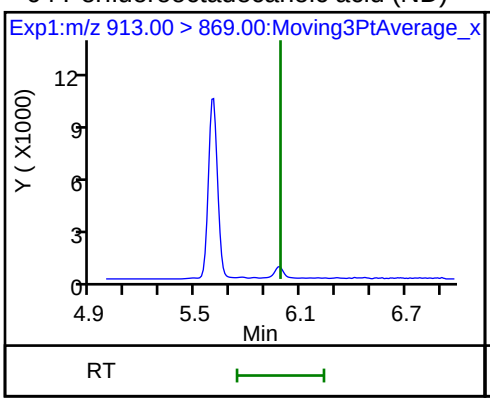
63 Perfluorohexadecanoic acid



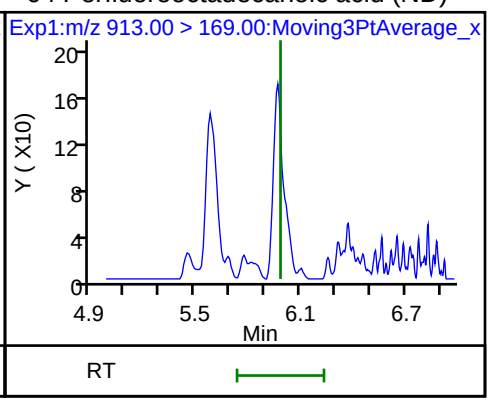
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid (ND)



64 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

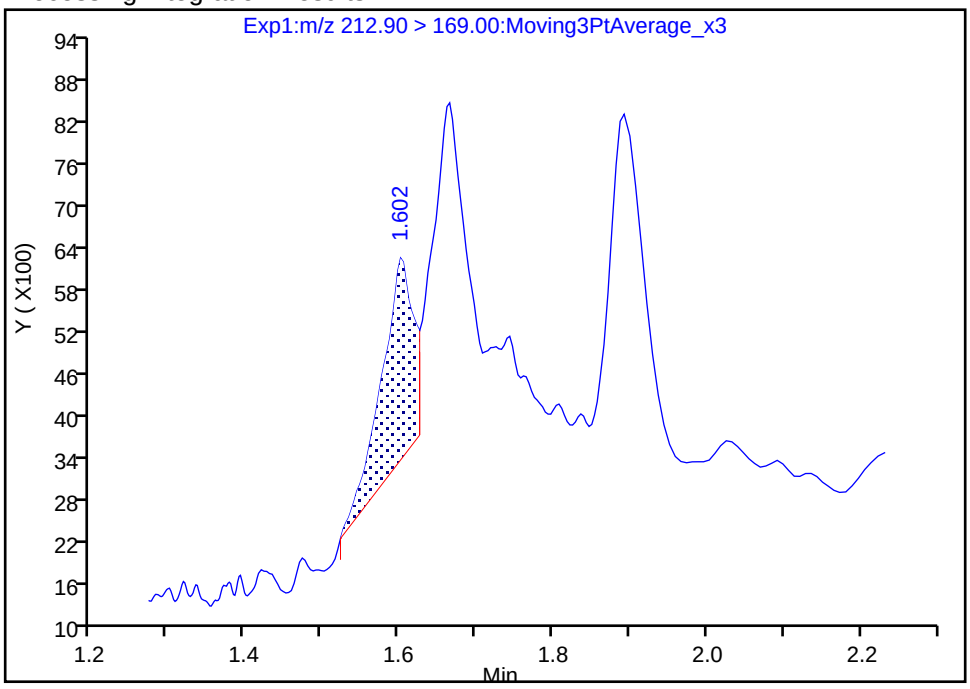
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._022.d				
Injection Date:	09-Oct-2019 01:11:47	Instrument ID:	A9		
Lims ID:	LB 320-327145/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

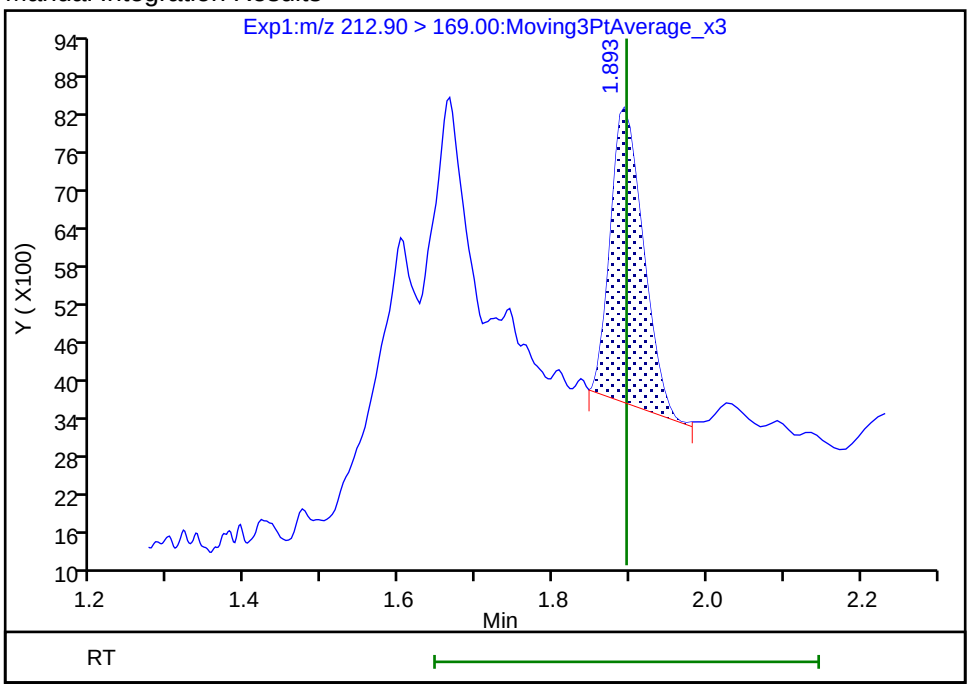
Processing Integration Results

RT: 1.60
Area: 8125
Amount: 0.003723
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 13775
Amount: 0.006312
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:35:00

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

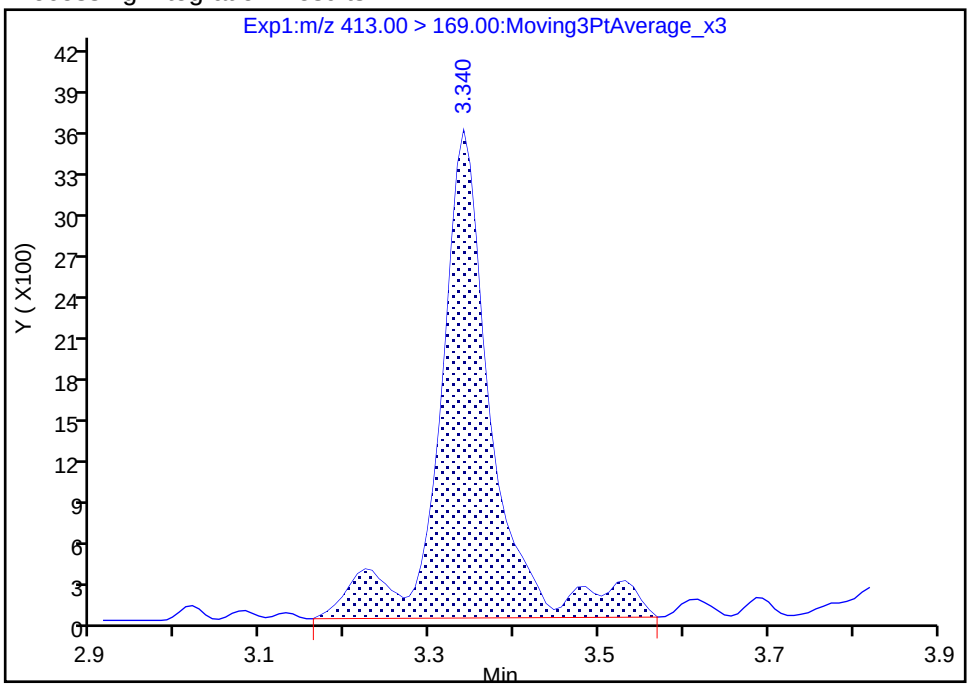
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._022.d
Injection Date: 09-Oct-2019 01:11:47 Instrument ID: A9
Lims ID: LB 320-327145/1-B
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

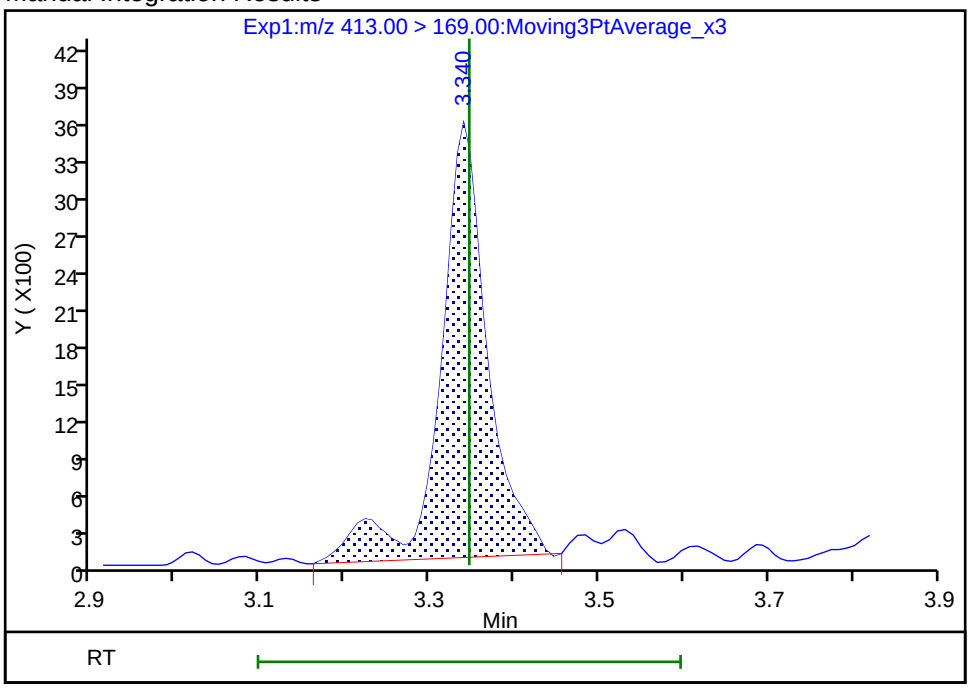
Processing Integration Results

RT: 3.34
Area: 15618
Amount: 0.013798
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 13784
Amount: 0.012851
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:35:35
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

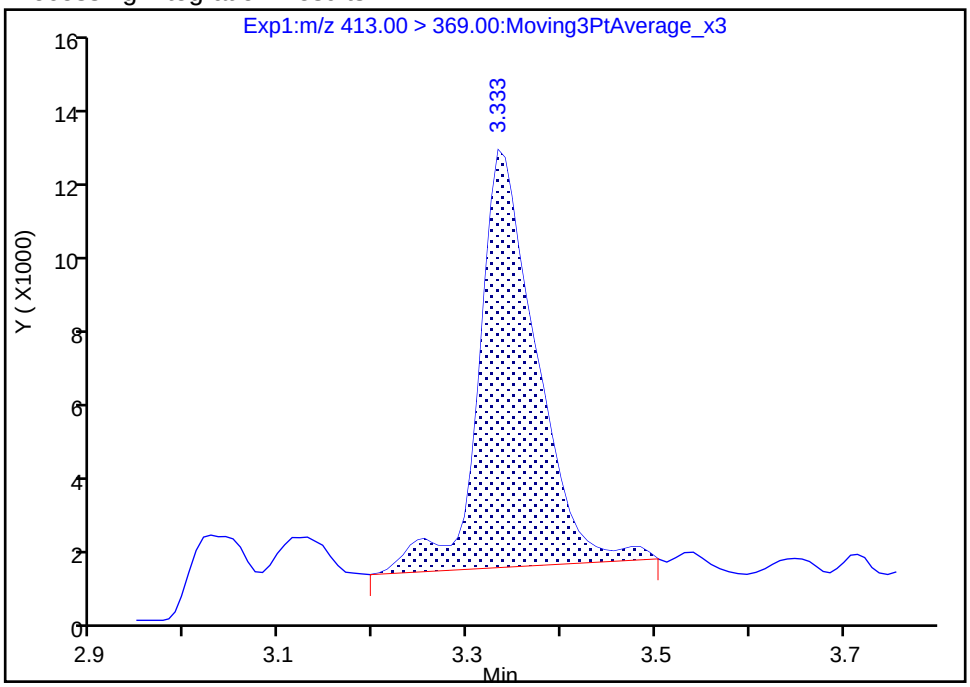
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._022.d				
Injection Date:	09-Oct-2019 01:11:47	Instrument ID:	A9		
Lims ID:	LB 320-327145/1-B				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	12	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

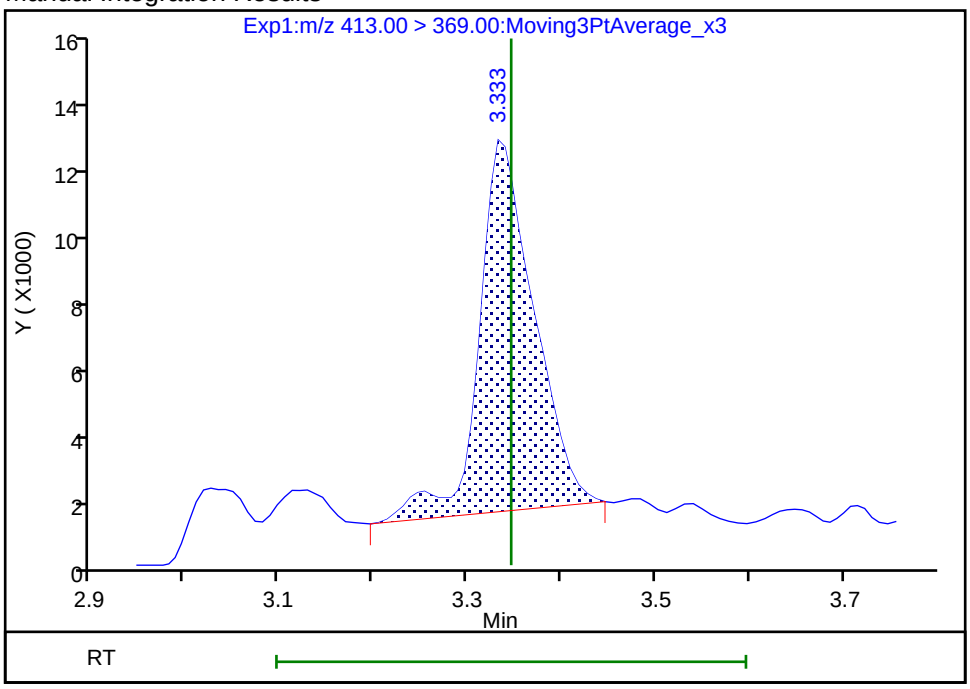
Processing Integration Results

RT: 3.33
Area: 48868
Amount: 0.013798
Amount Units: ng/ml



Manual Integration Results

RT: 3.33
Area: 45516
Amount: 0.012851
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:35:38

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-326624/2-A

Matrix: Solid Lab File ID: 2019.10.10_LLA_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.00(g) Date Analyzed: 10/10/2019 05:37

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.150		0.20	0.028
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.112		0.20	0.077
307-24-4	Perfluorohexanoic acid (PFHxA)	2.029		0.20	0.042
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.091		0.20	0.029
335-67-1	Perfluorooctanoic acid (PFOA)	1.873		0.20	0.086
375-95-1	Perfluorononanoic acid (PFNA)	2.022		0.20	0.036
335-76-2	Perfluorodecanoic acid (PFDA)	2.187		0.20	0.022
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.997		0.20	0.036
307-55-1	Perfluorododecanoic acid (PFDoA)	2.054		0.20	0.067
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.059		0.20	0.051
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.058		0.20	0.054
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.718		0.20	0.025
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.576		0.20	0.031
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.911		0.20	0.035
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.008		0.50	0.20
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.085		0.20	0.039
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.201		0.20	0.082
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.142		2.00	0.39
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.973	J	2.00	0.37
27619-97-2	6:2 FTS	2.291		2.00	0.15
39108-34-4	8:2 FTS	2.061		2.00	0.25

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-326624/2-A

Matrix: Solid Lab File ID: 2019.10.10_LLA_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: SHAKE Date Extracted: 09/27/2019 10:45

Sample wt/vol: 5.00(g) Date Analyzed: 10/10/2019 05:37

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329754 Units: ug/Kg

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	84		25-150
STL00993	13C2 PFHxA	84		25-150
STL00990	13C4 PFOA	88		25-150
STL00995	13C5 PFNA	91		25-150
STL00996	13C2 PFDA	84		25-150
STL01892	13C4 PFHpA	88		25-150
STL00997	13C2 PFUnA	87		25-150
STL01893	13C5 PFPeA	84		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2 PFTeDA	85		25-150
STL00994	18O2 PFHxS	92		25-150
STL00991	13C4 PFOS	80		25-150
STL01056	13C8 FOSA	80		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	88		25-150
STL02279	M2-6:2 FTS	64		25-150
STL02280	M2-8:2 FTS	62		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_008.d
Lims ID: LCS 320-326624/2-A
Client ID:
Sample Type: LCS
Inject. Date: 10-Oct-2019 05:37:22 ALS Bottle#: 2 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-326624/2-a
Misc. Info.: Plate: 1 Rack: 5
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 10-Oct-2019 14:41:58 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0304

First Level Reviewer: melnikv Date: 10-Oct-2019 14:23:42
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.900	1.903	-0.003	1.000	1789840	1.08		108	335	
D 1 13C4 PFBA										
217.00 > 172.00	1.900	1.903	-0.003	0.568	4898367	2.09		83.8	5358	
D 4 13C5 PFPeA										
267.90 > 223.00	2.205	2.208	-0.003	0.659	4107632	2.10		84.0	2423	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.205	2.208	-0.003	1.000	1777244	1.06		106	96.7	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.242	2.245	-0.003	0.759	2231088	0.8589	Target=2.71	97.2	175	
298.90 > 99.00	2.232	2.245	-0.013	0.756	794381		2.81(1.36-4.07)		171	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.524	2.527	-0.003	0.754	567403	1.52		65.1	1022	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.524	2.527	-0.003	1.000	632001	1.01		109	2385	
D 9 13C2 PFHxA										
315.00 > 270.00	2.567	2.570	-0.003	0.767	4708617	2.09		83.5	2820	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.567	2.570	-0.003	1.000	1774546	1.01	Target=16.45	101	189	
313.00 > 119.00	2.556	2.570	-0.014	0.996	121058		14.66(8.23-24.68)		186	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.578	2.580	-0.002	0.873	1176988	0.8657	Target=2.05	92.3	1904	
349.00 > 99.00	2.578	2.580	-0.002	0.873	554727		2.12(1.02-3.07)		1232	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.686	2.687	-0.001	0.803	819140	2.09		83.5	1786	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.687	-0.001	1.000	555196	1.12		112	403	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.947	2.952	-0.005	1.000	2673462	1.05	Target=4.37	105	418	
363.00 > 169.00	2.947	2.952	-0.005	1.000	607384		4.40(2.18-6.55)		1235	
D 14 13C4 PFHpA										
367.00 > 322.00	2.947	2.952	-0.005	0.881	5691893	2.21		88.3	2959	
D 16 18O2 PFHxS										
403.00 > 84.00	2.953	2.957	-0.004	0.882	3624252	2.19		92.5	6947	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.953	2.957	-0.004	1.000	1477370	0.7881	Target=3.46	86.6	1666	
399.00 > 99.00	2.953	2.957	-0.004	1.000	442914		3.34(1.73-5.19)		802	
18 DONA										
377.00 > 251.00	3.003	3.001	0.002	0.807	4501682	1.13	Target=2.38	120	3877	
377.00 > 85.00	3.003	3.001	0.002	0.807	1879122		2.40(1.19-3.57)		2622	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.325	3.331	-0.006	1.000	611950	1.15		121	1719	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.325	3.331	-0.006	0.994	544855	1.51		63.8	1578	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.346	3.345	0.001	0.899	1458403	0.9555	Target=3.75	100	2298	
449.00 > 99.00	3.346	3.345	0.001	0.899	404728		3.60(1.88-5.63)		929	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.353	-0.007		7932860	2.50			3572	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.346	3.353	-0.007	1.000	2779281	0.9366	Target=3.01	93.7	307	
413.00 > 169.00	3.346	3.353	-0.007	1.000	963959		2.88(1.51-4.52)		1138	
D 23 13C4 PFOA										
417.00 > 372.00	3.346	3.353	-0.007	1.000	6561518	2.21		88.3	4422	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.722	3.727	-0.005	1.000	1662757	1.00	Target=3.98	108	1294	
499.00 > 99.00	3.722	3.727	-0.005	1.000	421744		3.94(1.99-5.97)		1414	
D 27 13C4 PFOS										
503.00 > 80.00	3.722	3.727	-0.005	1.112	3688047	1.92		80.2	3993	
D 30 13C5 PFNA										
468.00 > 423.00	3.737	3.744	-0.007	1.117	6003010	2.27		90.7	4062	
29 Perfluorononanoic acid										
463.00 > 419.00	3.737	3.744	-0.007	1.000	2500917	1.01	Target=5.53	101	882	
463.00 > 169.00	3.737	3.744	-0.007	1.000	442732		5.65(2.77-8.30)		911	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.931	3.937	-0.006	1.056	1135422	1.04		111	2746	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.069	4.073	-0.004	1.093	958074	1.02	Target=4.44	106	2388	
549.00 > 99.00	4.069	4.073	-0.004	1.093	210754		4.55(2.22-6.67)		732	
D 36 13C2 PFDA										
515.00 > 470.00	4.095	4.100	-0.005	1.224	6283190	2.10		84.1	5059	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.095	4.100	-0.005	1.224	503743	1.49		62.2	1553	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.095	4.100	-0.005	1.000	479920	1.03		108	3089	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.095	4.100	-0.005	1.000	2612600	1.09	Target=16.36	109	967	
513.00 > 169.00	4.095	4.100	-0.005	1.000	160838		16.24(8.18-24.54)		281	
D 32 13C8 FOSA										
506.00 > 78.00	4.113	4.118	-0.005	1.229	1981962	2.00		79.9	1998	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.113	4.118	-0.005	1.000	2397165	1.10		110	1982	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.256	4.252	0.004	1.272	2869308	2.04		81.4	2291	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.256	4.261	-0.005	1.000	1006748	1.07		107	185	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.387	4.391	-0.004	1.179	1309018	1.04	Target=4.74	108	2624	
599.00 > 99.00	4.387	4.391	-0.004	1.179	267100		4.90(2.37-7.12)		858	
D 42 13C2 PFUnA										
565.00 > 520.00	4.413	4.409	0.005	1.319	5522866	2.17		86.7	3528	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.413	4.417	-0.004	1.000	1735453	1.00	Target=9.81	99.9	1035	
563.00 > 169.00	4.413	4.417	-0.004	1.000	170977		10.15(4.91-14.72)		505	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.417	-0.004	1.319	2678962	2.21		88.4	2048	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.422	4.426	-0.004	1.002	843425	0.9866		98.7	1133	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.550	4.554	-0.004	1.222	2381799	0.8253		87.6	3057	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.577	4.572	0.005		937675	1.45		11.6	518	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.585	4.590	-0.005	1.002	79088	1.01		101	132	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.594	4.599	-0.005		733744	1.04		41.4	140	
49 NMeFOSA										
512.00 > 169.00	4.604	4.599	0.005	1.002	291689	1.14		114	629	
D 55 13C2 PFDoA										
615.00 > 570.00	4.698	4.702	-0.004	1.404	6342733	2.26		90.4	4828	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.698	4.702	-0.004	1.000	2685619	1.03	Target=9.39	103	1524	
613.00 > 169.00	4.698	4.702	-0.004	1.000	280461		9.58(4.70-14.09)		1393	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.707	4.721	-0.014	1.149	363455	1.01		105	2015	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.751	4.748	0.003		1024883	1.52		12.1	831	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.759	4.763	-0.004	1.002	83390	0.9649		96.5	79.1	
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.774	4.778	-0.004		729474	1.07		42.7	838	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.782	4.778	0.004	1.002	315679	1.08		108	332	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.922	4.927	-0.005	1.322	142337	1.10	Target=0.67	114	794	
699.00 > 99.00	4.922	4.927	-0.005	1.322	212798		0.67(0.34-1.01)		1219	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.955	4.960	-0.005	1.055	1683392	1.03	Target=6.04	103	1766	
663.00 > 169.00	4.955	4.960	-0.005	1.055	271701		6.20(3.02-9.06)		750	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.189	5.194	-0.005	1.000	245172	1.03	Target=1.56	103	1157	
713.00 > 219.00	5.189	5.194	-0.005	1.000	167926		1.46(0.78-2.34)		1239	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.189	5.194	-0.005	1.551	4214958	2.12		84.7	4210	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.609	5.615	-0.006	1.000	1807329	1.11	Target=6.75	111	751	
813.00 > 169.00	5.609	5.615	-0.006	1.000	288746		6.26(3.37-10.12)		1496	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.609	5.615	-0.006	1.676	4581368	2.09		83.8	5291	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.993	5.998	-0.005	1.068	1541931	1.17	Target=6.31	117	920	
913.00 > 169.00	5.993	5.998	-0.005	1.068	256994		6.00(3.16-9.47)		1829	

Report Date: 10-Oct-2019 16:42:37 Chrom Revision: 2.3 09-Oct-2019 11:13:36

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191009-84626.b\2019.10.10_LLA_008.d

Injection Date: 10-Oct-2019 05:37:22 Instrument ID: A9

Lims ID: LCS 320-326624/2-A

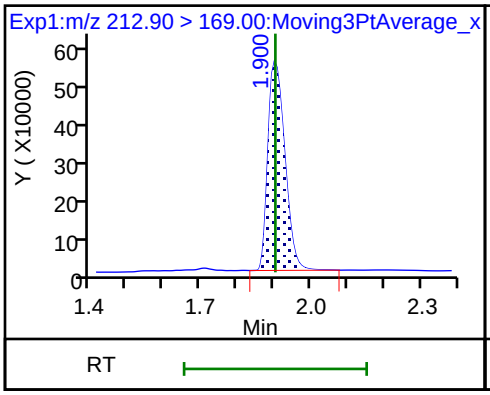
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 2 Worklist Smp#: 5

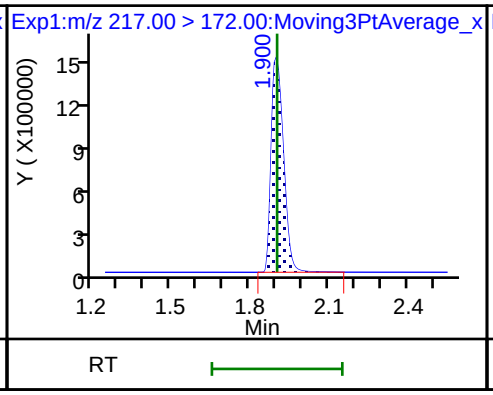
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

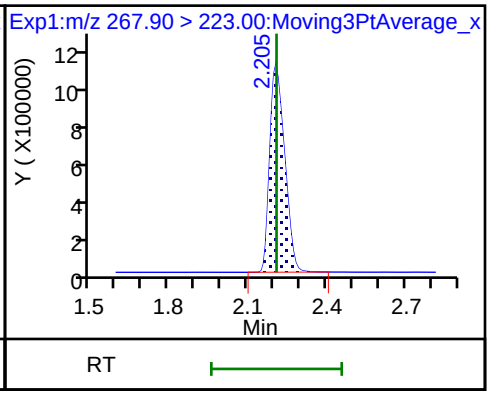
2 Perfluorobutanoic acid



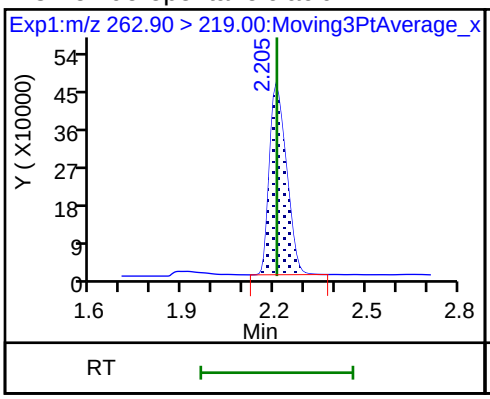
D 1 13C4 PFBA



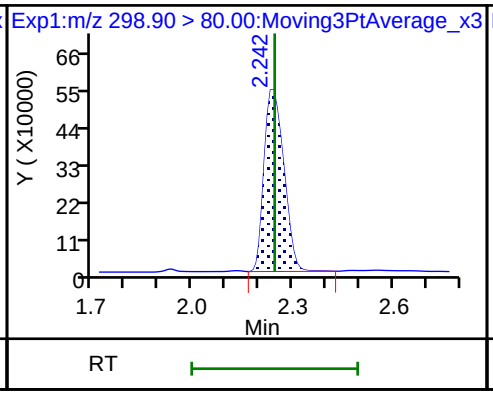
D 4 13C5 PFPeA



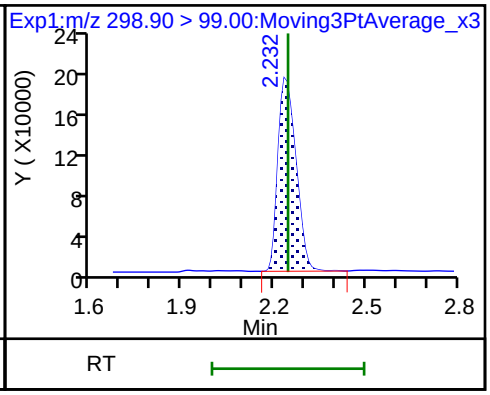
3 Perfluoropentanoic acid



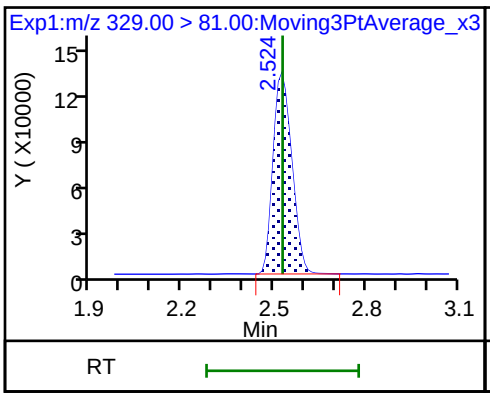
5 Perfluorobutanesulfonic acid



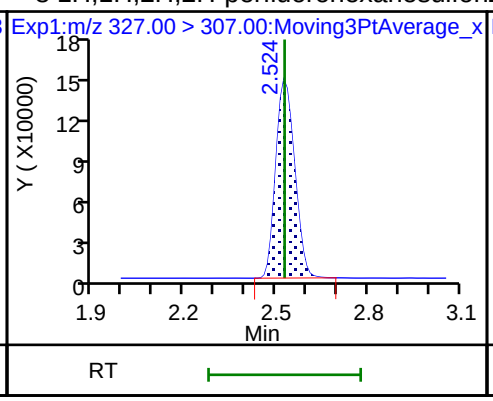
5 Perfluorobutanesulfonic acid



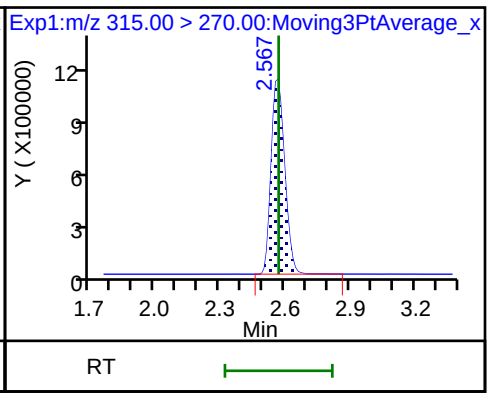
D 7 M2-4:2 FTS



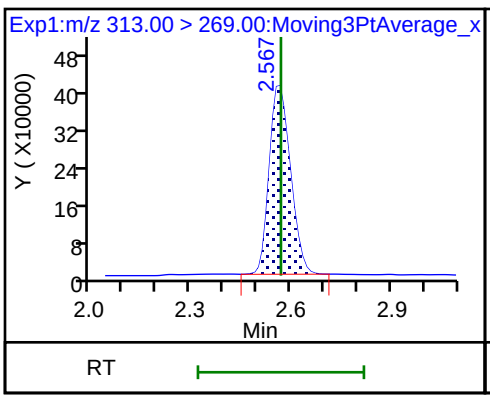
8 1H,1H,2H,2H-perfluorohexanesulfon



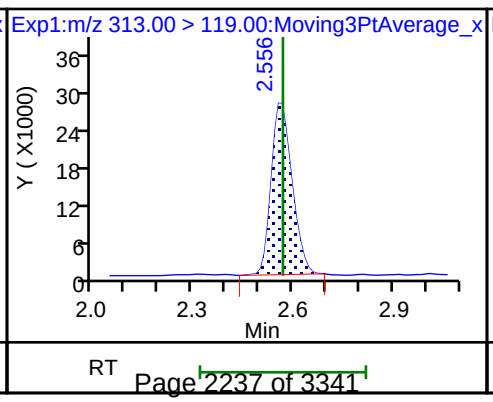
D 9 13C2 PFHxA



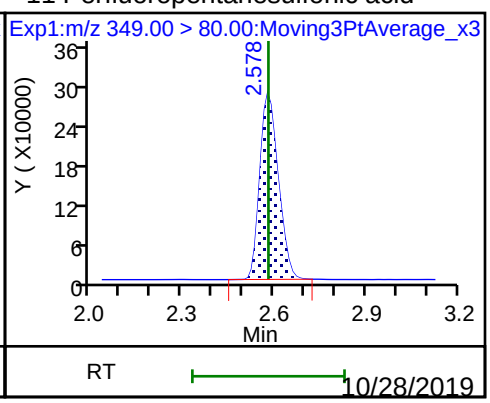
10 Perfluorohexanoic acid



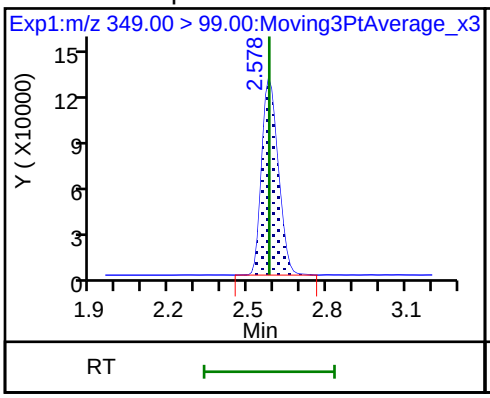
10 Perfluorohexanoic acid



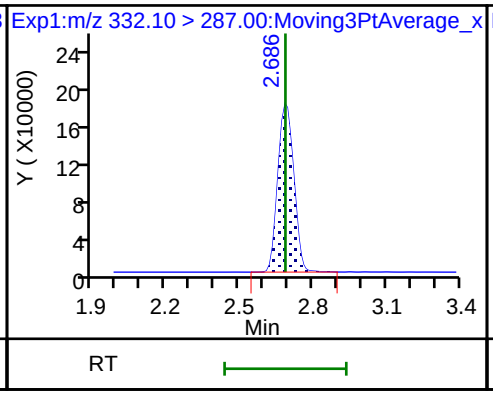
11 Perfluoropentanesulfonic acid



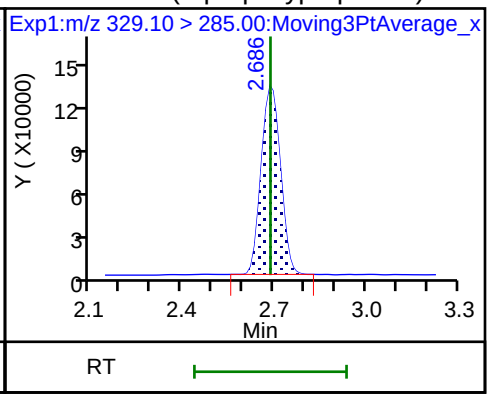
11 Perfluoropentanesulfonic acid



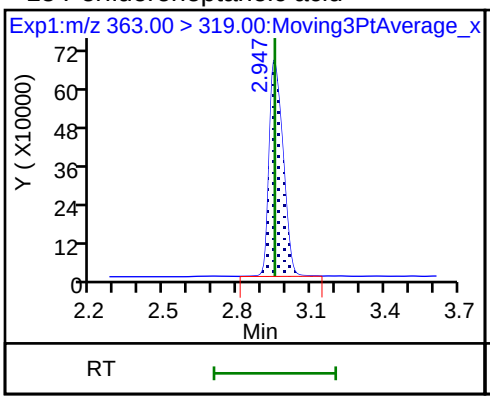
D 12 13C3 HFPO-DA



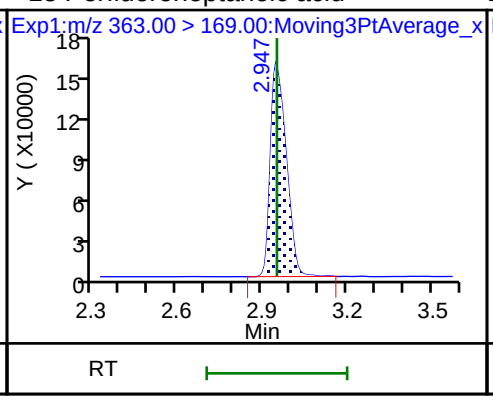
13 Perfluoro(2-propoxypropanoic) acid



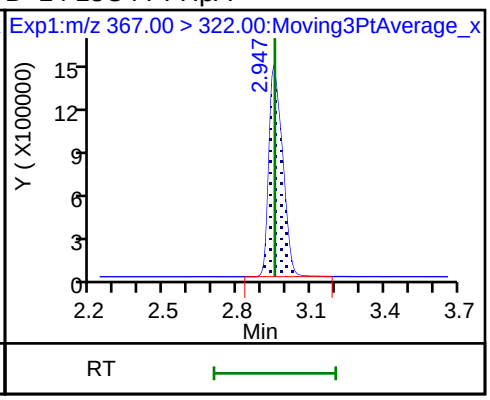
15 Perfluoroheptanoic acid



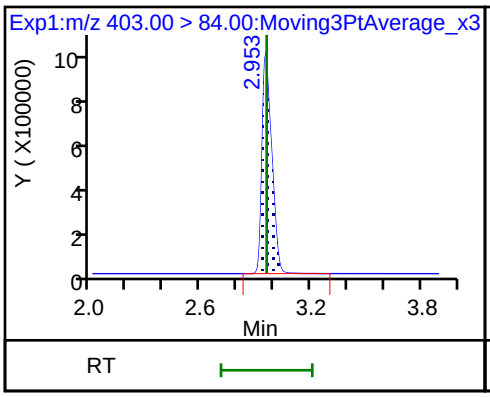
15 Perfluoroheptanoic acid



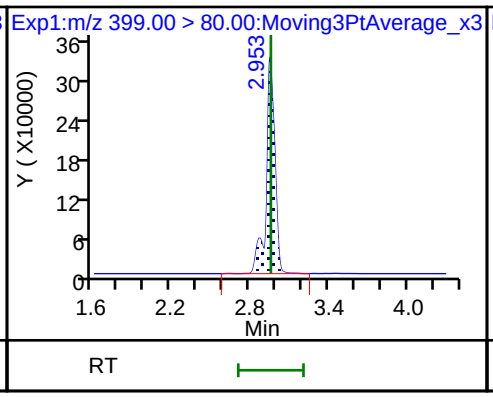
D 14 13C4 PFHpA



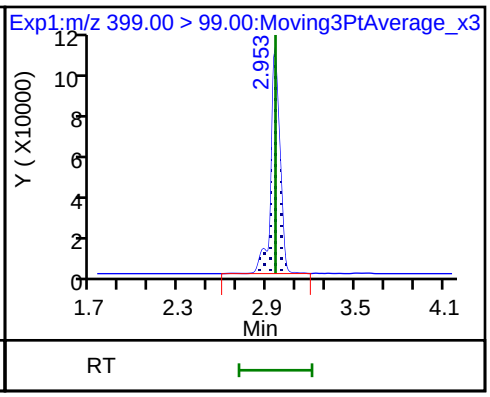
D 16 18O2 PFHxS



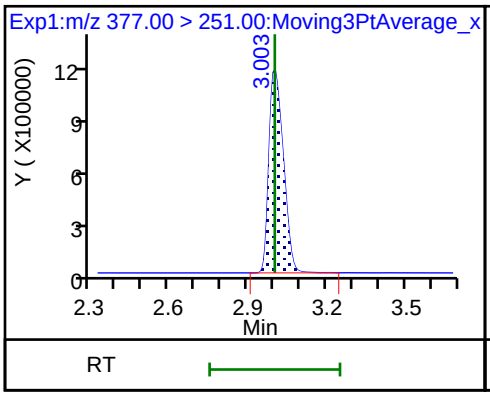
17 Perfluorohexanesulfonic acid



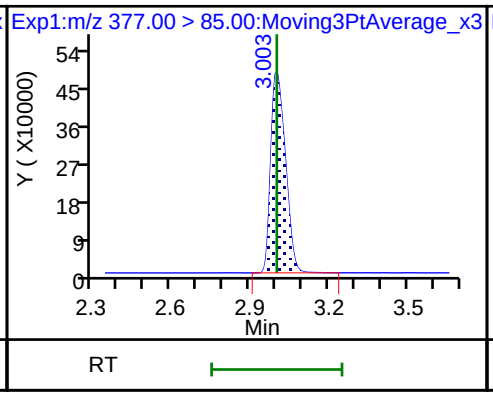
17 Perfluorohexanesulfonic acid



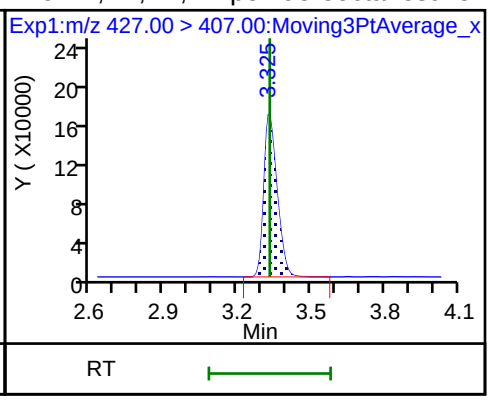
18 DONA



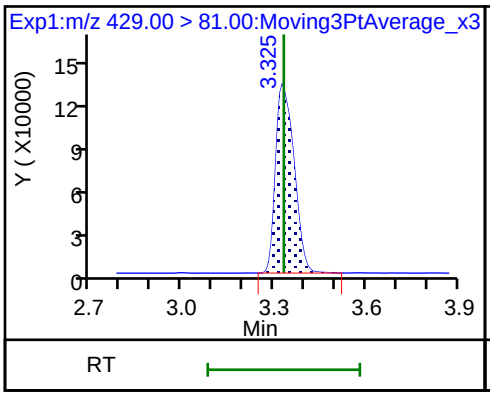
18 DONA



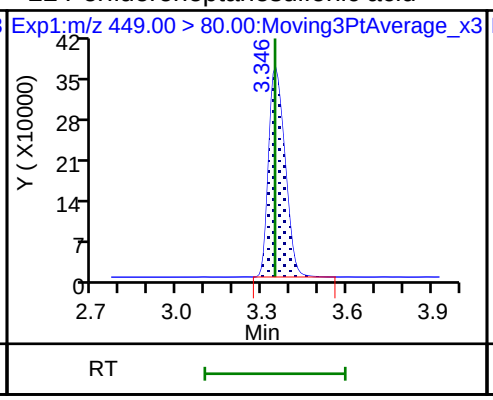
19 1H,1H,2H,2H-perfluorooctanesulfoni



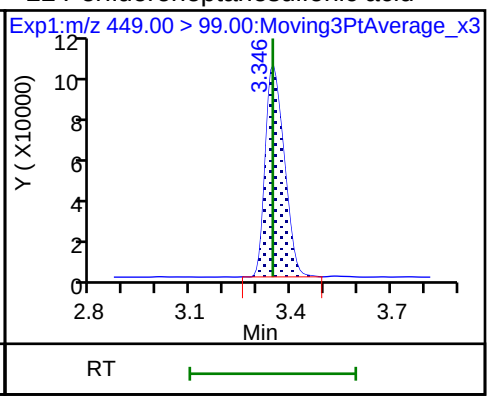
D 20 M2-6:2 FTS



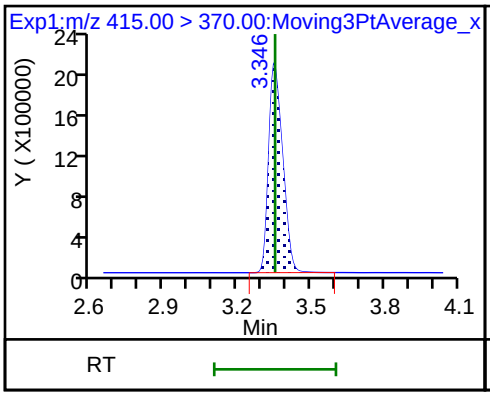
22 Perfluoroheptanesulfonic acid



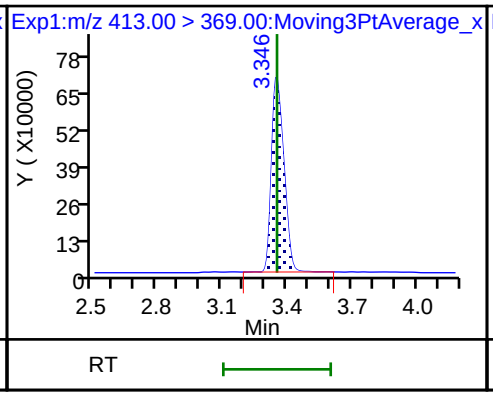
22 Perfluoroheptanesulfonic acid



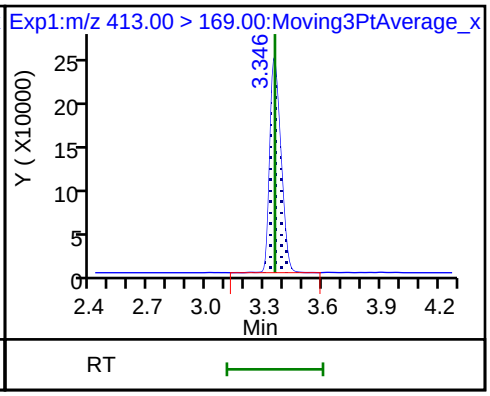
* 25 13C2 PFOA



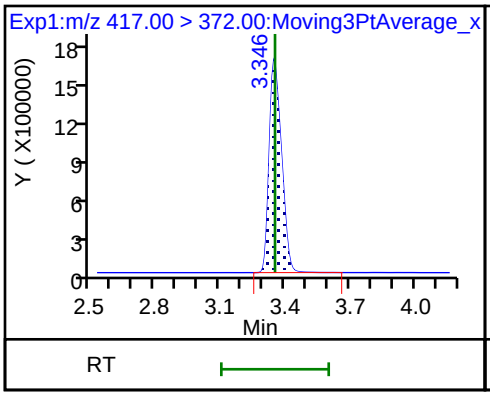
24 Perfluorooctanoic acid



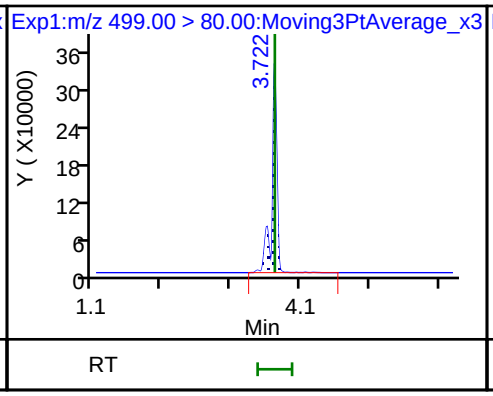
24 Perfluorooctanoic acid



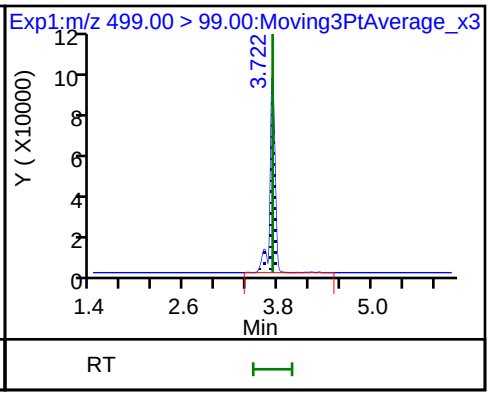
D 23 13C4 PFOA



28 Perfluorooctanesulfonic acid



28 Perfluorooctanesulfonic acid



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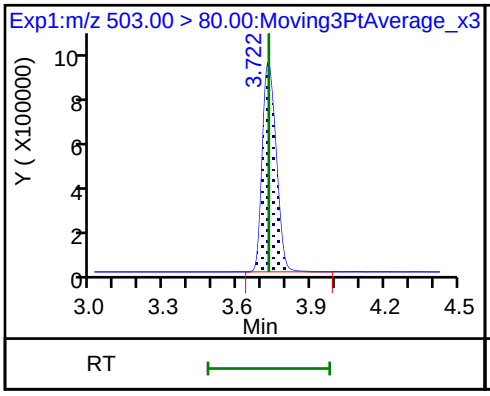
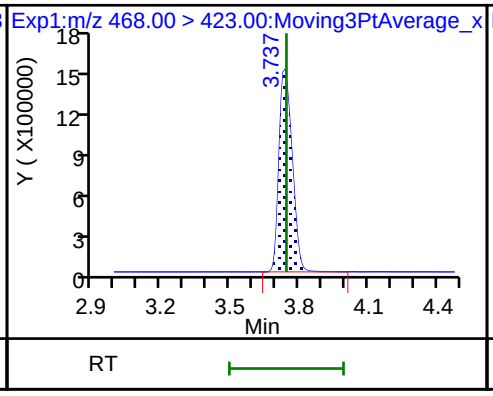
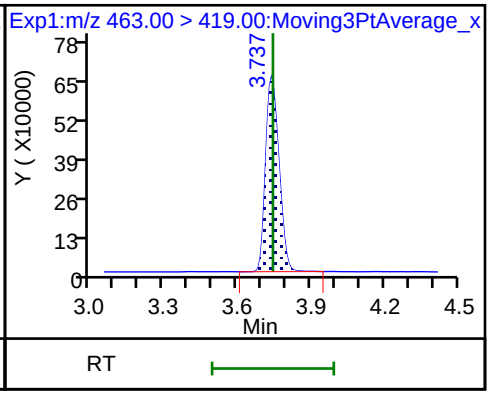


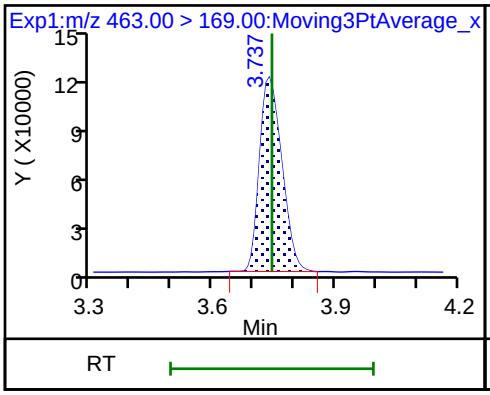
D 30 13C5 PFNA



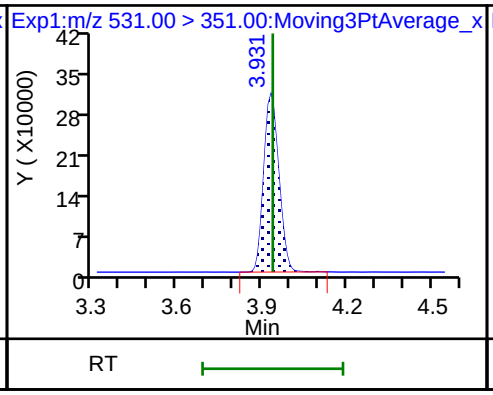
29 Perfluorononanoic acid



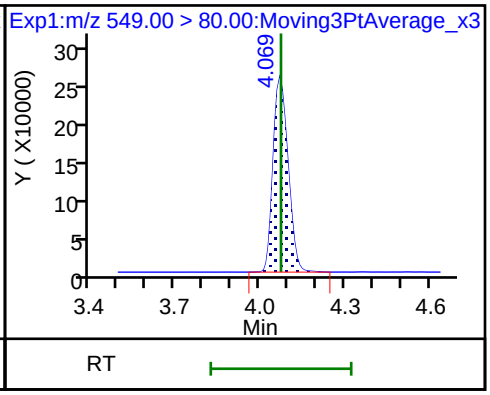
29 Perfluorononanoic acid



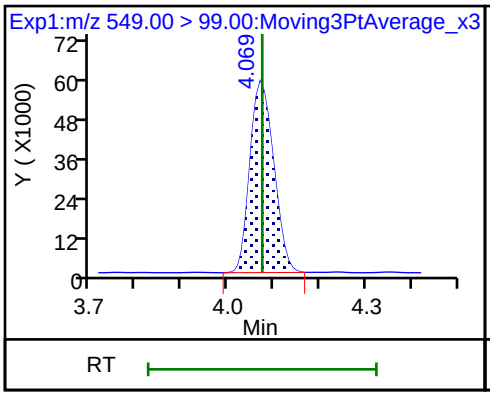
31 9-Chlorohexadecafluoro-3-oxanonane



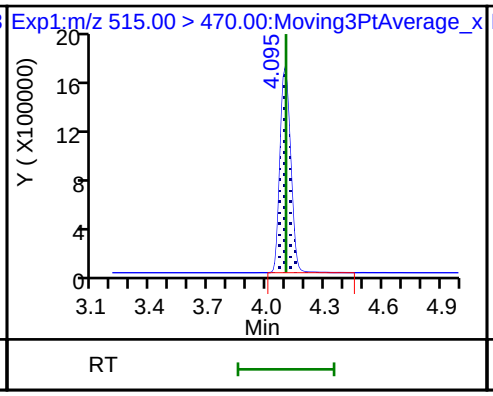
34 Perfluorononanesulfonic acid



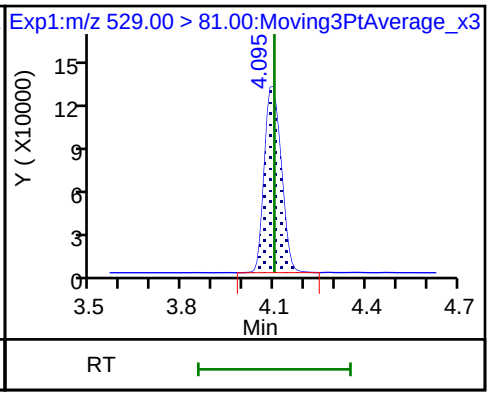
34 Perfluorononanesulfonic acid



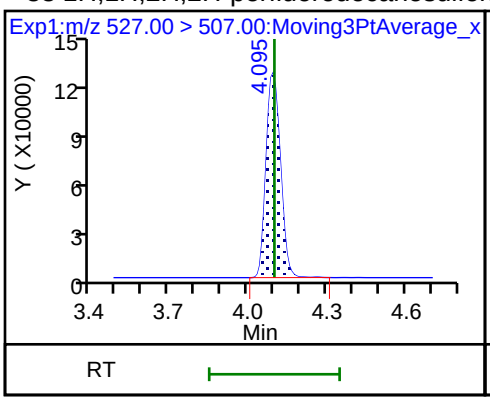
D 36 13C2 PFDA



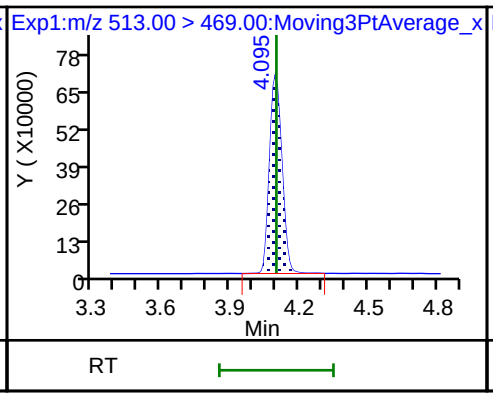
D 35 M2-8:2 FTS



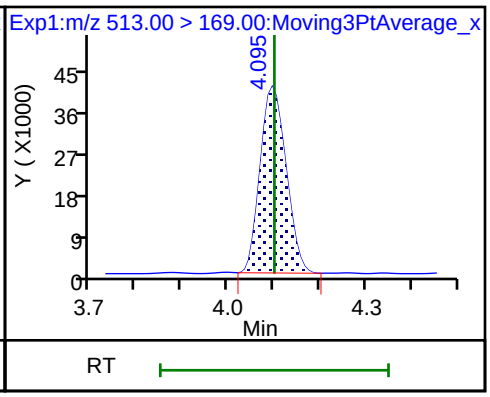
38 1H,1H,2H,2H-perfluorodecanesulfoni



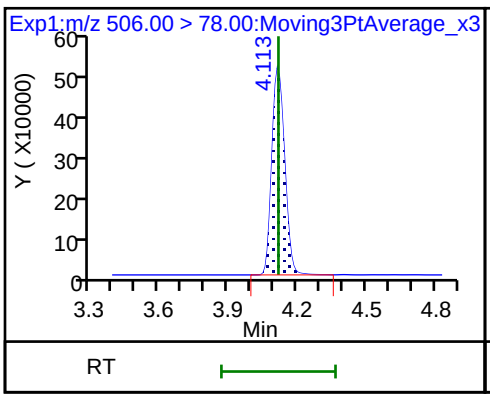
37 Perfluorodecanoic acid



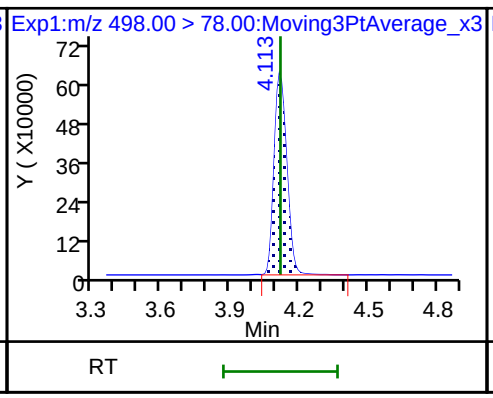
37 Perfluorodecanoic acid



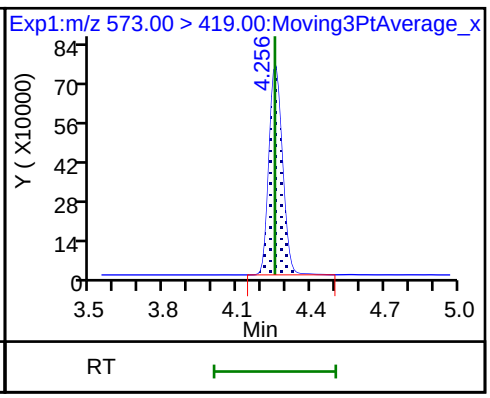
D 32 13C8 FOSA



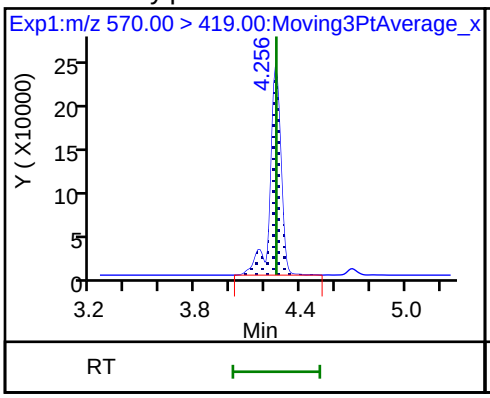
33 Perfluorooctanesulfonamide



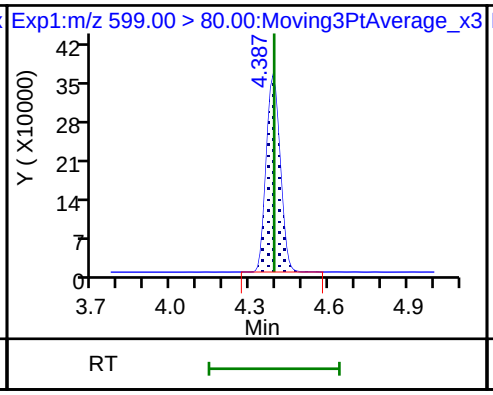
D 39 d3-NMeFOSAA



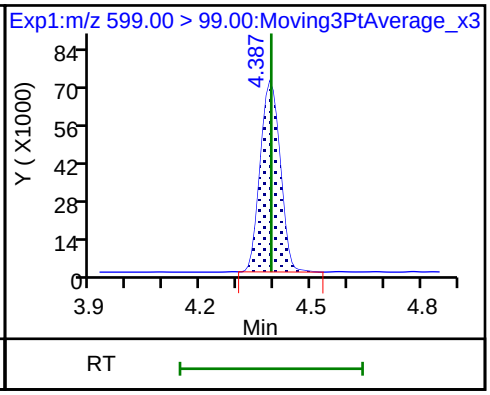
40 N-methylperfluorooctanesulfonamido



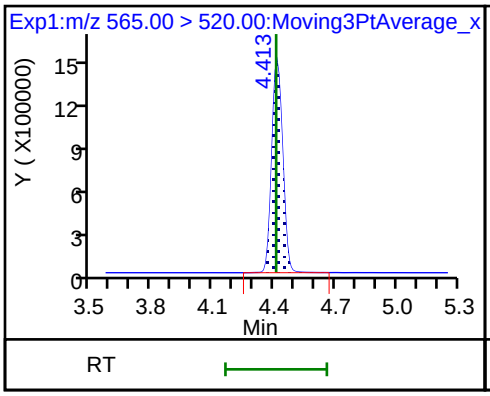
41 Perfluorodecanesulfonic acid



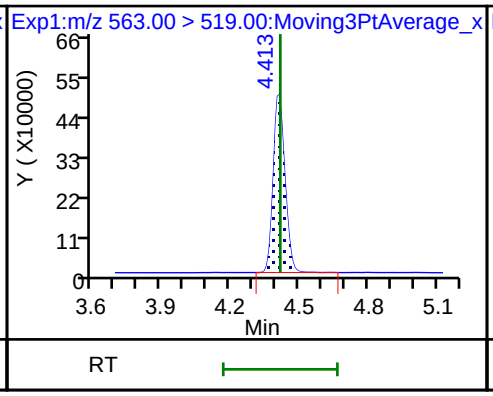
41 Perfluorodecanesulfonic acid



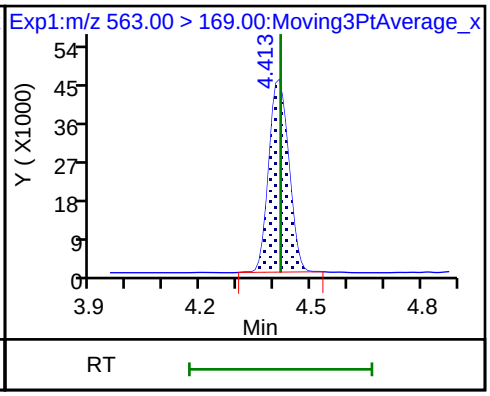
D 42 13C2 PFUnA



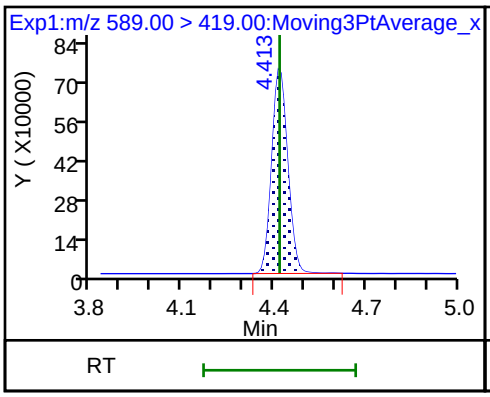
43 Perfluoroundecanoic acid



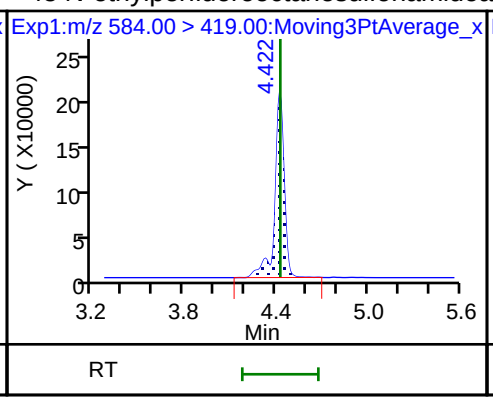
43 Perfluoroundecanoic acid



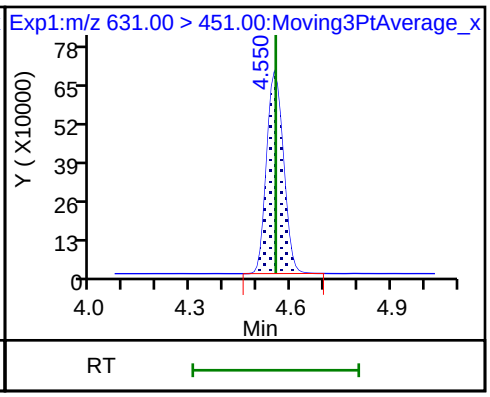
D 44 d5-NEtFOSAA



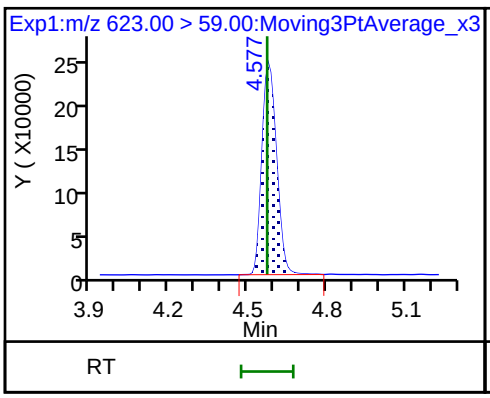
45 N-ethylperfluorooctanesulfonamidoa



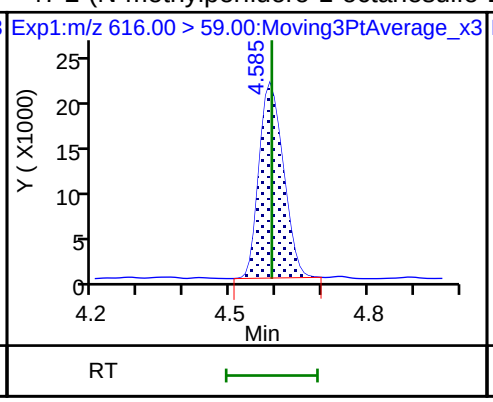
50 11-Chloroeicosafluoro-3-oxaundecan



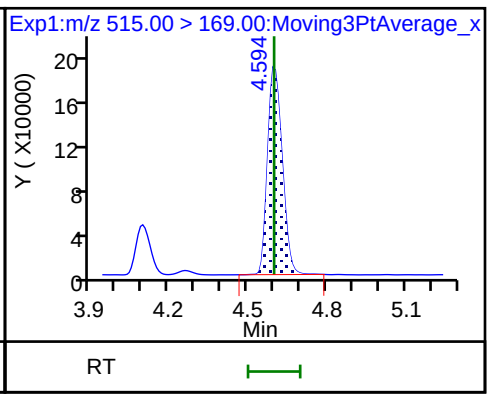
D 46 d7-N-MeFOSE-M



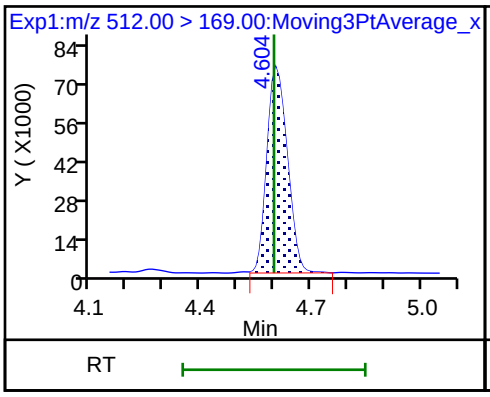
47 2-(N-methylperfluoro-1-octanesulfo



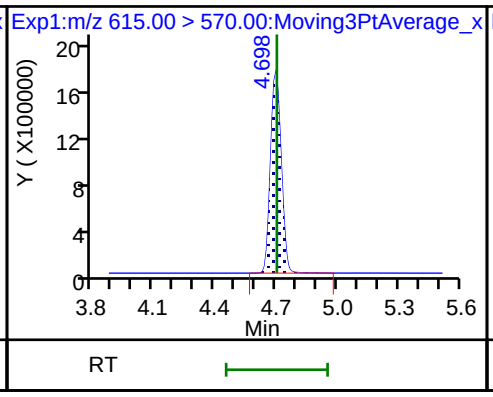
D 48 d-N-MeFOSA-M



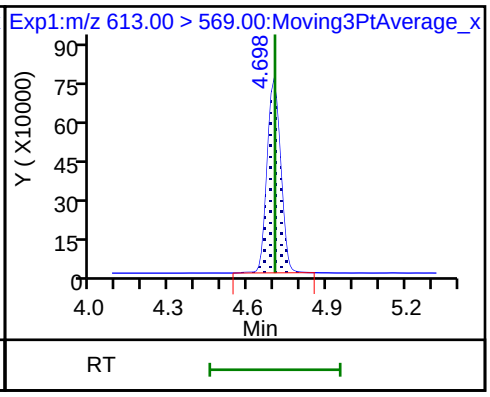
49 NMeFOSA



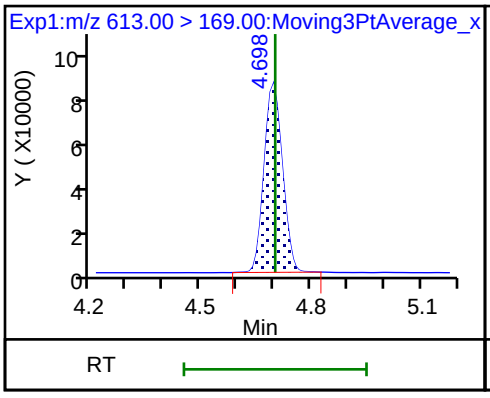
D 55 13C2 PFDoA



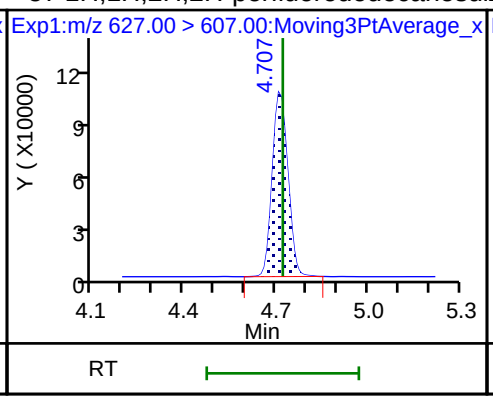
56 Perfluorododecanoic acid



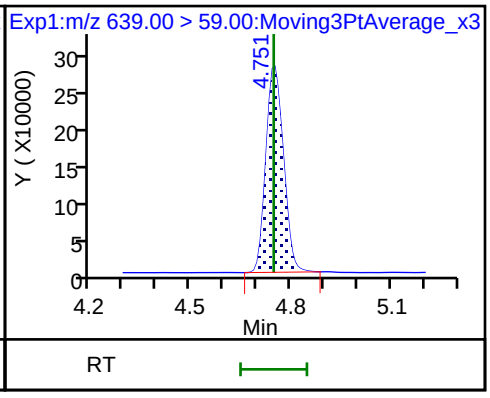
56 Perfluorododecanoic acid



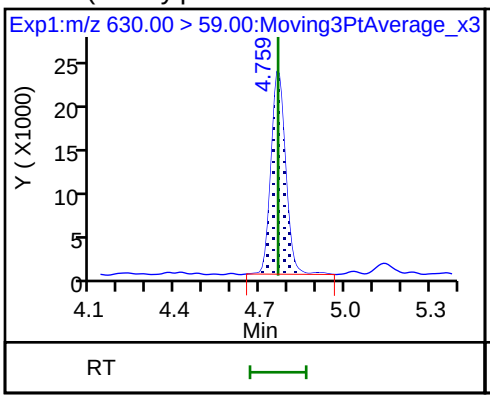
57 1H,1H,2H,2H-perfluorododecanesulfo



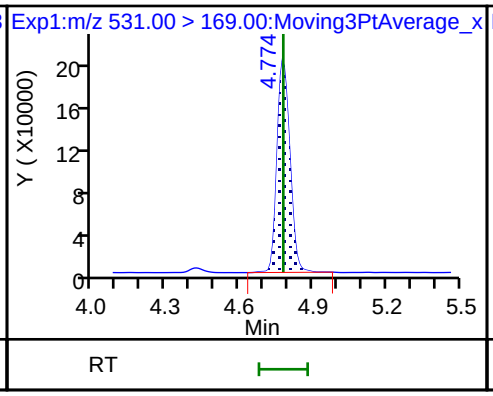
D 51 d9-N-EtFOSE-M



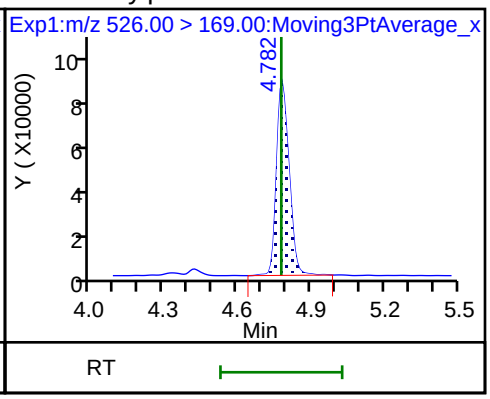
52 2-(N-ethylperfluoro-1-octanesulfon



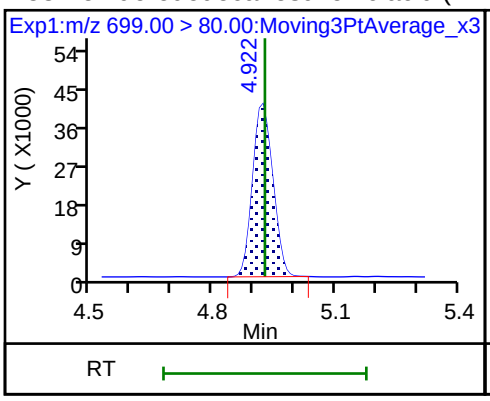
D 53 d-N-EtFOSA-M



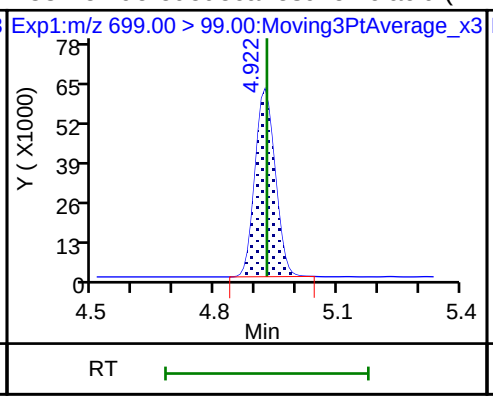
54 N-ethylperfluoro-1-octanesulfonami



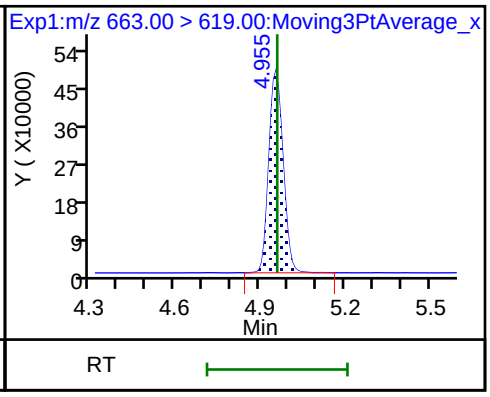
58 Perfluorododecanesulfonic acid (PF



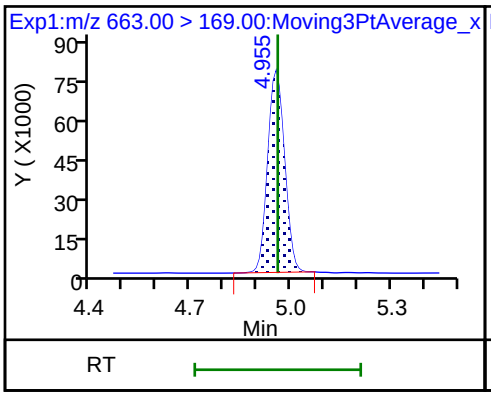
58 Perfluorododecanesulfonic acid (PF



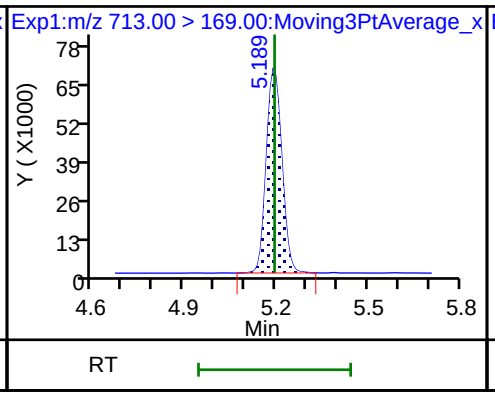
59 Perfluorotridecanoic acid



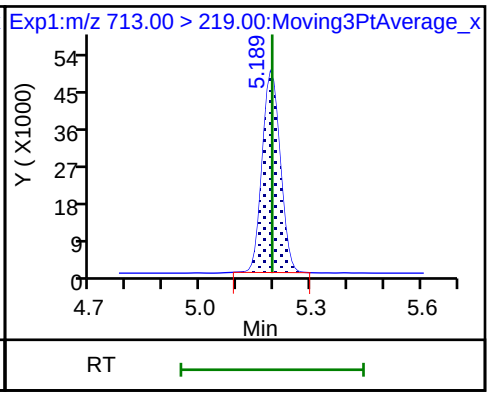
59 Perfluorotridecanoic acid



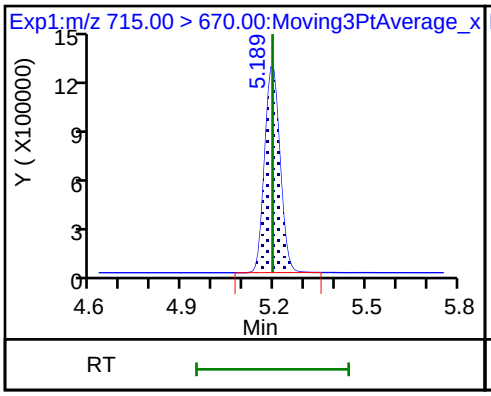
61 Perfluorotetradecanoic acid



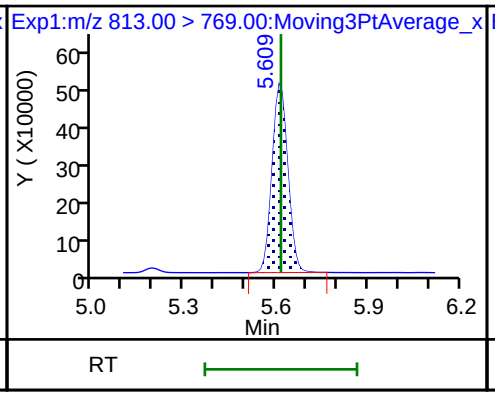
61 Perfluorotetradecanoic acid



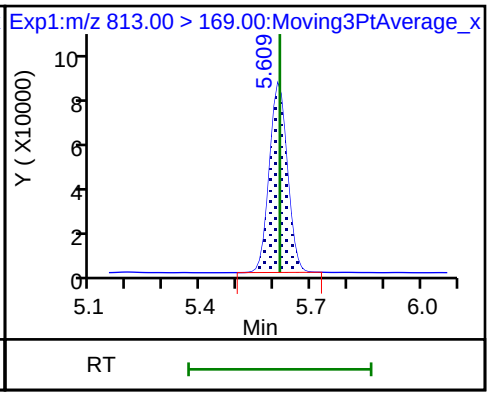
D 60 13C2 PFTeDA



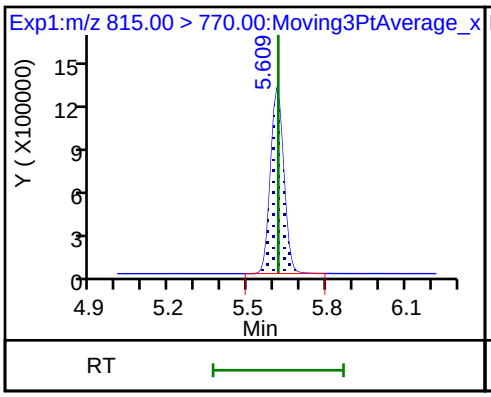
63 Perfluorohexadecanoic acid



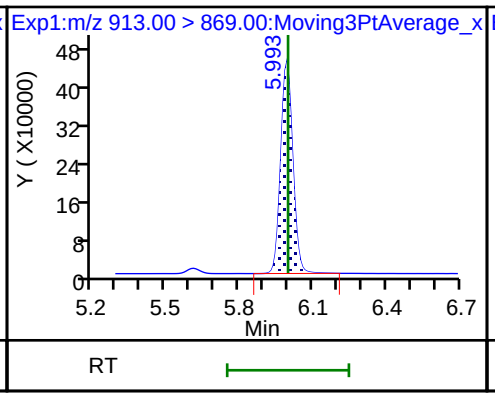
63 Perfluorohexadecanoic acid



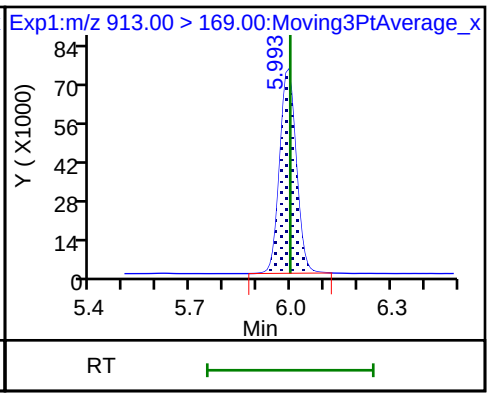
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 320-328853/2-A

Matrix: Solid Lab File ID: 2019.10.08LLBB._019.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 250(mL) Date Analyzed: 10/09/2019 00:43

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.91		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.84		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	42.76		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.15		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.77		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	41.61		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	42.78		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.96		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	40.74		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	39.87		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	42.45		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34.51		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	31.69		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	38.59		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	36.44		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	39.37		2.00	0.32

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	107		25-150
STL00993	13C2 PFHxA	104		25-150
STL00990	13C4 PFOA	105		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	104		25-150
STL01892	13C4 PFHpA	108		25-150
STL00997	13C2 PFUnA	103		25-150
STL01893	13C5 PFPeA	107		25-150
STL00998	13C2 PFDoA	106		25-150
STL02116	13C2 PFTeDA	106		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	99		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._019.d
Lims ID: LCS 320-328853/2-A
Client ID:
Sample Type: LCS
Inject. Date: 09-Oct-2019 00:43:01 ALS Bottle#: 9 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-328853/2-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:29:44 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:29:44
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.893	1.900	-0.007	1.000	2190143	1.05		105	349	a
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.900	-0.007	0.567	6150949	2.67		107	6241	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.205	-0.007	1.000	2106863	1.00		99.6	329	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.205	-0.007	0.659	5162059	2.67		107	3594	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.224	2.232	-0.008	0.756	2624091	0.8627	Target=2.72	97.6	175	
298.90 > 99.00	2.224	2.232	-0.008	0.756	961804		2.73(1.36-4.09)		156	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.514	2.524	-0.010	1.000	708896	1.00		107	2029	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.524	-0.010	0.753	643967	1.75		74.9	1098	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.556	0.001	1.004	2291595	1.07	Target=15.16	107	481	
313.00 > 119.00	2.557	2.556	0.001	1.004	143718		15.95(7.58-22.74)		229	
D 9 13C2 PFHxA										
315.00 > 270.00	2.546	2.567	-0.021	0.763	5770309	2.60		104	2686	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.578	-0.010	0.873	1423043	0.8939	Target=2.00	95.3	2778	
349.00 > 99.00	2.568	2.578	-0.010	0.873	714760		1.99(1.00-2.99)		1637	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.673	2.685	-0.012	0.801	1158488	3.00		120	1961	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.673	2.685	-0.012	1.000	672365	0.9576		95.8	554	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.940	2.941	-0.001	0.881	6897508	2.71		108	3466	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.940	2.947	-0.007	1.000	3187748	1.03	Target=4.38	103	826	
363.00 > 169.00	2.940	2.947	-0.007	1.000	734529		4.34(2.19-6.57)		1086	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.940	2.947	-0.007	1.000	1739250	0.7923	Target=3.29	87.1	1748	
399.00 > 99.00	2.940	2.947	-0.007	1.000	540255		3.22(1.64-4.93)		600	
D 16 18O2 PFHxS										
403.00 > 84.00	2.940	2.952	-0.012	0.881	4243848	2.60		110	3730	
18 DONA										
377.00 > 251.00	2.986	2.995	-0.009	0.805	5474560	1.13	Target=2.26	120	3957	
377.00 > 85.00	2.993	2.995	-0.002	0.806	2281919		2.40(1.13-3.38)		2717	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.325	-0.009	0.994	642400	1.81		76.2	2018	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.323	3.325	-0.002	1.002	682785	1.08		114	1548	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.339	-0.001	0.899	1791001	0.9646	Target=3.72	101	2821	
449.00 > 99.00	3.338	3.339	-0.001	0.899	486746		3.68(1.86-5.59)		1092	
D 23 13C4 PFOA										
417.00 > 372.00	3.338	3.346	-0.008	1.000	7679599	2.62		105	3473	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.346	-0.008		7822704	2.50			3535	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.345	3.346	-0.001	1.002	3453384	0.99	Target=2.91	99.4	380	
413.00 > 169.00	3.338	3.346	-0.008	1.000	1145085		3.02(1.45-4.36)		1473	
D 27 13C4 PFOS										
503.00 > 80.00	3.711	3.714	-0.003	1.112	4486189	2.36		99.0	5844	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.711	3.722	-0.011	1.000	1835504	0.9109	Target=3.91	98.2	1186	
499.00 > 99.00	3.711	3.722	-0.011	1.000	484229		3.79(1.95-5.86)		1063	
D 30 13C5 PFNA										
468.00 > 423.00	3.727	3.729	-0.002	1.117	6774014	2.59		104	4340	
29 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.737	-0.010	1.000	2903149	1.04	Target=5.56	104	1024	
463.00 > 169.00	3.727	3.737	-0.010	1.000	493101		5.89(2.78-8.34)		931	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.918	3.930	-0.012	1.056	1305595	0.9821		105	1686	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.064	4.068	-0.004	1.095	1134239	0.99	Target=4.72	103	2038	
549.00 > 99.00	4.056	4.068	-0.012	1.093	254831		4.45(2.36-7.09)		850	
D 36 13C2 PFDA										
515.00 > 470.00	4.082	4.086	-0.004	1.223	7660219	2.60		104	4257	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.082	4.095	-0.013	1.223	591654	1.77		74.0	1597	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.082	4.095	-0.013	1.000	3114882	1.07	Target=15.48	107	669	
513.00 > 169.00	4.082	4.095	-0.013	1.000	195479		15.93(7.74-23.21)		390	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.082	4.095	-0.013	1.000	564986	1.03		108	1955	
D 32 13C8 FOSA										
506.00 > 78.00	4.109	4.113	-0.004	1.231	2478530	2.53		101	3195	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.109	4.113	-0.004	1.000	3140036	1.15		115	2154	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.243	4.247	-0.004	1.271	3571951	2.57		103	1690	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.252	4.256	-0.004	1.002	1162851	0.99		99.4	153	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.374	4.387	-0.013	1.178	1503117	0.9842	Target=4.95	102	1855	
599.00 > 99.00	4.374	4.387	-0.013	1.178	343372		4.38(2.47-7.42)		1029	
D 42 13C2 PFUnA										
565.00 > 520.00	4.400	4.404	-0.004	1.318	6459954	2.57		103	4254	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.409	4.413	-0.004	1.321	3297958	2.76		110	2346	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.400	4.413	-0.013	1.000	2132058	1.05	Target=10.16	105	1169	
563.00 > 169.00	4.400	4.413	-0.013	1.000	218478		9.76(5.08-15.24)		553	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.409	4.421	-0.012	1.000	1034759	0.9832		98.3	2052	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.545	4.550	-0.005	1.225	2951988	0.8409		89.3	3147	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.572	4.567	0.005		2422072	3.79		30.3	1235	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.581	4.585	-0.004	1.002	193225	0.9571		95.7	393	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.590	4.594	-0.004		1089232	1.56		62.3	165	
49 NMeFOSA										
512.00 > 169.00	4.599	4.603	-0.004	1.002	426449	1.12		112	814	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.693	4.697	-0.004	1.002	3072359	1.02	Target=9.81	102	1491	
613.00 > 169.00	4.683	4.697	-0.014	1.000	333572		9.21(4.90-14.71)		1665	
D 55 13C2 PFDoA										
615.00 > 570.00	4.683	4.697	-0.014	1.403	7317670	2.64		106	3645	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.702	4.707	-0.005	1.152	450694	1.07		111	1685	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.739	4.744	-0.005		2474156	3.72		29.7	1694	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.756	4.751	0.005	1.003	197723	0.9477		94.8	246	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.771	4.766	0.005		761043	1.13		45.2	743	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.778	4.774	0.004	1.002	335734	1.10		110	348	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.910	4.913	-0.003	1.323	160335	1.02	Target=0.66	106	654	
699.00 > 99.00	4.910	4.913	-0.003	1.323	244684		0.66(0.33-0.99)		987	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.943	4.947	-0.004	1.056	1880393	1.00	Target=5.89	99.7	2211	
663.00 > 169.00	4.943	4.947	-0.004	1.056	322381		5.83(2.94-8.83)		1470	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.186	5.189	-0.003	1.000	311613	1.06	Target=1.35	106	1645	
713.00 > 219.00	5.177	5.189	-0.012	0.998	217370		1.43(0.67-2.02)		2826	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.186	5.189	-0.003	1.554	5195393	2.65		106	4121	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.606	5.609	-0.003	1.002	2112721	1.10	Target=6.52	110	961	
813.00 > 169.00	5.606	5.609	-0.003	1.002	312956		6.75(3.26-9.77)		1300	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.596	5.609	-0.013	1.677	5382887	2.50		99.8	7225	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.982	5.993	-0.011	1.069	1802739	1.16	Target=5.87	116	1141	
913.00 > 169.00	5.982	5.993	-0.011	1.069	293607		6.14(2.94-8.81)		1947	

QC Flag Legend

Review Flags

a - User Assigned ID

Report Date: 18-Oct-2019 15:29:45 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._019.d

Injection Date: 09-Oct-2019 00:43:01 Instrument ID: A9

Lims ID: LCS 320-328853/2-A

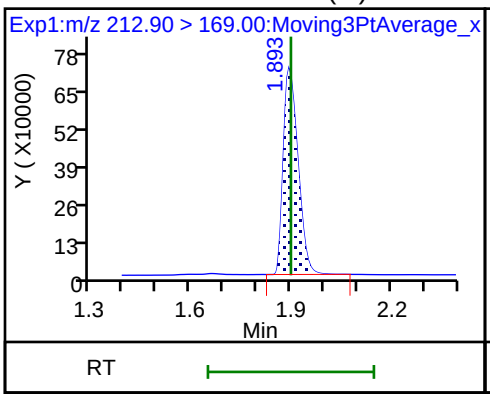
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 5

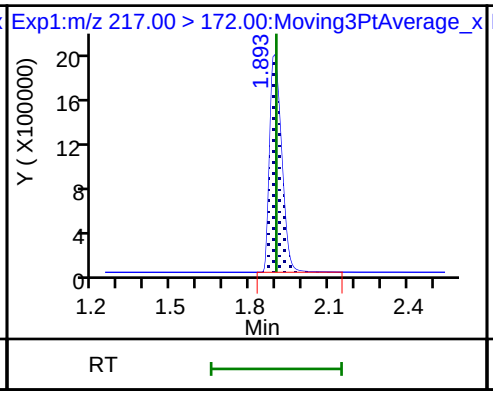
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

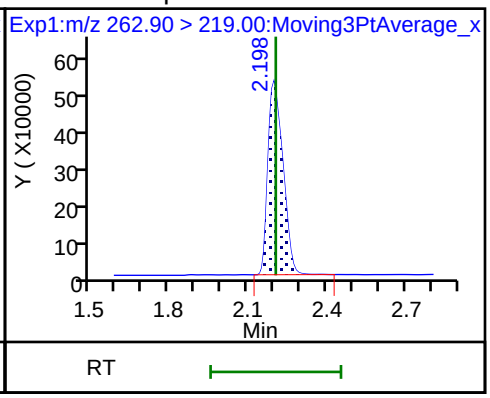
2 Perfluorobutanoic acid (M)



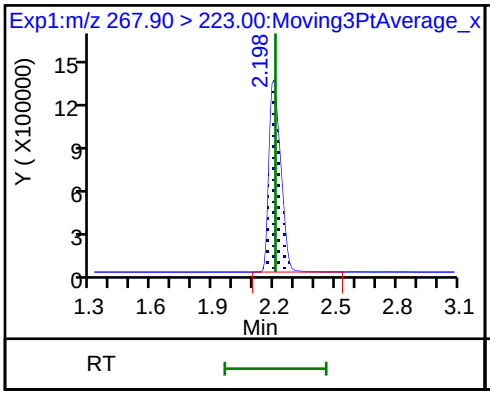
D 1 13C4 PFBA



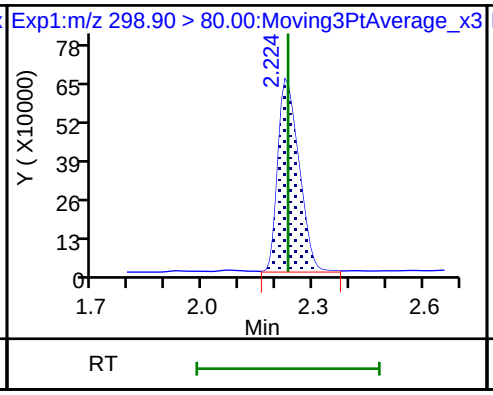
3 Perfluoropentanoic acid



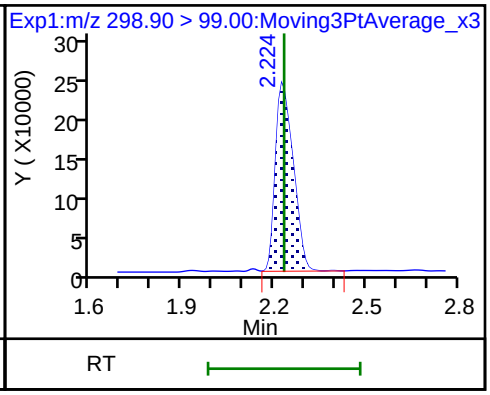
D 4 13C5 PFPeA



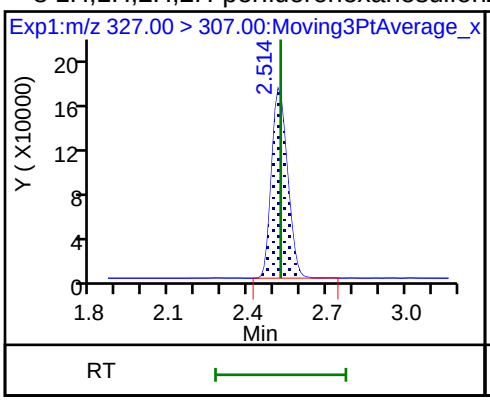
5 Perfluorobutanesulfonic acid



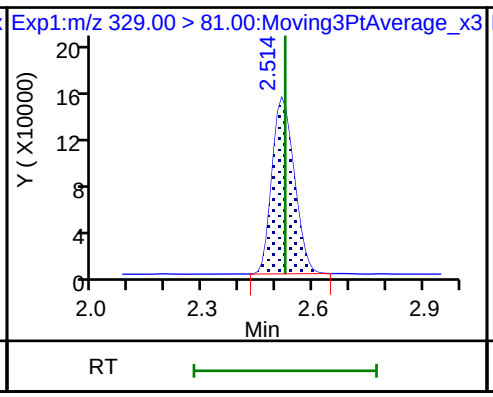
5 Perfluorobutanesulfonic acid



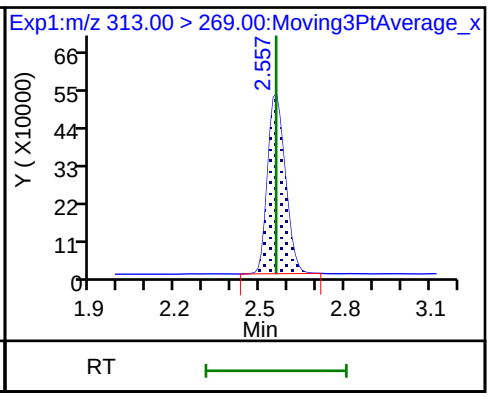
8 1H,1H,2H,2H-perfluorohexanesulfon



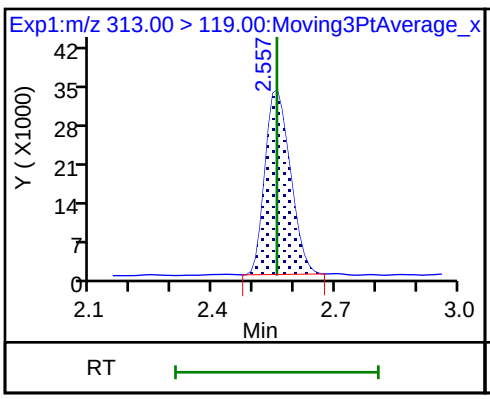
D 7 M2-4:2 FTS



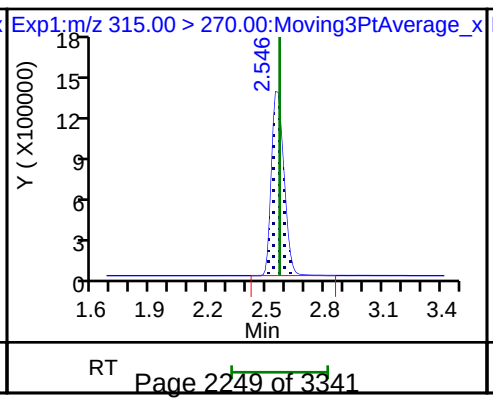
10 Perfluorohexanoic acid



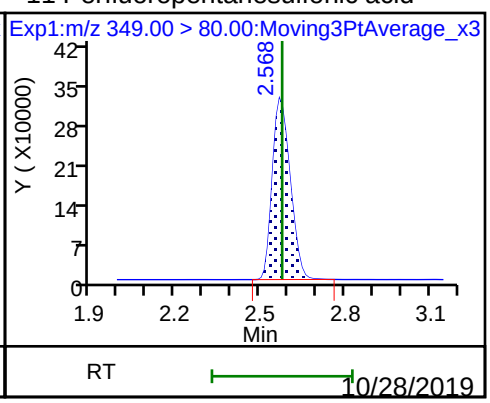
10 Perfluorohexanoic acid



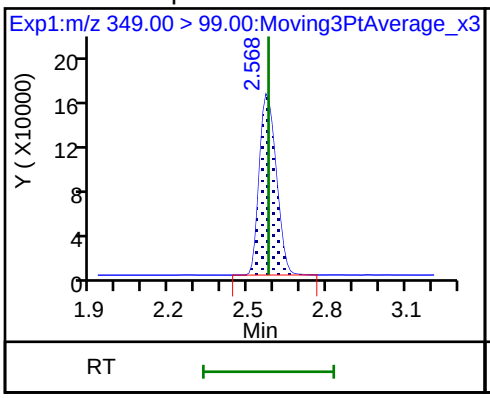
D 9 13C2 PFHxA



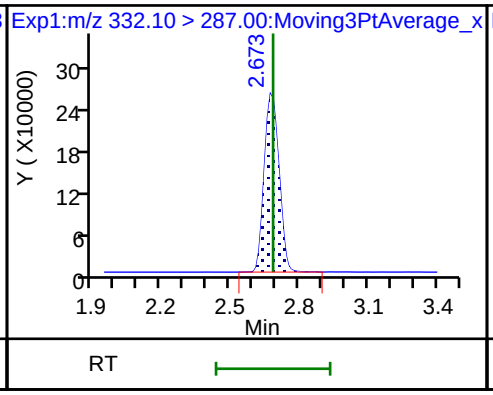
11 Perfluoropentanesulfonic acid



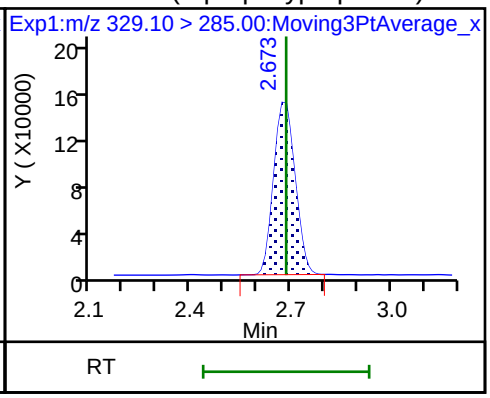
11 Perfluoropentanesulfonic acid



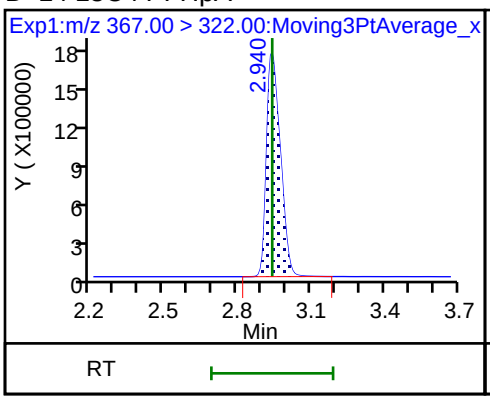
D 12 13C3 HFPO-DA



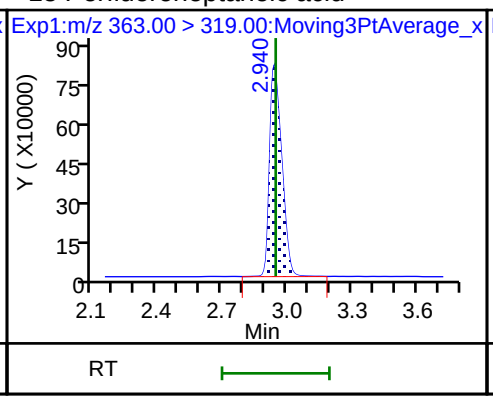
13 Perfluoro(2-propoxypropanoic) acid



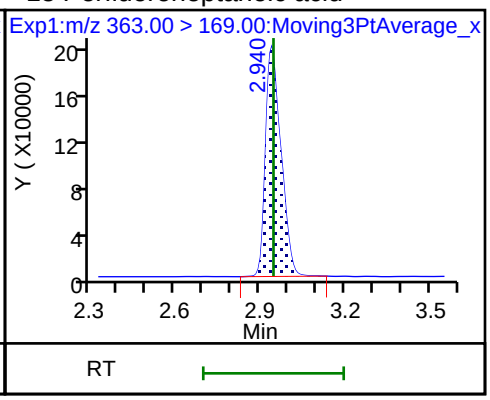
D 14 13C4 PFHpA



15 Perfluoroheptanoic acid



15 Perfluoroheptanoic acid



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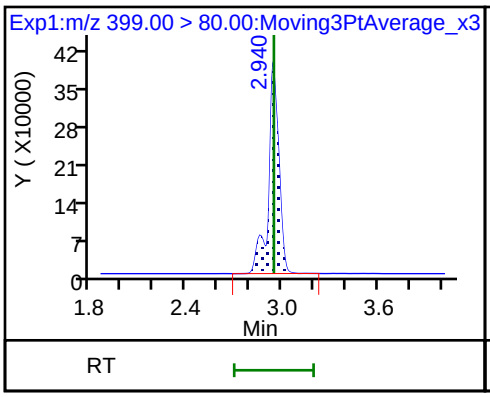

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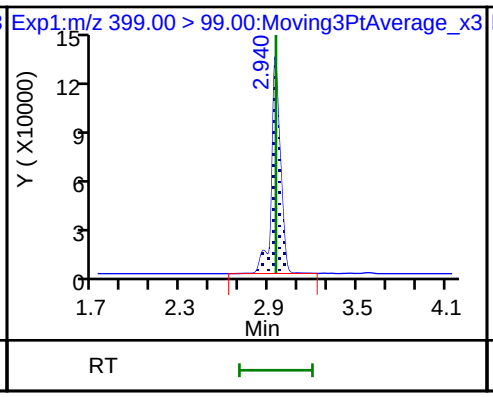
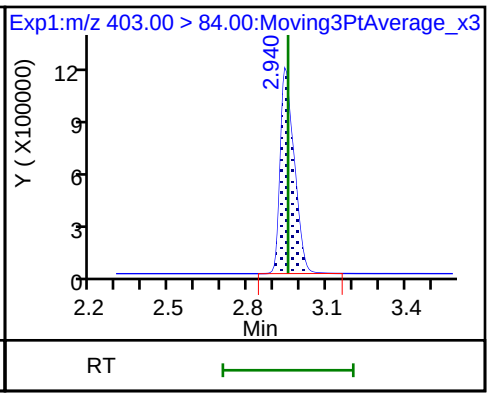
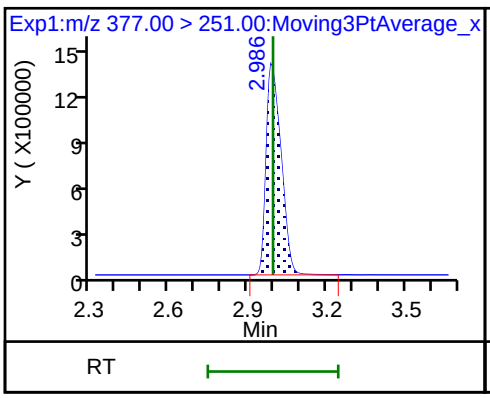


D 16 18O2 PFHxS



18 DONA



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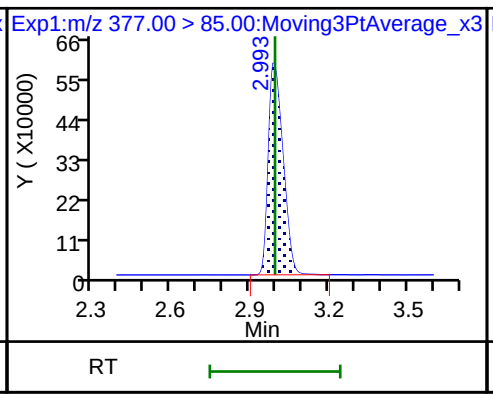
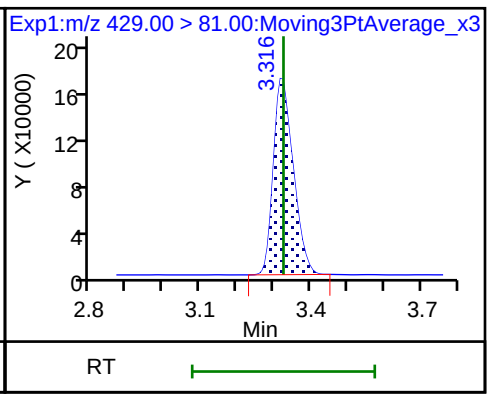
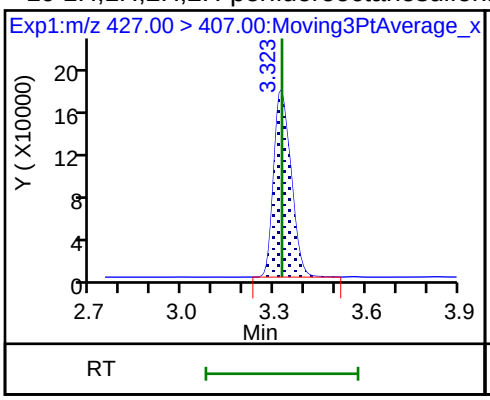


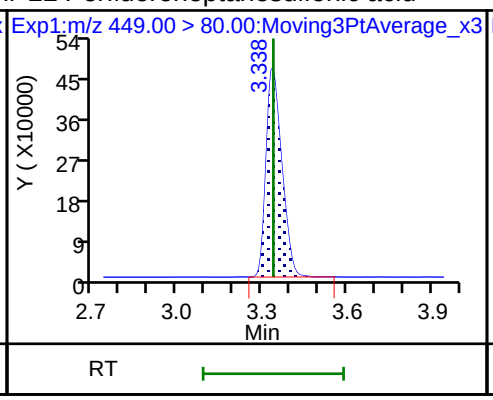
D 20 M2-6:2 FTS



19 1H,1H,2H,2H-perfluorooctanesulfoni



22 Perfluoroheptanesulfonic acid



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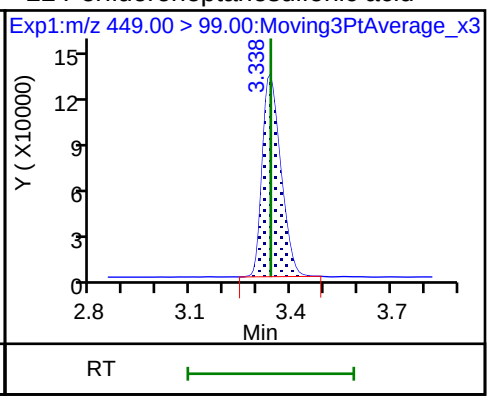
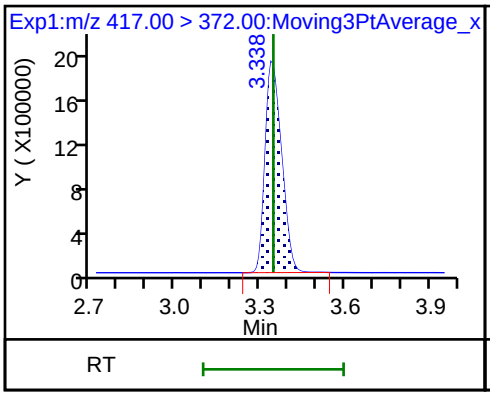
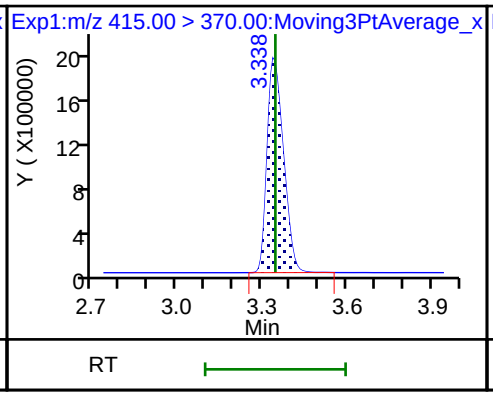


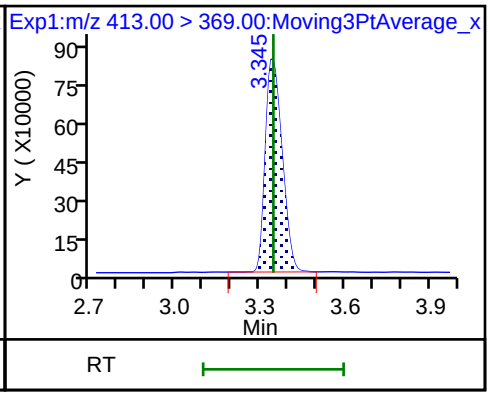
D 23 13C4 PFOA



* 25 13C2 PFOA



24 Perfluorooctanoic acid



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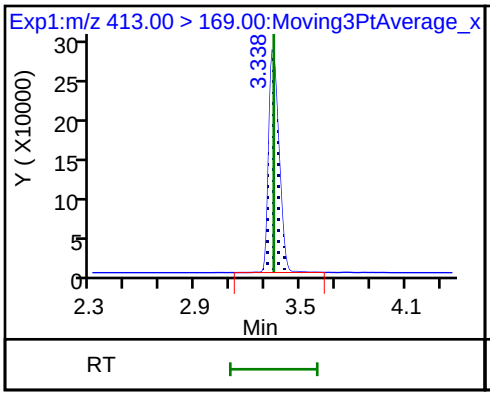
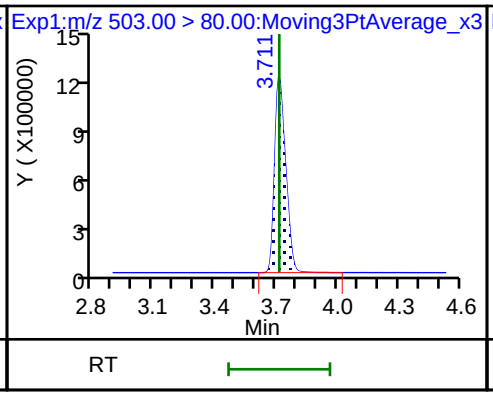
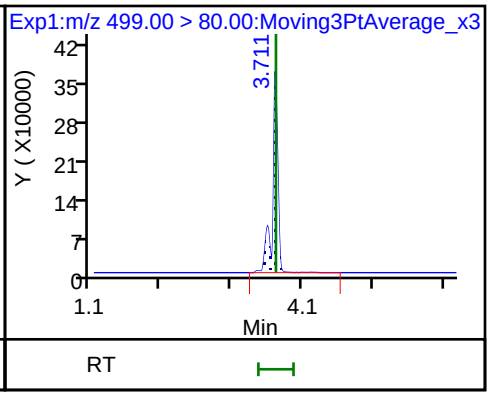


D 27 13C4 PFOS



28 Perfluorooctanesulfonic acid



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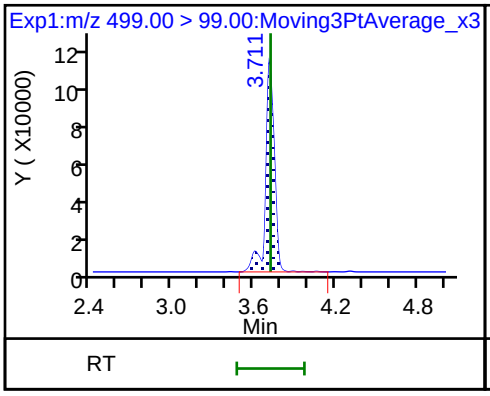
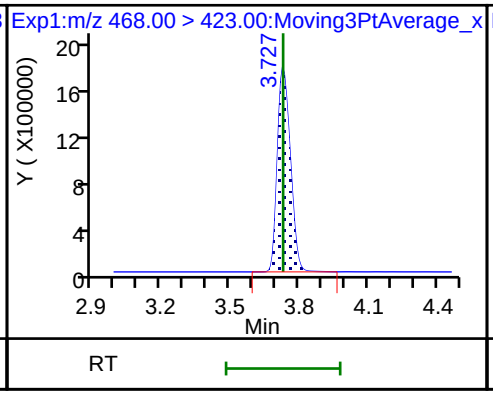
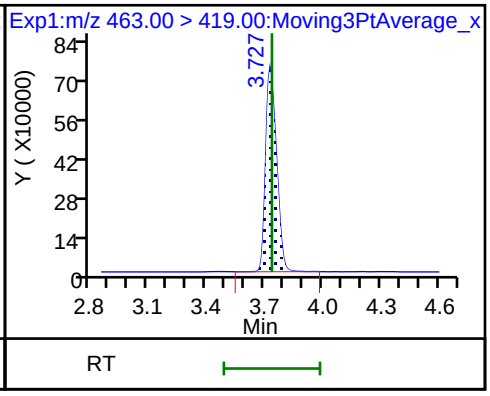


D 30 13C5 PFNA



29 Perfluorononanoic acid



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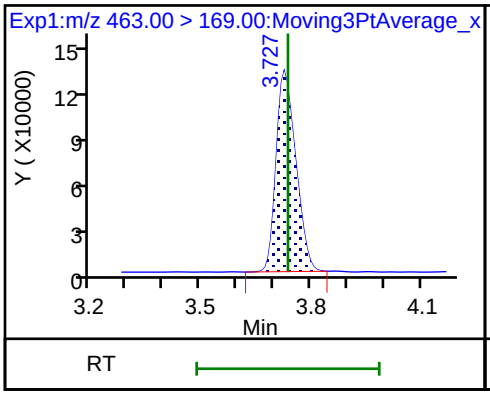
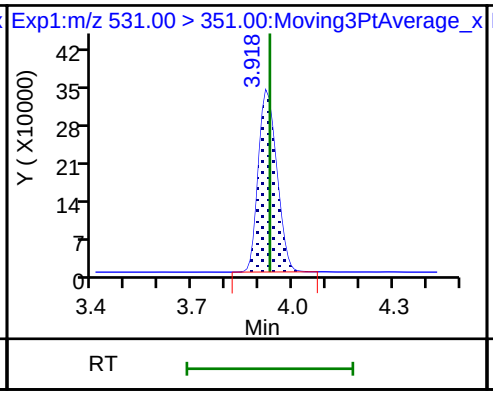
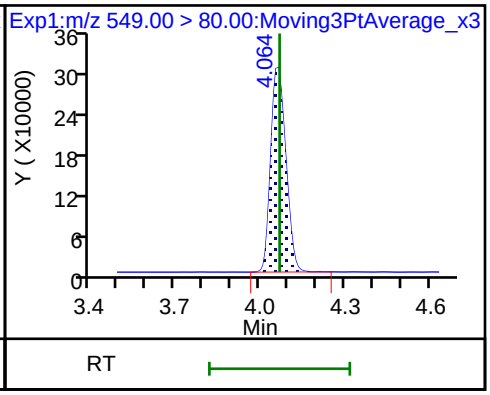


31 9-Chlorohexadecafluoro-3-oxanonane



34 Perfluorononanesulfonic acid



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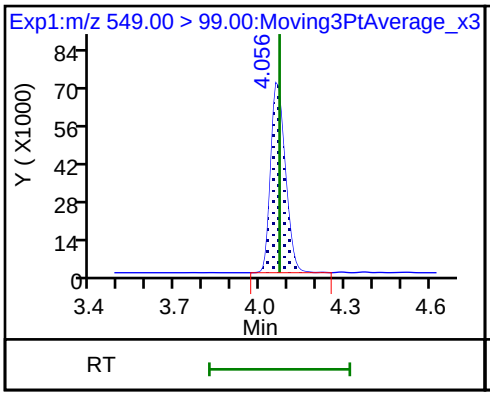
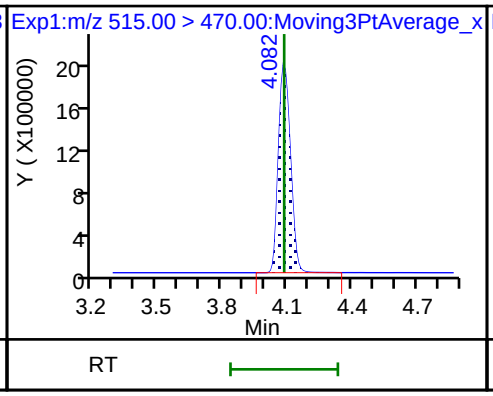
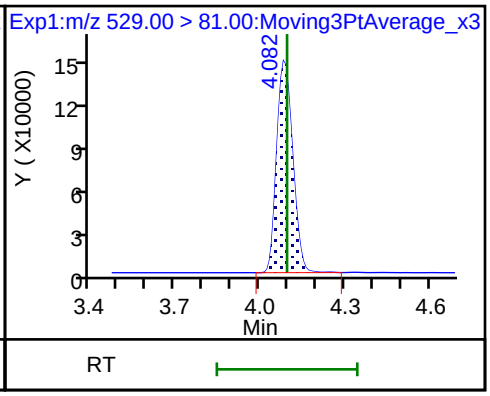


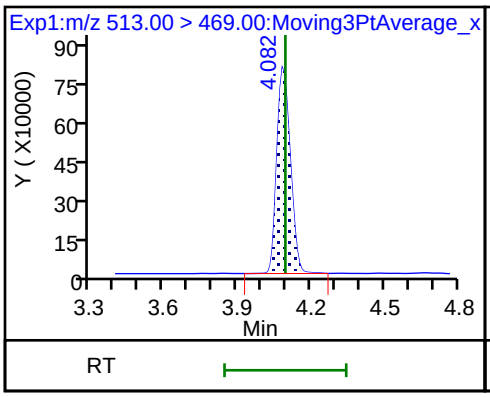
D 36 13C2 PFDA



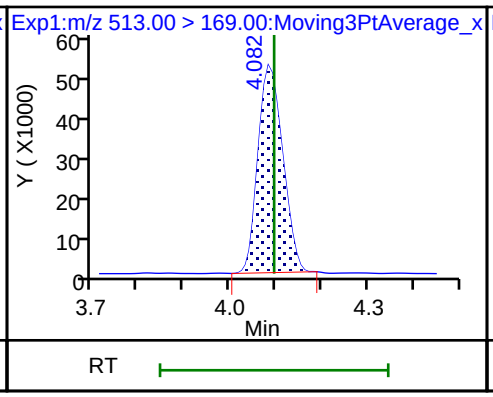
D 35 M2-8:2 FTS



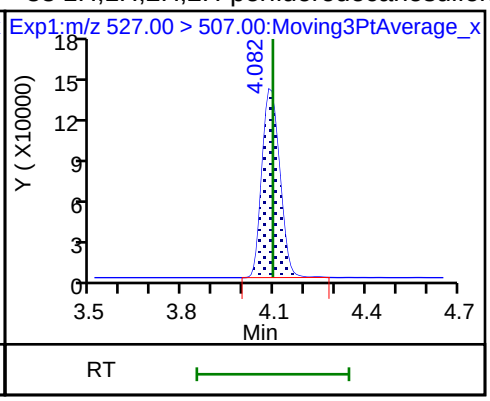
37 Perfluorodecanoic acid



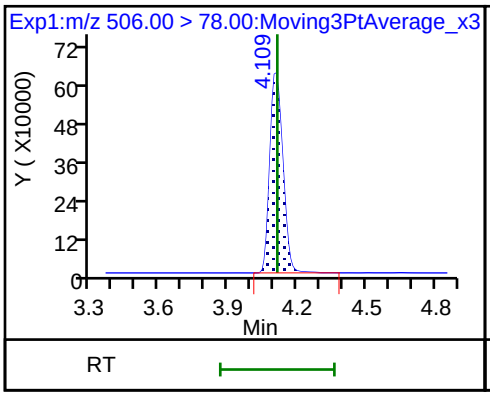
37 Perfluorodecanoic acid



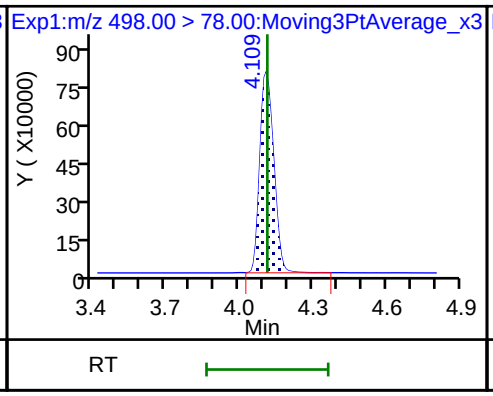
38 1H,1H,2H,2H-perfluorodecanesulfoni



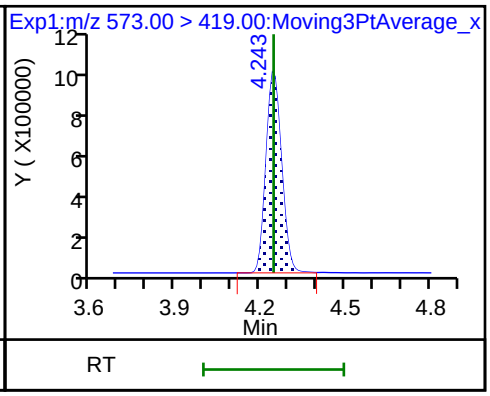
D 32 13C8 FOSA



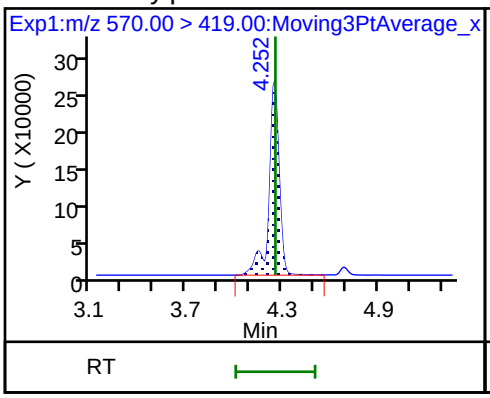
33 Perfluorooctanesulfonamide



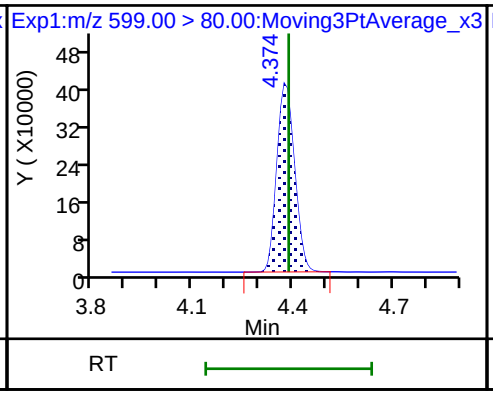
D 39 d3-NMeFOSAA



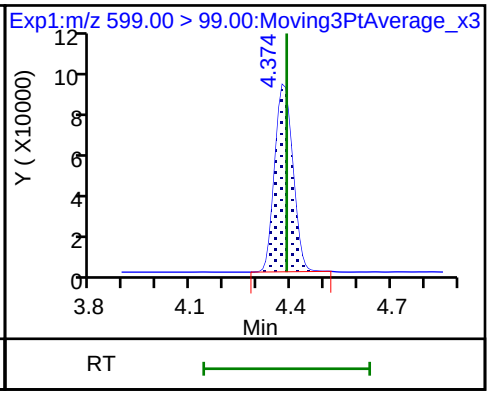
40 N-methylperfluorooctanesulfonamido



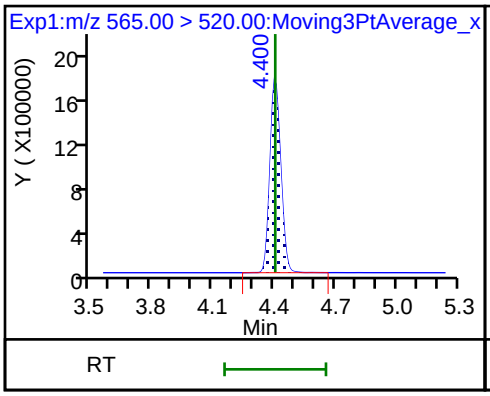
41 Perfluorodecanesulfonic acid



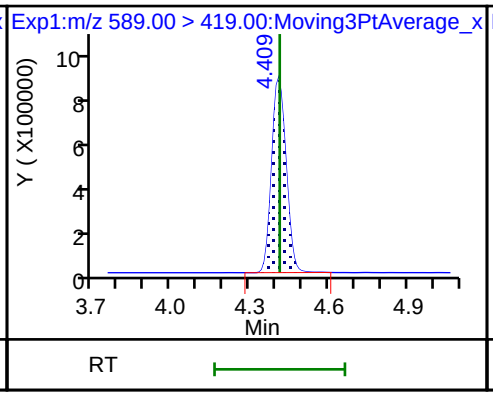
41 Perfluorodecanesulfonic acid



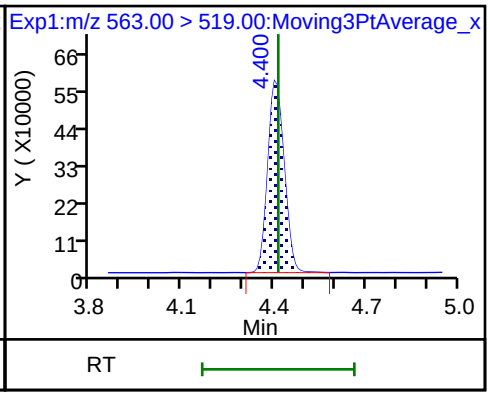
D 42 13C2 PFUnA



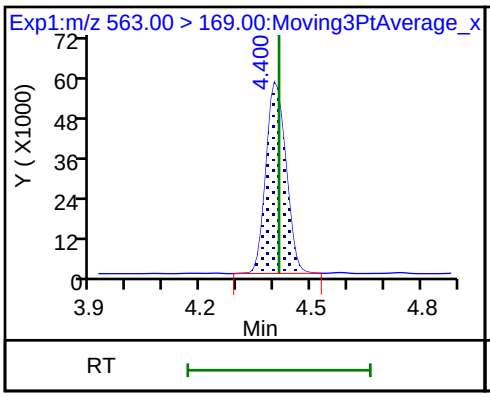
D 44 d5-NEtFOSAA



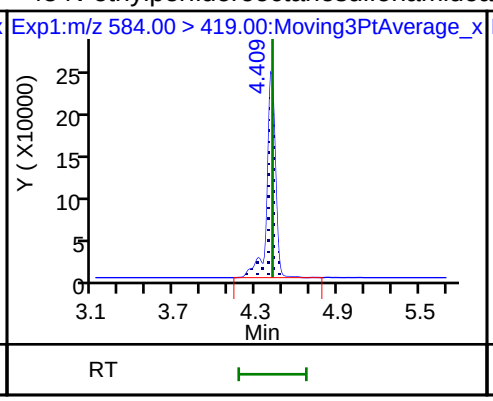
43 Perfluoroundecanoic acid



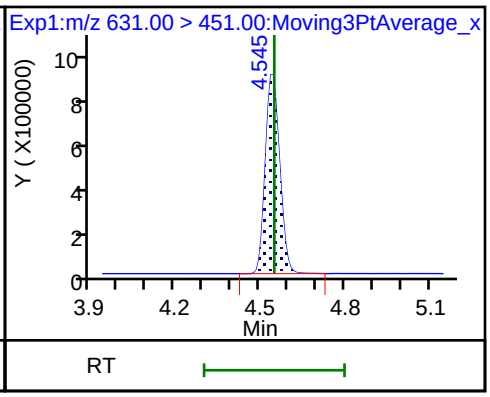
43 Perfluoroundecanoic acid



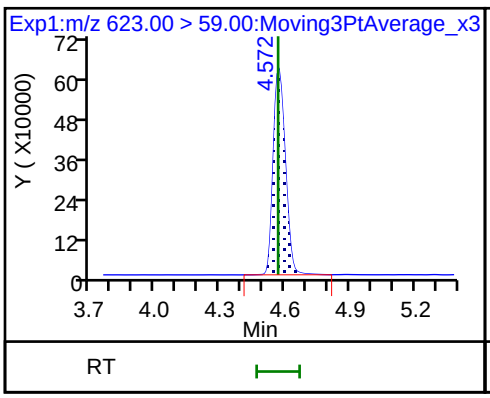
45 N-ethylperfluorooctanesulfonamidoa



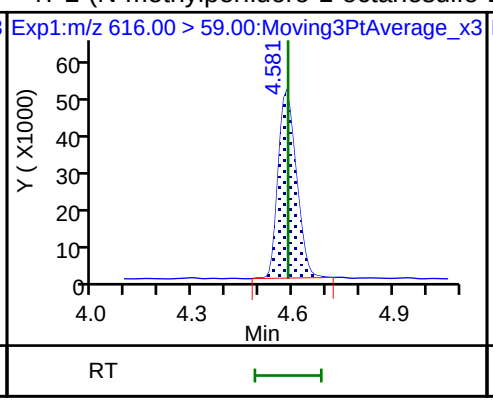
50 11-Chloroeicosafluoro-3-oxaundecan



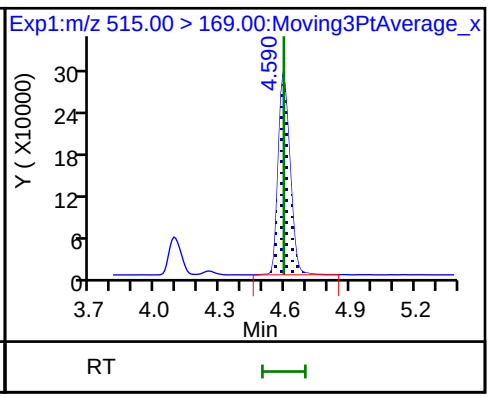
D 46 d7-N-MeFOSE-M



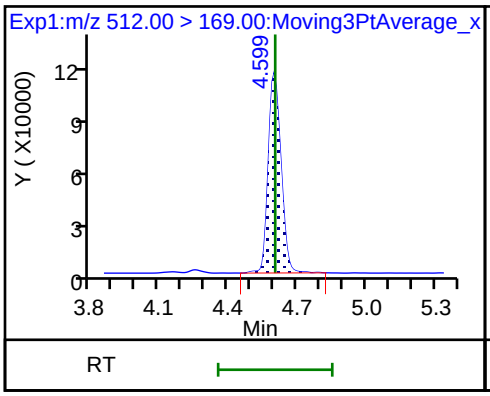
47 2-(N-methylperfluoro-1-octanesulfo



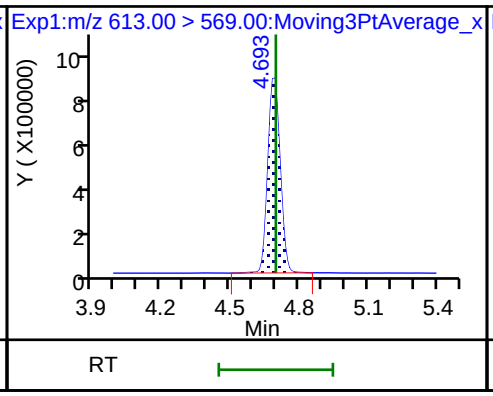
D 48 d-N-MeFOSA-M



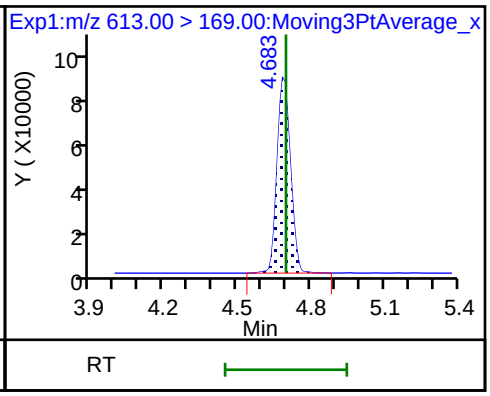
49 NMeFOSA



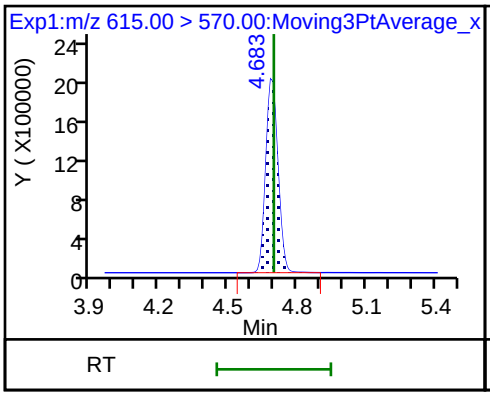
56 Perfluorododecanoic acid



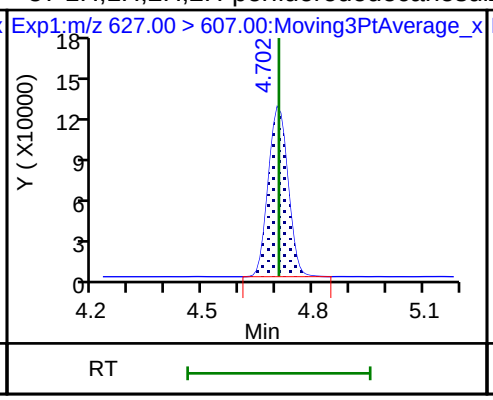
56 Perfluorododecanoic acid



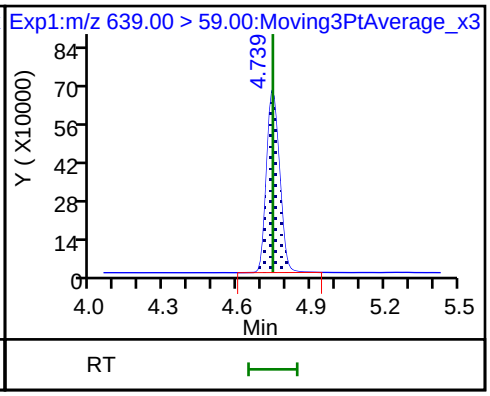
D 55 13C2 PFDoA



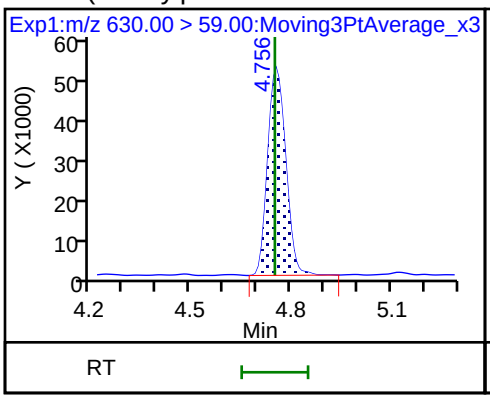
57 1H,1H,2H,2H-perfluorododecanesulfo



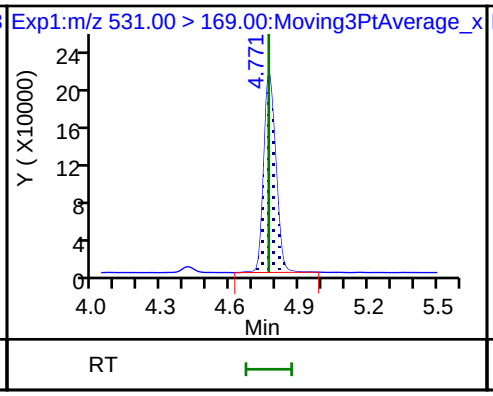
D 51 d9-N-EtFOSE-M



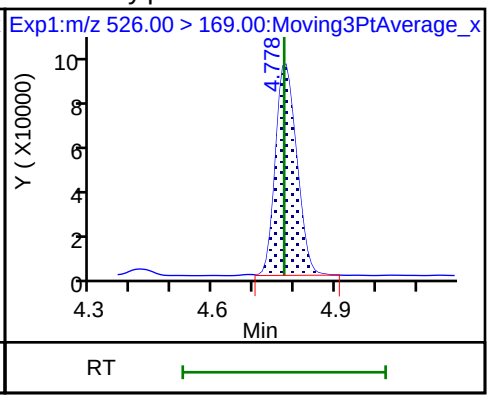
52 2-(N-ethylperfluoro-1-octanesulfon



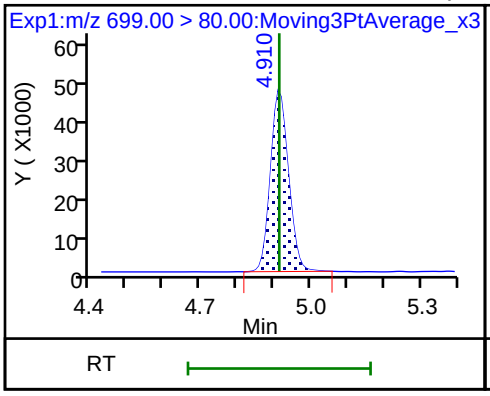
D 53 d-N-EtFOSA-M



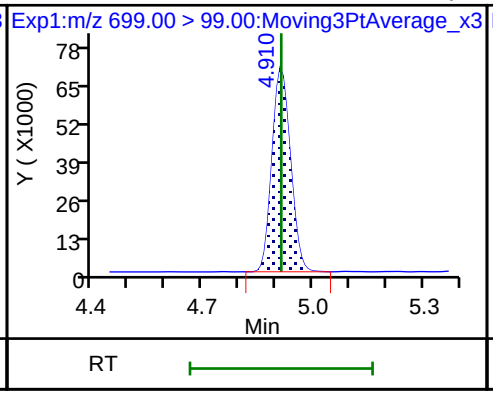
54 N-ethylperfluoro-1-octanesulfonami



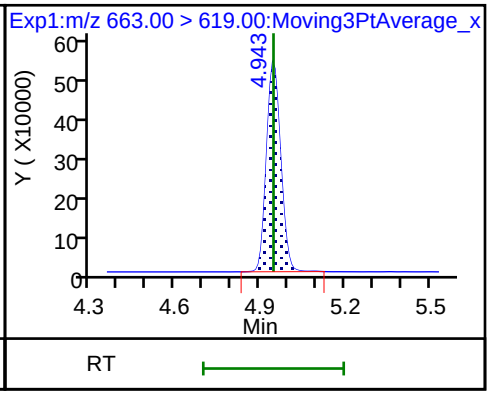
58 Perfluorododecanesulfonic acid (PF



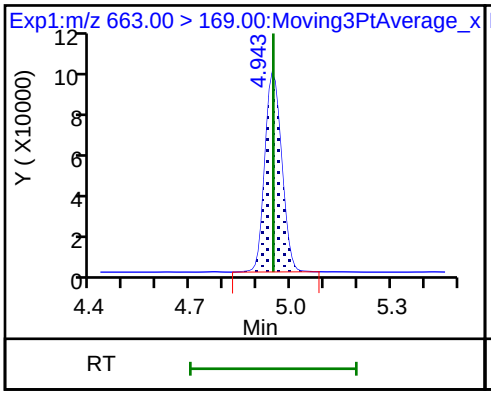
58 Perfluorododecanesulfonic acid (PF



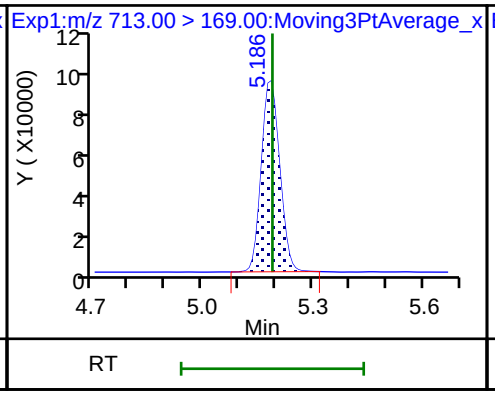
59 Perfluorotridecanoic acid



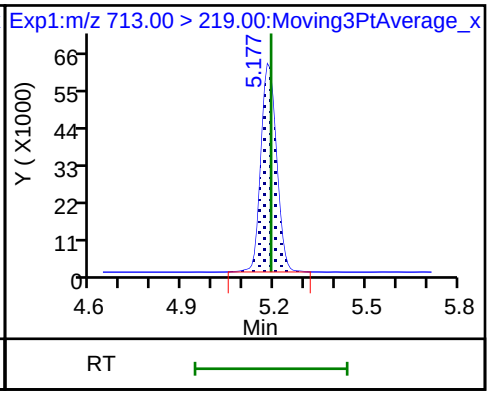
59 Perfluorotridecanoic acid



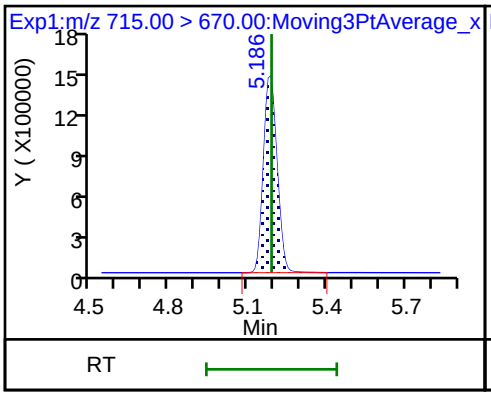
61 Perfluorotetradecanoic acid



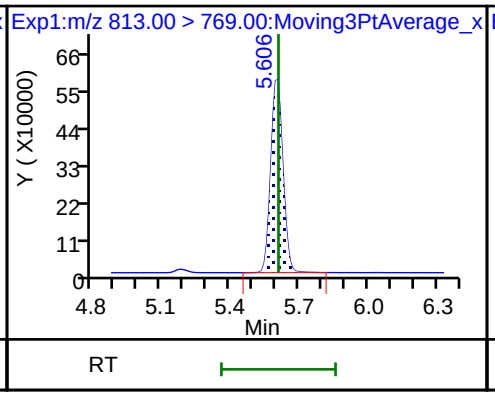
61 Perfluorotetradecanoic acid



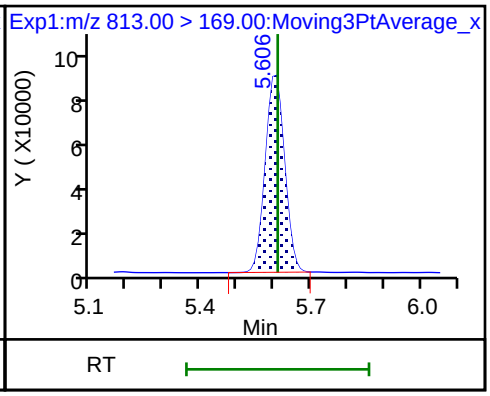
D 60 13C2 PFTeDA



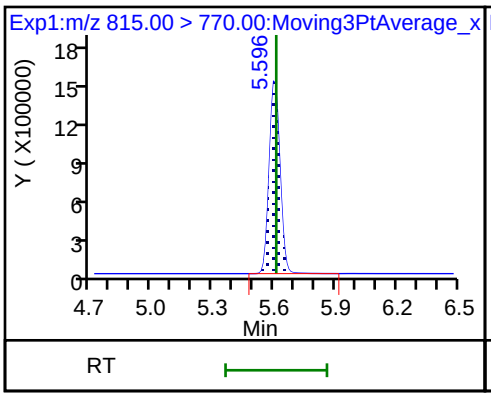
63 Perfluorohexadecanoic acid



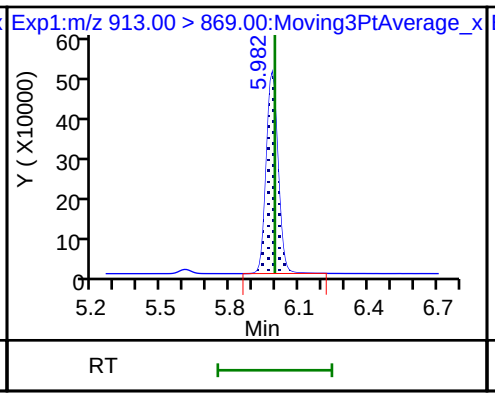
63 Perfluorohexadecanoic acid



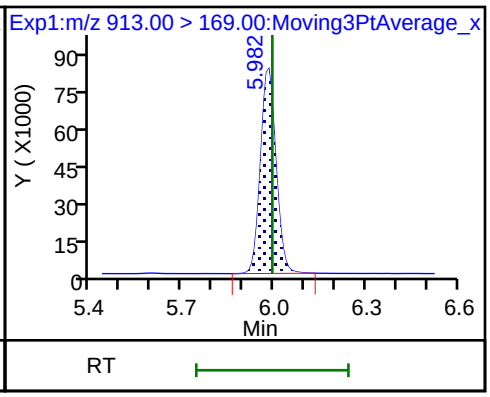
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

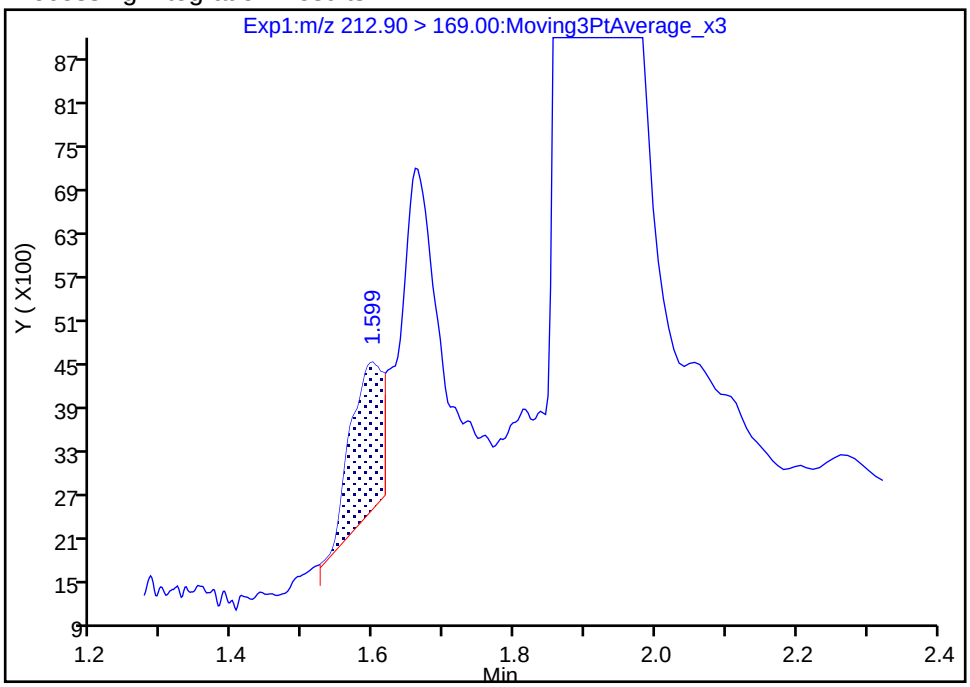
Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._019.d
Injection Date: 09-Oct-2019 00:43:01 Instrument ID: A9
Lims ID: LCS 320-328853/2-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

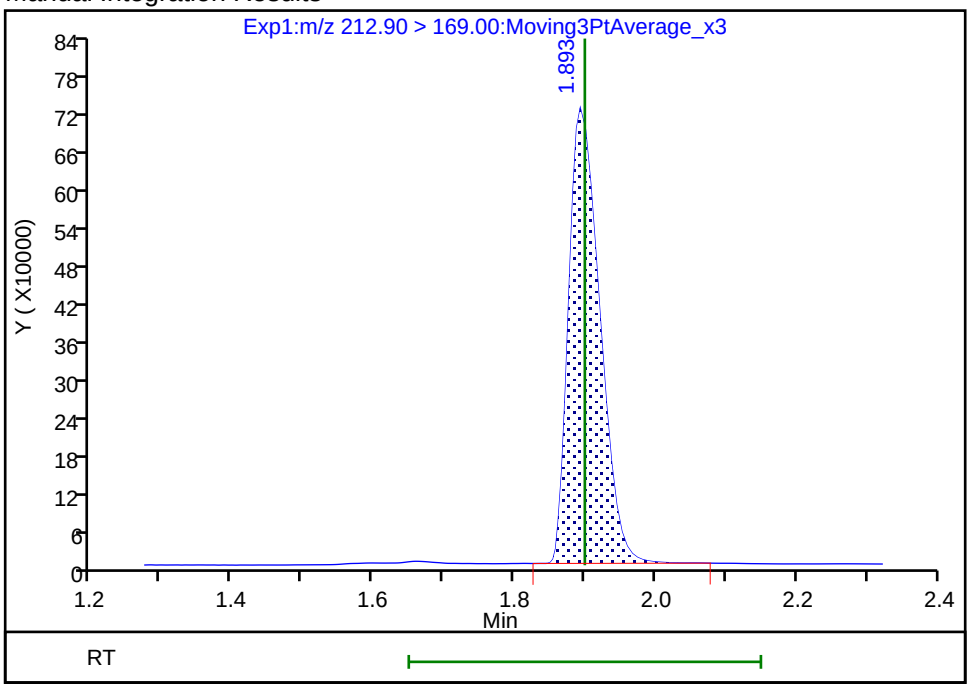
Processing Integration Results

RT: 1.60
Area: 6539
Amount: 0.003128
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 2190143
Amount: 1.047784
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:29:26
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Client Sample ID: Lab Sample ID: LCSD 320-328853/3-A

Matrix: Solid Lab File ID: 2019.10.08LLBB._020.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 10/07/2019 06:04

Sample wt/vol: 250(mL) Date Analyzed: 10/09/2019 00:52

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 329447 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.76		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.18		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	42.25		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.70		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	41.57		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	41.44		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	43.34		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.35		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	40.73		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	40.74		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	41.63		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	34.96		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.14		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	37.40		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.01		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	42.35		2.00	0.32

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	110		25-150
STL00993	13C2 PFHxA	108		25-150
STL00990	13C4 PFOA	108		25-150
STL00995	13C5 PFNA	109		25-150
STL00996	13C2 PFDA	108		25-150
STL01892	13C4 PFHpA	111		25-150
STL00997	13C2 PFUnA	105		25-150
STL01893	13C5 PFPeA	109		25-150
STL00998	13C2 PFDoA	107		25-150
STL02116	13C2 PFTeDA	110		25-150
STL00994	18O2 PFHxS	111		25-150
STL00991	13C4 PFOS	101		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._020.d
Lims ID: LCSD 320-328853/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 09-Oct-2019 00:52:37 ALS Bottle#: 10 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-328853/3-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: A9\Administrator Instrument ID: A9

Method: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 18-Oct-2019 15:30:21 Calib Date: 05-Oct-2019 19:10:52
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromna\Sacramento\ChromData\A9\20191005-84392.b\2019.10.05.ICALAAA_009.d

Column 1 : Det: EXP1
Process Host: CTX0314

First Level Reviewer: ruangyotsakuld Date: 18-Oct-2019 15:30:21
Ratio Calibration: CCV Sample: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._017.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										a
212.90 > 169.00	1.893	1.900	-0.007	1.000	2169780	1.04		104	350	a
D 1 13C4 PFBA										
217.00 > 172.00	1.893	1.900	-0.007	0.567	6116521	2.74		110	5257	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.205	-0.007	1.000	2089365	1.00		100	314	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.205	-0.007	0.658	5075587	2.72		109	3204	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.232	2.232	0.0	0.757	2608849	0.8741	Target=2.72	98.9	202	
298.90 > 99.00	2.223	2.232	-0.009	0.754	977892		2.67(1.36-4.09)		176	
8 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.514	2.524	-0.010	1.000	759748	1.03		111	2294	
D 7 M2-4:2 FTS										
329.00 > 81.00	2.514	2.524	-0.010	0.753	669911	1.88		80.5	1358	
10 Perfluorohexanoic acid										
313.00 > 269.00	2.557	2.556	0.001	1.000	2278904	1.06	Target=15.16	106	498	
313.00 > 119.00	2.557	2.556	0.001	1.000	143064		15.93(7.58-22.74)		245	
D 9 13C2 PFHxA										
315.00 > 270.00	2.557	2.567	-0.010	0.766	5806818	2.70		108	2851	
11 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.567	2.578	-0.011	0.871	1427965	0.9141	Target=2.00	97.5	3505	
349.00 > 99.00	2.567	2.578	-0.011	0.871	694635		2.06(1.00-2.99)		1486	
D 12 13C3 HFPO-DA										
332.10 > 287.00	2.673	2.685	-0.012	0.800	1053317	2.81		113	1947	
13 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.686	2.685	0.001	1.005	694791	1.09		109	557	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFHpA										
367.00 > 322.00	2.941	2.941	0.0	0.881	6812592	2.77		111	2668	
15 Perfluoroheptanoic acid										
363.00 > 319.00	2.941	2.947	-0.006	1.000	3190925	1.04	Target=4.38	104	820	
363.00 > 169.00	2.941	2.947	-0.006	1.000	740697		4.31(2.19-6.57)		1060	
17 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.947	2.947	0.0	1.000	1730652	0.8035	Target=3.29	88.3	1496	
399.00 > 99.00	2.941	2.947	-0.006	0.998	524333		3.30(1.64-4.93)		492	
D 16 18O2 PFHxS										
403.00 > 84.00	2.947	2.952	-0.005	0.883	4164085	2.63		111	5200	
18 DONA										
377.00 > 251.00	2.988	2.995	-0.007	0.805	5570572	1.17	Target=2.26	124	4400	
377.00 > 85.00	2.988	2.995	-0.007	0.805	2288494		2.43(1.13-3.38)		2674	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.325	-0.007	0.994	611313	1.78		75.0	1653	
19 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.318	3.325	-0.007	1.000	674755	1.13		119	2213	
22 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.340	3.339	0.001	0.899	1710610	0.9350	Target=3.72	98.2	2062	
449.00 > 99.00	3.340	3.339	0.001	0.899	482534		3.55(1.86-5.59)		996	
D 23 13C4 PFOA										
417.00 > 372.00	3.340	3.346	-0.006	1.000	7662028	2.70		108	4121	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.346	-0.006		7568849	2.50			4039	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.346	-0.006	1.000	3601120	1.04	Target=2.91	104	483	
413.00 > 169.00	3.340	3.346	-0.006	1.000	1197895		3.01(1.45-4.36)		1137	
D 27 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.112	4420802	2.41		101	4577	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.722	-0.008	1.000	1886794	0.9502	Target=3.91	102	1292	
499.00 > 99.00	3.714	3.722	-0.008	1.000	467109		4.04(1.95-5.86)		1042	
D 30 13C5 PFNA										
468.00 > 423.00	3.730	3.729	0.001	1.117	6907428	2.73		109	3640	
29 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.737	-0.007	1.000	2948778	1.04	Target=5.56	104	1117	
463.00 > 169.00	3.730	3.737	-0.007	1.000	517482		5.70(2.78-8.34)		750	
31 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.921	3.930	-0.009	1.056	1274219	0.9727		104	2363	
34 Perfluorononanesulfonic acid										
549.00 > 80.00	4.060	4.068	-0.008	1.093	1138477	1.01	Target=4.72	105	2774	
549.00 > 99.00	4.060	4.068	-0.008	1.093	257446		4.42(2.36-7.09)		985	
D 36 13C2 PFDA										
515.00 > 470.00	4.087	4.086	0.001	1.224	7714372	2.71		108	4869	
D 35 M2-8:2 FTS										
529.00 > 81.00	4.087	4.095	-0.008	1.224	599394	1.86		77.5	1225	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.087	4.095	-0.008	1.000	3178168	1.08	Target=15.48	108	1009	
513.00 > 169.00	4.087	4.095	-0.008	1.000	194654		16.33(7.74-23.21)		350	
38 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	4.087	4.095	-0.008	1.000	609227	1.10		115	2488	
D 32 13C8 FOSA										
506.00 > 78.00	4.104	4.113	-0.009	1.229	2388703	2.52		101	1569	
33 Perfluorooctanesulfonamide										
498.00 > 78.00	4.104	4.113	-0.009	1.000	2940774	1.12		112	2395	
D 39 d3-NMeFOSAA										
573.00 > 419.00	4.248	4.247	0.001	1.272	3840251	2.86		114	2222	
40 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.248	4.256	-0.008	1.000	1257702	1.00		100.0	224	
41 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.387	-0.009	1.179	1593322	1.06	Target=4.95	110	2575	
599.00 > 99.00	4.378	4.387	-0.009	1.179	335614		4.75(2.47-7.42)		1121	
D 42 13C2 PFUnA										
565.00 > 520.00	4.405	4.404	0.001	1.319	6369195	2.62		105	3149	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.405	4.413	-0.008	1.319	3002878	2.60		104	2234	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.405	4.413	-0.008	1.000	2071733	1.03	Target=10.16	103	1206	
563.00 > 169.00	4.405	4.413	-0.008	1.000	210399		9.85(5.08-15.24)		865	
45 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.413	4.421	-0.008	1.002	973333	1.02		102	1491	
50 11-Chloroeicosafluoro-3-oxaundecan										
631.00 > 451.00	4.541	4.550	-0.009	1.223	2960555	0.8558		90.8	4245	
D 46 d7-N-MeFOSE-M										
623.00 > 59.00	4.577	4.567	0.010		2599774	4.20		33.6	1217	
47 2-(N-methylperfluoro-1-octanesulfo										
616.00 > 59.00	4.577	4.585	-0.008	1.000	215593	0.99		99.5	487	
D 48 d-N-MeFOSA-M										
515.00 > 169.00	4.594	4.594	0.0		986048	1.46		58.3	146	
49 NMeFOSA										
512.00 > 169.00	4.604	4.603	0.001	1.002	398653	1.16		116	848	
56 Perfluorododecanoic acid										
613.00 > 569.00	4.688	4.697	-0.009	1.000	2999363	1.02	Target=9.81	102	1454	
613.00 > 169.00	4.688	4.697	-0.009	1.000	310351		9.66(4.90-14.71)		1454	
D 55 13C2 PFDoA										
615.00 > 570.00	4.688	4.697	-0.009	1.404	7145512	2.67		107	4921	
57 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.707	4.707	0.0	1.152	393844	0.9229		95.7	1371	
D 51 d9-N-EtFOSE-M										
639.00 > 59.00	4.744	4.744	0.0		2558301	3.97		31.8	2193	
52 2-(N-ethylperfluoro-1-octanesulfon										
630.00 > 59.00	4.759	4.751	0.008	1.003	206737	0.9583		95.8	258	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 53 d-N-EtFOSA-M										
531.00 > 169.00	4.767	4.766	0.001		699652	1.07		43.0	777	
54 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.774	4.774	0.0	1.002	314521	1.12		112	376	
58 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.914	4.913	0.001	1.323	146203	0.9468	Target=0.66	97.8	902	
699.00 > 99.00	4.914	4.913	0.001	1.323	234147		0.62(0.33-0.99)		940	
59 Perfluorotridecanoic acid										
663.00 > 619.00	4.947	4.947	0.0	1.055	1876180	1.02	Target=5.89	102	2020	
663.00 > 169.00	4.947	4.947	0.0	1.055	328946		5.70(2.94-8.83)		1579	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.181	5.189	-0.008	1.000	307983	1.04	Target=1.35	104	1435	
713.00 > 219.00	5.181	5.189	-0.008	1.000	201452		1.53(0.67-2.02)		937	
D 60 13C2 PFTeDA										
715.00 > 670.00	5.181	5.189	-0.008	1.551	5235484	2.76		110	3589	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	5.599	5.609	-0.010	1.000	2009090	1.07	Target=6.52	107	864	
813.00 > 169.00	5.599	5.609	-0.010	1.000	315342		6.37(3.26-9.77)		1640	
D 62 13C2 PFHxDA										
815.00 > 770.00	5.599	5.609	-0.010	1.677	5281857	2.53		101	6275	
64 Perfluorooctadecanoic acid										
913.00 > 869.00	5.985	5.993	-0.008	1.069	1724866	1.13	Target=5.87	113	1086	
913.00 > 169.00	5.977	5.993	-0.016	1.067	277120		6.22(2.94-8.81)		1997	

QC Flag Legend

Review Flags

a - User Assigned ID

Report Date: 18-Oct-2019 15:30:22 Chrom Revision: 2.3 15-Oct-2019 09:43:52

Eurofins TestAmerica, Sacramento

Data File: \\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._020.d

Injection Date: 09-Oct-2019 00:52:37 Instrument ID: A9

Lims ID: LCSD 320-328853/3-A

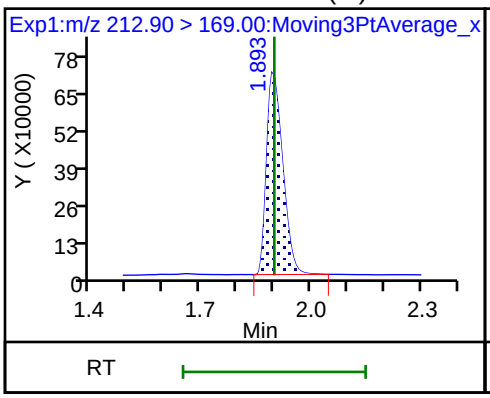
Client ID:

Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 6

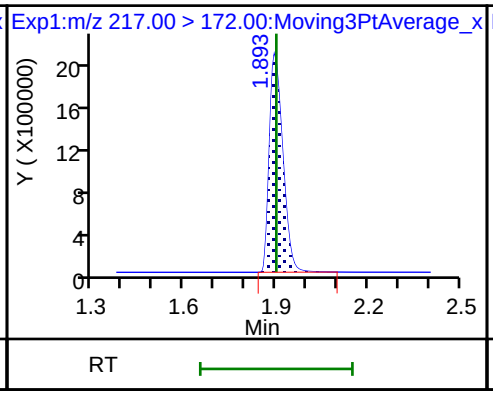
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

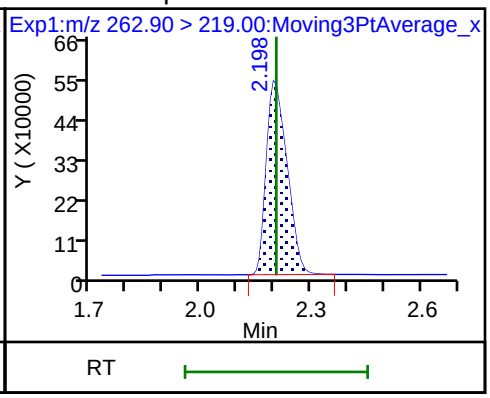
2 Perfluorobutanoic acid (M)



D 1 13C4 PFBA



3 Perfluoropentanoic acid



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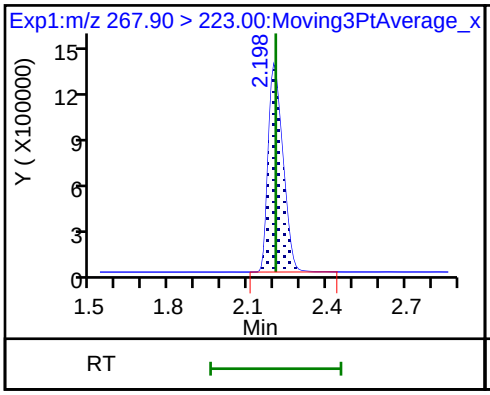
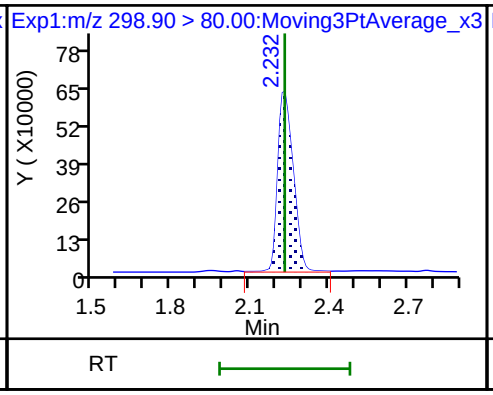
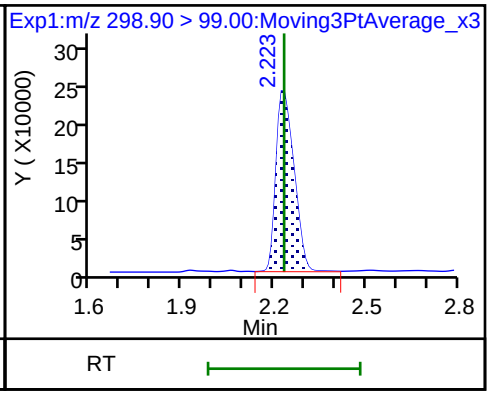


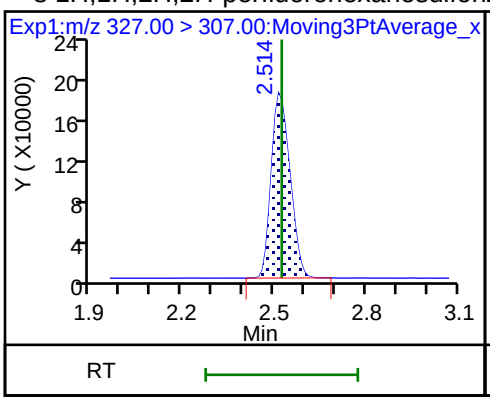
5 Perfluorobutanesulfonic acid



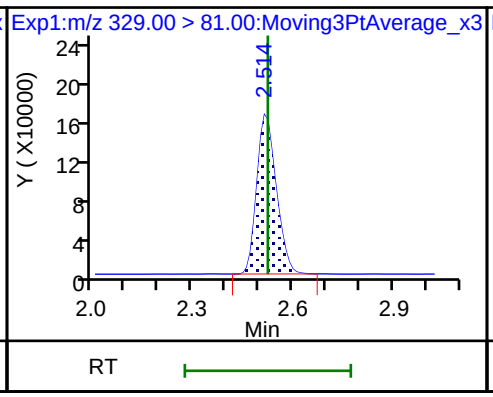
5 Perfluorobutanesulfonic acid



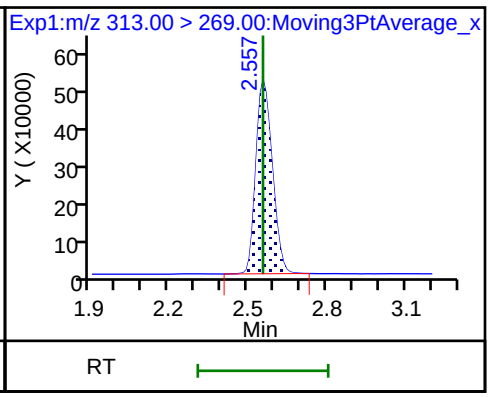
8 1H,1H,2H,2H-perfluorohexanesulfon



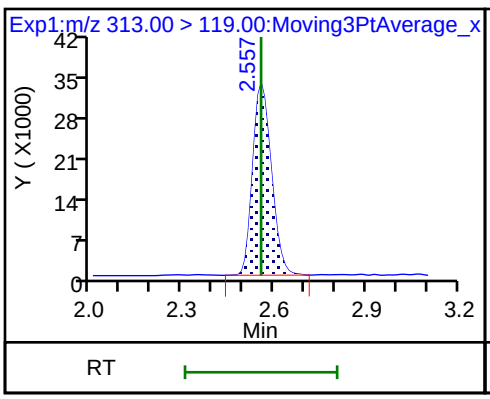
D 7 M2-4:2 FTS



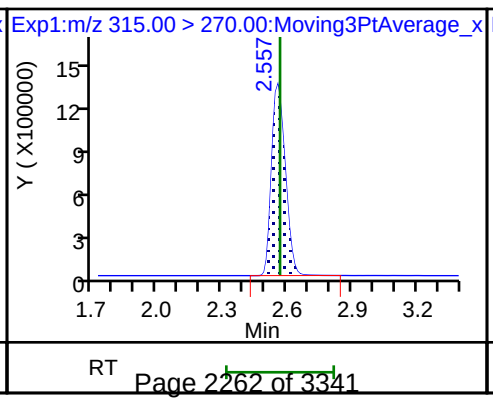
10 Perfluorohexanoic acid



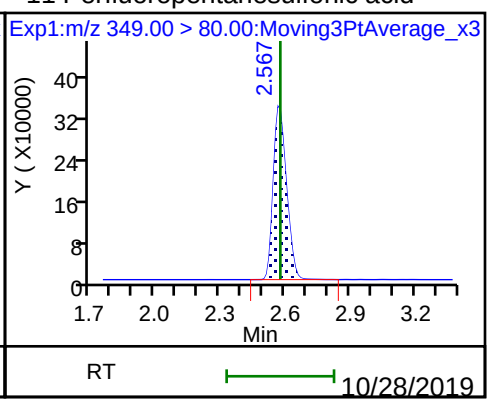
10 Perfluorohexanoic acid



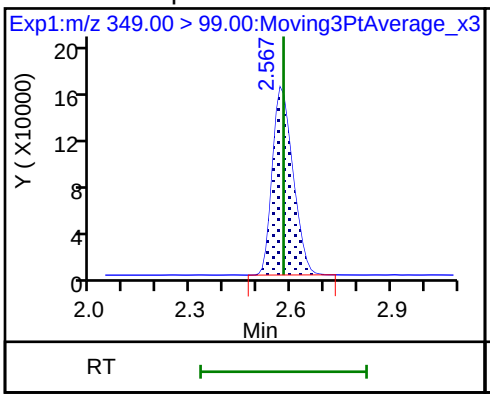
D 9 13C2 PFHxA



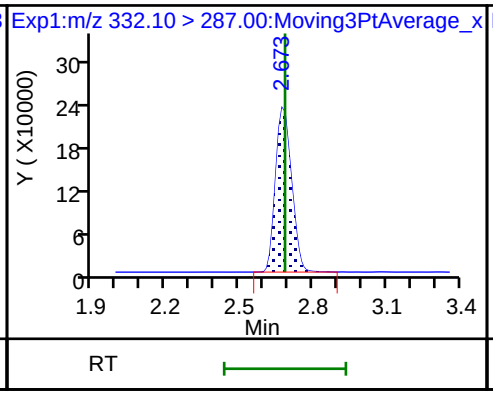
11 Perfluoropentanesulfonic acid



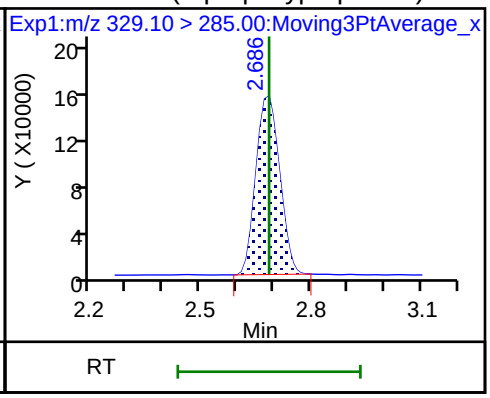
11 Perfluoropentanesulfonic acid



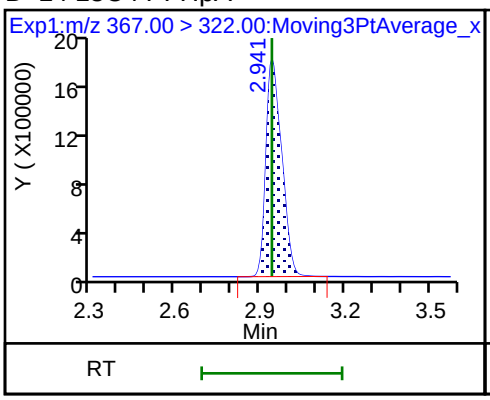
D 12 13C3 HFPO-DA



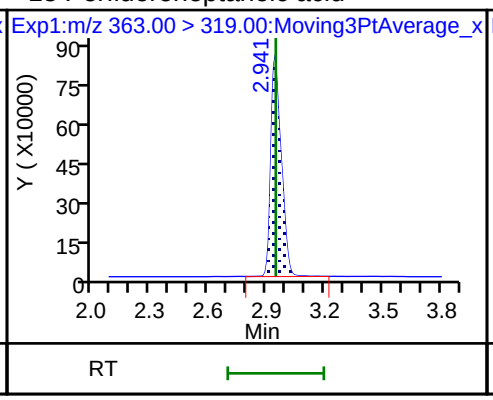
13 Perfluoro(2-propoxypropanoic) acid



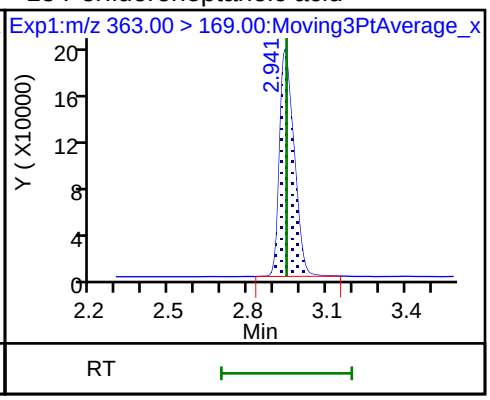
D 14 13C4 PFHpA



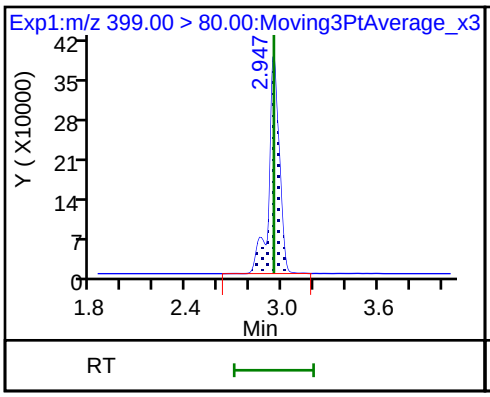
15 Perfluoroheptanoic acid



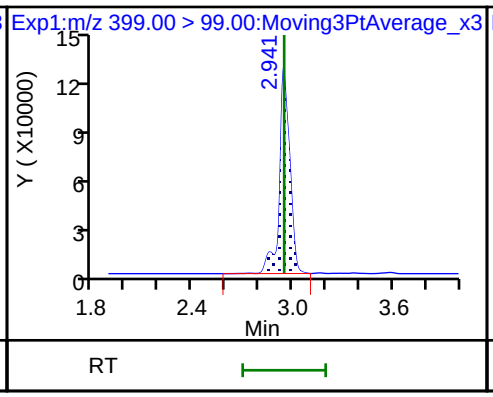
15 Perfluoroheptanoic acid



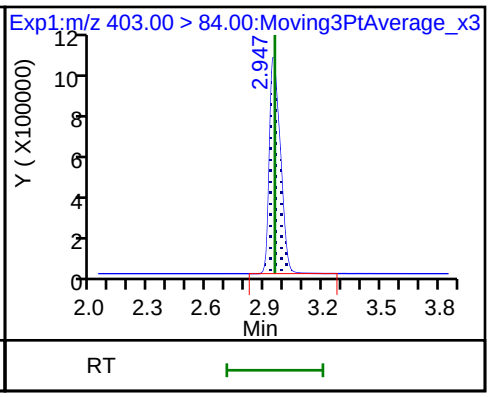
17 Perfluorohexanesulfonic acid



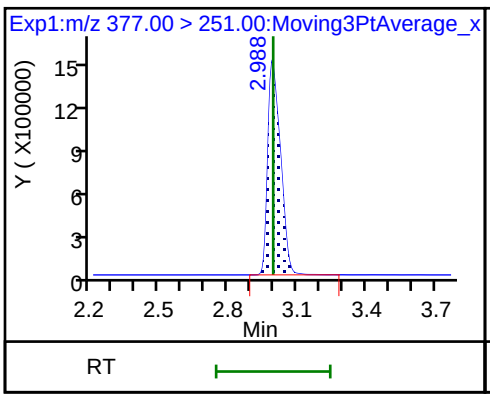
17 Perfluorohexanesulfonic acid



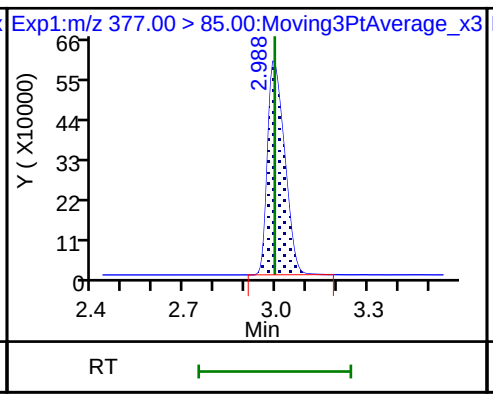
D 16 18O2 PFHxS



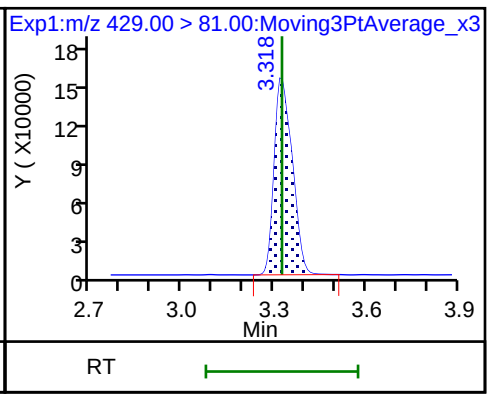
18 DONA



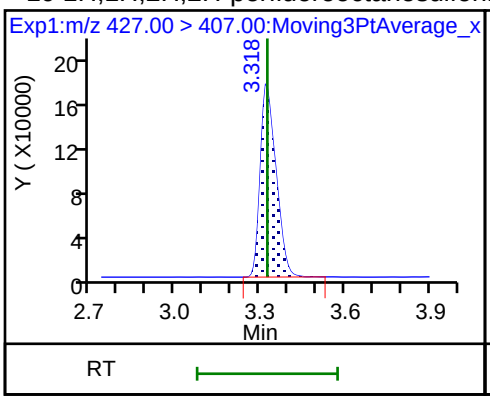
18 DONA



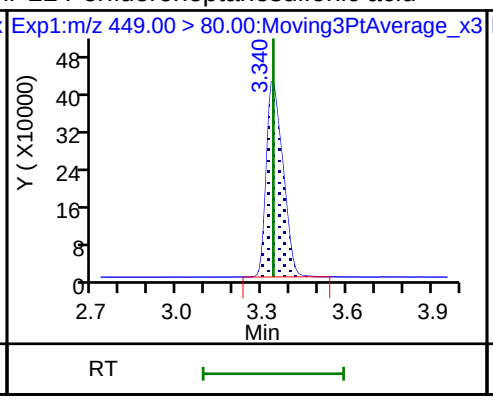
D 20 M2-6:2 FTS



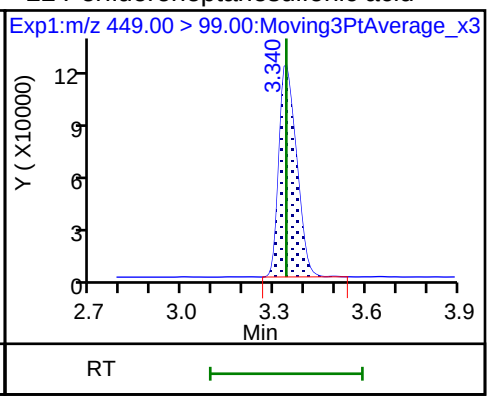
19 1H,1H,2H,2H-perfluorooctanesulfoni



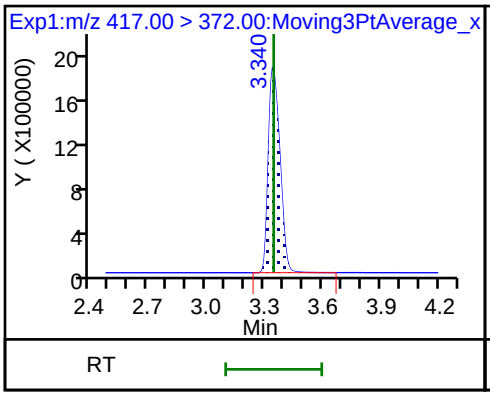
22 Perfluoroheptanesulfonic acid



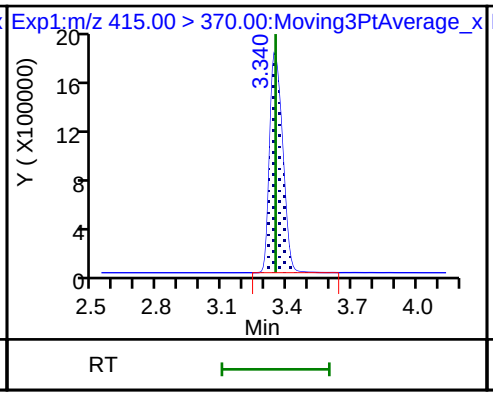
22 Perfluoroheptanesulfonic acid



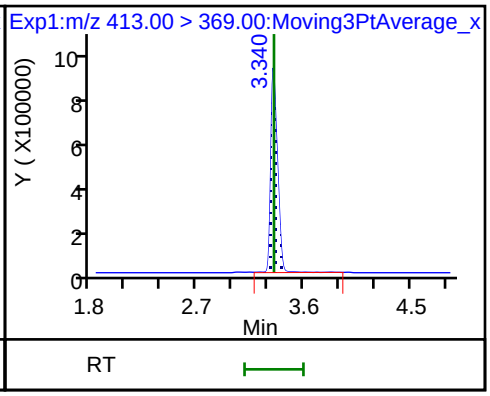
D 23 13C4 PFOA



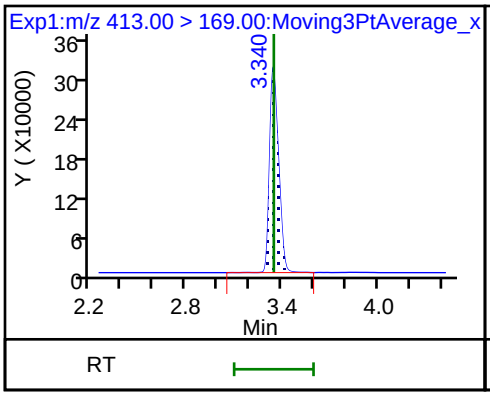
* 25 13C2 PFOA



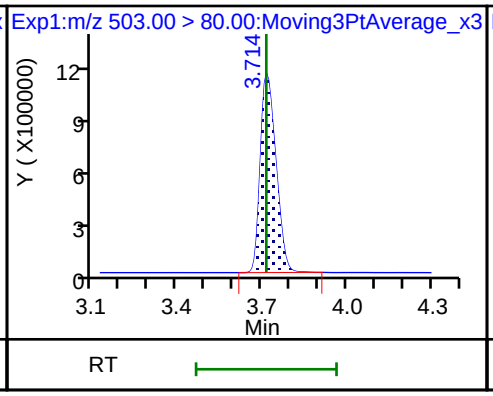
24 Perfluorooctanoic acid



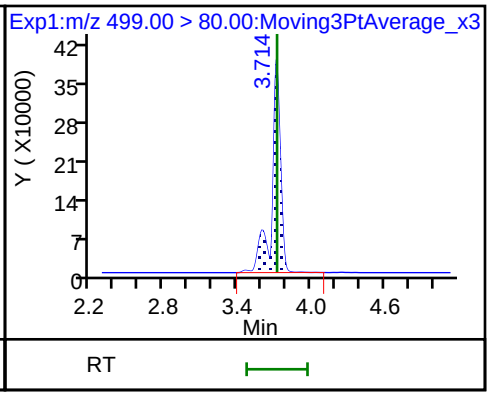
24 Perfluorooctanoic acid



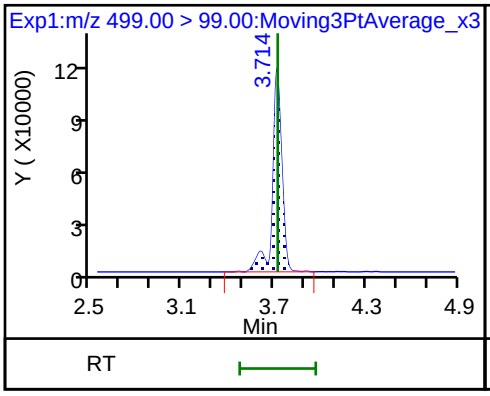
D 27 13C4 PFOS



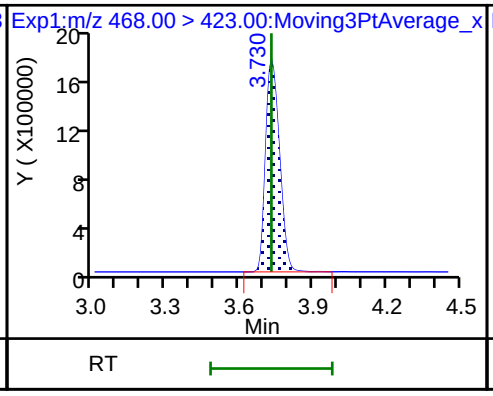
28 Perfluorooctanesulfonic acid



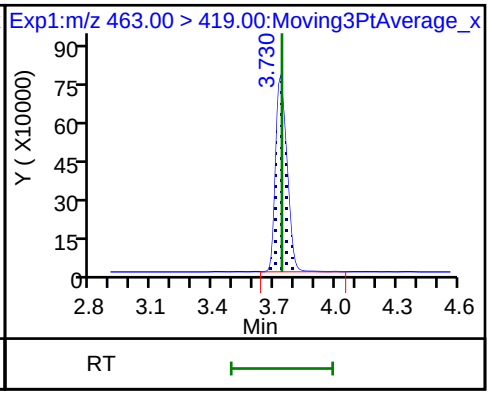
28 Perfluorooctanesulfonic acid



D 30 13C5 PFNA



29 Perfluorononanoic acid



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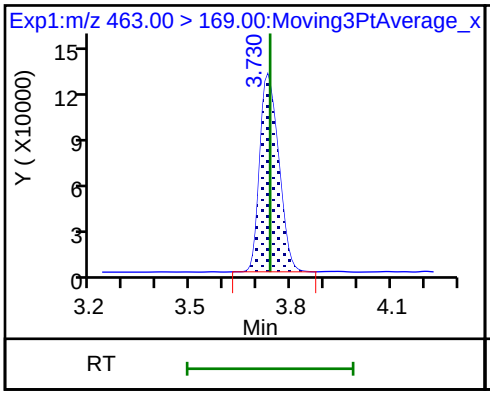
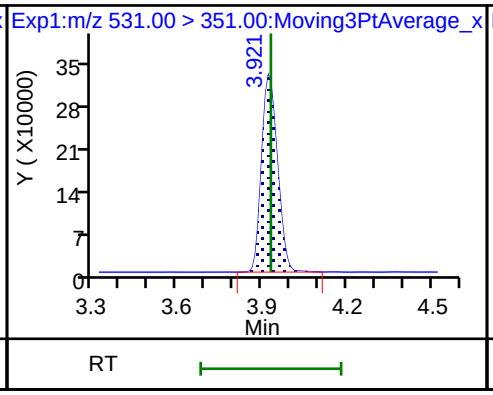
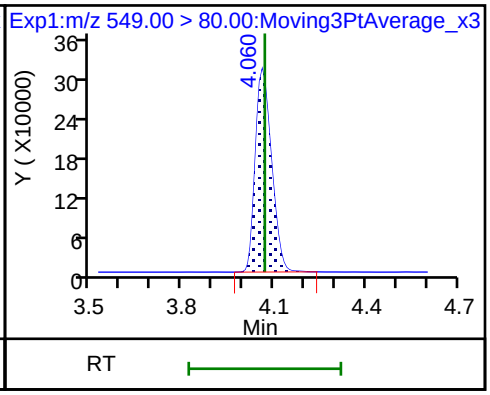


31 9-Chlorohexadecafluoro-3-oxanonane



34 Perfluorononanesulfonic acid



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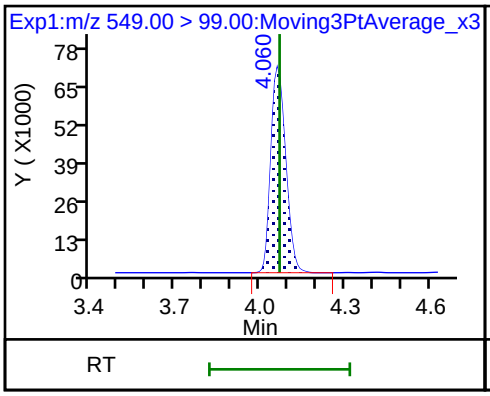
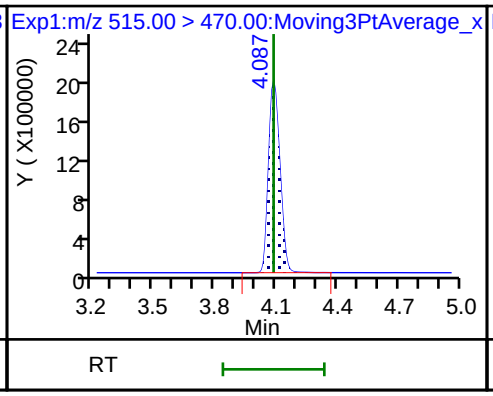
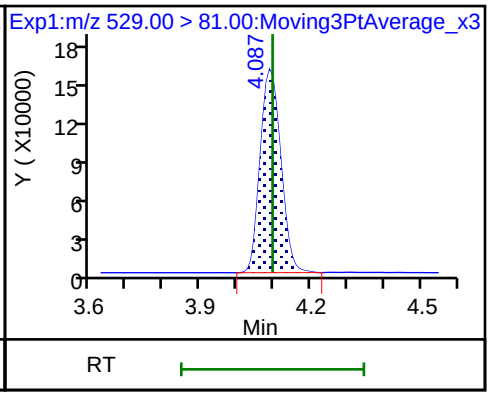


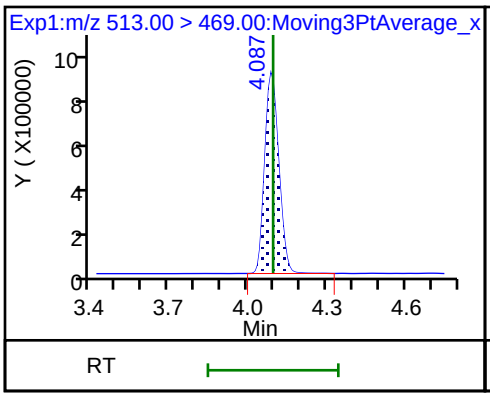
D 36 13C2 PFDA



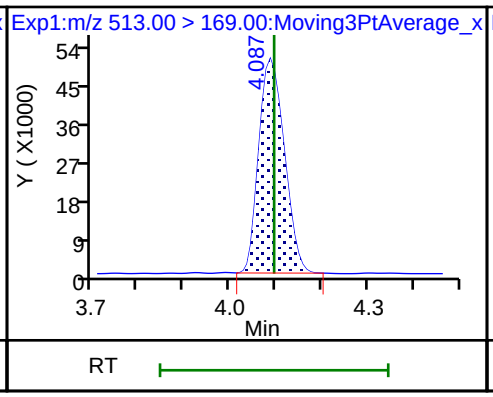
D 35 M2-8:2 FTS



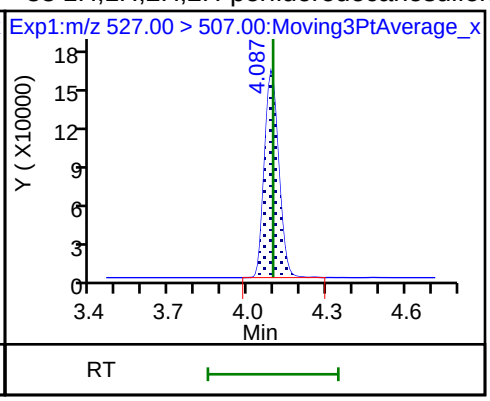
37 Perfluorodecanoic acid



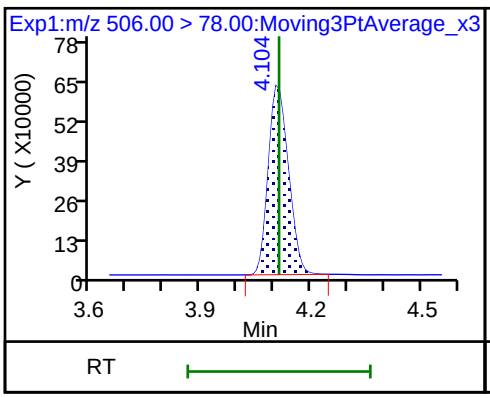
37 Perfluorodecanoic acid



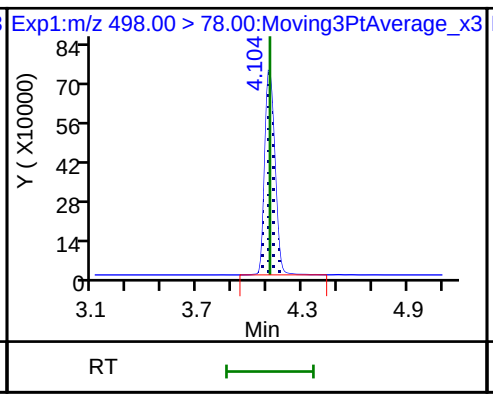
38 1H,1H,2H,2H-perfluorodecanesulfoni



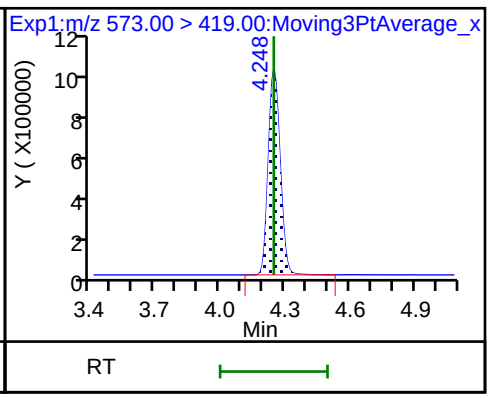
D 32 13C8 FOSA



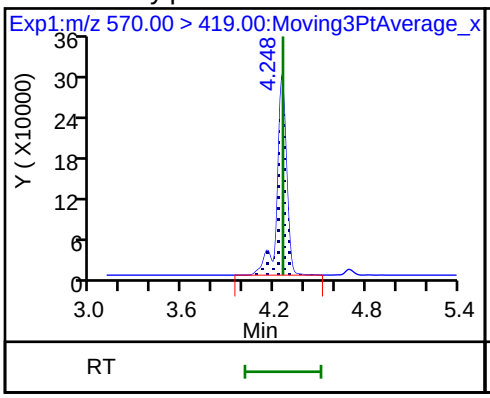
33 Perfluorooctanesulfonamide



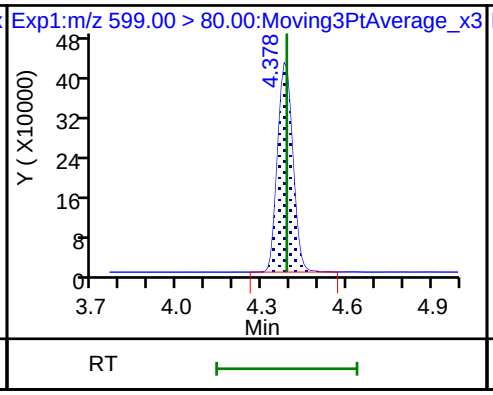
D 39 d3-NMeFOSAA



40 N-methylperfluorooctanesulfonamido



41 Perfluorodecanesulfonic acid



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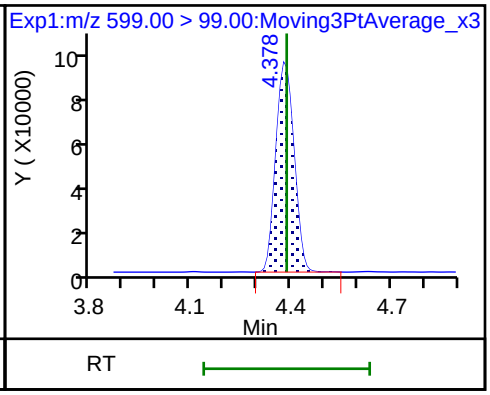
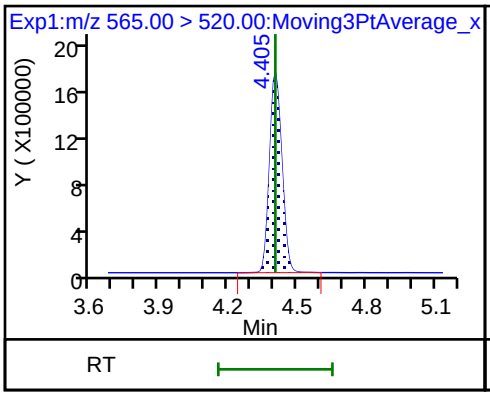
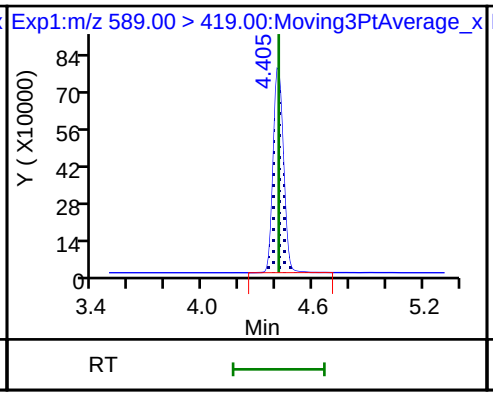


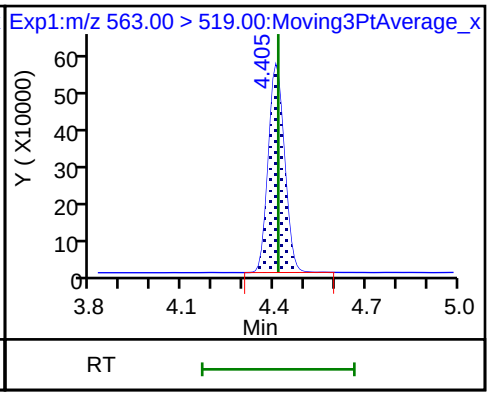
D 42 13C2 PFUnA



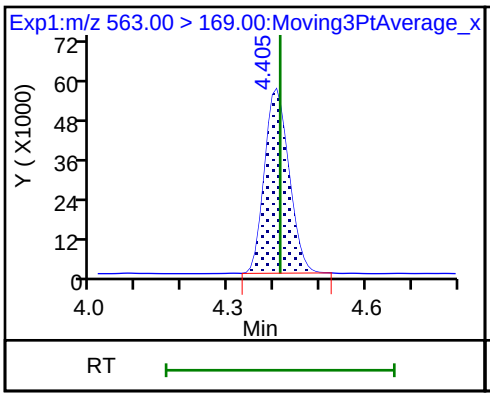
D 44 d5-NEtFOSAA



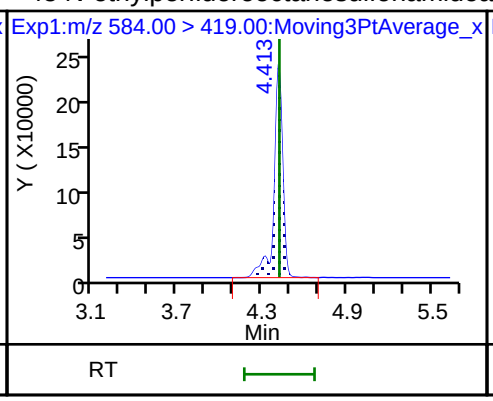
43 Perfluoroundecanoic acid



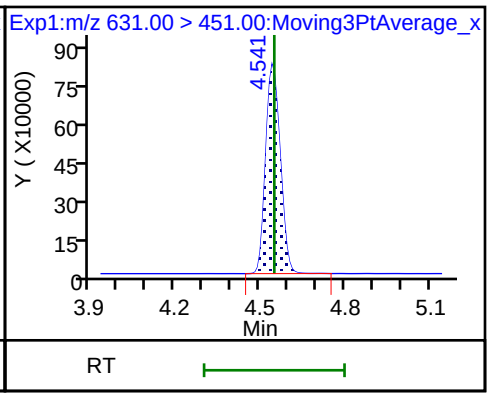
43 Perfluoroundecanoic acid



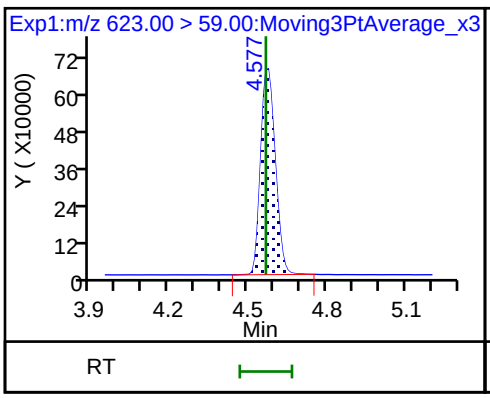
45 N-ethylperfluorooctanesulfonamidoa



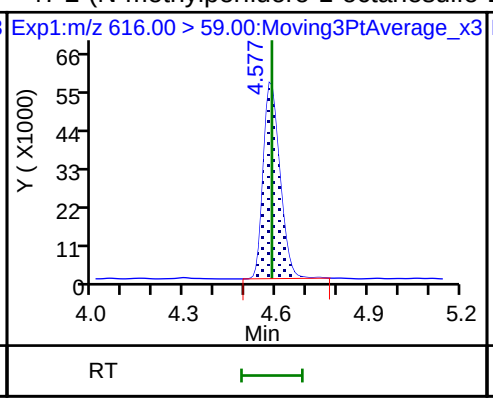
50 11-Chloroeicosafluoro-3-oxaundecan



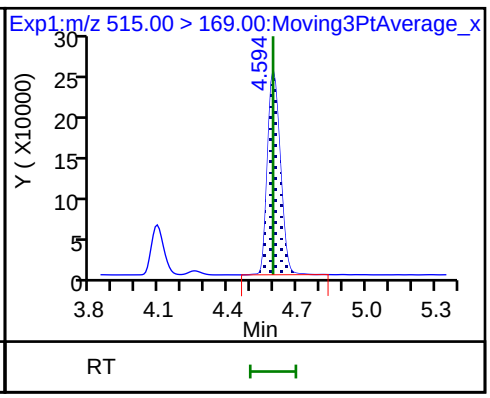
D 46 d7-N-MeFOSE-M



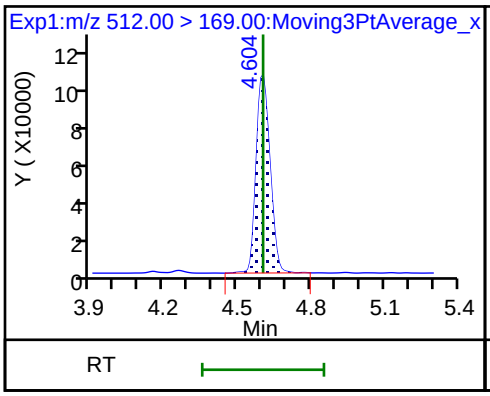
47 2-(N-methylperfluoro-1-octanesulfo



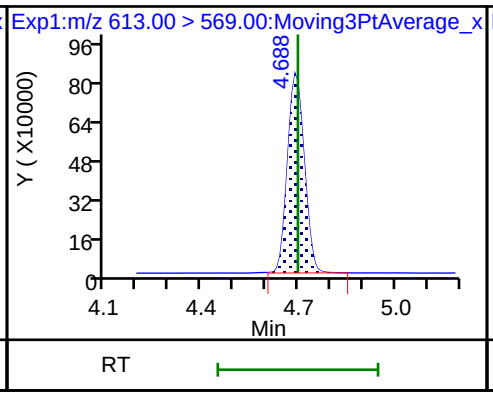
D 48 d-N-MeFOSA-M



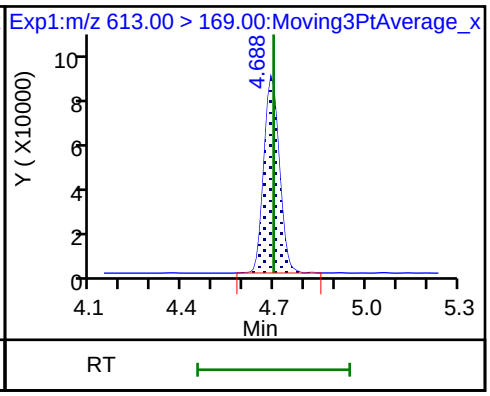
49 NMeFOSA



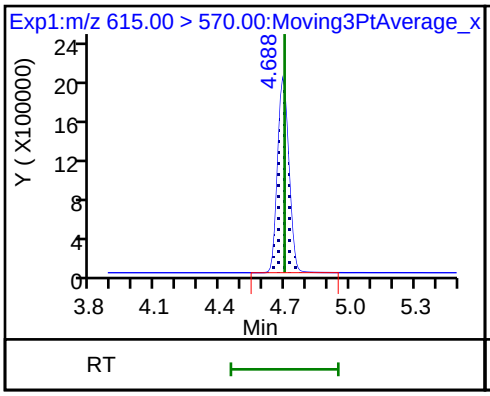
56 Perfluorododecanoic acid



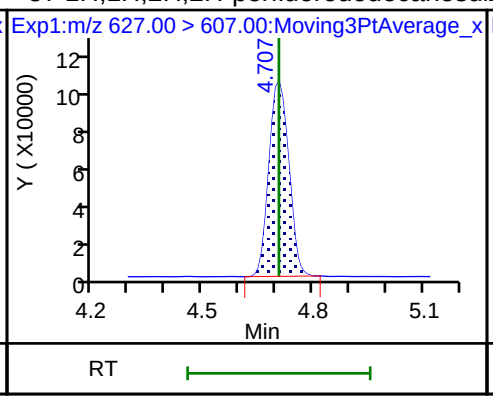
56 Perfluorododecanoic acid



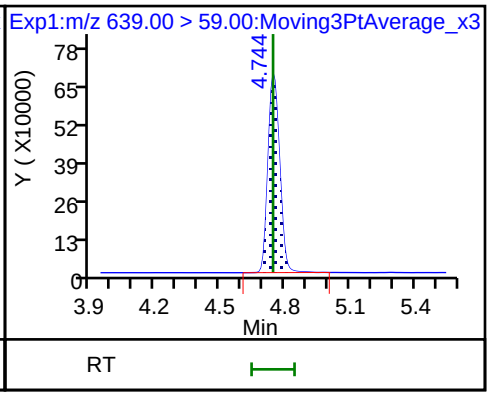
D 55 13C2 PFDoA



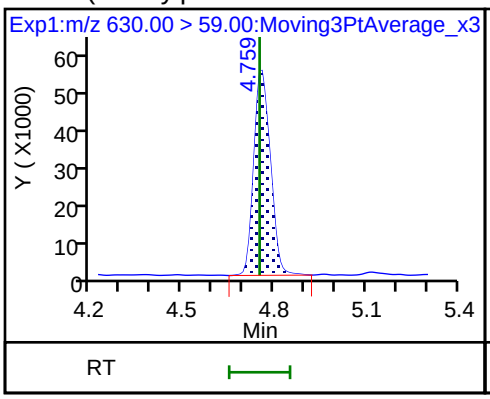
57 1H,1H,2H,2H-perfluorododecanesulfo



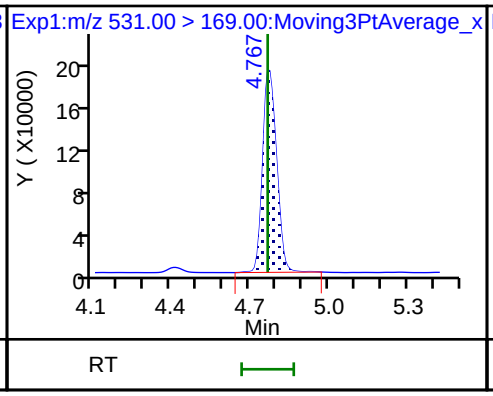
D 51 d9-N-EtFOSE-M



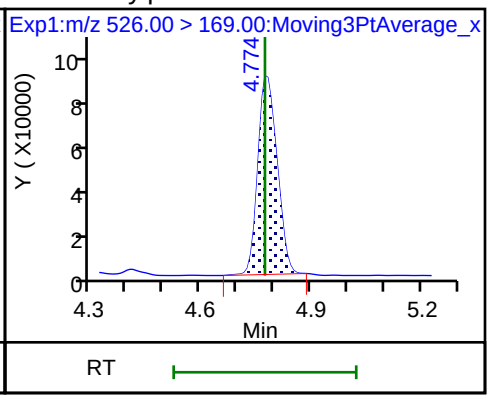
52 2-(N-ethylperfluoro-1-octanesulfon



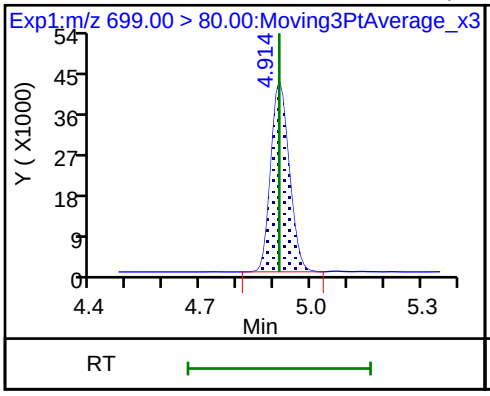
D 53 d-N-EtFOSA-M



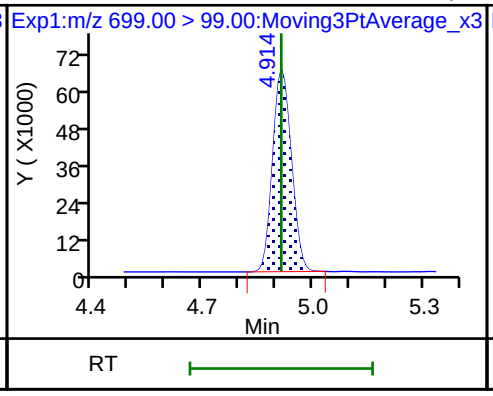
54 N-ethylperfluoro-1-octanesulfonami



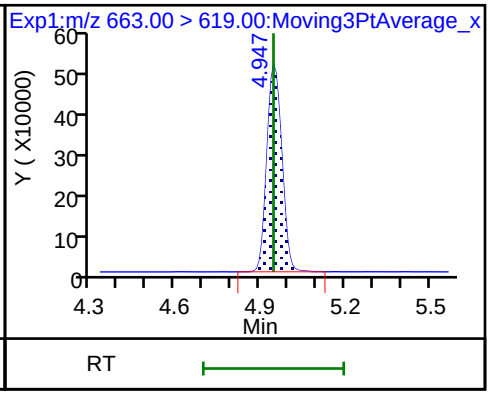
58 Perfluorododecanesulfonic acid (PF



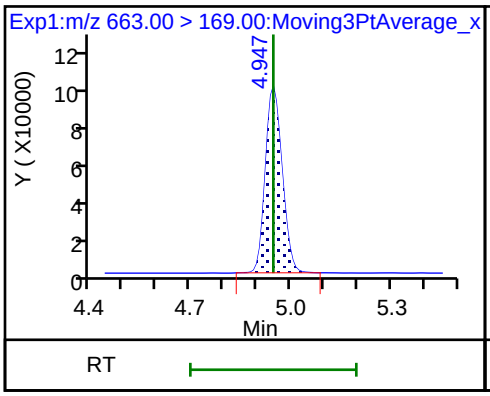
58 Perfluorododecanesulfonic acid (PF



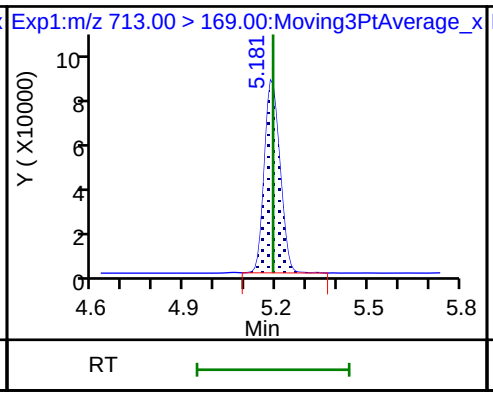
59 Perfluorotridecanoic acid



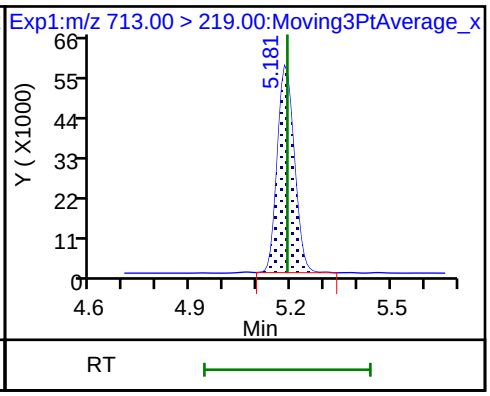
59 Perfluorotridecanoic acid



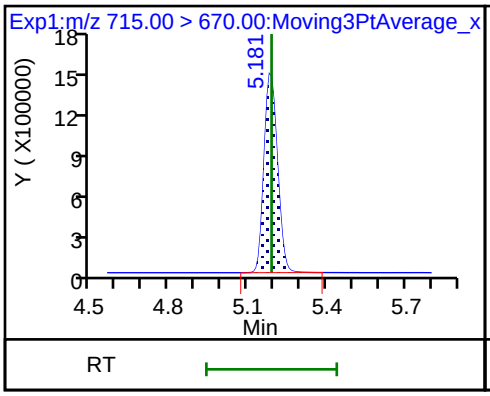
61 Perfluorotetradecanoic acid



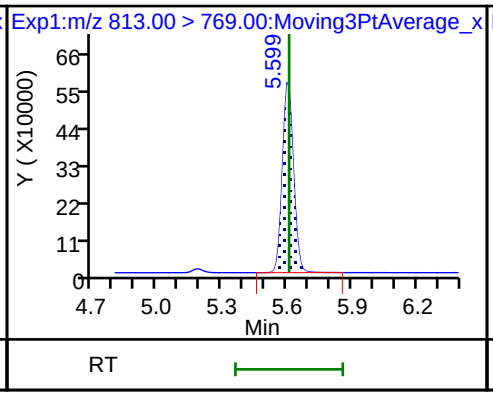
61 Perfluorotetradecanoic acid



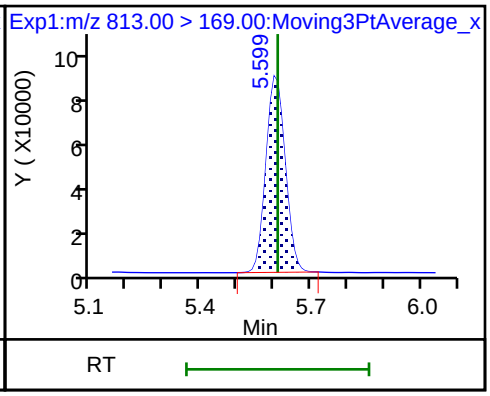
D 60 13C2 PFTeDA



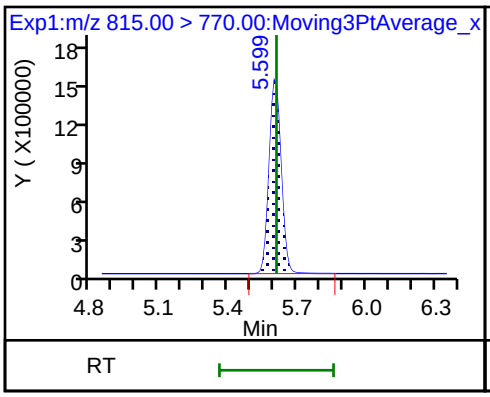
63 Perfluorohexadecanoic acid



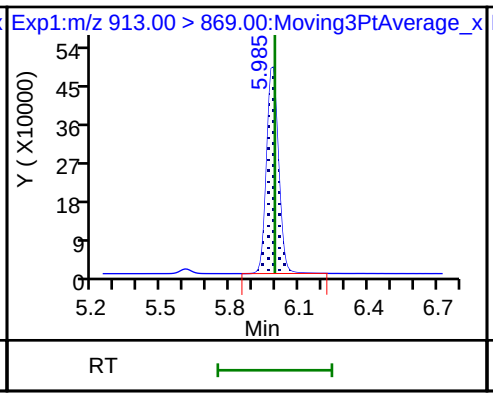
63 Perfluorohexadecanoic acid



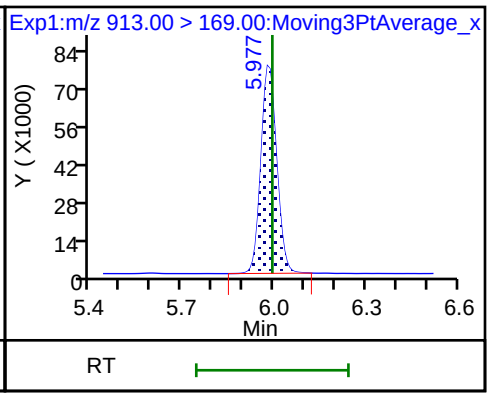
D 62 13C2 PFHxDA



64 Perfluorooctadecanoic acid



64 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

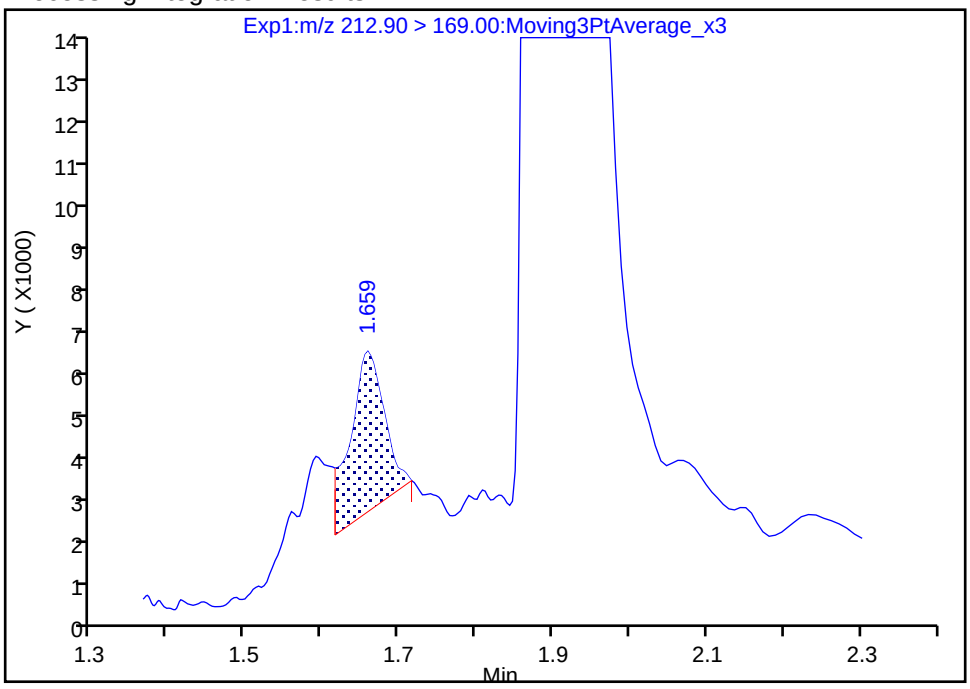
Data File:	\\chromna\Sacramento\ChromData\A9\20191008-84567.b\2019.10.08LLBB._020.d				
Injection Date:	09-Oct-2019 00:52:37	Instrument ID:	A9		
Lims ID:	LCSD 320-328853/3-A				
Client ID:					
Operator ID:	A9\Administrator	ALS Bottle#:	10	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

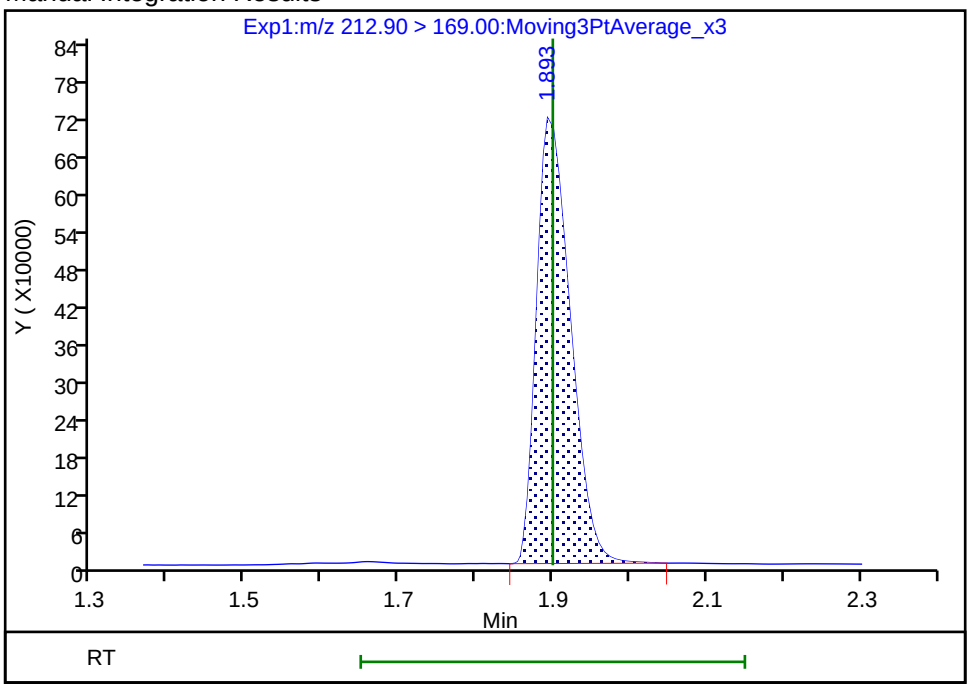
Processing Integration Results

RT: 1.66
Area: 10594
Amount: 0.005097
Amount Units: ng/ml



Manual Integration Results

RT: 1.89
Area: 2169780
Amount: 1.043885
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 18-Oct-2019 15:30:02

Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Instrument ID: A13 Start Date: 09/26/2019 21:21

Analysis Batch Number: 326599 End Date: 09/26/2019 23:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-326599/2		09/26/2019 21:21	1	2019.09.26.ICAL 004.d	GeminiC18 3x100 3(mm)
IC 320-326599/3		09/26/2019 21:30	1	2019.09.26.ICAL 005.d	GeminiC18 3x100 3(mm)
IC 320-326599/4		09/26/2019 21:40	1	2019.09.26.ICAL 006.d	GeminiC18 3x100 3(mm)
IC 320-326599/5 ICIS		09/26/2019 21:49	1	2019.09.26.ICAL 007.d	GeminiC18 3x100 3(mm)
IC 320-326599/6		09/26/2019 21:59	1	2019.09.26.ICAL 008.d	GeminiC18 3x100 3(mm)
IC 320-326599/7		09/26/2019 22:08	1	2019.09.26.ICAL 009.d	GeminiC18 3x100 3(mm)
ZZZZZ		09/26/2019 22:18	1		GeminiC18 3x100 3(mm)
IC 320-326599/9		09/26/2019 22:27	1	2019.09.26.ICAL 011.d	GeminiC18 3x100 3(mm)
ICB 320-326599/10		09/26/2019 22:37	1	2019.09.26.ICAL 012.d	GeminiC18 3x100 3(mm)
ICV 320-326599/11		09/26/2019 22:46	1	2019.09.26.ICAL 013.d	GeminiC18 3x100 3(mm)
ZZZZZ		09/26/2019 22:56	1		GeminiC18 3x100 3(mm)
ZZZZZ		09/26/2019 23:05	1		GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Instrument ID: A13 Start Date: 10/03/2019 11:40

Analysis Batch Number: 328148 End Date: 10/03/2019 15:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-328148/1		10/03/2019 11:40	1	2019.10.03.LLA_004.d	GeminiC18 3x100 3(mm)
CCVL 320-328148/2		10/03/2019 11:50	1	2019.10.03.LLA_005.d	GeminiC18 3x100 3(mm)
CCV 320-328148/3 CCVIS		10/03/2019 11:59	1	2019.10.03.LLA_006.d	GeminiC18 3x100 3(mm)
MB 320-326624/1-A		10/03/2019 12:09	1	2019.10.03.LLA_007.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 12:19	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 12:28	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 12:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 12:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 12:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 13:06	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 13:16	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 13:25	1		GeminiC18 3x100 3(mm)
480-159547-19		10/03/2019 13:35	1	2019.10.03.LLA_016.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 13:44	1		GeminiC18 3x100 3(mm)
CCV 320-328148/15		10/03/2019 13:54	1	2019.10.03.LLA_018.d	GeminiC18 3x100 3(mm)
480-159547-20		10/03/2019 14:03	1	2019.10.03.LLA_019.d	GeminiC18 3x100 3(mm)
480-159547-30		10/03/2019 14:13	1	2019.10.03.LLA_020.d	GeminiC18 3x100 3(mm)
480-159547-31		10/03/2019 14:22	1	2019.10.03.LLA_021.d	GeminiC18 3x100 3(mm)
480-159547-32		10/03/2019 14:32	1	2019.10.03.LLA_022.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 14:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/03/2019 14:51	1		GeminiC18 3x100 3(mm)
CCV 320-328148/23		10/03/2019 15:10	1	2019.10.03.LLA_026.d	GeminiC18 3x100 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Instrument ID: A9 Start Date: 10/05/2019 18:03

Analysis Batch Number: 328725 End Date: 10/05/2019 19:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-328725/2		10/05/2019 18:03	1	2019.10.05.ICAL AAA 002.d	Acquity 2.1(mm)
IC 320-328725/3		10/05/2019 18:13	1	2019.10.05.ICAL AAA 003.d	Acquity 2.1(mm)
IC 320-328725/4		10/05/2019 18:23	1	2019.10.05.ICAL AAA 004.d	Acquity 2.1(mm)
IC 320-328725/5 ICIS		10/05/2019 18:32	1	2019.10.05.ICAL AAA 005.d	Acquity 2.1(mm)
IC 320-328725/6		10/05/2019 18:42	1	2019.10.05.ICAL AAA 006.d	Acquity 2.1(mm)
IC 320-328725/7		10/05/2019 18:51	1	2019.10.05.ICAL AAA 007.d	Acquity 2.1(mm)
ZZZZZ		10/05/2019 19:01	1		Acquity 2.1(mm)
IC 320-328725/9		10/05/2019 19:10	1	2019.10.05.ICAL AAA 009.d	Acquity 2.1(mm)
ICB 320-328725/10		10/05/2019 19:20	1	2019.10.05.ICAL AAA 010.d	Acquity 2.1(mm)
ICV 320-328725/11		10/05/2019 19:29	1	2019.10.05.ICAL AAA 011.d	Acquity 2.1(mm)
ZZZZZ		10/05/2019 19:39	1		Acquity 2.1(mm)
ZZZZZ		10/05/2019 19:49	1		Acquity 2.1(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Instrument ID: A9 Start Date: 10/09/2019 00:04

Analysis Batch Number: 329447 End Date: 10/09/2019 03:35

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-329447/1		10/09/2019 00:04	1	2019.10.08LLBB.004.d	Acquity 2.1(mm)
CCVL 320-329447/2		10/09/2019 00:14	1	2019.10.08LLBB.005.d	Acquity 2.1(mm)
CCV 320-329447/3 CCVIS		10/09/2019 00:23	1	2019.10.08LLBB.017.d	Acquity 2.1(mm)
MB 320-328853/1-A		10/09/2019 00:33	1	2019.10.08LLBB.018.d	Acquity 2.1(mm)
LCS 320-328853/2-A		10/09/2019 00:43	1	2019.10.08LLBB.019.d	Acquity 2.1(mm)
LCSD 320-328853/3-A		10/09/2019 00:52	1	2019.10.08LLBB.020.d	Acquity 2.1(mm)
LB 320-326292/1-B		10/09/2019 01:02	1	2019.10.08LLBB.021.d	Acquity 2.1(mm)
LB 320-327145/1-B		10/09/2019 01:11	1	2019.10.08LLBB.022.d	Acquity 2.1(mm)
480-159547-7		10/09/2019 01:21	1	2019.10.08LLBB.023.d	Acquity 2.1(mm)
480-159547-8		10/09/2019 01:30	1	2019.10.08LLBB.024.d	Acquity 2.1(mm)
480-159547-18		10/09/2019 01:40	1	2019.10.08LLBB.025.d	Acquity 2.1(mm)
ZZZZZ		10/09/2019 01:50	1		Acquity 2.1(mm)
ZZZZZ		10/09/2019 01:59	1		Acquity 2.1(mm)
CCV 320-329447/14		10/09/2019 02:09	1	2019.10.08LLBB.028.d	Acquity 2.1(mm)
480-159547-19		10/09/2019 02:18	1	2019.10.08LLBB.029.d	Acquity 2.1(mm)
480-159547-20		10/09/2019 02:28	1	2019.10.08LLBB.030.d	Acquity 2.1(mm)
480-159547-30		10/09/2019 02:37	1	2019.10.08LLBB.031.d	Acquity 2.1(mm)
480-159547-31		10/09/2019 02:47	1	2019.10.08LLBB.032.d	Acquity 2.1(mm)
480-159547-32		10/09/2019 02:57	1	2019.10.08LLBB.033.d	Acquity 2.1(mm)
480-159547-39		10/09/2019 03:06	1	2019.10.08LLBB.034.d	Acquity 2.1(mm)
480-159547-40		10/09/2019 03:16	1	2019.10.08LLBB.035.d	Acquity 2.1(mm)
ZZZZZ		10/09/2019 03:25	1		Acquity 2.1(mm)
CCV 320-329447/23		10/09/2019 03:35	1	2019.10.08LLBB.037.d	Acquity 2.1(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-159547-1

SDG No.:

Instrument ID: A9 Start Date: 10/10/2019 04:59

Analysis Batch Number: 329754 End Date: 10/10/2019 07:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-329754/1		10/10/2019 04:59	1	2019.10.10_LLA_004.d	Acquity 2.1(mm)
CCVL 320-329754/2		10/10/2019 05:08	1	2019.10.10_LLA_005.d	Acquity 2.1(mm)
CCV 320-329754/3 CCVIS		10/10/2019 05:18	1	2019.10.10_LLA_006.d	Acquity 2.1(mm)
ZZZZZ		10/10/2019 05:27	1		Acquity 2.1(mm)
LCS 320-326624/2-A		10/10/2019 05:37	1	2019.10.10_LLA_008.d	Acquity 2.1(mm)
480-159547-7		10/10/2019 05:46	1	2019.10.10_LLA_009.d	Acquity 2.1(mm)
480-159547-8		10/10/2019 05:56	1	2019.10.10_LLA_010.d	Acquity 2.1(mm)
480-159547-18		10/10/2019 06:06	1	2019.10.10_LLA_011.d	Acquity 2.1(mm)
480-159547-39		10/10/2019 06:15	1	2019.10.10_LLA_012.d	Acquity 2.1(mm)
480-159547-40		10/10/2019 06:25	1	2019.10.10_LLA_013.d	Acquity 2.1(mm)
ZZZZZ		10/10/2019 06:35	5		Acquity 2.1(mm)
ZZZZZ		10/10/2019 06:44	5		Acquity 2.1(mm)
ZZZZZ		10/10/2019 06:54	5		Acquity 2.1(mm)
CCV 320-329754/14		10/10/2019 07:03	1	2019.10.10_LLA_017.d	Acquity 2.1(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 326292 Batch Start Date: 09/28/19 12:15 Batch Analyst: Melnik, Dmitry P

Batch Method: 1312 Batch End Date: 09/29/19 08:12

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LB 320-326292/1		1312, 3535, 537 (modified)		100.00 g	2000 mL				
480-159547-A-7	RUSSO-TS-COMP 1	1312, 3535, 537 (modified)	E	100.08 g	2000 mL				
480-159547-A-8	RUSSO-TS-COMP 2	1312, 3535, 537 (modified)	E	100.10 g	2000 mL				
480-159547-B-18	RUSSO-CF-COMP 1	1312, 3535, 537 (modified)	E	100.08 g	2000 mL				
480-159547-A-19	RUSSO-CF-COMP 2	1312, 3535, 537 (modified)	E	100.06 g	2000 mL				
480-159547-B-20	RUSSO-CF-COMP 3	1312, 3535, 537 (modified)	E	100.18 g	2000 mL				
480-159547-A-30	GERNATT-CF-COMP 1	1312, 3535, 537 (modified)	E	100.19 g	2000 mL				

Batch Notes	
Rotation Time for 10 Revolutions	20s
SPLP Fluid pH	4.23 SU
Tumbler Rotations per Minute	30

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 326624 Batch Start Date: 09/27/19 10:45 Batch Analyst: Contreras, Erika A

Batch Method: SHAKE Batch End Date: 10/02/19 14:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00256	LCPFC-IS 00218	LCPFCSP 00260	AnalysisComment
MB 320-326624/1		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL		
LCS 320-326624/2		SHAKE, 537 (modified)		5.00 g	10.00 mL	500 uL	500 uL	500 uL	
480-159547-A-7	RUSSO-TS-COMP 1	SHAKE, 537 (modified)	T	5.22 g	10.00 mL	500 uL	500 uL		
480-159547-A-8	RUSSO-TS-COMP 2	SHAKE, 537 (modified)	T	5.10 g	10.00 mL	500 uL	500 uL		The sample was yellow.
480-159547-B-18	RUSSO-CF-COMP 1	SHAKE, 537 (modified)	T	5.45 g	10.00 mL	500 uL	500 uL		
480-159547-A-19	RUSSO-CF-COMP 2	SHAKE, 537 (modified)	T	4.82 g	10.00 mL	500 uL	500 uL		
480-159547-A-20	RUSSO-CF-COMP 3	SHAKE, 537 (modified)	T	5.03 g	10.00 mL	500 uL	500 uL		
480-159547-A-30	GERNATT-CF-COMP 1	SHAKE, 537 (modified)	T	5.11 g	10.00 mL	500 uL	500 uL		
480-159547-A-31	GERNATT-CF-COMP 2	SHAKE, 537 (modified)	T	5.26 g	10.00 mL	500 uL	500 uL		
480-159547-A-32	GERNATT-CF-COMP 3	SHAKE, 537 (modified)	T	5.25 g	10.00 mL	500 uL	500 uL		
480-159547-B-39	GERNATT-TS-COMP 1	SHAKE, 537 (modified)	T	5.33 g	10.00 mL	500 uL	500 uL		The sample was yellow.
480-159547-B-40	GERNATT-TS-COMP 2	SHAKE, 537 (modified)	T	5.17 g	10.00 mL	500 uL	500 uL		The sample was yellow.

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 326624 Batch Start Date: 09/27/19 10:45 Batch Analyst: Contreras, Erika A

Batch Method: SHAKE Batch End Date: 10/02/19 14:55

Batch Notes	
Acetic Acid ID	1690749
Analyst ID - Aliquot Step	MC
Balance ID	QA-069
Batch Comment	Eurofins labels match client labels. EAC 09/27/19.
Analyst ID - Final Volume Step	MC
Hexane ID	1749919
Internal Standard ID#	1733031
Manifold ID	G & C
Methanol ID	1759023
Methanolic Potassium Hydroxide ID	1750919
Millipore Water Dispense Date	10/02/19
Sodium Hydroxide ID	175852
Ammonium Hydroxide/MeOH ID	1758130
pH Indicator ID	5018
Analyst ID - Reagent Drop Witness	EAC
Analyst ID - IS Reagent Drop	MC
Analyst ID - IS Reagent Drop Witness	SAD
Blank Sand Lot #	175767
SPE Cartridge Lot ID	018939170A
SPE Cartridge Type	WAX 150mg

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 327145 Batch Start Date: 09/29/19 14:35 Batch Analyst: Melnik, Dmitry P

Batch Method: 1312 Batch End Date: 09/30/19 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount				
LB 320-327145/1		1312, 3535, 537 (modified)		100.00 g	2000 mL				
480-159547-A-31	GERNATT-CF-COMP 2	1312, 3535, 537 (modified)	E	100.05 g	2000 mL				
480-159547-A-32	GERNATT-CF-COMP 3	1312, 3535, 537 (modified)	E	100.16 g	2000 mL				
480-159547-B-39	GERNATT-TS-COMP 1	1312, 3535, 537 (modified)	E	100.30 g	2000 mL				
480-159547-A-40	GERNATT-TS-COMP 2	1312, 3535, 537 (modified)	E	100.03 g	2000 mL				

Batch Notes	
Rotation Time for 10 Revolutions	20s
SPLP Fluid pH	4.23 SU
Tumbler Rotations per Minute	30

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 328853 Batch Start Date: 10/07/19 06:02 Batch Analyst: Nguyen, Mia T

Batch Method: 3535 Batch End Date: 10/07/19 11:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00260	LCPFC-IS 00219
MB 320-328853/1		3535, 537 (modified)				250 mL	10.0 mL	500 uL	500 uL
LCS 320-328853/2		3535, 537 (modified)				250 mL	10.0 mL	500 uL	500 uL
LCSD 320-328853/3		3535, 537 (modified)				250 mL	10.0 mL	500 uL	500 uL
LB 320-326292/1-A		3535, 537 (modified)		302.45 g	25.75 g	276.7 mL	10.0 mL	500 uL	500 uL
LB 320-327145/1-A		3535, 537 (modified)		309.98 g	25.65 g	284.3 mL	10.0 mL	500 uL	500 uL
480-159547-A-7-A	RUSSO-TS-COMP 1	3535, 537 (modified)	E	303.33 g	26.13 g	277.2 mL	10.0 mL	500 uL	500 uL
480-159547-A-8-A	RUSSO-TS-COMP 2	3535, 537 (modified)	E	284.72 g	26.08 g	258.6 mL	10.0 mL	500 uL	500 uL
480-159547-B-18-A	RUSSO-CF-COMP 1	3535, 537 (modified)	E	308.42 g	25.61 g	282.8 mL	10.0 mL	500 uL	500 uL
480-159547-A-19-A	RUSSO-CF-COMP 2	3535, 537 (modified)	E	296.91 g	25.45 g	271.5 mL	10.0 mL	500 uL	500 uL
480-159547-B-20-A	RUSSO-CF-COMP 3	3535, 537 (modified)	E	301.30 g	25.71 g	275.6 mL	10.0 mL	500 uL	500 uL
480-159547-A-30-A	GERNATT-CF-COMP 1	3535, 537 (modified)	E	314.67 g	25.97 g	288.7 mL	10.0 mL	500 uL	500 uL
480-159547-A-31-C	GERNATT-CF-COMP 2	3535, 537 (modified)	E	294.12 g	25.53 g	268.6 mL	10.0 mL	500 uL	500 uL
480-159547-A-32-C	GERNATT-CF-COMP 3	3535, 537 (modified)	E	302.37 g	25.91 g	276.5 mL	10.0 mL	500 uL	500 uL
480-159547-B-39-C	GERNATT-TS-COMP 1	3535, 537 (modified)	E	299.16 g	25.99 g	273.2 mL	10.0 mL	500 uL	500 uL
480-159547-A-40-A	GERNATT-TS-COMP 2	3535, 537 (modified)	E	299.12 g	25.78 g	273.3 mL	10.0 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00260
MB 320-328853/1		3535, 537 (modified)		
LCS 320-328853/2		3535, 537 (modified)		500 uL
LCSD 320-328853/3		3535, 537 (modified)		500 uL
LB 320-326292/1-A		3535, 537 (modified)		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 328853 Batch Start Date: 10/07/19 06:02 Batch Analyst: Nguyen, Mia T

Batch Method: 3535 Batch End Date: 10/07/19 11:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00260					
LB 320-327145/1-A		3535, 537 (modified)							
480-159547-A-7-A	RUSSO-TS-COMP 1	3535, 537 (modified)	E						
480-159547-A-8-A	RUSSO-TS-COMP 2	3535, 537 (modified)	E						
480-159547-B-18-A	RUSSO-CF-COMP 1	3535, 537 (modified)	E						
480-159547-A-19-A	RUSSO-CF-COMP 2	3535, 537 (modified)	E						
480-159547-B-20-A	RUSSO-CF-COMP 3	3535, 537 (modified)	E						
480-159547-A-30-A	GERNATT-CF-COMP 1	3535, 537 (modified)	E						
480-159547-A-31-C	GERNATT-CF-COMP 2	3535, 537 (modified)	E						
480-159547-A-32-C	GERNATT-CF-COMP 3	3535, 537 (modified)	E						
480-159547-B-39-C	GERNATT-TS-COMP 1	3535, 537 (modified)	E						
480-159547-A-40-A	GERNATT-TS-COMP 2	3535, 537 (modified)	E						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 480-159547-1

SDG No.:

Batch Number: 328853 Batch Start Date: 10/07/19 06:02 Batch Analyst: Nguyen, Mia T

Batch Method: 3535 Batch End Date: 10/07/19 11:50

Batch Notes	
Balance ID	QA-078
Batch Comment	Client labels match Eurofins/TA labels: MTN 10/07/2019.
First End time	10/07/2019 11:50
H2O ID	10/03/2019
Hexane ID	1749921
Manifold ID	G and C
Methanol ID	1765365
Sodium Hydroxide ID	1761866
Pipette/Syringe/Dispenser ID	I46370G
Analyst ID - Reagent Drop	MTN
Analyst ID - IS Reagent Drop	MTN
Analyst ID - IS Reagent Drop Witness	ATF
Solvent Lot #	1760879
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Lot ID	004539007A
SPE Cartridge Type	WAX 500mg
First Start time	10/07/2019 06:02

Basis	Basis Description
E	SPLP East

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG No.:

Project: 1318 Niagara Street #E915213

Client Sample ID	Lab Sample ID
RUSSO-TS-COMP 1	480-159547-7
RUSSO-TS-COMP 2	480-159547-8
RUSSO-CF-COMP 1	480-159547-18
RUSSO-CF-COMP 2	480-159547-19
RUSSO-CF-COMP 3	480-159547-20
GERNATT-CF-COMP 1	480-159547-30
GERNATT-CF-COMP 2	480-159547-31
GERNATT-CF-COMP 3	480-159547-32
GERNATT-TS-COMP 1	480-159547-39
GERNATT-TS-COMP 2	480-159547-40

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:35

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 78.5

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	12.5	2.6		mg/Kg			1	6010C
7440-39-3	Barium	104	0.65		mg/Kg		F1	1	6010C
7440-41-7	Beryllium	0.79	0.26		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.26		mg/Kg			1	6010C
7440-47-3	Chromium	20.6	0.65		mg/Kg			1	6010C
7440-50-8	Copper	27.1	1.3		mg/Kg			1	6010C
7439-92-1	Lead	32.5	1.3		mg/Kg			1	6010C
7439-96-5	Manganese	402	0.26		mg/Kg			1	6010C
7440-02-0	Nickel	28.8	6.5		mg/Kg			1	6010C
7782-49-2	Selenium	ND	5.2		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.78		mg/Kg			1	6010C
7440-66-6	Zinc	84.2	2.6		mg/Kg			1	6010C
7439-97-6	Mercury	0.048	0.026		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:40

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 72.2

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	9.5	2.7		mg/Kg			1	6010C
7440-39-3	Barium	117	0.68		mg/Kg			1	6010C
7440-41-7	Beryllium	0.74	0.27		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.27		mg/Kg			1	6010C
7440-47-3	Chromium	21.9	0.68		mg/Kg			1	6010C
7440-50-8	Copper	17.6	1.4		mg/Kg			1	6010C
7439-92-1	Lead	27.6	1.4		mg/Kg			1	6010C
7439-96-5	Manganese	411	0.27		mg/Kg			1	6010C
7440-02-0	Nickel	23.8	6.8		mg/Kg			1	6010C
7782-49-2	Selenium	ND	5.5		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.82		mg/Kg			1	6010C
7440-66-6	Zinc	84.9	2.7		mg/Kg			1	6010C
7439-97-6	Mercury	0.039	0.027		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.7

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	10.2	2.1		mg/Kg			1	6010C
7440-39-3	Barium	56.5	0.53		mg/Kg			1	6010C
7440-41-7	Beryllium	0.38	0.21		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.21		mg/Kg			1	6010C
7440-47-3	Chromium	9.9	0.53		mg/Kg			1	6010C
7440-50-8	Copper	23.9	1.1		mg/Kg			1	6010C
7439-92-1	Lead	11.5	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	410	0.21		mg/Kg			1	6010C
7440-02-0	Nickel	21.3	5.3		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.3		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.64		mg/Kg			1	6010C
7440-66-6	Zinc	106	2.1		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.023		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:52

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 90.6

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	12.9	2.2		mg/Kg			1	6010C
7440-39-3	Barium	73.8	0.55		mg/Kg			1	6010C
7440-41-7	Beryllium	0.47	0.22		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.22		mg/Kg			1	6010C
7440-47-3	Chromium	12.0	0.55		mg/Kg			1	6010C
7440-50-8	Copper	31.1	1.1		mg/Kg			1	6010C
7439-92-1	Lead	16.0	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	641	0.22		mg/Kg			1	6010C
7440-02-0	Nickel	26.3	5.5		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.4		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.66		mg/Kg			1	6010C
7440-66-6	Zinc	132	2.2		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.020		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:55

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 89.8

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	12.7	2.2		mg/Kg			1	6010C
7440-39-3	Barium	64.7	0.55		mg/Kg			1	6010C
7440-41-7	Beryllium	0.44	0.22		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.22		mg/Kg			1	6010C
7440-47-3	Chromium	12.0	0.55		mg/Kg			1	6010C
7440-50-8	Copper	31.0	1.1		mg/Kg			1	6010C
7439-92-1	Lead	16.2	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	564	0.22		mg/Kg			1	6010C
7440-02-0	Nickel	25.3	5.5		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.4		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.66		mg/Kg			1	6010C
7440-66-6	Zinc	152	2.2		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.022		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 93.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	12.8	2.1		mg/Kg			1	6010C
7440-39-3	Barium	45.1	0.53		mg/Kg			1	6010C
7440-41-7	Beryllium	0.47	0.21		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.21		mg/Kg			1	6010C
7440-47-3	Chromium	11.0	0.53		mg/Kg			1	6010C
7440-50-8	Copper	33.7	1.1		mg/Kg			1	6010C
7439-92-1	Lead	17.2	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	514	0.21		mg/Kg			1	6010C
7440-02-0	Nickel	27.5	5.3		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.3		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.64		mg/Kg			1	6010C
7440-66-6	Zinc	116	2.1		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.020		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:53

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 94.1

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	7.5	2.2		mg/Kg			1	6010C
7440-39-3	Barium	45.1	0.54		mg/Kg			1	6010C
7440-41-7	Beryllium	0.87	0.22		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.22		mg/Kg			1	6010C
7440-47-3	Chromium	29.2	0.54		mg/Kg			1	6010C
7440-50-8	Copper	29.5	1.1		mg/Kg			1	6010C
7439-92-1	Lead	11.7	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	508	0.22		mg/Kg			1	6010C
7440-02-0	Nickel	32.1	5.4		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.3		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.65		mg/Kg			1	6010C
7440-66-6	Zinc	97.7	2.2		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.021		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:57

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 92.9

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	9.3	2.2		mg/Kg			1	6010C
7440-39-3	Barium	43.1	0.54		mg/Kg			1	6010C
7440-41-7	Beryllium	0.40	0.22		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.22		mg/Kg			1	6010C
7440-47-3	Chromium	9.5	0.54		mg/Kg			1	6010C
7440-50-8	Copper	30.7	1.1		mg/Kg			1	6010C
7439-92-1	Lead	14.8	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	611	0.22		mg/Kg			1	6010C
7440-02-0	Nickel	25.2	5.4		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.4		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.65		mg/Kg			1	6010C
7440-66-6	Zinc	107	2.2		mg/Kg			1	6010C
7439-97-6	Mercury	ND	0.022		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 14:30

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.4

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	8.1	2.3		mg/Kg			1	6010C
7440-39-3	Barium	67.1	0.56		mg/Kg			1	6010C
7440-41-7	Beryllium	0.38	0.23		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.23		mg/Kg			1	6010C
7440-47-3	Chromium	11.6	0.56		mg/Kg			1	6010C
7440-50-8	Copper	20.1	1.1		mg/Kg			1	6010C
7439-92-1	Lead	15.1	1.1		mg/Kg			1	6010C
7439-96-5	Manganese	798	0.23		mg/Kg			1	6010C
7440-02-0	Nickel	16.4	5.6		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.5		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.68		mg/Kg			1	6010C
7440-66-6	Zinc	92.7	2.3		mg/Kg			1	6010C
7439-97-6	Mercury	0.041	0.022		mg/Kg			1	7471B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 14:35

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 87.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
7440-38-2	Arsenic	8.8	2.3		mg/Kg			1	6010C
7440-39-3	Barium	78.8	0.58		mg/Kg			1	6010C
7440-41-7	Beryllium	0.46	0.23		mg/Kg			1	6010C
7440-43-9	Cadmium	ND	0.23		mg/Kg			1	6010C
7440-47-3	Chromium	13.3	0.58		mg/Kg			1	6010C
7440-50-8	Copper	24.7	1.2		mg/Kg			1	6010C
7439-92-1	Lead	17.8	1.2		mg/Kg			1	6010C
7439-96-5	Manganese	889	0.23		mg/Kg			1	6010C
7440-02-0	Nickel	22.0	5.8		mg/Kg			1	6010C
7782-49-2	Selenium	ND	4.7		mg/Kg			1	6010C
7440-22-4	Silver	ND	0.70		mg/Kg			1	6010C
7440-66-6	Zinc	115	2.3		mg/Kg			1	6010C
7439-97-6	Mercury	0.041	0.023		mg/Kg			1	7471B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEI_MSS_ICV_00021 Concentration Units: mg/L

CCV Source: MEI_MSS_STD2_00043

Analyte	ICV 480-494449/6 09/26/2019 08:54				CCV 480-494449/18 09/26/2019 12:04				CCV 480-494449/24 09/26/2019 12:50			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.749		0.750	100	0.974		1.00	97	0.983		1.00	98
Barium	0.735		0.750	98	1.01		1.00	101	0.996		1.00	100
Beryllium	0.737		0.750	98	0.985		1.00	99	0.986		1.00	99
Cadmium	0.755		0.750	101	0.978		1.00	98	0.980		1.00	98
Chromium	0.749		0.750	100	0.993		1.00	99	1.00		1.00	100
Copper	0.715		0.750	95	0.971		1.00	97	0.976		1.00	98
Lead	0.722		0.750	96	0.972		1.00	97	0.966		1.00	97
Manganese	0.752		0.750	100	0.985		1.00	98	0.993		1.00	99
Nickel	0.732		0.750	98	0.975		1.00	98	0.972		1.00	97
Selenium	0.739		0.750	99	0.969		1.00	97	0.979		1.00	98
Silver	0.735		0.750	98	0.970		1.00	97	0.970		1.00	97
Zinc	0.777		0.750	104	0.988		1.00	99	0.997		1.00	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEI_MSS_ICV_00021 Concentration Units: mg/L

CCV Source: MEI_MSS_STD2_00043

Analyte	CCV 480-494449/36 09/26/2019 13:35				CCV 480-494449/44 09/26/2019 14:22							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.968		1.00	97	0.977		1.00	98				
Barium	0.997		1.00	100	1.01		1.00	101				
Beryllium	0.986		1.00	99	0.984		1.00	98				
Cadmium	0.972		1.00	97	0.975		1.00	98				
Chromium	0.994		1.00	99	0.991		1.00	99				
Copper	0.968		1.00	97	0.974		1.00	97				
Lead	0.972		1.00	97	0.970		1.00	97				
Manganese	0.988		1.00	99	0.987		1.00	99				
Nickel	0.975		1.00	97	0.974		1.00	97				
Selenium	0.951		1.00	95	0.956		1.00	96				
Silver	0.976		1.00	98	0.974		1.00	97				
Zinc	1.00		1.00	100	0.993		1.00	99				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEI_10_CCVL_00276 Concentration Units: mg/L

CCV Source: MEI_10_CCVL_00276

Analyte	ICVL 480-494449/8 09/26/2019 09:02				CCVL 480-494449/20 09/26/2019 12:12				CCVL 480-494449/26 09/26/2019 12:58			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.0169		0.0150	113	0.0155		0.0150	103	0.0126	J	0.0150	84
Barium	0.00218		0.00200	109	0.00218		0.00200	109	0.00218		0.00200	109
Beryllium	0.00216		0.00200	108	0.00215		0.00200	108	0.00215		0.00200	108
Cadmium	0.00222		0.00200	111	0.00211		0.00200	106	0.00220		0.00200	110
Chromium	0.00403		0.00400	101	0.00435		0.00400	109	0.00441		0.00400	110
Copper	ND		0.0100	95	0.00956	J	0.0100	96	0.00972	J	0.0100	97
Lead	0.0102		0.0100	102	0.00921	J	0.0100	92	0.00986	J	0.0100	99
Manganese	0.00316		0.00300	105	0.00310		0.00300	103	0.00304		0.00300	101
Nickel	ND		0.0100	98	0.00992	J	0.0100	99	0.0101		0.0100	101
Selenium	ND		0.0250	98	0.0229	J	0.0250	91	0.0197	J	0.0250	79
Silver	0.00643		0.00600	107	0.00587	J	0.00600	98	0.00633		0.00600	106
Zinc	ND		0.0100	89	0.00973	J	0.0100	97	0.0113		0.0100	113

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEI_10_CCVL_00276 Concentration Units: mg/L

CCV Source: MEI_10_CCVL_00276

Analyte	CCVL 480-494449/38 09/26/2019 13:43				CCVL 480-494449/46 09/26/2019 14:29							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Arsenic	0.0146	J	0.0150	97	0.0141	J	0.0150	94				
Barium	0.00217		0.00200	109	0.00219		0.00200	110				
Beryllium	0.00209		0.00200	105	0.00214		0.00200	107				
Cadmium	0.00199	J	0.00200	100	0.00207		0.00200	104				
Chromium	0.00407		0.00400	102	0.00421		0.00400	105				
Copper	0.00958	J	0.0100	96	0.00955	J	0.0100	96				
Lead	0.0108		0.0100	108	0.00880	J	0.0100	88				
Manganese	0.00308		0.00300	103	0.00316		0.00300	105				
Nickel	0.0105		0.0100	105	0.0101		0.0100	101				
Selenium	0.0203	J	0.0250	81	0.0224	J	0.0250	90				
Silver	0.00589	J	0.00600	98	0.00577	J	0.00600	96				
Zinc	0.0110		0.0100	110	0.0113		0.0100	113				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEH_HG1_WKG_02132 Concentration Units: mg/L

CCV Source: MEH_HG1_WKG_02132

Analyte	ICV 480-497542/12 10/11/2019 12:13				ICVL 480-497542/14 10/11/2019 12:16				CCVL 480-497542/107 10/11/2019 14:20			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	0.00317		0.00300	106	0.000210		0.000200	105	0.000210		0.000200	105

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEH_HG1_WKG_02132 Concentration Units: mg/L

CCV Source: MEH_HG1_WKG_02132

Analyte	CCV 480-497542/108 10/11/2019 14:35				CCV 480-497542/120 10/11/2019 14:51				CCV 480-497542/132 10/11/2019 15:08			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	0.00207		0.00200	104	0.00205		0.00200	103	0.00205		0.00200	103

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICV Source: MEH_HG1_WKG_02132 Concentration Units: mg/L

CCV Source: MEH_HG1_WKG_02132

Analyte	CCV 480-497542/144 10/11/2019 15:24				CCVL 480-497542/169 10/11/2019 15:57							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Mercury	0.00205		0.00200	103	0.000210		0.000200	105				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICB 480-494449/7 09/26/2019 08:58		CCB 480-494449/19 09/26/2019 12:08		CCB 480-494449/25 09/26/2019 12:54		CCB 480-494449/37 09/26/2019 13:39	
		Found	C	Found	C	Found	C	Found	C
Arsenic	0.015	ND		ND		ND		ND	
Barium	0.0020	ND		ND		ND		ND	
Beryllium	0.0020	ND		ND		ND		ND	
Cadmium	0.0020	ND		ND		ND		ND	
Chromium	0.0040	ND		ND		ND		ND	
Copper	0.010	ND		ND		ND		ND	
Lead	0.010	ND		ND		ND		ND	
Manganese	0.0030	ND		ND		ND		ND	
Nickel	0.010	ND		ND		ND		ND	
Selenium	0.025	ND		ND		ND		ND	
Silver	0.0060	ND		ND		ND		ND	
Zinc	0.010	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 480-494449/45 09/26/2019 14:25							
		Found	C	Found	C	Found	C	Found	C
Arsenic	0.015	ND							
Barium	0.0020	ND							
Beryllium	0.0020	ND							
Cadmium	0.0020	ND							
Chromium	0.0040	ND							
Copper	0.010	ND							
Lead	0.010	ND							
Manganese	0.0030	ND							
Nickel	0.010	ND							
Selenium	0.025	ND							
Silver	0.0060	ND							
Zinc	0.010	ND							

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	ICB 480-497542/13 10/11/2019 12:14		CCB 480-497542/109 10/11/2019 14:37		CCB 480-497542/121 10/11/2019 14:52		CCB 480-497542/133 10/11/2019 15:10	
		Found	C	Found	C	Found	C	Found	C
Mercury	0.00020	ND		ND		ND		ND	

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/L

Analyte	RL	CCB 480-497542/145 10/11/2019 15:25							
		Found	C	Found	C	Found	C	Found	C
Mercury	0.00020	ND							

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 480-493602/1-A

Instrument Code: ICAP1 Batch No.: 494449

CAS No.	Analyte	Concentration	C	Q	Method
7440-38-2	Arsenic	ND			6010C
7440-39-3	Barium	ND			6010C
7440-41-7	Beryllium	ND			6010C
7440-43-9	Cadmium	ND			6010C
7440-47-3	Chromium	ND			6010C
7440-50-8	Copper	ND			6010C
7439-92-1	Lead	ND			6010C
7439-96-5	Manganese	ND			6010C
7440-02-0	Nickel	ND			6010C
7782-49-2	Selenium	ND			6010C
7440-22-4	Silver	ND			6010C
7440-66-6	Zinc	ND			6010C

3-IN
METHOD BLANK
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Concentration Units: mg/Kg Lab Sample ID: MB 480-497458/1-A

Instrument Code: LEEMAN5 Batch No.: 497542

CAS No.	Analyte	Concentration	C	Q	Method
7439-97-6	Mercury	ND			7471B

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: ICSA 480-494449/9 Instrument ID: ICAP1

Lab File ID: i1092619a-7.asc ICS Source: MEI_MSS_ICSA_00007

Concentration Units: mg/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Arsenic		**0.0058**	
Barium		**0.0016**	
Beryllium		**0.0001**	
Cadmium		**-0.0009**	
Chromium		**0.0034**	
Copper		**-0.0043**	
Lead		**-0.0043**	
Manganese		**-0.0008**	
Nickel		**-0.0039**	
Selenium		**0.0031**	
Silver		**0.0001**	
Zinc		**-0.0005**	
Aluminum	*500*	*502*	*100*
Antimony		*-0.0123*	
Boron		*-0.0008*	
Calcium	*500*	*473*	*95*
Cobalt		*-0.0002*	
Iron	*200*	*188*	*94*
Lithium		*0.0027*	
Magnesium	*500*	*502*	*100*
Molybdenum		*-0.0013*	
Potassium		*-0.0145*	
Sodium		*0.176*	
Strontium		*-0.0089*	
Thallium		*-0.0041*	
Tin		*-0.0015*	
Titanium		*0.0008*	
Vanadium		*-0.0006*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Lab Sample ID: ICSAB 480-494449/10 Instrument ID: ICAP1

Lab File ID: i1092619a-7.asc ICS Source: MEI_MSS_ICSAB_00009

Concentration Units: mg/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Arsenic	**0.500**	**0.540**	**108**
Barium	**0.501**	**0.513**	**103**
Beryllium	**0.250**	**0.249**	**99**
Cadmium	**0.500**	**0.552**	**110**
Chromium	**0.500**	**0.494**	**99**
Copper	**0.500**	**0.533**	**107**
Lead	**0.500**	**0.511**	**102**
Manganese	**0.501**	**0.493**	**98**
Nickel	**0.501**	**0.501**	**100**
Selenium	**0.500**	**0.519**	**104**
Silver	**0.500**	**0.553**	**111**
Zinc	**0.501**	**0.467**	**93**
Aluminum	*500*	*506*	*101*
Antimony	*0.500*	*0.520*	*104*
Boron	*5.00*	*5.21*	*104*
Calcium	*500*	*478*	*96*
Cobalt	*0.500*	*0.508*	*102*
Iron	*200*	*191*	*95*
Lithium		*0.0030*	
Magnesium	*500*	*507*	*101*
Molybdenum	*0.500*	*0.511*	*102*
Potassium	*5.00*	*5.20*	*104*
Sodium	*5.00*	*5.36*	*107*
Strontium	*0.500*	*0.485*	*97*
Thallium	*0.500*	*0.493*	*99*
Tin	*0.500*	*0.515*	*103*
Titanium	*0.500*	*0.499*	*100*
Vanadium	*0.500*	*0.497*	*99*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS

Client ID: RUSSO-TS-COMP 1 MS
Lab ID: 480-159547-7 MS
Lab Name: Eurofins TestAmerica, Buffalo
Job No.: 480-159547-1
SDG No.:
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 78.5

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Arsenic	55.87		12.5		49.9	87	75-125		6010C
Barium	187.7		104		49.9	168	75-125	F1	6010C
Beryllium	46.41		0.79		49.9	91	75-125		6010C
Cadmium	46.07		ND		49.9	92	75-125		6010C
Chromium	74.85		20.6		49.9	109	75-125		6010C
Copper	65.38		27.1		49.9	77	75-125		6010C
Lead	75.54		32.5		49.9	86	75-125		6010C
Manganese	478.0		402		49.9	152	75-125	4	6010C
Nickel	73.56		28.8		49.9	90	75-125		6010C
Selenium	44.71		ND		49.9	90	75-125		6010C
Silver	11.70		ND		12.5	94	75-125		6010C
Zinc	125.1		84.2		49.9	82	75-125		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS

Client ID: RUSSO-TS-COMP 1 MSD
Lab ID: 480-159547-7 MSD
Lab Name: Eurofins TestAmerica, Buffalo
Job No.: 480-159547-1
SDG No.:
Matrix: Solid
Concentration Units: mg/Kg
% Solids: 78.5

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Arsenic	54.63		48.6	87	75-125	2	20		6010C
Barium	199.2		48.6	196	75-125	6	20	F1	6010C
Beryllium	46.63		48.6	94	75-125	0	20		6010C
Cadmium	45.94		48.6	94	75-125	0	20		6010C
Chromium	75.31		48.6	113	75-125	1	20		6010C
Copper	66.04		48.6	80	75-125	1	20		6010C
Lead	73.19		48.6	84	75-125	3	20		6010C
Manganese	529.4		48.6	262	75-125	10	20	4	6010C
Nickel	75.50		48.6	96	75-125	3	20		6010C
Selenium	44.67		48.6	92	75-125	0	20		6010C
Silver	11.54		12.1	95	75-125	1	20		6010C
Zinc	127.8		48.6	90	75-125	2	20		6010C

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS

Client ID: RUSSO-TS-COMP 1 PDS Lab ID: 480-159547-7 PDS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid Concentration Units: mg/Kg

Analyte	SSR	C	Sample Result (SR)	C	Spike Added (SA)	%R	Control Limit %R	Q	Method
Arsenic	61.85		12.5		52.1	95	80-120		6010C
Barium	151.1		104		52.1	91	80-120		6010C
Beryllium	51.78		0.79		52.1	98	80-120		6010C
Cadmium	50.17		ND		52.1	96	80-120		6010C
Chromium	67.98		20.6		52.1	91	80-120		6010C
Copper	75.11		27.1		52.1	92	80-120		6010C
Lead	82.28		32.5		52.1	95	80-120		6010C
Manganese	428.2		402		52.1	50	80-120	W	6010C
Nickel	81.37		28.8		52.1	101	80-120		6010C
Selenium	48.03		ND		52.1	92	80-120		6010C
Silver	12.53		ND		13.0	96	80-120		6010C
Zinc	129.2		84.2		52.1	86	80-120		6010C

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM VB - IN

7A-IN
LCS-CERTIFIED REFERENCE MATERIAL
METALS

Lab ID: LCSSRM 480-493602/2-A

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

Sample Matrix: Solid LCS Source: MED_SRM_D087_00024

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Arsenic	221	185.3		83.9	63.8	119.0		6010C
Barium	288	252.8		87.8	70.5	117.4		6010C
Beryllium	102	88.77		87.0	71.2	118.6		6010C
Cadmium	153	130.8		85.5	68.6	115.0		6010C
Chromium	179	149.3		83.4	65.4	121.2		6010C
Copper	113	93.82		83.0	71.4	118.6		6010C
Lead	74.5	72.86		97.8	67.8	130.3		6010C
Manganese	348	301.7		86.7	71.3	118.4		6010C
Nickel	98.0	90.69		92.5	63.8	118.4		6010C
Selenium	54.4	44.12		81.1	53.3	130.0		6010C
Silver	75.5	62.43		82.7	66.6	121.7		6010C
Zinc	281	234.4		83.4	65.8	122.4		6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LCS-CERTIFIED REFERENCE MATERIAL
METALS

Lab ID: LCSSRM 480-497458/2-A ^5

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

Sample Matrix: Solid LCS Source: MED_SRM_D087_00025

Analyte	Solid(mg/Kg)							
	True	Found	C	%R	Limits		Q	Method
Mercury	3.12	2.83		90.7	56.4	131.4		7471B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7D-IN
LCSD - CERTIFIED REFERENCE MATERIAL
METALS

Lab ID: LCDSRM 480-497458/25-A ^5

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

Sample Matrix: Solid LCS Source: MED_SRM_D087_00025

Analyte	(SDR)	C	Spike Added	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Mercury	2.73		3.12	87.4	4-131.4	4	20		7471B

SDR = Spike Duplicate Results
Calculations are performed before rounding to avoid round-off errors in calculated results.

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS

Lab ID: 480-159547-7

SDG No:

Lab Name: Eurofins TestAmerica, Buffalo Job No: 480-159547-1

Matrix: Solid Concentration Units: mg/Kg

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Arsenic	12.5		ND		NC		6010C
Barium	104		116.4		12	V	6010C
Beryllium	0.79		ND		NC		6010C
Cadmium	ND		ND		NC		6010C
Chromium	20.6		22.36		8.5		6010C
Copper	27.1		27.80		2.5		6010C
Lead	32.5		30.93		5.0		6010C
Manganese	402		434.2		8.0		6010C
Nickel	28.8		ND		0.1		6010C
Selenium	ND		ND		NC		6010C
Silver	ND		ND		NC		6010C
Zinc	84.2		94.70		12	V	6010C

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: ICAP1

Method: 6010C MDL Date: 06/04/2015 15:22

Prep Method: 3050B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Arsenic	189.042	2	0.4
Barium	455.403	0.5	0.11
Beryllium	313.042	0.2	0.028
Cadmium	228.802	0.2	0.03
Chromium	267.716	0.5	0.2
Copper	327.396	1	0.21
Lead	220.353	1	0.24
Manganese	257.610	0.2	0.032
Nickel	231.604	5	0.23
Selenium	196.090	4	0.4
Silver	328.068	0.6	0.2
Zinc	206.200	2	0.64

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: ICAP1

Method: 6010C XMDL Date: 07/17/2013 10:53

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Arsenic	189.042	0.015	0.00555
Barium	455.403	0.002	0.0007
Beryllium	313.042	0.002	0.0003
Cadmium	228.802	0.002	0.0005
Chromium	267.716	0.004	0.001
Copper	327.396	0.01	0.0016
Lead	220.353	0.01	0.003
Manganese	257.610	0.003	0.0004
Nickel	231.604	0.01	0.00126
Selenium	196.090	0.025	0.0087
Silver	328.068	0.006	0.0017
Zinc	206.200	0.01	0.0015

9-IN
DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: LEEMAN5

Method: 7471B MDL Date: 01/29/2010 00:00

Prep Method: 7471B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Mercury	253.7	0.02	0.0081

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: LEEMAN5

Method: 7471B XMDL Date: 01/29/2010 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Mercury	253.7	0.0002	0.00012

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG No.:

ICP-AES Instrument ID: ICAP1 Date: 05/17/2019

Analyte	Wave Length	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Li
Aluminum	308.215														
Antimony	206.833										0.011204		-0.000091		
Arsenic	189.042										-0.013070				
Barium	455.403														
Beryllium	313.042														
Boron	208.959														
Cadmium	228.802			0.001560									0.000001		
Calcium	317.933														
Chromium	267.716												-0.00001		
Cobalt	228.616														
Copper	327.396							0.000012							
Iron	259.940														
Lead	220.353		-0.000041									0.000307	0.000029		
Lithium	670.784														
Magnesium	279.079														
Manganese	257.610		0.0000025										0.0000023		
Molybdenum	202.030														
Nickel	231.604												0.000028		
Potassium	766.490														
Selenium	196.090														
Silicon	288.158														
Silver	328.068												-0.000009		
Sodium	589.592														
Strontium	407.771							0.0000357							
Sulfur	182.034														
Thallium	190.856									0.002444					
Tin	189.989														
Titanium	334.904														
Vanadium	292.402												0.000016		
Zinc	206.200										-0.001694				

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG No.:

ICP-AES Instrument ID: ICAP1 Date: 05/17/2019

Analyte	Wave Length	Mg	Mn	Mo	Na	Ni	Pb	S	Sb	Se	Si	Sn	Sr	Ti	Tl
Aluminum	308.215														
Antimony	206.833														
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042													-0.00656	
Boron	208.959			0.028306											
Cadmium	228.802														
Calcium	317.933														
Chromium	267.716		0.000093												
Cobalt	228.616			-0.001186										0.001957	
Copper	327.396														
Iron	259.940														
Lead	220.353			-0.001446											
Lithium	670.784														
Magnesium	279.079		-0.003930												
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Potassium	766.490														
Selenium	196.090		0.000338												
Silicon	288.158														
Silver	328.068		0.000090												
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856		0.000597												
Tin	189.989														
Titanium	334.904		0.000146												
Vanadium	292.402			-0.013712										0.000519	
Zinc	206.200														

X-IN

10-IN
ICP-AES INTERELEMENT CORRECTION FACTORS
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG No.:

ICP-AES Instrument ID: ICAP1 Date: 05/17/2019

Analyte	Wave Length	V	Zn												
Aluminum	308.215														
Antimony	206.833														
Arsenic	189.042														
Barium	455.403														
Beryllium	313.042	0.000298													
Boron	208.959														
Cadmium	228.802														
Calcium	317.933														
Chromium	267.716														
Cobalt	228.616														
Copper	327.396														
Iron	259.940														
Lead	220.353														
Lithium	670.784														
Magnesium	279.079														
Manganese	257.610														
Molybdenum	202.030														
Nickel	231.604														
Potassium	766.490														
Selenium	196.090														
Silicon	288.158														
Silver	328.068														
Sodium	589.592														
Strontium	407.771														
Sulfur	182.034														
Thallium	190.856	0.002141													
Tin	189.989														
Titanium	334.904														
Vanadium	292.402														
Zinc	206.200														

X-IN

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No: 480-159547-1

SDG No.:

Instrument ID: ICAP1 Date: 08/01/2019 09:58

Analyte	Integ. Time (Sec.)	Concentration (mg/L)	Method
Arsenic	15	5	6010C
Barium	15	10	6010C
Beryllium	15	25	6010C
Cadmium	15	5	6010C
Chromium	15	10	6010C
Copper	15	25	6010C
Lead	15	120	6010C
Manganese	15	50	6010C
Nickel	15	10	6010C
Selenium	15	60	6010C
Silver	15	3	6010C
Zinc	15	20	6010C

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Date: 10/09/2018 16:19

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Mercury	10	20	7471B

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Prep Method: 3050B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 480-493602/1-A	09/25/2019 07:01	493602	0.4993		50
LCSSRM 480-493602/2-A	09/25/2019 07:01	493602	0.4901		50
480-159547-7	09/25/2019 07:01	493602	0.4891		50
480-159547-7 MS	09/25/2019 07:01	493602	0.5107		50
480-159547-7 MSD	09/25/2019 07:01	493602	0.5244		50
480-159547-8	09/25/2019 07:01	493602	0.5064		50
480-159547-18	09/25/2019 07:01	493602	0.5273		50
480-159547-19	09/25/2019 07:01	493602	0.5053		50
480-159547-20	09/25/2019 07:01	493602	0.5031		50
480-159547-30	09/25/2019 07:01	493602	0.5044		50
480-159547-31	09/25/2019 07:01	493602	0.4920		50
480-159547-32	09/25/2019 07:01	493602	0.4941		50
480-159547-39	09/25/2019 07:01	493602	0.5028		50
480-159547-40	09/25/2019 07:01	493602	0.4943		50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Prep Method: 7471B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 480-497458/1-A	10/11/2019 13:45	497458	0.6201		50
LCSSRM 480-497458/2-A ^5	10/11/2019 13:45	497458	0.1529		50
480-159547-7	10/11/2019 13:45	497458	0.5850		50
480-159547-8	10/11/2019 13:45	497458	0.6265		50
480-159547-18	10/11/2019 13:45	497458	0.6007		50
480-159547-19	10/11/2019 13:45	497458	0.6528		50
480-159547-20	10/11/2019 13:45	497458	0.6019		50
480-159547-30	10/11/2019 13:45	497458	0.6324		50
480-159547-31	10/11/2019 13:45	497458	0.6106		50
480-159547-32	10/11/2019 13:45	497458	0.5828		50
480-159547-39	10/11/2019 13:45	497458	0.6143		50
480-159547-40	10/11/2019 13:45	497458	0.5918		50
LCDSRM 480-497458/25-A ^5	10/11/2019 13:45	497458	0.2007		50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: ICAP1 Method: 6010C

Start Date: 09/26/2019 08:34 End Date: 09/26/2019 14:29

Lab Sample ID	D/F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Cr	Cu	Mn	Ni	Pb	Se	Zn								
ICIS 480-494449/1	1		08:34	X	X	X	X	X	X	X	X	X	X	X	X								
IC 480-494449/2			08:38	X	X	X	X	X	X	X	X	X	X	X	X								
IC 480-494449/3			08:42	X	X	X	X	X	X	X	X	X	X	X	X								
IC 480-494449/4			08:46	X	X	X	X	X	X	X	X	X	X	X	X								
ZZZZZZ			08:49																				
ICV 480-494449/6	1		08:54	X	X	X	X	X	X	X	X	X	X	X	X								
ICB 480-494449/7	1		08:58	X	X	X	X	X	X	X	X	X	X	X	X								
ICVL 480-494449/8	1		09:02	X	X	X	X	X	X	X	X	X	X	X	X								
ICSA 480-494449/9	1		09:06	X	X	X	X	X	X	X	X	X	X	X	X								
ICSAB 480-494449/10	1		09:10	X	X	X	X	X	X	X	X	X	X	X	X								
ZZZZZZ			09:14																				
ZZZZZZ			09:18																				
ZZZZZZ			09:22																				
ZZZZZZ			09:26																				
ZZZZZZ			09:29																				
CCV 480-494449/16			09:33																				
CCB 480-494449/17			09:37																				
CCV 480-494449/18	1		12:04	X	X	X	X	X	X	X	X	X	X	X	X								
CCB 480-494449/19	1		12:08	X	X	X	X	X	X	X	X	X	X	X	X								
CCVL 480-494449/20	1		12:12	X	X	X	X	X	X	X	X	X	X	X	X								
MB 480-493602/1-A	1	T	12:39	X	X	X	X	X	X	X	X	X	X	X	X								
LCSSRM 480-493602/2-A	1	T	12:43	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-7	1	T	12:46	X	X	X	X	X	X	X	X	X	X	X	X								
CCV 480-494449/24	1		12:50	X	X	X	X	X	X	X	X	X	X	X	X								
CCB 480-494449/25	1		12:54	X	X	X	X	X	X	X	X	X	X	X	X								
CCVL 480-494449/26	1		12:58	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-7 SD	5	T	13:01	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-7 PDS	1	T	13:05	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-7 MS	1	T	13:09	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-7 MSD	1	T	13:13	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-8	1	T	13:16	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-18	1	T	13:20	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-19	1	T	13:24	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-20	1	T	13:28	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-30	1	T	13:32	X	X	X	X	X	X	X	X	X	X	X	X								
CCV 480-494449/36	1		13:35	X	X	X	X	X	X	X	X	X	X	X	X								
CCB 480-494449/37	1		13:39	X	X	X	X	X	X	X	X	X	X	X	X								
CCVL 480-494449/38	1		13:43	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-31	1	T	13:47	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-32	1	T	13:51	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-39	1	T	13:55	X	X	X	X	X	X	X	X	X	X	X	X								
480-159547-40	1	T	13:59	X	X	X	X	X	X	X	X	X	X	X	X								

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: ICAP1 Method: 6010C

Start Date: 09/26/2019 08:34 End Date: 09/26/2019 14:29

Lab Sample ID	D / F	Type	Time	Analytes																			
				Ag	As	Ba	Be	Cd	Cr	Cu	Mn	Ni	Pb	Se	Zn								
ZZZZZZ			14:02																				
CCV 480-494449/44	1		14:22	X	X	X	X	X	X	X	X	X	X	X	X								
CCB 480-494449/45	1		14:25	X	X	X	X	X	X	X	X	X	X	X	X								
CCVL 480-494449/46	1		14:29	X	X	X	X	X	X	X	X	X	X	X	X								

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Method: 7471B

Start Date: 10/11/2019 11:55 End Date: 10/11/2019 15:57

Lab Sample ID	D / F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			11:55																				
ZZZZZZ			11:58																				
ZZZZZZ			12:00																				
ZZZZZZ			12:01																				
ZZZZZZ			12:04																				
IC 480-497528/1-A			12:05	X																			
IC 480-497528/2-A			12:07	X																			
IC 480-497528/3-A			12:08	X																			
IC 480-497528/4-A			12:09	X																			
IC 480-497528/5-A			12:10	X																			
IC 480-497528/6-A			12:12	X																			
ICV 480-497542/12	1		12:13	X																			
ICB 480-497542/13	1		12:14	X																			
ICVL 480-497542/14	1		12:16	X																			
CCV 480-497542/15			12:20																				
CCB 480-497542/16			12:21																				
ZZZZZZ			12:23																				
ZZZZZZ			12:24																				
ZZZZZZ			12:25																				
ZZZZZZ			12:26																				
ZZZZZZ			12:28																				
ZZZZZZ			12:29																				
ZZZZZZ			12:30																				
ZZZZZZ			12:32																				
ZZZZZZ			12:33																				
ZZZZZZ			12:34																				
CCV 480-497542/27			12:36																				
CCB 480-497542/28			12:37																				
ZZZZZZ			12:38																				
ZZZZZZ			12:39																				
ZZZZZZ			12:41																				
ZZZZZZ			12:42																				
ZZZZZZ			12:43																				
ZZZZZZ			12:45																				
ZZZZZZ			12:46																				
ZZZZZZ			12:47																				
ZZZZZZ			12:49																				
ZZZZZZ			12:50																				
CCV 480-497542/39			12:51																				
CCB 480-497542/40			12:52																				
ZZZZZZ			12:54																				
ZZZZZZ			12:55																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Method: 7471B

Start Date: 10/11/2019 11:55 End Date: 10/11/2019 15:57

Lab Sample ID	D/F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			12:56																				
ZZZZZZ			12:58																				
ZZZZZZ			12:59																				
ZZZZZZ			13:00																				
ZZZZZZ			13:02																				
ZZZZZZ			13:03																				
ZZZZZZ			13:04																				
ZZZZZZ			13:05																				
CCV 480-497542/51			13:07																				
CCB 480-497542/52			13:08																				
ZZZZZZ			13:09																				
ZZZZZZ			13:11																				
ZZZZZZ			13:12																				
ZZZZZZ			13:13																				
ZZZZZZ			13:15																				
ZZZZZZ			13:16																				
ZZZZZZ			13:17																				
ZZZZZZ			13:19																				
ZZZZZZ			13:20																				
ZZZZZZ			13:21																				
CCV 480-497542/63			13:22																				
CCB 480-497542/64			13:24																				
ZZZZZZ			13:25																				
ZZZZZZ			13:26																				
ZZZZZZ			13:28																				
ZZZZZZ			13:29																				
ZZZZZZ			13:30																				
ZZZZZZ			13:32																				
ZZZZZZ			13:33																				
ZZZZZZ			13:34																				
ZZZZZZ			13:36																				
ZZZZZZ			13:37																				
CCV 480-497542/75			13:38																				
CCB 480-497542/76			13:39																				
ZZZZZZ			13:41																				
ZZZZZZ			13:42																				
ZZZZZZ			13:43																				
ZZZZZZ			13:45																				
ZZZZZZ			13:46																				
ZZZZZZ			13:47																				
ZZZZZZ			13:49																				
ZZZZZZ			13:50																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Method: 7471B

Start Date: 10/11/2019 11:55 End Date: 10/11/2019 15:57

Lab Sample ID	D / F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			13:51																				
ZZZZZZ			13:52																				
CCV 480-497542/87			13:54																				
CCB 480-497542/88			13:55																				
ZZZZZZ			13:56																				
ZZZZZZ			13:58																				
ZZZZZZ			13:59																				
ZZZZZZ			14:00																				
ZZZZZZ			14:02																				
ZZZZZZ			14:03																				
ZZZZZZ			14:04																				
ZZZZZZ			14:06																				
ZZZZZZ			14:07																				
ZZZZZZ			14:08																				
CCV 480-497542/99			14:09																				
CCB 480-497542/100			14:11																				
ZZZZZZ			14:12																				
ZZZZZZ			14:13																				
ZZZZZZ			14:15																				
ZZZZZZ			14:16																				
CCV 480-497542/105			14:17																				
CCB 480-497542/106			14:19																				
CCVL 480-497542/107	1		14:20	X																			
CCV 480-497542/108	1		14:35	X																			
CCB 480-497542/109	1		14:37	X																			
MB 480-497458/1-A	1	T	14:38	X																			
LCSSRM 480-497458/2-A ^5	5	T	14:39	X																			
480-159547-7	1	T	14:41	X																			
480-159547-8	1	T	14:42	X																			
480-159547-18	1	T	14:43	X																			
480-159547-19	1	T	14:45	X																			
480-159547-20	1	T	14:46	X																			
480-159547-30	1	T	14:47	X																			
480-159547-31	1	T	14:48	X																			
480-159547-32	1	T	14:50	X																			
CCV 480-497542/120	1		14:51	X																			
CCB 480-497542/121	1		14:52	X																			
480-159547-39	1	T	14:54	X																			
480-159547-40	1	T	14:55	X																			
ZZZZZZ			14:56																				
ZZZZZZ			14:58																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Method: 7471B

Start Date: 10/11/2019 11:55 End Date: 10/11/2019 15:57

Lab Sample ID	D / F	Type	Time	Analytes																			
				Hg																			
ZZZZZZ			14:59																				
ZZZZZZ			15:00																				
ZZZZZZ			15:02																				
ZZZZZZ			15:04																				
ZZZZZZ			15:06																				
ZZZZZZ			15:07																				
CCV 480-497542/132	1		15:08	X																			
CCB 480-497542/133	1		15:10	X																			
ZZZZZZ			15:11																				
ZZZZZZ			15:12																				
ZZZZZZ			15:13																				
ZZZZZZ			15:15																				
ZZZZZZ			15:16																				
LCDSRM 480-497458/25-A ^5	5	T	15:17	X																			
ZZZZZZ			15:19																				
ZZZZZZ			15:20																				
ZZZZZZ			15:21																				
ZZZZZZ			15:23																				
CCV 480-497542/144	1		15:24	X																			
CCB 480-497542/145	1		15:25	X																			
ZZZZZZ			15:27																				
ZZZZZZ			15:28																				
ZZZZZZ			15:29																				
ZZZZZZ			15:30																				
ZZZZZZ			15:32																				
ZZZZZZ			15:33																				
ZZZZZZ			15:34																				
ZZZZZZ			15:36																				
ZZZZZZ			15:37																				
ZZZZZZ			15:38																				
CCV 480-497542/156			15:40																				
CCB 480-497542/157			15:41																				
ZZZZZZ			15:42																				
ZZZZZZ			15:44																				
ZZZZZZ			15:45																				
ZZZZZZ			15:46																				
ZZZZZZ			15:48																				
ZZZZZZ			15:49																				
ZZZZZZ			15:50																				
ZZZZZZ			15:51																				
ZZZZZZ			15:53																				

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LEEMAN5 Method: 7471B

Start Date: 10/11/2019 11:55 End Date: 10/11/2019 15:57

Lab Sample ID	D / F	Type	Time	Analytes																			
				Hg																			
CCV 480-497542/167			15:54																				
CCB 480-497542/168			15:55																				
CCVL 480-497542/169	1		15:57	X																			

Prep Types

T = Total/NA

15-IN
ICP INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

ICP Instrument ID: ICAP1 Start Date: 09/26/2019 End Date: 09/26/2019

Lab Sample ID	Time	Internal Standards %RI For:									
		Element In 230.606	Q	Element Y 224.306	Q	Element Y 360.073	Q	Element Y 377.433	Q	Element	Q
ICIS 480-494449/1	08:34										
ICV 480-494449/6	08:54	93		97		96		101			
ICB 480-494449/7	08:58	100		98		99		100			
ICVL 480-494449/8	09:02	100		98		100		101			
ICSA 480-494449/9	09:06	77		86		86		97			
ICSAB 480-494449/10	09:10	77		86		86		97			
CCV 480-494449/18	12:04	91		98		95		100			
CCB 480-494449/19	12:08	100		101		100		101			
CCVL 480-494449/20	12:12	100		100		99		101			
MB 480-493602/1-A	12:39	99		100		100		101			
LCSSRM 480-493602/2-A	12:43	91		107		107		113			
480-159547-7	12:46	91		102		102		108			
CCV 480-494449/24	12:50	92		99		95		101			
CCB 480-494449/25	12:54	101		102		100		101			
CCVL 480-494449/26	12:58	101		102		101		101			
480-159547-7 SD	13:01	98		103		100		103			
480-159547-7 PDS	13:05	89		102		101		107			
480-159547-7 MS	13:09	87		102		100		108			
480-159547-7 MSD	13:13	86		102		99		108			
480-159547-8	13:16	91		102		101		107			
480-159547-18	13:20	88		107		106		112			
480-159547-19	13:24	86		108		107		115			
480-159547-20	13:28	88		110		110		116			
480-159547-30	13:32	86		112		112		119			
CCV 480-494449/36	13:35	92		100		95		101			
CCB 480-494449/37	13:39	100		103		101		100			
CCVL 480-494449/38	13:43	101		102		101		102			
480-159547-31	13:47	85		105		105		114			
480-159547-32	13:51	83		107		107		116			
480-159547-39	13:55	91		102		102		108			
480-159547-40	13:59	89		102		101		108			
CCV 480-494449/44	14:22	91		100		95		101			
CCB 480-494449/45	14:25	100		103		100		101			
CCVL 480-494449/46	14:29	100		103		101		101			

Run File: i1092619a

Instrument: ICAP1

Analyst: emb EMB

Data Review: 9/27/19

Spikes Ids:5424134(W1), 5424135(w2) 5433185(Sn), 5409749(Ag), 5258400(Si), 5282890(S), 5037348(TCLP)
Pipette Ids: 5/2/19-(1-11)
Internal Standard: 5499749

Seq#	Run File ID	Sample ID	Date / Time	Sample Type
1	i1092619a	ICIS-5508960	09/26/19 08:34 AM	Standard
2	i1092619a	IC-5514926	09/26/19 08:38 AM	Standard
3	i1092619a	IC-5520066	09/26/19 08:42 AM	Standard
4	i1092619a	IC-5466929	09/26/19 08:46 AM	Standard
5	i1092619a	ICV-5508963	09/26/19 08:49 AM	QC
6	i1092619a	ICV-5508963	09/26/19 08:54 AM	QC
7	i1092619a	ICB-5508960	09/26/19 08:58 AM	QC
8	i1092619a	ICVL-5514926	09/26/19 09:02 AM	QC
9	i1092619a	ICSA-5486551	09/26/19 09:06 AM	QC
10	i1092619a	ICSAB-5486552	09/26/19 09:10 AM	QC
11	i1092619a	ICEX1	09/26/19 09:14 AM	Unknown
12	i1092619a	ICEX2	09/26/19 09:18 AM	Unknown
13	i1092619a	ICEX3	09/26/19 09:22 AM	Unknown
14	i1092619a	ICEX4	09/26/19 09:26 AM	Unknown
15	i1092619a	ICEX5	09/26/19 09:29 AM	Unknown
16	i1092619a	CCV-5520066	09/26/19 09:33 AM	QC
17	i1092619a	CCB-5508960	09/26/19 09:37 AM	QC
18	i1092619a	CCVL-5514926	09/26/19 09:54 AM	QC
19	i1092619a	480-158532-A-18-B	09/26/19 09:58 AM	Unknown
20	i1092619a	480-159397-A-2-A@2	09/26/19 10:02 AM	Unknown
21	i1092619a	480-159397-A-3-A@5	09/26/19 10:06 AM	Unknown
22	i1092619a	480-159397-A-4-A@2	09/26/19 10:10 AM	Unknown
23	i1092619a	480-159254-C-16-A@2	09/26/19 10:14 AM	Unknown
24	i1092619a	480-159144-B-3-B	09/26/19 10:18 AM	Unknown
25	i1092619a	480-159144-B-4-B	09/26/19 10:21 AM	Unknown
26	i1092619a	159254-14 sol	09/26/19 10:25 AM	Unknown
27	i1092619a	158378-10 tot	09/26/19 10:29 AM	Unknown
28	i1092619a	CCV-5520066	09/26/19 10:33 AM	QC
29	i1092619a	CCB-5508960	09/26/19 10:37 AM	QC
30	i1092619a	CCVL-5514926	09/26/19 10:40 AM	QC
31	i1092619a	MB 480-493347/1-A	09/26/19 10:44 AM	Unknown
32	i1092619a	480-159415-A-1-A@2	09/26/19 10:48 AM	Unknown
33	i1092619a	480-159532-A-2-A@2	09/26/19 10:52 AM	Unknown
34	i1092619a	480-159532-A-4-A@2	09/26/19 10:56 AM	Unknown
35	i1092619a	480-159532-A-7-A@2	09/26/19 11:00 AM	Unknown
36	i1092619a	480-159532-A-12-A@2	09/26/19 11:03 AM	Unknown
37	i1092619a	480-159532-A-13-A@2	09/26/19 11:07 AM	Unknown
38	i1092619a	480-159532-A-32-A@2	09/26/19 11:11 AM	Unknown
39	i1092619a	480-159532-A-33-A@2	09/26/19 11:15 AM	Unknown
40	i1092619a	CCV-5520066	09/26/19 11:19 AM	QC
41	i1092619a	CCB-5508960	09/26/19 11:22 AM	QC
42	i1092619a	CCVL-5514926	09/26/19 11:26 AM	QC

43	i1092619a	159345-A-15-Asd@5	09/26/19 11:30 AM Unknown
44	i1092619a	158880-11 sol	09/26/19 11:34 AM Unknown
45	i1092619a	158880-12 sol	09/26/19 11:38 AM Unknown
46	i1092619a	158893-1 sol	09/26/19 11:41 AM Unknown
47	i1092619a	158893-5 sol	09/26/19 11:45 AM Unknown
48	i1092619a	MB 480-493594/1-A	09/26/19 11:49 AM Unknown
49	i1092619a	LCSSRM 480-493594/2-	09/26/19 11:53 AM Unknown
50	i1092619a	480-159473-A-3-A@5	09/26/19 11:57 AM Unknown
51	i1092619a	480-159473-A-4-A@5	09/26/19 12:00 PM Unknown
52	i1092619a	CCV-5520066	09/26/19 12:04 PM QC
53	i1092619a	CCB-5508960	09/26/19 12:08 PM QC
54	i1092619a	CCVL-5514926	09/26/19 12:12 PM QC
55	i1092619a	480-159496-E-6-A@2	09/26/19 12:16 PM Unknown
56	i1092619a	480-159499-C-7-A	09/26/19 12:20 PM Unknown
57	i1092619a	480-159536-G-1-A	09/26/19 12:23 PM Unknown
58	i1092619a	480-159536-F-2-A	09/26/19 12:27 PM Unknown
59	i1092619a	480-159536-F-3-A	09/26/19 12:31 PM Unknown
60	i1092619a	480-159536-G-4-A	09/26/19 12:35 PM Unknown
61	i1092619a	MB 480-493602/1-A	09/26/19 12:39 PM Unknown
62	i1092619a	LCSSRM 480-493602/2-	09/26/19 12:43 PM Unknown
63	i1092619a	480-159547-E-7-A	09/26/19 12:46 PM Unknown
64	i1092619a	CCV-5520066	09/26/19 12:50 PM QC
65	i1092619a	CCB-5508960	09/26/19 12:54 PM QC
66	i1092619a	CCVL-5514926	09/26/19 12:58 PM QC
67	i1092619a	480-159547-E-7-Asd@5	09/26/19 01:01 PM Unknown
68	i1092619a	480-159547-E-7-Apds	09/26/19 01:05 PM Unknown
69	i1092619a	480-159547-E-7-B MS	09/26/19 01:09 PM Unknown
70	i1092619a	480-159547-E-7-C MSD	09/26/19 01:13 PM Unknown
71	i1092619a	480-159547-F-8-A	09/26/19 01:16 PM Unknown
72	i1092619a	480-159547-F-18-A	09/26/19 01:20 PM Unknown
73	i1092619a	480-159547-F-19-A	09/26/19 01:24 PM Unknown
74	i1092619a	480-159547-D-20-A	09/26/19 01:28 PM Unknown
75	i1092619a	480-159547-D-30-A	09/26/19 01:32 PM Unknown
76	i1092619a	CCV-5520066	09/26/19 01:35 PM QC
77	i1092619a	CCB-5508960	09/26/19 01:39 PM QC
78	i1092619a	CCVL-5514926	09/26/19 01:43 PM QC
79	i1092619a	480-159547-F-31-A	09/26/19 01:47 PM Unknown
80	i1092619a	480-159547-D-32-A	09/26/19 01:51 PM Unknown
81	i1092619a	480-159547-D-39-A	09/26/19 01:55 PM Unknown
82	i1092619a	480-159547-E-40-A	09/26/19 01:59 PM Unknown
83	i1092619a	480-159538-A-2-A	09/26/19 02:02 PM Unknown
84	i1092619a	LB 480-493708/1-C	09/26/19 02:06 PM Unknown
85	i1092619a	MB 480-493991/2-A	09/26/19 02:10 PM Unknown
86	i1092619a	LCS 480-493991/3-A	09/26/19 02:14 PM Unknown
87	i1092619a	480-158364-A-2-D	09/26/19 02:18 PM Unknown
88	i1092619a	CCV-5520066	09/26/19 02:22 PM QC
89	i1092619a	CCB-5508960	09/26/19 02:25 PM QC
90	i1092619a	CCVL-5514926	09/26/19 02:29 PM QC
91	i1092619a	480-158364-A-2-Dsd@5	09/26/19 02:33 PM Unknown
92	i1092619a	480-158364-A-2-Dpds	09/26/19 02:37 PM Unknown
93	i1092619a	480-158364-A-2-E MS	09/26/19 02:41 PM Unknown
94	i1092619a	480-158364-A-2-F MSD	09/26/19 02:44 PM Unknown

95	i1092619a	LB 480-493985/1-B	09/26/19 02:48 PM Unknown
96	i1092619a	MB 480-493993/2-A	09/26/19 02:52 PM Unknown
97	i1092619a	LCS 480-493993/3-A	09/26/19 02:56 PM Unknown
98	i1092619a	480-159348-C-3-B	09/26/19 03:00 PM Unknown
99	i1092619a	480-159556-G-1-C	09/26/19 03:04 PM Unknown
100	i1092619a	CCV-5520066	09/26/19 03:08 PM QC
101	i1092619a	CCB-5508960	09/26/19 03:11 PM QC
102	i1092619a	CCVL-5514926	09/26/19 03:15 PM QC
103	i1092619a	480-159556-G-1-Csd@5	09/26/19 03:19 PM Unknown
104	i1092619a	480-159556-G-1-Cpds	09/26/19 03:23 PM Unknown
105	i1092619a	480-159556-G-1-D MS	09/26/19 03:27 PM Unknown
106	i1092619a	480-159556-G-1-E MSD	09/26/19 03:31 PM Unknown
107	i1092619a	480-159572-E-1-B	09/26/19 03:35 PM Unknown
108	i1092619a	LB 480-493713/1-B	09/26/19 03:39 PM Unknown
109	i1092619a	MB 480-493994/2-A	09/26/19 03:42 PM Unknown
110	i1092619a	LCS 480-493994/3-A	09/26/19 03:46 PM Unknown
111	i1092619a	480-159532-A-14-B	09/26/19 03:50 PM Unknown
112	i1092619a	CCV-5520066	09/26/19 03:54 PM QC
113	i1092619a	CCB-5508960	09/26/19 03:58 PM QC
114	i1092619a	CCVL-5514926	09/26/19 04:05 PM QC
115	i1092619a	159532-A-14-Bsd@5	09/26/19 04:08 PM Unknown
116	i1092619a	480-159532-A-14-Bpds	09/26/19 04:12 PM Unknown
117	i1092619a	480-159532-A-14-C MS	09/26/19 04:16 PM Unknown
118	i1092619a	159532-A-14-D MSd	09/26/19 04:20 PM Unknown
119	i1092619a	480-159532-A-15-B	09/26/19 04:24 PM Unknown
120	i1092619a	480-159532-A-16-B	09/26/19 04:28 PM Unknown
121	i1092619a	480-159532-A-17-B	09/26/19 04:32 PM Unknown
122	i1092619a	480-159532-A-18-B	09/26/19 04:36 PM Unknown
123	i1092619a	480-159532-A-19-B	09/26/19 04:40 PM Unknown
124	i1092619a	CCV-5520066	09/26/19 04:44 PM QC
125	i1092619a	CCB-5508960	09/26/19 04:48 PM QC
126	i1092619a	CCVL-5514926	09/26/19 04:52 PM QC
127	i1092619a	480-159532-A-20-B	09/26/19 04:56 PM Unknown
128	i1092619a	480-159532-A-21-B	09/26/19 05:00 PM Unknown
129	i1092619a	480-159532-A-22-B	09/26/19 05:04 PM Unknown
130	i1092619a	480-159348-D-1-C	09/26/19 05:08 PM Unknown
131	i1092619a	480-159348-D-1-C@5	09/26/19 05:12 PM Unknown
132	i1092619a	480-159348-A-2-C	09/26/19 05:15 PM Unknown
133	i1092619a	blank	09/26/19 05:19 PM Unknown
134	i1092619a	MB 480-494119/1-A	09/26/19 05:23 PM Unknown
135	i1092619a	LCS 480-494119/2-A	09/26/19 05:27 PM Unknown
136	i1092619a	CCV-5520066	09/26/19 05:31 PM QC
137	i1092619a	CCB-5508960	09/26/19 05:34 PM QC
138	i1092619a	CCVL-5514926	09/26/19 05:38 PM QC
139	i1092619a	480-159611-C-1-B	09/26/19 05:42 PM Unknown
140	i1092619a	480-159611-C-2-B	09/26/19 05:46 PM Unknown
141	i1092619a	480-159611-C-2-Bsd@5	09/26/19 05:50 PM Unknown
142	i1092619a	480-159611-C-2-Bpds	09/26/19 05:54 PM Unknown
143	i1092619a	480-159611-C-2-C MS	09/26/19 05:58 PM Unknown
144	i1092619a	480-159611-C-2-D MSD	09/26/19 06:01 PM Unknown
145	i1092619a	480-159611-C-3-B	09/26/19 06:05 PM Unknown
146	i1092619a	480-158664-B-3-C	09/26/19 06:09 PM Unknown

147	i1092619a	480-159337-C-1-C	09/26/19 06:13 PM Unknown
148	i1092619a	CCV-5520066	09/26/19 06:17 PM QC
149	i1092619a	CCB-5508960	09/26/19 06:20 PM QC
150	i1092619a	CCVL-5514926	09/26/19 06:24 PM QC
151	i1092619a	MB 480-494147/1-A	09/26/19 06:28 PM Unknown
152	i1092619a	LCS 480-494147/2-A	09/26/19 06:32 PM Unknown
153	i1092619a	480-159680-B-1-A	09/26/19 06:36 PM Unknown
154	i1092619a	480-159680-B-1-Asd@5	09/26/19 06:39 PM Unknown
155	i1092619a	480-159680-B-1-Apds	09/26/19 06:43 PM Unknown
156	i1092619a	480-159680-B-1-B MS	09/26/19 06:47 PM Unknown
157	i1092619a	480-159680-B-1-C MSD	09/26/19 06:51 PM Unknown
158	i1092619a	480-159672-B-1-A	09/26/19 06:55 PM Unknown
159	i1092619a	480-159689-A-1-A	09/26/19 06:58 PM Unknown
160	i1092619a	CCV-5520066	09/26/19 07:02 PM QC
161	i1092619a	CCB-5508960	09/26/19 07:06 PM QC
162	i1092619a	CCVL-5514926	09/26/19 07:10 PM QC
163	i1092619a	480-159682-C-1-A	09/26/19 07:14 PM Unknown
164	i1092619a	480-159682-C-2-A	09/26/19 07:18 PM Unknown
165	i1092619a	480-159691-F-1-A	09/26/19 07:22 PM Unknown
166	i1092619a	480-159691-F-2-A	09/26/19 07:26 PM Unknown
167	i1092619a	480-159691-E-3-A	09/26/19 07:29 PM Unknown
168	i1092619a	MB 480-493281/1-A	09/26/19 07:33 PM Unknown
169	i1092619a	LCS 480-493281/2-A	09/26/19 07:37 PM Unknown
170	i1092619a	480-159440-A-1-A	09/26/19 07:41 PM Unknown
171	i1092619a	480-159440-A-2-A	09/26/19 07:45 PM Unknown
172	i1092619a	CCV-5520066	09/26/19 07:48 PM QC
173	i1092619a	CCB-5508960	09/26/19 07:52 PM QC
174	i1092619a	CCVL-5514926	09/26/19 07:56 PM QC
175	i1092619a	480-159440-A-3-A	09/26/19 08:00 PM Unknown
176	i1092619a	480-159440-A-3-Asd@5	09/26/19 08:04 PM Unknown
177	i1092619a	480-159440-A-3-Apds	09/26/19 08:07 PM Unknown
178	i1092619a	480-159440-A-3-B MS	09/26/19 08:11 PM Unknown
179	i1092619a	480-159440-A-3-C MSD	09/26/19 08:15 PM Unknown
180	i1092619a	480-159440-A-4-A	09/26/19 08:18 PM Unknown
181	i1092619a	480-159440-A-5-A	09/26/19 08:22 PM Unknown
182	i1092619a	480-159440-A-7-A	09/26/19 08:26 PM Unknown
183	i1092619a	480-159440-A-8-A	09/26/19 08:30 PM Unknown
184	i1092619a	CCV-5520066	09/26/19 08:34 PM QC
185	i1092619a	CCB-5508960	09/26/19 08:38 PM QC
186	i1092619a	CCVL-5514926	09/26/19 08:42 PM QC
187	i1092619a	480-159440-A-9-A	09/26/19 08:46 PM Unknown
188	i1092619a	480-159440-A-10-A	09/26/19 08:50 PM Unknown
189	i1092619a	480-159440-A-11-A	09/26/19 08:53 PM Unknown
190	i1092619a	480-159440-A-12-A	09/26/19 08:57 PM Unknown
191	i1092619a	480-159441-C-1-A	09/26/19 09:01 PM Unknown
192	i1092619a	MB 480-494122/1-A	09/26/19 09:05 PM Unknown
193	i1092619a	LCS 480-494122/2-A	09/26/19 09:09 PM Unknown
194	i1092619a	480-159276-A-26-B	09/26/19 09:13 PM Unknown
195	i1092619a	159276-A-26-Bsd@5	09/26/19 09:16 PM Unknown
196	i1092619a	CCV-5520066	09/26/19 09:20 PM QC
197	i1092619a	CCB-5508960	09/26/19 09:24 PM QC
198	i1092619a	CCVL-5514926	09/26/19 09:28 PM QC

199	i1092619a	480-159276-A-26-Bpds	09/26/19 09:32 PM Unknown
200	i1092619a	480-159276-A-26-C MS	09/26/19 09:35 PM Unknown
201	i1092619a	159276-A-26-D MSd	09/26/19 09:39 PM Unknown
202	i1092619a	480-159254-C-6-D	09/26/19 09:43 PM Unknown
203	i1092619a	MB 480-494097/1-A	09/26/19 09:46 PM Unknown
204	i1092619a	LCS 480-494097/2-A	09/26/19 09:50 PM Unknown
205	i1092619a	LCSD 480-494097/3-A	09/26/19 09:54 PM Unknown
206	i1092619a	480-159555-D-1-B	09/26/19 09:58 PM Unknown
207	i1092619a	480-159555-D-2-B	09/26/19 10:02 PM Unknown
208	i1092619a	CCV-5520066	09/26/19 10:05 PM QC
209	i1092619a	CCB-5508960	09/26/19 10:09 PM QC
210	i1092619a	CCVL-5514926	09/26/19 10:13 PM QC
211	i1092619a	480-159544-C-1-B	09/26/19 10:17 PM Unknown
212	i1092619a	480-159545-C-1-A	09/26/19 10:21 PM Unknown
213	i1092619a	480-159545-C-2-A	09/26/19 10:25 PM Unknown
214	i1092619a	480-159545-C-3-A	09/26/19 10:29 PM Unknown
215	i1092619a	480-159545-C-4-A	09/26/19 10:32 PM Unknown
216	i1092619a	480-159545-C-5-A	09/26/19 10:36 PM Unknown
217	i1092619a	480-159545-C-6-A	09/26/19 10:40 PM Unknown
218	i1092619a	480-159545-C-7-D	09/26/19 10:44 PM Unknown
219	i1092619a	480-159545-C-8-A	09/26/19 10:48 PM Unknown
220	i1092619a	CCV-5520066	09/26/19 10:52 PM QC
221	i1092619a	CCB-5508960	09/26/19 10:56 PM QC
222	i1092619a	CCVL-5514926	09/26/19 11:00 PM QC
223	i1092619a	480-159619-A-3-A	09/26/19 11:03 PM Unknown
224	i1092619a	480-159619-A-2-A	09/26/19 11:07 PM Unknown
225	i1092619a	480-159420-A-1-A	09/26/19 11:11 PM Unknown
226	i1092619a	480-159420-A-1-Asd@5	09/26/19 11:15 PM Unknown
227	i1092619a	480-159420-A-1-Apds	09/26/19 11:19 PM Unknown
228	i1092619a	480-159420-A-1-B MS	09/26/19 11:23 PM Unknown
229	i1092619a	480-159420-A-1-C MSD	09/26/19 11:27 PM Unknown
230	i1092619a	480-159420-A-2-A	09/26/19 11:30 PM Unknown
231	i1092619a	480-159495-C-1-B	09/26/19 11:34 PM Unknown
232	i1092619a	CCV-5520066	09/26/19 11:38 PM QC
233	i1092619a	CCB-5508960	09/26/19 11:42 PM QC
234	i1092619a	CCVL-5514926	09/26/19 11:46 PM QC
235	i1092619a	480-159552-C-2-A	09/26/19 11:49 PM Unknown
236	i1092619a	480-159523-A-10-B	09/26/19 11:53 PM Unknown
237	i1092619a	480-159523-A-11-B	09/26/19 11:57 PM Unknown
238	i1092619a	480-159540-H-1-A	09/27/19 12:01 AM Unknown
239	i1092619a	MB 480-491981/1-A	09/27/19 12:05 AM Unknown
240	i1092619a	LCS 480-491981/2-A	09/27/19 12:09 AM Unknown
241	i1092619a	480-159110-B-1-B	09/27/19 12:13 AM Unknown
242	i1092619a	480-159110-B-2-B	09/27/19 12:16 AM Unknown
243	i1092619a	480-159110-B-3-B	09/27/19 12:20 AM Unknown
244	i1092619a	CCV-5520066	09/27/19 12:24 AM QC
245	i1092619a	CCB-5508960	09/27/19 12:28 AM QC
246	i1092619a	CCVL-5514926	09/27/19 12:32 AM QC
247	i1092619a	480-159110-B-4-D	09/27/19 12:35 AM Unknown
248	i1092619a	480-159110-B-4-Dsd@5	09/27/19 12:39 AM Unknown
249	i1092619a	480-159110-B-4-Dpds	09/27/19 12:43 AM Unknown
250	i1092619a	480-159110-B-4-E MS	09/27/19 12:47 AM Unknown

251	i1092619a	480-159110-B-4-F MSD	09/27/19 12:50 AM Unknown
252	i1092619a	480-159110-B-5-B	09/27/19 12:54 AM Unknown
253	i1092619a	480-159110-B-6-B	09/27/19 12:58 AM Unknown
254	i1092619a	480-159110-B-7-B	09/27/19 01:02 AM Unknown
255	i1092619a	480-159110-B-8-B	09/27/19 01:06 AM Unknown
256	i1092619a	CCV-5520066	09/27/19 01:10 AM QC
257	i1092619a	CCB-5508960	09/27/19 01:13 AM QC
258	i1092619a	CCVL-5514926	09/27/19 01:17 AM QC
259	i1092619a	480-159109-D-1-B	09/27/19 01:21 AM Unknown
260	i1092619a	480-159109-D-2-B	09/27/19 01:25 AM Unknown
261	i1092619a	480-159111-C-1-B	09/27/19 01:29 AM Unknown
262	i1092619a	480-159111-C-1-B@5	09/27/19 01:33 AM Unknown
263	i1092619a	MB 480-494142/1-A	09/27/19 01:37 AM Unknown
264	i1092619a	LCS 480-494142/2-A	09/27/19 01:41 AM Unknown
265	i1092619a	480-159681-C-1-A	09/27/19 01:44 AM Unknown
266	i1092619a	480-159681-C-2-A	09/27/19 01:48 AM Unknown
267	i1092619a	480-159559-C-1-B	09/27/19 01:52 AM Unknown
268	i1092619a	CCV-5520066	09/27/19 01:56 AM QC
269	i1092619a	CCB-5508960	09/27/19 01:59 AM QC
270	i1092619a	CCVL-5514926	09/27/19 02:03 AM QC
271	i1092619a	480-159676-D-1-A	09/27/19 02:07 AM Unknown
272	i1092619a	480-159676-D-2-A	09/27/19 02:11 AM Unknown
273	i1092619a	480-159676-D-3-A	09/27/19 02:15 AM Unknown
274	i1092619a	480-159677-D-1-A	09/27/19 02:18 AM Unknown
275	i1092619a	480-159677-D-1-Asd@5	09/27/19 02:22 AM Unknown
276	i1092619a	480-159677-D-1-Apds	09/27/19 02:26 AM Unknown
277	i1092619a	480-159677-D-1-B MS	09/27/19 02:30 AM Unknown
278	i1092619a	480-159677-D-1-C MSD	09/27/19 02:33 AM Unknown
279	i1092619a	480-159677-D-2-A	09/27/19 02:37 AM Unknown
280	i1092619a	CCV-5520066	09/27/19 02:41 AM QC
281	i1092619a	CCB-5508960	09/27/19 02:45 AM QC
282	i1092619a	CCVL-5514926	09/27/19 02:48 AM QC
283	i1092619a	480-159677-D-3-A	09/27/19 02:52 AM Unknown
284	i1092619a	480-159679-A-1-A	09/27/19 02:56 AM Unknown
285	i1092619a	480-159679-A-2-A	09/27/19 03:00 AM Unknown
286	i1092619a	480-159679-A-3-A	09/27/19 03:04 AM Unknown
287	i1092619a	480-159679-A-4-A	09/27/19 03:07 AM Unknown
288	i1092619a	480-159674-D-1-A	09/27/19 03:11 AM Unknown
289	i1092619a	480-159674-D-2-A	09/27/19 03:15 AM Unknown
290	i1092619a	480-159692-I-1-A	09/27/19 03:19 AM Unknown
291	i1092619a	480-159692-I-1-A@5	09/27/19 03:23 AM Unknown
292	i1092619a	CCV-5520066	09/27/19 03:27 AM QC
293	i1092619a	CCB-5508960	09/27/19 03:30 AM QC
294	i1092619a	CCVL-5514926	09/27/19 03:34 AM QC
295	i1092619a	159315-10 tot	09/27/19 03:38 AM Unknown
296	i1092619a	159315-4 tot	09/27/19 03:42 AM Unknown
297	i1092619a	159315-8 tot	09/27/19 03:46 AM Unknown
298	i1092619a	159347-1 tot	09/27/19 03:50 AM Unknown
299	i1092619a	159347-2 tot	09/27/19 03:53 AM Unknown
300	i1092619a	159350-3 tot	09/27/19 03:57 AM Unknown
301	i1092619a	159349-3 tot	09/27/19 04:01 AM Unknown
302	i1092619a	blank	09/27/19 04:05 AM Unknown

303	i1092619a	blank	09/27/19 04:09 AM Unknown
304	i1092619a	CCV-5520066	09/27/19 04:13 AM QC
305	i1092619a	CCB-5508960	09/27/19 04:16 AM QC
306	i1092619a	CCVL-5514926	09/27/19 04:20 AM QC
307	i1092619a	ICSA-5486551	09/27/19 04:24 AM QC
308	i1092619a	ICSAB-5486552	09/27/19 04:28 AM QC
309	i1092619a	CCV-5520066	09/27/19 04:32 AM QC
310	i1092619a	CCB-5508960	09/27/19 04:36 AM QC

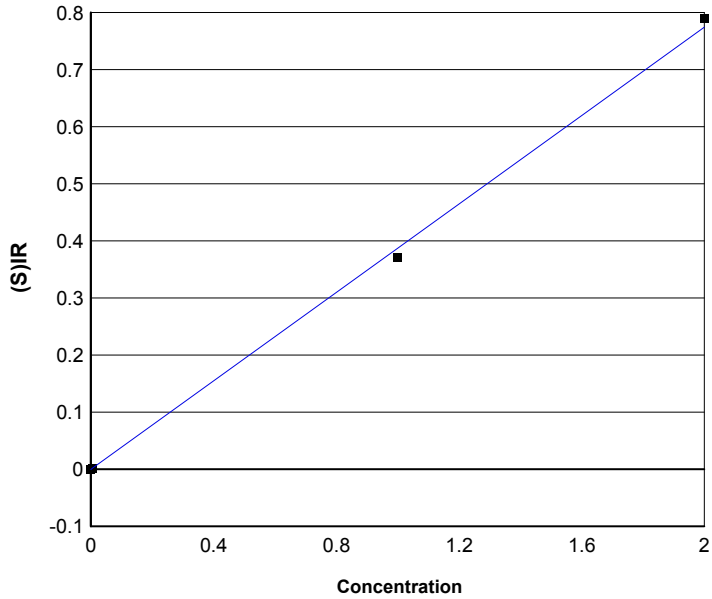
i1092619a

Author: emb

Published: 9/27/2019 6:27:28AM

Instrument Name: iCAP1 Serial Number: 20094603

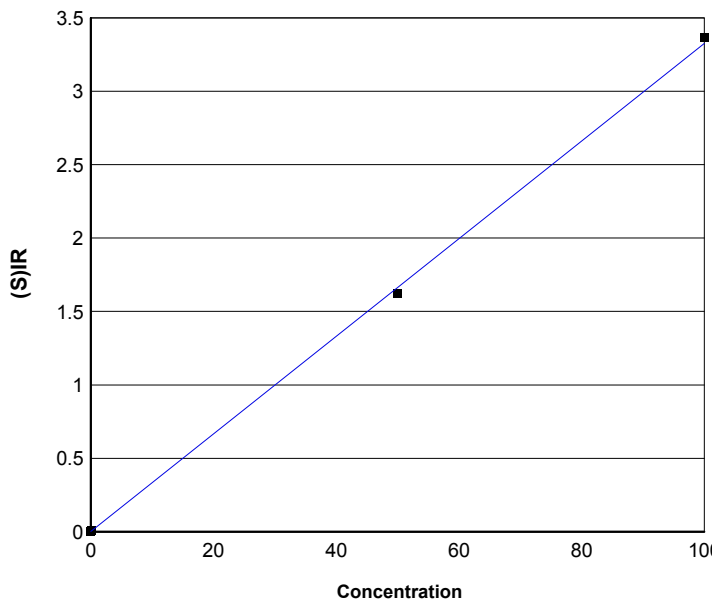
Method Name: ICAP1 New Stds (177)



Element Name:	Ag
Element Wavelength:	Ag 328.068 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99956
A0 (Offset):	-0.00038876
A1 (Gain):	0.38741
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

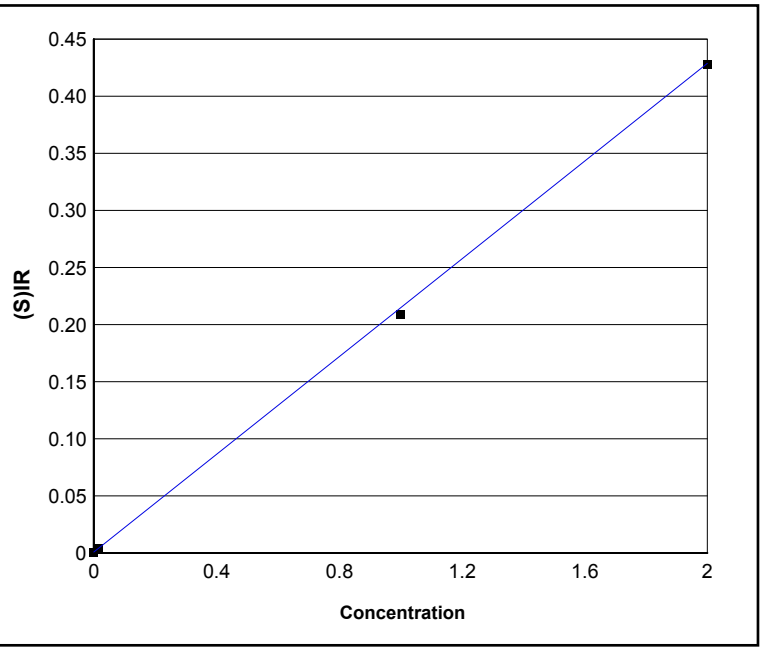
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000002292	0.0000002292	0.00000	-0.00038867	0.00017379	1
IC-5514926	0.0060000	0.0058958	-0.00010423	-1.7372	0.0018953	0.00012549	1
IC-5520066	1.0000	0.95825	-0.041745	-4.1745	0.37071	0.00086335	1
IC-5466929	2.0000	2.0418	0.041849	2.0925	0.79036	0.000023708	1



Element Name:	Al
Element Wavelength:	Al 308.215 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99984
A0 (Offset):	0.0018735
A1 (Gain):	0.033245
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

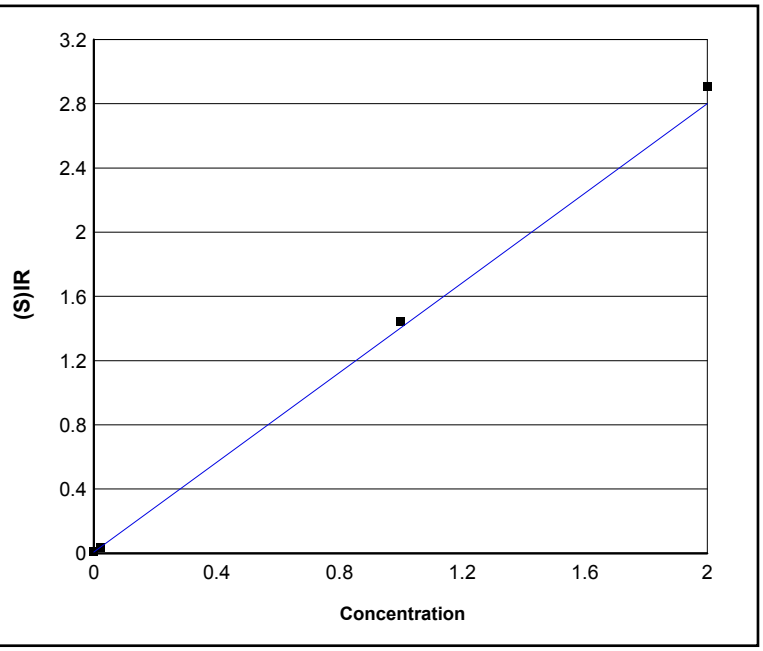
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.000019850	0.000019850	0.00000	0.0018741	0.00027878	1
IC-5514926	0.20000	0.18262	-0.017384	-8.6922	0.0079446	0.00037010	1
IC-5520066	50.000	48.750	-1.2502	-2.5004	1.6226	0.0048615	1
IC-5466929	100.00	101.27	1.2676	1.2676	3.3686	0.00071106	1



Element Name:	As
Element Wavelength:	As 189.042 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99990
A0 (Offset):	0.00068499
A1 (Gain):	0.21397
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

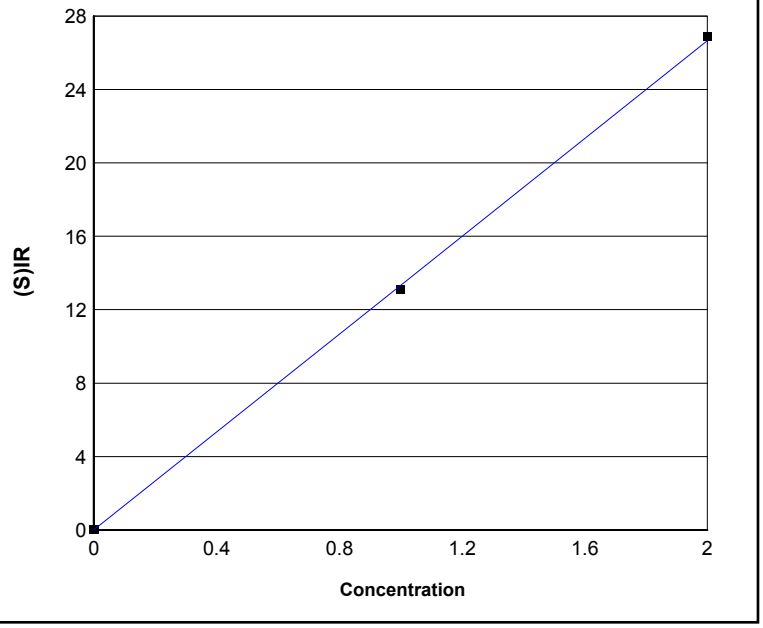
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000011120	-0.0000011120	0.00000	0.00068476	0.00063230	1
IC-5514926	0.015000	0.016257	0.0012569	8.3793	0.0041547	0.00066960	1
IC-5520066	1.0000	0.98195	-0.018046	-1.8046	0.20859	0.0013174	1
IC-5466929	2.0000	2.0168	0.016780	0.83898	0.42782	0.0036712	1



Element Name:	B
Element Wavelength:	B 208.959 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99999
A0 (Offset):	0.0082872
A1 (Gain):	1.3963
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

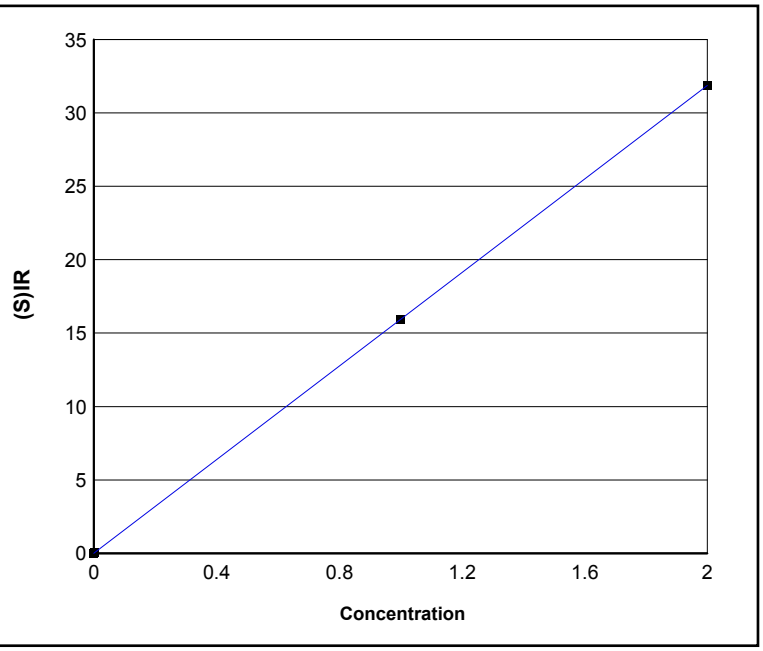
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000005476	0.0000005476	0.00000	0.0082879	0.000020716	1
IC-5514926	0.020000	0.019510	-0.00049009	-2.4505	0.036002	0.0013877	1
IC-5520066	1.0000	0.99377	-0.0062278	-0.62278	1.4433	0.00021103	1
IC-5466929	2.0000	2.0067	0.0067099	0.33549	2.9050	0.012214	1



Element Name:	Ba
Element Wavelength:	Ba 455.403 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99993
A0 (Offset):	0.0089882
A1 (Gain):	13.328
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

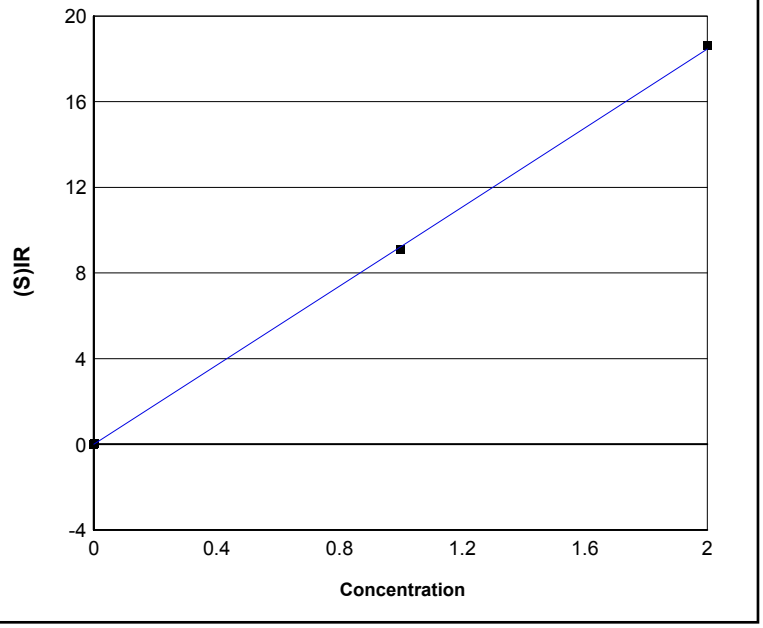
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000302	0.0000000302	0.00000	0.0089886	0.00097010	1
IC-5514926	0.0020000	0.0019870	-0.000013033	-0.65167	0.035471	0.00067474	1
IC-5520066	1.0000	0.98285	-0.017152	-1.7152	13.108	0.0018783	1
IC-5466929	2.0000	2.0172	0.017165	0.85826	26.894	0.0039997	1



Element Name:	Ba
Element Wavelength:	Ba 455.403 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	1.00000
A0 (Offset):	0.0031255
A1 (Gain):	15.936
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

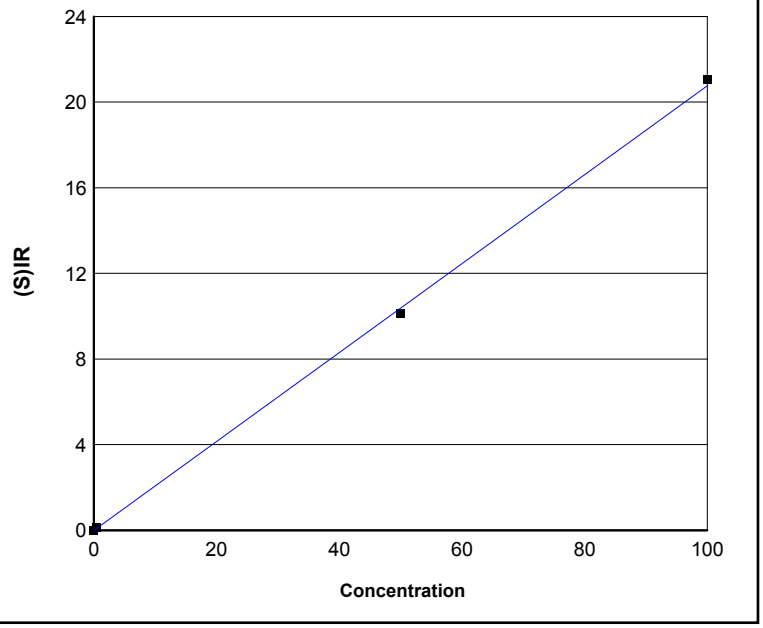
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000001454	-0.0000001454	0.00000	0.0031232	0.00045596	1
IC-5514926	0.0020000	0.0021466	0.00014662	7.3309	0.037335	0.00011943	1
IC-5520066	1.0000	0.99890	-0.0010959	-0.10959	15.922	0.10296	1
IC-5466929	2.0000	2.0009	0.00094933	0.047466	31.891	0.099062	1



Element Name:	Be
Element Wavelength:	Be 313.042 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99993
A0 (Offset):	-0.00029307
A1 (Gain):	9.2347
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

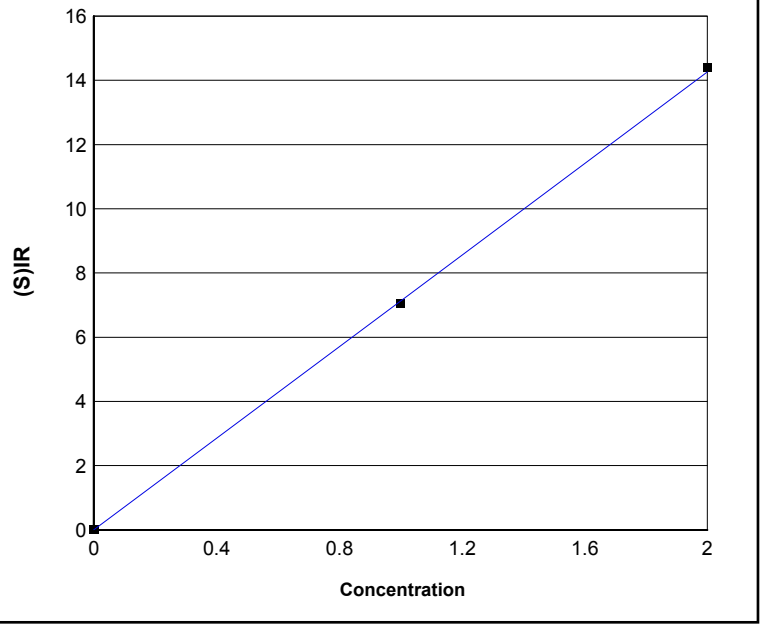
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000926	-0.0000000926	0.00000	-0.00029392	0.00053773	1
IC-5514926	0.0020000	0.0021090	0.00010896	5.4480	0.019165	0.00024738	1
IC-5520066	1.0000	0.98378	-0.016216	-1.6216	9.0811	0.042291	1
IC-5466929	2.0000	2.0161	0.016107	0.80536	18.611	0.070801	1



Element Name:	Ca
Element Wavelength:	Ca 317.933 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99982
A0 (Offset):	0.0042673
A1 (Gain):	0.20763
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

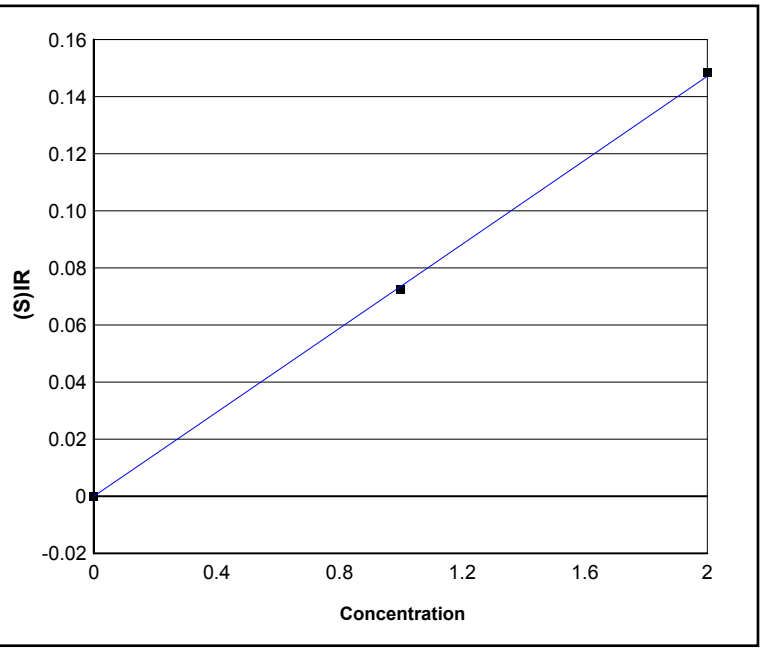
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	-0.000017526	-0.000017526	0.00000	0.0042636	0.00082270	1
IC-5514926	0.50000	0.52433	0.024326	4.8651	0.11313	0.0012309	1
IC-5520066	50.000	48.664	-1.3357	-2.6713	10.108	0.062569	1
IC-5466929	100.00	101.31	1.3113	1.3113	21.039	0.045172	1



Element Name:	Cd
Element Wavelength:	Cd 228.802 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99994
A0 (Offset):	0.0039734
A1 (Gain):	7.1298
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

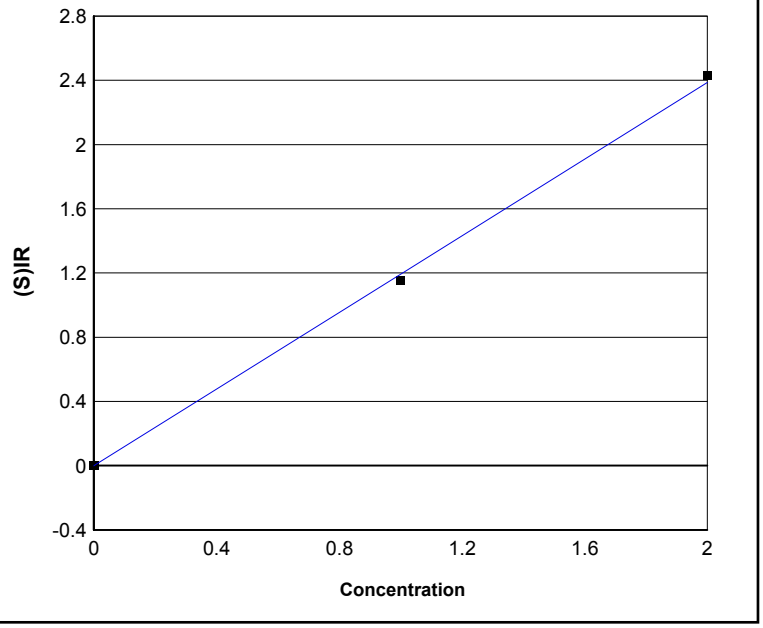
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000173	0.0000000173	0.00000	0.0039735	0.00014737	1
IC-5514926	0.0020000	0.0019980	-0.0000020433	-0.10216	0.018411	0.0012949	1
IC-5520066	1.0000	0.98476	-0.015239	-1.5239	7.0383	0.0086452	1
IC-5466929	2.0000	2.0152	0.015241	0.76205	14.399	0.090489	1



Element Name:	Ce
Element Wavelength:	Ce 404.076 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9999
A0 (Offset):	-0.00005484
A1 (Gain):	0.07361
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

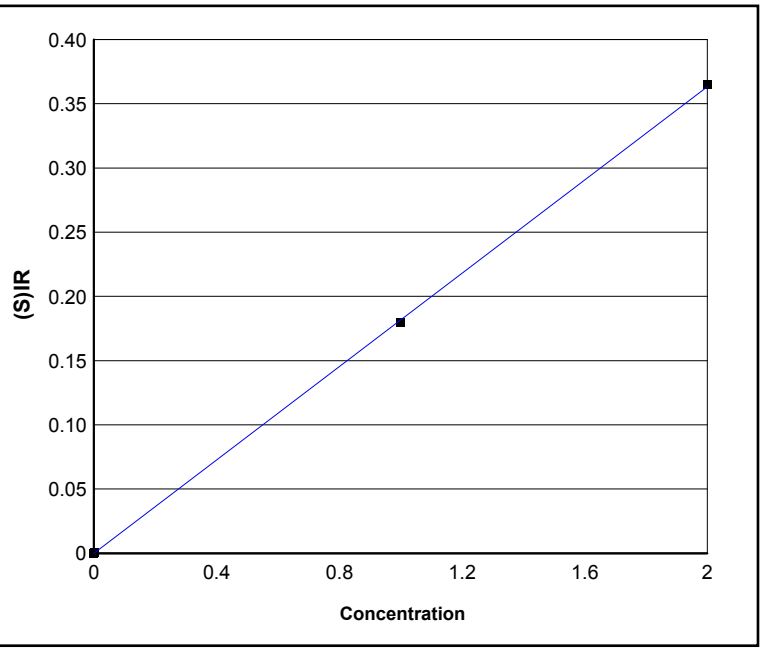
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.000008059	0.000008059	0.0000	-0.00005424	0.0004788	1
IC-5520066	1.000	0.9839	-0.01612	-1.612	0.07237	0.0001560	1
IC-5466929	2.000	2.016	0.01612	0.8059	0.1483	0.0004744	1



Element Name:	Co
Element Wavelength:	Co 228.616 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99973
A0 (Offset):	-0.00046261
A1 (Gain):	1.1931
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

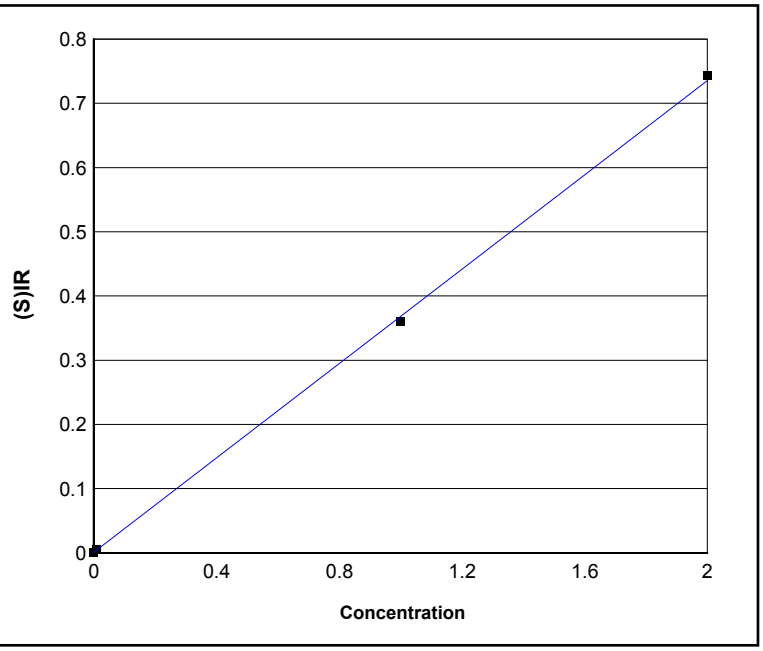
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000001228	0.0000001228	0.00000	-0.00046246	0.000071885	1
IC-5514926	0.0040000	0.0039423	-0.000057660	-1.4415	0.0042410	0.000032026	1
IC-5520066	1.0000	0.96736	-0.032635	-3.2635	1.1547	0.00027577	1
IC-5466929	2.0000	2.0327	0.032693	1.6347	2.4268	0.0041309	1



Element Name:	Cr
Element Wavelength:	Cr 267.716 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99996
A0 (Offset):	0.000067108
A1 (Gain):	0.18158
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

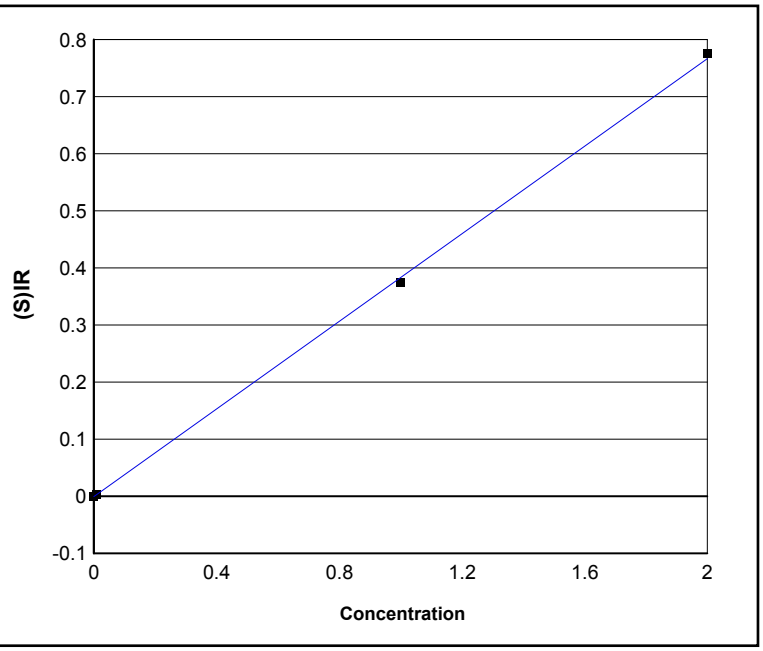
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000005577	-0.0000005577	0.00000	0.000067006	0.000089129	1
IC-5514926	0.0040000	0.0045787	0.00057867	14.467	0.00089859	0.000041089	1
IC-5520066	1.0000	0.99010	-0.0099022	-0.99022	0.17988	0.00064398	1
IC-5466929	2.0000	2.0093	0.0093236	0.46618	0.36498	0.00029699	1



Element Name:	Cu
Element Wavelength:	Cu 324.754 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99990
A0 (Offset):	0.0011189
A1 (Gain):	0.36715
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

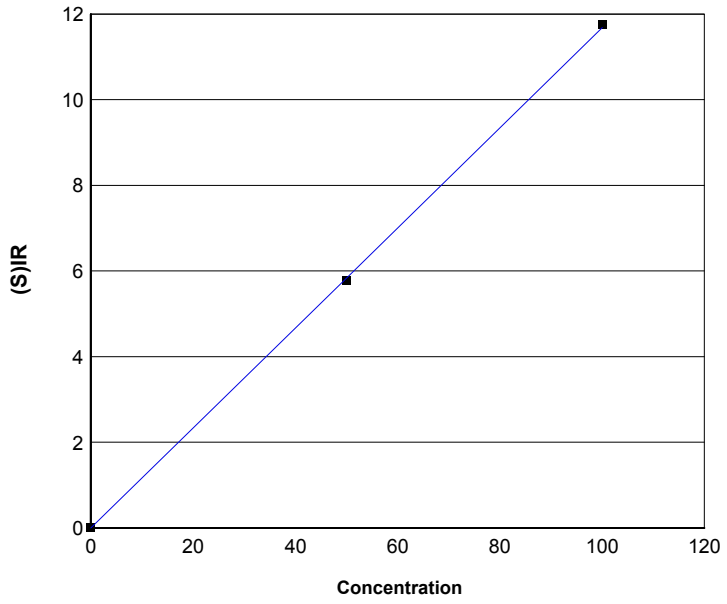
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000584	0.0000000584	0.00000	0.0011189	0.00010813	1
IC-5514926	0.010000	0.010042	0.000041548	0.41548	0.0048057	0.000069583	1
IC-5520066	1.0000	0.98004	-0.019957	-1.9957	0.36095	0.0010081	1
IC-5466929	2.0000	2.0199	0.019916	0.99578	0.74274	0.0032186	1



Element Name:	Cu
Element Wavelength:	Cu 327.396 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99985
A0 (Offset):	-0.00062621
A1 (Gain):	0.38360
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

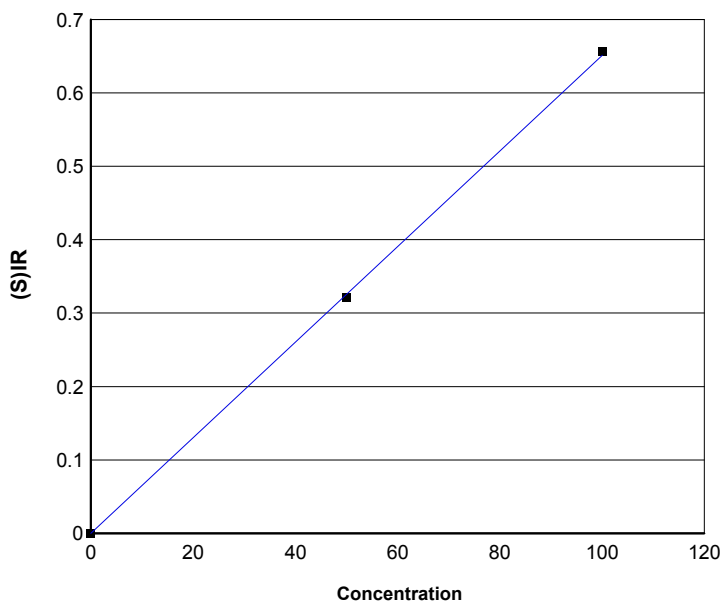
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000002815	0.0000002815	0.00000	-0.00062610	0.00010318	1
IC-5514926	0.010000	0.0098387	-0.00016126	-1.6126	0.0031503	0.00012279	1
IC-5520066	1.0000	0.97579	-0.024215	-2.4215	0.37392	0.00044862	1
IC-5466929	2.0000	2.0244	0.024376	1.2188	0.77639	0.00012775	1



Element Name:	Fe
Element Wavelength:	Fe 259.940 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99996
A0 (Offset):	0.0014876
A1 (Gain):	0.11676
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		**QC Normalize**	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

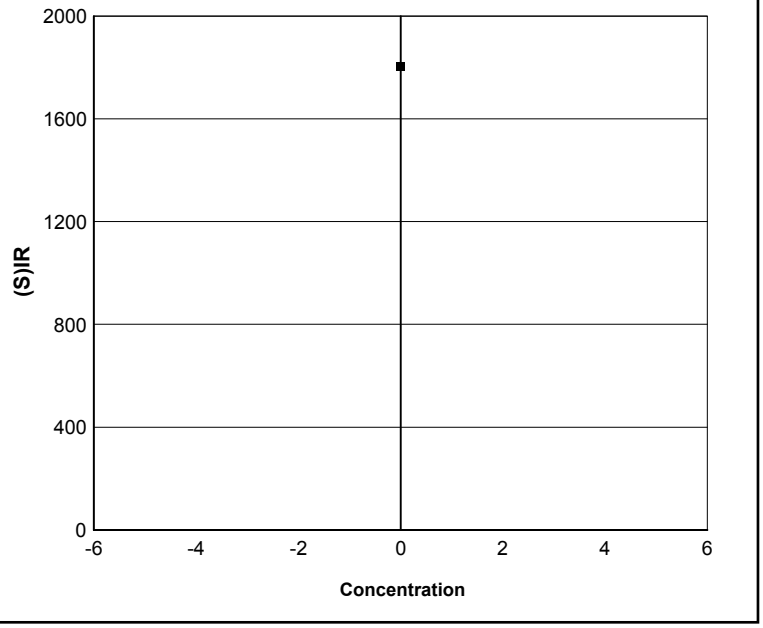
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000007412	0.0000007412	0.00000	0.0014877	0.00046063	1
IC-5514926	0.050000	0.049561	-0.00043874	-0.87749	0.0072745	0.00037084	1
IC-5520066	50.025	49.419	-0.60569	-1.2108	5.7718	0.030618	1
IC-5466929	100.05	100.66	0.60612	0.60582	11.754	0.022910	1



Element Name:	Fe
Element Wavelength:	Fe 271.441 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99988
A0 (Offset):	0.000065097
A1 (Gain):	0.0065082
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		**QC Normalize**	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

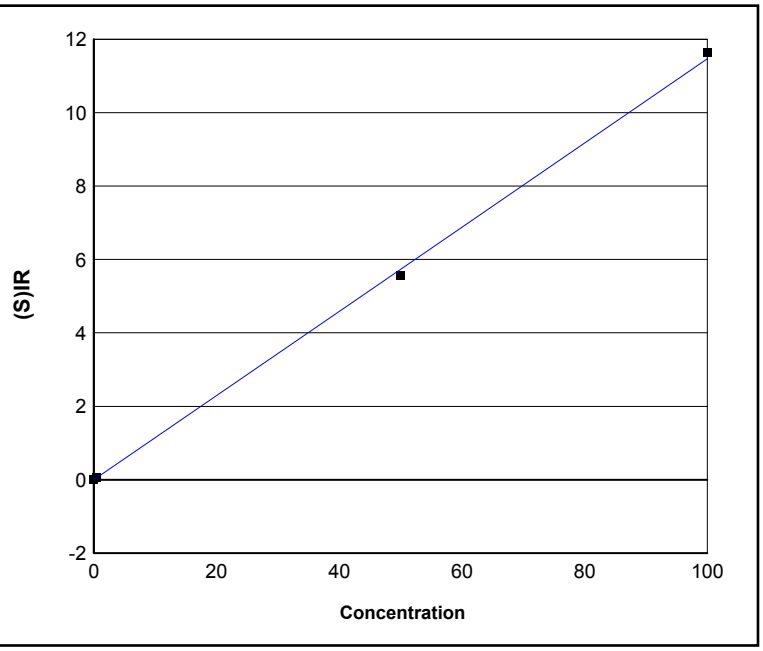
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.000032705	0.000032705	0.00000	0.000065310	0.00074642	1
IC-5514926	0.050000	0.017631	-0.032369	-64.738	0.00017984	0.00047547	1
IC-5520066	50.025	49.321	-0.70426	-1.4078	0.32105	0.00022507	1
IC-5466929	100.05	100.79	0.73662	0.73626	0.65600	0.0029331	1



Element Name:	In
Element Wavelength:	In 230.606 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:38:35AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.0000
A0 (Offset):	0.0000
A1 (Gain):	0.0000
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

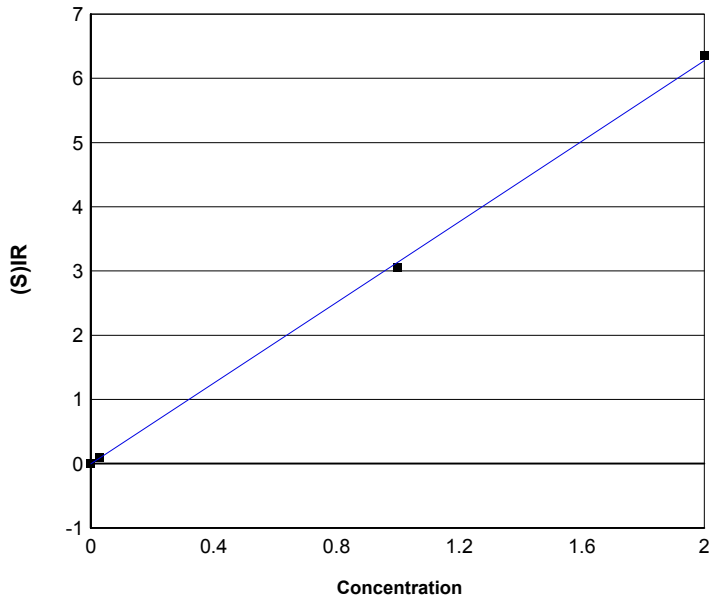
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000			0.0000	1,805	0.9040	1



Element Name:	K
Element Wavelength:	K 766.490 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99978
A0 (Offset):	-0.00054694
A1 (Gain):	0.11467
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		**QC Normalize**	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

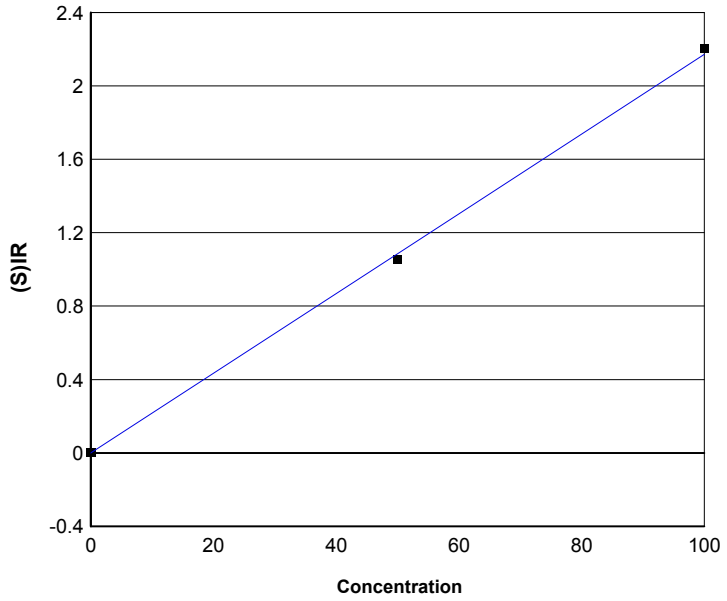
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.000016983	0.000016983	0.00000	-0.00054499	0.000044702	1
IC-5514926	0.50000	0.49033	-0.0096737	-1.9347	0.055680	0.00015721	1
IC-5520066	50.000	48.529	-1.4714	-2.9429	5.5643	0.0087102	1
IC-5466929	100.00	101.48	1.4811	1.4811	11.636	0.023080	1



Element Name:	Li
Element Wavelength:	Li 670.784 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99981
A0 (Offset):	-0.0022818
A1 (Gain):	3.1374
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

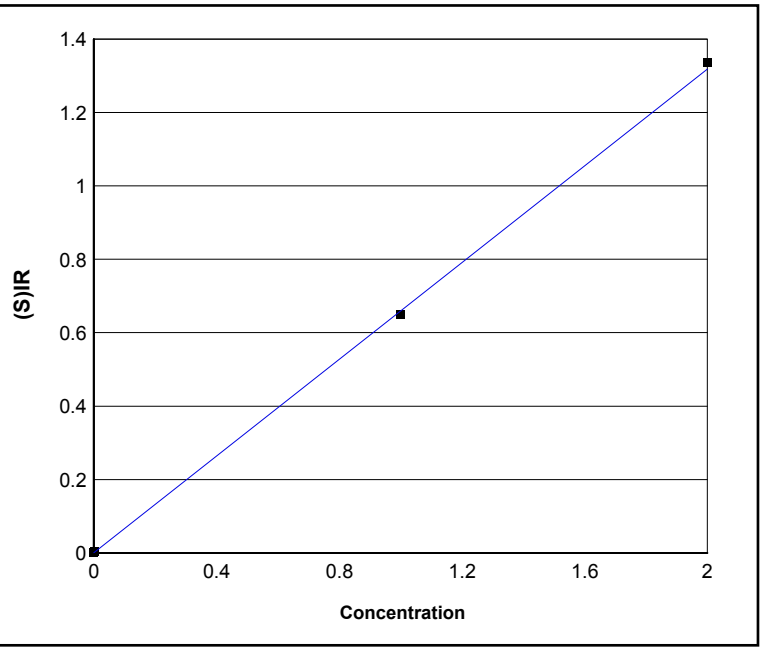
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000003526	0.0000003526	0.00000	-0.0022807	0.0019617	1
IC-5514926	0.030000	0.030062	0.000061867	0.20622	0.092034	0.0021847	1
IC-5520066	1.0000	0.97243	-0.027568	-2.7568	3.0486	0.0079727	1
IC-5466929	2.0000	2.0275	0.027506	1.3753	6.3588	0.010738	1



Element Name:	Mg
Element Wavelength:	Mg 279.079 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99979
A0 (Offset):	-0.000077808
A1 (Gain):	0.021722
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

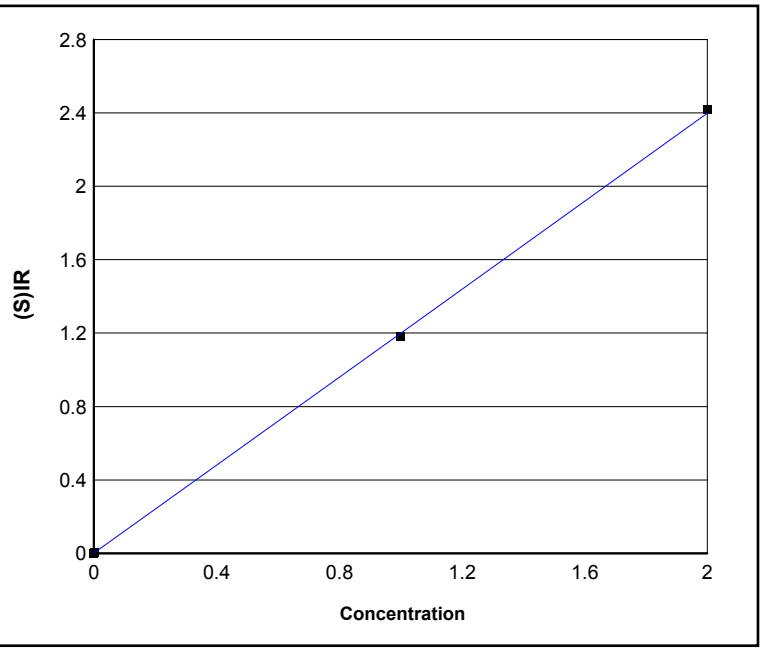
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000075522	-0.0000075522	0.00000	-0.000077972	0.00010928	1
IC-5514926	0.20000	0.21046	0.010460	5.2298	0.0044936	0.000083443	1
IC-5520066	50.000	48.557	-1.4432	-2.8864	1.0546	0.0017056	1
IC-5466929	100.00	101.43	1.4327	1.4327	2.2031	0.00073004	1



Element Name:	Mn
Element Wavelength:	Mn 257.610 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99991
A0 (Offset):	0.00092816
A1 (Gain):	0.65876
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		**QC Normalize**	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

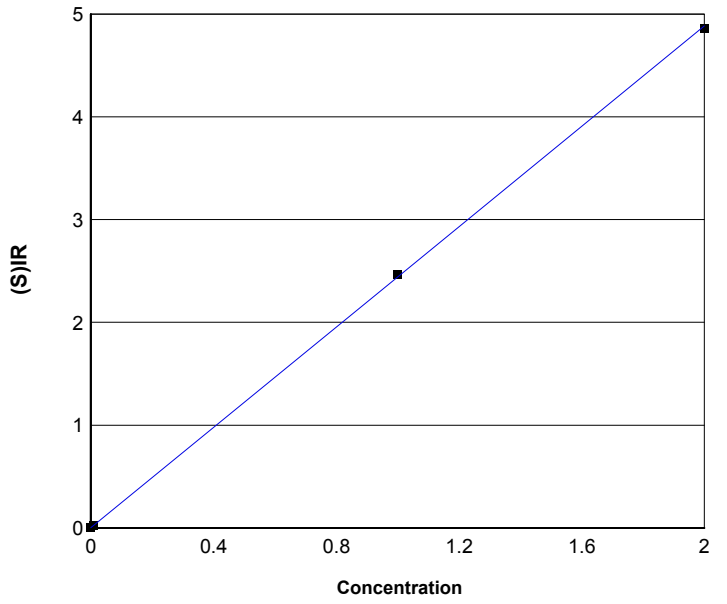
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000629	0.0000000629	0.00000	0.00092820	0.00015947	1
IC-5514926	0.0030000	0.0029653	-0.000034687	-1.1562	0.0028898	0.00038685	1
IC-5520066	1.0000	0.98117	-0.018829	-1.8829	0.64939	0.00067028	1
IC-5466929	2.0000	2.0189	0.018864	0.94319	1.3351	0.0067554	1



Element Name:	Mn
Element Wavelength:	Mn 257.610 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99995
A0 (Offset):	0.0014204
A1 (Gain):	1.1982
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		**QC Normalize**	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

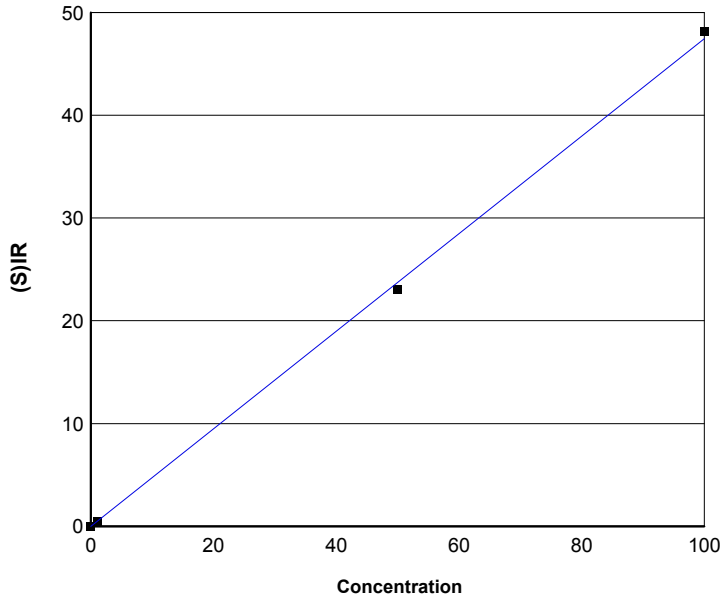
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000002131	-0.0000002131	0.00000	0.0014201	0.000061800	1
IC-5514926	0.0030000	0.0032348	0.00023479	7.8263	0.0052988	0.000046034	1
IC-5520066	1.0000	0.98578	-0.014216	-1.4216	1.1833	0.0023160	1
IC-5466929	2.0000	2.0140	0.013981	0.69905	2.4160	0.0029977	1



Element Name:	Mo
Element Wavelength:	Mo 202.030 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99998
A0 (Offset):	0.0025949
A1 (Gain):	2.4406
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

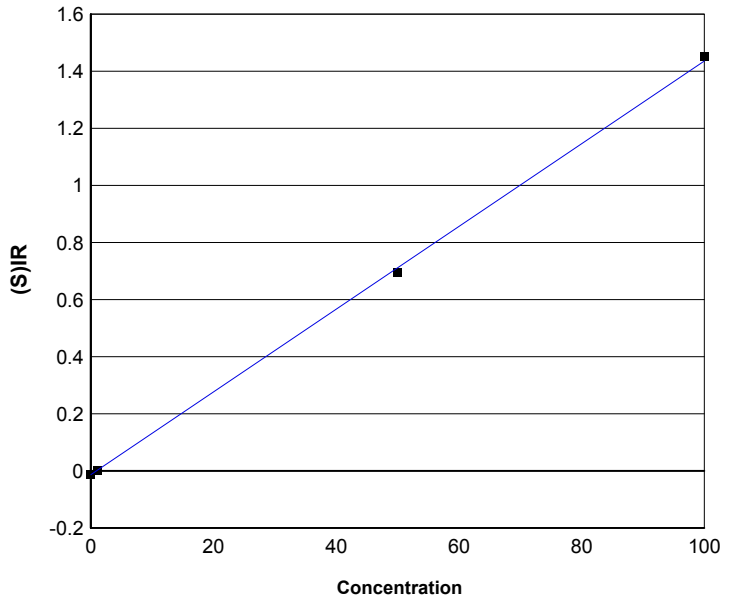
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000523	-0.0000000523	0.00000	0.0025948	0.0000050063	1
IC-5514926	0.010000	0.010011	0.000010650	0.10650	0.027027	0.00020186	1
IC-5520066	1.0000	1.0083	0.0083370	0.83370	2.4636	0.0030837	1
IC-5466929	2.0000	1.9917	-0.0083477	-0.41738	4.8634	0.028118	1



Element Name:	Na
Element Wavelength:	Na 589.592 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99979
A0 (Offset):	0.0021988
A1 (Gain):	0.47454
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

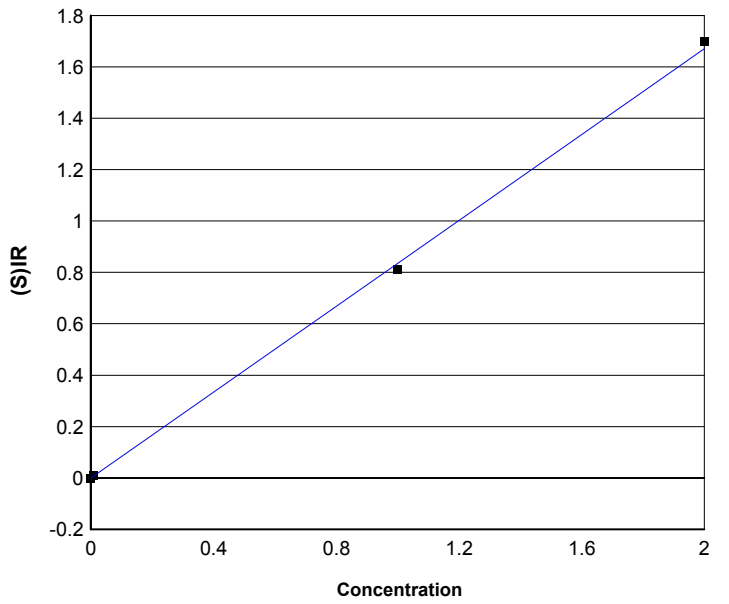
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.000043340	0.000043340	0.00000	0.0022194	0.0010798	1
IC-5514926	1.0000	0.97069	-0.029308	-2.9308	0.46283	0.0044130	1
IC-5520066	50.000	48.567	-1.4325	-2.8650	23.049	0.0011598	1
IC-5466929	100.00	101.46	1.4618	1.4618	48.150	0.061794	1



Element Name:	Na
Element Wavelength:	Na 818.326 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99985
A0 (Offset):	-0.013292
A1 (Gain):	0.014495
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

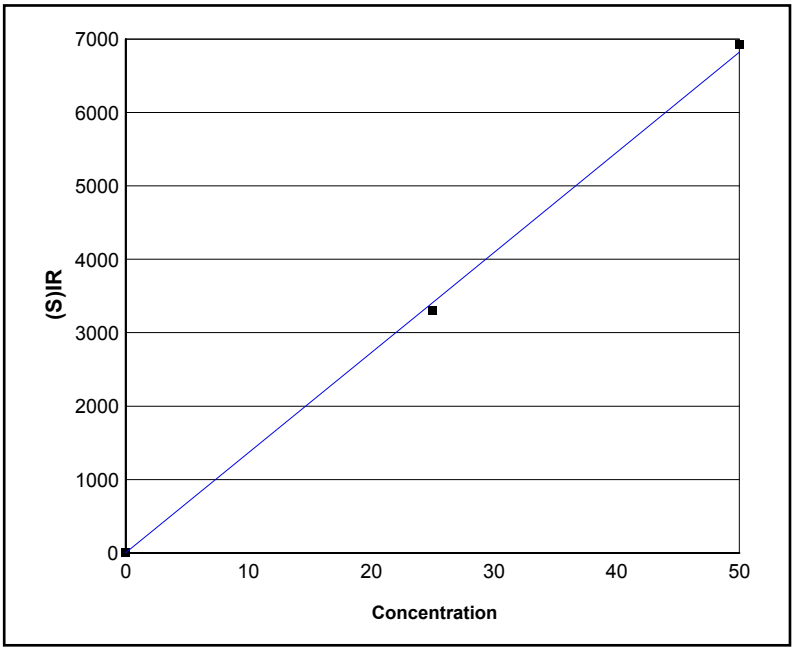
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	-0.000043255	-0.000043255	0.00000	-0.013292	0.000033546	1
IC-5514926	1.0000	1.0557	0.055702	5.5702	0.0020110	0.0025038	1
IC-5520066	50.000	48.811	-1.1890	-2.3780	0.69423	0.0027222	1
IC-5466929	100.00	101.13	1.1333	1.1333	1.4526	0.0058518	1



Element Name:	Ni
Element Wavelength:	Ni 231.604 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99976
A0 (Offset):	-0.00034516
A1 (Gain):	0.83553
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

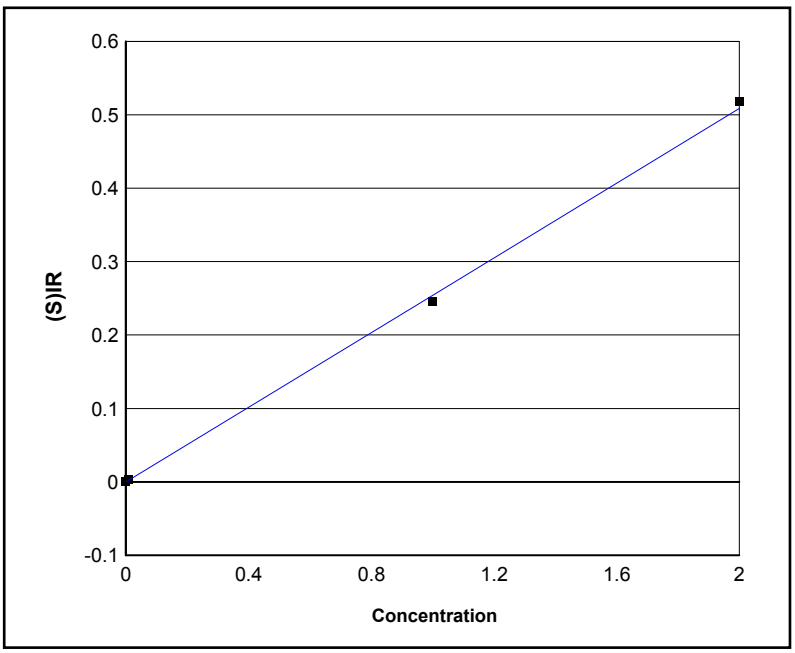
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000606	0.0000000606	0.00000	-0.00034511	0.000065416	1
IC-5514926	0.010000	0.010094	0.000094009	0.94009	0.0080899	0.000051757	1
IC-5520066	1.0000	0.96917	-0.030833	-3.0833	0.81060	0.00040075	1
IC-5466929	2.0000	2.0307	0.030739	1.5369	1.6987	0.0023758	1



Element Name:	P
Element Wavelength:	P 213.618 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9997
A0 (Offset):	3.265
A1 (Gain):	136.3
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

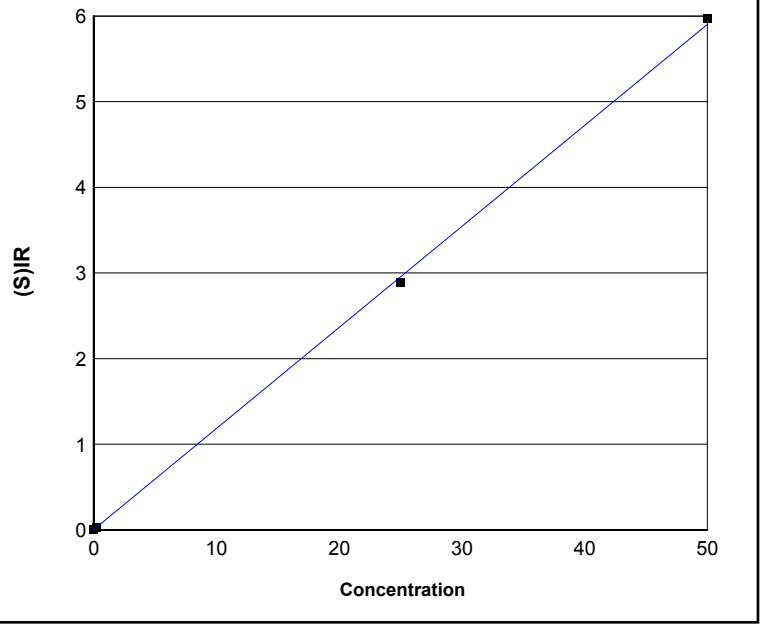
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.0004169	0.0004169	0.0000	3.322	0.2355	1
IC-5520066	25.00	24.17	-0.8338	-3.335	3,298	0.5558	1
IC-5466929	50.00	50.83	0.8338	1.668	6,934	8.342	1



Element Name:	Pb
Element Wavelength:	Pb 220.353 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99968
A0 (Offset):	-0.000019224
A1 (Gain):	0.25427
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

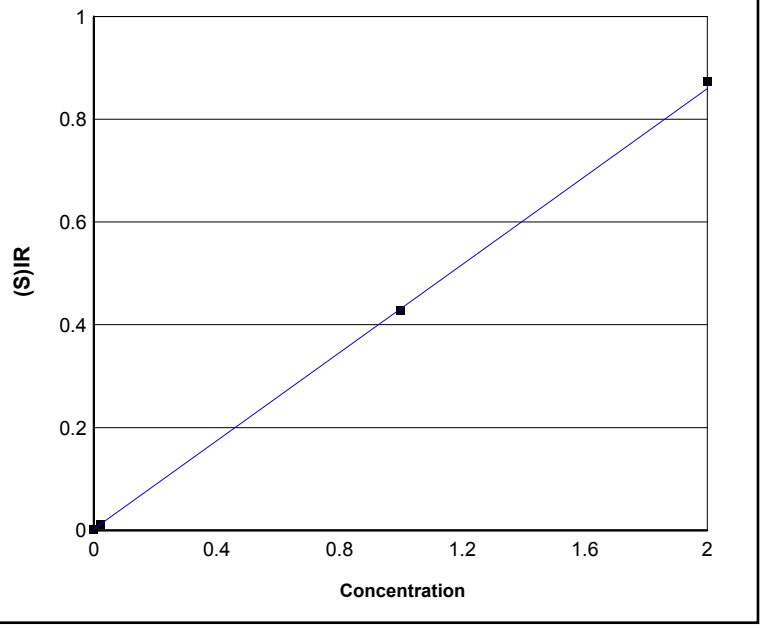
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000003975	-0.0000003975	0.00000	-0.000019326	0.000041776	1
IC-5514926	0.010000	0.010580	0.00058001	5.8001	0.0026967	0.000057314	1
IC-5520066	1.0000	0.96409	-0.035911	-3.5911	0.24516	0.00071604	1
IC-5466929	2.0000	2.0353	0.035325	1.7662	0.51759	0.00033994	1



Element Name:	S
Element Wavelength:	S 182.034 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9999
A0 (Offset):	0.007555
A1 (Gain):	0.1179
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

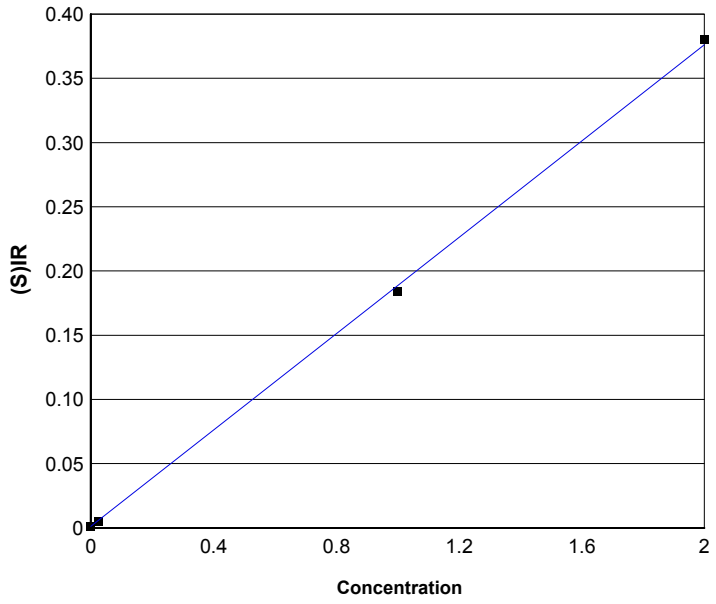
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.0000001228	-0.0000001228	0.0000	0.007555	0.0002089	1
IC-5514926	0.2000	0.2025	0.002451	1.226	0.03143	0.0004146	1
IC-5520066	25.00	24.42	-0.5797	-2.319	2.888	0.001877	1
IC-5466929	50.00	50.58	0.5772	1.154	5.972	0.03153	1



Element Name:	Sb
Element Wavelength:	Sb 206.833 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99989
A0 (Offset):	0.0023011
A1 (Gain):	0.42880
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

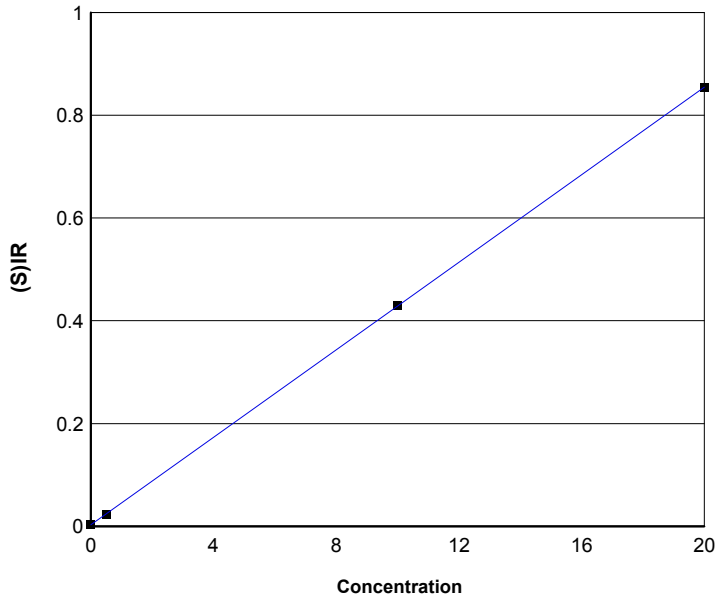
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000025202	-0.0000025202	0.00000	0.0023000	0.00051778	1
IC-5514926	0.020000	0.022705	0.0027046	13.523	0.012046	0.00050401	1
IC-5520066	1.0000	0.98423	-0.015766	-1.5766	0.42857	0.0021430	1
IC-5466929	2.0000	2.0131	0.013085	0.65423	0.87398	0.0046645	1



Element Name:	Se
Element Wavelength:	Se 196.090 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99983
A0 (Offset):	0.0011364
A1 (Gain):	0.18746
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

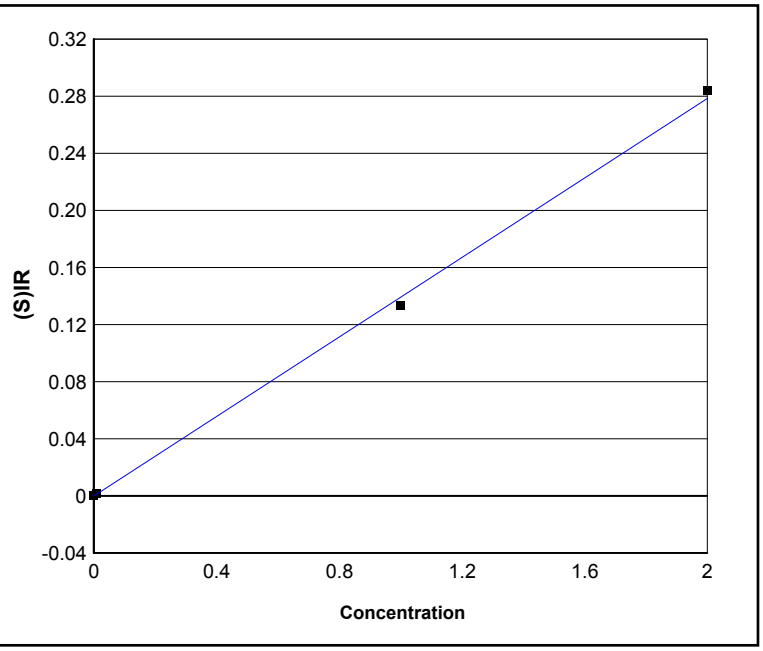
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000024364	0.0000024364	0.00000	0.0011369	0.00028272	1
IC-5514926	0.025000	0.022820	-0.0021803	-8.7210	0.0054129	0.0014265	1
IC-5520066	1.0000	0.97733	-0.022671	-2.2671	0.18406	0.00035699	1
IC-5466929	2.0000	2.0249	0.024854	1.2427	0.38015	0.0028570	1



Element Name:	Si
Element Wavelength:	Si 288.158 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99997
A0 (Offset):	0.0027677
A1 (Gain):	0.042581
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

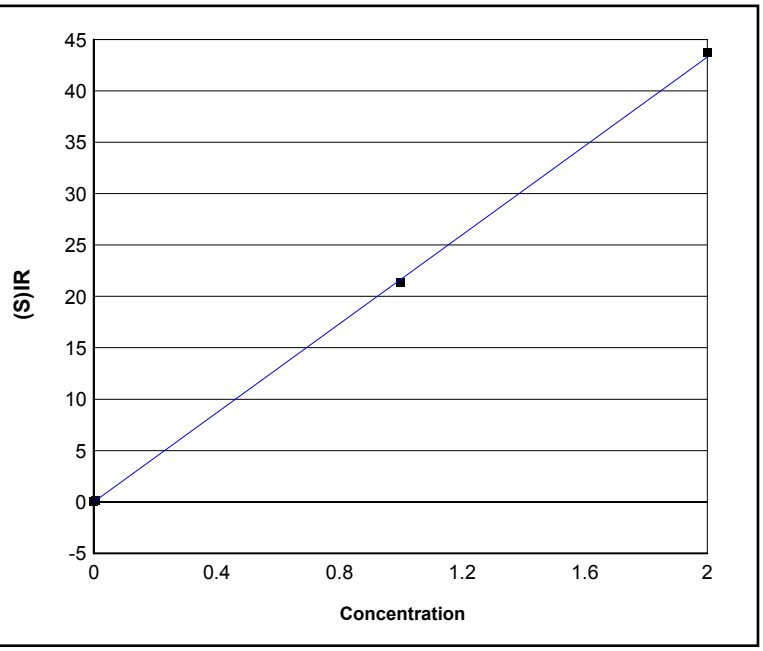
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.000026483	0.000026483	0.00000	0.0027688	0.0010655	1
IC-5514926	0.50000	0.47188	-0.028124	-5.6248	0.022861	0.000058947	1
IC-5520066	10.000	10.037	0.037494	0.37494	0.43017	0.0016067	1
IC-5466929	20.000	19.991	-0.0093699	-0.046849	0.85399	0.0015386	1



Element Name:	Sn
Element Wavelength:	Sn 189.989 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99958
A0 (Offset):	-0.000021567
A1 (Gain):	0.13918
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

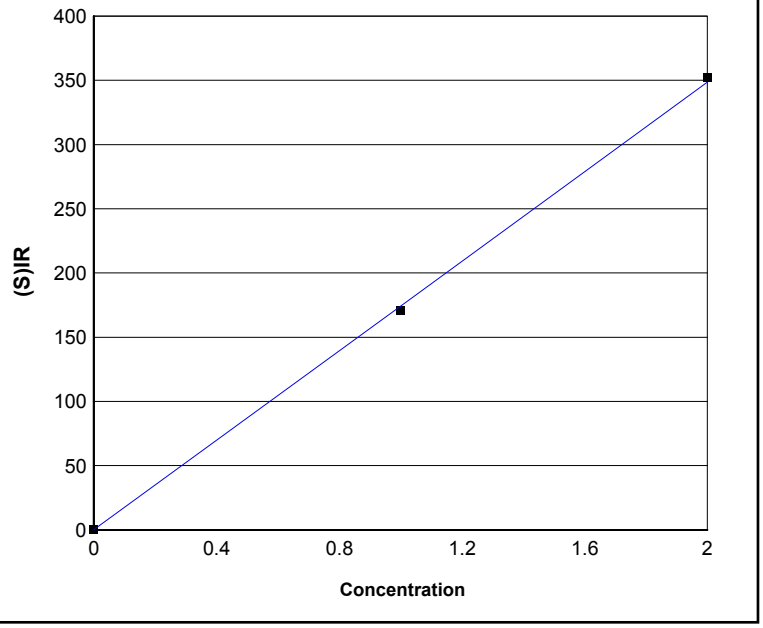
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000000337	-0.0000000337	0.00000	-0.000021572	0.00015010	1
IC-5514926	0.010000	0.010241	0.00024125	2.4125	0.0014038	0.000096053	1
IC-5520066	1.0000	0.95874	-0.041265	-4.1265	0.13342	0.00012177	1
IC-5466929	2.0000	2.0410	0.041024	2.0512	0.28405	0.00039291	1



Element Name:	Sr
Element Wavelength:	Sr 407.771 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99994
A0 (Offset):	-0.0021025
A1 (Gain):	21.652
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

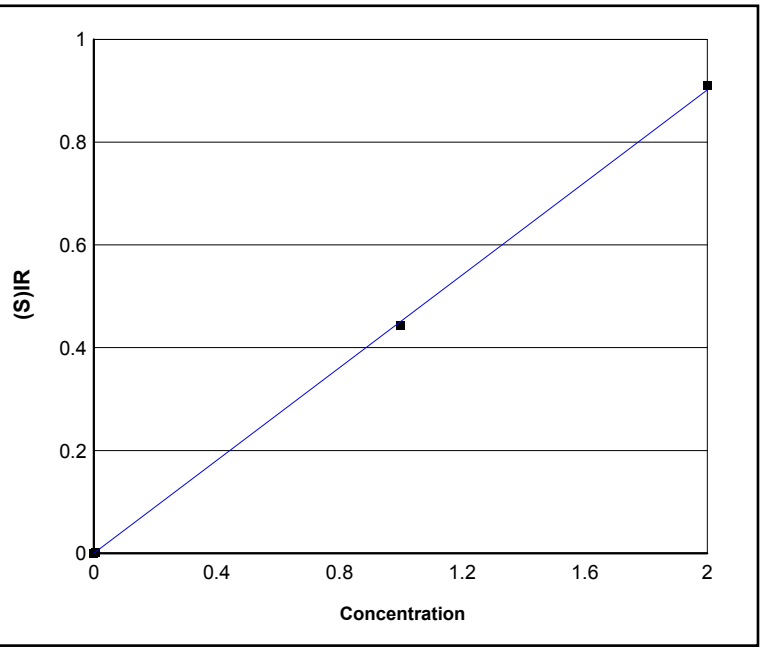
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000001360	0.0000001360	0.00000	-0.0020996	0.00019305	1
IC-5514926	0.0050000	0.0049036	-0.000096358	-1.9272	0.10446	0.00045950	1
IC-5520066	1.0000	0.98404	-0.015956	-1.5956	21.343	0.040686	1
IC-5466929	2.0000	2.0161	0.016052	0.80262	43.727	0.020220	1



Element Name:	Th
Element Wavelength:	Th 283.730 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9999
A0 (Offset):	0.1437
A1 (Gain):	174.2
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

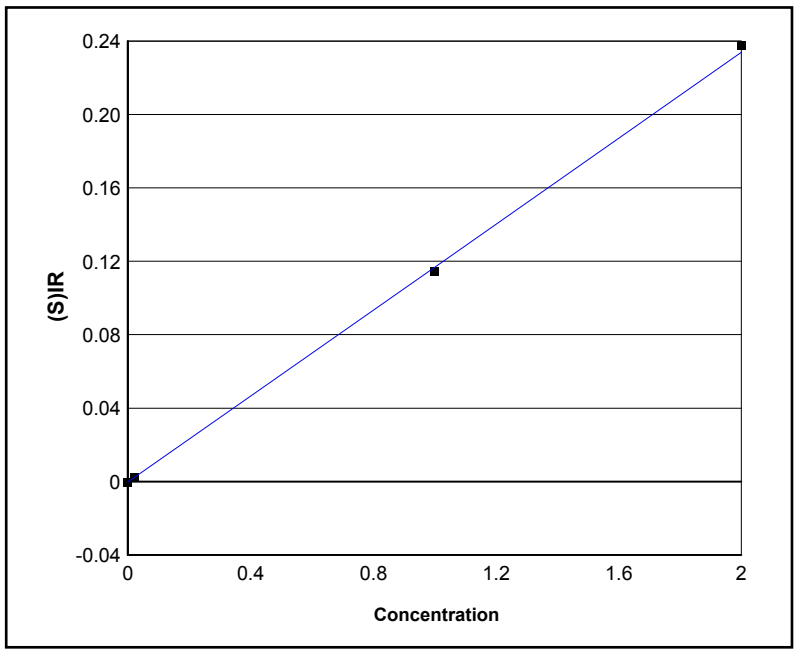
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.00001013	0.00001013	0.0000	0.1455	0.8164	1
IC-5520066	1.000	0.9797	-0.02027	-2.027	170.8	0.7385	1
IC-5466929	2.000	2.020	0.02027	1.013	352.1	1.707	1



Element Name:	Ti
Element Wavelength:	Ti 334.904 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99991
A0 (Offset):	0.00018540
A1 (Gain):	0.45097
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

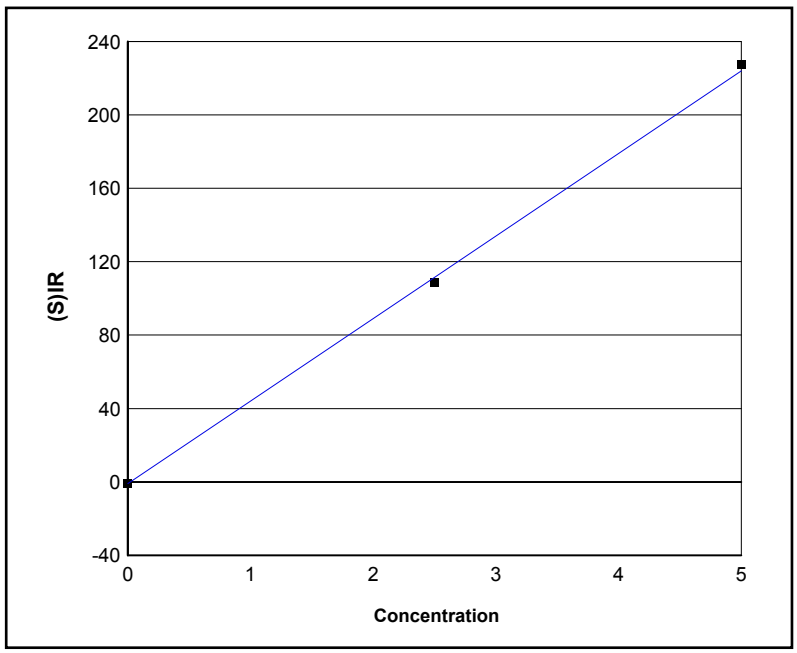
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000003690	0.0000003690	0.00000	0.00018556	0.00012454	1
IC-5514926	0.0050000	0.0046764	-0.00032363	-6.4727	0.0022947	0.000064861	1
IC-5520066	1.0000	0.98152	-0.018476	-1.8476	0.44296	0.00039126	1
IC-5466929	2.0000	2.0188	0.018799	0.93997	0.91088	0.00085658	1



Element Name:	Tl
Element Wavelength:	Tl 190.856 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99985
A0 (Offset):	-0.00026606
A1 (Gain):	0.11710
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

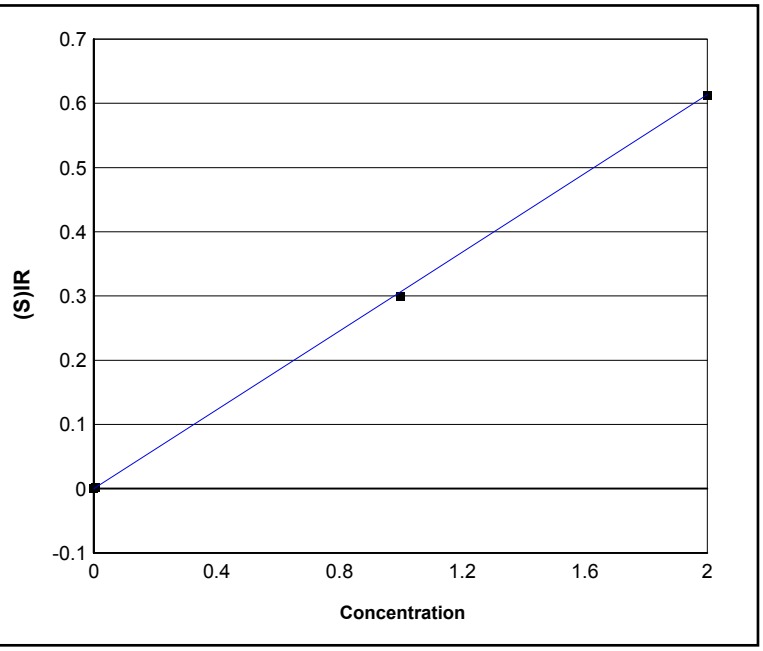
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000010929	0.0000010929	0.00000	-0.00026593	0.000028339	1
IC-5514926	0.020000	0.019137	-0.00086308	-4.3154	0.0019769	0.00012414	1
IC-5520066	1.0000	0.97616	-0.023841	-2.3841	0.11448	0.00050694	1
IC-5466929	2.0000	2.0247	0.024702	1.2351	0.23771	0.00064090	1



Element Name:	U
Element Wavelength:	U 409.014 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9998
A0 (Offset):	-0.8902
A1 (Gain):	44.99
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

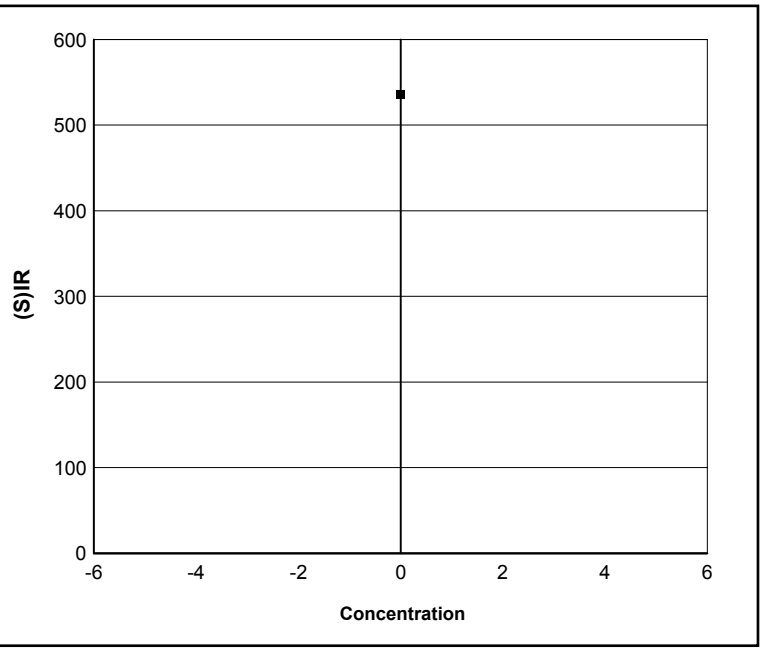
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.00003490	0.00003490	0.0000	-0.8886	2.671	1
IC-5520066	2.500	2.430	-0.06980	-2.792	108.4	1.345	1
IC-5466929	5.000	5.070	0.06980	1.396	227.2	0.8929	1



Element Name:	V
Element Wavelength:	V 292.402 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99995
A0 (Offset):	-0.000037297
A1 (Gain):	0.30672
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

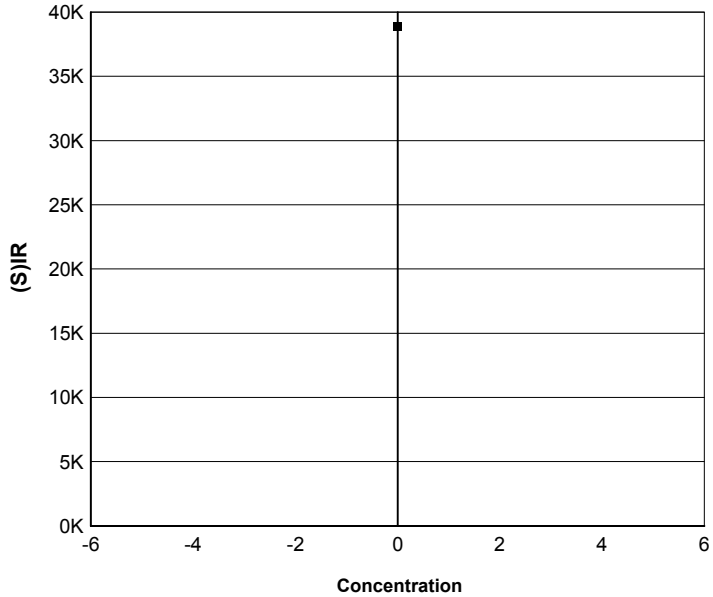
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000002865	0.0000002865	0.00000	-0.000037209	0.000072667	1
IC-5514926	0.0050000	0.0047482	-0.00025184	-5.0368	0.0013905	0.00013251	1
IC-5520066	1.0000	0.98588	-0.014119	-1.4119	0.29971	0.00075664	1
IC-5466929	2.0000	2.0144	0.014368	0.71840	0.61253	0.0013799	1



Element Name:	Y
Element Wavelength:	Y 224.306 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:38:35AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.0000
A0 (Offset):	0.0000
A1 (Gain):	0.0000
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

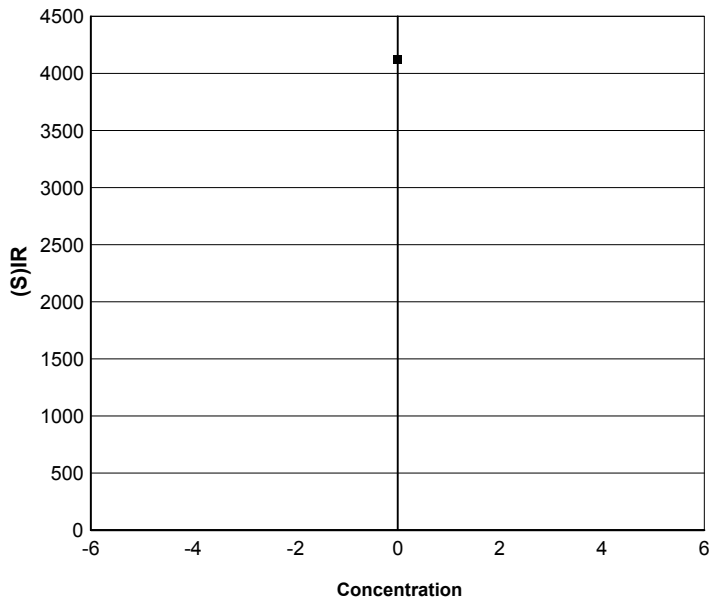
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000			0.0000	536.1	3.512	1



Element Name:	Y
Element Wavelength:	Y 360.073 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:38:35AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.0000
A0 (Offset):	0.0000
A1 (Gain):	0.0000
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

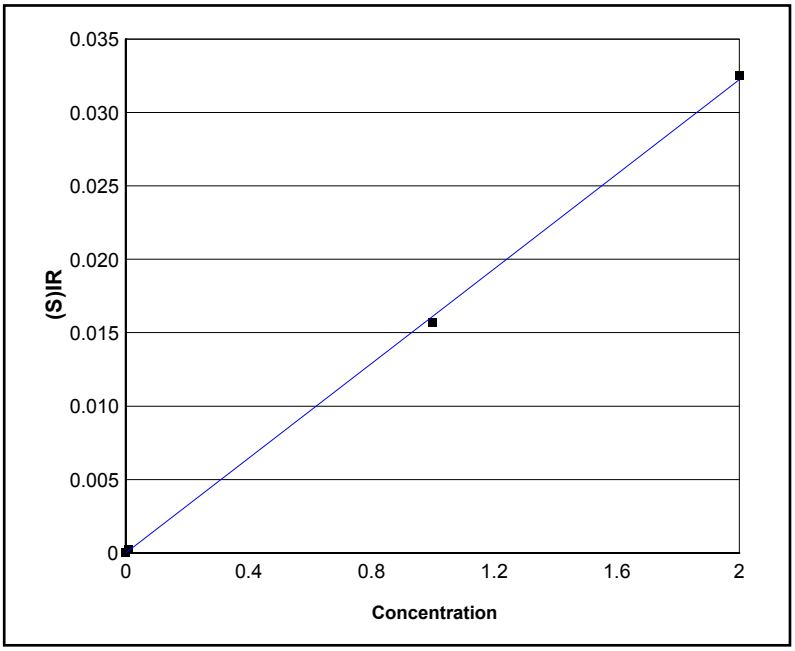
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000			0.0000	38,860	98.25	1



Element Name:	Y
Element Wavelength:	Y 377.433 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:38:35AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.0000
A0 (Offset):	0.0000
A1 (Gain):	0.0000
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

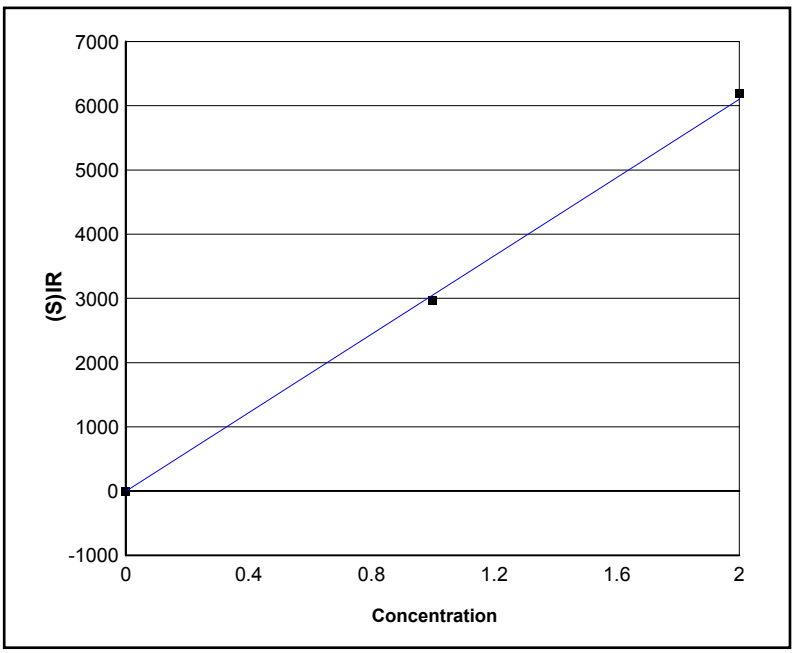
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000			0.0000	4,120	15.96	1



Element Name:	Zn
Element Wavelength:	Zn 206.200 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.99980
A0 (Offset):	0.0000094855
A1 (Gain):	0.016118
A2 (Curvature):	0.00000
n (Exponent):	1.0000

Reslope		QC Normalize	
Slope:	1.0000	**Slope factor:**	1.0000
Y Int:	0.00000	**Offset:**	0.00000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.00000	0.0000017925	-0.0000017925	0.00000	0.0000094566	0.0000067579	1
IC-5514926	0.010000	0.011923	0.0019228	19.228	0.00020154	0.0000086556	1
IC-5520066	1.0000	0.97586	-0.024142	-2.4142	0.015709	0.0000077389	1
IC-5466929	2.0000	2.0222	0.022217	1.1109	0.032546	0.000025068	1



Element Name:	Zr
Element Wavelength:	Zr 343.823 nm
Concentration Units:	ppm
Date of Calibration:	9/26/2019 8:49:55AM
Date of Fit:	9/26/2019 9:49:50AM
Type of Fit:	Linear
Correlation:	0.9998
A0 (Offset):	-3.605
A1 (Gain):	3,053
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
ICIS-5508960	0.0000	0.00001413	0.00001413	0.0000	-3.561	0.2796	1
IC-5520066	1.000	0.9717	-0.02826	-2.826	2,963	6.278	1
IC-5466929	2.000	2.028	0.02826	1.413	6,189	0.2675	1

Sample Name: ICIS-5508960 Acquired: 9/26/2019 8:34:44 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Ba4554-2	Be3130
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00039**	**.00187**	**.00068**	**.00829**	**.00899**	**.00312**	**-.00029**
Stddev	.00017	.00028	.00063	.00002	.00097	.00046	.00054
%RSD	44.715	14.875	92.339	.24995	10.793	14.599	182.95
#1	-.00027	.00168	.00024	.00827	.00967	.00280	.00009
#2	-.00051	.00207	.00113	.00830	.00830	.00345	-.00067

Elem	Ca3179	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00426**	**.00397**	i **-.0001**	**-.00046**	**.00007**	**-.00063**	**.00149**
Stddev	.00082	.00015	.0005	.00007	.00009	.00010	.00046
%RSD	19.296	3.7088	882.8	15.544	133.02	16.479	30.962
#1	.00485	.00387	i -.0004	-.00041	.00013	-.00070	.00116
#2	.00368	.00408	i .0003	-.00051	.00000	-.00055	.00181

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576-2	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00007**	**-.00054**	**-.00228**	**-.00008**	**.00093**	**.00142**	**.00259**
Stddev	.00075	.00004	.00196	.00011	.00016	.00006	.00001
%RSD	1142.9	8.2023	86.016	140.15	17.181	4.3518	.19294
#1	.00059	-.00058	-.00089	-.00016	.00104	.00138	.00259
#2	-.00046	-.00051	-.00367	-.00000	.00082	.00146	.00260

Elem	Na5895	Na8183	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00222**	**-.01329**	**-.00035**	**3.322**	**-.00002**	**.0076**	**.00230**
Stddev	.00108	.00003	.00007	.235	.00004	.0002	.00052
%RSD	48.655	.25237	18.955	7.090	216.17	2.765	22.512
#1	.00146	-.01327	-.00030	3.488	-.00005	.0074	.00267
#2	.00298	-.01332	-.00039	3.155	.00001	.0077	.00193

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00114**	**.00277**	**-.00002**	**-.00210**	**.1455**	**.00019**	**-.00027**
Stddev	.00028	.00107	.00015	.00019	.8164	.00012	.00003
%RSD	24.868	38.483	695.82	9.1944	561.3	67.114	10.656
#1	.00134	.00202	.00008	-.00196	.7227	.00027	-.00025
#2	.00094	.00352	-.00013	-.00224	-.4318	.00010	-.00029

Sample Name: ICIS-5508960 Acquired: 9/26/2019 8:34:44 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	U_4090	V_2924	Zn2062	Zr3438
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	i -.8886	-.00004	.00001	-3.561
Stddev	2.671	.00007	.00001	.280
%RSD	300.6	195.29	71.463	7.852
#1	i -2.777	-.00009	.00001	-3.364
#2	i 1.000	.00001	.00000	-3.759
Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1805.0	536.12	38857.	4119.5
Stddev	.9	3.51	98.	16.0
%RSD	.05008	.65504	.25285	.38738
#1	1805.7	538.60	38927.	4130.8
#2	1804.4	533.64	38788.	4108.2

Sample Name: IC-5514926 Acquired: 9/26/2019 8:38:38 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Ba4554-2	Be3130
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00190**	**.00794**	**.00415**	**.03600**	**.03547**	**.03733**	**.01916**
Stddev	.00013	.00037	.00067	.00139	.00067	.00012	.00025
%RSD	6.6215	4.6585	16.117	3.8545	1.9023	.31988	1.2908
#1	.00181	.00768	.00368	.03698	.03595	.03742	.01899
#2	.00198	.00821	.00463	.03502	.03499	.03725	.01934

Elem	Ca3179	Cd2288	Co2286	Cr2677	Cu3273	Fe2599	Fe2714
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.11313**	**.01841**	**.00424**	**.00090**	**.00315**	**.00727**	**.00018**
Stddev	.00123	.00129	.00003	.00004	.00012	.00037	.00048
%RSD	1.0881	7.0333	.75517	4.5726	3.8979	5.0978	264.38
#1	.11400	.01750	.00426	.00093	.00306	.00754	.00052
#2	.11226	.01933	.00422	.00087	.00324	.00701	-.00016

Elem	K_7664	Li6707	Mg2790	Mn2576-2	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05568**	**.09203**	**.00449**	**.00289**	**.00530**	**.02703**	**.46283**
Stddev	.00016	.00218	.00008	.00039	.00005	.00020	.00441
%RSD	.28235	2.3738	1.8569	13.387	.86876	.74690	.95348
#1	.05557	.09049	.00443	.00262	.00533	.02717	.45971
#2	.05579	.09358	.00455	.00316	.00527	.02688	.46595

Elem	Na8183	Ni2316	Pb2203	S_1820	Sb2068	Se1960	Si2881
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00201**	**.00809**	**.00270**	**.0314**	**.01205**	**.00541**	**.02286**
Stddev	.00250	.00005	.00006	.0004	.00050	.00143	.00006
%RSD	124.50	.63978	2.1254	1.319	4.1839	26.354	.25785
#1	.00378	.00805	.00274	.0317	.01240	.00642	.02282
#2	.00024	.00813	.00266	.0311	.01169	.00440	.02290

Elem	Sn1899	Sr4077	Ti3349	Tl1908	V_2924	Zn2062
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00140**	**.10446**	**.00229**	**.00198**	**.00139**	**.00020**
Stddev	.00010	.00046	.00006	.00012	.00013	.00001
%RSD	6.8422	.43989	2.8265	6.2796	9.5297	4.2947
#1	.00134	.10478	.00225	.00206	.00130	.00021
#2	.00147	.10413	.00234	.00189	.00148	.00020

Sample Name: IC-5514926 Acquired: 9/26/2019 8:38:38 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1807.6	535.65	38938.	4161.6
Stddev	4.2	.06	104.	6.6
%RSD	.23446	.01048	.26637	.15751
#1	1804.6	535.69	39011.	4166.3
#2	1810.6	535.61	38865.	4157.0

Sample Name: IC-5520066 Acquired: 9/26/2019 8:42:32 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Ba4554-2	Be3130
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.37071**	**1.6226**	**.20859**	**1.4433**	**13.108**	**15.922**	**9.0811**
Stddev	.00086	.0049	.00132	.0002	.002	.103	.0423
%RSD	.23289	.29961	.63159	.01462	.01433	.64667	.46570
#1	.37010	1.6260	.20953	1.4434	13.107	15.849	9.1110
#2	.37132	1.6191	.20766	1.4431	13.110	15.995	9.0512

Elem	Ca3179	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**10.108**	**7.0383**	i **.0724**	**1.1547**	**.17988**	**.37392**	**5.7718**
Stddev	.063	.0086	.0002	.0003	.00064	.00045	.0306
%RSD	.61898	.12283	.2156	.02388	.35801	.11998	.53048
#1	10.153	7.0444	i .0725	1.1549	.17942	.37360	5.7934
#2	10.064	7.0322	i .0723	1.1545	.18034	.37424	5.7501

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576-2	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.32105**	**5.5643**	**3.0486**	**1.0546**	**.64939**	**1.1833**	**2.4636**
Stddev	.00023	.0087	.0080	.0017	.00067	.0023	.0031
%RSD	.07010	.15654	.26152	.16173	.10322	.19572	.12517
#1	.32089	5.5705	3.0430	1.0534	.64986	1.1817	2.4657
#2	.32121	5.5581	3.0543	1.0558	.64892	1.1850	2.4614

Elem	Na5895	Na8183	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**23.049**	**.69423**	**.81060**	**3298.**	**.24516**	**2.888**	**.42857**
Stddev	.001	.00272	.00040	1.	.00072	.002	.00214
%RSD	.00503	.39212	.04944	.0169	.29207	.0650	.50002
#1	23.049	.69615	.81088	3299.	.24466	2.889	.43009
#2	23.050	.69231	.81031	3298.	.24567	2.886	.42706

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18406**	**.43017**	**.13342**	**21.343**	**170.8**	**.44296**	**.11448**
Stddev	.00036	.00161	.00012	.041	.7	.00039	.00051
%RSD	.19395	.37350	.09127	.19063	.4323	.08833	.44281
#1	.18381	.42904	.13350	21.372	171.3	.44324	.11484
#2	.18432	.43131	.13333	21.314	170.3	.44269	.11412

Sample Name: IC-5520066 Acquired: 9/26/2019 8:42:32 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	U_4090	V_2924	Zn2062	Zr3438
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	i 108.4	.29971	.01571	2963.
Stddev	1.3	.00076	.00001	6.
%RSD	1.240	.25246	.04926	.2119
#1	i 107.5	.29918	.01570	2959.
#2	i 109.4	.30025	.01571	2968.

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1636.2	517.06	36615.	4108.9
Stddev	.7	.07	99.	31.6
%RSD	.04534	.01289	.27112	.76795
#1	1635.7	517.01	36685.	4086.6
#2	1636.8	517.10	36545.	4131.2

Sample Name: IC-5466929 Acquired: 9/26/2019 8:46:17 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Ba4554-2	Be3130
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.79036**	**3.3686**	**.42782**	**2.9050**	**26.894**	**31.891**	**18.611**
Stddev	.00002	.0007	.00367	.0122	.004	.099	.071
%RSD	.00300	.02111	.85814	.42043	.01487	.31063	.38043
#1	.79035	3.3681	.43041	2.9137	26.897	31.821	18.661
#2	.79038	3.3691	.42522	2.8964	26.891	31.961	18.561

Elem	Ca3179	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**21.039**	**14.399**	i **.1483**	**2.4268**	**.36498**	**.77639**	**11.754**
Stddev	.045	.090	.0005	.0041	.00030	.00013	.023
%RSD	.21470	.62846	.3198	.17022	.08137	.01645	.19491
#1	21.071	14.463	i .1487	2.4297	.36519	.77630	11.770
#2	21.008	14.335	i .1480	2.4238	.36477	.77648	11.738

Elem	Fe2714	K_7664	Li6707	Mg2790	Mn2576-2	Mn2576	Mo2020
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.65600**	**11.636**	**6.3588**	**2.2031**	**1.3351**	**2.4160**	**4.8634**
Stddev	.00293	.023	.0107	.0007	.0068	.0030	.0281
%RSD	.44712	.19835	.16886	.03314	.50599	.12407	.57815
#1	.65808	11.653	6.3664	2.2036	1.3399	2.4182	4.8833
#2	.65393	11.620	6.3512	2.2026	1.3303	2.4139	4.8436

Elem	Na5895	Na8183	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**48.150**	**1.4526**	**1.6987**	**6934.**	**.51759**	**5.972**	**.87398**
Stddev	.062	.0059	.0024	8.	.00034	.032	.00466
%RSD	.12834	.40284	.13986	.1203	.06568	.5279	.53371
#1	48.193	1.4568	1.7004	6940.	.51783	5.995	.87728
#2	48.106	1.4485	1.6971	6928.	.51735	5.950	.87068

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.38015**	**.85399**	**.28405**	**43.727**	**352.1**	**.91088**	**.23771**
Stddev	.00286	.00154	.00039	.020	1.7	.00086	.00064
%RSD	.75154	.18017	.13832	.04624	.4849	.09404	.26962
#1	.38217	.85508	.28433	43.713	353.3	.91149	.23816
#2	.37813	.85290	.28377	43.741	350.9	.91028	.23725

Sample Name: IC-5466929 Acquired: 9/26/2019 8:46:17 Type: Cal
Method: ICAP1 New Stds (v177) Mode: IR Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	U_4090	V_2924	Zn2062	Zr3438
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	i 227.2	.61253	.03255	6189.
Stddev	.9	.00138	.00003	.
%RSD	.3930	.22528	.07703	.0043
#1	i 226.6	.61155	.03256	6189.
#2	i 227.8	.61350	.03253	6188.

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1555.1	522.41	36108.	4082.6
Stddev	.2	2.08	136.	1.6
%RSD	.01229	.39727	.37608	.04019
#1	1555.2	520.94	36204.	4083.8
#2	1554.9	523.87	36012.	4081.5

Sample Name: ICV-5508963 Acquired: 9/26/2019 8:49:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.73723**	**37.038**	**.74560**	W **.79346**	**.74442**	**.74137**	**36.966**
Stddev	.00259	.126	.00047	.00160	.00213	.00213	.020
%RSD	.35133	.33973	.06307	.20150	.28636	.28736	.05543
#1	.73906	36.949	.74594	.79233	.74291	.73986	36.981
#2	.73539	37.127	.74527	.79459	.74593	.74287	36.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
Value				.75000			
Range				5.0000%			

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.75290**	i **-.0008**	**.72772**	**.75448**	**.71676**	**37.690**	**36.704**
Stddev	.00055	.0000	.00177	.00007	.00057	.113	.101
%RSD	.07352	4.712	.24391	.00873	.08021	.29866	.27456
#1	.75251	i -.0007	.72898	.75453	.71716	37.611	36.633
#2	.75330	i -.0008	.72647	.75443	.71635	37.770	36.775
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.73704**	**37.081**	**.75573**	**.77928**	**36.617**	**.73622**	**18.91**
Stddev	.00197	.072	.00217	.00317	.115	.00061	.01
%RSD	.26776	.19325	.28702	.40721	.31357	.08292	.0322
#1	.73564	37.030	.75419	.77703	36.536	.73665	18.91
#2	.73843	37.131	.75726	.78152	36.698	.73579	18.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: ICV-5508963 Acquired: 9/26/2019 8:49:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.72810	19.10	W .79560	.73912	7.4018	.71607	.74634
Stddev	.00222	.08	.00316	.00278	.0030	.00348	.00235
%RSD	.30506	.4073	.39706	.37676	.04070	.48654	.31451
#1	.72967	19.05	.79337	.73715	7.3997	.71361	.74468
#2	.72653	19.16	.79783	.74109	7.4039	.71853	.74800
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.75000				
Range			5.0000%				

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0727	.74319	.73935	i .9510	.74990	.77886	.0080
Stddev	.0096	.00218	.00049	.0202	.00176	.00101	.0007
%RSD	13.24	.29316	.06584	2.121	.23458	.12971	8.453
#1	.0659	.74165	.73970	i .9368	.75115	.77814	.0084
#2	.0795	.74474	.73901	i .9653	.74866	.77957	.0075
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1673.2	521.94	37194.	4138.5
Stddev	1.7	1.30	17.	15.6
%RSD	.09988	.24982	.04532	.37740
#1	1672.1	522.86	37182.	4127.4
#2	1674.4	521.02	37205.	4149.5

Sample Name: ICV-5508963 Acquired: 9/26/2019 8:54:41 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.73468**	**36.649**	**.74908**	W **.79206**	**.73537**	**.73702**	**36.591**
Stddev	.00113	.112	.00621	.00275	.00349	.00099	.020
%RSD	.15427	.30454	.82858	.34703	.47492	.13473	.05587
#1	.73388	36.727	.75347	.79401	.73784	.73632	36.605
#2	.73548	36.570	.74469	.79012	.73290	.73772	36.576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
Value				.75000			
Range				5.0000%			

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.75473**	i **.0110**	**.72443**	**.74854**	**.71475**	**37.482**	**36.454**
Stddev	.00310	.0026	.00079	.00122	.00267	.012	.072
%RSD	.41111	23.68	.10958	.16343	.37340	.03314	.19803
#1	.75692	i .0092	.72386	.74941	.71664	37.474	36.403
#2	.75254	i .0128	.72499	.74768	.71286	37.491	36.505
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.73095**	**36.880**	**.75151**	**.77623**	**36.264**	**.73225**	**18.78**
Stddev	.00266	.025	.00224	.00264	.130	.00259	.00
%RSD	.36441	.06757	.29781	.34022	.35838	.35415	.0027
#1	.73284	36.862	.75309	.77809	36.355	.73042	18.78
#2	.72907	36.897	.74993	.77436	36.172	.73409	18.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: ICV-5508963 Acquired: 9/26/2019 8:54:41 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.72224	19.13	W .79617	.73899	7.2441	.71452	.74002
Stddev	.00183	.16	.00012	.00656	.0221	.00265	.00264
%RSD	.25401	.8132	.01539	.88832	.30465	.37155	.35730
#1	.72094	19.24	.79626	.74363	7.2285	.71264	.74189
#2	.72354	19.02	.79608	.73435	7.2597	.71640	.73815
Check ?	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.75000				
Range			5.0000%				

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0508	.74112	.73434	i .9586	.74196	.77653	.0037
Stddev	.0010	.00216	.00622	.0190	.00042	.00445	.0000
%RSD	2.028	.29127	.84733	1.985	.05634	.57315	1.151
#1	.0515	.74265	.73874	i .9452	.74167	.77338	.0037
#2	.0501	.73960	.72994	i .9721	.74226	.77968	.0038
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1677.4	519.14	37280.	4165.9
Stddev	4.8	1.27	20.	4.8
%RSD	.28634	.24509	.05380	.11441
#1	1680.8	518.24	37266.	4162.6
#2	1674.0	520.04	37295.	4169.3

Sample Name: ICB-5508960 Acquired: 9/26/2019 8:58:25 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00943**	**.00001**	**-.00064**	**.00017**	**.00004**	**-.00391**	**.00001**
Stddev	.00042	.00089	.00123	.00034	.00003	.00004	.00001	.00007
%RSD	1188.5	9.4616	18651.	53.010	17.888	82.903	.31539	689.12
#1	.00026	.01006	-.00086	-.00089	.00015	.00007	-.00390	.00006
#2	-.00033	.00880	.00087	-.00040	.00020	.00002	-.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0009**	**-.00003**	**.00035**	**.00010**	**.00123**	**-.00308**	**.00020**	**.00272**
Stddev	.0056	.00009	.00029	.00013	.00208	.00847	.00006	.00220
%RSD	607.7	343.05	82.270	132.10	169.13	275.47	28.826	81.085
#1	i .0048	-.00009	.00015	.00019	-.00024	-.00907	.00016	.00116
#2	i -.0030	.00004	.00056	.00001	.00270	.00292	.00025	.00427
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00171**	**.00067**	**-.00006**	**.0044**	**-.00021**	**-.0075**	**-.00015**
Stddev	.00005	.00017	.00145	.00002	.0008	.00182	.0075	.00224
%RSD	465.13	10.141	217.00	44.112	18.60	853.05	99.23	1443.7
#1	.00002	.00159	-.00036	-.00007	.0050	.00107	-.0022	.00143
#2	-.00004	.00183	.00170	-.00004	.0039	-.00150	-.0128	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB-5508960 Acquired: 9/26/2019 8:58:25 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.02788**	**-.00019**	**.00005**	**-.0042**	**-.00008**	**.00090**	i **-.0191**
Stddev	.00241	.00467	.00049	.00004	.0042	.00020	.00122	.0550
%RSD	1780.0	16.751	265.15	76.158	99.37	262.66	136.02	287.8
#1	-.00157	-.03118	-.00053	.00002	-.0071	-.00022	.00176	i -.0580
#2	.00184	-.02457	.00016	.00007	-.0012	.00007	.00003	i .0198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00041**	**.00056**	**.0003**
Stddev	.00001	.00004	.0006
%RSD	1.9577	6.6471	195.8
#1	-.00041	.00059	-.0001
#2	-.00040	.00053	.0007
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1805.8**	**525.43**	**38651.**	**4107.8**
Stddev	8.4	2.66	27.	4.5
%RSD	.46343	.50665	.07007	.11001
#1	1811.7	527.32	38671.	4111.0
#2	1799.9	523.55	38632.	4104.6

Sample Name: ICVL-5514926 Acquired: 9/26/2019 9:02:20 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00643**	**.20741**	**.01688**	**.01990**	**.00218**	**.00216**	**.51855**	**.00222**
Stddev	.00019	.00058	.00268	.00009	.00000	.00003	.00326	.00012
%RSD	3.0038	.28169	15.874	.46101	.07374	1.4033	.62807	5.5747
#1	.00657	.20783	.01878	.01983	.00218	.00213	.51625	.00213
#2	.00629	.20700	.01499	.01996	.00218	.00218	.52086	.00231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0043**	**.00386**	**.00403**	**.00945**	**.05010**	**.48468**	**.02950**	**.21015**
Stddev	.0093	.00003	.00024	.00023	.00134	.00849	.00035	.00115
%RSD	217.4	.80601	5.8866	2.3973	2.6653	1.7525	1.1890	.54772
#1	i .0109	.00388	.00419	.00961	.05104	.47867	.02925	.20933
#2	i -.0023	.00384	.00386	.00929	.04915	.49069	.02974	.21096
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.01063**	**.96990**	**.00982**	**-.0254**	**.01020**	**.2015**	**.02370**
Stddev	.00003	.00034	.00377	.00015	.0009	.00008	.0013	.00004
%RSD	.80756	3.1938	.38914	1.4973	3.573	.79847	.6301	.18124
#1	.00318	.01039	.97257	.00972	-.0248	.01015	.2006	.02373
#2	.00314	.01087	.96723	.00993	-.0261	.01026	.2024	.02367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: ICVL-5514926 Acquired: 9/26/2019 9:02:20 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02451	.45566	.00859	.00496	-.0055	.00476	.01809	i -.0534
Stddev	.00078	.01541	.00138	.00010	.0067	.00015	.00139	.0419
%RSD	3.2033	3.3828	16.038	1.9715	122.2	3.2506	7.7088	78.46
#1	.02506	.44476	.00762	.00503	-.0007	.00487	.01711	i -.0830
#2	.02395	.46656	.00957	.00489	-.0102	.00465	.01908	i -.0238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00487	.00886	.0010
Stddev	.00036	.00136	.0004
%RSD	7.3511	15.331	45.07
#1	.00512	.00790	.0007
#2	.00462	.00982	.0013
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1810.6	522.78	38663.	4153.3
Stddev	5.9	5.49	170.	32.2
%RSD	.32617	1.0506	.43990	.77573
#1	1814.7	526.66	38543.	4176.1
#2	1806.4	518.90	38783.	4130.5

Sample Name: ICSA-5486551 Acquired: 9/26/2019 9:06:14 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**501.66**	**.00578**	**-.00080**	**.00157**	**.00005**	**473.47**	**-.00086**
Stddev	.00092	1.92	.00354	.00012	.00001	.00006	1.63	.00023
%RSD	646.81	.38225	61.259	14.774	.49236	126.66	.34479	26.982
#1	-.00051	500.30	.00828	-.00072	.00157	.00009	472.31	-.00102
#2	.00080	503.02	.00328	-.00088	.00156	.00000	474.62	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0421**	**-.00018**	**.00344**	**-.00429**	**187.91**	**-.01447**	**.00267**	**502.42**
Stddev	.0182	.00002	.00057	.00006	1.15	.00275	.00006	.44
%RSD	43.18	10.507	16.630	1.3114	.61120	19.001	2.2530	.08709
#1	i .0549	-.00020	.00304	-.00433	187.10	-.01641	.00271	502.73
#2	i .0292	-.00017	.00384	-.00425	188.72	-.01252	.00263	502.11
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**-.00128**	**.17645**	**-.00385**	**-.4427**	**-.00432**	**-.1142**	**-.01227**
Stddev	.00021	.00047	.01026	.00055	.0047	.00343	.0009	.00058
%RSD	25.453	36.917	5.8128	14.206	1.066	79.293	.7859	4.7116
#1	-.00067	-.00095	.16920	-.00424	-.4460	-.00190	-.1149	-.01186
#2	-.00097	-.00161	.18370	-.00347	-.4393	-.00675	-.1136	-.01268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICSA-5486551 Acquired: 9/26/2019 9:06:14 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00309	-.00946	-.00153	-.00894	.0887	.00083	-.00410	i .0850
Stddev	.00405	.00437	.00296	.00011	.0048	.00013	.00271	.0888
%RSD	131.08	46.213	193.39	1.2814	5.386	15.223	66.103	104.5
#1	.00023	-.01255	-.00363	-.00885	.0853	.00091	-.00602	i .1477
#2	.00596	-.00637	.00056	-.00902	.0921	.00074	-.00218	i .0222
Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	-.00056	-.00048	.0070
Stddev	.00054	.00227	.0010
%RSD	97.169	469.39	14.66
#1	-.00094	-.00209	.0077
#2	-.00018	.00112	.0063
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1398.4	462.70	33467.	3987.6
Stddev	4.2	1.32	9.	31.1
%RSD	.30342	.28608	.02562	.78067
#1	1401.4	463.64	33461.	4009.7
#2	1395.4	461.77	33473.	3965.6

Sample Name: ICSAB-5486552 Acquired: 9/26/2019 9:10:18 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55339	506.21	.54026	5.2104	.51314	.24875	477.70	.55222
Stddev	.00007	2.56	.00234	.0083	.00019	.00088	2.47	.00118
%RSD	.01309	.50474	.43340	.15976	.03723	.35375	.51794	.21368
#1	.55344	508.02	.53860	5.2163	.51328	.24937	475.95	.55306
#2	.55334	504.40	.54191	5.2045	.51301	.24813	479.45	.55139
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0251	.50765	.49414	.53260	190.64	5.2029	.00295	507.19
Stddev	.0127	.00237	.00117	.00040	.78	.0499	.00007	3.38
%RSD	50.74	.46626	.23634	.07568	.41141	.95941	2.4821	.66656
#1	i .0341	.50598	.49331	.53232	191.20	5.2382	.00301	509.58
#2	i .0161	.50933	.49496	.53289	190.09	5.1676	.00290	504.80
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49292	.51093	5.3572	.50090	3.722	.51106	-.1107	.52007
Stddev	.00040	.00134	.0252	.00097	.003	.00424	.0023	.00241
%RSD	.08155	.26284	.47002	.19277	.0836	.82917	2.106	.46377
#1	.49320	.51188	5.3750	.50022	3.725	.51406	-.1091	.52177
#2	.49263	.50998	5.3394	.50158	3.720	.50806	-.1124	.51836
Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: ICSAB-5486552 Acquired: 9/26/2019 9:10:18 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51884**	**4.7817**	**.51520**	**.48486**	**.1016**	**.49929**	**.49310**	i **-.0808**
Stddev	.00507	.0193	.00188	.00259	.0139	.00020	.00014	.0401
%RSD	.97717	.40399	.36456	.53399	13.69	.03945	.02879	49.64
#1	.52243	4.7953	.51387	.48670	.1115	.49915	.49320	i -.0524
#2	.51526	4.7680	.51653	.48303	.0918	.49943	.49300	i -.1091
Check ?	Chk Pass	Chk Pass	None	None	None	None	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.49739**	**.46716**	**.0068**
Stddev	.00003	.00623	.0003
%RSD	.00601	1.3338	4.944
#1	.49737	.46275	.0066
#2	.49741	.47156	.0071
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1386.0**	**461.03**	**33534.**	**4010.0**
Stddev	5.3	.16	56.	.9
%RSD	.38444	.03410	.16776	.02261
#1	1389.8	460.92	33494.	4009.3
#2	1382.3	461.14	33574.	4010.6

Sample Name: ICEX1 Acquired: 9/26/2019 9:14:15 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.03183**	**5.2305**	**.00140**	**.00039**
Stddev	.00013	.00284	.0174	.00092	.00001
%RSD	13.728	8.9372	.33293	65.564	3.0958
#1	.00087	.02981	5.2428	.00205	.00038
#2	.00106	.03384	5.2182	.00075	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00095**	**.01364**	**-.00076**	i **-.0095**	**-.00020**
Stddev	.00003	.00145	.00011	.0075	.00003
%RSD	3.4223	10.601	14.541	78.28	13.202
#1	-.00092	.01466	-.00084	i -.0043	-.00018
#2	-.00097	.01262	-.00068	i -.0148	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**23.643**	**.01197**	**-.00844**	**.00036**
Stddev	.00019	.165	.00160	.00877	.00018
%RSD	51.484	.69907	13.387	103.83	51.088
#1	-.00024	23.526	.01310	-.01464	.00023
#2	-.00051	23.759	.01083	-.00224	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX1 Acquired: 9/26/2019 9:14:15 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00807**	**.00103**	**.00001**	**-.00119**	**-.00092**
Stddev	.00231	.00000	.00007	.00252	.00023
%RSD	28.668	.38152	846.81	212.52	25.206
#1	.00643	.00104	.00006	-.00297	-.00076
#2	.00970	.00103	-.00004	.00060	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	^ *****	**-.00249**	**-.0069**	**.00406**	**.00152**
Stddev	-----	.00055	.0033	.00097	.00193
%RSD	-----	22.238	48.43	23.821	126.69
#1	^ -----	-.00288	-.0093	.00474	.00289
#2	^ -----	-.00210	-.0045	.00337	.00016
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01482**	**.00049**	**.00001**	**.0032**	**-.00107**
Stddev	.01044	.00108	.00001	.0016	.00019
%RSD	70.431	220.34	96.228	49.69	17.823
#1	-.02220	-.00027	.00002	.0043	-.00094
#2	-.00744	.00125	.00000	.0021	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX1 Acquired: 9/26/2019 9:14:15 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00677**	i **-.1797**	**5.0787**	**.00291**	**.0014**
Stddev	.00022	.0531	.0035	.00002	.0006
%RSD	3.2773	29.54	.06922	.66003	46.42
#1	-.00693	i -.1422	5.0762	.00292	.0018
#2	-.00662	i -.2172	5.0812	.00289	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1805.6**	**527.60**	**39124.**	**4168.0**
Stddev	2.0	.98	88.	11.7
%RSD	.11268	.18620	.22523	.27958
#1	1807.0	526.90	39186.	4176.3
#2	1804.2	528.29	39062.	4159.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.03%	98.411%	100.69%	101.18%
Range				

Sample Name: ICEX2 Acquired: 9/26/2019 9:18:19 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.03204**	**.00370**	**.00659**	**.00005**
Stddev	.00019	.00151	.00197	.00009	.00001
%RSD	19.907	4.7030	53.170	1.3562	22.197
#1	-.00110	.03097	.00231	.00653	.00004
#2	-.00083	.03310	.00509	.00665	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00239**	**.00032**	i **.0033**	**-.00131**
Stddev	.00005	.00107	.00013	.0104	.00036
%RSD	514.67	44.499	40.074	317.8	27.413
#1	.00004	-.00164	.00023	i -.0041	-.00156
#2	-.00002	-.00315	.00041	i .0106	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00071**	**-.00640**	**-.00332**	**-.01771**	**9.9918**
Stddev	.00052	.00012	.00124	.01595	.0302
%RSD	73.212	1.9112	37.485	90.045	.30196
#1	.00034	-.00648	-.00420	-.02899	10.013
#2	.00108	-.00631	-.00244	-.00643	9.9705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX2 Acquired: 9/26/2019 9:18:19 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.03867**	**.00067**	**.00186**	**.00354**	**.00381**
Stddev	.00411	.00005	.00031	.00260	.00004
%RSD	10.618	8.0513	16.726	73.479	.99007
#1	-.04157	.00064	.00208	.00539	.00379
#2	-.03577	.00071	.00164	.00170	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0021**	**-.00303**	**-.0248**	**.00121**	**.00183**
Stddev	.0055	.00175	.0074	.00025	.00193
%RSD	264.7	57.670	29.95	20.175	105.21
#1	-.0060	-.00426	-.0195	.00139	.00047
#2	.0018	-.00179	-.0300	.00104	.00319
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**48.238**	**-.00133**	**.00018**	**.0083**	**19.675**
Stddev	.035	.00081	.00009	.0107	.043
%RSD	.07249	60.598	49.887	128.9	.21682
#1	48.213	-.00190	.00011	.0159	19.705
#2	48.262	-.00076	.00024	.0007	19.645
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX2 Acquired: 9/26/2019 9:18:19 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**19.904**	i **.0327**	**.00456**	**-.00070**	**.0124**
Stddev	.002	.0345	.00001	.00005	.0007
%RSD	.00945	105.6	.29527	6.7888	5.902
#1	19.906	i .0571	.00456	-.00067	.0118
#2	19.903	i .0083	.00455	-.00074	.0129
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1763.9**	**526.96**	**38134.**	**4155.7**
Stddev	1.4	1.56	66.	6.0
%RSD	.08086	.29586	.17403	.14495
#1	1762.9	525.85	38087.	4160.0
#2	1764.9	528.06	38180.	4151.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.722%	98.291%	98.138%	100.88%
Range				

Sample Name: ICEX3 Acquired: 9/26/2019 9:22:14 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00316**	**.03926**	**.00232**	**.00010**	**-.00005**
Stddev	.00005	.00577	.00166	.00010	.00001
%RSD	1.5535	14.687	71.404	93.155	27.167
#1	-.00319	.03518	.00349	.00004	-.00005
#2	-.00312	.04334	.00115	.00017	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.01094**	**.00042**	i **-.0319**	**.00012**
Stddev	.00001	.00079	.00010	.0040	.00010
%RSD	14.131	7.2189	23.817	12.53	78.265
#1	-.00009	.01150	.00035	i -.0290	.00019
#2	-.00007	.01038	.00049	i -.0347	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00099**	**.00261**	**.00904**	**.00305**
Stddev	.00020	.00009	.00397	.00023	.00044
%RSD	6480.5	9.5573	152.32	2.5721	14.552
#1	.00014	.00106	-.00020	.00887	.00337
#2	-.00013	.00093	.00541	.00920	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX3 Acquired: 9/26/2019 9:22:14 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576-2	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}2	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02671**	**50.922**	**-.00261**	**.00627**	**-.00003**
Stddev	.00044	.115	.00032	.00210	.00008
%RSD	1.6632	.22516	12.073	33.554	247.55
#1	-.02703	50.841	-.00283	.00775	.00002
#2	-.02640	51.003	-.00239	.00478	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0028**	**.00229**	**99.07**	**-.00276**	**-.00489**
Stddev	.0018	.00128	.33	.00200	.00396
%RSD	62.64	55.587	.3370	72.325	80.971
#1	.0016	.00320	99.30	-.00135	-.00768
#2	.0041	.00139	98.83	-.00417	-.00209
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.04235**	**-.00094**	**-.00001**	**-.0114**	**-.00211**
Stddev	.00454	.00042	.00002	.0037	.00012
%RSD	10.731	44.185	203.38	32.11	5.4686
#1	.03914	-.00065	.00000	-.0088	-.00203
#2	.04557	-.00123	-.00002	-.0140	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX3 Acquired: 9/26/2019 9:22:14 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00003	i -3.333	.00017	.00264	-.0018
Stddev	.00005	.063	.00021	.00039	.0008
%RSD	149.42	1.891	122.46	14.781	43.37
#1	-.00000	i -3.289	.00032	.00292	-.0024
#2	.00006	i -3.378	.00002	.00237	-.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1806.3	523.14	38528.	4175.9
Stddev	.0	1.35	11.	12.0
%RSD	.00190	.25826	.02773	.28776
#1	1806.2	522.18	38536.	4184.4
#2	1806.3	524.10	38520.	4167.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.07%	97.579%	99.153%	101.37%
Range				

Sample Name: ICEX4 Acquired: 9/26/2019 9:26:08 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.03591**	**-.00187**	**-.00329**	**-.00004**
Stddev	.00009	.00427	.00090	.00012	.00000
%RSD	89.441	11.880	48.005	3.6739	7.7486
#1	.00017	-.03892	-.00250	-.00320	-.00004
#2	.00004	-.03289	-.00123	-.00338	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00357**	**-.00064**	i **.0096**	**19.284**
Stddev	.00003	.00332	.00020	.0075	.069
%RSD	98.631	92.958	31.743	77.94	.35743
#1	-.00001	.00122	-.00050	i .0043	19.235
#2	-.00006	.00592	-.00078	i .0149	19.332
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.348**	**.00549**	**-.00511**	**.00122**	**-.00014**
Stddev	.009	.00004	.00051	.02257	.00011
%RSD	.09092	.75025	9.9976	1854.3	81.473
#1	10.355	.00552	-.00547	.01718	-.00006
#2	10.342	.00546	-.00475	-.01475	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX4 Acquired: 9/26/2019 9:26:08 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00301**	**.00210**	**-.00022**	**.00111**	**10.096**
Stddev	.00003	.00005	.00011	.00446	.036
%RSD	.83207	2.4713	48.152	401.24	.35773
#1	-.00302	.00213	-.00014	.00427	10.070
#2	-.00299	.00206	-.00029	-.00204	10.121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0166**	**-.00363**	**-.0466**	**-.00563**	**.00350**
Stddev	.0019	.00004	.0013	.00129	.00070
%RSD	11.73	.97918	2.726	22.914	19.987
#1	-.0180	-.00366	-.0457	-.00472	.00399
#2	-.0152	-.00361	-.0475	-.00654	.00300
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.08806**	**.00005**	**.00005**	**-.0026**	**.00170**
Stddev	.00440	.00025	.00002	.0046	.00003
%RSD	4.9960	453.97	51.986	176.2	1.6850
#1	-.09117	-.00012	.00006	.0006	.00168
#2	-.08495	.00023	.00003	-.0058	.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX4 Acquired: 9/26/2019 9:26:08 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01525**	i **.0421**	**.00025**	**-.00198**	**-.0007**
Stddev	.00008	.0582	.00007	.00058	.0010
%RSD	.54712	138.1	28.953	29.407	148.4
#1	-.01531	i .0010	.00030	-.00239	.0000
#2	-.01519	i .0832	.00020	-.00157	-.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1816.6**	**537.65**	**39080.**	**4179.6**
Stddev	6.9	1.95	77.	1.9
%RSD	.37942	.36359	.19693	.04614
#1	1821.5	539.03	39026.	4181.0
#2	1811.7	536.27	39135.	4178.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.64%	100.29%	100.57%	101.46%
Range				

Sample Name: ICEX5 Acquired: 9/26/2019 9:29:57 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.04637**	**-.00158**	**.00616**	**-.00011**
Stddev	.00006	.00854	.00085	.00120	.00000
%RSD	6717.8	18.409	54.082	19.504	3.4680
#1	-.00005	.04033	-.00097	.00700	-.00010
#2	.00004	.05241	-.00218	.00531	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00073**	**.00028**	i **.0074**	**-.00119**
Stddev	.00008	.00079	.00007	.0035	.00018
%RSD	57.418	108.27	25.457	46.75	15.110
#1	-.00019	.00017	.00023	i .0099	-.00132
#2	-.00008	.00128	.00033	i .0050	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**-.00084**	**-.00817**	**.01028**	**.00065**
Stddev	.00056	.00029	.00152	.00014	.00069
%RSD	91.809	34.297	18.595	1.3855	105.77
#1	-.00021	-.00104	-.00710	.01038	.00113
#2	-.00101	-.00063	-.00925	.01018	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX5 Acquired: 9/26/2019 9:29:57 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.05953**	**.00030**	**5.3513**	**.00029**	**-.00041**
Stddev	.00129	.00005	.0246	.00346	.00014
%RSD	2.1656	16.078	.46009	1210.8	35.581
#1	-.06044	.00034	5.3339	.00273	-.00051
#2	-.05862	.00027	5.3687	-.00216	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0174**	**-.00059**	**-.0240**	**.00615**	**.00115**
Stddev	.0011	.00043	.0074	.00117	.00333
%RSD	6.368	73.308	30.76	19.082	290.91
#1	-.0181	-.00090	-.0188	.00532	-.00121
#2	-.0166	-.00028	-.0292	.00699	.00350
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02102**	**-.00013**	**.00001**	**.0017**	**.00150**
Stddev	.00615	.00054	.00002	.0047	.00046
%RSD	29.247	431.92	107.92	282.2	30.619
#1	-.01667	.00026	.00000	.0050	.00118
#2	-.02536	-.00051	.00003	-.0017	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: ICEX5 Acquired: 9/26/2019 9:29:57 Type: Unk
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	i **.0721**	**.00048**	**.00116**	**.0003**
Stddev	.00123	.1477	.00013	.00049	.0005
%RSD	256.05	204.8	27.798	42.295	196.9
#1	.00039	i .1766	.00038	.00081	-.0001
#2	-.00135	i -.0323	.00057	.00150	.0007
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1797.3**	**526.14**	**38924.**	**4171.5**
Stddev	6.0	2.57	55.	4.1
%RSD	.33175	.48911	.14049	.09754
#1	1801.5	527.96	38886.	4174.4
#2	1793.0	524.32	38963.	4168.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.570%	98.139%	100.17%	101.26%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 9:33:47 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96454**	**48.593**	**1.0010**	**1.0030**	**.97619**	**.98800**	**48.676**	**.99514**
Stddev	.00601	.267	.0067	.0054	.00490	.00221	.164	.00384
%RSD	.62313	.54893	.66986	.54129	.50238	.22369	.33708	.38636
#1	.96029	48.404	1.0057	1.0069	.97272	.98956	48.792	.99786
#2	.96879	48.781	.99626	.99919	.97965	.98643	48.560	.99242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9910**	**.96599**	**1.0012**	**.98508**	**49.422**	**48.584**	**.96971**	**48.867**
Stddev	.0111	.00267	.0004	.00281	.029	.134	.00288	.088
%RSD	1.120	.27676	.03457	.28538	.05879	.27556	.29700	.18014
#1	i .9988	.96788	1.0015	.98707	49.442	48.679	.96767	48.805
#2	i .9831	.96410	1.0010	.98309	49.401	48.489	.97174	48.929
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99385**	**1.0340**	**48.380**	**.96836**	**24.27**	**.96429**	**24.74**	**.99739**
Stddev	.00295	.0053	.247	.00210	.02	.00141	.18	.00128
%RSD	.29661	.51457	.51153	.21672	.0624	.14645	.7232	.12882
#1	.99594	1.0378	48.205	.96985	24.26	.96529	24.86	.99830
#2	.99177	1.0302	48.555	.96688	24.29	.96329	24.61	.99648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 9:33:47 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98823	9.8591	.95862	.98246	.9908	.99059	.97660	i 2.541
Stddev	.01301	.0186	.00665	.00301	.0110	.00155	.00731	.023
%RSD	1.3165	.18870	.69395	.30653	1.108	.15638	.74894	.8983
#1	.99743	9.8459	.96332	.98033	.9985	.99168	.98178	i 2.557
#2	.97903	9.8722	.95392	.98459	.9830	.98949	.97143	i 2.525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99595	.99041	.9747
Stddev	.00016	.01136	.0007
%RSD	.01591	1.1474	.0690
#1	.99607	.98238	.9743
#2	.99584	.99845	.9752
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1641.8	513.61	36486.	4131.4
Stddev	2.1	1.68	37.	3.8
%RSD	.12931	.32705	.10086	.09287
#1	1640.3	512.42	36512.	4128.7
#2	1643.3	514.80	36460.	4134.1

Sample Name: CCB-5508960 Acquired: 9/26/2019 9:37:28 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00705	-.00022	-.00100	.00012	.00005	-.00114	-.00010
Stddev	.00005	.02494	.00118	.00043	.00002	.00003	.00018	.00009
%RSD	14.091	353.93	533.06	43.170	15.657	55.557	15.532	85.574
#1	-.00041	.02469	-.00105	-.00070	.00011	.00007	-.00126	-.00004
#2	-.00034	-.01059	.00061	-.00131	.00014	.00003	-.00101	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0127	.00002	-.00022	.00033	.00195	.00657	.00020	.00110
Stddev	.0088	.00018	.00022	.00009	.00294	.00345	.00090	.00096
%RSD	69.35	901.04	100.37	26.956	150.69	52.457	457.47	87.208
#1	i .0065	.00015	-.00006	.00039	.00404	.00901	.00084	.00177
#2	i .0189	-.00011	-.00037	.00027	-.00013	.00413	-.00044	.00042
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00336	.00111	-.00042	.0014	-.00169	-.0072	-.00060
Stddev	.00001	.00032	.00059	.00006	.0017	.00217	.0032	.00278
%RSD	42.411	9.6422	53.149	13.836	122.6	128.59	44.35	466.04
#1	-.00001	.00313	.00153	-.00046	.0026	-.00323	-.0049	.00137
#2	-.00003	.00359	.00069	-.00038	.0002	-.00015	-.0094	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 9:37:28 Type: QC
Method: ICAP1 New Stds (v178) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**-.03150**	**-.00081**	**.00007**	**-.0009**	**.00045**	**.00003**	i **.0763**
Stddev	.00287	.00359	.00041	.00005	.0065	.00013	.00114	.1270
%RSD	284.09	11.399	50.484	72.278	727.6	29.361	4454.3	166.6
#1	.00102	-.02896	-.00110	.00003	-.0055	.00036	-.00078	i .1661
#2	-.00304	-.03404	-.00052	.00011	.0037	.00055	.00083	i -.0136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00007**	**-.00039**	**.0006**
Stddev	.00006	.00005	.0007
%RSD	84.429	12.600	116.0
#1	.00003	-.00035	.0001
#2	.00012	-.00042	.0011
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1805.4**	**529.63**	**38745.**	**4121.7**
Stddev	.5	.80	170.	19.2
%RSD	.02595	.15080	.43887	.46531
#1	1805.1	530.19	38865.	4135.3
#2	1805.7	529.06	38625.	4108.1

Sample Name: CCVL-5514926 Acquired: 9/26/2019 9:54:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00669	.20142	.01573	.01899	.00213	.00218	.51875	.00201
Stddev	.00005	.00809	.00019	.00056	.00000	.00006	.00020	.00015
%RSD	.76361	4.0188	1.2208	2.9481	.20356	2.7399	.03773	7.4105
#1	.00666	.19569	.01587	.01939	.00213	.00214	.51889	.00211
#2	.00673	.20714	.01560	.01860	.00213	.00222	.51861	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i -.0034	.00394	.00458	.00982	.04815	.49071	.03050	.21388
Stddev	.0037	.00012	.00023	.00009	.00196	.00555	.00012	.00398
%RSD	108.9	3.0989	5.0892	.87106	4.0664	1.1314	.39778	1.8623
#1	i -.0060	.00403	.00442	.00988	.04954	.48679	.03042	.21670
#2	i -.0008	.00385	.00475	.00976	.04677	.49464	.03059	.21107
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.01144	.98046	.00994	-.0273	.01062	.2016	.02070
Stddev	.00002	.00011	.00218	.00036	.0004	.00044	.0045	.00114
%RSD	.50796	.96610	.22229	3.5833	1.411	4.1072	2.228	5.4833
#1	.00313	.01151	.98200	.00969	-.0270	.01093	.2048	.01990
#2	.00315	.01136	.97892	.01019	-.0276	.01031	.1985	.02151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 9:54:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02328	.46766	.00934	.00499	-.0055	.00502	.01809	i .0161
Stddev	.00264	.01692	.00119	.00002	.0017	.00007	.00023	.0452
%RSD	11.357	3.6189	12.768	.49325	30.22	1.4127	1.2882	280.9
#1	.02515	.45570	.00850	.00501	-.0067	.00497	.01825	i -.0159
#2	.02141	.47963	.01018	.00497	-.0043	.00507	.01792	i .0481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00487	.01071	.0012
Stddev	.00004	.00032	.0009
%RSD	.79248	3.0136	75.37
#1	.00490	.01094	.0006
#2	.00484	.01048	.0018
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1811.9	533.34	38803.	4145.3
Stddev	.0	1.05	50.	10.9
%RSD	.00211	.19729	.12987	.26308
#1	1811.9	532.60	38767.	4153.1
#2	1811.8	534.09	38839.	4137.6

Sample Name: 480-158532-A-18-B Acquired: 9/26/2019 9:58:46 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.02810**	**.00719**	**.28447**	**.01658**
Stddev	.00030	.01585	.00316	.00183	.00006
%RSD	137.24	56.388	43.912	.64399	.38031
#1	.00001	.03930	.00943	.28317	.01653
#2	.00044	.01690	.00496	.28576	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**14.102**	**-.00002**	i **.0143**	**-.00015**
Stddev	.00000	.018	.00012	.0083	.00020
%RSD	10.131	.12858	700.64	57.68	140.05
#1	.00003	14.115	.00007	i .0201	-.00029
#2	.00004	14.089	-.00010	i .0085	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00434**	**.01743**	**.50872**	**.00272**
Stddev	.00006	.00033	.00051	.00553	.00038
%RSD	11.242	7.5261	2.9546	1.0880	14.025
#1	.00060	.00411	.01706	.51263	.00245
#2	.00051	.00457	.01779	.50481	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158532-A-18-B Acquired: 9/26/2019 9:58:46 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.4934**	**.00059**	**.02057**	**28.911**	**.00074**
Stddev	.0027	.00001	.00014	.063	.00012
%RSD	.04176	2.5431	.65963	.21640	16.646
#1	6.4953	.00058	.02047	28.956	.00065
#2	6.4915	.00060	.02066	28.867	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0288**	**.00126**	**8.138**	**.00059**	**.00066**
Stddev	.0032	.00006	.060	.00260	.00658
%RSD	11.03	5.1149	.7323	443.93	998.88
#1	.0266	.00121	8.096	-.00125	-.00399
#2	.0311	.00131	8.180	.00243	.00531
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.3907**	**-.00128**	**.22631**	**.0049**	**.00068**
Stddev	.0109	.00070	.00026	.0058	.00001
%RSD	.24899	54.763	.11313	118.0	1.8290
#1	4.3830	-.00177	.22649	.0008	.00069
#2	4.3984	-.00078	.22613	.0090	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158532-A-18-B Acquired: 9/26/2019 9:58:46 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	i **.0283**	**.00082**	**.01605**	**.0014**
Stddev	.00079	.0018	.00008	.00175	.0004
%RSD	143.41	6.280	9.4556	10.912	28.18
#1	-.00112	i .0296	.00088	.01481	.0011
#2	.00001	i .0270	.00077	.01729	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1767.8**	**521.87**	**38133.**	**4164.6**
Stddev	2.6	5.48	174.	11.4
%RSD	.14515	1.0509	.45556	.27374
#1	1769.6	525.75	38256.	4156.5
#2	1766.0	517.99	38010.	4172.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.936%	97.342%	98.137%	101.09%
Range				

Sample Name: 480-159397-A-2-A@2 Acquired: 9/26/2019 10:02:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.01918**	**-.00359**	**.10755**	**.01105**
Stddev	.00082	.01221	.00395	.00065	.00003
%RSD	240.66	63.650	110.02	.60480	.30303
#1	-.00092	.02781	-.00639	.10709	.01107
#2	.00024	.01055	-.00080	.10801	.01102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**85.685**	**.00020**	i **.0213**	**.00003**
Stddev	.00004	.523	.00007	.0010	.00017
%RSD	110.97	.61023	32.552	4.844	567.04
#1	-.00007	86.055	.00016	i .0205	-.00009
#2	-.00001	85.315	.00025	i .0220	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00071**	**-.00089**	**7.7641**	**.45537**
Stddev	.00032	.00040	.00005	.0025	.00220
%RSD	436.47	55.580	6.1403	.03269	.48233
#1	.00030	.00043	-.00093	7.7659	.45692
#2	-.00015	.00099	-.00085	7.7623	.45382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-2-A@2 Acquired: 9/26/2019 10:02:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**44.649**	**-.00007**	**.00070**	**690.30**	**.00060**
Stddev	.015	.00003	.00038	3.74	.00005
%RSD	.03333	35.436	54.534	.54216	8.6934
#1	44.660	-.00005	.00096	692.95	.00064
#2	44.639	-.00009	.00043	687.65	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0133**	**-.00147**	F **426.2**	**-.00117**	**.09691**
Stddev	.0017	.00175	1.3	.00117	.00348
%RSD	13.15	118.83	.3048	100.05	3.5912
#1	.0121	-.00023	425.3	-.00034	.09937
#2	.0145	-.00271	427.1	-.00200	.09445
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.1526**	**.00068**	**1.8681**	**-.0052**	**.00038**
Stddev	.0121	.00027	.0083	.0023	.00022
%RSD	.29048	40.138	.44566	44.40	57.512
#1	4.1611	.00087	1.8740	-.0036	.00053
#2	4.1441	.00049	1.8622	-.0069	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-2-A@2 Acquired: 9/26/2019 10:02:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	i **.0606**	**-.00022**	**-.00079**	**.0003**
Stddev	.00232	.0412	.00037	.00167	.0008
%RSD	223.55	67.97	170.73	212.86	257.9
#1	.00060	i .0315	-.00048	-.00197	-.0003
#2	-.00268	i .0897	.00004	.00040	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1501.4**	**483.92**	**34181.**	**4002.6**
Stddev	.2	3.13	35.	32.5
%RSD	.01139	.64615	.10330	.81211
#1	1501.5	486.13	34206.	3979.6
#2	1501.3	481.71	34156.	4025.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	83.180%	90.264%	87.966%	97.161%
Range				

Sample Name: 480-159397-A-3-A@5 Acquired: 9/26/2019 10:06:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.07602**	**.01002**	**.09332**	**.00375**
Stddev	.00030	.01445	.00004	.00089	.00002
%RSD	87.410	19.004	.43120	.95361	.65963
#1	-.00013	.08624	.00999	.09269	.00373
#2	-.00056	.06581	.01005	.09395	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**76.877**	**.00040**	i **.0309**	**.00167**
Stddev	.00005	.023	.00003	.0003	.00005
%RSD	178.58	.02961	7.7783	1.093	3.2786
#1	-.00007	76.893	.00042	i .0307	.00171
#2	.00001	76.861	.00037	i .0311	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00260**	**.32009**	**4.3569**	**.23768**
Stddev	.00015	.00040	.00183	.0195	.00044
%RSD	116.84	15.544	.57324	.44660	.18332
#1	.00002	.00231	.32138	4.3431	.23799
#2	.00024	.00288	.31879	4.3706	.23738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-3-A@5 Acquired: 9/26/2019 10:06:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**36.415**	**.15764**	**-.00060**	**414.01**	**.00568**
Stddev	.094	.00004	.00007	1.70	.00022
%RSD	.25859	.02274	11.654	.41131	3.8573
#1	36.482	.15762	-.00055	415.21	.00552
#2	36.349	.15767	-.00065	412.80	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0038**	**-.00027**	F **347.6**	**.00208**	**-.00979**
Stddev	.0015	.00071	1.2	.00016	.00269
%RSD	38.57	264.53	.3397	7.8361	27.517
#1	.0048	-.00078	348.4	.00220	-.01170
#2	.0028	.00024	346.7	.00197	-.00789
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.5007**	**-.00007**	**1.5076**	**-.0038**	**.00102**
Stddev	.0132	.00018	.0022	.0065	.00029
%RSD	.87600	265.40	.14761	170.9	28.359
#1	1.5100	.00006	1.5092	-.0083	.00082
#2	1.4914	-.00020	1.5060	.0008	.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-3-A@5 Acquired: 9/26/2019 10:06:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	i **-.0083**	**-.00015**	**.00034**	**.0002**
Stddev	.00126	.0213	.00047	.00306	.0006
%RSD	476.98	257.5	312.35	911.08	368.6
#1	-.00063	i .0068	-.00048	.00250	-.0002
#2	.00116	i -.0233	.00018	-.00183	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1545.3**	**479.01**	**34760.**	**4045.4**
Stddev	4.6	2.48	14.	2.3
%RSD	.30006	.51790	.03929	.05792
#1	1542.0	477.25	34750.	4043.7
#2	1548.6	480.76	34769.	4047.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.611%	89.347%	89.455%	98.201%
Range				

Sample Name: 480-159397-A-4-A@2 Acquired: 9/26/2019 10:10:22 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00965**	**.00308**	**.20580**	**.01834**
Stddev	.00035	.01382	.00042	.00029	.00003
%RSD	458.11	143.27	13.764	.14325	.17758
#1	-.00017	.01942	.00278	.20559	.01836
#2	.00033	-.00013	.00338	.20601	.01832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**78.502**	**.00040**	i **.0262**	**-.00055**
Stddev	.00003	.265	.00005	.0084	.00027
%RSD	109.74	.33727	11.385	32.02	49.214
#1	-.00001	78.689	.00036	i .0203	-.00074
#2	-.00006	78.315	.00043	i .0321	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00049**	**.54782**	**4.5115**	**.13054**
Stddev	.00027	.00019	.00260	.0080	.00011
%RSD	43.988	38.934	.47539	.17780	.08131
#1	.00081	-.00035	.54966	4.5172	.13047
#2	.00043	-.00062	.54598	4.5058	.13062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-4-A@2 Acquired: 9/26/2019 10:10:22 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.902**	**.02605**	**-.00061**	**675.14**	**-.00086**
Stddev	.020	.00014	.00009	.27	.00019
%RSD	.11023	.52388	15.031	.03968	21.900
#1	17.916	.02595	-.00054	675.33	-.00099
#2	17.888	.02614	-.00067	674.95	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0173**	**-.00148**	F **300.1**	**.00144**	**-.01228**
Stddev	.0046	.00125	.5	.00320	.00039
%RSD	26.53	84.742	.1695	221.81	3.1886
#1	.0141	-.00059	300.5	.00371	-.01200
#2	.0206	-.00237	299.8	-.00082	-.01255
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.2074**	**.00204**	**1.4516**	**.0067**	**-.00009**
Stddev	.0109	.00037	.0056	.0103	.00014
%RSD	.49529	17.998	.38529	154.5	159.97
#1	2.2151	.00178	1.4556	.0140	.00001
#2	2.1997	.00230	1.4476	-.0006	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159397-A-4-A@2 Acquired: 9/26/2019 10:10:22 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00017	i .0271	-.00014	-.00127	.0013
Stddev	.00224	.1386	.00003	.00063	.0008
%RSD	1325.2	511.5	23.339	49.185	62.56
#1	.00175	i -.0709	-.00016	-.00083	.0007
#2	-.00141	i .1251	-.00012	-.00171	.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1509.4	477.81	34072.	4011.4
Stddev	1.1	.95	40.	6.7
%RSD	.07297	.19793	.11794	.16742
#1	1508.6	478.47	34043.	4016.2
#2	1510.2	477.14	34100.	4006.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	83.621%	89.123%	87.684%	97.377%
Range				

Sample Name: 480-159254-C-16-A@2 Acquired: 9/26/2019 10:14:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.02326**	**.00406**	**.15204**	**.07963**
Stddev	.00021	.02611	.00241	.00045	.00008
%RSD	125.79	112.23	59.282	.29394	.10066
#1	-.00032	.04173	.00576	.15236	.07969
#2	-.00002	.00480	.00236	.15172	.07958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**3.9305**	**.00028**	i **.0219**	**-.00004**
Stddev	.00007	.0129	.00010	.0015	.00003
%RSD	490.17	.32896	34.566	6.771	79.107
#1	.00003	3.9214	.00021	i .0230	-.00002
#2	-.00006	3.9397	.00035	i .0209	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00077**	**.05774**	**.76113**	**.01210**
Stddev	.00008	.00007	.00355	.00447	.00045
%RSD	17.568	8.8272	6.1445	.58666	3.6803
#1	.00051	.00072	.05523	.75797	.01242
#2	.00040	.00082	.06025	.76428	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159254-C-16-A@2 Acquired: 9/26/2019 10:14:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0850**	**.00939**	**.00026**	**475.26**	**.00178**
Stddev	.0016	.00002	.00022	.46	.00035
%RSD	.14402	.24262	84.839	.09701	19.484
#1	1.0839	.00938	.00011	475.58	.00203
#2	1.0861	.00941	.00042	474.93	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0315**	**-.00157**	**2.936**	**.00127**	**-.01033**
Stddev	.0001	.00201	.014	.00100	.00026
%RSD	.3228	128.31	.4844	79.199	2.4891
#1	.0316	-.00299	2.926	.00056	-.01014
#2	.0315	-.00015	2.946	.00198	-.01051
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.2698**	**.00081**	**.32617**	**.0031**	**-.00016**
Stddev	.0071	.00109	.00055	.0066	.00021
%RSD	.31290	134.11	.16857	214.4	132.01
#1	2.2748	.00158	.32656	.0077	-.00001
#2	2.2648	.00004	.32578	-.0016	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159254-C-16-A@2 Acquired: 9/26/2019 10:14:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	i **.0362**	**.00003**	**.00024**	**.0033**
Stddev	.00066	.0329	.00007	.00138	.0003
%RSD	143.07	90.89	231.23	587.90	9.404
#1	-.00001	i .0129	.00008	.00121	.0031
#2	.00093	i .0594	-.00002	-.00074	.0036
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1583.4**	**495.83**	**35399.**	**4095.7**
Stddev	1.9	1.47	78.	23.2
%RSD	.12283	.29602	.22094	.56624
#1	1584.8	496.87	35454.	4112.1
#2	1582.0	494.79	35343.	4079.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.721%	92.485%	91.100%	99.423%
Range				

Sample Name: 480-159144-B-3-B Acquired: 9/26/2019 10:18:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.04402**	**.00035**	**.01626**	**.09416**
Stddev	.00010	.01824	.00147	.00008	.00007
%RSD	255.13	41.441	420.35	.51394	.07481
#1	-.00010	.05692	-.00069	.01632	.09411
#2	.00003	.03112	.00139	.01620	.09421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**8.6019**	**.00009**	i **-.0038**	**.03805**
Stddev	.00002	.0254	.00014	.0043	.00008
%RSD	5.9726	.29474	153.26	111.3	.22017
#1	.00036	8.5840	-.00001	i -.0008	.03799
#2	.00039	8.6198	.00019	i -.0069	.03811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**.00064**	**.11761**	**1.2221**	**.00470**
Stddev	.00044	.00044	.00002	.0065	.00034
%RSD	47.025	68.550	.01962	.52980	7.1350
#1	.00124	.00095	.11763	1.2176	.00493
#2	.00062	.00033	.11760	1.2267	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159144-B-3-B Acquired: 9/26/2019 10:18:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.8837**	**.82166**	**-.00055**	**4.1823**	**.00663**
Stddev	.0142	.00250	.00028	.0060	.00025
%RSD	.20693	.30441	50.930	.14387	3.7360
#1	6.8937	.81989	-.00074	4.1780	.00645
#2	6.8736	.82343	-.00035	4.1865	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0117**	**-.00063**	**9.422**	**-.00062**	**-.00095**
Stddev	.0030	.00038	.004	.00101	.00318
%RSD	25.75	60.579	.0476	161.62	336.27
#1	.0095	-.00036	9.418	.00009	-.00320
#2	.0138	-.00090	9.425	-.00133	.00130
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.4549**	**-.00069**	**.07417**	**-.0063**	**-.00032**
Stddev	.0223	.00032	.00053	.0027	.00015
%RSD	.40889	46.454	.71023	42.93	46.633
#1	5.4707	-.00092	.07380	-.0082	-.00043
#2	5.4391	-.00046	.07455	-.0044	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159144-B-3-B Acquired: 9/26/2019 10:18:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	i **-.0248**	**.00009**	**.01003**	**.0012**
Stddev	.00309	.0687	.00005	.00037	.0014
%RSD	271.20	277.2	48.858	3.7296	112.3
#1	-.00332	i .0238	.00013	.00977	.0022
#2	.00104	i -.0733	.00006	.01030	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1789.6**	**514.85**	**38188.**	**4185.2**
Stddev	6.5	2.12	48.	.7
%RSD	.36297	.41240	.12487	.01770
#1	1794.2	516.35	38221.	4184.7
#2	1785.0	513.35	38154.	4185.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.147%	96.033%	98.277%	101.59%
Range				

Sample Name: 480-159144-B-4-B Acquired: 9/26/2019 10:21:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.09597**	**.00197**	**.00047**	**.00156**
Stddev	.00004	.00876	.00004	.00005	.00001
%RSD	30.687	9.1241	2.2598	10.157	.74972
#1	.00014	.10217	.00194	.00051	.00157
#2	.00009	.08978	.00200	.00044	.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.45165**	**.00000**	i **.0076**	**-.00001**
Stddev	.00005	.00289	.00000	.0061	.00009
%RSD	141.04	.63940	43.444	79.37	1174.6
#1	-.00006	.44961	.00000	i .0033	.00006
#2	-.00000	.45369	.00000	i .0119	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00141**	**.01816**	**.07684**	**-.00020**
Stddev	.00008	.00017	.00064	.00414	.00119
%RSD	17.539	12.260	3.5374	5.3835	600.79
#1	.00053	.00129	.01861	.07392	.00064
#2	.00041	.00154	.01770	.07977	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159144-B-4-B Acquired: 9/26/2019 10:21:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03213**	**.00070**	**-.00044**	**1.0790**	**-.00003**
Stddev	.00056	.00006	.00009	.0039	.00035
%RSD	1.7501	8.4712	21.058	.36123	1145.2
#1	.03174	.00066	-.00050	1.0763	.00022
#2	.03253	.00074	-.00037	1.0818	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0052**	**-.00084**	**.0111**	**.00117**	**-.00120**
Stddev	.0003	.00079	.0031	.00003	.00652
%RSD	6.436	94.668	27.52	2.1897	543.17
#1	-.0054	-.00140	.0133	.00115	.00341
#2	-.0049	-.00028	.0089	.00119	-.00581
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.9081**	**.00015**	**.00100**	**-.0050**	**.00062**
Stddev	.0013	.00119	.00004	.0037	.00009
%RSD	.06766	799.62	4.2891	72.87	14.100
#1	1.9072	.00099	.00103	-.0024	.00068
#2	1.9091	-.00069	.00097	-.0076	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159144-B-4-B Acquired: 9/26/2019 10:21:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	i **.1074**	**-.00011**	**.00514**	**-.0000**
Stddev	.00086	.0064	.00025	.00099	.0013
%RSD	68.326	5.988	218.97	19.274	4021.
#1	-.00065	i .1028	-.00029	.00444	-.0009
#2	-.00188	i .1119	.00006	.00584	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1798.6**	**519.11**	**38559.**	**4212.9**
Stddev	6.0	2.00	96.	10.4
%RSD	.33436	.38569	.24814	.24723
#1	1802.9	520.52	38491.	4220.3
#2	1794.4	517.69	38627.	4205.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.644%	96.827%	99.233%	102.27%
Range				

Sample Name: 159254-14 sol Acquired: 9/26/2019 10:25:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.23052**	**.00277**	**.06179**	**.03618**
Stddev	.00039	.00778	.00450	.00005	.00001
%RSD	139.81	3.3728	162.29	.07775	.03911
#1	-.00000	.23602	.00595	.06183	.03617
#2	-.00056	.22502	-.00041	.06176	.03619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**87.236**	**.00034**	i **-.0002**	**.00583**
Stddev	.00008	.364	.00003	.0092	.00039
%RSD	77.660	.41747	9.9669	4595.	6.7603
#1	.00005	86.979	.00036	i .0063	.00611
#2	.00016	87.494	.00032	i -.0067	.00556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00023**	**.25315**	**2.4452**	**.03350**
Stddev	.00003	.00029	.00748	.0085	.00115
%RSD	14.004	123.72	2.9558	.34777	3.4430
#1	-.00020	.00044	.25844	2.4392	.03268
#2	-.00024	.00003	.24786	2.4512	.03431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159254-14 sol Acquired: 9/26/2019 10:25:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**31.928**	**1.6109**	**-.00012**	**5.9075**	**.03520**
Stddev	.001	.0048	.00038	.0142	.00028
%RSD	.00289	.29526	323.05	.23962	.79561
#1	31.929	1.6142	-.00039	5.8975	.03540
#2	31.928	1.6075	.00015	5.9175	.03500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0378**	**-.00121**	F **95.08**	**-.00112**	**-.00843**
Stddev	.0037	.00093	.17	.00422	.00189
%RSD	9.679	77.171	.1774	376.80	22.402
#1	.0352	-.00187	94.96	.00187	-.00977
#2	.0404	-.00055	95.20	-.00411	-.00709
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.1697**	**-.00099**	**.44045**	**-.0016**	**.00037**
Stddev	.0291	.00133	.00123	.0073	.00027
%RSD	.91844	134.27	.27934	447.4	73.569
#1	3.1491	-.00005	.43958	-.0068	.00056
#2	3.1903	-.00193	.44132	.0035	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159254-14 sol Acquired: 9/26/2019 10:25:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	i **-.1472**	**-.00043**	**.02163**	**.0002**
Stddev	.00072	.0391	.00031	.00109	.0005
%RSD	38.325	26.55	71.482	5.0522	290.0
#1	.00138	i -.1748	-.00021	.02240	-.0002
#2	.00240	i -.1196	-.00065	.02086	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1751.1**	**516.86**	**37650.**	**4139.3**
Stddev	13.8	2.95	133.	34.9
%RSD	.78543	.57098	.35284	.84382
#1	1760.8	518.94	37744.	4164.0
#2	1741.4	514.77	37556.	4114.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.012%	96.407%	96.894%	100.48%
Range				

Sample Name: 158378-10 tot Acquired: 9/26/2019 10:29:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.12237**	**.00217**	**.07059**	**.05986**
Stddev	.00013	.02499	.00056	.00047	.00028
%RSD	113.20	20.420	25.931	.66509	.47513
#1	.00020	.14004	.00178	.07025	.06006
#2	.00002	.10470	.00257	.07092	.05966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**79.913**	**.00007**	i **.0190**	**-.00015**
Stddev	.00001	.175	.00002	.0229	.00031
%RSD	12.464	.21840	32.252	120.8	210.56
#1	-.00005	80.036	.00005	i .0028	.00007
#2	-.00004	79.789	.00008	i .0352	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00002**	**.04554**	**3.1234**	**.03680**
Stddev	.00023	.00018	.00602	.0120	.00008
%RSD	77.884	1044.4	13.221	.38449	.20874
#1	.00013	-.00014	.04980	3.1149	.03674
#2	.00046	.00011	.04129	3.1319	.03685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 158378-10 tot Acquired: 9/26/2019 10:29:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**78.630**	**.12367**	**-.00020**	**28.414**	**.00062**
Stddev	.003	.00045	.00000	.037	.00004
%RSD	.00432	.36627	1.9406	.13032	6.6774
#1	78.628	.12399	-.00020	28.388	.00065
#2	78.633	.12335	-.00021	28.440	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0054**	**-.00091**	**23.87**	**-.00247**	**-.00289**
Stddev	.0008	.00113	.15	.00124	.00121
%RSD	15.01	123.62	.6186	50.044	41.898
#1	-.0060	-.00171	23.77	-.00334	-.00204
#2	-.0049	-.00011	23.98	-.00160	-.00375
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.4642**	**-.00003**	**1.1933**	**.0034**	**.01020**
Stddev	.0154	.00133	.0027	.0036	.00819
%RSD	.18242	4568.3	.22732	104.5	80.298
#1	8.4533	.00091	1.1914	.0009	.00441
#2	8.4751	-.00097	1.1952	.0060	.01600
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 158378-10 tot Acquired: 9/26/2019 10:29:34 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	i **.0238**	**.00024**	**-.00024**	**-.0001**
Stddev	.00025	.0284	.00030	.00041	.0009
%RSD	12.522	119.3	125.14	172.34	730.8
#1	-.00184	i .0037	.00003	-.00052	-.0007
#2	-.00219	i .0440	.00045	.00005	.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1696.7**	**511.71**	**37226.**	**4107.5**
Stddev	12.1	4.27	31.	1.4
%RSD	.71550	.83398	.08278	.03322
#1	1705.3	514.73	37248.	4106.5
#2	1688.1	508.69	37204.	4108.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.999%	95.447%	95.802%	99.708%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 10:33:21 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96534	49.580	.99165	.99823	1.0001	.98467	48.565	.98613
Stddev	.00011	.153	.00016	.00099	.0058	.00185	.050	.00040
%RSD	.01092	.30793	.01569	.09966	.57856	.18791	.10328	.04053
#1	.96526	49.688	.99176	.99753	1.0042	.98598	48.601	.98585
#2	.96541	49.472	.99154	.99893	.99597	.98336	48.530	.98641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.010	.96480	.99158	.98012	49.139	48.663	.98507	48.682
Stddev	.007	.00183	.00141	.00301	.177	.207	.00411	.104
%RSD	.6827	.18921	.14229	.30683	.36031	.42451	.41724	.21341
#1	i 1.015	.96351	.99258	.98225	49.264	48.809	.98797	48.755
#2	i 1.005	.96609	.99058	.97799	49.014	48.517	.98216	48.608
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98548	1.0090	49.265	.96463	24.07	.95929	24.58	.99166
Stddev	.00153	.0025	.244	.00198	.06	.00199	.05	.00108
%RSD	.15532	.24375	.49480	.20517	.2392	.20787	.2143	.10894
#1	.98656	1.0107	49.438	.96323	24.03	.95788	24.62	.99090
#2	.98440	1.0072	49.093	.96603	24.11	.96070	24.54	.99242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 10:33:21 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98793	9.8679	.95241	.99851	.9786	.98006	.97880	i 2.463
Stddev	.00094	.0222	.00225	.00551	.0046	.00278	.00390	.029
%RSD	.09467	.22503	.23588	.55180	.4711	.28369	.39888	1.177
#1	.98726	9.8836	.95082	1.0024	.9818	.98203	.97604	i 2.442
#2	.98859	9.8522	.95400	.99461	.9753	.97810	.98156	i 2.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99101	.97711	.9680
Stddev	.00031	.00195	.0004
%RSD	.03109	.19935	.0453
#1	.99123	.97573	.9677
#2	.99080	.97849	.9684
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1624.3	511.35	36219.	4094.8
Stddev	.9	1.30	108.	3.1
%RSD	.05320	.25476	.29753	.07518
#1	1624.9	510.43	36143.	4092.7
#2	1623.7	512.27	36295.	4097.0

Sample Name: CCB-5508960 Acquired: 9/26/2019 10:37:02 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00632**	**.00187**	**-.00207**	**.00010**	**.00002**	**-.00400**	**-.00015**
Stddev	.00004	.01850	.00206	.00027	.00001	.00005	.00293	.00012
%RSD	8.4331	292.81	110.02	13.054	7.9004	281.34	73.293	79.007
#1	.00050	.01940	.00042	-.00188	.00010	.00006	-.00192	-.00023
#2	.00056	-.00676	.00333	-.00226	.00011	-.00002	-.00607	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0112**	**-.00014**	**-.00002**	**.00014**	**.00143**	**.01090**	**.00059**	**.00227**
Stddev	.0019	.00007	.00005	.00001	.00381	.02111	.00022	.00313
%RSD	16.54	46.756	220.22	6.3635	267.13	193.65	37.851	138.07
#1	i .0099	-.00019	.00001	.00015	-.00127	-.00403	.00043	.00448
#2	i .0125	-.00009	-.00006	.00013	.00412	.02582	.00074	.00005
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00154**	**.00348**	**.00011**	**.0036**	**-.00059**	**-.0014**	**-.00077**
Stddev	.00007	.00023	.00126	.00047	.0036	.00014	.0049	.00135
%RSD	261.91	14.739	36.342	419.09	97.85	24.495	357.0	176.14
#1	.00002	.00138	.00258	.00045	.0011	-.00049	-.0048	.00019
#2	-.00008	.00170	.00437	-.00022	.0062	-.00069	.0021	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 10:37:02 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**-.01583**	**.00103**	**-.00001**	**.0019**	**.00000**	**-.00090**	i **.0917**
Stddev	.00261	.00591	.00049	.00001	.0037	.00032	.00044	.0722
%RSD	605.68	37.354	47.599	85.054	199.7	14076.	49.330	78.79
#1	.00228	-.02001	.00068	-.00000	-.0008	-.00022	-.00059	i .0406
#2	-.00141	-.01165	.00137	-.00002	.0045	.00023	-.00121	i .1427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00010**	**-.00017**	**.0009**
Stddev	.00010	.00033	.0008
%RSD	92.743	191.46	84.31
#1	-.00017	.00006	.0004
#2	-.00004	-.00041	.0015
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1790.8**	**532.42**	**38418.**	**4109.9**
Stddev	2.6	.08	144.	5.6
%RSD	.14709	.01424	.37604	.13549
#1	1792.6	532.36	38316.	4105.9
#2	1788.9	532.47	38520.	4113.8

Sample Name: CCVL-5514926 Acquired: 9/26/2019 10:40:53 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.21988	.01512	.01870	.00219	.00213	.51652	.00197
Stddev	.00023	.00326	.00256	.00033	.00000	.00006	.00354	.00017
%RSD	3.9130	1.4840	16.922	1.7811	.22123	2.7947	.68627	8.8039
#1	.00573	.21757	.01693	.01893	.00219	.00217	.51903	.00209
#2	.00606	.22219	.01331	.01846	.00219	.00209	.51402	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0085	.00404	.00445	.00968	.04714	.49584	.02919	.21302
Stddev	.0005	.00008	.00020	.00028	.00077	.00216	.00107	.00317
%RSD	5.318	1.8951	4.5186	2.9421	1.6239	.43474	3.6744	1.4895
#1	i .0088	.00409	.00460	.00989	.04660	.49432	.02995	.21078
#2	i .0081	.00399	.00431	.00948	.04769	.49736	.02844	.21526
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01038	.99611	.01005	-.0273	.00978	.2052	.02070
Stddev	.00008	.00006	.00384	.00033	.0005	.00160	.0005	.00207
%RSD	2.4141	.54280	.38500	3.3106	1.786	16.380	.2208	9.9833
#1	.00307	.01042	.99340	.01029	-.0269	.01091	.2056	.02216
#2	.00318	.01034	.99883	.00982	-.0276	.00864	.2049	.01924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 10:40:53 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02121	.45463	.00946	.00502	.0019	.00488	.01950	i .0936
Stddev	.00229	.01033	.00088	.00003	.0017	.00017	.00083	.0063
%RSD	10.784	2.2723	9.3284	.51978	91.82	3.4538	4.2750	6.714
#1	.01959	.44732	.01009	.00503	.0007	.00476	.02009	i .0981
#2	.02282	.46193	.00884	.00500	.0031	.00500	.01892	i .0892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00475	.01159	.0009
Stddev	.00019	.00038	.0003
%RSD	3.9964	3.2679	31.03
#1	.00489	.01186	.0007
#2	.00462	.01132	.0011
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1798.5	526.74	38564.	4133.2
Stddev	2.0	2.73	83.	2.3
%RSD	.11033	.51800	.21616	.05506
#1	1797.1	524.81	38623.	4134.8
#2	1799.9	528.67	38505.	4131.6

Sample Name: MB 480-493347/1-A Acquired: 9/26/2019 10:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.01301**	**-.00172**	**.00483**	**.00043**
Stddev	.00005	.00992	.00430	.00018	.00001
%RSD	36.731	76.277	250.66	3.7992	1.1942
#1	.00018	.02003	-.00476	.00496	.00043
#2	.00010	.00599	.00133	.00470	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.08317**	**.00016**	i **.0119**	**-.00010**
Stddev	.00002	.00363	.00009	.0130	.00007
%RSD	75.840	4.3600	55.321	109.1	65.827
#1	-.00001	.08061	.00010	i .0027	-.00005
#2	-.00004	.08574	.00022	i .0210	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00142**	**.00046**	**.01980**	**.00316**	**.00193**
Stddev	.00020	.00008	.00129	.02002	.00052
%RSD	14.082	17.066	6.5278	634.61	26.846
#1	.00156	.00041	.01889	.01731	.00230
#2	.00128	.00052	.02071	-.01100	.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493347/1-A Acquired: 9/26/2019 10:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01179**	**.00063**	F **.00919**	**.02610**	**.00002**
Stddev	.00020	.00004	.00009	.00055	.00023
%RSD	1.7338	6.0296	.99994	2.1085	1193.6
#1	.01194	.00060	.00913	.02649	.00018
#2	.01165	.00065	.00926	.02571	-.00014
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			.00500		
Low Limit			-.00500		

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**-.00066**	**.0115**	**-.00015**	**-.00030**
Stddev	.0015	.00091	.0038	.00135	.00058
%RSD	586.3	137.00	33.45	878.19	190.60
#1	-.0008	-.00130	.0142	-.00111	-.00071
#2	.0013	-.00002	.0088	.00080	.00010
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.29100**	**.00010**	**.00034**	**.0015**	**.00028**
Stddev	.00113	.00164	.00001	.0123	.00002
%RSD	.38730	1661.0	1.4799	790.6	8.1024
#1	.29020	-.00106	.00034	.0102	.00029
#2	.29180	.00126	.00034	-.0071	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493347/1-A Acquired: 9/26/2019 10:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00203**	i **-.0222**	**-.00021**	**.00529**	**.0015**
Stddev	.00002	.0748	.00003	.00106	.0009
%RSD	1.0082	337.0	16.635	20.069	56.88
#1	-.00204	i -.0751	-.00018	.00604	.0009
#2	-.00201	i .0307	-.00023	.00454	.0022
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1792.5**	**524.05**	**38636.**	**4230.7**
Stddev	5.6	2.63	10.	8.8
%RSD	.31262	.50116	.02620	.20714
#1	1788.5	522.19	38629.	4224.5
#2	1796.4	525.90	38643.	4236.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.305%	97.748%	99.431%	102.70%
Range				

Sample Name: 480-159415-A-1-A@2 Acquired: 9/26/2019 10:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00071**	**40.923**	**.12219**	**.02833**	**.32641**
Stddev	.00048	.083	.00325	.00055	.00079
%RSD	68.311	.20316	2.6593	1.9550	.24331
#1	.00036	40.982	.12449	.02872	.32585
#2	.00105	40.864	.11989	.02794	.32698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00156**	**19.133**	**-.00167**	i **.1555**	**.13674**
Stddev	.00008	.025	.00005	.0119	.00017
%RSD	5.2686	.13031	3.2573	7.643	.12212
#1	.00150	19.151	-.00163	i .1640	.13686
#2	.00162	19.116	-.00171	i .1471	.13663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20837**	**.09036**	**351.03**	**4.6643**	**.02820**
Stddev	.00022	.00006	.54	.0001	.00014
%RSD	.10379	.06317	.15470	.00221	.48111
#1	.20821	.09032	351.41	4.6643	.02811
#2	.20852	.09040	350.65	4.6642	.02830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159415-A-1-A@2 Acquired: 9/26/2019 10:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.1502**	**9.3482**	**.00632**	**.94100**	**.28381**
Stddev	.0018	.0115	.00024	.00118	.00061
%RSD	.04426	.12298	3.8583	.12496	.21484
#1	4.1489	9.3563	.00649	.94183	.28424
#2	4.1515	9.3400	.00615	.94017	.28338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.036**	**.05057**	**1.439**	F **-.02696**	**.00324**
Stddev	.000	.00121	.003	.00036	.01236
%RSD	.0163	2.3902	.1779	1.3219	381.21
#1	2.036	.05142	1.441	-.02671	-.00550
#2	2.037	.04971	1.437	-.02721	.01198
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.4210**	**.00858**	**.14873**	**.2156**	**2.8473**
Stddev	.0173	.00001	.00041	.0018	.0030
%RSD	.39202	.12788	.27279	.8524	.10685
#1	4.4333	.00858	.14902	.2143	2.8451
#2	4.4087	.00859	.14845	.2169	2.8494
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159415-A-1-A@2 Acquired: 9/26/2019 10:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00695**	i **-.4053**	**.17540**	**1.3498**	**.0445**
Stddev	.00075	.0222	.00046	.0047	.0006
%RSD	10.850	5.471	.26080	.34595	1.396
#1	-.00641	i -.4210	.17573	1.3531	.0450
#2	-.00748	i -.3897	.17508	1.3465	.0441
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1665.0**	**525.19**	**38500.**	**4258.9**
Stddev	4.6	1.32	48.	6.5
%RSD	.27722	.25131	.12451	.15183
#1	1661.7	524.26	38534.	4254.3
#2	1668.2	526.13	38466.	4263.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.240%	97.962%	99.082%	103.38%
Range				

Sample Name: 480-159532-A-2-A@2 Acquired: 9/26/2019 10:52:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**15.111**	**.02040**	**.02645**	**.13951**
Stddev	.00045	.010	.00108	.00049	.00009
%RSD	75.217	.06379	5.2851	1.8561	.06146
#1	-.00091	15.104	.01964	.02680	.13957
#2	-.00028	15.118	.02117	.02610	.13945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00121**	**551.08**	**.00104**	i **.0922**	**.01171**
Stddev	.00000	.96	.00031	.0080	.00020
%RSD	.24104	.17489	30.003	8.720	1.6669
#1	.00121	551.76	.00082	i .0865	.01157
#2	.00122	550.40	.00126	i .0978	.01185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03428**	**.14581**	**49.030**	**3.6455**	**.03666**
Stddev	.00044	.00041	.020	.0072	.00041
%RSD	1.2868	.28014	.03992	.19640	1.1080
#1	.03459	.14610	49.044	3.6404	.03637
#2	.03396	.14552	49.016	3.6505	.03695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-2-A@2 Acquired: 9/26/2019 10:52:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**299.70**	**3.0644**	**.00392**	**.69145**	**.03473**
Stddev	.66	.0040	.00056	.00055	.00050
%RSD	.22156	.12927	14.174	.07946	1.4378
#1	300.17	3.0672	.00353	.69106	.03508
#2	299.23	3.0616	.00431	.69183	.03438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8649**	**1.5331**	**1.411**	**-.00602**	**-.00365**
Stddev	.0020	.0026	.004	.00210	.00640
%RSD	.2255	.16802	.3045	34.919	175.46
#1	.8663	1.5349	1.414	-.00751	.00088
#2	.8636	1.5313	1.408	-.00453	-.00818
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.1991**	**.02447**	**.35399**	**.0250**	**.21933**
Stddev	.0101	.00014	.00166	.0046	.00090
%RSD	.45959	.55360	.46955	18.53	.40841
#1	2.1920	.02457	.35517	.0217	.21870
#2	2.2063	.02437	.35282	.0283	.21996
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-2-A@2 Acquired: 9/26/2019 10:52:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	i **.0330**	**.05253**	**.21210**	**.0151**
Stddev	.00091	.0501	.00032	.00149	.0001
%RSD	115.47	151.7	.60836	.70016	.7249
#1	-.00144	i -.0024	.05231	.21315	.0150
#2	-.00015	i .0685	.05276	.21105	.0152
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1451.0**	**485.22**	**35310.**	**4110.9**
Stddev	3.7	.43	10.	12.8
%RSD	.25426	.08775	.02784	.31048
#1	1453.6	485.52	35317.	4101.8
#2	1448.4	484.92	35303.	4119.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	80.388%	90.506%	90.871%	99.790%
Range				

Sample Name: 480-159532-A-4-A@2 Acquired: 9/26/2019 10:56:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**19.307**	**.03473**	**.04241**	**.20191**
Stddev	.00006	.024	.00662	.00068	.00007
%RSD	14.376	.12430	19.064	1.6032	.03493
#1	.00036	19.324	.03005	.04193	.20186
#2	.00044	19.290	.03941	.04289	.20196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**678.07**	**.00088**	i **.1223**	**.02172**
Stddev	.00003	2.49	.00008	.0083	.00009
%RSD	2.2316	.36777	9.6033	6.809	.40682
#1	.00152	679.83	.00094	i .1282	.02166
#2	.00147	676.30	.00082	i .1164	.02178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11492**	**.48165**	**130.99**	**4.9296**	**.05508**
Stddev	.00017	.00018	.05	.0184	.00051
%RSD	.14925	.03711	.03687	.37227	.92169
#1	.11480	.48152	130.95	4.9166	.05543
#2	.11504	.48177	131.02	4.9426	.05472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-4-A@2 Acquired: 9/26/2019 10:56:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**57.919**	**1.4053**	**.01448**	**.83261**	**.10969**
Stddev	.079	.0012	.00031	.00524	.00034
%RSD	.13656	.08672	2.1394	.62904	.31414
#1	57.975	1.4061	.01470	.83631	.10945
#2	57.863	1.4044	.01426	.82890	.10993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0436**	**18.368**	**4.009**	**.00119**	**-.00888**
Stddev	.0031	.072	.030	.00080	.00517
%RSD	7.216	.39351	.7536	67.165	58.232
#1	.0413	18.317	3.988	.00063	-.00522
#2	.0458	18.419	4.030	.00176	-.01253
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.4750**	**.11750**	**1.0023**	**.0773**	**.43846**
Stddev	.0425	.00083	.0018	.0052	.00092
%RSD	1.7169	.70509	.17572	6.672	.21094
#1	2.5050	.11691	1.0036	.0737	.43912
#2	2.4449	.11809	1.0011	.0810	.43781
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-4-A@2 Acquired: 9/26/2019 10:56:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	i **.1818**	**.05434**	**.37935**	**.0248**
Stddev	.00089	.1385	.00016	.00154	.0005
%RSD	138.04	76.14	.29286	.40468	1.947
#1	-.00128	i .0839	.05423	.37827	.0244
#2	-.00002	i .2797	.05446	.38044	.0251
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1464.4**	**487.62**	**35485.**	**4148.3**
Stddev	2.1	.82	34.	15.5
%RSD	.14409	.16831	.09497	.37351
#1	1465.9	488.20	35461.	4137.3
#2	1462.9	487.04	35508.	4159.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	81.129%	90.953%	91.321%	100.70%
Range				

Sample Name: 480-159532-A-7-A@2 Acquired: 9/26/2019 11:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**40.746**	**.04758**	**.07735**	**.42835**
Stddev	.00002	.057	.00068	.00123	.00164
%RSD	1.4286	.13995	1.4368	1.5945	.38185
#1	.00124	40.706	.04710	.07648	.42720
#2	.00122	40.787	.04806	.07822	.42951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00234**	**137.70**	**-.00069**	i **.1579**	**.04693**
Stddev	.00006	.40	.00008	.0064	.00000
%RSD	2.5657	.29253	12.194	4.065	.00220
#1	.00239	137.41	-.00063	i .1624	.04693
#2	.00230	137.98	-.00075	i .1534	.04693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.35901**	**.86395**	**340.62**	**9.9536**	**.07496**
Stddev	.00181	.00286	1.32	.0025	.00055
%RSD	.50552	.33155	.38706	.02518	.73361
#1	.35772	.86192	339.69	9.9519	.07458
#2	.36029	.86597	341.56	9.9554	.07535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-7-A@2 Acquired: 9/26/2019 11:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**22.505**	**3.2084**	**.07046**	**.62442**	**.22511**
Stddev	.028	.0054	.00023	.00365	.00043
%RSD	.12546	.16959	.32382	.58392	.19207
#1	22.485	3.2046	.07030	.62184	.22481
#2	22.524	3.2123	.07062	.62700	.22542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0766**	**27.906**	**2.956**	F **-.03414**	**-.00245**
Stddev	.0263	.108	.014	.00367	.00755
%RSD	34.39	.38684	.4701	10.755	307.87
#1	.0952	27.830	2.947	-.03155	-.00779
#2	.0580	27.983	2.966	-.03674	.00289
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.8430**	**.04716**	**.43224**	**.2162**	**.34906**
Stddev	.0253	.00040	.00028	.0154	.00006
%RSD	.88925	.85320	.06459	7.119	.01806
#1	2.8251	.04744	.43204	.2053	.34901
#2	2.8608	.04687	.43243	.2271	.34910
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-7-A@2 Acquired: 9/26/2019 11:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00560**	i **.0844**	**.10125**	**.58535**	**.0381**
Stddev	.00127	.0327	.00085	.00065	.0012
%RSD	22.589	38.69	.84413	.11089	3.201
#1	-.00471	i .1075	.10064	.58581	.0390
#2	-.00650	i .0613	.10185	.58490	.0372
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1584.9**	**518.53**	**38201.**	**4309.1**
Stddev	7.2	3.30	42.	12.2
%RSD	.45287	.63717	.10904	.28303
#1	1590.0	520.87	38231.	4317.8
#2	1579.9	516.20	38172.	4300.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.807%	96.720%	98.312%	104.60%
Range				

Sample Name: 480-159532-A-12-A@2 Acquired: 9/26/2019 11:03:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**23.871**	**.14539**	**.10811**	**.40667**
Stddev	.00013	.049	.00148	.00035	.00149
%RSD	6.4898	.20458	1.0159	.31957	.36601
#1	.00188	23.836	.14643	.10786	.40772
#2	.00206	23.905	.14435	.10835	.40561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	**135.82**	**-.00148**	i **.1180**	**.03185**
Stddev	.00005	.74	.00017	.0148	.00051
%RSD	2.6405	.54500	11.834	12.52	1.5913
#1	.00197	135.30	-.00160	i .1075	.03149
#2	.00205	136.35	-.00135	i .1284	.03221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.17974**	**.91551**	**409.68**	**4.4124**	**.03154**
Stddev	.00097	.00320	.79	.0313	.00042
%RSD	.53700	.34964	.19312	.70872	1.3368
#1	.17906	.91324	409.12	4.4346	.03124
#2	.18043	.91777	410.24	4.3903	.03184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-12-A@2 Acquired: 9/26/2019 11:03:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.6174**	**3.4159**	**.02392**	**.70945**	**.13640**
Stddev	.0067	.0119	.00025	.00655	.00070
%RSD	.06987	.34760	1.0363	.92271	.51157
#1	9.6127	3.4075	.02410	.71408	.13590
#2	9.6222	3.4243	.02375	.70482	.13689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.1947**	**17.758**	**28.67**	**-.01613**	**.00413**
Stddev	.0077	.136	.06	.00136	.00514
%RSD	3.971	.76343	.1985	8.4492	124.55
#1	-.1893	17.662	28.63	-.01517	.00049
#2	-.2002	17.854	28.71	-.01710	.00776
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.2132**	**.12307**	**.25530**	**.2435**	**2.7670**
Stddev	.0145	.00041	.00067	.0067	.0094
%RSD	.45130	.33701	.26211	2.765	.34086
#1	3.2029	.12278	.25483	.2387	2.7604
#2	3.2234	.12336	.25578	.2482	2.7737
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-12-A@2 Acquired: 9/26/2019 11:03:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	i **-.1708**	**.18328**	**.38740**	**.0574**
Stddev	.00125	.1023	.00014	.00364	.0003
%RSD	71.397	59.90	.07374	.93862	.5597
#1	-.00086	i -.0984	.18319	.38483	.0571
#2	-.00263	i -.2431	.18338	.38997	.0576
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1588.6**	**506.65**	**37198.**	**4160.0**
Stddev	1.9	1.76	42.	11.9
%RSD	.11879	.34704	.11414	.28712
#1	1589.9	505.41	37167.	4168.5
#2	1587.2	507.89	37228.	4151.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.008%	94.504%	95.729%	100.98%
Range				

Sample Name: 480-159532-A-13-A@2 Acquired: 9/26/2019 11:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00500**	**25.002**	**.10066**	**.06688**	**.76002**
Stddev	.00027	.089	.00457	.00042	.00121
%RSD	5.3437	.35683	4.5390	.62275	.15906
#1	.00519	24.939	.10389	.06659	.75917
#2	.00481	25.066	.09743	.06718	.76088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00315**	**67.139**	**-.00042**	i **.1492**	**.04285**
Stddev	.00009	.146	.00012	.0073	.00010
%RSD	2.8637	.21778	28.846	4.915	.22460
#1	.00321	67.036	-.00051	i .1544	.04279
#2	.00309	67.243	-.00034	i .1440	.04292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.24486**	**1.9347**	**425.31**	**4.3155**	**.03978**
Stddev	.00045	.0073	.41	.0189	.00070
%RSD	.18318	.37851	.09528	.43798	1.7675
#1	.24517	1.9399	425.59	4.3021	.04028
#2	.24454	1.9295	425.02	4.3288	.03928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-13-A@2 Acquired: 9/26/2019 11:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.4331**	**2.7046**	**.04907**	**.72258**	**.23846**
Stddev	.0288	.0070	.00059	.00213	.00040
%RSD	.44764	.25878	1.2055	.29442	.16909
#1	6.4535	2.7096	.04865	.72108	.23875
#2	6.4128	2.6997	.04949	.72409	.23818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.987**	**95.188**	**9.776**	**.04094**	**.00179**
Stddev	.018	.216	.070	.00404	.00088
%RSD	.6011	.22680	.7200	9.8618	49.081
#1	-2.975	95.035	9.726	.03808	.00241
#2	-3.000	95.340	9.825	.04379	.00117
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.5536**	**.13722**	**.31221**	**.2611**	**.95878**
Stddev	.0215	.00093	.00021	.0118	.00294
%RSD	.84224	.67501	.06591	4.527	.30711
#1	2.5383	.13657	.31207	.2527	.96086
#2	2.5688	.13788	.31236	.2694	.95670
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-13-A@2 Acquired: 9/26/2019 11:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00419**	i **.0096**	**.08646**	**.88102**	**.0439**
Stddev	.00249	.1126	.00090	.00543	.0007
%RSD	59.524	1178.	1.0376	.61647	1.533
#1	-.00243	i -.0701	.08709	.88486	.0444
#2	-.00595	i .0892	.08582	.87717	.0434
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1617.3**	**519.64**	**38191.**	**4249.2**
Stddev	3.0	1.14	128.	1.5
%RSD	.18381	.21875	.33620	.03646
#1	1619.5	520.44	38100.	4248.1
#2	1615.2	518.83	38282.	4250.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.603%	96.926%	98.285%	103.15%
Range				

Sample Name: 480-159532-A-32-A@2 Acquired: 9/26/2019 11:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**24.756**	**.07943**	**.04598**	**.31643**
Stddev	.00040	.019	.00247	.00056	.00029
%RSD	58.283	.07602	3.1113	1.2111	.09297
#1	.00096	24.743	.08118	.04637	.31622
#2	.00040	24.769	.07768	.04559	.31664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**520.56**	**.00116**	i **.1792**	**.02490**
Stddev	.00003	3.29	.00017	.0117	.00046
%RSD	1.4195	.63290	14.788	6.552	1.8592
#1	.00227	522.89	.00128	i .1709	.02523
#2	.00223	518.23	.00104	i .1875	.02457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10466**	**.68926**	**134.39**	**6.0780**	**.08083**
Stddev	.00088	.00240	.25	.0170	.00038
%RSD	.84017	.34795	.18433	.27967	.46618
#1	.10404	.68756	134.57	6.0659	.08057
#2	.10528	.69095	134.21	6.0900	.08110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-32-A@2 Acquired: 9/26/2019 11:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**107.91**	**1.7267**	**.01558**	**.72718**	**.11543**
Stddev	.17	.0016	.00036	.00392	.00090
%RSD	.16027	.09437	2.3042	.53932	.78300
#1	108.03	1.7278	.01584	.72440	.11479
#2	107.79	1.7255	.01533	.72995	.11606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.707**	**13.472**	**2.980**	**.00139**	**-.01082**
Stddev	.019	.007	.013	.00106	.00306
%RSD	.7136	.05022	.4234	76.024	28.295
#1	2.720	13.477	2.989	.00214	-.00866
#2	2.693	13.467	2.971	.00064	-.01299
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.1714**	**.06866**	**.69642**	**.0890**	**.43645**
Stddev	.0202	.00076	.00017	.0180	.00110
%RSD	.63662	1.1129	.02456	20.20	.25267
#1	3.1856	.06920	.69654	.0763	.43567
#2	3.1571	.06812	.69630	.1017	.43723
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-32-A@2 Acquired: 9/26/2019 11:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00293**	i **.3577**	**.09259**	**.40559**	**.0256**
Stddev	.00220	.0658	.00056	.00304	.0007
%RSD	75.058	18.40	.60233	.75038	2.759
#1	-.00449	i .3112	.09298	.40774	.0251
#2	-.00138	i .4043	.09219	.40344	.0261
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1481.7**	**506.11**	**36806.**	**4266.8**
Stddev	.0	.69	12.	3.3
%RSD	.00047	.13632	.03347	.07736
#1	1481.7	505.62	36815.	4264.4
#2	1481.7	506.60	36798.	4269.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	82.087%	94.403%	94.722%	103.57%
Range				

Sample Name: 480-159532-A-33-A@2 Acquired: 9/26/2019 11:15:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00182**	**38.521**	**.07505**	**.07258**	**.37781**
Stddev	.00037	.012	.00053	.00049	.00133
%RSD	20.375	.03126	.69956	.67898	.35320
#1	.00155	38.513	.07543	.07223	.37686
#2	.00208	38.530	.07468	.07293	.37875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00285**	**96.504**	**-.00086**	i **.2060**	**.05008**
Stddev	.00004	.047	.00024	.0071	.00034
%RSD	1.2565	.04863	28.216	3.435	.67635
#1	.00282	96.537	-.00103	i .2010	.04984
#2	.00288	96.470	-.00069	i .2110	.05032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.09906**	**.33355**	**366.54**	**8.4100**	**.08344**
Stddev	.00066	.00141	.51	.0129	.00055
%RSD	.66352	.42227	.13948	.15314	.65682
#1	.09859	.33454	366.18	8.4191	.08383
#2	.09952	.33255	366.90	8.4009	.08305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-33-A@2 Acquired: 9/26/2019 11:15:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.047**	**3.1215**	**.00335**	**.28957**	**.13637**
Stddev	.046	.0110	.00015	.00168	.00089
%RSD	.22770	.35104	4.4980	.58169	.64996
#1	20.015	3.1138	.00346	.28838	.13700
#2	20.080	3.1293	.00324	.29077	.13574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.295**	**.52628**	**1.941**	F **-.03942**	**-.00066**
Stddev	.004	.00240	.009	.00121	.00392
%RSD	.1564	.45651	.4696	3.0702	589.60
#1	2.292	.52797	1.935	-.03856	-.00344
#2	2.297	.52458	1.948	-.04027	.00211
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.7595**	**.06257**	**.33618**	**.2315**	**.34346**
Stddev	.0030	.00192	.00035	.0056	.00250
%RSD	.10720	3.0760	.10427	2.424	.72709
#1	2.7616	.06121	.33593	.2275	.34169
#2	2.7574	.06393	.33643	.2354	.34522
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-33-A@2 Acquired: 9/26/2019 11:15:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00395**	i **.1051**	**.10424**	**.75159**	**.0345**
Stddev	.00086	.0461	.00006	.00557	.0024
%RSD	21.892	43.88	.05486	.74170	6.888
#1	-.00334	i .1377	.10420	.74764	.0362
#2	-.00456	i .0725	.10428	.75553	.0328
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1598.8**	**525.59**	**38943.**	**4382.2**
Stddev	3.6	1.05	49.	2.1
%RSD	.22794	.20012	.12513	.04829
#1	1596.3	524.84	38978.	4380.7
#2	1601.4	526.33	38909.	4383.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.578%	98.036%	100.22%	106.38%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 11:19:03 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96985**	**49.183**	**.97366**	**.97971**	**.98772**	**.98115**	**48.820**	**.97320**
Stddev	.00079	.195	.00565	.00624	.00307	.00128	.142	.00522
%RSD	.08116	.39658	.57980	.63717	.31062	.13031	.29038	.53663
#1	.96929	49.045	.97765	.98413	.98555	.98025	48.719	.97689
#2	.97041	49.321	.96967	.97530	.98989	.98206	48.920	.96951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9995**	**.97452**	**.99649**	**.97379**	**49.212**	**48.236**	**.97313**	**48.997**
Stddev	.0198	.00222	.00264	.00521	.253	.221	.00544	.007
%RSD	1.978	.22811	.26495	.53462	.51330	.45844	.55879	.01472
#1	i 1.013	.97609	.99463	.97011	49.033	48.079	.96928	48.992
#2	i .9855	.97295	.99836	.97747	49.391	48.392	.97697	49.002
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98729**	**.98996**	**48.643**	**.97085**	**24.64**	**.96833**	**24.07**	**.98004**
Stddev	.00108	.00582	.182	.00288	.03	.00410	.15	.00520
%RSD	.10901	.58795	.37431	.29646	.1238	.42303	.6277	.53084
#1	.98653	.99407	48.514	.97288	24.66	.97123	24.18	.98372
#2	.98805	.98584	48.772	.96881	24.62	.96543	23.96	.97636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 11:19:03 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95021	9.8381	.96366	.98718	.9778	.98106	.97504	i 2.478
Stddev	.01197	.0864	.00136	.00184	.0135	.00217	.00111	.113
%RSD	1.2594	.87842	.14146	.18636	1.377	.22114	.11366	4.545
#1	.95867	9.7770	.96463	.98588	.9874	.97953	.97425	i 2.558
#2	.94175	9.8993	.96270	.98848	.9683	.98259	.97582	i 2.398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99124	.99406	.9741
Stddev	.00106	.00082	.0016
%RSD	.10668	.08234	.1650
#1	.99049	.99464	.9752
#2	.99199	.99348	.9730
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1648.9	531.58	36937.	4148.3
Stddev	2.9	2.66	27.	14.6
%RSD	.17756	.50019	.07249	.35252
#1	1646.8	529.70	36956.	4158.6
#2	1650.9	533.46	36918.	4137.9

Sample Name: CCB-5508960 Acquired: 9/26/2019 11:22:44 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00622**	**-.00200**	**-.00174**	**.00008**	**-.00000**	**-.00020**	**-.00007**
Stddev	.00008	.01012	.00087	.00043	.00002	.00006	.00199	.00005
%RSD	13.609	162.78	43.479	24.460	21.731	2293.3	976.83	77.826
#1	.00063	.01338	-.00262	-.00204	.00007	-.00005	.00120	-.00010
#2	.00052	-.00094	-.00139	-.00144	.00010	.00004	-.00161	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **-.0029**	**.00004**	**.00017**	**-.00005**	**.00228**	**-.01958**	**.00007**	**.00043**
Stddev	.0054	.00021	.00007	.00003	.00006	.00260	.00070	.00101
%RSD	185.0	576.04	43.032	76.656	2.8396	13.285	1045.3	235.35
#1	i .0009	.00018	.00022	-.00007	.00232	-.02141	-.00043	-.00029
#2	i -.0067	-.00011	.00012	-.00002	.00223	-.01774	.00056	.00114
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00134**	**.00381**	**-.00034**	**.0032**	**-.00068**	**-.0034**	**.00014**
Stddev	.00001	.00029	.00615	.00022	.0004	.00133	.0012	.00066
%RSD	89.181	21.870	161.34	63.467	13.13	197.63	35.27	472.47
#1	-.00002	.00113	.00816	-.00049	.0029	.00027	-.0042	.00061
#2	-.00001	.00155	-.00054	-.00019	.0035	-.00162	-.0025	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 11:22:44 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**-.02478**	**.00021**	**.00001**	**-.0137**	**.00028**	**.00059**	i **-.0385**
Stddev	.00414	.01023	.00077	.00002	.0094	.00011	.00058	.0583
%RSD	220.52	41.274	360.06	278.04	68.40	40.379	97.353	151.4
#1	-.00105	-.03201	.00076	.00002	-.0203	.00020	.00018	i .0027
#2	.00480	-.01755	-.00033	-.00001	-.0071	.00036	.00100	i -.0797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00001**	**.00069**	**.0005**
Stddev	.00028	.00001	.0015
%RSD	2750.8	2.0025	285.5
#1	-.00021	.00070	-.0005
#2	.00019	.00069	.0015
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1815.9**	**545.33**	**38901.**	**4149.3**
Stddev	.1	1.00	65.	2.3
%RSD	.00280	.18272	.16732	.05570
#1	1815.8	544.63	38947.	4150.9
#2	1815.9	546.04	38855.	4147.6

Sample Name: CCVL-5514926 Acquired: 9/26/2019 11:26:35 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00589**	**.19702**	**.01934**	**.01887**	**.00218**	**.00207**	**.52078**	**.00216**
Stddev	.00048	.00481	.00139	.00000	.00001	.00005	.00615	.00030
%RSD	8.2057	2.4395	7.1852	.00652	.62655	2.1901	1.1816	13.837
#1	.00555	.20041	.01836	.01887	.00217	.00210	.52513	.00195
#2	.00623	.19362	.02033	.01887	.00219	.00203	.51643	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0169**	**.00411**	**.00406**	**.00945**	**.05197**	**.49830**	**.03003**	**.20947**
Stddev	.0011	.00028	.00030	.00020	.00138	.00785	.00002	.00165
%RSD	6.262	6.7545	7.3079	2.1392	2.6564	1.5745	.06740	.78924
#1	i .0177	.00431	.00385	.00931	.05100	.49275	.03005	.20830
#2	i .0162	.00391	.00427	.00960	.05295	.50385	.03002	.21064
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.01015**	**.97781**	**.00994**	**-.0264**	**.00935**	**.2020**	**.01992**
Stddev	.00002	.00008	.01235	.00005	.0006	.00147	.0045	.00299
%RSD	.63312	.74648	1.2629	.49591	2.086	15.705	2.211	14.989
#1	.00315	.01020	.96907	.00998	-.0260	.01038	.2052	.01781
#2	.00317	.01009	.98654	.00991	-.0268	.00831	.1989	.02203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 11:26:35 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02532	.45763	.00918	.00493	.0077	.00501	.01955	i .0493
Stddev	.00141	.00752	.00107	.00006	.0016	.00029	.00086	.0587
%RSD	5.5516	1.6440	11.635	1.2457	21.14	5.7102	4.4095	119.1
#1	.02632	.46295	.00842	.00489	.0065	.00521	.01894	i .0908
#2	.02433	.45231	.00993	.00497	.0088	.00481	.02016	i .0078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00476	.01207	.0004
Stddev	.00024	.00116	.0002
%RSD	5.0523	9.6210	45.52
#1	.00459	.01289	.0005
#2	.00493	.01125	.0003
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1813.7	537.53	38912.	4179.1
Stddev	8.0	1.41	80.	28.3
%RSD	.43922	.26162	.20539	.67787
#1	1819.3	538.53	38968.	4199.2
#2	1808.1	536.54	38855.	4159.1

Sample Name: 159345-A-15-Asd@5 Acquired: 9/26/2019 11:30:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00011	16.665	.01949	.04261	.70706
Stddev	.00038	.039	.00265	.00062	.00019
%RSD	329.93	.23149	13.593	1.4615	.02660
#1	-.00015	16.692	.01761	.04305	.70692
#2	.00038	16.638	.02136	.04217	.70719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00120	61.803	.00058	i .0486	.01034
Stddev	.00000	.176	.00016	.0037	.00028
%RSD	.28277	.28553	27.562	7.655	2.7284
#1	.00119	61.678	.00069	i .0513	.01014
#2	.00120	61.927	.00047	i .0460	.01054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.04162	.14881	45.645	7.6876	.02277
Stddev	.00064	.00045	.078	.0145	.00003
%RSD	1.5281	.30439	.17089	.18875	.11944
#1	.04117	.14913	45.590	7.6978	.02279
#2	.04207	.14849	45.700	7.6773	.02275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159345-A-15-Asd@5 Acquired: 9/26/2019 11:30:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9951**	**.76622**	**.00215**	**.37737**	**.03258**
Stddev	.0005	.00118	.00018	.00973	.00014
%RSD	.00778	.15405	8.4141	2.5772	.44293
#1	6.9947	.76538	.00228	.37049	.03248
#2	6.9955	.76705	.00203	.38425	.03268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.994**	**.42819**	**.7460**	**-.00123**	**-.00766**
Stddev	.008	.00210	.0003	.00015	.00076
%RSD	.3902	.49152	.0459	12.108	9.8916
#1	1.988	.42670	.7458	-.00133	-.00712
#2	1.999	.42968	.7463	-.00112	-.00819
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.104**	**.03249**	**.25434**	**.0310**	**.61617**
Stddev	.351	.00051	.00008	.0050	.00387
%RSD	2.6751	1.5759	.03251	16.24	.62862
#1	13.352	.03285	.25428	.0345	.61891
#2	12.856	.03213	.25440	.0274	.61343
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159345-A-15-Asd@5 Acquired: 9/26/2019 11:30:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	i **.0807**	**.04379**	**.38221**	**.0217**
Stddev	.00158	.0091	.00003	.00194	.0014
%RSD	124.55	11.28	.06191	.50819	6.330
#1	-.00015	i .0872	.04381	.38359	.0227
#2	-.00239	i .0743	.04377	.38084	.0207
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1728.8**	**531.89**	**38296.**	**4216.3**
Stddev	1.7	2.78	62.	8.9
%RSD	.09841	.52304	.16295	.21030
#1	1730.0	529.93	38252.	4222.5
#2	1727.6	533.86	38340.	4210.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	95.775%	99.212%	98.555%	102.35%
Range				

Sample Name: 158880-11 sol Acquired: 9/26/2019 11:34:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.01680**	**.00383**	**.00832**	**.07107**
Stddev	.00016	.01186	.00287	.00026	.00007
%RSD	34.925	70.597	75.064	3.1797	.10121
#1	-.00035	-.02518	.00586	.00813	.07102
#2	-.00058	-.00841	.00180	.00850	.07112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**89.959**	**.00011**	i **.0069**	**.00011**
Stddev	.00000	.797	.00006	.0203	.00011
%RSD	7.7578	.88610	57.129	293.8	99.856
#1	-.00005	90.523	.00015	i -.0075	.00003
#2	-.00006	89.396	.00006	i .0213	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00056**	**.02646**	**1.0777**	**.00520**
Stddev	.00024	.00031	.00456	.0153	.00020
%RSD	95.568	56.071	17.250	1.4221	3.8712
#1	-.00042	-.00078	.02969	1.0669	.00534
#2	-.00008	-.00034	.02323	1.0886	.00506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 158880-11 sol Acquired: 9/26/2019 11:34:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**52.519**	**.01268**	**-.00062**	**3.9522**	**-.00023**
Stddev	.020	.00002	.00007	.0059	.00046
%RSD	.03884	.12154	11.155	.14951	200.57
#1	52.534	.01269	-.00057	3.9563	-.00055
#2	52.505	.01267	-.00066	3.9480	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**-.00176**	**18.45**	**-.00500**	**-.00677**
Stddev	.0059	.00103	.19	.00136	.00199
%RSD	846.1	58.258	1.055	27.157	29.402
#1	-.0035	-.00249	18.32	-.00597	-.00536
#2	.0048	-.00104	18.59	-.00404	-.00818
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.151**	**.00011**	**.07516**	**-.0018**	**.00007**
Stddev	.093	.00190	.00028	.0083	.00001
%RSD	.76356	1699.9	.37656	459.3	10.661
#1	12.217	.00145	.07536	-.0077	.00006
#2	12.086	-.00123	.07496	.0041	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 158880-11 sol Acquired: 9/26/2019 11:34:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00022	i .0463	-.00034	-.00186	-.0005
Stddev	.00238	.1119	.00007	.00076	.0001
%RSD	1066.8	241.4	20.430	40.569	22.05
#1	.00191	i -.0328	-.00039	-.00133	-.0006
#2	-.00146	i .1255	-.00029	-.00240	-.0004
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1769.8	540.77	38200.	4162.7
Stddev	12.6	8.28	135.	15.9
%RSD	.71122	1.5307	.35257	.38197
#1	1778.7	546.63	38295.	4151.4
#2	1760.9	534.92	38105.	4173.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.048%	100.87%	98.309%	101.05%
Range				

Sample Name: 158880-12 sol Acquired: 9/26/2019 11:38:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00334**	**-.00110**	**.08445**	**.06695**
Stddev	.00027	.00088	.00027	.00010	.00006
%RSD	110.48	26.366	24.933	.12032	.08293
#1	-.00005	-.00272	-.00090	.08438	.06699
#2	-.00044	-.00397	-.00129	.08452	.06691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**154.72**	**.00011**	i **.0125**	**.00219**
Stddev	.00004	.29	.00011	.0100	.00022
%RSD	112.34	.19049	93.416	80.52	10.173
#1	-.00001	154.93	.00004	i .0195	.00203
#2	-.00006	154.52	.00019	i .0054	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00136**	**-.00303**	**44.290**	**.00608**
Stddev	.00054	.00033	.00071	.052	.00038
%RSD	118.98	24.490	23.421	.11654	6.2584
#1	-.00007	.00159	-.00253	44.253	.00634
#2	-.00084	.00112	-.00353	44.326	.00581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 158880-12 sol Acquired: 9/26/2019 11:38:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**81.137**	**.20781**	**-.00045**	**28.009**	**.00303**
Stddev	.054	.00005	.00008	.061	.00036
%RSD	.06668	.02609	18.802	.21727	11.855
#1	81.175	.20777	-.00051	27.966	.00328
#2	81.098	.20785	-.00039	28.052	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0071**	**-.00143**	**72.68**	**-.00076**	**-.00881**
Stddev	.0030	.00128	.36	.00172	.00101
%RSD	41.88	89.422	.5012	227.16	11.422
#1	-.0092	-.00234	72.42	-.00198	-.00810
#2	-.0050	-.00053	72.94	.00046	-.00952
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.7536**	**-.00024**	**.17568**	**-.0050**	**-.00002**
Stddev	.0336	.00064	.00002	.0010	.00001
%RSD	.43308	270.75	.01083	20.25	59.869
#1	7.7773	-.00069	.17566	-.0043	-.00003
#2	7.7298	.00022	.17569	-.0057	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 158880-12 sol Acquired: 9/26/2019 11:38:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	i **-.0509**	**-.00020**	**-.00101**	**.0007**
Stddev	.00068	.1320	.00005	.00085	.0006
%RSD	419.30	259.6	26.511	83.459	82.42
#1	.00032	i -.1442	-.00017	-.00161	.0003
#2	-.00065	i .0425	-.00024	-.00042	.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1662.1**	**517.99**	**36675.**	**4097.3**
Stddev	5.3	3.32	126.	11.5
%RSD	.32021	.64144	.34330	.27966
#1	1665.8	520.34	36764.	4105.4
#2	1658.3	515.64	36586.	4089.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.079%	96.619%	94.384%	99.460%
Range				

Sample Name: 158893-1 sol Acquired: 9/26/2019 11:41:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00513**	**.00078**	**.00994**	**.00047**
Stddev	.00003	.00039	.00394	.00004	.00000
%RSD	20.983	7.6360	508.70	.35469	.46811
#1	.00011	.00485	.00356	.00992	.00047
#2	.00015	.00540	-.00201	.00997	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.05303**	**-.00018**	i **.0126**	**.00006**
Stddev	.00010	.00229	.00010	.0128	.00007
%RSD	1719.8	4.3093	54.241	101.8	110.58
#1	-.00007	.05464	-.00011	i .0035	.00001
#2	.00006	.05141	-.00026	i .0217	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00565**	**-.00665**	**.00723**	**-.00035**
Stddev	.00019	.00008	.00242	.03293	.00028
%RSD	44.561	1.4609	36.325	455.33	79.277
#1	-.00029	.00559	-.00836	.03051	-.00015
#2	-.00055	.00571	-.00494	-.01605	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 158893-1 sol Acquired: 9/26/2019 11:41:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01451**	**-.00041**	**-.00098**	**.97676**	**.00005**
Stddev	.00182	.00001	.00033	.00162	.00006
%RSD	12.517	2.5158	34.245	.16628	118.17
#1	.01580	-.00041	-.00074	.97791	.00001
#2	.01323	-.00042	-.00121	.97562	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0231**	**-.00101**	**.0014**	**-.00209**	**-.00073**
Stddev	.0032	.00103	.0041	.00056	.00055
%RSD	13.99	102.82	292.9	26.547	76.200
#1	-.0254	-.00027	-.0015	-.00170	-.00034
#2	-.0208	-.00174	.0043	-.00249	-.00112
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.15874**	**-.00022**	**.00014**	**-.0038**	**-.00029**
Stddev	.00105	.00023	.00002	.0207	.00016
%RSD	.66093	105.98	17.495	540.2	55.677
#1	.15800	-.00038	.00012	.0108	-.00041
#2	.15948	-.00005	.00015	-.0184	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 158893-1 sol Acquired: 9/26/2019 11:41:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	i **.0593**	**-.00023**	**.00583**	**.0006**
Stddev	.00023	.0410	.00027	.00185	.0011
%RSD	106.15	69.16	114.86	31.664	175.9
#1	.00005	i .0303	-.00042	.00452	.0014
#2	.00038	i .0883	-.00004	.00713	-.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1845.7**	**551.50**	**39209.**	**4187.7**
Stddev	12.7	4.72	46.	20.4
%RSD	.69009	.85647	.11832	.48665
#1	1854.7	554.84	39241.	4202.1
#2	1836.7	548.16	39176.	4173.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	102.26%	102.87%	100.90%	101.65%
Range				

Sample Name: 158893-5 sol Acquired: 9/26/2019 11:45:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.11911**	**.00636**	**.48138**	**.02415**
Stddev	.00036	.00798	.00049	.00107	.00005
%RSD	115.35	6.6968	7.6419	.22185	.22290
#1	-.00006	.12475	.00601	.48063	.02419
#2	-.00057	.11347	.00670	.48214	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**15.892**	**-.00025**	i **.0095**	**.00019**
Stddev	.00001	.068	.00012	.0076	.00002
%RSD	21.486	.42672	47.310	80.28	11.659
#1	-.00008	15.844	-.00017	i .0149	.00018
#2	-.00006	15.940	-.00034	i .0041	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00009**	**.11283**	**.86791**	**.00276**
Stddev	.00055	.00010	.00236	.00800	.00087
%RSD	161.11	115.78	2.0932	.92150	31.711
#1	-.00072	.00016	.11450	.87357	.00214
#2	.00005	.00002	.11116	.86226	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 158893-5 sol Acquired: 9/26/2019 11:45:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.548**	**.00453**	**.06393**	**37.828**	**.00063**
Stddev	.007	.00000	.00459	.050	.00005
%RSD	.06583	.01436	7.1843	.13107	7.3721
#1	10.553	.00453	.06717	37.793	.00067
#2	10.543	.00453	.06068	37.863	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0035**	**-.00098**	**3.759**	**-.00250**	**-.00090**
Stddev	.0002	.00039	.056	.00091	.00343
%RSD	6.961	39.958	1.483	36.391	380.36
#1	.0033	-.00126	3.798	-.00186	.00152
#2	.0037	-.00070	3.719	-.00314	-.00332
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.1681**	**-.00043**	**.40186**	**-.0044**	**.00423**
Stddev	.0149	.00034	.00081	.0037	.00052
%RSD	.24134	77.161	.20180	83.45	12.320
#1	6.1575	-.00067	.40129	-.0070	.00460
#2	6.1786	-.00020	.40243	-.0018	.00386
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 158893-5 sol Acquired: 9/26/2019 11:45:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	i **.0271**	**-.00014**	**.00004**	**.0011**
Stddev	.00105	.0787	.00025	.00000	.0003
%RSD	95.726	290.5	181.03	4.7833	26.53
#1	.00035	i .0827	-.00032	.00004	.0013
#2	.00183	i -.0285	.00004	.00004	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1784.7**	**540.46**	**38174.**	**4162.9**
Stddev	11.8	3.39	3.	19.3
%RSD	.66285	.62716	.00825	.46330
#1	1793.1	542.85	38176.	4176.5
#2	1776.4	538.06	38172.	4149.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.876%	100.81%	98.243%	101.05%
Range				

Sample Name: MB 480-493594/1-A Acquired: 9/26/2019 11:49:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.01239**	**.00194**	**-.00079**	**.00032**
Stddev	.00021	.00451	.00178	.00017	.00001
%RSD	738.62	36.399	91.480	21.949	2.0136
#1	-.00012	-.00920	.00320	-.00091	.00033
#2	.00018	-.01558	.00069	-.00067	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.06119**	**.00019**	i **.0110**	**-.00015**
Stddev	.00004	.00180	.00009	.0072	.00014
%RSD	98.508	2.9488	45.756	65.46	91.562
#1	-.00001	.05991	.00013	i .0059	-.00005
#2	-.00007	.06246	.00025	i .0160	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**.00039**	**.01647**	**.03546**	**.00089**
Stddev	.00000	.00022	.00250	.01149	.00051
%RSD	.19358	56.397	15.209	32.403	57.429
#1	.00198	.00055	.01824	.04358	.00053
#2	.00197	.00023	.01470	.02733	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493594/1-A Acquired: 9/26/2019 11:49:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00500**	**.00023**	F **.01258**	**.02474**	**.00031**
Stddev	.00016	.00001	.00032	.00260	.00009
%RSD	3.1034	5.9820	2.5385	10.510	27.835
#1	.00511	.00024	.01236	.02658	.00025
#2	.00489	.00022	.01281	.02290	.00037
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			.00500		
Low Limit			-.00500		

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0398**	**-.00102**	**.0204**	**.00109**	**.00025**
Stddev	.0011	.00033	.0021	.00232	.00044
%RSD	2.818	32.076	10.41	213.05	172.60
#1	.0390	-.00125	.0189	.00273	.00056
#2	.0405	-.00079	.0219	-.00055	-.00006
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.22630**	F **.02897**	**.00011**	**-.0006**	**.00040**
Stddev	.00239	.00015	.00001	.0028	.00021
%RSD	1.0548	.51172	7.1161	505.8	51.878
#1	.22462	.02907	.00011	-.0025	.00055
#2	.22799	.02886	.00012	.0014	.00025
Check ?	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
High Limit		.01000			
Low Limit		-.01000			

Sample Name: MB 480-493594/1-A Acquired: 9/26/2019 11:49:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	i **-.0163**	**-.00002**	**.00458**	**.0009**
Stddev	.00132	.0820	.00057	.00106	.0005
%RSD	135.50	503.7	3096.7	23.127	57.81
#1	-.00004	i -.0743	.00038	.00383	.0005
#2	-.00191	i .0417	-.00042	.00532	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1766.7**	**520.45**	**38277.**	**4148.9**
Stddev	2.3	2.39	27.	3.3
%RSD	.13086	.46013	.07013	.08057
#1	1765.1	518.76	38296.	4146.5
#2	1768.3	522.14	38258.	4151.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.877%	97.077%	98.506%	100.71%
Range				

Sample Name: LCSSRM 480-493594/2- Acquired: 9/26/2019 11:53:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.62276	85.414	1.8874	1.4149	2.5793
Stddev	.00018	.275	.0114	.0099	.0112
%RSD	.02915	.32236	.60484	.69740	.43306
#1	.62263	85.609	1.8955	1.4219	2.5872
#2	.62289	85.219	1.8793	1.4080	2.5714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.88822	42.218	1.3010	i 1.160	1.7788
Stddev	.00222	.094	.0086	.017	.0030
%RSD	.24939	.22188	.66446	1.481	.16951
#1	.88978	42.284	1.3071	i 1.173	1.7810
#2	.88665	42.152	1.2949	i 1.148	1.7767
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	1.5265	.95609	137.82	20.945	.06528
Stddev	.0054	.00096	.17	.036	.00151
%RSD	.35135	.10091	.12297	.17129	2.3059
#1	1.5303	.95541	137.94	20.970	.06635
#2	1.5227	.95677	137.70	20.920	.06422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Sample Name: LCSSRM 480-493594/2- Acquired: 9/26/2019 11:53:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**21.585**	F **4.3553**	**1.0178**	**1.8657**	**.92633**
Stddev	.014	.0015	.0083	.0088	.00345
%RSD	.06619	.03480	.81859	.46997	.37219
#1	21.595	4.3564	1.0237	1.8719	.92877
#2	21.575	4.3542	1.0119	1.8595	.92389
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		4.1200			
Low Limit		2.4800			

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.919**	**.80563**	**.7640**	**.57785**	**.45709**
Stddev	.001	.00101	.0091	.00066	.00814
%RSD	.0147	.12538	1.193	.11500	1.7807
#1	3.919	.80491	.7705	.57738	.46284
#2	3.919	.80634	.7576	.57832	.45133
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3768**	**.74782**	**.85557**	**.2528**	**4.1918**
Stddev	.0197	.00111	.00321	.0053	.0084
%RSD	.36659	.14810	.37466	2.085	.20137
#1	5.3907	.74860	.85784	.2491	4.1858
#2	5.3628	.74704	.85330	.2565	4.1977
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCSSRM 480-493594/2- Acquired: 9/26/2019 11:53:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.62640	i 2.853	.56463	2.4554	.0641
Stddev	.00290	.004	.00016	.0044	.0001
%RSD	.46231	.1481	.02759	.17816	.0786
#1	.62844	i 2.856	.56452	2.4523	.0641
#2	.62435	i 2.850	.56474	2.4585	.0641
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1635.6	568.34	41574.	4662.8
Stddev	5.3	4.70	54.	7.2
%RSD	.32502	.82777	.12995	.15375
#1	1631.8	565.01	41536.	4657.8
#2	1639.3	571.67	41612.	4667.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	90.612%	106.01%	106.99%	113.19%
Range				

Sample Name: 480-159473-A-3-A@5 Acquired: 9/26/2019 11:57:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**5.3995**	**.00412**	**.02528**	**.02338**
Stddev	.00023	.0443	.00027	.00005	.00002
%RSD	32.499	.82020	6.4767	.18659	.08709
#1	-.00085	5.3682	.00431	.02531	.02336
#2	-.00054	5.4308	.00393	.02525	.02339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00121**	**665.68**	**.00016**	i **.0416**	**.00024**
Stddev	.00005	1.27	.00022	.0085	.00003
%RSD	3.7430	.19116	137.23	20.33	14.033
#1	.00124	664.78	.00032	i .0476	.00026
#2	.00118	666.58	.00000	i .0356	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00223**	**.00446**	**1.4410**	**.00768**	**.00475**
Stddev	.00033	.00006	.0023	.02204	.00032
%RSD	14.804	1.2702	.15910	286.97	6.7571
#1	.00247	.00450	1.4394	-.00790	.00498
#2	.00200	.00442	1.4426	.02327	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159473-A-3-A@5 Acquired: 9/26/2019 11:57:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.55764**	**.02203**	**.00338**	**.01292**	**.00177**
Stddev	.00319	.00014	.00024	.00309	.00062
%RSD	.57243	.65446	7.2022	23.924	35.200
#1	.55538	.02193	.00355	.01073	.00221
#2	.55990	.02213	.00321	.01510	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0328**	**.03762**	**10.59**	**.00090**	**-.00611**
Stddev	.0020	.00374	.11	.00203	.00040
%RSD	6.180	9.9340	1.003	224.98	6.5473
#1	.0342	.03498	10.51	.00234	-.00639
#2	.0313	.04026	10.66	-.00053	-.00583
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.62827**	**.00646**	**.19469**	**.0156**	**.28058**
Stddev	.00113	.00130	.00029	.0037	.00101
%RSD	.17959	20.086	.14678	23.94	.35965
#1	.62747	.00554	.19449	.0182	.27986
#2	.62907	.00738	.19489	.0130	.28129
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159473-A-3-A@5 Acquired: 9/26/2019 11:57:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	i **.2090**	**.00568**	**.00873**	**.0103**
Stddev	.00198	.0175	.00021	.00017	.0003
%RSD	450.30	8.376	3.6939	1.9827	2.527
#1	-.00096	i .1966	.00553	.00885	.0105
#2	.00184	i .2213	.00583	.00860	.0101
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1529.0**	**491.89**	**34975.**	**4025.1**
Stddev	.9	.36	33.	8.9
%RSD	.06141	.07398	.09461	.22159
#1	1529.7	492.15	34952.	4018.8
#2	1528.4	491.63	34998.	4031.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.711%	91.751%	90.009%	97.710%
Range				

Sample Name: 480-159473-A-4-A@5 Acquired: 9/26/2019 12:00:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**5.2413**	**.00184**	**.02733**	**.02371**
Stddev	.00001	.0042	.00051	.00030	.00009
%RSD	1.7687	.08026	27.850	1.1024	.36030
#1	-.00053	5.2384	.00148	.02712	.02378
#2	-.00052	5.2443	.00220	.02755	.02365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**704.20**	**.00014**	i **.0289**	**.00035**
Stddev	.00005	1.55	.00011	.0002	.00061
%RSD	4.6109	.22073	80.877	.5699	173.68
#1	.00109	703.10	.00022	i .0288	.00079
#2	.00117	705.30	.00006	i .0290	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00203**	**.00468**	**1.3848**	**.02145**	**.00446**
Stddev	.00098	.00057	.0011	.00655	.00028
%RSD	48.428	12.251	.07754	30.555	6.3720
#1	.00133	.00428	1.3855	.02609	.00466
#2	.00272	.00509	1.3840	.01682	.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159473-A-4-A@5 Acquired: 9/26/2019 12:00:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.49696**	**.01584**	**.00131**	**.00851**	**.00136**
Stddev	.00660	.00008	.00022	.00076	.00049
%RSD	1.3278	.52961	16.643	8.9220	36.236
#1	.50163	.01578	.00115	.00797	.00171
#2	.49229	.01590	.00146	.00905	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0264**	**.02990**	**10.61**	**-.00343**	**-.00649**
Stddev	.0015	.00074	.04	.00160	.00075
%RSD	5.685	2.4876	.3431	46.565	11.507
#1	.0275	.02937	10.64	-.00230	-.00702
#2	.0253	.03042	10.58	-.00456	-.00596
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.4305**	**.00778**	**.21081**	**-.0000**	**.28565**
Stddev	.0258	.00087	.00007	.0059	.00019
%RSD	1.8050	11.171	.03461	12660.	.06504
#1	1.4123	.00840	.21086	-.0042	.28578
#2	1.4488	.00717	.21076	.0041	.28552
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159473-A-4-A@5 Acquired: 9/26/2019 12:00:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00190**	i **.1830**	**.00503**	**.00874**	**.0088**
Stddev	.00221	.0283	.00003	.00243	.0003
%RSD	115.90	15.48	.63382	27.784	3.068
#1	-.00346	i .2031	.00501	.01046	.0090
#2	-.00034	i .1630	.00506	.00703	.0086
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1518.1**	**485.96**	**34903.**	**4032.8**
Stddev	3.2	1.43	38.	2.8
%RSD	.20962	.29497	.10869	.07026
#1	1515.8	484.95	34876.	4034.8
#2	1520.3	486.98	34930.	4030.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.104%	90.645%	89.825%	97.895%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 12:04:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96993	50.309	.97431	.98839	1.0133	.98526	49.127	.97807
Stddev	.00158	.193	.00451	.00231	.0031	.00263	.202	.00366
%RSD	.16296	.38276	.46306	.23384	.30397	.26662	.41064	.37431
#1	.96881	50.445	.97112	.98676	1.0155	.98712	49.269	.97548
#2	.97105	50.173	.97750	.99003	1.0111	.98341	48.984	.98065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .9912	.97797	.99300	.97058	49.522	48.519	.99033	49.111
Stddev	.0194	.00252	.00202	.00037	.136	.044	.00381	.063
%RSD	1.953	.25754	.20373	.03774	.27493	.09115	.38493	.12810
#1	i 1.005	.97619	.99156	.97032	49.426	48.550	.99303	49.066
#2	i .9775	.97975	.99443	.97084	49.618	48.487	.98764	49.155
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98483	.99495	49.499	.97511	24.61	.97193	24.27	.98668
Stddev	.00149	.00189	.106	.00150	.05	.00002	.12	.00625
%RSD	.15153	.18954	.21463	.15426	.1951	.00158	.5036	.63374
#1	.98378	.99361	49.574	.97405	24.65	.97194	24.18	.98226
#2	.98589	.99628	49.424	.97617	24.58	.97191	24.36	.99110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 12:04:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96892	9.9507	.96456	1.0028	.9747	.97880	.98376	i 2.432
Stddev	.00482	.0384	.00096	.0021	.0036	.00238	.00112	.044
%RSD	.49711	.38552	.09986	.21073	.3658	.24308	.11390	1.828
#1	.96552	9.9236	.96388	1.0043	.9772	.97712	.98297	i 2.463
#2	.97233	9.9778	.96524	1.0014	.9722	.98049	.98456	i 2.400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99207	.98841	.9787
Stddev	.00010	.00492	.0017
%RSD	.01044	.49766	.1774
#1	.99199	.99189	.9775
#2	.99214	.98493	.9799
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1634.2	526.23	36743.	4109.2
Stddev	.7	1.56	55.	6.2
%RSD	.04558	.29629	.14990	.15036
#1	1633.6	527.34	36782.	4104.8
#2	1634.7	525.13	36704.	4113.5

Sample Name: CCB-5508960 Acquired: 9/26/2019 12:08:31 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.01759	-.00069	-.00250	.00009	-.00001	-.00189	-.00004
Stddev	.00013	.00273	.00156	.00012	.00001	.00001	.00139	.00011
%RSD	31.967	15.527	226.43	4.9799	13.850	96.223	73.715	276.94
#1	.00049	.01952	.00041	-.00259	.00010	-.00002	-.00090	-.00012
#2	.00031	.01566	-.00179	-.00241	.00008	-.00000	-.00288	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i -.0045	.00015	-.00049	-.00017	-.00087	-.01557	.00054	.00306
Stddev	.0023	.00023	.00014	.00026	.00024	.00712	.00023	.00323
%RSD	51.96	154.50	28.546	151.03	27.396	45.716	42.399	105.62
#1	i -.0062	-.00001	-.00059	.00001	-.00104	-.02060	.00038	.00534
#2	i -.0029	.00031	-.00039	-.00035	-.00070	-.01054	.00071	.00077
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00136	.00109	-.00015	.0053	-.00091	-.0035	-.00220
Stddev	.00003	.00031	.00207	.00024	.0031	.00060	.0012	.00265
%RSD	39.638	22.459	189.51	162.23	58.56	65.420	33.80	120.11
#1	-.00008	.00114	.00256	.00002	.0031	-.00133	-.0043	-.00407
#2	-.00005	.00158	-.00037	-.00032	.0075	-.00049	-.0026	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 12:08:31 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00311	-.01916	-.00012	.00002	-.0069	.00041	.00007	i .0695
Stddev	.00039	.00191	.00167	.00004	.0005	.00009	.00078	.0812
%RSD	12.657	9.9488	1383.5	202.45	7.256	22.021	1131.8	116.8
#1	-.00283	-.01781	-.00130	-.00001	-.0065	.00034	-.00048	i .0121
#2	-.00339	-.02051	.00106	.00004	-.0072	.00047	.00062	i .1269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	-.00028	.00150	.0002
Stddev	.00012	.00048	.0002
%RSD	44.101	31.724	87.96
#1	-.00037	.00116	.0001
#2	-.00019	.00184	.0004
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1802.0	542.37	38867.	4148.9
Stddev	.6	.98	16.	18.5
%RSD	.03486	.18089	.04132	.44707
#1	1801.6	541.68	38855.	4135.8
#2	1802.5	543.07	38878.	4162.1

Sample Name: CCVL-5514926 Acquired: 9/26/2019 12:12:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00587	.19875	.01552	.01882	.00218	.00215	.51884	.00211
Stddev	.00047	.00894	.00343	.00012	.00001	.00011	.00580	.00011
%RSD	8.0528	4.4973	22.120	.65732	.52115	5.1040	1.1182	5.3951
#1	.00620	.20507	.01795	.01891	.00219	.00223	.51474	.00219
#2	.00553	.19243	.01309	.01874	.00217	.00208	.52294	.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0252	.00394	.00435	.00956	.05320	.47914	.03051	.21542
Stddev	.0109	.00010	.00029	.00024	.00113	.00341	.00018	.00517
%RSD	43.31	2.4529	6.7795	2.4751	2.1199	.71087	.58397	2.3983
#1	i .0175	.00387	.00414	.00973	.05240	.47673	.03039	.21907
#2	i .0330	.00401	.00455	.00939	.05399	.48155	.03064	.21176
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	.01005	.98472	.00992	-.0271	.00921	.2009	.02294
Stddev	.00003	.00039	.00931	.00001	.0014	.00163	.0029	.00016
%RSD	.82760	3.8396	.94573	.14892	5.344	17.713	1.429	.70567
#1	.00312	.00978	.99131	.00993	-.0261	.00806	.1989	.02306
#2	.00308	.01033	.97814	.00991	-.0281	.01036	.2029	.02283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 12:12:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02287	.46861	.00923	.00496	-.0048	.00496	.01876	i .0989
Stddev	.00134	.00897	.00136	.00001	.0111	.00008	.00144	.0321
%RSD	5.8407	1.9137	14.771	.19435	231.1	1.6967	7.6658	32.51
#1	.02381	.47495	.01019	.00496	.0030	.00490	.01775	i .0762
#2	.02192	.46227	.00826	.00495	-.0126	.00502	.01978	i .1216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00489	.00973	.0011
Stddev	.00025	.00002	.0007
%RSD	5.1256	.20468	57.69
#1	.00471	.00974	.0016
#2	.00507	.00971	.0007
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1802.0	534.71	38636.	4146.9
Stddev	1.4	1.21	9.	11.2
%RSD	.07858	.22632	.02446	.27062
#1	1803.0	535.57	38629.	4154.8
#2	1801.0	533.86	38643.	4138.9

Sample Name: 480-159496-E-6-A@2 Acquired: 9/26/2019 12:16:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**22.670**	**.01925**	**.04324**	**.22278**
Stddev	.00027	.035	.00217	.00017	.00035
%RSD	56.964	.15544	11.257	.38162	.15795
#1	-.00067	22.695	.01772	.04312	.22253
#2	-.00029	22.646	.02078	.04336	.22302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00199**	**617.86**	**.00351**	i **.0976**	**.01649**
Stddev	.00003	2.25	.00015	.0075	.00009
%RSD	1.3665	.36471	4.1866	7.652	.56378
#1	.00197	619.46	.00361	i .1029	.01655
#2	.00201	616.27	.00340	i .0923	.01642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05799**	**.04586**	**49.185**	**4.4210**	**.04117**
Stddev	.00027	.00012	.096	.0077	.00007
%RSD	.46762	.25745	.19587	.17403	.16603
#1	.05780	.04577	49.253	4.4265	.04122
#2	.05818	.04594	49.117	4.4156	.04113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159496-E-6-A@2 Acquired: 9/26/2019 12:16:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**369.58**	**3.1510**	**.00524**	**.81920**	**.04091**
Stddev	.46	.0036	.00041	.00044	.00029
%RSD	.12577	.11363	7.8466	.05336	.69771
#1	369.25	3.1535	.00553	.81889	.04071
#2	369.91	3.1484	.00495	.81951	.04111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8238**	**.56286**	**6.524**	**-.00620**	**-.01427**
Stddev	.0002	.00024	.035	.00030	.00444
%RSD	.0290	.04242	.5435	4.8291	31.115
#1	.8240	.56303	6.499	-.00599	-.01741
#2	.8237	.56269	6.550	-.00641	-.01113
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.5339**	**.02188**	**.21056**	**.0352**	**.46693**
Stddev	.0210	.00135	.00063	.0041	.00158
%RSD	.82730	6.1491	.29784	11.64	.33770
#1	2.5488	.02093	.21101	.0323	.46804
#2	2.5191	.02283	.21012	.0380	.46581
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159496-E-6-A@2 Acquired: 9/26/2019 12:16:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00065	i .0152	.05041	1.1102	.0225
Stddev	.00146	.0294	.00008	.0075	.0013
%RSD	226.01	192.8	.15315	.67951	5.991
#1	-.00039	i -.0055	.05046	1.1156	.0235
#2	.00168	i .0360	.05035	1.1049	.0216
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1423.9	477.79	34757.	4076.9
Stddev	.1	.74	72.	.3
%RSD	.00993	.15455	.20579	.00638
#1	1424.0	478.32	34706.	4076.8
#2	1423.8	477.27	34807.	4077.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	78.884%	89.121%	89.448%	98.967%
Range				

Sample Name: 480-159499-C-7-A Acquired: 9/26/2019 12:20:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00142**	**85.667**	**.07174**	**.05621**	**1.4705**
Stddev	.00010	.375	.00208	.00029	.0065
%RSD	7.1797	.43770	2.9051	.51963	.43924
#1	.00135	85.402	.07321	.05600	1.4659
#2	.00149	85.932	.07026	.05641	1.4751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00424**	**62.876**	**.00563**	i **.3893**	**.05803**
Stddev	.00002	.001	.00030	.0269	.00067
%RSD	.41518	.00082	5.3549	6.898	1.1463
#1	.00423	62.876	.00584	i .3703	.05756
#2	.00425	62.875	.00541	i .4083	.05850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.12197**	**1.3289**	**266.98**	**14.104**	**.06244**
Stddev	.00019	.0065	.81	.006	.00061
%RSD	.15597	.48764	.30240	.04457	.97646
#1	.12211	1.3243	267.56	14.109	.06201
#2	.12184	1.3335	266.41	14.100	.06287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159499-C-7-A Acquired: 9/26/2019 12:20:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**18.786**	**3.4681**	**.00391**	**2.8907**	**.11930**
Stddev	.007	.0077	.00006	.0141	.00002
%RSD	.03839	.22167	1.6435	.48815	.01992
#1	18.791	3.4627	.00386	2.8808	.11928
#2	18.781	3.4735	.00395	2.9007	.11932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.1099**	**4.4635**	**2.381**	**-.00244**	**-.00113**
Stddev	.0043	.0096	.009	.00295	.00054
%RSD	3.918	.21581	.3819	121.03	47.859
#1	.1068	4.4566	2.374	-.00035	-.00151
#2	.1129	4.4703	2.387	-.00452	-.00075
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3671**	**.18219**	**.21379**	**.1875**	**1.8421**
Stddev	.0073	.00163	.00067	.0006	.0027
%RSD	.13675	.89340	.31223	.3352	.14626
#1	5.3723	.18104	.21331	.1879	1.8402
#2	5.3620	.18334	.21426	.1870	1.8440
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159499-C-7-A Acquired: 9/26/2019 12:20:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00310**	i **.6918**	**.19396**	**8.5629**	**.0498**
Stddev	.00014	.1317	.00012	.0284	.0006
%RSD	4.5333	19.03	.06300	.33139	1.154
#1	-.00300	i .5987	.19405	8.5830	.0502
#2	-.00320	i .7850	.19388	8.5429	.0494
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1597.1**	**538.77**	**39253.**	**4412.5**
Stddev	1.2	.69	35.	2.3
%RSD	.07624	.12851	.08987	.05221
#1	1596.2	538.28	39278.	4414.2
#2	1598.0	539.26	39228.	4410.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.480%	100.50%	101.02%	107.11%
Range				

Sample Name: 480-159536-G-1-A Acquired: 9/26/2019 12:23:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00727**	**85.653**	**.85215**	**.11247**	**.79208**
Stddev	.00019	.418	.00076	.00078	.00390
%RSD	2.6482	.48776	.08863	.69615	.49177
#1	.00740	85.948	.85268	.11303	.79483
#2	.00713	85.358	.85161	.11192	.78932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00530**	**35.285**	**.00302**	i **.7429**	**.31977**
Stddev	.00006	.018	.00011	.0060	.00086
%RSD	1.1163	.05033	3.4889	.8132	.26844
#1	.00534	35.272	.00295	i .7386	.32037
#2	.00526	35.297	.00310	i .7472	.31916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11757**	**1.3148**	**201.57**	**19.260**	**.09887**
Stddev	.00091	.0029	.07	.039	.00018
%RSD	.77223	.21944	.03554	.20224	.18069
#1	.11821	1.3168	201.52	19.287	.09900
#2	.11693	1.3128	201.63	19.232	.09874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-G-1-A Acquired: 9/26/2019 12:23:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576-2	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}2	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.718**	**18.655**	**.00802**	**.73845**	**.26491**
Stddev	.010	.023	.00002	.00003	.00125
%RSD	.05695	.12568	.27283	.00417	.47099
#1	17.711	18.639	.00803	.73847	.26579
#2	17.725	18.672	.00800	.73843	.26403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4847**	**.53805**	**48.63**	F **-.02569**	**-.00686**
Stddev	.0320	.00012	.21	.00335	.00446
%RSD	6.600	.02233	.4370	13.026	65.111
#1	-.4621	.53813	48.78	-.02332	-.01001
#2	-.5073	.53796	48.48	-.02805	-.00370
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.4584**	**.03423**	**.10052**	**.2034**	**.37651**
Stddev	.0050	.00150	.00018	.0062	.00219
%RSD	.14493	4.3812	.17956	3.042	.58168
#1	3.4620	.03317	.10065	.1990	.37496
#2	3.4549	.03529	.10039	.2077	.37806
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-G-1-A Acquired: 9/26/2019 12:23:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01158**	i **.8350**	**.14949**	**.94914**	**.1023**
Stddev	.00398	.0596	.00046	.00060	.0003
%RSD	34.365	7.136	.30630	.06305	.3071
#1	-.00877	i .7929	.14981	.94957	.1021
#2	-.01439	i .8772	.14917	.94872	.1025
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1608.8**	**716.53**	**52551.**	**5881.0**
Stddev	1.0	5.68	152.	18.1
%RSD	.05931	.79281	.28881	.30718
#1	1608.1	712.51	52444.	5868.2
#2	1609.4	720.55	52658.	5893.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.127%	133.65%	135.24%	142.76%
Range				

Sample Name: 480-159536-F-2-A Acquired: 9/26/2019 12:27:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**42.095**	**.03505**	**.06667**	**.19802**
Stddev	.00001	.368	.00071	.00001	.00089
%RSD	.78214	.87423	2.0203	.02004	.44955
#1	-.00088	42.355	.03455	.06668	.19739
#2	-.00089	41.835	.03555	.06666	.19865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**206.15**	**.00064**	i **.4193**	**.04286**
Stddev	.00005	.52	.00020	.0096	.00006
%RSD	2.3282	.25279	30.704	2.291	.13436
#1	.00209	206.52	.00078	i .4261	.04290
#2	.00202	205.78	.00050	i .4125	.04282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05408**	**.77677**	**75.366**	**10.780**	**.06192**
Stddev	.00020	.00051	.267	.048	.00048
%RSD	.36614	.06593	.35379	.44172	.77736
#1	.05394	.77641	75.555	10.813	.06226
#2	.05422	.77713	75.178	10.746	.06158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-F-2-A Acquired: 9/26/2019 12:27:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**31.147**	**3.9960**	**.00118**	**.90137**	**.06750**
Stddev	.033	.0029	.00022	.00756	.00021
%RSD	.10697	.07375	19.063	.83915	.31496
#1	31.123	3.9940	.00102	.90672	.06765
#2	31.170	3.9981	.00133	.89602	.06734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.345**	**.05274**	**.3768**	**-.01090**	**-.00998**
Stddev	.004	.00056	.0073	.00058	.00573
%RSD	.1154	1.0538	1.950	5.2867	57.382
#1	3.347	.05314	.3716	-.01049	-.01403
#2	3.342	.05235	.3820	-.01131	-.00593
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.8597**	**.03223**	**.28299**	**.0662**	**.99337**
Stddev	.0203	.00091	.00258	.0100	.00028
%RSD	.52667	2.8214	.91175	15.15	.02769
#1	3.8454	.03288	.28482	.0591	.99318
#2	3.8741	.03159	.28117	.0733	.99357
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-F-2-A Acquired: 9/26/2019 12:27:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00409**	i **.8007**	**.09785**	**.38719**	**.0750**
Stddev	.00308	.0768	.00028	.00555	.0002
%RSD	75.280	9.595	.29013	1.4326	.2201
#1	-.00191	i .8551	.09765	.38327	.0749
#2	-.00627	i .7464	.09805	.39111	.0751
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1589.3**	**560.70**	**40420.**	**4597.8**
Stddev	7.3	1.07	159.	14.6
%RSD	.46075	.19102	.39387	.31772
#1	1584.2	559.94	40533.	4587.5
#2	1594.5	561.46	40308.	4608.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.050%	104.58%	104.02%	111.61%
Range				

Sample Name: 480-159536-F-3-A Acquired: 9/26/2019 12:31:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00519**	**60.739**	**.47532**	**.09099**	**.53372**
Stddev	.00014	.085	.00393	.00028	.00093
%RSD	2.6745	.13936	.82696	.30246	.17460
#1	.00509	60.679	.47254	.09118	.53306
#2	.00529	60.798	.47810	.09079	.53438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00350**	**94.122**	**.00210**	i **.6072**	**.12640**
Stddev	.00007	.366	.00003	.0036	.00077
%RSD	2.0380	.38883	1.4523	.5942	.60840
#1	.00355	93.863	.00208	i .6046	.12586
#2	.00345	94.381	.00212	i .6097	.12695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.08315**	**1.4539**	**119.78**	**14.649**	**.08054**
Stddev	.00020	.0001	.18	.001	.00075
%RSD	.23760	.01037	.14729	.00507	.93683
#1	.08329	1.4540	119.65	14.650	.08108
#2	.08301	1.4538	119.90	14.649	.08001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-F-3-A Acquired: 9/26/2019 12:31:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**19.643**	**12.375**	**.00216**	**.85350**	**.12896**
Stddev	.028	.069	.00064	.00277	.00034
%RSD	.14084	.56015	29.531	.32439	.26256
#1	19.624	12.424	.00261	.85154	.12920
#2	19.663	12.325	.00171	.85545	.12872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2741**	**.54070**	**1.834**	**-.01350**	**-.00444**
Stddev	.0012	.00331	.006	.00330	.00570
%RSD	.4352	.61224	.3348	24.448	128.42
#1	-.2749	.53836	1.829	-.01116	-.00041
#2	-.2732	.54304	1.838	-.01583	-.00847
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.9294**	**.03499**	**.11150**	**.1211**	**.46123**
Stddev	.0265	.00022	.00003	.0011	.00031
%RSD	.90492	.63335	.03100	.8712	.06720
#1	2.9481	.03483	.11148	.1204	.46101
#2	2.9107	.03515	.11152	.1219	.46145
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-F-3-A Acquired: 9/26/2019 12:31:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01093**	i **.6669**	**.10945**	**.87643**	**.0799**
Stddev	.00353	.1699	.00033	.00202	.0008
%RSD	32.342	25.48	.29891	.23075	.9872
#1	-.01343	i .7870	.10968	.87500	.0794
#2	-.00843	i .5467	.10922	.87786	.0805
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1615.1**	**652.90**	**47409.**	**5333.0**
Stddev	4.2	.34	41.	9.2
%RSD	.25928	.05193	.08733	.17246
#1	1618.1	653.14	47380.	5339.5
#2	1612.2	652.66	47439.	5326.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.481%	121.78%	122.01%	129.46%
Range				

Sample Name: 480-159536-G-4-A Acquired: 9/26/2019 12:35:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**44.936**	**.05035**	**.07389**	**.25112**
Stddev	.00049	.075	.00016	.00063	.00082
%RSD	1221.3	.16609	.31127	.84767	.32703
#1	.00038	44.989	.05024	.07433	.25054
#2	-.00030	44.883	.05046	.07344	.25171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00263**	**12.923**	**.00117**	i **.3465**	**.07187**
Stddev	.00007	.048	.00015	.0041	.00019
%RSD	2.5260	.37180	13.195	1.187	.26137
#1	.00258	12.957	.00106	i .3495	.07200
#2	.00268	12.889	.00128	i .3436	.07173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.06098**	**1.0561**	**89.723**	**11.974**	**.06699**
Stddev	.00001	.0004	.180	.006	.00088
%RSD	.02386	.03888	.20070	.04870	1.3097
#1	.06097	1.0558	89.850	11.978	.06761
#2	.06099	1.0564	89.596	11.970	.06637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-G-4-A Acquired: 9/26/2019 12:35:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.416**	**4.1084**	**.00057**	**.69930**	**.07450**
Stddev	.042	.0103	.00019	.00169	.00046
%RSD	.24119	.25076	33.658	.24130	.62032
#1	17.445	4.1157	.00043	.69811	.07418
#2	17.386	4.1011	.00070	.70049	.07483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.4857**	**.13703**	**.2585**	**-.00989**	**-.00047**
Stddev	.0150	.00114	.0030	.00216	.00107
%RSD	3.088	.82838	1.161	21.870	228.66
#1	.4963	.13623	.2606	-.01142	-.00123
#2	.4751	.13784	.2564	-.00836	.00029
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.2894**	**.03077**	**.05402**	**.0721**	**.69266**
Stddev	.0125	.00094	.00011	.0027	.00014
%RSD	.38070	3.0428	.20709	3.682	.02092
#1	3.2805	.03010	.05410	.0702	.69256
#2	3.2982	.03143	.05394	.0740	.69277
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159536-G-4-A Acquired: 9/26/2019 12:35:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00275**	i **.6073**	**.08635**	**.66178**	**.0617**
Stddev	.00198	.0006	.00049	.00309	.0006
%RSD	71.829	.1018	.56761	.46676	.9430
#1	-.00415	i .6077	.08600	.66396	.0621
#2	-.00135	i .6068	.08670	.65959	.0613
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1702.3**	**578.59**	**41729.**	**4597.5**
Stddev	4.4	2.28	106.	10.2
%RSD	.25664	.39486	.25469	.22233
#1	1699.2	576.98	41653.	4590.2
#2	1705.4	580.21	41804.	4604.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.308%	107.92%	107.39%	111.60%
Range				

Sample Name: MB 480-493602/1-A Acquired: 9/26/2019 12:39:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.02191**	**-.00244**	**-.00152**	**.00026**
Stddev	.00022	.00855	.00281	.00022	.00003
%RSD	45.108	39.000	115.35	14.413	11.433
#1	.00065	.01587	-.00045	-.00137	.00028
#2	.00034	.02796	-.00443	-.00167	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.03731**	**.00012**	i **.0021**	**-.00013**
Stddev	.00003	.00100	.00008	.0010	.00000
%RSD	68.979	2.6774	70.886	45.19	.13362
#1	-.00002	.03801	.00018	i .0015	-.00013
#2	-.00006	.03660	.00006	i .0028	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00242**	**.00030**	**.02022**	**.01323**	**.00135**
Stddev	.00031	.00032	.00255	.00367	.00016
%RSD	12.796	106.80	12.606	27.723	11.845
#1	.00220	.00007	.02202	.01582	.00124
#2	.00264	.00053	.01842	.01063	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493602/1-A Acquired: 9/26/2019 12:39:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00347**	**.00057**	F **.00711**	**.02247**	**.00037**
Stddev	.00164	.00000	.00016	.00199	.00001
%RSD	47.292	.30170	2.3178	8.8393	3.0012
#1	.00463	.00057	.00722	.02388	.00038
#2	.00231	.00057	.00699	.02107	.00036
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			.00500		
Low Limit			-.00500		

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0433**	**-.00004**	**.0049**	**.00194**	**.00102**
Stddev	.0041	.00171	.0011	.00106	.00241
%RSD	9.527	4798.2	22.01	54.760	236.02
#1	.0404	.00117	.0057	.00119	.00272
#2	.0462	-.00124	.0041	.00269	-.00068
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.24527**	F **.02746**	**.00015**	**-.0034**	**.00066**
Stddev	.00264	.00018	.00000	.0166	.00032
%RSD	1.0778	.65476	.74217	483.8	47.787
#1	.24340	.02733	.00015	.0083	.00044
#2	.24714	.02759	.00015	-.0151	.00089
Check ?	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
High Limit		.01000			
Low Limit		-.01000			

Sample Name: MB 480-493602/1-A Acquired: 9/26/2019 12:39:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00125**	i **-.0103**	**-.00003**	**.00517**	**.0077**
Stddev	.00135	.0106	.00037	.00056	.0001
%RSD	107.88	103.6	1219.3	10.929	1.165
#1	-.00220	i -.0027	-.00029	.00477	.0077
#2	-.00030	i -.0178	.00023	.00557	.0076
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1794.6**	**534.83**	**38707.**	**4170.3**
Stddev	.2	.69	57.	8.2
%RSD	.01352	.12899	.14724	.19750
#1	1794.4	534.34	38667.	4176.1
#2	1794.7	535.31	38748.	4164.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.420%	99.759%	99.615%	101.23%
Range				

Sample Name: LCSSRM 480-493602/2- Acquired: 9/26/2019 12:43:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.61190**	**79.046**	**1.8167**	**1.3621**	**2.4784**
Stddev	.00165	.095	.0002	.0013	.0005
%RSD	.26912	.12071	.01181	.09514	.02141
#1	.61307	78.978	1.8165	1.3612	2.4780
#2	.61074	79.113	1.8168	1.3630	2.4787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.87013**	**40.987**	**1.2818**	i **1.114**	**1.7225**
Stddev	.00101	.032	.0003	.019	.0002
%RSD	.11598	.07826	.02184	1.668	.01162
#1	.86942	41.009	1.2816	i 1.128	1.7226
#2	.87084	40.964	1.2820	i 1.101	1.7223
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.4635**	**.91960**	**122.77**	**19.646**	**.06137**
Stddev	.0002	.00054	.66	.014	.00060
%RSD	.01455	.05845	.53512	.07158	.97750
#1	1.4634	.91998	122.31	19.636	.06180
#2	1.4637	.91922	123.23	19.656	.06095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Sample Name: LCSSRM 480-493602/2- Acquired: 9/26/2019 12:43:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.138**	**2.9572**	**.96975**	**1.7298**	**.88899**
Stddev	.000	.0001	.00067	.0050	.00083
%RSD	.00184	.00212	.06878	.28993	.09354
#1	20.138	2.9571	.97022	1.7263	.88958
#2	20.138	2.9572	.96928	1.7333	.88840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.534**	**.71420**	**.6917**	**.52520**	**.43247**
Stddev	.003	.00202	.0027	.00074	.00647
%RSD	.0716	.28219	.3953	.14117	1.4967
#1	3.536	.71563	.6897	.52573	.42789
#2	3.533	.71278	.6936	.52468	.43704
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.0630**	**.73355**	**.84981**	**.2325**	**3.7805**
Stddev	.0889	.00321	.00170	.0025	.0048
%RSD	1.7552	.43772	.20011	1.056	.12631
#1	5.1259	.73582	.84861	.2307	3.7771
#2	5.0002	.73128	.85101	.2342	3.7839
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCSSRM 480-493602/2- Acquired: 9/26/2019 12:43:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.61048**	i **2.765**	**.52029**	**2.2975**	**.0743**
Stddev	.00062	.058	.00318	.0090	.0014
%RSD	.10095	2.082	.61117	.39171	1.835
#1	.61005	i 2.724	.52254	2.3039	.0734
#2	.61092	i 2.805	.51804	2.2911	.0753
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1648.8**	**574.01**	**41707.**	**4652.0**
Stddev	3.6	.09	87.	3.6
%RSD	.22132	.01628	.20761	.07647
#1	1646.2	573.94	41646.	4654.5
#2	1651.4	574.07	41769.	4649.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	91.346%	107.07%	107.34%	112.93%
Range				

Sample Name: 480-159547-E-7-A Acquired: 9/26/2019 12:46:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**122.98**	**.09585**	**.05206**	**.79653**
Stddev	.00033	.10	.00480	.00094	.00085
%RSD	50.581	.08188	5.0122	1.8007	.10645
#1	.00087	123.05	.09245	.05273	.79713
#2	.00041	122.91	.09925	.05140	.79593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00604**	**12.037**	**.00122**	i **.2937**	**.08595**
Stddev	.00001	.020	.00017	.0074	.00036
%RSD	.22536	.16336	13.522	2.517	.41884
#1	.00605	12.023	.00134	i .2989	.08570
#2	.00604	12.051	.00111	i .2885	.08621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.15819**	**.20819**	**245.48**	**11.812**	**.16939**
Stddev	.00035	.00011	1.17	.044	.00055
%RSD	.22342	.05364	.47786	.36979	.32460
#1	.15844	.20827	244.65	11.843	.16900
#2	.15794	.20811	246.31	11.781	.16978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-A Acquired: 9/26/2019 12:46:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.761**	**3.0857**	**.06911**	**.31267**	**.22073**
Stddev	.013	.0005	.00076	.00179	.00025
%RSD	.06259	.01605	1.0926	.57195	.11543
#1	20.752	3.0861	.06857	.31393	.22055
#2	20.770	3.0854	.06964	.31140	.22091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.503**	**.24988**	**1.810**	F **-.02124**	**.00309**
Stddev	.004	.00138	.012	.00243	.00120
%RSD	.1798	.55118	.6416	11.455	39.002
#1	2.500	.25085	1.819	-.02296	.00224
#2	2.506	.24890	1.802	-.01952	.00394
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.7916**	**.03208**	**.06301**	**.1864**	**.69129**
Stddev	.0708	.00037	.00045	.0111	.01208
%RSD	.72348	1.1669	.71162	5.956	1.7476
#1	9.8417	.03234	.06269	.1786	.69983
#2	9.7415	.03181	.06333	.1943	.68274
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-A Acquired: 9/26/2019 12:46:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00303**	i **.4170**	**.26894**	**.64653**	**.0617**
Stddev	.00065	.1627	.00144	.00135	.0003
%RSD	21.535	39.02	.53640	.20889	.4546
#1	-.00349	i .5320	.26996	.64558	.0619
#2	-.00257	i .3020	.26792	.64749	.0615
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1646.6**	**548.50**	**39772.**	**4452.2**
Stddev	.5	.20	205.	1.5
%RSD	.02929	.03720	.51550	.03392
#1	1646.9	548.35	39627.	4451.1
#2	1646.3	548.64	39917.	4453.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	91.224%	102.31%	102.36%	108.08%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 12:50:32 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96958**	**49.646**	**.98294**	**.98935**	**.99567**	**.98637**	**49.207**	**.98037**
Stddev	.00217	.217	.01470	.00613	.00242	.00445	.225	.00861
%RSD	.22341	.43614	1.4957	.62001	.24267	.45104	.45664	.87856
#1	.97111	49.799	.99333	.99369	.99738	.98952	49.366	.98646
#2	.96804	49.493	.97254	.98502	.99396	.98322	49.048	.97428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9913**	**.97439**	**1.0010**	**.97577**	**49.875**	**48.496**	**.97814**	**49.114**
Stddev	.0045	.00020	.0013	.00078	.189	.204	.00203	.052
%RSD	.4569	.02082	.13379	.08043	.37837	.42095	.20753	.10538
#1	i .9945	.97453	1.0019	.97522	49.742	48.640	.97958	49.151
#2	i .9881	.97424	1.0000	.97633	50.009	48.351	.97671	49.078
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99346**	**.99996**	**48.938**	**.97175**	**24.69**	**.96568**	**24.49**	**.98600**
Stddev	.00121	.01062	.131	.00239	.02	.00355	.34	.00945
%RSD	.12214	1.0616	.26756	.24616	.1010	.36764	1.374	.95826
#1	.99432	1.0075	49.031	.97345	24.68	.96819	24.73	.99268
#2	.99260	.99246	48.846	.97006	24.71	.96317	24.25	.97932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 12:50:32 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97863	9.9139	.96620	.99203	.9727	.98691	.98413	i 2.535
Stddev	.02195	.0494	.00373	.00175	.0010	.00029	.00531	.124
%RSD	2.2430	.49830	.38655	.17609	.1000	.02959	.53935	4.897
#1	.99415	9.9488	.96884	.99326	.9734	.98670	.98788	i 2.623
#2	.96311	9.8790	.96355	.99079	.9720	.98712	.98037	i 2.447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99365	.99700	.9839
Stddev	.00497	.00616	.0013
%RSD	.50054	.61755	.1290
#1	.99717	1.0014	.9830
#2	.99013	.99265	.9848
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1654.0	529.23	37021.	4140.3
Stddev	.1	4.39	73.	7.7
%RSD	.00432	.82939	.19700	.18694
#1	1654.1	526.13	36970.	4134.8
#2	1654.0	532.33	37073.	4145.7

Sample Name: CCB-5508960 Acquired: 9/26/2019 12:54:14 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00825**	**.00188**	**-.00214**	**.00009**	**.00004**	**-.00166**	**.00000**
Stddev	.00003	.00986	.00111	.00035	.00000	.00000	.00011	.00002
%RSD	13.973	119.51	59.059	16.483	2.1748	5.7286	6.5262	4048.8
#1	-.00017	-.00128	.00267	-.00239	.00009	.00004	-.00159	-.00002
#2	-.00021	-.01522	.00110	-.00189	.00010	.00004	-.00174	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0124**	**.00004**	**.00028**	**.00017**	**.00499**	**-.00398**	**.00015**	**.00253**
Stddev	.0131	.00005	.00018	.00014	.00317	.01112	.00036	.00026
%RSD	106.3	142.24	62.348	81.910	63.427	279.34	233.77	10.408
#1	i .0031	.00007	.00016	.00027	.00275	.00388	.00041	.00271
#2	i .0216	-.00000	.00041	.00007	.00723	-.01184	-.00010	.00234
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00140**	**.00241**	**.00000**	**.0064**	**-.00075**	**-.0066**	**-.00149**
Stddev	.00007	.00018	.00214	.00014	.0020	.00133	.0027	.00137
%RSD	178.36	12.754	88.719	4240.8	30.52	177.10	41.33	91.764
#1	.00001	.00127	.00392	.00010	.0050	-.00169	-.0085	-.00246
#2	-.00009	.00152	.00090	-.00009	.0078	.00019	-.0047	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 12:54:14 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00188**	**-.02058**	**-.00018**	**.00003**	**.0013**	**.00035**	**-.00113**	i **.0095**
Stddev	.00013	.00568	.00012	.00002	.0037	.00001	.00112	.1409
%RSD	7.1089	27.586	67.759	74.432	292.3	1.5509	99.052	1479.
#1	-.00197	-.01657	-.00026	.00004	-.0013	.00035	-.00192	i -.0901
#2	-.00178	-.02459	-.00009	.00001	.0039	.00035	-.00034	i .1092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00001**	**.00060**	**.0011**
Stddev	.00000	.00055	.0002
%RSD	53.767	91.730	21.49
#1	.00000	.00098	.0013
#2	.00001	.00021	.0009
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1816.2**	**548.16**	**39008.**	**4142.2**
Stddev	5.5	.67	131.	5.2
%RSD	.30036	.12197	.33498	.12559
#1	1820.1	547.69	39100.	4145.9
#2	1812.3	548.63	38915.	4138.5

Sample Name: CCVL-5514926 Acquired: 9/26/2019 12:58:05 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00633	.20506	.01259	.01892	.00218	.00215	.52171	.00220
Stddev	.00011	.02585	.00086	.00033	.00002	.00001	.00035	.00012
%RSD	1.6834	12.608	6.7925	1.7578	.79796	.47999	.06683	5.4451
#1	.00640	.22335	.01198	.01868	.00219	.00216	.52196	.00228
#2	.00625	.18678	.01319	.01915	.00217	.00214	.52147	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0136	.00379	.00441	.00972	.04969	.48503	.03047	.21250
Stddev	.0104	.00003	.00042	.00014	.00091	.00094	.00029	.00268
%RSD	76.50	.68399	9.6316	1.4211	1.8389	.19446	.94733	1.2600
#1	i .0063	.00378	.00411	.00962	.04905	.48436	.03027	.21061
#2	i .0210	.00381	.00471	.00982	.05034	.48570	.03067	.21440
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	.00978	.98110	.01014	-.0268	.00986	.1994	.02101
Stddev	.00001	.00006	.00516	.00020	.0012	.00020	.0013	.00030
%RSD	.45849	.61002	.52614	1.9790	4.464	2.0252	.6454	1.4331
#1	.00305	.00982	.98475	.01028	-.0260	.00971	.1985	.02079
#2	.00303	.00974	.97745	.01000	-.0277	.01000	.2003	.02122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 12:58:05 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01971	.46856	.00930	.00505	-.0013	.00480	.01804	i .1083
Stddev	.00819	.00467	.00002	.00003	.0018	.00007	.00103	.0265
%RSD	41.553	.99631	.25576	.55439	142.6	1.3582	5.7351	24.46
#1	.01392	.47186	.00929	.00503	.0000	.00475	.01877	i .1271
#2	.02550	.46526	.00932	.00507	-.0025	.00484	.01731	i .0896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00491	.01127	.0016
Stddev	.00023	.00167	.0003
%RSD	4.7752	14.776	20.06
#1	.00508	.01245	.0014
#2	.00474	.01010	.0019
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1814.5	547.82	39103.	4163.4
Stddev	.2	1.65	52.	12.4
%RSD	.01331	.30035	.13236	.29873
#1	1814.3	546.66	39067.	4172.1
#2	1814.6	548.98	39140.	4154.6

Sample Name: 480-159547-E-7-Asd@5 Acquired: 9/26/2019 13:01:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**26.796**	**.01873**	**.01088**	**.17876**
Stddev	.00025	.039	.00622	.00006	.00061
%RSD	288.60	.14457	33.204	.51582	.33949
#1	.00026	26.823	.02312	.01092	.17833
#2	-.00009	26.768	.01433	.01084	.17919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**2.5980**	**.00040**	i **.0579**	**.01685**
Stddev	.00007	.0201	.00000	.0101	.00015
%RSD	5.2115	.77390	.40513	17.39	.88971
#1	.00131	2.5838	.00040	i .0650	.01696
#2	.00122	2.6122	.00040	i .0507	.01675
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03433**	**.04269**	**52.425**	**2.7086**	**.03660**
Stddev	.00043	.00014	.340	.0110	.00035
%RSD	1.2640	.33517	.64845	.40456	.96593
#1	.03403	.04258	52.185	2.7008	.03635
#2	.03464	.04279	52.666	2.7163	.03685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-Asd@5 Acquired: 9/26/2019 13:01:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.6273**	**.66664**	**.01343**	**.07763**	**.04419**
Stddev	.0186	.00040	.00030	.00385	.00063
%RSD	.40111	.06005	2.2043	4.9649	1.4199
#1	4.6142	.66636	.01364	.08035	.04375
#2	4.6404	.66692	.01322	.07490	.04464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.5052**	**.04749**	**.3746**	**-.00615**	**-.00375**
Stddev	.0051	.00012	.0137	.00110	.00216
%RSD	1.016	.25191	3.649	17.865	57.565
#1	.5088	.04758	.3843	-.00537	-.00222
#2	.5016	.04741	.3649	-.00692	-.00527
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.2024**	**.00616**	**.01434**	**.0374**	**.20843**
Stddev	.1124	.00006	.00001	.0081	.00123
%RSD	2.6750	.95120	.06626	21.79	.58927
#1	4.2819	.00612	.01433	.0316	.20930
#2	4.1229	.00621	.01434	.0432	.20756
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-Asd@5 Acquired: 9/26/2019 13:01:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	i **.0611**	**.05805**	**.14541**	**.0117**
Stddev	.00168	.0178	.00019	.00136	.0006
%RSD	427.94	29.21	.31944	.93415	5.433
#1	.00080	i .0485	.05818	.14445	.0113
#2	-.00158	i .0737	.05792	.14637	.0122
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1771.3**	**552.17**	**39004.**	**4260.9**
Stddev	3.9	.80	32.	33.7
%RSD	.21854	.14405	.08099	.79203
#1	1774.1	552.73	38981.	4284.7
#2	1768.6	551.61	39026.	4237.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.134%	102.99%	100.38%	103.43%
Range				

Sample Name: 480-159547-E-7-Apds Acquired: 9/26/2019 13:05:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.09622**	**138.66**	**.47483**	**.42640**	**1.1601**
Stddev	.00123	.35	.00358	.00166	.0026
%RSD	1.2828	.25324	.75473	.38855	.22479
#1	.09535	138.41	.47737	.42523	1.1582
#2	.09709	138.91	.47230	.42757	1.1619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.39756**	**30.216**	**.38519**	i **.2879**	**.48494**
Stddev	.00123	.050	.00002	.0315	.00028
%RSD	.31005	.16468	.00485	10.94	.05744
#1	.39843	30.251	.38518	i .3102	.48475
#2	.39669	30.180	.38520	i .2657	.48514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.52190**	**.57661**	**251.01**	**30.126**	**.55216**
Stddev	.00006	.00193	.41	.025	.00079
%RSD	.01061	.33477	.16454	.08362	.14320
#1	.52186	.57525	251.30	30.144	.55160
#2	.52194	.57798	250.71	30.108	.55272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-Apds Acquired: 9/26/2019 13:05:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**38.306**	**3.2874**	**.45737**	**18.642**	**.62473**
Stddev	.038	.0012	.00161	.037	.00207
%RSD	.09812	.03510	.35160	.19654	.33090
#1	38.279	3.2866	.45851	18.617	.62327
#2	38.332	3.2882	.45624	18.668	.62619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.486**	**.63166**	**1.731**	**.38311**	**.36875**
Stddev	.001	.00161	.003	.00861	.00489
%RSD	.0461	.25543	.1519	2.2478	1.3253
#1	1.485	.63280	1.729	.38920	.37220
#2	1.486	.63052	1.732	.37702	.36529
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.618**	**.41660**	**.43507**	**.1777**	**1.0812**
Stddev	.119	.00107	.00069	.0019	.0069
%RSD	1.0235	.25718	.15795	1.083	.64118
#1	11.702	.41584	.43458	.1763	1.0861
#2	11.534	.41736	.43555	.1790	1.0763
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-Apds Acquired: 9/26/2019 13:05:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.39281**	i **.4324**	**.63840**	**.99153**	**.0485**
Stddev	.00290	.0621	.00042	.00308	.0005
%RSD	.73848	14.36	.06572	.31063	.9909
#1	.39076	i .4763	.63811	.98935	.0489
#2	.39486	i .3885	.63870	.99370	.0482
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1599.8**	**549.06**	**39203.**	**4417.1**
Stddev	.2	.50	.	10.6
%RSD	.01034	.09108	.00104	.23989
#1	1599.9	548.71	39203.	4409.6
#2	1599.7	549.41	39203.	4424.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.632%	102.41%	100.89%	107.22%
Range				

Sample Name: 480-159547-E-7-B MS Acquired: 9/26/2019 13:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.09383**	**235.63**	**.44791**	**.56585**	**1.5049**
Stddev	.00006	2.17	.00730	.00235	.0129
%RSD	.06198	.92208	1.6308	.41520	.85529
#1	.09379	234.09	.44274	.56419	1.4958
#2	.09387	237.17	.45307	.56751	1.5140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.37204**	**30.061**	**.36928**	i **.3551**	**.46746**
Stddev	.00059	.036	.00259	.0127	.00111
%RSD	.15835	.11959	.70077	3.572	.23772
#1	.37162	30.036	.36745	i .3461	.46825
#2	.37245	30.087	.37111	i .3640	.46668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.60005**	**.52409**	**233.45**	**53.276**	**.60485**
Stddev	.00215	.00103	.77	.082	.00255
%RSD	.35768	.19577	.33188	.15339	.42211
#1	.60156	.52337	232.90	53.219	.60304
#2	.59853	.52482	233.99	53.334	.60666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-B MS Acquired: 9/26/2019 13:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**45.094**	**3.8315**	**.43274**	**18.050**	**.58966**
Stddev	.045	.0028	.00464	.143	.00084
%RSD	.10083	.07256	1.0732	.79258	.14325
#1	45.127	3.8334	.42946	17.949	.59026
#2	45.062	3.8295	.43602	18.151	.58907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.307**	**.60557**	**19.78**	**.18736**	**.35839**
Stddev	.019	.00032	.12	.00602	.01115
%RSD	.8157	.05310	.6013	3.2128	3.1114
#1	2.293	.60535	19.70	.18310	.35050
#2	2.320	.60580	19.87	.19162	.36627
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.980**	**.38357**	**.48316**	**.1824**	**1.7007**
Stddev	.018	.00152	.00275	.0009	.0125
%RSD	.15359	.39684	.57009	.4996	.73321
#1	11.967	.38249	.48121	.1818	1.6918
#2	11.993	.38464	.48511	.1831	1.7095
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-B MS Acquired: 9/26/2019 13:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.38125	i .4592	.84749	1.0025	.1299
Stddev	.00029	.0516	.00319	.0031	.0003
%RSD	.07589	11.24	.37640	.30624	.2216
#1	.38104	i .4957	.84975	1.0047	.1301
#2	.38145	i .4228	.84524	1.0003	.1297
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1565.7	545.38	38665.	4456.1
Stddev	3.9	3.22	7.	9.8
%RSD	.24724	.58990	.01916	.22081
#1	1562.9	547.66	38670.	4463.0
#2	1568.4	543.11	38660.	4449.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	86.739%	101.73%	99.506%	108.17%
Range				

Sample Name: 480-159547-E-7-C MSD Acquired: 9/26/2019 13:13:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.09496	252.67	.44967	.58672	1.6397
Stddev	.00079	1.22	.00556	.00340	.0095
%RSD	.83297	.48090	1.2376	.57925	.57626
#1	.09440	253.53	.45360	.58912	1.6464
#2	.09552	251.81	.44573	.58432	1.6331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.38383	32.320	.37818	i .3858	.50129
Stddev	.00138	.131	.00240	.0025	.00101
%RSD	.35970	.40444	.63433	.6606	.20245
#1	.38286	32.227	.37988	i .3840	.50201
#2	.38481	32.412	.37649	i .3876	.50057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.61989	.54362	247.61	56.427	.63098
Stddev	.00205	.00194	.69	.065	.00359
%RSD	.33148	.35595	.27950	.11487	.56962
#1	.62134	.54499	247.12	56.382	.63352
#2	.61843	.54226	248.10	56.473	.62844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-C MSD Acquired: 9/26/2019 13:13:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**47.552**	**4.3575**	**.43718**	**18.709**	**.62144**
Stddev	.070	.0082	.00194	.099	.00105
%RSD	.14671	.18834	.44307	.52658	.16866
#1	47.601	4.3634	.43855	18.778	.62218
#2	47.503	4.3517	.43581	18.639	.62070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.299**	**.60245**	**20.33**	**.19011**	**.36768**
Stddev	.005	.00104	.11	.00095	.00070
%RSD	.2071	.17213	.5345	.50053	.19118
#1	2.295	.60318	20.41	.18943	.36817
#2	2.302	.60171	20.26	.19078	.36718
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.447**	**.39266**	**.51031**	**.1818**	**1.8237**
Stddev	.027	.00126	.00206	.0104	.0043
%RSD	.18921	.32063	.40317	5.697	.23629
#1	14.466	.39177	.51177	.1745	1.8206
#2	14.428	.39355	.50886	.1891	1.8267
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-7-C MSD Acquired: 9/26/2019 13:13:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.38737**	i **.4815**	**.87643**	**1.0519**	**.1371**
Stddev	.00184	.0105	.00335	.0064	.0011
%RSD	.47372	2.180	.38184	.60852	.7703
#1	.38867	i .4741	.87879	1.0564	.1363
#2	.38607	i .4889	.87406	1.0474	.1378
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1560.6**	**544.69**	**38606.**	**4429.5**
Stddev	5.2	3.21	34.	10.9
%RSD	.33496	.58941	.08935	.24640
#1	1556.9	542.42	38582.	4437.2
#2	1564.3	546.96	38630.	4421.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	86.461%	101.60%	99.353%	107.53%
Range				

Sample Name: 480-159547-F-8-A Acquired: 9/26/2019 13:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**136.55**	**.06966**	**.05082**	**.85479**
Stddev	.00010	.26	.00357	.00066	.00361
%RSD	27.743	.18803	5.1215	1.2937	.42252
#1	.00041	136.73	.06714	.05129	.85734
#2	.00028	136.36	.07219	.05036	.85223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00538**	**12.416**	**.00096**	i **.2869**	**.08134**
Stddev	.00007	.032	.00015	.0130	.00040
%RSD	1.3300	.26124	15.920	4.535	.49250
#1	.00543	12.439	.00085	i .2961	.08105
#2	.00533	12.393	.00107	i .2777	.08162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.16013**	**.12872**	**199.67**	**11.560**	**.18495**
Stddev	.00056	.00100	1.08	.026	.00018
%RSD	.35077	.77502	.54046	.22796	.09943
#1	.15973	.12943	200.44	11.579	.18508
#2	.16052	.12802	198.91	11.541	.18482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-8-A Acquired: 9/26/2019 13:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.931**	**3.0070**	**.05016**	**.30818**	**.17411**
Stddev	.032	.0057	.00035	.00126	.00090
%RSD	.15168	.19086	.68945	.40974	.51805
#1	20.909	3.0030	.04992	.30729	.17347
#2	20.954	3.0111	.05041	.30908	.17475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.569**	**.20216**	**1.534**	**-.01881**	**.00233**
Stddev	.006	.00150	.005	.00113	.00257
%RSD	.2386	.74299	.2991	6.0231	110.21
#1	2.574	.20109	1.538	-.01961	.00051
#2	2.565	.20322	1.531	-.01801	.00414
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.0302**	**.03269**	**.06290**	**.1476**	**.79145**
Stddev	.0294	.00180	.00032	.0063	.00002
%RSD	.36653	5.4991	.51016	4.267	.00247
#1	8.0093	.03396	.06313	.1432	.79147
#2	8.0510	.03142	.06267	.1521	.79144
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-8-A Acquired: 9/26/2019 13:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00141**	i **.3737**	**.28612**	**.62122**	**.0359**
Stddev	.00095	.0016	.00082	.00437	.0003
%RSD	67.671	.4213	.28670	.70372	.8775
#1	-.00208	i .3748	.28554	.61813	.0357
#2	-.00074	i .3726	.28670	.62431	.0361
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1650.2**	**546.01**	**39315.**	**4416.0**
Stddev	4.4	.95	77.	17.5
%RSD	.26687	.17454	.19496	.39658
#1	1653.3	546.68	39369.	4403.6
#2	1647.1	545.33	39261.	4428.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	91.423%	101.84%	101.18%	107.20%
Range				

Sample Name: 480-159547-F-18-A Acquired: 9/26/2019 13:20:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**76.099**	**.09510**	**.04017**	**.52903**
Stddev	.00016	.260	.00325	.00043	.00213
%RSD	353.87	.34103	3.4154	1.0678	.40309
#1	-.00016	76.283	.09740	.04047	.53054
#2	.00007	75.916	.09280	.03987	.52752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**110.54**	**.00095**	i **.3210**	**.07821**
Stddev	.00001	.36	.00006	.0077	.00008
%RSD	.35346	.32265	6.5910	2.408	.09939
#1	.00352	110.79	.00090	i .3265	.07826
#2	.00350	110.29	.00099	i .3156	.07815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.09294**	**.22410**	**183.77**	**10.615**	**.15379**
Stddev	.00072	.00011	.45	.043	.00017
%RSD	.77848	.04876	.24740	.40104	.11273
#1	.09243	.22402	184.09	10.585	.15367
#2	.09345	.22418	183.45	10.645	.15392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-18-A Acquired: 9/26/2019 13:20:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**49.486**	**3.8380**	**.01598**	**.54356**	**.19953**
Stddev	.025	.0053	.00048	.00299	.00058
%RSD	.04988	.13859	2.9758	.55074	.29018
#1	49.504	3.8418	.01564	.54567	.19994
#2	49.469	3.8342	.01632	.54144	.19912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.896**	**.10788**	**2.119**	**-.01968**	**-.00467**
Stddev	.004	.00016	.003	.00375	.00495
%RSD	.1465	.14955	.1592	19.057	106.16
#1	2.893	.10777	2.117	-.02233	-.00817
#2	2.899	.10800	2.122	-.01703	-.00116
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9158**	**.03124**	**.17703**	**.1403**	**.69341**
Stddev	.0115	.00078	.00101	.0006	.00119
%RSD	.16588	2.4991	.57092	.4049	.17162
#1	6.9239	.03069	.17775	.1398	.69425
#2	6.9077	.03179	.17632	.1407	.69257
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-18-A Acquired: 9/26/2019 13:20:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	i **.4601**	**.12585**	**.99070**	**.0523**
Stddev	.00119	.0287	.00053	.00671	.0018
%RSD	116.39	6.246	.42228	.67682	3.481
#1	-.00018	i .4398	.12547	.99544	.0536
#2	-.00187	i .4804	.12623	.98596	.0510
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1597.1**	**571.80**	**41185.**	**4611.7**
Stddev	2.2	.25	33.	28.3
%RSD	.14007	.04327	.08017	.61384
#1	1595.5	571.63	41161.	4591.7
#2	1598.7	571.98	41208.	4631.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.480%	106.66%	105.99%	111.95%
Range				

Sample Name: 480-159547-F-19-A Acquired: 9/26/2019 13:24:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**88.441**	**.11847**	**.05474**	**.67530**
Stddev	.00041	.200	.00416	.00070	.00092
%RSD	60.819	.22607	3.5145	1.2701	.13552
#1	-.00038	88.583	.11553	.05425	.67595
#2	-.00096	88.300	.12142	.05524	.67465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00427**	**191.61**	**.00109**	i **.3600**	**.10378**
Stddev	.00010	.18	.00003	.0004	.00125
%RSD	2.3834	.09164	2.5582	.1240	1.2059
#1	.00434	191.73	.00111	i .3603	.10466
#2	.00419	191.48	.00107	i .3596	.10290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10944**	**.28492**	**219.41**	**13.543**	**.16973**
Stddev	.00016	.00042	.37	.025	.00070
%RSD	.14238	.14788	.17009	.18667	.41404
#1	.10933	.28522	219.67	13.560	.16924
#2	.10955	.28462	219.14	13.525	.17023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-19-A Acquired: 9/26/2019 13:24:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**65.975**	**5.8706**	**.02137**	**.67220**	**.24063**
Stddev	.072	.0044	.00025	.00140	.00004
%RSD	.10841	.07434	1.1869	.20796	.01719
#1	66.026	5.8676	.02155	.67121	.24066
#2	65.924	5.8737	.02119	.67318	.24060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.152**	**.14626**	**1.705**	F **-.02112**	**-.00745**
Stddev	.018	.00054	.016	.00259	.00128
%RSD	.5743	.37137	.9149	12.256	17.131
#1	3.164	.14587	1.694	-.02295	-.00655
#2	3.139	.14664	1.716	-.01929	-.00836
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.2127**	**.03417**	**.34081**	**.1759**	**.74934**
Stddev	.0926	.00188	.00115	.0026	.00278
%RSD	1.1271	5.5043	.33675	1.492	.37034
#1	8.2781	.03550	.34162	.1778	.74738
#2	8.1472	.03284	.34000	.1741	.75130
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-19-A Acquired: 9/26/2019 13:24:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00277**	i **.4525**	**.14435**	**1.2045**	**.0684**
Stddev	.00392	.0087	.00002	.0005	.0017
%RSD	141.78	1.923	.01398	.04291	2.506
#1	.00001	i .4587	.14436	1.2048	.0696
#2	-.00554	i .4464	.14433	1.2041	.0672
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1544.6**	**577.64**	**41672.**	**4721.6**
Stddev	.6	3.17	15.	7.3
%RSD	.04019	.54821	.03590	.15542
#1	1545.0	579.88	41661.	4716.4
#2	1544.1	575.40	41682.	4726.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.571%	107.75%	107.24%	114.61%
Range				

Sample Name: 480-159547-D-20-A Acquired: 9/26/2019 13:28:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**81.514**	**.11465**	**.04051**	**.58447**
Stddev	.00045	.813	.00313	.00087	.00024
%RSD	151.95	.99790	2.7341	2.1541	.04103
#1	.00002	80.939	.11244	.04113	.58464
#2	-.00061	82.089	.11687	.03990	.58430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00399**	**86.166**	**.00117**	i **.3382**	**.09897**
Stddev	.00013	.484	.00005	.0019	.00033
%RSD	3.2437	.56191	3.9905	.5477	.32901
#1	.00390	85.824	.00114	i .3369	.09874
#2	.00408	86.508	.00121	i .3395	.09920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10816**	**.28032**	**220.55**	**10.885**	**.16371**
Stddev	.00042	.00048	.95	.033	.00114
%RSD	.38882	.17030	.42953	.30522	.69495
#1	.10845	.28066	219.88	10.862	.16291
#2	.10786	.27998	221.22	10.909	.16452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-20-A Acquired: 9/26/2019 13:28:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**51.773**	**5.0962**	**.02070**	**.52355**	**.22828**
Stddev	.025	.0057	.00018	.00287	.00062
%RSD	.04860	.11136	.86510	.54779	.27027
#1	51.790	5.0921	.02058	.52152	.22784
#2	51.755	5.1002	.02083	.52558	.22872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.421**	**.14600**	**1.497**	F **-.02454**	**-.00390**
Stddev	.002	.00248	.008	.00223	.00566
%RSD	.0497	1.6986	.5353	9.0738	145.17
#1	3.419	.14775	1.502	-.02612	.00010
#2	3.422	.14425	1.491	-.02297	-.00790
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.2207**	**.03222**	**.14207**	**.1748**	**.67205**
Stddev	.0283	.00004	.00101	.0012	.00421
%RSD	.54159	.13107	.71383	.6581	.62657
#1	5.2007	.03219	.14135	.1740	.67502
#2	5.2407	.03225	.14279	.1756	.66907
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-20-A Acquired: 9/26/2019 13:28:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	i **.4480**	**.13976**	**1.3775**	**.0693**
Stddev	.00111	.0119	.00085	.0070	.0014
%RSD	71.038	2.654	.60596	.50508	2.064
#1	-.00078	i .4564	.14036	1.3726	.0703
#2	-.00234	i .4396	.13916	1.3824	.0683
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1589.3**	**589.48**	**42661.**	**4776.6**
Stddev	.8	3.06	28.	20.2
%RSD	.05211	.51884	.06614	.42245
#1	1588.7	587.32	42641.	4790.9
#2	1589.9	591.64	42681.	4762.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.047%	109.95%	109.79%	115.95%
Range				

Sample Name: 480-159547-D-30-A Acquired: 9/26/2019 13:32:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00467**	**73.276**	**.12044**	**.04826**	**.42272**
Stddev	.00009	.026	.00441	.00015	.00257
%RSD	1.8932	.03548	3.6625	.31348	.60911
#1	-.00461	73.258	.11732	.04836	.42454
#2	-.00473	73.295	.12356	.04815	.42090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**160.64**	**.00159**	iF **1.942**	**.09086**
Stddev	.00007	.65	.00014	.010	.00044
%RSD	1.5209	.40634	8.9581	.5166	.48156
#1	.00441	161.10	.00170	i 1.949	.09117
#2	.00432	160.18	.00149	i 1.935	.09055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				1.500	
Low Limit				-.0500	

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10364**	**.31623**	**197.53**	**10.926**	**.14602**
Stddev	.00087	.00109	.04	.050	.00010
%RSD	.83919	.34531	.02014	.46019	.06752
#1	.10302	.31546	197.50	10.891	.14595
#2	.10425	.31700	197.56	10.962	.14609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-30-A Acquired: 9/26/2019 13:32:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**80.893**	**4.8237**	**.03216**	**.47855**	**.25769**
Stddev	.002	.0017	.00081	.00039	.00007
%RSD	.00192	.03558	2.5220	.08176	.02903
#1	80.891	4.8224	.03159	.47827	.25763
#2	80.894	4.8249	.03273	.47883	.25774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.750**	**.16103**	**1.500**	F **-.02532**	**-.00360**
Stddev	.008	.00244	.014	.00090	.00071
%RSD	.2965	1.5129	.9046	3.5624	19.672
#1	2.756	.15931	1.509	-.02596	-.00310
#2	2.744	.16275	1.490	-.02469	-.00410
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3941**	**.03220**	**.21822**	**.2269**	**.81470**
Stddev	.0149	.00016	.00082	.0035	.00199
%RSD	.27682	.50749	.37528	1.544	.24436
#1	5.4047	.03208	.21880	.2244	.81329
#2	5.3835	.03231	.21764	.2294	.81610
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-30-A Acquired: 9/26/2019 13:32:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00431**	i **4.828**	**.13652**	**1.0854**	**.0831**
Stddev	.00138	.015	.00077	.0029	.0004
%RSD	32.149	.3060	.56437	.26494	.5042
#1	-.00529	i 4.817	.13707	1.0875	.0828
#2	-.00333	i 4.838	.13598	1.0834	.0834
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1552.0**	**598.20**	**43563.**	**4888.5**
Stddev	.7	.84	100.	27.3
%RSD	.04443	.14027	.22972	.55789
#1	1552.5	597.60	43493.	4869.2
#2	1551.5	598.79	43634.	4907.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.983%	111.58%	112.11%	118.67%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 13:35:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97613**	**49.654**	**.96840**	**.98029**	**.99707**	**.98622**	**49.352**	**.97238**
Stddev	.00017	.230	.00503	.00017	.00172	.00300	.133	.00049
%RSD	.01754	.46399	.51916	.01768	.17233	.30427	.26934	.05061
#1	.97601	49.491	.97196	.98041	.99586	.98834	49.446	.97204
#2	.97625	49.817	.96485	.98016	.99829	.98410	49.258	.97273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9988**	**.97943**	**.99363**	**.96849**	**49.410**	**48.402**	**.97834**	**49.390**
Stddev	.0094	.00086	.00175	.00007	.167	.043	.00094	.069
%RSD	.9420	.08811	.17570	.00687	.33890	.08841	.09651	.13924
#1	i .9922	.97882	.99239	.96844	49.291	48.432	.97900	49.341
#2	i 1.005	.98004	.99486	.96853	49.528	48.371	.97767	49.438
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98751**	**.98545**	**48.777**	**.97496**	**24.90**	**.97156**	**24.17**	**.97533**
Stddev	.00086	.00060	.061	.00109	.01	.00039	.02	.00442
%RSD	.08724	.06048	.12466	.11143	.0361	.03969	.1026	.45314
#1	.98690	.98587	48.734	.97419	24.91	.97128	24.15	.97221
#2	.98812	.98503	48.820	.97572	24.90	.97183	24.19	.97846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 13:35:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95109	10.027	.97269	.98942	.9888	.97955	.98808	i 2.523
Stddev	.00079	.008	.00105	.00150	.0046	.00002	.00050	.075
%RSD	.08271	.07543	.10765	.15199	.4611	.00245	.05097	2.972
#1	.95053	10.022	.97195	.98836	.9855	.97953	.98843	i 2.470
#2	.95164	10.032	.97343	.99048	.9920	.97956	.98772	i 2.576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99102	1.0022	.9863
Stddev	.00035	.0056	.0019
%RSD	.03549	.55769	.1944
#1	.99127	.99824	.9850
#2	.99077	1.0061	.9877
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1654.7	537.94	37057.	4159.7
Stddev	3.6	1.11	77.	9.0
%RSD	.21552	.20647	.20797	.21711
#1	1657.2	538.73	37112.	4153.3
#2	1652.2	537.16	37003.	4166.1

Sample Name: CCB-5508960 Acquired: 9/26/2019 13:39:36 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00782**	**-.00062**	**-.00208**	**.00011**	**-.00005**	**.00054**	**-.00011**
Stddev	.00008	.00030	.00614	.00025	.00002	.00004	.00216	.00012
%RSD	37.557	3.8700	991.96	12.060	13.465	82.719	400.54	116.98
#1	-.00026	.00761	.00372	-.00226	.00013	-.00008	.00206	-.00002
#2	-.00015	.00804	-.00496	-.00191	.00010	-.00002	-.00099	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **-.0032**	**-.00010**	**.00017**	**-.00011**	**.00387**	**-.03373**	**.00016**	**.00465**
Stddev	.0076	.00015	.00058	.00093	.00192	.00388	.00043	.00092
%RSD	234.8	155.39	333.63	837.55	49.686	11.497	265.28	19.763
#1	i -.0086	.00001	.00058	.00055	.00523	-.03648	-.00014	.00530
#2	i .0021	-.00020	-.00024	-.00077	.00251	-.03099	.00046	.00400
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00156**	**-.00040**	**.00039**	**.0044**	**-.00189**	**-.0088**	**-.00105**
Stddev	.00009	.00017	.00160	.00001	.0019	.00092	.0035	.00118
%RSD	586.58	10.850	402.93	3.4339	44.19	48.775	39.49	112.15
#1	-.00008	.00144	.00073	.00038	.0030	-.00254	-.0112	-.00188
#2	.00005	.00168	-.00152	.00040	.0057	-.00124	-.0063	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 13:39:36 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00514**	**-.03193**	**-.00064**	**.00002**	**.0028**	**.00036**	**-.00063**	i **-.0357**
Stddev	.00312	.00842	.00176	.00007	.0072	.00016	.00030	.0094
%RSD	60.637	26.372	272.61	347.50	257.3	45.515	47.446	26.19
#1	-.00734	-.02598	.00060	-.00003	-.0023	.00024	-.00084	i -.0291
#2	-.00293	-.03789	-.00189	.00007	.0079	.00047	-.00042	i -.0423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00071**	**.0003**
Stddev	.00003	.00023	.0007
%RSD	28.604	33.140	288.2
#1	-.00009	.00087	-.0003
#2	-.00014	.00054	.0008
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1813.7**	**551.74**	**39093.**	**4137.4**
Stddev	.4	1.25	138.	13.5
%RSD	.02427	.22616	.35195	.32616
#1	1813.4	550.86	38995.	4146.9
#2	1814.0	552.63	39190.	4127.8

Sample Name: CCVL-5514926 Acquired: 9/26/2019 13:43:27 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.20434	.01455	.01841	.00217	.00209	.52008	.00199
Stddev	.00024	.00166	.00130	.00065	.00000	.00009	.00018	.00000
%RSD	4.0025	.81210	8.9151	3.5351	.22444	4.2442	.03463	.14634
#1	.00572	.20317	.01547	.01795	.00217	.00203	.51995	.00198
#2	.00605	.20552	.01363	.01887	.00216	.00215	.52021	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0069	.00418	.00407	.00958	.05280	.49057	.03016	.21502
Stddev	.0107	.00000	.00055	.00022	.00155	.00717	.00083	.00003
%RSD	154.9	.11845	13.530	2.2500	2.9333	1.4614	2.7403	.01439
#1	i -.0007	.00419	.00446	.00974	.05389	.48550	.02958	.21500
#2	i .0145	.00418	.00368	.00943	.05170	.49564	.03075	.21504
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00308	.01031	.97738	.01052	-.0289	.01078	.1922	.02085
Stddev	.00003	.00013	.00145	.00042	.0025	.00040	.0030	.00352
%RSD	.97682	1.2935	.14882	4.0002	8.753	3.7414	1.535	16.870
#1	.00306	.01022	.97636	.01022	-.0271	.01107	.1943	.02334
#2	.00310	.01041	.97841	.01081	-.0306	.01050	.1901	.01836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 13:43:27 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02028	.46912	.00915	.00495	-.0021	.00488	.02010	i .0026
Stddev	.00164	.00203	.00118	.00001	.0082	.00019	.00043	.0283
%RSD	8.0620	.43291	12.888	.29476	384.9	3.9745	2.1160	1083.
#1	.01913	.46769	.00831	.00496	.0037	.00474	.01980	i -.0174
#2	.02144	.47056	.00998	.00494	-.0080	.00502	.02040	i .0226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00473	.01098	.0013
Stddev	.00022	.00092	.0001
%RSD	4.5541	8.4174	10.92
#1	.00458	.01163	.0012
#2	.00488	.01032	.0014
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1815.6	548.53	39210.	4182.0
Stddev	4.4	.39	31.	15.7
%RSD	.24477	.07029	.07799	.37437
#1	1818.7	548.80	39188.	4170.9
#2	1812.4	548.26	39231.	4193.0

Sample Name: 480-159547-F-31-A Acquired: 9/26/2019 13:47:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**121.16**	**.06955**	**.04167**	**.41780**
Stddev	.00009	.19	.00161	.00014	.00104
%RSD	12.835	.15948	2.3111	.33311	.24859
#1	-.00061	121.02	.07069	.04157	.41854
#2	-.00073	121.29	.06842	.04177	.41707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00809**	**199.01**	**.00094**	i **.3387**	**.10193**
Stddev	.00004	.48	.00002	.0167	.00008
%RSD	.50448	.24276	2.1702	4.931	.07387
#1	.00806	199.35	.00096	i .3505	.10199
#2	.00812	198.66	.00093	i .3269	.10188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.27019**	**.27350**	**181.41**	**9.5891**	**.15967**
Stddev	.00142	.00022	.60	.0026	.00079
%RSD	.52661	.08185	.32882	.02739	.49431
#1	.27120	.27334	180.99	9.5873	.15911
#2	.26919	.27366	181.84	9.5910	.16022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-31-A Acquired: 9/26/2019 13:47:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**70.902**	**4.7040**	**.02052**	**4.8461**	**.29754**
Stddev	.073	.0005	.00003	.0055	.00080
%RSD	.10255	.00986	.13971	.11413	.26799
#1	70.851	4.7036	.02050	4.8421	.29810
#2	70.954	4.7043	.02054	4.8500	.29697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.926**	**.10822**	**1.075**	F **-.02094**	**-.00450**
Stddev	.001	.00069	.001	.00090	.00136
%RSD	.0443	.63350	.1192	4.3155	30.230
#1	2.925	.10871	1.074	-.02030	-.00547
#2	2.927	.10774	1.076	-.02158	-.00354
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.7191**	**.03159**	**.27556**	**.1315**	**.68018**
Stddev	.0181	.00142	.00070	.0057	.00283
%RSD	.26957	4.5087	.25498	4.298	.41669
#1	6.7319	.03059	.27506	.1355	.67818
#2	6.7063	.03260	.27605	.1275	.68219
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-F-31-A Acquired: 9/26/2019 13:47:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	i **.5522**	**.25482**	**.90449**	**.0536**
Stddev	.00341	.0016	.00043	.00352	.0012
%RSD	249.51	.2929	.16702	.38890	2.171
#1	.00104	i .5511	.25512	.90698	.0545
#2	-.00378	i .5534	.25452	.90200	.0528
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1528.6**	**565.28**	**40773.**	**4688.7**
Stddev	4.6	3.00	156.	17.5
%RSD	.29917	.53085	.38276	.37318
#1	1525.3	567.40	40663.	4676.4
#2	1531.8	563.16	40884.	4701.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.685%	105.44%	104.93%	113.82%
Range				

Sample Name: 480-159547-D-32-A Acquired: 9/26/2019 13:51:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**67.863**	**.08549**	**.04704**	**.39576**
Stddev	.00031	.501	.00042	.00047	.00005
%RSD	36.529	.73804	.48829	.99470	.01372
#1	-.00106	67.509	.08579	.04737	.39580
#2	-.00062	68.217	.08520	.04671	.39572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00365**	**316.92**	**.00149**	i **.4067**	**.08438**
Stddev	.00010	4.00	.00013	.0074	.00049
%RSD	2.8619	1.2623	8.5752	1.832	.57575
#1	.00357	314.09	.00140	i .4014	.08472
#2	.00372	319.74	.00158	i .4120	.08403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.08735**	**.28147**	**174.36**	**11.146**	**.13716**
Stddev	.00022	.00069	.89	.069	.00028
%RSD	.24854	.24459	.50990	.61971	.20730
#1	.08719	.28098	173.74	11.097	.13736
#2	.08750	.28195	174.99	11.195	.13696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-32-A Acquired: 9/26/2019 13:51:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**74.531**	**5.6096**	**.02394**	**.53706**	**.23083**
Stddev	.148	.0020	.00004	.00647	.00119
%RSD	.19860	.03637	.16215	1.2041	.51454
#1	74.635	5.6110	.02391	.53249	.23167
#2	74.426	5.6081	.02397	.54163	.22999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.636**	**.13558**	**1.161**	F **-.02105**	**-.00644**
Stddev	.003	.00129	.004	.00313	.00622
%RSD	.1259	.94834	.3909	14.872	96.609
#1	2.633	.13649	1.164	-.01883	-.00204
#2	2.638	.13467	1.157	-.02326	-.01084
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.9034**	**.03333**	**.32336**	**.1784**	**.69979**
Stddev	.0165	.00179	.00176	.0173	.00218
%RSD	.28017	5.3574	.54382	9.684	.31209
#1	5.9151	.03206	.32211	.1906	.69825
#2	5.8918	.03459	.32460	.1662	.70134
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-32-A Acquired: 9/26/2019 13:51:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00353**	i **.7533**	**.13045**	**.97952**	**.0728**
Stddev	.00240	.0741	.00049	.00019	.0007
%RSD	68.075	9.841	.37321	.01971	.9036
#1	-.00183	i .7008	.13080	.97938	.0733
#2	-.00522	i .8057	.13011	.97966	.0724
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1505.7**	**575.01**	**41649.**	**4796.2**
Stddev	3.3	2.30	56.	36.0
%RSD	.21830	.39948	.13558	.74964
#1	1503.3	573.39	41609.	4821.7
#2	1508.0	576.64	41689.	4770.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	83.415%	107.26%	107.19%	116.43%
Range				

Sample Name: 480-159547-D-39-A Acquired: 9/26/2019 13:55:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**92.407**	**.07163**	**.03107**	**.59638**
Stddev	.00011	.507	.00223	.00000	.00023
%RSD	46.072	.54833	3.1196	.01105	.03847
#1	-.00033	92.765	.07321	.03108	.59654
#2	-.00017	92.048	.07005	.03107	.59622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00334**	**52.389**	**.00133**	i **.2825**	**.06085**
Stddev	.00002	.157	.00009	.0033	.00019
%RSD	.73242	.30010	6.9819	1.166	.31071
#1	.00336	52.278	.00140	i .2802	.06072
#2	.00333	52.500	.00126	i .2849	.06099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10290**	**.17823**	**165.47**	**8.2119**	**.11661**
Stddev	.00094	.00018	.66	.0122	.00058
%RSD	.90932	.10306	.39985	.14874	.49901
#1	.10224	.17836	165.00	8.2205	.11620
#2	.10356	.17810	165.94	8.2032	.11702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-39-A Acquired: 9/26/2019 13:55:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**26.161**	**7.0960**	**.01748**	**.28555**	**.14534**
Stddev	.027	.0110	.00030	.00203	.00037
%RSD	.10191	.15547	1.7327	.71001	.25769
#1	26.180	7.0882	.01769	.28698	.14507
#2	26.143	7.1038	.01726	.28411	.14560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.691**	**.13381**	**1.351**	**-.01761**	**-.00122**
Stddev	.007	.00209	.006	.00530	.00431
%RSD	.0992	1.5629	.4572	30.108	354.72
#1	6.695	.13233	1.346	-.02136	-.00427
#2	6.686	.13529	1.355	-.01386	.00183
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3431**	**.03058**	**.07847**	**.1233**	**1.0354**
Stddev	.0107	.00050	.00043	.0079	.0015
%RSD	.20113	1.6204	.54471	6.420	.14430
#1	5.3507	.03023	.07877	.1289	1.0344
#2	5.3355	.03093	.07817	.1177	1.0365
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-D-39-A Acquired: 9/26/2019 13:55:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00128**	i **.1453**	**.17333**	**.82438**	**.0379**
Stddev	.00064	.0107	.00066	.00424	.0006
%RSD	49.505	7.367	.38108	.51441	1.673
#1	-.00173	i .1529	.17287	.82138	.0384
#2	-.00084	i .1377	.17380	.82738	.0375
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1650.1**	**549.49**	**39563.**	**4433.2**
Stddev	1.4	.41	53.	.5
%RSD	.08711	.07481	.13271	.01186
#1	1651.2	549.20	39601.	4433.6
#2	1649.1	549.78	39526.	4432.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	91.419%	102.49%	101.82%	107.62%
Range				

Sample Name: 480-159547-E-40-A Acquired: 9/26/2019 13:59:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**106.03**	**.07605**	**.03852**	**.67706**
Stddev	.00020	.02	.00390	.00058	.00092
%RSD	29.721	.01612	5.1348	1.4979	.13520
#1	-.00053	106.02	.07881	.03811	.67771
#2	-.00081	106.05	.07329	.03893	.67641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**100.36**	**.00169**	i **.3329**	**.07366**
Stddev	.00006	.09	.00005	.0225	.00010
%RSD	1.4742	.08692	2.7630	6.746	.13037
#1	.00401	100.42	.00165	i .3487	.07359
#2	.00392	100.29	.00172	i .3170	.07372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11436**	**.21230**	**183.41**	**9.9292**	**.14461**
Stddev	.00118	.00004	.39	.0046	.00074
%RSD	1.0317	.01911	.21515	.04607	.50964
#1	.11353	.21227	183.69	9.9324	.14513
#2	.11519	.21232	183.14	9.9259	.14409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-40-A Acquired: 9/26/2019 13:59:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**38.467**	**7.6401**	**.01668**	**.41495**	**.18933**
Stddev	.046	.0223	.00023	.00204	.00038
%RSD	.11964	.29218	1.3983	.49112	.20119
#1	38.435	7.6244	.01652	.41351	.18906
#2	38.500	7.6559	.01685	.41639	.18960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.497**	**.15279**	**1.586**	F **-.02045**	**-.00124**
Stddev	.011	.00230	.001	.00685	.00501
%RSD	.1490	1.5059	.0864	33.507	404.45
#1	7.489	.15441	1.585	-.02529	-.00478
#2	7.505	.15116	1.587	-.01560	.00230
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2192**	**.03358**	**.12780**	**.1356**	**1.1084**
Stddev	.0317	.00099	.00003	.0048	.0039
%RSD	.50945	2.9439	.02175	3.514	.35557
#1	6.2416	.03288	.12782	.1322	1.1056
#2	6.1968	.03428	.12778	.1389	1.1112
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159547-E-40-A Acquired: 9/26/2019 13:59:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	i **.1588**	**.18804**	**.98810**	**.0376**
Stddev	.00275	.0917	.00069	.00333	.0006
%RSD	275.64	57.73	.36925	.33704	1.518
#1	.00095	i .2237	.18755	.98575	.0372
#2	-.00294	i .0940	.18853	.99046	.0380
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1605.3**	**544.62**	**39257.**	**4449.3**
Stddev	2.4	.27	49.	3.8
%RSD	.14784	.05020	.12496	.08503
#1	1603.6	544.81	39292.	4446.6
#2	1607.0	544.43	39222.	4452.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.935%	101.59%	101.03%	108.01%
Range				

Sample Name: 480-159538-A-2-A Acquired: 9/26/2019 14:02:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.01987	26.317	.04614	.03929	2.1492
Stddev	.00006	.012	.00377	.00007	.0016
%RSD	.29172	.04576	8.1794	.18580	.07405
#1	.01991	26.309	.04347	.03934	2.1481
#2	.01983	26.326	.04880	.03924	2.1503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00254	74.056	.00094	i .0809	.08541
Stddev	.00000	.078	.00006	.0090	.00023
%RSD	.12226	.10546	6.4138	11.11	.27087
#1	.00254	74.001	.00098	i .0746	.08557
#2	.00255	74.111	.00090	i .0873	.08525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.94521	.35088	75.877	7.1411	.07291
Stddev	.00388	.00240	.313	.0117	.00071
%RSD	.41071	.68371	.41303	.16331	.97235
#1	.94796	.35258	75.656	7.1329	.07341
#2	.94247	.34918	76.099	7.1493	.07241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159538-A-2-A Acquired: 9/26/2019 14:02:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576-2	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}2	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.161**	**27.156**	**.01845**	**2.8075**	**.44045**
Stddev	.017	.066	.00038	.0174	.00022
%RSD	.16406	.24376	2.0653	.62110	.05094
#1	10.173	27.109	.01872	2.7952	.44061
#2	10.150	27.203	.01818	2.8199	.44029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.986**	**.10337**	**5.670**	**-.00538**	**-.00071**
Stddev	.007	.00152	.027	.00014	.00358
%RSD	.1350	1.4707	.4802	2.5506	505.22
#1	4.991	.10230	5.689	-.00548	-.00324
#2	4.981	.10445	5.651	-.00528	.00182
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.9044**	**.04141**	**.37536**	**.0528**	**.32782**
Stddev	.0161	.00052	.00101	.0014	.00816
%RSD	.16216	1.2645	.26969	2.743	2.4906
#1	9.9157	.04178	.37465	.0538	.33359
#2	9.8930	.04104	.37608	.0517	.32204
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159538-A-2-A Acquired: 9/26/2019 14:02:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00975**	i **-1.681**	**.05054**	**.69028**	**.0366**
Stddev	.00338	.017	.00021	.00338	.0010
%RSD	34.667	1.022	.41434	.48970	2.653
#1	-.01214	i -1.693	.05069	.68789	.0373
#2	-.00736	i -1.668	.05040	.69267	.0359
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1678.3**	**538.30**	**38788.**	**4313.0**
Stddev	1.2	.57	168.	12.5
%RSD	.06962	.10537	.43372	.28923
#1	1677.5	537.90	38669.	4321.8
#2	1679.1	538.71	38907.	4304.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.978%	100.41%	99.822%	104.70%
Range				

Sample Name: LB 480-493708/1-C Acquired: 9/26/2019 14:06:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00690**	**-.00052**	**.05793**	**.00015**
Stddev	.00005	.00509	.00118	.00115	.00001
%RSD	52.867	73.724	228.16	1.9809	7.2832
#1	-.00006	.00330	-.00135	.05712	.00015
#2	-.00013	.01050	.00032	.05874	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.10159**	**-.00010**	i **.0028**	**-.00006**
Stddev	.00003	.00025	.00007	.0070	.00003
%RSD	87.652	.24773	65.774	252.9	55.004
#1	.00005	.10142	-.00005	i .0077	-.00003
#2	.00001	.10177	-.00015	i -.0022	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00084**	**.07571**	**.02579**	**.00023**
Stddev	.00035	.00026	.00099	.00719	.00028
%RSD	172.30	31.290	1.3123	27.866	125.43
#1	.00045	.00103	.07501	.03087	.00042
#2	-.00004	.00066	.07641	.02071	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LB 480-493708/1-C Acquired: 9/26/2019 14:06:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.02130**	**.00099**	**-.00075**	F **2.0730**	**.00015**
Stddev	.00030	.00007	.00014	.0070	.00016
%RSD	1.4179	7.3797	19.332	.33681	103.63
#1	.02151	.00104	-.00065	2.0780	.00027
#2	.02108	.00094	-.00085	2.0681	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				1.0000	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**.00034**	**.0009**	**-.00155**	**-.00337**
Stddev	.0024	.00018	.0001	.00002	.00414
%RSD	483.0	53.469	15.19	1.0370	122.64
#1	-.0012	.00047	.0008	-.00153	-.00630
#2	.0022	.00021	.0010	-.00156	-.00045
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.08870**	**-.00003**	**.00027**	**-.0010**	**.00018**
Stddev	.01506	.00061	.00005	.0005	.00060
%RSD	16.974	2023.1	19.486	55.26	339.59
#1	.07805	.00040	.00031	-.0013	-.00025
#2	.09934	-.00046	.00023	-.0006	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LB 480-493708/1-C Acquired: 9/26/2019 14:06:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	i **.0203**	**-.00002**	**.00268**	**.0011**
Stddev	.00124	.0250	.00012	.00161	.0011
%RSD	142.86	123.2	640.29	60.068	101.5
#1	-.00174	i .0026	.00006	.00154	.0019
#2	.00001	i .0380	-.00010	.00382	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1813.7**	**546.41**	**39017.**	**4187.9**
Stddev	6.9	.64	5.	.9
%RSD	.37969	.11713	.01235	.02118
#1	1818.6	545.96	39013.	4187.3
#2	1808.8	546.86	39020.	4188.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.48%	101.92%	100.41%	101.66%
Range				

Sample Name: MB 480-493991/2-A Acquired: 9/26/2019 14:10:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.02409**	**-.00264**	**.00042**	**-.00000**
Stddev	.00013	.00035	.00094	.00066	.00001
%RSD	32.996	1.4572	35.516	159.43	524.59
#1	.00031	.02384	-.00198	-.00005	.00001
#2	.00049	.02433	-.00331	.00088	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.04204**	**-.00009**	i **.0038**	**.00022**
Stddev	.00001	.00050	.00009	.0076	.00008
%RSD	100.94	1.1963	93.513	200.6	34.227
#1	.00000	.04168	-.00015	i .0091	.00027
#2	.00002	.04239	-.00003	i -.0016	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.00018**	**.00039**	**-.01950**	**.00077**
Stddev	.00000	.00019	.00027	.00098	.00092
%RSD	1.3202	104.98	68.132	5.0071	119.21
#1	-.00025	.00005	.00058	-.01881	.00142
#2	-.00025	.00031	.00020	-.02019	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493991/2-A Acquired: 9/26/2019 14:10:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**.00041**	**-.00073**	**.01232**	**.00012**
Stddev	.00021	.00006	.00012	.00595	.00011
%RSD	30.076	15.504	16.889	48.251	90.137
#1	-.00084	.00046	-.00064	.01653	.00019
#2	-.00054	.00037	-.00081	.00812	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0012**	**-.00035**	**-.0082**	**-.00105**	**-.00147**
Stddev	.0010	.00024	.0008	.00148	.00009
%RSD	87.65	70.436	9.777	141.30	6.3881
#1	.0019	-.00017	-.0088	-.00000	-.00140
#2	.0004	-.00052	-.0077	-.00209	-.00153
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01354**	**-.00000**	**.00021**	**-.0030**	**-.00001**
Stddev	.00090	.00165	.00004	.0055	.00018
%RSD	6.6725	144320.	19.596	186.9	2136.9
#1	-.01290	.00117	.00024	.0009	-.00014
#2	-.01418	-.00117	.00018	-.0069	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493991/2-A Acquired: 9/26/2019 14:10:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	i **.0216**	**-.00013**	**.00535**	**.0013**
Stddev	.00162	.0489	.00010	.00133	.0019
%RSD	279.10	227.0	76.462	24.927	149.7
#1	-.00056	i -.0130	-.00006	.00629	.0026
#2	.00172	i .0562	-.00020	.00440	-.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1804.4**	**547.77**	**38956.**	**4173.7**
Stddev	2.0	2.05	113.	7.4
%RSD	.10817	.37475	.28976	.17716
#1	1805.8	549.22	39035.	4178.9
#2	1803.0	546.32	38876.	4168.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.964%	102.17%	100.25%	101.32%
Range				

Sample Name: LCS 480-493991/3-A Acquired: 9/26/2019 14:14:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98458**	**.02847**	**.99412**	**.05571**	**.99704**
Stddev	.00364	.01725	.00495	.00097	.00213
%RSD	.37007	60.579	.49758	1.7422	.21399
#1	.98716	.01628	.99062	.05640	.99855
#2	.98200	.04067	.99762	.05503	.99553
Check ?	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0146**	**.10832**	**.98500**	i **.0044**	**.95693**
Stddev	.0047	.00148	.00248	.0100	.00134
%RSD	.46704	1.3618	.25179	224.8	.14033
#1	1.0180	.10937	.98325	i -.0026	.95598
#2	1.0113	.10728	.98676	i .0115	.95788
Check ?	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0054**	**.92181**	**.00516**	**.01471**	**.00071**
Stddev	.0021	.00243	.00362	.00133	.00029
%RSD	.20724	.26369	70.105	9.0239	40.180
#1	1.0068	.92353	.00771	.01377	.00051
#2	1.0039	.92010	.00260	.01565	.00092
Check ?	Chk Pass	Chk Pass	None	None	None
High Limit					
Low Limit					

Sample Name: LCS 480-493991/3-A Acquired: 9/26/2019 14:14:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01055**	**.98803**	**1.0032**	**2.0220**	**.99295**
Stddev	.00206	.00260	.0010	.0038	.00113
%RSD	19.558	.26302	.09559	.18638	.11388
#1	.00909	.98987	1.0039	2.0247	.99215
#2	.01201	.98619	1.0025	2.0194	.99375
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.533**	**.96038**	F **-.0094**	**1.0583**	**.96151**
Stddev	.011	.00246	.0011	.0059	.00349
%RSD	.4228	.25622	11.97	.55331	.36252
#1	-2.541	.95864	-.0086	1.0542	.96397
#2	-2.525	.96212	-.0102	1.0625	.95904
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			1.200		
Low Limit			.8000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.07892**	**.00028**	**.97193**	**.0027**	**-.00001**
Stddev	.01112	.00007	.00103	.0112	.00006
%RSD	14.095	25.786	.10624	407.6	995.49
#1	.08678	.00033	.97266	.0106	.00003
#2	.07105	.00023	.97120	-.0052	-.00005
Check ?	None	None	None	None	None
High Limit					
Low Limit					

Sample Name: LCS 480-493991/3-A Acquired: 9/26/2019 14:14:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.97929	i -.0565	.96861	1.0455	.0017
Stddev	.00193	.0067	.00577	.0053	.0001
%RSD	.19698	11.89	.59521	.50458	5.742
#1	.97793	i -.0518	.97269	1.0493	.0018
#2	.98066	i -.0613	.96453	1.0418	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1793.0	545.17	38794.	4175.2
Stddev	2.1	1.56	95.	12.9
%RSD	.11760	.28600	.24579	.30998
#1	1794.5	546.28	38727.	4166.1
#2	1791.5	544.07	38862.	4184.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.335%	101.69%	99.839%	101.35%
Range				

Sample Name: 480-158364-A-2-D Acquired: 9/26/2019 14:18:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.27281**	**2.0058**	**.99343**	**.05014**
Stddev	.00032	.01453	.0112	.00091	.00017
%RSD	1523.9	5.3247	.55758	.09167	.33397
#1	-.00025	.26254	2.0137	.99407	.05002
#2	.00021	.28308	1.9979	.99278	.05026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**23.736**	**-.00007**	i **.0145**	**.00608**
Stddev	.00003	.022	.00016	.0011	.00012
%RSD	243.65	.09426	212.64	7.907	2.0206
#1	-.00001	23.721	-.00019	i .0153	.00600
#2	.00004	23.752	.00004	i .0136	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.04916**	**.00968**	**34.444**	**77.249**	**2.5746**
Stddev	.00045	.00004	.105	.235	.0086
%RSD	.91642	.41945	.30470	.30442	.33359
#1	.04884	.00971	34.370	77.083	2.5685
#2	.04948	.00965	34.519	77.415	2.5807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-D Acquired: 9/26/2019 14:18:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.7302**	**5.3767**	**.00595**	**170.46**	**.20442**
Stddev	.0093	.0081	.00031	.91	.00075
%RSD	.33960	.14987	5.1328	.53217	.36831
#1	2.7367	5.3710	.00574	169.82	.20389
#2	2.7236	5.3824	.00617	171.10	.20495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8340**	**.00383**	F **96.21**	**.00250**	**-.00548**
Stddev	.0057	.00090	.19	.00112	.00582
%RSD	.6887	23.354	.1988	44.615	106.25
#1	.8381	.00320	96.34	.00329	-.00136
#2	.8300	.00447	96.07	.00171	-.00960
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.4454**	**.00148**	**.86352**	**.0137**	**-.00069**
Stddev	.0313	.00052	.00257	.0130	.00073
%RSD	.41980	35.427	.29745	94.45	105.85
#1	7.4233	.00185	.86171	.0046	-.00017
#2	7.4675	.00111	.86534	.0229	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-D Acquired: 9/26/2019 14:18:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	i **-.3536**	**.00046**	**.22006**	**.0083**
Stddev	.00056	.0099	.00018	.00286	.0006
%RSD	260.74	2.791	38.948	1.3014	7.682
#1	.00061	i -.3467	.00058	.21803	.0087
#2	-.00018	i -.3606	.00033	.22208	.0078
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1629.7**	**518.34**	**36334.**	**4128.4**
Stddev	1.6	.36	86.	5.1
%RSD	.09716	.06968	.23617	.12254
#1	1630.8	518.08	36395.	4132.0
#2	1628.6	518.60	36274.	4124.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	90.286%	96.684%	93.508%	100.22%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 14:22:09 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97398**	**49.997**	**.97705**	**.98342**	**1.0067**	**.98370**	**49.129**	**.97508**
Stddev	.00307	.298	.00822	.00418	.0026	.00182	.200	.00287
%RSD	.31476	.59663	.84146	.42502	.26036	.18519	.40699	.29428
#1	.97181	49.786	.97123	.98047	1.0048	.98242	48.988	.97305
#2	.97615	50.208	.98286	.98638	1.0085	.98499	49.270	.97711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9817**	**.98011**	**.99142**	**.97439**	**49.433**	**48.354**	**.98763**	**49.344**
Stddev	.0024	.00152	.00255	.00356	.102	.022	.00329	.009
%RSD	.2468	.15510	.25755	.36536	.20589	.04476	.33357	.01743
#1	i .9799	.97904	.99322	.97187	49.361	48.339	.98530	49.350
#2	i .9834	.98118	.98961	.97691	49.505	48.370	.98996	49.338
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98745**	**.98903**	**49.143**	**.97406**	**24.79**	**.97046**	**24.28**	**.98115**
Stddev	.00127	.00374	.068	.00261	.02	.00075	.08	.00624
%RSD	.12899	.37773	.13916	.26795	.0633	.07769	.3129	.63617
#1	.98835	.98639	49.094	.97222	24.78	.96993	24.23	.97674
#2	.98655	.99168	49.191	.97591	24.80	.97100	24.34	.98556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 14:22:09 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95595	9.9642	.97141	.99615	.9823	.97864	.98720	i 2.442
Stddev	.00546	.1131	.00186	.00044	.0017	.00032	.00113	.047
%RSD	.57127	1.1352	.19098	.04439	.1714	.03244	.11421	1.907
#1	.95209	9.8842	.97272	.99583	.9835	.97842	.98640	i 2.475
#2	.95981	10.044	.97009	.99646	.9811	.97887	.98800	i 2.409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99074	.99334	.9738
Stddev	.00534	.00196	.0006
%RSD	.53912	.19746	.0601
#1	.99451	.99473	.9742
#2	.98696	.99195	.9734
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1646.5	534.17	36927.	4140.2
Stddev	.5	1.41	41.	10.4
%RSD	.02855	.26445	.11235	.25168
#1	1646.8	535.17	36897.	4147.6
#2	1646.2	533.17	36956.	4132.8

Sample Name: CCB-5508960 Acquired: 9/26/2019 14:25:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.01305**	**-.00290**	**-.00189**	**.00008**	**-.00001**	**-.00066**	**-.00008**
Stddev	.00009	.00469	.00009	.00031	.00003	.00001	.00019	.00010
%RSD	50.472	35.956	3.2562	16.446	41.638	90.363	29.638	133.55
#1	-.00025	-.01637	-.00296	-.00211	.00010	-.00002	-.00052	-.00000
#2	-.00012	-.00973	-.00283	-.00167	.00006	-.00000	-.00080	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0162**	**-.00002**	**.00002**	**.00013**	**.00559**	**.00098**	**.00068**	**.00242**
Stddev	.0115	.00011	.00017	.00039	.00079	.00751	.00027	.00244
%RSD	70.54	529.43	736.13	312.98	14.045	762.78	39.712	100.88
#1	i .0243	-.00010	.00015	.00041	.00615	-.00432	.00049	.00415
#2	i .0081	.00006	-.00010	-.00015	.00504	.00629	.00088	.00069
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00149**	**-.00033**	**-.00017**	**.0040**	**-.00028**	**-.0123**	**-.00147**
Stddev	.00008	.00027	.00366	.00003	.0005	.00045	.0008	.00097
%RSD	439.98	18.314	1103.3	15.715	13.09	161.98	6.250	65.708
#1	.00004	.00130	.00226	-.00015	.0037	-.00059	-.0128	-.00079
#2	-.00007	.00169	-.00292	-.00018	.0044	.00004	-.0117	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 14:25:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00656**	**-.03889**	**.00085**	**.00003**	**-.0066**	**.00030**	**.00024**	i **-.0133**
Stddev	.00038	.00623	.00180	.00002	.0084	.00028	.00051	.0326
%RSD	5.8255	16.027	211.54	72.358	127.1	93.125	215.29	245.5
#1	-.00629	-.03449	-.00042	.00001	-.0007	.00049	-.00012	i -.0364
#2	-.00683	-.04330	.00212	.00004	-.0126	.00010	.00060	i .0098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00038**	**.0016**
Stddev	.00013	.00069	.0007
%RSD	34.384	181.11	42.88
#1	-.00028	.00087	.0021
#2	-.00046	-.00011	.0011
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1802.5**	**553.14**	**38957.**	**4169.6**
Stddev	.6	1.16	18.	3.1
%RSD	.03071	.20934	.04605	.07389
#1	1802.1	553.96	38944.	4171.8
#2	1802.9	552.32	38970.	4167.4

Sample Name: CCVL-5514926 Acquired: 9/26/2019 14:29:41 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00577	.21367	.01407	.01862	.00219	.00214	.52810	.00207
Stddev	.00003	.00928	.00208	.00060	.00001	.00006	.00372	.00007
%RSD	.47431	4.3439	14.817	3.2166	.34785	3.0167	.70452	3.4874
#1	.00579	.22024	.01259	.01819	.00218	.00210	.53074	.00212
#2	.00576	.20711	.01554	.01904	.00219	.00219	.52547	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0110	.00387	.00421	.00955	.05298	.49192	.03033	.21606
Stddev	.0146	.00013	.00031	.00012	.00583	.02509	.00044	.00164
%RSD	133.5	3.3854	7.4479	1.2640	10.996	5.1003	1.4547	.75917
#1	i .0006	.00397	.00443	.00963	.05710	.47418	.03002	.21722
#2	i .0213	.00378	.00399	.00946	.04886	.50966	.03064	.21490
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.01007	.98850	.01011	-.0299	.00880	.1949	.02181
Stddev	.00001	.00025	.00387	.00005	.0024	.00006	.0032	.00049
%RSD	.40324	2.4657	.39198	.49889	8.046	.71352	1.648	2.2345
#1	.00317	.01024	.99124	.01014	-.0316	.00885	.1926	.02146
#2	.00315	.00989	.98576	.01007	-.0282	.00876	.1972	.02215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 14:29:41 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02239**	**.45528**	**.00961**	**.00500**	**.0037**	**.00495**	**.02022**	i **.0798**
Stddev	.00827	.00403	.00117	.00006	.0003	.00007	.00033	.0857
%RSD	36.920	.88464	12.155	1.2976	7.582	1.4644	1.6366	107.3
#1	.01654	.45243	.00878	.00496	.0035	.00500	.01999	i .0193
#2	.02823	.45813	.01043	.00505	.0038	.00489	.02046	i .1404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00486**	**.01126**	**.0005**
Stddev	.00012	.00122	.0008
%RSD	2.5618	10.830	145.7
#1	.00495	.01039	-.0000
#2	.00478	.01212	.0011
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1804.8**	**549.81**	**39058.**	**4160.7**
Stddev	2.6	.74	58.	4.8
%RSD	.14657	.13541	.14772	.11576
#1	1806.6	549.28	39099.	4157.3
#2	1802.9	550.33	39018.	4164.1

Sample Name: 480-158364-A-2-Dsd@5 Acquired: 9/26/2019 14:33:32 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.06742**	**.01141**	**.12806**	**.05324**
Stddev	.00019	.00168	.00067	.00026	.00007
%RSD	139.43	2.4959	5.8897	.20115	.12370
#1	.00028	.06861	.01188	.12788	.05329
#2	.00000	.06623	.01093	.12824	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**147.37**	**.00002**	i **.0095**	**.00070**
Stddev	.00001	.67	.00003	.0184	.00035
%RSD	87.378	.45283	125.77	194.6	50.494
#1	-.00003	147.84	.00000	i .0225	.00095
#2	-.00001	146.90	.00005	i -.0036	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**-.00057**	**.59412**	**8.3958**	**.00982**
Stddev	.00026	.00042	.00058	.0431	.00081
%RSD	20.532	73.227	.09822	.51321	8.2637
#1	.00108	-.00028	.59453	8.4262	.01039
#2	.00144	-.00087	.59371	8.3653	.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-Dsd@5 Acquired: 9/26/2019 14:33:32 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.504**	**.28600**	**-.00017**	**19.225**	**.00364**
Stddev	.028	.00147	.00007	.000	.00010
%RSD	.22724	.51446	41.444	.00004	2.8357
#1	12.524	.28704	-.00022	19.225	.00356
#2	12.483	.28496	-.00012	19.225	.00371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0113**	**-.00026**	F **184.2**	**.01448**	**-.00233**
Stddev	.0019	.00076	.0	.00149	.00535
%RSD	16.55	288.63	.0235	10.288	229.32
#1	.0126	.00027	184.2	.01343	-.00612
#2	.0100	-.00080	184.3	.01553	.00145
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.3499**	**.00025**	**.29694**	**-.0079**	**-.00016**
Stddev	.0386	.00123	.00002	.0025	.00025
%RSD	.46262	483.58	.00790	32.26	155.74
#1	8.3226	-.00061	.29692	-.0097	.00002
#2	8.3772	.00112	.29696	-.0061	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-Dsd@5 Acquired: 9/26/2019 14:33:32 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	i **-.0798**	**-.00029**	**-.00016**	**.0001**
Stddev	.00100	.0830	.00060	.00168	.0002
%RSD	200.82	104.0	208.82	1037.0	175.0
#1	-.00121	i -.0211	.00014	.00103	-.0000
#2	.00021	i -.1384	-.00071	-.00135	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1678.4**	**519.28**	**36853.**	**4090.8**
Stddev	.3	.47	90.	.6
%RSD	.01734	.08968	.24440	.01447
#1	1678.2	519.61	36789.	4090.4
#2	1678.6	518.95	36917.	4091.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.986%	96.859%	94.842%	99.304%
Range				

Sample Name: 480-158364-A-2-Dpds Acquired: 9/26/2019 14:37:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.30099**	**.00226**	**.06882**	**.01457**
Stddev	.00028	.01392	.00354	.00048	.00004
%RSD	997.64	4.6252	157.01	.69636	.25016
#1	-.00022	.29115	-.00025	.06916	.01460
#2	.00017	.31084	.00476	.06848	.01455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**30.451**	**-.00001**	i **.0177**	**-.00008**
Stddev	.00002	.263	.00001	.0006	.00015
%RSD	178.00	.86370	37.759	3.241	195.85
#1	.00000	30.637	-.00002	i .0173	-.00019
#2	-.00002	30.265	-.00001	i .0181	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00000**	**.12562**	**1.6977**	**.00243**
Stddev	.00017	.00028	.00384	.0131	.00007
%RSD	111.51	6683.7	3.0560	.76849	2.9835
#1	.00003	-.00020	.12291	1.7070	.00238
#2	.00027	.00019	.12834	1.6885	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-Dpds Acquired: 9/26/2019 14:37:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.4918**	**.05932**	**-.00055**	**3.8977**	**.00057**
Stddev	.0146	.00020	.00010	.0257	.00026
%RSD	.58626	.33265	18.959	.65936	46.205
#1	2.5021	.05946	-.00047	3.9159	.00038
#2	2.4814	.05919	-.00062	3.8796	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0021**	**-.00101**	**34.63**	**.00287**	**-.00379**
Stddev	.0004	.00051	.10	.00023	.00003
%RSD	16.83	50.887	.2942	7.8474	.68237
#1	.0018	-.00064	34.71	.00271	-.00377
#2	.0023	-.00137	34.56	.00303	-.00381
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.6678**	**-.00060**	**.06708**	**-.0024**	**.00075**
Stddev	.0093	.00163	.00018	.0176	.00011
%RSD	.55913	270.59	.27234	731.1	15.245
#1	1.6744	-.00175	.06721	-.0149	.00083
#2	1.6612	.00055	.06695	.0100	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-Dpds Acquired: 9/26/2019 14:37:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00074	i -.0313	.00005	-.00104	.0008
Stddev	.00148	.0534	.00008	.00059	.0017
%RSD	199.91	170.6	166.19	57.224	196.9
#1	.00179	i .0065	.00011	-.00146	-.0003
#2	-.00031	i -.0690	-.00001	-.00062	.0020
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1793.2	537.94	38409.	4175.7
Stddev	3.5	.39	16.	25.6
%RSD	.19339	.07328	.04156	.61200
#1	1790.8	538.22	38398.	4157.6
#2	1795.7	537.66	38420.	4193.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.347%	100.34%	98.847%	101.36%
Range				

Sample Name: 480-158364-A-2-E MS Acquired: 9/26/2019 14:41:07 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0300**	**.06476**	**1.0765**	**.13715**	**1.0902**
Stddev	.0007	.00407	.0006	.00048	.0020
%RSD	.06359	6.2858	.05723	.35248	.18364
#1	1.0295	.06189	1.0761	.13681	1.0888
#2	1.0305	.06764	1.0770	.13750	1.0916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0670**	**159.14**	**1.0537**	i **.0237**	**1.0040**
Stddev	.0001	.30	.0052	.0054	.0006
%RSD	.01038	.18866	.49032	22.56	.05500
#1	1.0670	159.35	1.0501	i .0200	1.0044
#2	1.0669	158.93	1.0574	i .0275	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.99021**	**.64909**	**9.0587**	**.01075**
Stddev	.0001	.00053	.00163	.0214	.00033
%RSD	.00670	.05400	.25095	.23655	3.1061
#1	1.0190	.99058	.64793	9.0436	.01052
#2	1.0191	.98983	.65024	9.0739	.01099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-E MS Acquired: 9/26/2019 14:41:07 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.465**	**1.3111**	**1.0522**	**20.739**	**1.0398**
Stddev	.004	.0006	.0023	.026	.0005
%RSD	.03014	.04967	.22046	.12543	.04977
#1	13.468	1.3106	1.0506	20.720	1.0395
#2	13.462	1.3116	1.0539	20.757	1.0402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.402**	**1.0253**	F **195.9**	**1.1493**	**1.0655**
Stddev	.002	.0007	.8	.0030	.0057
%RSD	.0709	.07197	.4105	.26211	.53954
#1	-2.403	1.0259	195.3	1.1514	1.0614
#2	-2.401	1.0248	196.5	1.1471	1.0696
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.8887**	**.00109**	**.32191**	**.0009**	**-.00027**
Stddev	.0393	.00040	.00023	.0097	.00013
%RSD	.44152	36.507	.07018	1055.	47.547
#1	8.8610	.00137	.32175	-.0060	-.00036
#2	8.9165	.00081	.32207	.0078	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-E MS Acquired: 9/26/2019 14:41:07 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0461**	i **.0147**	**1.0055**	**1.0650**	**.0007**
Stddev	.0013	.0050	.0012	.0039	.0011
%RSD	.12303	34.26	.12361	.36369	156.3
#1	1.0452	i .0182	1.0047	1.0678	.0015
#2	1.0470	i .0111	1.0064	1.0623	-.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1664.6**	**516.22**	**36887.**	**4088.8**
Stddev	2.2	2.77	6.	8.3
%RSD	.13512	.53699	.01657	.20419
#1	1666.2	518.18	36882.	4082.9
#2	1663.0	514.26	36891.	4094.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.221%	96.289%	94.929%	99.255%
Range				

Sample Name: 480-158364-A-2-F MSD Acquired: 9/26/2019 14:44:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98407**	**.12953**	**1.0372**	**.13952**	**1.0495**
Stddev	.00189	.00536	.0055	.00094	.0035
%RSD	.19255	4.1355	.53032	.67182	.33444
#1	.98541	.13332	1.0333	.13886	1.0520
#2	.98273	.12575	1.0410	.14018	1.0470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0278**	**147.85**	**1.0139**	i **-.0081**	**.97398**
Stddev	.0001	.08	.0015	.0076	.00268
%RSD	.01132	.05696	.14662	94.67	.27552
#1	1.0278	147.91	1.0129	i -.0134	.97587
#2	1.0279	147.79	1.0150	i -.0027	.97208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98583**	**.95930**	**.59972**	**8.4133**	**.01036**
Stddev	.00649	.00451	.00296	.0160	.00015
%RSD	.65825	.46965	.49370	.18970	1.4046
#1	.99041	.96248	.60181	8.4020	.01046
#2	.98124	.95611	.59762	8.4246	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-F MSD Acquired: 9/26/2019 14:44:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.536**	**1.2576**	**1.0149**	**19.196**	**1.0065**
Stddev	.021	.0045	.0008	.036	.0003
%RSD	.16612	.35456	.07768	.18780	.03343
#1	12.551	1.2607	1.0144	19.222	1.0067
#2	12.521	1.2544	1.0155	19.171	1.0063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.337**	**.98932**	F **181.0**	**1.1090**	**1.0193**
Stddev	.010	.00131	.7	.0027	.0029
%RSD	.4175	.13234	.4053	.24066	.27994
#1	-2.344	.99025	180.5	1.1071	1.0213
#2	-2.331	.98840	181.6	1.1109	1.0173
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.2261**	**-.00043**	**1.2724**	**-.0061**	**-.00044**
Stddev	.0240	.00047	.0062	.0035	.00000
%RSD	.29203	109.09	.48404	56.55	.34088
#1	8.2431	-.00076	1.2768	-.0037	-.00044
#2	8.2091	-.00010	1.2681	-.0086	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158364-A-2-F MSD Acquired: 9/26/2019 14:44:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0043**	i **-.0900**	**.97344**	**1.0315**	**.0002**
Stddev	.0004	.1041	.00434	.0009	.0002
%RSD	.03450	115.6	.44571	.09132	107.7
#1	1.0041	i -.0164	.97651	1.0308	.0000
#2	1.0046	i -.1636	.97038	1.0322	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1668.3**	**520.49**	**36983.**	**4092.0**
Stddev	1.3	1.61	4.	5.3
%RSD	.07523	.30936	.00951	.12846
#1	1669.2	521.63	36986.	4095.7
#2	1667.5	519.35	36981.	4088.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.427%	97.085%	95.178%	99.332%
Range				

Sample Name: LB 480-493985/1-B Acquired: 9/26/2019 14:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0050	.05728	F 1.0468	.12742	F 1.0680
Stddev	.0045	.01025	.0051	.00132	.0029
%RSD	.44622	17.901	.49065	1.0360	.27523
#1	1.0018	.05003	1.0432	.12649	1.0659
#2	1.0082	.06453	1.0504	.12836	1.0700
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail
High Limit	.00300		.01500		1.0000
Low Limit	-.00600		-.01500		-1.0000

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0482	F 150.10	F 1.0242	i .0181	F .98994
Stddev	.0006	.22	.0019	.0018	.00102
%RSD	.05208	.14888	.18776	10.21	.10319
#1	1.0486	150.26	1.0229	i .0194	.98922
#2	1.0478	149.94	1.0256	i .0168	.99066
Check ?	Chk Fail	Chk Fail	Chk Fail	None	Chk Fail
High Limit	.00200	3.0000	.00200		.00400
Low Limit	-.00200	-3.0000	-.00200		-.00400

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0004	F .97208	F .60492	F 8.5270	.01063
Stddev	.0026	.00122	.00240	.0055	.00015
%RSD	.26329	.12586	.39667	.06401	1.4277
#1	.99854	.97122	.60661	8.5309	.01074
#2	1.0023	.97295	.60322	8.5231	.01053
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass
High Limit	.02000	.01000	.10000	2.0000	
Low Limit	-.02000	-.01000	-.10000	-2.0000	

Sample Name: LB 480-493985/1-B Acquired: 9/26/2019 14:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **12.764**	F **1.2765**	F **1.0252**	F **19.474**	F **1.0225**
Stddev	.025	.0036	.0028	.017	.0015
%RSD	.19851	.28152	.27416	.08792	.14419
#1	12.746	1.2740	1.0232	19.462	1.0214
#2	12.782	1.2790	1.0272	19.486	1.0235
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.50000	.01000	.01000	1.0000	.01000
Low Limit	-.50000	-.01000	-.01000	-1.0000	-.01000

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.389**	F **1.0057**	F **182.8**	F **1.1255**	F **1.0262**
Stddev	.005	.0011	.9	.0014	.0006
%RSD	.2275	.10958	.4769	.12296	.06272
#1	-2.393	1.0049	182.2	1.1246	1.0257
#2	-2.385	1.0065	183.5	1.1265	1.0266
Check ?	None	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		.02000	.4000	.02000	.02500
Low Limit		-.02000	-.4000	-.02000	-.02500

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **8.4800**	**-.00008**	F **1.2891**	**-.0032**	**-.00052**
Stddev	.1299	.00182	.0018	.0117	.00007
%RSD	1.5317	2195.0	.13845	370.6	14.201
#1	8.5718	-.00137	1.2879	-.0114	-.00057
#2	8.3882	.00120	1.2904	.0051	-.00047
Check ?	Chk Fail	Chk Pass	Chk Fail	None	Chk Pass
High Limit	.50000		.01000		
Low Limit	-.50000		-.01000		

Sample Name: LB 480-493985/1-B Acquired: 9/26/2019 14:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0253	i -.0756	F .99059	F 1.0550	.0003
Stddev	.0003	.0372	.00224	.0021	.0007
%RSD	.02415	49.20	.22642	.19465	266.8
#1	1.0255	i -.1019	.98900	1.0564	.0008
#2	1.0252	i -.0493	.99218	1.0535	-.0002
Check ?	Chk Fail	None	Chk Fail	Chk Fail	None
High Limit	.02000		.00500	.05000	
Low Limit	-.02000		-.00500	-.05000	

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1665.6	523.76	36833.	4103.8
Stddev	1.8	1.83	72.	11.5
%RSD	.10620	.34947	.19469	.28140
#1	1666.9	525.05	36884.	4095.6
#2	1664.4	522.46	36782.	4111.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.277%	97.694%	94.791%	99.618%
Range				

Sample Name: MB 480-493993/2-A Acquired: 9/26/2019 14:52:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.03616**	**.00276**	F **.71550**	**.04504**
Stddev	.00067	.01646	.00236	.00050	.00014
%RSD	215.07	45.517	85.776	.07027	.31358
#1	.00016	.02452	.00108	.71514	.04494
#2	-.00078	.04780	.00443	.71585	.04514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				.50000	
Low Limit				-.50000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	F **477.66**	**.00027**	i **.0124**	**-.00011**
Stddev	.00005	2.08	.00007	.0067	.00009
%RSD	233.88	.43614	26.871	53.77	85.389
#1	-.00006	476.19	.00032	i .0077	-.00017
#2	.00001	479.13	.00022	i .0171	-.00004
Check ?	Chk Pass	Chk Fail	Chk Pass	None	Chk Pass
High Limit		3.0000			
Low Limit		-3.0000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00336**	**-.00059**	F **66.772**	F **.10222**
Stddev	.00044	.00021	.00245	.181	.00056
%RSD	65.354	6.2147	412.69	.27037	.55157
#1	.00098	.00351	-.00233	66.900	.10261
#2	.00036	.00322	.00114	66.645	.10182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit				2.0000	.03000
Low Limit				-2.0000	-.03000

Sample Name: MB 480-493993/2-A Acquired: 9/26/2019 14:52:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **633.54**	**.00167**	**.00437**	F **113.93**	**.00028**
Stddev	.86	.00001	.00036	.67	.00034
%RSD	.13539	.60434	8.2586	.59001	120.40
#1	634.15	.00168	.00411	113.46	.00004
#2	632.94	.00167	.00462	114.41	.00052
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit	.50000			1.0000	
Low Limit	-.50000			-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0085**	**-.00390**	F **1125.**	**.00158**	**-.01102**
Stddev	.0013	.00095	2.	.00268	.00814
%RSD	15.07	24.244	.1893	170.12	73.940
#1	-.0076	-.00457	1126.	-.00032	-.00526
#2	-.0094	-.00323	1123.	.00347	-.01677
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			.4000		
Low Limit			-.4000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **2.5725**	**.00127**	F **6.1688**	**.0003**	**-.00031**
Stddev	.0026	.00269	.0215	.0027	.00023
%RSD	.10120	212.13	.34767	833.2	75.201
#1	2.5743	-.00063	6.1536	-.0016	-.00047
#2	2.5707	.00317	6.1840	.0022	-.00014
Check ?	Chk Fail	Chk Pass	Chk Fail	None	Chk Pass
High Limit	.50000		.01000		
Low Limit	-.50000		-.01000		

Sample Name: MB 480-493993/2-A Acquired: 9/26/2019 14:52:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	i **.1153**	**-.00141**	**.00449**	**.0015**
Stddev	.00190	.0641	.00000	.00149	.0017
%RSD	277.01	55.60	.10533	33.046	113.0
#1	.00203	i .0699	-.00141	.00344	.0003
#2	-.00066	i .1606	-.00141	.00554	.0027
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1431.4**	**477.03**	**33355.**	**3889.3**
Stddev	.5	1.06	13.	8.5
%RSD	.03255	.22169	.04047	.21899
#1	1431.0	476.29	33364.	3895.3
#2	1431.7	477.78	33345.	3883.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.299%	88.979%	85.839%	94.411%
Range				

Sample Name: LCS 480-493993/3-A Acquired: 9/26/2019 14:56:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F .00063	.02006	F .00271	.01857	F .00107
Stddev	.00027	.02363	.00155	.00007	.00002
%RSD	41.876	117.77	57.380	.38382	1.6085
#1	.00045	.03677	.00161	.01852	.00109
#2	.00082	.00336	.00381	.01863	.00106
Check ?	Chk Fail	None	Chk Fail	None	Chk Fail
High Limit	1.2000		1.2000		1.2000
Low Limit	.80000		.80000		.80000

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F -.00009	.11673	F -.00010	i .0135	F .00010
Stddev	.00008	.00720	.00017	.0104	.00000
%RSD	90.566	6.1688	174.93	77.07	3.6192
#1	-.00003	.12182	.00002	i .0062	.00010
#2	-.00015	.11163	-.00022	i .0209	.00010
Check ?	Chk Fail	None	Chk Fail	None	Chk Fail
High Limit	1.2000		1.2000		1.2000
Low Limit	.80000		.80000		.80000

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F .00204	F .00057	.00585	.24311	.00194
Stddev	.00043	.00015	.00318	.03419	.00010
%RSD	20.933	26.633	54.481	14.065	4.9124
#1	.00234	.00067	.00359	.21893	.00187
#2	.00174	.00046	.00810	.26728	.00201
Check ?	Chk Fail	Chk Fail	None	None	None
High Limit	1.2000	1.2000			
Low Limit	.80000	.80000			

Sample Name: LCS 480-493993/3-A Acquired: 9/26/2019 14:56:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03743**	F **.00060**	F **.00007**	**1505.9**	F **.00046**
Stddev	.00559	.00004	.00004	.9	.00046
%RSD	14.937	6.8184	53.159	.05741	101.78
#1	.04138	.00063	.00004	1505.3	.00078
#2	.03348	.00057	.00010	1506.5	.00013
Check ?	None	Chk Fail	Chk Fail	None	Chk Fail
High Limit		1.2000	1.2000		1.2000
Low Limit		.80000	.80000		.80000

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0056**	F **-.00094**	F **.0797**	F **.00117**	F **-.01112**
Stddev	.0007	.00036	.0102	.00085	.00526
%RSD	11.93	37.912	12.77	72.901	47.301
#1	-.0051	-.00069	.0869	.00057	-.01484
#2	-.0061	-.00119	.0725	.00177	-.00740
Check ?	None	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		1.2000	1.200	1.2000	1.2000
Low Limit		.80000	.8000	.80000	.80000

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00852**	**.00188**	**.00073**	**-.0079**	**-.00016**
Stddev	.00055	.00014	.00003	.0008	.00008
%RSD	6.4415	7.2372	3.6901	9.937	50.447
#1	.00891	.00178	.00075	-.0073	-.00021
#2	.00813	.00198	.00071	-.0084	-.00010
Check ?	None	None	None	None	None
High Limit					
Low Limit					

Sample Name: LCS 480-493993/3-A Acquired: 9/26/2019 14:56:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **-.00026**	i **.0304**	F **-.00060**	F **.00528**	**.0005**
Stddev	.00072	.0174	.00032	.00102	.0013
%RSD	275.42	57.37	52.702	19.406	284.2
#1	.00025	i .0427	-.00038	.00600	.0014
#2	-.00077	i .0181	-.00082	.00456	-.0005
Check ?	Chk Fail	None	Chk Fail	Chk Fail	None
High Limit	1.2000		1.2000	1.2000	
Low Limit	.80000		.80000	.80000	

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1432.2**	**495.47**	**33097.**	**3965.9**
Stddev	1.3	.86	39.	7.6
%RSD	.09055	.17331	.11931	.19202
#1	1433.1	496.08	33069.	3971.3
#2	1431.3	494.87	33125.	3960.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.346%	92.419%	85.176%	96.272%
Range				

Sample Name: 480-159348-C-3-B Acquired: 9/26/2019 15:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.01576**	**-.00468**	**.00038**	**-.00000**
Stddev	.00035	.00078	.00027	.00020	.00002
%RSD	132.72	4.9255	5.7721	52.395	512.72
#1	.00002	.01521	-.00449	.00024	-.00002
#2	.00051	.01631	-.00488	.00052	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.04679**	**-.00005**	i **.0112**	**.00007**
Stddev	.00005	.00179	.00006	.0110	.00024
%RSD	172.93	3.8250	127.70	98.50	329.75
#1	.00001	.04552	-.00000	i .0034	.00025
#2	-.00006	.04805	-.00010	i .0190	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00058**	**.00007**	**-.00548**	**.00057**
Stddev	.00004	.00020	.00002	.00297	.00035
%RSD	34.032	34.651	22.870	54.271	61.446
#1	.00016	.00044	.00006	-.00758	.00032
#2	.00010	.00072	.00008	-.00337	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-C-3-B Acquired: 9/26/2019 15:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00561**	**.00027**	**-.00031**	**.09624**	**.00030**
Stddev	.00492	.00012	.00001	.00406	.00033
%RSD	87.589	42.294	4.4509	4.2202	110.82
#1	.00909	.00036	-.00030	.09911	.00053
#2	.00214	.00019	-.00032	.09337	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0030**	**-.00047**	**.0144**	**.00098**	**-.00282**
Stddev	.0028	.00174	.0008	.00214	.00238
%RSD	90.85	370.91	5.851	217.24	84.705
#1	-.0011	.00076	.0150	-.00053	-.00113
#2	-.0050	-.00170	.0138	.00250	-.00450
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01431**	**-.00014**	**.00018**	**-.0014**	**.00003**
Stddev	.00401	.00061	.00000	.0075	.00005
%RSD	28.023	445.82	.58475	519.6	172.94
#1	-.01147	-.00057	.00018	.0038	-.00001
#2	-.01714	.00029	.00018	-.0067	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-C-3-B Acquired: 9/26/2019 15:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00128**	i **.0369**	**-.00032**	**.00439**	**.0010**
Stddev	.00188	.0211	.00014	.00167	.0006
%RSD	147.29	57.37	45.199	38.147	54.57
#1	-.00260	i .0518	-.00042	.00321	.0006
#2	.00005	i .0219	-.00022	.00557	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1786.8**	**548.01**	**38622.**	**4128.6**
Stddev	2.8	1.53	95.	18.6
%RSD	.15847	.27986	.24682	.45001
#1	1788.8	549.10	38555.	4115.5
#2	1784.8	546.93	38690.	4141.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.993%	102.22%	99.396%	100.22%
Range				

Sample Name: 480-159556-G-1-C Acquired: 9/26/2019 15:04:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0625**	**.06908**	**1.0344**	**.01931**	**.96838**
Stddev	.0005	.00244	.0083	.00003	.00054
%RSD	.04743	3.5389	.80382	.14769	.05546
#1	1.0622	.06735	1.0402	.01933	.96876
#2	1.0629	.07081	1.0285	.01929	.96800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.99077**	**.13697**	**1.0027**	i **.0106**	**1.0004**
Stddev	.00255	.00061	.0012	.0049	.0012
%RSD	.25749	.44300	.11747	45.93	.11666
#1	.99258	.13740	1.0036	i .0141	1.0013
#2	.98897	.13655	1.0019	i .0072	.99962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.97799**	**.94760**	**.00728**	**.20783**	**.00243**
Stddev	.00128	.00207	.00586	.01166	.00045
%RSD	.13122	.21866	80.518	5.6123	18.395
#1	.97890	.94614	.01142	.19958	.00274
#2	.97708	.94907	.00313	.21607	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-C Acquired: 9/26/2019 15:04:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01417**	**.95046**	**.95424**	F **1416.9**	**1.0186**
Stddev	.00451	.00111	.00189	.4	.0008
%RSD	31.819	.11712	.19762	.02738	.07706
#1	.01098	.94967	.95557	1417.1	1.0191
#2	.01736	.95124	.95290	1416.6	1.0180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.108**	**.99397**	**.0131**	**1.0507**	**.99270**
Stddev	.001	.00225	.0028	.0014	.00028
%RSD	.0563	.22630	21.75	.12930	.02853
#1	-2.109	.99238	.0111	1.0516	.99250
#2	-2.108	.99556	.0151	1.0497	.99290
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.00105**	**.95082**	**-.0116**	**-.00016**
Stddev	.00800	.00121	.00186	.0019	.00038
%RSD	672.00	115.42	.19600	16.09	236.49
#1	.00685	.00191	.95214	-.0103	-.00043
#2	-.00447	.00019	.94950	-.0129	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-C Acquired: 9/26/2019 15:04:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.93242**	i **-.0986**	**.96762**	**1.0722**	**.0005**
Stddev	.00466	.0112	.00122	.0018	.0003
%RSD	.50000	11.37	.12564	.16328	63.76
#1	.93572	i -.0906	.96676	1.0734	.0007
#2	.92912	i -.1065	.96848	1.0710	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1430.9**	**503.21**	**33153.**	**3968.6**
Stddev	.7	.04	77.	13.6
%RSD	.04779	.00882	.23100	.34194
#1	1430.4	503.18	33207.	3978.2
#2	1431.4	503.24	33099.	3959.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.274%	93.862%	85.320%	96.336%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 15:08:05 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97924	49.774	.96530	.97734	1.0032	.98468	49.352	.96677
Stddev	.00410	.115	.00232	.00240	.0040	.00089	.009	.00179
%RSD	.41828	.23050	.24000	.24597	.40066	.09066	.01897	.18544
#1	.98214	49.855	.96694	.97904	1.0060	.98531	49.346	.96804
#2	.97634	49.693	.96366	.97564	1.0003	.98405	49.359	.96550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.012	.98275	.98246	.96913	49.230	48.432	.98750	49.371
Stddev	.001	.00023	.00415	.00253	.140	.023	.00157	.078
%RSD	.1167	.02350	.42192	.26119	.28510	.04784	.15918	.15787
#1	i 1.012	.98291	.98539	.97092	49.329	48.448	.98862	49.316
#2	i 1.011	.98258	.97953	.96734	49.131	48.415	.98639	49.426
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98216	.97959	48.866	.97443	24.77	.97466	23.97	.97772
Stddev	.00247	.00273	.175	.00123	.01	.00084	.02	.00174
%RSD	.25117	.27857	.35914	.12635	.0531	.08638	.0745	.17769
#1	.98390	.98152	48.990	.97530	24.78	.97525	23.98	.97649
#2	.98042	.97766	48.742	.97355	24.76	.97406	23.96	.97895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 15:08:05 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94836	9.9238	.97169	.99078	.9858	.97216	.98618	i 2.551
Stddev	.01000	.0772	.00169	.00333	.0079	.00038	.00844	.030
%RSD	1.0541	.77764	.17440	.33565	.8048	.03954	.85623	1.189
#1	.95543	9.8692	.97049	.99313	.9914	.97243	.99215	i 2.573
#2	.94129	9.9784	.97289	.98843	.9801	.97188	.98021	i 2.530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.98406	.99157	.9721
Stddev	.00368	.00674	.0041
%RSD	.37440	.67947	.4188
#1	.98667	.99633	.9692
#2	.98146	.98680	.9749
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1638.5	538.05	36857.	4130.7
Stddev	2.2	1.52	70.	9.0
%RSD	.13148	.28296	.19070	.21757
#1	1636.9	536.98	36807.	4124.3
#2	1640.0	539.13	36907.	4137.0

Sample Name: CCB-5508960 Acquired: 9/26/2019 15:11:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	-.00614	-.00004	-.00288	.00009	.00004	.00056	.00005
Stddev	.00002	.00715	.00335	.00029	.00001	.00006	.00053	.00015
%RSD	3.6672	116.44	9473.8	10.109	14.336	151.37	93.995	329.91
#1	.00041	-.01120	.00233	-.00267	.00008	.00008	.00094	.00015
#2	.00043	-.00109	-.00240	-.00308	.00010	-.00000	.00019	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0069	-.00012	-.00015	.00020	-.00076	.00001	.00011	.00215
Stddev	.0083	.00006	.00016	.00009	.00038	.00596	.00093	.00282
%RSD	120.4	52.394	104.54	44.607	49.809	88874.	879.09	131.00
#1	i .0010	-.00008	-.00004	.00014	-.00049	-.00420	.00076	.00016
#2	i .0128	-.00016	-.00026	.00027	-.00103	.00422	-.00055	.00415
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00185	.04767	-.00002	.0019	-.00071	-.0062	.00080
Stddev	.00009	.00008	.00037	.00010	.0028	.00065	.0036	.00010
%RSD	73.573	4.3054	.77995	501.35	147.2	91.260	57.48	12.615
#1	-.00019	.00179	.04740	-.00009	-.0001	-.00025	-.0087	.00087
#2	-.00006	.00191	.04793	.00005	.0039	-.00117	-.0037	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 15:11:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00150**	**-.01639**	**.00061**	**-.00001**	**.0020**	**.00003**	**.00077**	i **.0038**
Stddev	.00446	.00090	.00093	.00003	.0087	.00009	.00055	.1000
%RSD	296.84	5.5007	152.21	327.46	440.8	343.58	71.131	2616.
#1	-.00466	-.01575	-.00005	.00001	-.0042	.00009	.00115	i -.0669
#2	.00165	-.01703	.00127	-.00003	.0081	-.00004	.00038	i .0745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00018**	**.00034**	**.0018**
Stddev	.00002	.00011	.0003
%RSD	12.418	31.848	14.87
#1	-.00016	.00027	.0019
#2	-.00019	.00042	.0016
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1799.1**	**559.53**	**39056.**	**4164.6**
Stddev	4.3	1.59	91.	5.5
%RSD	.24062	.28504	.23177	.13186
#1	1802.1	560.66	38992.	4160.7
#2	1796.0	558.40	39120.	4168.5

Sample Name: CCVL-5514926 Acquired: 9/26/2019 15:15:37 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00654	.21884	.01570	.01779	.00221	.00214	.53183	.00203
Stddev	.00021	.00289	.00300	.00055	.00000	.00003	.00144	.00004
%RSD	3.1628	1.3224	19.109	3.1159	.16335	1.6079	.27043	1.9544
#1	.00669	.21679	.01782	.01818	.00221	.00216	.53285	.00206
#2	.00640	.22088	.01358	.01740	.00221	.00211	.53082	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0142	.00418	.00414	.00952	.04843	.49735	.02985	.21455
Stddev	.0043	.00018	.00035	.00036	.00514	.01745	.00027	.00542
%RSD	30.40	4.2606	8.5246	3.7640	10.608	3.5090	.90921	2.5274
#1	i .0172	.00430	.00439	.00977	.05206	.50969	.03004	.21838
#2	i .0111	.00405	.00389	.00927	.04480	.48501	.02965	.21071
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00303	.00999	1.0175	.01013	-.0289	.01008	.1955	.02202
Stddev	.00006	.00010	.0073	.00016	.0003	.00014	.0005	.00070
%RSD	1.9435	.98822	.71228	1.6085	.9854	1.3493	.2580	3.1619
#1	.00299	.00992	1.0226	.01025	-.0291	.01017	.1959	.02251
#2	.00307	.01006	1.0123	.01002	-.0287	.00998	.1952	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 15:15:37 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02288	.47858	.01000	.00497	-.0100	.00472	.01955	i .0730
Stddev	.00013	.01364	.00087	.00006	.0058	.00040	.00243	.0194
%RSD	.59004	2.8496	8.7342	1.2109	58.20	8.5071	12.453	26.61
#1	.02297	.46894	.00938	.00501	-.0142	.00500	.01783	i .0593
#2	.02278	.48823	.01061	.00492	-.0059	.00443	.02127	i .0868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00494	.01065	.0009
Stddev	.00003	.00043	.0007
%RSD	.69470	4.0043	70.83
#1	.00492	.01095	.0005
#2	.00497	.01035	.0014
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1804.2	558.93	39000.	4168.7
Stddev	4.5	.35	25.	1.3
%RSD	.25111	.06259	.06445	.03188
#1	1807.4	558.68	38983.	4169.7
#2	1801.0	559.18	39018.	4167.8

Sample Name: 480-159556-G-1-Csd@5 Acquired: 9/26/2019 15:19:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.10053**	**.02831**	**.49531**	**.02596**
Stddev	.00002	.00329	.00318	.00015	.00006
%RSD	1.4409	3.2735	11.232	.03101	.21243
#1	-.00123	.10286	.02606	.49520	.02592
#2	-.00126	.09820	.03056	.49542	.02600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**625.16**	**.00037**	i **.0259**	**.02349**
Stddev	.00006	4.58	.00020	.0006	.00029
%RSD	173.89	.73256	54.945	2.350	1.2177
#1	-.00001	628.40	.00051	i .0254	.02329
#2	.00008	621.93	.00022	i .0263	.02369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00334**	**-.00345**	**2.8540**	**121.79**	**.03536**
Stddev	.00001	.00014	.0072	.09	.00073
%RSD	.25200	4.1841	.25328	.07158	2.0777
#1	.00335	-.00356	2.8592	121.73	.03588
#2	.00334	-.00335	2.8489	121.85	.03484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-Csd@5 Acquired: 9/26/2019 15:19:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**294.73**	**2.1978**	**.05175**	F **3837.9**	**.31381**
Stddev	.59	.0035	.00047	7.3	.00056
%RSD	.20135	.15747	.91338	.18991	.17937
#1	295.15	2.2003	.05208	3832.8	.31421
#2	294.31	2.1954	.05142	3843.1	.31342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**143.5**	**-.00412**	F **990.9**	**.00072**	**-.01646**
Stddev	.1	.00109	2.1	.00182	.00225
%RSD	.0481	26.577	.2111	251.85	13.685
#1	143.5	-.00489	992.4	.00201	-.01487
#2	143.4	-.00335	989.4	-.00056	-.01805
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.8570**	**.00269**	**.47747**	**.0048**	**-.00103**
Stddev	.0311	.00060	.00112	.0139	.00024
%RSD	.80576	22.175	.23544	287.7	23.291
#1	3.8350	.00311	.47668	.0146	-.00120
#2	3.8790	.00227	.47827	-.0050	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-Csd@5 Acquired: 9/26/2019 15:19:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	i **-.0074**	**.00081**	**.18161**	**.0024**
Stddev	.00102	.0715	.00062	.00260	.0008
%RSD	112.39	960.4	77.189	1.4321	32.55
#1	.00019	i .0431	.00125	.18344	.0018
#2	.00163	i -.0580	.00037	.17977	.0029
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1186.9**	**444.98**	**29589.**	**3704.1**
Stddev	1.6	.86	38.	.5
%RSD	.13703	.19329	.12901	.01430
#1	1185.7	444.38	29562.	3703.7
#2	1188.0	445.59	29616.	3704.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	65.753%	83.001%	76.149%	89.916%
Range				

Sample Name: 480-159556-G-1-Cpds Acquired: 9/26/2019 15:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.04721**	**.00741**	**.09897**	**.00560**
Stddev	.00093	.01828	.00430	.00073	.00001
%RSD	500.22	38.726	58.077	.73422	.15401
#1	.00047	.03428	.00437	.09948	.00561
#2	-.00084	.06014	.01045	.09845	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**128.25**	**.00015**	i **.0083**	**.00429**
Stddev	.00005	.22	.00026	.0045	.00019
%RSD	1998.9	.17347	175.98	53.79	4.4476
#1	-.00003	128.09	-.00004	i .0114	.00443
#2	.00004	128.41	.00033	i .0051	.00416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**-.00083**	**.57446**	**22.511**	**.00666**
Stddev	.00009	.00001	.00255	.026	.00023
%RSD	13.142	.60654	.44422	.11618	3.4617
#1	.00071	-.00084	.57266	22.493	.00683
#2	.00059	-.00083	.57626	22.530	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-Cpds Acquired: 9/26/2019 15:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**59.755**	**.45035**	**.01048**	**733.38**	**.06110**
Stddev	.100	.00097	.00024	2.03	.00028
%RSD	.16685	.21493	2.2709	.27692	.46543
#1	59.825	.44966	.01031	731.94	.06130
#2	59.684	.45103	.01065	734.82	.06090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**29.79**	**-.00136**	F **190.4**	**-.00133**	**-.02120**
Stddev	.07	.00036	.6	.00128	.00727
%RSD	.2198	26.619	.2971	95.863	34.269
#1	29.75	-.00110	190.0	-.00223	-.01607
#2	29.84	-.00161	190.8	-.00043	-.02634
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.70769**	**.00157**	**.09591**	**-.0067**	**-.00033**
Stddev	.00454	.00049	.00037	.0129	.00028
%RSD	.64170	30.986	.38909	191.6	85.569
#1	.70448	.00122	.09564	-.0158	-.00052
#2	.71090	.00191	.09617	.0024	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-Cpds Acquired: 9/26/2019 15:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	i **.0214**	**.00007**	**.03545**	**-.0005**
Stddev	.00148	.0368	.00006	.00057	.0015
%RSD	272.43	172.2	85.336	1.6101	322.9
#1	.00159	i .0474	.00011	.03504	-.0015
#2	-.00050	i -.0047	.00003	.03585	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1479.6**	**506.62**	**34210.**	**3996.2**
Stddev	3.2	.03	68.	1.2
%RSD	.21610	.00603	.19735	.02878
#1	1477.4	506.60	34162.	3995.4
#2	1481.9	506.64	34258.	3997.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	81.973%	94.498%	88.040%	97.008%
Range				

Sample Name: 480-159556-G-1-D MS Acquired: 9/26/2019 15:27:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.2669**	**.12549**	**1.1781**	**.48660**	**1.0569**
Stddev	.0029	.01406	.0016	.00092	.0050
%RSD	.23261	11.201	.13356	.18884	.47022
#1	1.2690	.11555	1.1792	.48595	1.0605
#2	1.2648	.13542	1.1770	.48725	1.0534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0277**	**622.52**	**1.1268**	i **.0251**	**1.0866**
Stddev	.0015	3.32	.0008	.0016	.0027
%RSD	.14297	.53311	.06969	6.399	.24837
#1	1.0267	624.86	1.1263	i .0240	1.0885
#2	1.0287	620.17	1.1274	i .0262	1.0847
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.97013**	**1.0720**	**2.8312**	**121.62**	**.03423**
Stddev	.00410	.0037	.0017	.15	.00034
%RSD	.42241	.35001	.06139	.12507	.99705
#1	.97303	1.0746	2.8299	121.73	.03399
#2	.96723	1.0693	2.8324	121.51	.03447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-D MS Acquired: 9/26/2019 15:27:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**293.29**	**3.1250**	**1.0175**	F **3844.7**	**1.3721**
Stddev	.61	.0034	.0016	11.6	.0008
%RSD	.20682	.10981	.15427	.30142	.05754
#1	293.72	3.1275	1.0186	3852.9	1.3727
#2	292.87	3.1226	1.0164	3836.5	1.3716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**141.5**	**1.0525**	F **974.9**	**1.1969**	**1.1643**
Stddev	.1	.0013	1.0	.0003	.0073
%RSD	.1001	.12187	.1067	.02414	.62417
#1	141.6	1.0534	975.7	1.1967	1.1695
#2	141.4	1.0516	974.2	1.1971	1.1592
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.8537**	**.00332**	**.47699**	**.0013**	**-.00059**
Stddev	.0202	.00178	.00131	.0025	.00003
%RSD	.52482	53.686	.27411	184.7	5.3991
#1	3.8394	.00458	.47791	.0031	-.00057
#2	3.8680	.00206	.47606	-.0004	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-D MS Acquired: 9/26/2019 15:27:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.95589	i -.1752	1.0018	1.1938	.0010
Stddev	.00244	.1306	.0014	.0032	.0002
%RSD	.25507	74.54	.14094	.26657	20.26
#1	.95762	i -.0829	1.0028	1.1960	.0012
#2	.95417	i -.2675	1.0008	1.1915	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1187.1	450.75	29719.	3714.8
Stddev	.8	.69	77.	2.9
%RSD	.06358	.15309	.25925	.07896
#1	1187.6	451.24	29665.	3712.7
#2	1186.5	450.26	29774.	3716.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	65.765%	84.077%	76.483%	90.175%
Range				

Sample Name: 480-159556-G-1-E MSD Acquired: 9/26/2019 15:31:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.1890**	**.14665**	**1.1375**	**.48175**	**1.0155**
Stddev	.0006	.00747	.0100	.00240	.0029
%RSD	.04653	5.0909	.88078	.49854	.28282
#1	1.1894	.14137	1.1304	.48005	1.0176
#2	1.1886	.15192	1.1446	.48345	1.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98710**	**603.81**	**1.0765**	i **.0113**	**1.0333**
Stddev	.00017	3.65	.0047	.0043	.0025
%RSD	.01740	.60520	.44031	38.11	.23940
#1	.98722	606.40	1.0732	i .0082	1.0351
#2	.98698	601.23	1.0799	i .0143	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.92290**	**1.0268**	**2.7631**	**118.45**	**.03434**
Stddev	.00114	.0009	.0016	.06	.00025
%RSD	.12339	.09073	.05928	.05078	.73383
#1	.92210	1.0275	2.7643	118.41	.03416
#2	.92371	1.0262	2.7620	118.49	.03451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-E MSD Acquired: 9/26/2019 15:31:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**283.40**	**3.0176**	**.98384**	F **3748.2**	**1.3149**
Stddev	.58	.0046	.00404	10.2	.0006
%RSD	.20390	.15413	.41100	.27150	.04894
#1	283.00	3.0143	.98098	3755.4	1.3144
#2	283.81	3.0208	.98670	3741.0	1.3153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**137.7**	**1.0009**	F **948.8**	**1.1551**	**1.1433**
Stddev	.2	.0035	5.7	.0033	.0082
%RSD	.1561	.35261	.5976	.28618	.71378
#1	137.9	1.0034	944.8	1.1528	1.1490
#2	137.6	.99844	952.8	1.1574	1.1375
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.7327**	**.00128**	**1.4262**	**-.0018**	**-.00117**
Stddev	.0138	.00029	.0028	.0094	.00033
%RSD	.36967	23.006	.19894	526.1	28.208
#1	3.7424	.00107	1.4282	-.0084	-.00141
#2	3.7229	.00149	1.4241	.0048	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159556-G-1-E MSD Acquired: 9/26/2019 15:31:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.90174	i -.1676	.95906	1.1355	.0008
Stddev	.00454	.0102	.00156	.0058	.0012
%RSD	.50398	6.115	.16311	.51224	150.6
#1	.90495	i -.1604	.96016	1.1314	-.0000
#2	.89852	i -.1749	.95795	1.1396	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1190.4	448.93	29797.	3700.4
Stddev	.7	2.84	46.	18.0
%RSD	.06160	.63281	.15601	.48584
#1	1190.9	450.94	29830.	3687.7
#2	1189.9	446.92	29764.	3713.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	65.950%	83.737%	76.684%	89.826%
Range				

Sample Name: 480-159572-E-1-B Acquired: 9/26/2019 15:35:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.1890**	**.14611**	**1.1430**	**.48562**	**1.0092**
Stddev	.0014	.00969	.0052	.00019	.0076
%RSD	.11939	6.6291	.45760	.03981	.75052
#1	1.1900	.15296	1.1393	.48548	1.0146
#2	1.1880	.13927	1.1467	.48576	1.0039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98665**	**604.80**	**1.0839**	i **.0085**	**1.0327**
Stddev	.00011	1.09	.0001	.0003	.0010
%RSD	.01142	.18082	.00660	3.769	.10038
#1	.98673	605.57	1.0839	i .0088	1.0334
#2	.98657	604.03	1.0838	i .0083	1.0319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.92127**	**1.0272**	**2.7613**	**118.93**	**.03311**
Stddev	.00130	.0020	.0040	.06	.00014
%RSD	.14106	.19117	.14575	.05447	.42301
#1	.92218	1.0285	2.7585	118.88	.03301
#2	.92035	1.0258	2.7642	118.97	.03321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159572-E-1-B Acquired: 9/26/2019 15:35:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**283.77**	**3.0198**	**.99006**	F **3730.6**	**1.3144**
Stddev	.11	.0060	.00405	26.7	.0009
%RSD	.03711	.19943	.40928	.71550	.06814
#1	283.85	3.0241	.99292	3749.5	1.3138
#2	283.70	3.0156	.98719	3711.7	1.3151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**137.7**	**1.0022**	F **955.1**	**1.1557**	**1.1442**
Stddev	.1	.0009	1.6	.0026	.0014
%RSD	.1085	.08551	.1657	.22450	.12041
#1	137.8	1.0028	956.3	1.1539	1.1451
#2	137.6	1.0015	954.0	1.1575	1.1432
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.7310**	**.00192**	**1.4208**	**-.0099**	**-.00061**
Stddev	.0358	.00217	.0061	.0158	.00035
%RSD	.96026	113.37	.42687	159.3	56.966
#1	3.7563	.00038	1.4251	-.0211	-.00086
#2	3.7056	.00345	1.4165	.0013	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159572-E-1-B Acquired: 9/26/2019 15:35:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.90786**	i **-.1873**	**.95868**	**1.1347**	**.0007**
Stddev	.00720	.0069	.00212	.0010	.0004
%RSD	.79355	3.675	.22117	.08749	58.80
#1	.91295	i -.1921	.95718	1.1354	.0004
#2	.90277	i -.1824	.96018	1.1340	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1192.4**	**447.06**	**29756.**	**3702.2**
Stddev	1.0	.31	12.	12.2
%RSD	.07979	.06852	.03947	.32895
#1	1193.1	446.84	29764.	3693.6
#2	1191.8	447.28	29748.	3710.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	66.062%	83.388%	76.578%	89.869%
Range				

Sample Name: LB 480-493713/1-B Acquired: 9/26/2019 15:39:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.02915**	**.00026**	**.05656**	**.00269**
Stddev	.00058	.00230	.00077	.00038	.00003
%RSD	143.29	7.8989	291.17	.67273	1.2447
#1	-.00001	.02752	.00080	.05683	.00272
#2	.00082	.03078	-.00028	.05629	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.26426**	**-.00023**	i **.0210**	**-.00045**
Stddev	.00001	.00281	.00006	.0123	.00001
%RSD	3113.2	1.0652	26.962	58.62	2.6570
#1	.00001	.26227	-.00019	i .0297	-.00044
#2	-.00001	.26625	-.00028	i .0123	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00193**	**.00056**	**.00217**	**.42042**	**.00090**
Stddev	.00040	.00026	.00265	.00244	.00056
%RSD	20.543	46.512	122.03	.57971	62.035
#1	.00165	.00037	.00030	.41870	.00129
#2	.00221	.00074	.00404	.42215	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LB 480-493713/1-B Acquired: 9/26/2019 15:39:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.07263**	**.00026**	**.00311**	F **1377.0**	**.00034**
Stddev	.00239	.00009	.00055	1.7	.00015
%RSD	3.2923	34.782	17.619	.12633	42.921
#1	.07432	.00019	.00273	1375.7	.00024
#2	.07094	.00032	.00350	1378.2	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				1.0000	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0303**	**.00041**	**.0610**	**.00137**	**-.00781**
Stddev	.0003	.00068	.0025	.00043	.00517
%RSD	1.020	166.67	4.034	31.619	66.231
#1	.0301	-.00007	.0628	.00106	-.01147
#2	.0305	.00089	.0593	.00167	-.00415
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01800**	**.00009**	**.00066**	**.0054**	**.00017**
Stddev	.01162	.00203	.00004	.0048	.00033
%RSD	64.549	2275.9	5.8179	88.11	194.65
#1	.00979	-.00134	.00063	.0020	.00041
#2	.02622	.00152	.00069	.0088	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LB 480-493713/1-B Acquired: 9/26/2019 15:39:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00233**	i **.0247**	**.00003**	**.00348**	**.0009**
Stddev	.00017	.0131	.00021	.00001	.0001
%RSD	7.2237	53.08	631.39	.35303	6.616
#1	.00245	i .0340	-.00011	.00347	.0009
#2	.00221	i .0154	.00018	.00348	.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1435.5**	**502.14**	**33102.**	**3959.4**
Stddev	2.3	.89	9.	12.9
%RSD	.15841	.17732	.02753	.32615
#1	1437.2	501.51	33095.	3968.6
#2	1433.9	502.77	33108.	3950.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.530%	93.663%	85.189%	96.115%
Range				

Sample Name: MB 480-493994/2-A Acquired: 9/26/2019 15:42:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**-.00419**	**-.00078**	**.00007**	**-.00002**
Stddev	.00044	.01370	.00285	.00019	.00002
%RSD	196.14	327.33	365.08	287.39	95.906
#1	.00009	.00550	-.00280	.00021	-.00003
#2	-.00054	-.01388	.00124	-.00007	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.03346**	**-.00015**	i **.0122**	**.00018**
Stddev	.00004	.00136	.00003	.0127	.00004
%RSD	67.542	4.0773	20.290	104.4	24.802
#1	-.00008	.03250	-.00013	i .0032	.00021
#2	-.00003	.03443	-.00017	i .0211	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00006**	**-.00310**	**.07384**	**-.00026**
Stddev	.00019	.00058	.00113	.00308	.00011
%RSD	44.009	1044.3	36.333	4.1658	40.769
#1	-.00057	-.00036	-.00390	.07167	-.00018
#2	-.00030	.00047	-.00231	.07602	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493994/2-A Acquired: 9/26/2019 15:42:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00415**	**.00016**	**.00024**	**.41402**	**-.00003**
Stddev	.00240	.00001	.00017	.00830	.00015
%RSD	57.815	5.4225	69.435	2.0057	470.09
#1	.00246	.00017	.00012	.41989	-.00014
#2	.00585	.00016	.00036	.40815	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0070**	**-.00122**	**.0320**	**-.00076**	**-.00208**
Stddev	.0039	.00087	.0043	.00051	.00018
%RSD	56.26	71.380	13.35	67.580	8.5696
#1	.0042	-.00060	.0351	-.00040	-.00195
#2	.0097	-.00183	.0290	-.00112	-.00220
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02040**	**-.00110**	**.00018**	**-.0036**	**-.00008**
Stddev	.00529	.00032	.00002	.0022	.00018
%RSD	25.910	28.833	10.486	59.47	219.45
#1	-.01666	-.00133	.00020	-.0052	.00005
#2	-.02414	-.00088	.00017	-.0021	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493994/2-A Acquired: 9/26/2019 15:42:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00173**	i **.0103**	**-.00029**	**.00246**	**.0004**
Stddev	.00136	.1007	.00024	.00118	.0001
%RSD	78.530	979.0	82.622	47.787	39.22
#1	-.00269	i -.0609	-.00046	.00329	.0005
#2	-.00077	i .0815	-.00012	.00163	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1776.1**	**548.74**	**38537.**	**4111.0**
Stddev	2.9	2.06	36.	9.8
%RSD	.16057	.37579	.09457	.23877
#1	1778.1	550.19	38512.	4117.9
#2	1774.1	547.28	38563.	4104.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.397%	102.35%	99.177%	99.794%
Range				

Sample Name: LCS 480-493994/3-A Acquired: 9/26/2019 15:46:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0908**	**.01868**	**1.0598**	**.05783**	**.99152**
Stddev	.0005	.00755	.0012	.00063	.00604
%RSD	.04438	40.389	.11106	1.0863	.60955
#1	1.0905	.01335	1.0589	.05739	.99579
#2	1.0912	.02402	1.0606	.05828	.98724
Check ?	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0018**	**.25335**	**1.0214**	i **.0108**	**1.0186**
Stddev	.0025	.00344	.0044	.0026	.0009
%RSD	.24725	1.3561	.43489	24.06	.09191
#1	1.0035	.25578	1.0245	i .0090	1.0193
#2	1.0000	.25092	1.0182	i .0127	1.0180
Check ?	Chk Pass	None	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.99105**	**.96444**	**.00464**	**.31205**	**.00135**
Stddev	.00202	.00185	.00014	.00584	.00018
%RSD	.20391	.19140	3.0911	1.8700	13.552
#1	.99248	.96575	.00474	.31617	.00148
#2	.98962	.96314	.00454	.30792	.00122
Check ?	Chk Pass	Chk Pass	None	None	None
High Limit					
Low Limit					

Sample Name: LCS 480-493994/3-A Acquired: 9/26/2019 15:46:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05746**	**.96442**	**.97217**	**1415.2**	**1.0310**
Stddev	.00046	.00234	.00605	10.0	.0001
%RSD	.79284	.24235	.62248	.70928	.01373
#1	.05714	.96607	.97645	1422.3	1.0311
#2	.05779	.96277	.96789	1408.1	1.0309
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.147**	**1.0130**	F **.0235**	**1.0808**	**1.0307**
Stddev	.010	.0038	.0025	.0076	.0032
%RSD	.4681	.37780	10.45	.70708	.30567
#1	-2.154	1.0157	.0218	1.0862	1.0329
#2	-2.140	1.0103	.0252	1.0754	1.0285
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			1.200		
Low Limit			.8000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**.00091**	**.95737**	**-.0118**	**-.00042**
Stddev	.00163	.00007	.00213	.0018	.00005
%RSD	77.114	7.9128	.22291	15.45	11.212
#1	.00096	.00096	.95888	-.0105	-.00039
#2	.00326	.00086	.95586	-.0131	-.00045
Check ?	None	None	None	None	None
High Limit					
Low Limit					

Sample Name: LCS 480-493994/3-A Acquired: 9/26/2019 15:46:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.95101**	i **-.0434**	**.98051**	**1.0958**	**-.0004**
Stddev	.00824	.0014	.00140	.0030	.0003
%RSD	.86615	3.218	.14302	.27213	80.27
#1	.95684	i -.0424	.97952	1.0979	-.0006
#2	.94519	i -.0444	.98150	1.0937	-.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1429.4**	**502.37**	**33220.**	**3958.9**
Stddev	3.8	.58	61.	6.8
%RSD	.26518	.11623	.18345	.17255
#1	1432.1	501.96	33263.	3954.1
#2	1426.7	502.79	33177.	3963.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.191%	93.706%	85.494%	96.102%
Range				

Sample Name: 480-159532-A-14-B Acquired: 9/26/2019 15:50:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.17880**	**.00906**	**.68636**	**.93650**
Stddev	.00044	.02082	.00541	.00604	.00338
%RSD	60.430	11.645	59.705	.87952	.36040
#1	-.00104	.19353	.01289	.68209	.93889
#2	-.00042	.16408	.00524	.69063	.93412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	F **940.71**	**.01362**	i **.0191**	**.00999**
Stddev	.00002	9.18	.00014	.0051	.00031
%RSD	563.71	.97539	1.0066	26.75	3.0599
#1	.00001	947.20	.01352	i .0155	.01020
#2	-.00002	934.22	.01371	i .0227	.00977
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00162**	**.13075**	**.32923**	**3.2558**	**.01451**
Stddev	.00068	.00144	.00511	.0209	.00069
%RSD	41.878	1.1012	1.5525	.64315	4.7778
#1	.00114	.13177	.32562	3.2706	.01500
#2	.00210	.12973	.33285	3.2410	.01402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-B Acquired: 9/26/2019 15:50:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.630**	**1.3366**	**.00474**	F **1503.6**	**.06511**
Stddev	.007	.0007	.00055	5.4	.00016
%RSD	.05488	.05181	11.626	.35842	.24736
#1	12.635	1.3361	.00435	1507.4	.06523
#2	12.625	1.3371	.00513	1499.8	.06500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2302**	**51.992**	F **212.1**	**.02475**	**-.01954**
Stddev	.0000	.048	1.3	.00248	.00633
%RSD	.0172	.09193	.6224	10.024	32.381
#1	-.2302	51.958	211.2	.02650	-.01507
#2	-.2301	52.026	213.1	.02300	-.02401
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.0472**	**.00078**	**1.3707**	**-.0110**	**.00309**
Stddev	.0750	.00203	.0058	.0031	.00087
%RSD	.82909	258.29	.42012	28.24	28.124
#1	9.1002	-.00065	1.3748	-.0088	.00247
#2	8.9941	.00222	1.3666	-.0131	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-B Acquired: 9/26/2019 15:50:41 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	i **-.0609**	**.00012**	**1.1525**	**.0007**
Stddev	.00200	.1192	.00043	.0025	.0004
%RSD	111.56	195.6	358.79	.21629	58.42
#1	.00320	i -.1452	-.00018	1.1543	.0009
#2	.00038	i .0233	.00042	1.1508	.0004
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1299.9**	**463.79**	**31563.**	**3824.4**
Stddev	1.4	2.99	9.	22.4
%RSD	.10414	.64446	.02846	.58448
#1	1300.8	465.90	31569.	3808.6
#2	1298.9	461.67	31557.	3840.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	72.013%	86.508%	81.229%	92.837%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 15:54:43 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98328	50.270	.96390	.98292	1.0164	.98402	49.417	.96881
Stddev	.00038	.158	.00430	.00091	.0026	.00195	.409	.00119
%RSD	.03821	.31362	.44605	.09269	.25386	.19843	.82743	.12294
#1	.98355	50.158	.96694	.98228	1.0145	.98263	49.128	.96966
#2	.98302	50.381	.96086	.98357	1.0182	.98540	49.706	.96797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.012	.98566	.98655	.97361	48.897	48.622	.99971	49.732
Stddev	.008	.00038	.00061	.00203	.276	.012	.00032	.033
%RSD	.8102	.03861	.06144	.20846	.56408	.02563	.03230	.06586
#1	i 1.018	.98539	.98612	.97504	48.702	48.613	.99994	49.709
#2	i 1.006	.98593	.98698	.97217	49.092	48.631	.99948	49.755
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98358	.98172	49.413	.98056	24.81	.97967	24.09	.98333
Stddev	.00144	.00090	.005	.00164	.01	.00132	.01	.00126
%RSD	.14619	.09127	.01094	.16747	.0527	.13518	.0592	.12765
#1	.98256	.98235	49.409	.98172	24.80	.97873	24.08	.98421
#2	.98460	.98108	49.417	.97940	24.82	.98060	24.10	.98244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 15:54:43 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95259	9.9316	.97665	.99889	.9625	.97294	.99636	i 2.493
Stddev	.00116	.0750	.00033	.00093	.0009	.00166	.00197	.014
%RSD	.12213	.75541	.03350	.09355	.0944	.17044	.19766	.5481
#1	.95341	9.8785	.97688	.99823	.9631	.97177	.99775	i 2.503
#2	.95176	9.9846	.97642	.99955	.9618	.97411	.99497	i 2.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99230	.99615	.9670
Stddev	.00280	.00128	.0006
%RSD	.28199	.12879	.0623
#1	.99428	.99706	.9666
#2	.99032	.99525	.9675
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1625.5	533.99	36493.	4106.9
Stddev	2.3	1.22	25.	16.4
%RSD	.14187	.22807	.06730	.40014
#1	1623.8	533.13	36476.	4118.5
#2	1627.1	534.85	36510.	4095.3

Sample Name: CCB-5508960 Acquired: 9/26/2019 15:58:24 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**-.01010**	**-.00277**	**-.00164**	**.00011**	**.00008**	**.00130**	**.00006**
Stddev	.00013	.00050	.00181	.00011	.00001	.00004	.00241	.00012
%RSD	741.57	4.9950	65.223	6.7656	12.988	50.279	185.31	186.09
#1	-.00008	-.01046	-.00405	-.00172	.00010	.00010	.00300	-.00002
#2	.00011	-.00974	-.00149	-.00156	.00012	.00005	-.00040	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0147**	**.00011**	**-.00009**	**-.00002**	**.00380**	**.01992**	**.00009**	**.00050**
Stddev	.0022	.00021	.00013	.00018	.00030	.02218	.00026	.00141
%RSD	14.72	186.40	141.72	784.36	7.8486	111.33	279.23	282.22
#1	i .0163	.00026	.00000	-.00015	.00359	.03561	.00027	-.00050
#2	i .0132	-.00004	-.00018	.00010	.00401	.00424	-.00009	.00149
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00151**	**.18210**	**.00004**	**.0041**	**-.00039**	**.0124**	**.00074**
Stddev	.00011	.00037	.00118	.00004	.0001	.00141	.0003	.00427
%RSD	347.75	24.560	.64644	94.654	2.247	360.98	2.420	575.07
#1	.00005	.00125	.18293	.00001	.0040	.00061	.0122	.00376
#2	-.00011	.00177	.18126	.00007	.0042	-.00139	.0126	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 15:58:24 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**-.03269**	**-.00029**	**.00005**	**.0056**	**.00007**	**.00040**	i **.0249**
Stddev	.00463	.00035	.00024	.00001	.0059	.00023	.00179	.0344
%RSD	114.48	1.0730	81.724	22.564	105.1	321.30	450.55	138.1
#1	.00077	-.03294	-.00046	.00006	.0014	-.00009	.00166	i .0006
#2	.00732	-.03244	-.00012	.00004	.0098	.00024	-.00087	i .0492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00012**	**-.00078**	**.0015**
Stddev	.00009	.00171	.0003
%RSD	78.929	218.98	23.03
#1	-.00018	.00043	.0017
#2	-.00005	-.00199	.0012
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1783.2**	**548.23**	**38554.**	**4116.3**
Stddev	5.9	1.91	25.	1.0
%RSD	.32879	.34821	.06444	.02432
#1	1787.4	549.58	38572.	4117.0
#2	1779.1	546.88	38537.	4115.6

Sample Name: CCVL-5514926 Acquired: 9/26/2019 16:05:08 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00622	.20140	.01634	.01844	.00219	.00211	.53319	.00203
Stddev	.00005	.00536	.00067	.00032	.00001	.00002	.00043	.00004
%RSD	.73979	2.6617	4.1139	1.7090	.44231	.91435	.08058	2.1616
#1	.00619	.20519	.01586	.01867	.00220	.00212	.53289	.00200
#2	.00626	.19761	.01681	.01822	.00218	.00210	.53350	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0125	.00397	.00411	.00943	.05081	.51988	.03123	.21703
Stddev	.0022	.00010	.00002	.00006	.00009	.01095	.00046	.00208
%RSD	17.73	2.5678	.49070	.61255	.17090	2.1063	1.4873	.95756
#1	i .0109	.00404	.00410	.00947	.05075	.51214	.03090	.21556
#2	i .0141	.00389	.00413	.00939	.05087	.52762	.03156	.21850
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00317	.00997	1.1214	.01029	-.0274	.01021	.2057	.02418
Stddev	.00002	.00030	.0130	.00028	.0002	.00024	.0004	.00032
%RSD	.67087	2.9849	1.1595	2.7599	.6047	2.3040	.2187	1.3188
#1	.00315	.00976	1.1122	.01009	-.0273	.01037	.2061	.02395
#2	.00318	.01018	1.1306	.01049	-.0276	.01004	.2054	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 16:05:08 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02110**	**.45545**	**.00918**	**.00498**	**.0010**	**.00454**	**.01937**	i **.0706**
Stddev	.00058	.03055	.00027	.00005	.0153	.00019	.00214	.0825
%RSD	2.7299	6.7082	2.9467	.90935	1593.	4.2505	11.048	116.9
#1	.02151	.43385	.00899	.00495	.0118	.00440	.01785	i .0122
#2	.02070	.47705	.00937	.00501	-.0099	.00467	.02088	i .1289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00458**	**.00933**	**.0011**
Stddev	.00029	.00054	.0003
%RSD	6.3872	5.7838	30.49
#1	.00478	.00895	.0009
#2	.00437	.00971	.0014
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1793.8**	**556.21**	**38694.**	**4107.2**
Stddev	2.6	1.54	164.	.8
%RSD	.14369	.27657	.42277	.02062
#1	1795.6	557.29	38810.	4107.8
#2	1792.0	555.12	38579.	4106.6

Sample Name: 159532-A-14-Bsd@5 Acquired: 9/26/2019 16:08:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.03826**	**-.00445**	**.13330**	**.18551**
Stddev	.00011	.00543	.00018	.00044	.00016
%RSD	27.754	14.194	4.0228	.33139	.08368
#1	-.00049	.03442	-.00458	.13299	.18540
#2	-.00033	.04210	-.00432	.13362	.18562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**191.76**	**.00268**	i **.0146**	**.00171**
Stddev	.00001	.54	.00011	.0093	.00005
%RSD	21.672	.28225	4.2448	63.85	3.2190
#1	-.00002	191.38	.00260	i .0211	.00167
#2	-.00003	192.14	.00276	i .0080	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.02397**	**.06385**	**.57189**	**.00324**
Stddev	.00024	.00002	.00019	.02704	.00040
%RSD	78.415	.08971	.30497	4.7289	12.422
#1	.00048	.02396	.06399	.59101	.00352
#2	.00014	.02399	.06371	.55277	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159532-A-14-Bsd@5 Acquired: 9/26/2019 16:08:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.5956**	**.27003**	**.00002**	**288.30**	**.01193**
Stddev	.0093	.00064	.00025	.48	.00031
%RSD	.35883	.23689	1108.8	.16766	2.5733
#1	2.5890	.26957	-.00015	288.65	.01171
#2	2.6022	.27048	.00020	287.96	.01214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0551**	**9.7379**	**38.17**	**-.00002**	**-.01224**
Stddev	.0032	.0014	.14	.00099	.00475
%RSD	5.780	.01387	.3754	5278.9	38.817
#1	-.0528	9.7388	38.27	-.00072	-.01560
#2	-.0573	9.7369	38.07	.00068	-.00888
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.7178**	**.00230**	**.26960**	**.0058**	**.00003**
Stddev	.0009	.00157	.00051	.0022	.00001
%RSD	.05315	68.320	.18908	37.85	41.044
#1	1.7171	.00342	.26996	.0073	.00002
#2	1.7184	.00119	.26924	.0042	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159532-A-14-Bsd@5 Acquired: 9/26/2019 16:08:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00173**	i **-.0733**	**.00005**	**.23282**	**.0012**
Stddev	.00214	.0975	.00025	.00427	.0007
%RSD	123.79	133.1	551.78	1.8323	62.36
#1	.00022	i -.0043	-.00013	.22980	.0007
#2	.00325	i -.1423	.00022	.23584	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1559.8**	**515.32**	**35430.**	**4041.8**
Stddev	.0	.78	135.	7.3
%RSD	.00287	.15063	.38191	.17967
#1	1559.8	514.77	35526.	4047.0
#2	1559.9	515.87	35334.	4036.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	86.416%	96.121%	91.181%	98.115%
Range				

Sample Name: 480-159532-A-14-Bpds Acquired: 9/26/2019 16:12:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.1718**	**.21195**	**1.1463**	**.68544**	**1.9867**
Stddev	.0021	.00576	.0059	.00507	.0154
%RSD	.17589	2.7169	.51177	.73968	.77631
#1	1.1704	.20788	1.1421	.68186	1.9758
#2	1.1733	.21602	1.1504	.68903	1.9976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0204**	F **944.60**	**1.1130**	i **.0183**	**1.0679**
Stddev	.0027	1.05	.0098	.0036	.0006
%RSD	.26191	.11131	.88402	19.64	.06028
#1	1.0185	943.86	1.1060	i .0158	1.0684
#2	1.0223	945.34	1.1199	i .0208	1.0675
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.99242**	**1.1681**	**.33858**	**3.1291**	**.01422**
Stddev	.00299	.0019	.00264	.0058	.00007
%RSD	.30160	.16715	.78105	.18621	.47514
#1	.99031	1.1695	.34045	3.1250	.01417
#2	.99454	1.1667	.33671	3.1332	.01427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-Bpds Acquired: 9/26/2019 16:12:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.577**	**2.3013**	**1.0054**	F **1509.1**	**1.1321**
Stddev	.001	.0031	.0087	12.4	.0006
%RSD	.00438	.13300	.86828	.81835	.04872
#1	12.577	2.2992	.99925	1500.4	1.1325
#2	12.577	2.3035	1.0116	1517.8	1.1317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.220**	**53.169**	F **211.4**	**1.2011**	**1.1074**
Stddev	.013	.023	2.3	.0113	.0083
%RSD	.5812	.04321	1.082	.93973	.75169
#1	-2.229	53.185	209.8	1.1931	1.1016
#2	-2.211	53.153	213.0	1.2090	1.1133
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.1523**	**.00193**	**1.3789**	**-.0080**	**.00131**
Stddev	.0385	.00148	.0078	.0087	.00028
%RSD	.42029	76.964	.56914	108.8	21.513
#1	9.1795	.00298	1.3733	-.0141	.00111
#2	9.1251	.00088	1.3844	-.0018	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-Bpds Acquired: 9/26/2019 16:12:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98538**	i **-.0957**	**1.0100**	**2.1863**	**.0012**
Stddev	.00320	.0838	.0013	.0208	.0001
%RSD	.32480	87.57	.13135	.94941	12.74
#1	.98312	i -.1549	1.0090	2.1716	.0011
#2	.98764	i -.0364	1.0109	2.2010	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1301.6**	**464.76**	**31718.**	**3810.8**
Stddev	1.5	4.87	35.	9.3
%RSD	.11276	1.0475	.11039	.24391
#1	1302.6	468.20	31743.	3817.3
#2	1300.6	461.32	31693.	3804.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	72.110%	86.690%	81.627%	92.505%
Range				

Sample Name: 480-159532-A-14-C MS Acquired: 9/26/2019 16:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.91861	.15910	.88697	.55235	1.5427
Stddev	.00019	.01729	.00536	.00010	.0049
%RSD	.02113	10.869	.60437	.01844	.31581
#1	.91875	.17133	.88318	.55243	1.5462
#2	.91848	.14688	.89076	.55228	1.5393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.78972	739.21	.86555	i .0073	.81460
Stddev	.00135	2.24	.00226	.0033	.00231
%RSD	.17101	.30272	.26125	46.00	.28324
#1	.79068	740.79	.86715	i .0049	.81624
#2	.78877	737.63	.86395	i .0097	.81297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.75917	.89250	.26331	2.4707	.01080
Stddev	.00245	.00010	.00771	.0097	.00026
%RSD	.32279	.01115	2.9264	.39115	2.3862
#1	.76090	.89243	.26876	2.4775	.01099
#2	.75744	.89257	.25786	2.4638	.01062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-C MS Acquired: 9/26/2019 16:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.9400**	**1.7833**	**.78558**	F **1184.8**	**.86971**
Stddev	.0175	.0016	.00369	4.2	.00112
%RSD	.17631	.08784	.46925	.35417	.12869
#1	9.9276	1.7844	.78819	1187.8	.87051
#2	9.9524	1.7822	.78297	1181.9	.86892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-1.757**	**42.090**	F **169.7**	**.92151**	**.85727**
Stddev	.000	.009	1.0	.00911	.00326
%RSD	.0002	.02228	.6080	.98889	.38014
#1	-1.757	42.084	170.4	.92795	.85497
#2	-1.757	42.097	168.9	.91506	.85957
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.1704**	**.00444**	**1.8609**	**-.0024**	**.00097**
Stddev	.0253	.00188	.0047	.0003	.00058
%RSD	.35345	42.368	.25224	10.59	59.803
#1	7.1524	.00578	1.8642	-.0022	.00137
#2	7.1883	.00311	1.8576	-.0026	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-14-C MS Acquired: 9/26/2019 16:16:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.78407**	i **-.0594**	**.78149**	**1.7308**	**.0006**
Stddev	.00074	.1274	.00073	.0024	.0015
%RSD	.09386	214.3	.09296	.13717	270.1
#1	.78354	i -.1495	.78200	1.7291	-.0005
#2	.78459	i .0306	.78097	1.7325	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1342.0**	**471.89**	**32201.**	**3842.6**
Stddev	1.8	.81	13.	4.5
%RSD	.13322	.17233	.04073	.11632
#1	1343.3	471.31	32192.	3839.5
#2	1340.8	472.46	32210.	3845.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	74.350%	88.019%	82.870%	93.279%
Range				

Sample Name: 159532-A-14-D MSd Acquired: 9/26/2019 16:20:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.0603**	**.19077**	**1.0622**	**.65309**	**1.8622**
Stddev	.0025	.02299	.0006	.00101	.0113
%RSD	.23621	12.054	.05751	.15506	.60594
#1	1.0621	.17451	1.0617	.65380	1.8702
#2	1.0586	.20703	1.0626	.65237	1.8542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.94691**	**882.74**	**1.0220**	i **.0253**	**.98059**
Stddev	.00570	7.07	.0008	.0012	.00143
%RSD	.60207	.80063	.07779	4.560	.14599
#1	.95094	887.74	1.0226	i .0261	.97958
#2	.94288	877.74	1.0215	i .0245	.98161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.91049**	**1.0833**	**.30579**	**2.9410**	**.01391**
Stddev	.00206	.0009	.00093	.0338	.00041
%RSD	.22634	.08302	.30452	1.1481	2.9178
#1	.91194	1.0839	.30513	2.9648	.01362
#2	.90903	1.0827	.30644	2.9171	.01420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159532-A-14-D MSd Acquired: 9/26/2019 16:20:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.777**	**2.1350**	**.93528**	F **1423.2**	**1.0405**
Stddev	.021	.0027	.00119	9.2	.0003
%RSD	.18159	.12864	.12720	.64555	.02607
#1	11.792	2.1370	.93612	1429.7	1.0407
#2	11.762	2.1331	.93444	1416.7	1.0404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-2.054**	**49.469**	F **197.2**	**1.1100**	**1.0346**
Stddev	.004	.001	.4	.0058	.0079
%RSD	.2135	.00281	.1878	.52168	.76561
#1	-2.058	49.470	197.5	1.1141	1.0402
#2	-2.051	49.468	197.0	1.1059	1.0290
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.5232**	**.00285**	**2.2449**	**.0004**	**.00350**
Stddev	.0241	.00041	.0166	.0095	.00182
%RSD	.28238	14.214	.73816	2539.	52.151
#1	8.5402	.00257	2.2566	-.0063	.00221
#2	8.5062	.00314	2.2332	.0071	.00479
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159532-A-14-D MSd Acquired: 9/26/2019 16:20:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.89597**	i **-.0950**	**.93440**	**2.0087**	**.0000**
Stddev	.00081	.1172	.00338	.0129	.0005
%RSD	.09087	123.3	.36217	.64111	957.2
#1	.89540	i -.0121	.93679	2.0179	.0004
#2	.89655	i -.1779	.93201	1.9996	-.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1311.0**	**465.57**	**31765.**	**3798.3**
Stddev	1.1	.06	110.	23.2
%RSD	.08630	.01219	.34654	.60994
#1	1311.8	465.61	31688.	3781.9
#2	1310.2	465.53	31843.	3814.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	72.632%	86.841%	81.749%	92.202%
Range				

Sample Name: 480-159532-A-15-B Acquired: 9/26/2019 16:24:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.54642**	**.00912**	**1.5959**	**.29297**
Stddev	.00040	.00964	.00289	.0035	.00022
%RSD	109.47	1.7640	31.744	.21659	.07365
#1	-.00008	.55323	.00707	1.5983	.29313
#2	-.00065	.53960	.01116	1.5934	.29282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	F **1245.8**	**.00017**	i **.0406**	**.00008**
Stddev	.00007	1.6	.00016	.0031	.00011
%RSD	115.61	.13141	91.961	7.540	130.05
#1	-.00001	1247.0	.00006	i .0384	.00016
#2	-.00010	1244.7	.00028	i .0428	.00001
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00541**	**.30126**	**.05151**	**5.2129**	**.00989**
Stddev	.00041	.00023	.00562	.0108	.00094
%RSD	7.6132	.07787	10.919	.20664	9.4871
#1	.00570	.30142	.04753	5.2053	.00923
#2	.00511	.30109	.05549	5.2205	.01055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-15-B Acquired: 9/26/2019 16:24:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.57695**	**.00232**	**.05495**	F **1494.6**	**.00499**
Stddev	.00541	.00004	.00020	.5	.00029
%RSD	.93739	1.5334	.36084	.03625	5.9003
#1	.57313	.00230	.05481	1494.2	.00478
#2	.58077	.00235	.05509	1495.0	.00519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.3377**	**.00426**	F **452.6**	**.01415**	**-.00948**
Stddev	.0049	.00015	.3	.00130	.00242
%RSD	1.443	3.5670	.0565	9.1913	25.480
#1	-.3411	.00437	452.8	.01323	-.01119
#2	-.3342	.00415	452.4	.01507	-.00778
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.2583**	**.00075**	**1.0359**	**.0057**	**.00016**
Stddev	.0150	.00173	.0022	.0056	.00132
%RSD	.20733	229.76	.21161	99.56	845.75
#1	7.2477	-.00047	1.0343	.0097	.00109
#2	7.2690	.00197	1.0374	.0017	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-15-B Acquired: 9/26/2019 16:24:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00087	i .1827	.03547	.00092	.0004
Stddev	.00012	.0968	.00001	.00018	.0010
%RSD	13.980	53.00	.02028	19.100	233.7
#1	.00096	i .1142	.03547	.00080	.0011
#2	.00078	i .2512	.03546	.00104	-.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1291.9	455.47	31284.	3827.7
Stddev	.6	.04	26.	9.6
%RSD	.04514	.00883	.08254	.25150
#1	1292.3	455.44	31266.	3834.5
#2	1291.5	455.50	31302.	3820.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	71.574%	84.957%	80.510%	92.916%
Range				

Sample Name: 480-159532-A-16-B Acquired: 9/26/2019 16:28:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.05672**	**.00275**	**.81675**	**.87560**
Stddev	.00010	.01914	.00285	.00233	.00151
%RSD	9.6379	33.751	103.56	.28477	.17243
#1	-.00100	.07025	.00476	.81510	.87667
#2	-.00115	.04318	.00074	.81839	.87453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	F **1035.7**	**.00549**	i **.0113**	**.00912**
Stddev	.00001	1.1	.00009	.0004	.00029
%RSD	163.78	.10714	1.5770	3.566	3.1988
#1	.00002	1036.5	.00543	i .0116	.00933
#2	-.00000	1034.9	.00555	i .0110	.00891
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.06229**	**.03693**	**3.2554**	**.01554**
Stddev	.00035	.00045	.00363	.0410	.00032
%RSD	628.25	.71464	9.8333	1.2592	2.0483
#1	-.00030	.06197	.03950	3.2264	.01576
#2	.00019	.06260	.03436	3.2844	.01531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-16-B Acquired: 9/26/2019 16:28:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.604**	**1.2042**	**.00318**	F **1507.7**	**.07151**
Stddev	.011	.0023	.00043	3.7	.00016
%RSD	.08308	.18767	13.418	.24595	.22974
#1	13.612	1.2058	.00288	1510.3	.07139
#2	13.596	1.2026	.00348	1505.1	.07162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0974**	**58.176**	F **304.0**	**.02280**	**-.02050**
Stddev	.0057	.045	.4	.00214	.00222
%RSD	5.854	.07769	.1381	9.3795	10.837
#1	-.1014	58.144	303.7	.02432	-.01893
#2	-.0933	58.208	304.3	.02129	-.02207
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.6181**	**-.00036**	**1.1317**	**.0028**	**-.00158**
Stddev	.0006	.00157	.0014	.0129	.00016
%RSD	.00625	440.51	.12797	458.0	10.151
#1	9.6185	-.00146	1.1327	-.0063	-.00169
#2	9.6177	.00075	1.1306	.0120	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-16-B Acquired: 9/26/2019 16:28:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00203**	i **.0303**	**.00025**	**.52180**	**.0006**
Stddev	.00079	.1171	.00059	.00323	.0002
%RSD	38.760	386.5	240.00	.61924	27.23
#1	-.00148	i .1131	.00067	.52408	.0008
#2	-.00259	i -.0525	-.00017	.51951	.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1297.8**	**461.36**	**31428.**	**3827.9**
Stddev	1.6	1.03	55.	.4
%RSD	.12156	.22415	.17512	.01151
#1	1298.9	462.10	31389.	3827.5
#2	1296.6	460.63	31467.	3828.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	71.897%	86.056%	80.882%	92.920%
Range				

Sample Name: 480-159532-A-17-B Acquired: 9/26/2019 16:32:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.07732**	**.00247**	**.87708**	**.44085**
Stddev	.00016	.00777	.00304	.00096	.00080
%RSD	16.483	10.052	122.82	.10911	.18091
#1	-.00108	.08282	.00462	.87776	.44141
#2	-.00085	.07182	.00032	.87641	.44029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	F **996.15**	**-.00010**	i **.0248**	**-.00011**
Stddev	.00010	.97	.00008	.0151	.00034
%RSD	352.47	.09740	83.352	60.70	311.17
#1	-.00010	995.46	-.00016	i .0142	-.00035
#2	.00004	996.84	-.00004	i .0354	.00013
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01827**	**.17338**	**.01962**	**3.3483**	**.01123**
Stddev	.00034	.00067	.00181	.0039	.00042
%RSD	1.8578	.38576	9.2368	.11563	3.7718
#1	.01851	.17385	.01834	3.3510	.01153
#2	.01803	.17291	.02090	3.3456	.01093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-17-B Acquired: 9/26/2019 16:32:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.992**	**.00095**	**.02997**	F **1261.3**	**.00099**
Stddev	.028	.00004	.00025	.5	.00039
%RSD	.25479	4.7306	.83479	.03862	39.253
#1	11.012	.00098	.02979	1260.9	.00126
#2	10.972	.00092	.03015	1261.6	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2498**	**.00864**	F **379.9**	**.02531**	**-.01374**
Stddev	.0039	.00255	.7	.00414	.00300
%RSD	1.544	29.529	.1819	16.374	21.856
#1	-.2471	.00684	380.4	.02824	-.01587
#2	-.2525	.01044	379.4	.02238	-.01162
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.0216**	**.00153**	**.93875**	**-.0054**	**-.00165**
Stddev	.0156	.00049	.00068	.0033	.00002
%RSD	.77186	31.916	.07246	60.80	.98547
#1	2.0326	.00188	.93827	-.0031	-.00166
#2	2.0106	.00119	.93923	-.0077	-.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-17-B Acquired: 9/26/2019 16:32:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00107	i .0185	.00021	.00113	.0012
Stddev	.00083	.0547	.00046	.00127	.0006
%RSD	77.523	295.1	222.35	113.01	48.11
#1	.00048	i -.0201	-.00012	.00203	.0008
#2	.00166	i .0572	.00054	.00023	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1315.9	464.88	31674.	3822.3
Stddev	1.0	.67	115.	18.0
%RSD	.07371	.14431	.36410	.47144
#1	1316.6	465.35	31592.	3835.1
#2	1315.2	464.40	31755.	3809.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	72.902%	86.712%	81.513%	92.787%
Range				

Sample Name: 480-159532-A-18-B Acquired: 9/26/2019 16:36:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.07211**	**-.00500**	**1.0205**	**1.1689**
Stddev	.00026	.01042	.00274	.0020	.0024
%RSD	35.828	14.452	54.694	.20001	.20619
#1	-.00092	.07948	-.00307	1.0219	1.1706
#2	-.00055	.06474	-.00694	1.0191	1.1672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	F **972.33**	**.00288**	i **.0008**	**.00967**
Stddev	.00005	5.06	.00007	.0088	.00008
%RSD	231.24	.51996	2.5589	1051.	.79250
#1	.00006	975.90	.00283	i .0070	.00962
#2	-.00001	968.75	.00294	i -.0054	.00973
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.14194**	**.08757**	**2.9189**	**.02532**
Stddev	.00006	.00039	.00212	.0210	.00028
%RSD	5.2008	.27191	2.4170	.71767	1.0887
#1	.00110	.14167	.08907	2.9338	.02552
#2	.00102	.14221	.08607	2.9041	.02513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-18-B Acquired: 9/26/2019 16:36:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.920**	**1.0421**	**.00223**	F **1495.3**	**.10458**
Stddev	.026	.0014	.00043	2.8	.00029
%RSD	.18619	.13379	19.270	.19057	.28127
#1	13.938	1.0411	.00192	1497.3	.10437
#2	13.901	1.0431	.00253	1493.3	.10478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2526**	**86.768**	F **298.4**	**.02668**	**-.01865**
Stddev	.0010	.102	.6	.00033	.00208
%RSD	.4046	.11759	.2050	1.2466	11.161
#1	-.2518	86.696	298.0	.02644	-.01718
#2	-.2533	86.841	298.9	.02691	-.02013
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.689**	**.00133**	**1.2821**	**.0038**	**-.00088**
Stddev	.050	.00038	.0030	.0046	.00041
%RSD	.47161	28.260	.23625	121.5	46.357
#1	10.725	.00106	1.2842	.0070	-.00059
#2	10.654	.00160	1.2799	.0005	-.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-18-B Acquired: 9/26/2019 16:36:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	i **-.0436**	**.00007**	**.50083**	**.0005**
Stddev	.00245	.0542	.00051	.00044	.0012
%RSD	234.98	124.3	767.99	.08813	233.8
#1	.00069	i -.0820	.00043	.50052	.0014
#2	-.00277	i -.0053	-.00030	.50114	-.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1301.1**	**459.20**	**31457.**	**3816.3**
Stddev	2.9	.44	25.	8.8
%RSD	.22239	.09516	.08103	.23072
#1	1303.1	459.51	31439.	3810.1
#2	1299.0	458.89	31475.	3822.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	72.082%	85.653%	80.957%	92.641%
Range				

Sample Name: 480-159532-A-19-B Acquired: 9/26/2019 16:40:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.42491**	**-.00339**	**1.5092**	**.46496**
Stddev	.00020	.00700	.00930	.0044	.00349
%RSD	11.903	1.6483	274.51	.28898	.75102
#1	-.00154	.41995	-.00996	1.5123	.46249
#2	-.00182	.42986	.00319	1.5061	.46743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	F **1318.1**	**.00001**	i **.0439**	**-.00103**
Stddev	.00004	2.3	.00017	.0145	.00026
%RSD	51.878	.17491	1357.5	32.95	25.091
#1	-.00005	1316.4	.00013	i .0541	-.00122
#2	-.00010	1319.7	-.00011	i .0336	-.00085
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**.07352**	**.09431**	**3.3164**	**.01353**
Stddev	.00020	.00001	.00757	.0009	.00020
%RSD	22.597	.01654	8.0270	.02780	1.4844
#1	.00073	.07351	.09966	3.3170	.01338
#2	.00101	.07353	.08895	3.3157	.01367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-19-B Acquired: 9/26/2019 16:40:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.45173**	**.00204**	**.04180**	F **1493.5**	**-.00070**
Stddev	.00042	.00001	.00044	5.6	.00005
%RSD	.09289	.39119	1.0511	.37471	7.7430
#1	.45203	.00204	.04211	1489.5	-.00074
#2	.45144	.00205	.04149	1497.4	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.1010**	**7.7415**	F **524.5**	**-.00112**	**-.02201**
Stddev	.0006	.0037	2.0	.00232	.00066
%RSD	.6286	.04816	.3817	206.28	3.0000
#1	-.1006	7.7441	526.0	-.00276	-.02154
#2	-.1015	7.7388	523.1	.00052	-.02247
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.78334**	**.00299**	**1.1850**	**.0071**	**-.00072**
Stddev	.01135	.00031	.0025	.0016	.00004
%RSD	1.4484	10.241	.20889	21.87	5.1168
#1	.77532	.00277	1.1832	.0060	-.00070
#2	.79137	.00320	1.1867	.0082	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-19-B Acquired: 9/26/2019 16:40:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00211**	i **.2529**	**.00013**	**.00174**	**.0008**
Stddev	.00351	.0075	.00039	.00156	.0003
%RSD	166.26	2.951	298.62	89.781	36.75
#1	.00037	i .2582	-.00015	.00063	.0010
#2	-.00459	i .2477	.00041	.00284	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1279.7**	**456.42**	**31067.**	**3798.9**
Stddev	1.8	.78	134.	7.9
%RSD	.13972	.17047	.43035	.20772
#1	1281.0	455.87	31161.	3804.5
#2	1278.4	456.97	30972.	3793.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	70.897%	85.134%	79.951%	92.218%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 16:44:40 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98433	50.611	.96732	.98160	1.0230	.98480	49.500	.96604
Stddev	.00038	.123	.00033	.00208	.0034	.00137	.024	.00174
%RSD	.03848	.24295	.03448	.21193	.33336	.13941	.04873	.17990
#1	.98460	50.524	.96709	.98013	1.0206	.98577	49.517	.96482
#2	.98407	50.698	.96756	.98307	1.0255	.98383	49.483	.96727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.012	.98783	.99123	.97609	48.992	48.808	1.0061	49.616
Stddev	.001	.00004	.00425	.00207	.180	.023	.0031	.026
%RSD	.1411	.00425	.42874	.21242	.36772	.04770	.30776	.05334
#1	i 1.013	.98786	.98822	.97462	49.119	48.791	1.0039	49.634
#2	i 1.011	.98780	.99423	.97755	48.865	48.824	1.0083	49.597
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98472	.98112	49.831	.98108	24.98	.97923	23.98	.97995
Stddev	.00097	.00203	.124	.00084	.01	.00067	.09	.00325
%RSD	.09823	.20695	.24885	.08541	.0230	.06881	.3697	.33144
#1	.98404	.97969	49.743	.98167	24.99	.97875	23.92	.97766
#2	.98541	.98256	49.918	.98049	24.98	.97970	24.04	.98225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 16:44:40 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95541	9.9704	.97724	1.0049	.9834	.97453	.99123	i 2.414
Stddev	.01254	.0144	.00137	.0018	.0081	.00017	.00282	.052
%RSD	1.3125	.14478	.13984	.18090	.8274	.01731	.28405	2.140
#1	.94655	9.9602	.97820	1.0036	.9891	.97465	.98924	i 2.450
#2	.96428	9.9806	.97627	1.0061	.9776	.97441	.99322	i 2.377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99709	.99546	.9708
Stddev	.00397	.00332	.0014
%RSD	.39827	.33375	.1444
#1	.99428	.99311	.9698
#2	.99990	.99781	.9718
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1632.8	537.70	36632.	4109.9
Stddev	.7	1.11	34.	4.1
%RSD	.04206	.20724	.09228	.09906
#1	1632.3	538.49	36656.	4112.7
#2	1633.3	536.91	36608.	4107.0

Sample Name: CCB-5508960 Acquired: 9/26/2019 16:48:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00810**	**-.00017**	**-.00046**	**.00010**	**-.00004**	**.00405**	**-.00015**
Stddev	.00051	.01711	.00071	.00003	.00001	.00000	.00127	.00014
%RSD	372.05	211.22	407.90	6.5960	13.478	3.3813	31.507	94.727
#1	.00050	-.02020	.00033	-.00048	.00011	-.00004	.00495	-.00005
#2	-.00022	.00400	-.00067	-.00044	.00009	-.00004	.00314	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0058**	**-.00001**	**-.00016**	**.00009**	**.00092**	**.00269**	**.00039**	**.00253**
Stddev	.0121	.00018	.00003	.00006	.00339	.00031	.00036	.00052
%RSD	207.9	1245.5	16.606	62.703	369.78	11.650	93.912	20.397
#1	i -.0027	-.00014	-.00014	.00013	-.00148	.00247	.00013	.00216
#2	i .0143	.00011	-.00018	.00005	.00331	.00292	.00065	.00289
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00136**	**.20499**	**-.00014**	**.0028**	**-.00061**	**.0233**	**.00075**
Stddev	.00007	.00035	.00116	.00040	.0006	.00033	.0033	.00063
%RSD	86.027	25.905	.56524	278.81	20.40	54.481	14.21	83.915
#1	-.00003	.00111	.20418	.00014	.0024	-.00084	.0257	.00030
#2	-.00014	.00160	.20581	-.00043	.0032	-.00037	.0210	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 16:48:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00213**	**-.02030**	**-.00024**	**.00004**	**.0059**	**.00019**	**.00053**	i **.1021**
Stddev	.00643	.00798	.00016	.00001	.0041	.00001	.00066	.0369
%RSD	302.02	39.335	68.175	21.387	68.57	5.7675	125.99	36.10
#1	-.00242	-.02594	-.00035	.00005	.0088	.00019	.00100	i .1282
#2	.00667	-.01465	-.00012	.00003	.0031	.00018	.00006	i .0761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00003**	**.0009**
Stddev	.00021	.00122	.0003
%RSD	106.05	4848.0	31.57
#1	-.00005	.00089	.0011
#2	-.00035	-.00084	.0007
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1791.2**	**555.16**	**38561.**	**4107.3**
Stddev	4.2	1.23	4.	.0
%RSD	.23492	.22229	.01145	.00106
#1	1794.2	556.03	38558.	4107.3
#2	1788.2	554.29	38564.	4107.3

Sample Name: CCVL-5514926 Acquired: 9/26/2019 16:52:12 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00642	.19238	.01804	.01989	.00220	.00205	.52685	.00209
Stddev	.00076	.03763	.00145	.00044	.00002	.00008	.00095	.00011
%RSD	11.893	19.562	8.0239	2.2015	.90624	3.6703	.18051	5.1165
#1	.00588	.16577	.01701	.02020	.00218	.00200	.52618	.00217
#2	.00696	.21899	.01906	.01958	.00221	.00211	.52752	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0116	.00383	.00425	.00941	.05067	.48924	.03069	.21502
Stddev	.0230	.00024	.00032	.00019	.00067	.03344	.00010	.00214
%RSD	199.1	6.3339	7.5410	1.9810	1.3286	6.8353	.33146	.99298
#1	i .0279	.00400	.00448	.00928	.05115	.51289	.03076	.21653
#2	i -.0047	.00366	.00402	.00955	.05020	.46559	.03062	.21351
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00305	.01006	1.1629	.01026	-.0279	.01103	.2140	.02240
Stddev	.00002	.00022	.0046	.00006	.0004	.00015	.0001	.00073
%RSD	.66836	2.2225	.39857	.54673	1.408	1.3795	.0449	3.2432
#1	.00306	.01021	1.1596	.01022	-.0276	.01114	.2140	.02292
#2	.00303	.00990	1.1662	.01030	-.0282	.01092	.2141	.02189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 16:52:12 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02241	.49062	.00982	.00503	.0038	.00484	.01910	i .0207
Stddev	.00137	.00511	.00019	.00001	.0080	.00009	.00031	.0344
%RSD	6.1149	1.0415	1.9410	.27238	210.1	1.9271	1.6280	166.4
#1	.02144	.49423	.00968	.00502	-.0018	.00477	.01932	i .0450
#2	.02338	.48701	.00995	.00504	.0094	.00490	.01888	i -.0037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00464	.01006	.0021
Stddev	.00002	.00015	.0001
%RSD	.51329	1.4600	2.460
#1	.00462	.01016	.0021
#2	.00465	.00995	.0021
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1793.8	554.35	38896.	4159.8
Stddev	2.3	1.84	62.	3.6
%RSD	.12774	.33164	.16024	.08627
#1	1795.5	553.05	38940.	4162.3
#2	1792.2	555.65	38852.	4157.2

Sample Name: 480-159532-A-20-B Acquired: 9/26/2019 16:56:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.05641**	**.00206**	**1.1132**	**.73698**
Stddev	.00005	.01834	.00475	.0070	.00185
%RSD	4.8142	32.509	231.20	.62800	.25114
#1	-.00112	.06938	-.00130	1.1181	.73829
#2	-.00104	.04344	.00542	1.1083	.73567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	F **1105.1**	**.00275**	i **.0250**	**.00730**
Stddev	.00002	7.1	.00011	.0174	.00040
%RSD	837.64	.63893	3.9736	69.80	5.4458
#1	.00001	1110.1	.00283	i .0373	.00758
#2	-.00002	1100.1	.00267	i .0126	.00702
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.11267**	**.04735**	**3.7468**	**.02091**
Stddev	.00011	.00031	.00287	.0026	.00034
%RSD	12.463	.27547	6.0532	.06851	1.6269
#1	.00098	.11289	.04938	3.7486	.02067
#2	.00082	.11245	.04532	3.7450	.02115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-20-B Acquired: 9/26/2019 16:56:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.453**	**1.0081**	**.00509**	F **1495.3**	**.05217**
Stddev	.043	.0026	.00006	3.5	.00028
%RSD	.27780	.26154	1.1352	.23436	.54090
#1	15.483	1.0100	.00513	1497.8	.05237
#2	15.423	1.0063	.00504	1492.8	.05197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.1917**	**30.711**	F **346.0**	**.02770**	**-.01624**
Stddev	.0039	.037	3.2	.00120	.00121
%RSD	2.010	.11945	.9121	4.3398	7.4460
#1	-.1944	30.685	348.2	.02685	-.01538
#2	-.1890	30.737	343.8	.02855	-.01709
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.1028**	**.00260**	**1.2714**	**.0080**	**-.00174**
Stddev	.0206	.00064	.0007	.0173	.00039
%RSD	.22655	24.617	.05553	216.3	22.234
#1	9.1174	.00215	1.2719	-.0042	-.00147
#2	9.0883	.00305	1.2709	.0202	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-20-B Acquired: 9/26/2019 16:56:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	i **-.0003**	**.00005**	**.08213**	**.0013**
Stddev	.00298	.0230	.00020	.00040	.0010
%RSD	208.52	7991.	373.00	.49067	74.77
#1	-.00354	i -.0166	-.00009	.08242	.0006
#2	.00068	i .0160	.00020	.08185	.0020
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1296.0**	**467.28**	**31364.**	**3811.5**
Stddev	3.3	2.21	36.	1.0
%RSD	.25089	.47244	.11451	.02514
#1	1298.3	465.72	31390.	3810.8
#2	1293.7	468.84	31339.	3812.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	71.799%	87.159%	80.717%	92.522%
Range				

Sample Name: 480-159532-A-21-B Acquired: 9/26/2019 17:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.05003**	**.00398**	**1.0741**	**1.2522**
Stddev	.00020	.00867	.00587	.0056	.0017
%RSD	44.577	17.320	147.50	.52201	.13589
#1	-.00031	.04391	-.00017	1.0701	1.2510
#2	-.00060	.05616	.00813	1.0781	1.2534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	F **1059.4**	**.00269**	i **.0129**	**.00998**
Stddev	.00008	1.1	.00025	.0018	.00004
%RSD	387.42	.10422	9.3159	13.72	.43906
#1	.00007	1060.2	.00252	i .0117	.01001
#2	-.00003	1058.6	.00287	i .0142	.00994
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**.12030**	**.03162**	**4.0140**	**.02077**
Stddev	.00009	.00078	.00073	.0458	.00005
%RSD	9.2739	.64739	2.3174	1.1403	.24480
#1	.00094	.12085	.03213	3.9816	.02080
#2	.00107	.11975	.03110	4.0463	.02073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-21-B Acquired: 9/26/2019 17:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.521**	**1.1629**	**.00224**	F **1505.4**	**.05766**
Stddev	.006	.0002	.00043	2.1	.00036
%RSD	.04056	.01845	19.412	.13664	.63145
#1	15.525	1.1631	.00193	1504.0	.05791
#2	15.516	1.1628	.00255	1506.9	.05740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2084**	**83.061**	F **347.8**	**.00978**	**-.01695**
Stddev	.0026	.023	1.0	.00469	.00277
%RSD	1.264	.02724	.2981	47.902	16.356
#1	-.2102	83.077	347.1	.01310	-.01891
#2	-.2065	83.045	348.6	.00647	-.01499
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.032**	**-.00041**	**1.1858**	**.0049**	**-.00136**
Stddev	.000	.00017	.0029	.0146	.00019
%RSD	.00031	40.956	.24359	295.5	14.152
#1	10.032	-.00052	1.1837	-.0054	-.00150
#2	10.032	-.00029	1.1878	.0152	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-21-B Acquired: 9/26/2019 17:00:05 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	i **.0564**	**-.00002**	**.32019**	**.0008**
Stddev	.00118	.0947	.00021	.00232	.0023
%RSD	148.19	168.0	1027.6	.72397	292.1
#1	-.00162	i .1233	-.00017	.31855	-.0008
#2	.00004	i -.0106	.00013	.32183	.0024
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1298.0**	**462.93**	**31452.**	**3799.2**
Stddev	1.5	1.27	30.	2.8
%RSD	.11727	.27410	.09462	.07481
#1	1299.0	463.83	31431.	3797.2
#2	1296.9	462.03	31473.	3801.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	71.908%	86.349%	80.943%	92.225%
Range				

Sample Name: 480-159532-A-22-B Acquired: 9/26/2019 17:04:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.28190**	**.00889**	**1.1808**	**.37444**
Stddev	.00036	.00706	.00129	.0029	.00056
%RSD	28.675	2.5041	14.481	.24985	.15009
#1	-.00152	.28689	.00798	1.1829	.37484
#2	-.00101	.27691	.00980	1.1788	.37404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	F **1213.9**	**.00001**	i **.0181**	**-.00024**
Stddev	.00000	6.5	.00012	.0022	.00042
%RSD	3.2339	.53543	924.66	12.26	177.96
#1	-.00006	1218.5	-.00007	i .0165	.00006
#2	-.00006	1209.3	.00010	i .0196	-.00053
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**.18886**	**.11471**	**3.0252**	**.01138**
Stddev	.00005	.00010	.00094	.0132	.00076
%RSD	2.3022	.05532	.81792	.43579	6.6467
#1	.00242	.18879	.11405	3.0159	.01191
#2	.00234	.18894	.11537	3.0345	.01084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-22-B Acquired: 9/26/2019 17:04:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.1655**	**.00218**	**.03376**	F **1478.0**	**.00262**
Stddev	.0021	.00004	.00008	2.0	.00039
%RSD	.09499	1.8020	.22569	.13408	14.785
#1	2.1640	.00216	.03382	1479.4	.00234
#2	2.1670	.00221	.03371	1476.6	.00289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2427**	**.07251**	F **444.1**	**.00608**	**-.02194**
Stddev	.0045	.00092	.0	.00403	.00126
%RSD	1.874	1.2667	.0055	66.184	5.7308
#1	-.2395	.07186	444.1	.00893	-.02283
#2	-.2460	.07316	444.1	.00324	-.02105
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.0367**	**.00295**	**1.0334**	**.0048**	**-.00036**
Stddev	.0043	.00085	.0025	.0089	.00031
%RSD	.14234	28.766	.23777	183.1	86.032
#1	3.0398	.00235	1.0351	.0111	-.00014
#2	3.0336	.00354	1.0316	-.0014	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159532-A-22-B Acquired: 9/26/2019 17:04:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00251	i .1883	.00069	-.00315	.0006
Stddev	.00201	.1402	.00063	.00097	.0009
%RSD	79.934	74.46	92.168	30.647	142.0
#1	.00109	i .0892	.00024	-.00247	-.0000
#2	.00394	i .2875	.00113	-.00383	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1285.8	459.23	31183.	3801.4
Stddev	2.3	.42	20.	4.6
%RSD	.17664	.09054	.06512	.12119
#1	1287.4	458.94	31168.	3798.1
#2	1284.2	459.53	31197.	3804.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	71.234%	85.659%	80.250%	92.278%
Range				

Sample Name: 480-159348-D-1-C Acquired: 9/26/2019 17:08:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00344**	**.58605**	F **18.328**	**1.6550**	**.16383**
Stddev	.00004	.02222	.011	.0030	.00028
%RSD	1.0720	3.7914	.06152	.18056	.17056
#1	.00347	.57034	18.336	1.6571	.16403
#2	.00342	.60177	18.320	1.6529	.16364
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			4.5000		
Low Limit			-.01500		

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**173.33**	F **-.00579**	i **.0675**	**.03806**
Stddev	.00010	.73	.00010	.0021	.00035
%RSD	217.22	.42107	1.7466	3.153	.90775
#1	.00003	172.81	-.00572	i .0690	.03781
#2	-.00012	173.85	-.00586	i .0660	.03830
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			4.5000		
Low Limit			-.00200		

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.22026**	**-.00784**	F **962.75**	**70.337**	**9.5732**
Stddev	.00231	.00057	2.97	.095	.0020
%RSD	1.0508	7.3170	.30881	.13569	.02071
#1	.22190	-.00743	960.65	70.404	9.5746
#2	.21863	-.00824	964.85	70.269	9.5718
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			540.00		
Low Limit			-.05000		

Sample Name: 480-159348-D-1-C Acquired: 9/26/2019 17:08:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576-2	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}2	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.2032**	**22.068**	**.01397**	F **1856.7**	**.99313**
Stddev	.0241	.069	.00030	4.0	.00105
%RSD	.33434	.31304	2.1295	.21303	.10598
#1	7.2203	22.019	.01418	1853.9	.99239
#2	7.1862	22.116	.01376	1859.5	.99388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5046**	**.04528**	F **235.5**	F **-.10669**	**-.00704**
Stddev	.0089	.00026	.3	.00476	.00431
%RSD	1.767	.57487	.1151	4.4598	61.202
#1	-.4983	.04509	235.7	-.10333	-.00399
#2	-.5109	.04546	235.3	-.11006	-.01009
Check ?	None	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit			90.00	9.0000	
Low Limit			-.2000	-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.4982**	**.02009**	**3.6316**	**.5318**	**-.00168**
Stddev	.0044	.00013	.0132	.0079	.00007
%RSD	.29289	.62320	.36324	1.490	4.2483
#1	1.4951	.02018	3.6223	.5374	-.00163
#2	1.5013	.02001	3.6410	.5262	-.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-D-1-C Acquired: 9/26/2019 17:08:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01758**	i **-1.734**	**.01673**	**2.0357**	**.0375**
Stddev	.00026	.036	.00060	.0104	.0003
%RSD	1.4901	2.081	3.5636	.50821	.6963
#1	-.01740	i -1.709	.01631	2.0431	.0374
#2	-.01777	i -1.760	.01715	2.0284	.0377
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1231.3**	**441.34**	**31151.**	**3847.7**
Stddev	2.9	.91	7.	24.7
%RSD	.23841	.20556	.02214	.64067
#1	1229.2	440.69	31147.	3865.2
#2	1233.3	441.98	31156.	3830.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	68.213%	82.320%	80.169%	93.403%
Range				

Sample Name: 480-159348-D-1-C@5 Acquired: 9/26/2019 17:12:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.10754**	**3.1563**	**.31314**	**.03228**
Stddev	.00029	.00537	.0011	.00070	.00008
%RSD	80.901	4.9968	.03606	.22393	.24506
#1	.00057	.10374	3.1555	.31364	.03222
#2	.00016	.11134	3.1571	.31265	.03233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**33.713**	**-.00120**	i **.0208**	**.00646**
Stddev	.00011	.138	.00009	.0050	.00017
%RSD	973.08	.41030	7.5946	24.15	2.7042
#1	.00007	33.615	-.00126	i .0173	.00658
#2	-.00009	33.811	-.00113	i .0244	.00634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.04351**	**-.00152**	**190.60**	**12.879**	**1.7732**
Stddev	.00027	.00043	1.40	.058	.0045
%RSD	.63106	28.131	.73215	.44767	.25430
#1	.04370	-.00122	189.61	12.838	1.7700
#2	.04331	-.00182	191.58	12.920	1.7763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-D-1-C@5 Acquired: 9/26/2019 17:12:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.5331**	**4.3744**	**.00235**	**349.20**	**.18067**
Stddev	.0028	.0012	.00008	.25	.00055
%RSD	.18211	.02795	3.4489	.07217	.30462
#1	1.5312	4.3736	.00229	349.02	.18028
#2	1.5351	4.3753	.00240	349.37	.18106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.1175**	**.00542**	**43.10**	F **-.02169**	**-.00611**
Stddev	.0027	.00148	.07	.00040	.00248
%RSD	2.273	27.227	.1728	1.8419	40.587
#1	-.1156	.00647	43.15	-.02141	-.00436
#2	-.1194	.00438	43.05	-.02197	-.00787
Check ?	None	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				9.0000	
Low Limit				-.02000	

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.25931**	**.00448**	**.70508**	**.1144**	**-.00041**
Stddev	.00004	.00267	.00313	.0022	.00021
%RSD	.01532	59.550	.44454	1.901	50.299
#1	.25928	.00636	.70286	.1129	-.00055
#2	.25934	.00259	.70729	.1159	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-D-1-C@5 Acquired: 9/26/2019 17:12:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00288**	i **-.3191**	**.00268**	**.40911**	**.0086**
Stddev	.00046	.0293	.00036	.00130	.0002
%RSD	16.073	9.168	13.546	.31758	1.910
#1	-.00321	i -.2984	.00294	.40819	.0085
#2	-.00255	i -.3398	.00243	.41003	.0087
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1572.1**	**517.85**	**35585.**	**4106.0**
Stddev	3.1	1.91	11.	29.9
%RSD	.19904	.36932	.03101	.72727
#1	1569.9	516.50	35577.	4127.1
#2	1574.3	519.20	35593.	4084.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.096%	96.592%	91.580%	99.672%
Range				

Sample Name: 480-159348-A-2-C Acquired: 9/26/2019 17:15:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.04876**	**.04048**	**.22485**	**.06387**
Stddev	.00049	.00817	.00369	.00107	.00022
%RSD	70.064	16.761	9.1204	.47571	.35088
#1	-.00035	.04298	.03787	.22409	.06403
#2	-.00105	.05453	.04310	.22560	.06371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**45.900**	**.00024**	i **.0149**	**.00007**
Stddev	.00001	.080	.00029	.0191	.00015
%RSD	29.759	.17375	119.87	128.3	194.33
#1	-.00004	45.844	.00044	i .0284	-.00003
#2	-.00005	45.956	.00004	i .0014	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00569**	**.01129**	**1.0053**	**4.8184**	**.03493**
Stddev	.00038	.00028	.0029	.0015	.00037
%RSD	6.6128	2.5143	.28647	.03024	1.0535
#1	.00542	.01109	1.0073	4.8194	.03467
#2	.00596	.01150	1.0032	4.8174	.03519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-A-2-C Acquired: 9/26/2019 17:15:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.98672**	**.13767**	**-.00074**	F **1549.0**	**.04685**
Stddev	.00458	.00003	.00003	7.4	.00019
%RSD	.46394	.01870	3.4850	.47560	.41192
#1	.98996	.13765	-.00073	1543.8	.04698
#2	.98348	.13768	-.00076	1554.2	.04671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.683**	**.00123**	**1.664**	**.00500**	**-.00668**
Stddev	.008	.00143	.010	.00102	.00700
%RSD	.4845	116.29	.5880	20.467	104.92
#1	1.689	.00223	1.657	.00428	-.01163
#2	1.677	.00022	1.670	.00573	-.00172
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.12882**	**.00169**	**.06537**	**.0003**	**-.00024**
Stddev	.01643	.00188	.00016	.0137	.00004
%RSD	12.753	111.43	.25116	5157.	17.429
#1	.14044	.00036	.06526	.0099	-.00021
#2	.11720	.00301	.06549	-.0094	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159348-A-2-C Acquired: 9/26/2019 17:15:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	i **.0364**	**-.00029**	**1.6430**	**.0004**
Stddev	.00202	.0876	.00023	.0034	.0001
%RSD	160.24	240.7	80.251	.20478	18.15
#1	.00017	i .0983	-.00012	1.6406	.0004
#2	-.00270	i -.0255	-.00045	1.6454	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1416.3**	**497.54**	**32981.**	**3963.1**
Stddev	4.9	1.46	33.	16.3
%RSD	.34542	.29425	.10129	.41241
#1	1419.7	498.57	32958.	3974.6
#2	1412.8	496.50	33005.	3951.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	78.463%	92.804%	84.879%	96.202%
Range				

Sample Name: blank Acquired: 9/26/2019 17:19:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00613**	**-.00242**	**-.00079**	**-.00006**
Stddev	.00024	.00540	.00327	.00017	.00001
%RSD	141.54	88.077	135.54	21.300	17.452
#1	.00000	.00995	-.00010	-.00067	-.00007
#2	-.00034	.00231	-.00473	-.00091	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00449**	**.00017**	i **.0183**	**-.00019**
Stddev	.00002	.00380	.00012	.0121	.00002
%RSD	116.21	84.646	73.529	66.11	8.0292
#1	-.00003	.00717	.00026	i .0097	-.00020
#2	-.00000	.00180	.00008	i .0269	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00006**	**-.00042**	**.02404**	**.00069**
Stddev	.00023	.00015	.00373	.01015	.00069
%RSD	54.292	227.82	877.38	42.235	99.790
#1	.00026	.00017	-.00306	.01686	.00020
#2	.00058	-.00004	.00221	.03122	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/26/2019 17:19:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00145**	**-.00008**	**-.00070**	**.32407**	**-.00037**
Stddev	.00139	.00007	.00017	.01264	.00021
%RSD	96.255	89.901	23.656	3.9016	56.403
#1	.00046	-.00013	-.00082	.33301	-.00052
#2	.00243	-.00003	-.00059	.31513	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0020**	**-.00074**	**.0325**	**-.00032**	**.00084**
Stddev	.0010	.00053	.0002	.00234	.00080
%RSD	50.88	70.764	.5954	738.82	94.380
#1	.0013	-.00111	.0326	.00134	.00028
#2	.0028	-.00037	.0324	-.00197	.00141
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.03903**	**.00008**	**.00001**	**-.0060**	**.00007**
Stddev	.00330	.00130	.00004	.0044	.00006
%RSD	8.4461	1695.1	501.33	74.71	82.136
#1	-.04136	-.00084	-.00002	-.0028	.00012
#2	-.03670	.00100	.00004	-.0091	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/26/2019 17:19:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	i **.1321**	**-.00027**	**.00057**	**-.0000**
Stddev	.00101	.0870	.00009	.00053	.0002
%RSD	72.544	65.85	34.549	93.849	713.4
#1	-.00068	i .0706	-.00021	.00095	.0001
#2	-.00211	i .1937	-.00034	.00019	-.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1801.2**	**557.58**	**39078.**	**4155.4**
Stddev	3.2	3.47	95.	3.1
%RSD	.17495	.62259	.24237	.07425
#1	1798.9	555.13	39011.	4157.6
#2	1803.4	560.04	39145.	4153.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.787%	104.00%	100.57%	100.87%
Range				

Sample Name: MB 480-494119/1-A Acquired: 9/26/2019 17:23:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00946**	**.00271**	**.00315**	**.00022**
Stddev	.00020	.01668	.00310	.00032	.00000
%RSD	133.88	176.31	114.33	10.058	1.5032
#1	-.00030	-.02125	.00490	.00338	.00022
#2	-.00001	.00233	.00052	.00293	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.05493**	**-.00001**	i **.0197**	**.00001**
Stddev	.00002	.00083	.00003	.0156	.00003
%RSD	60.674	1.5027	224.85	79.26	505.19
#1	-.00005	.05551	-.00004	i .0087	.00003
#2	-.00002	.05435	.00001	i .0308	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00017**	**-.00195**	**.00086**	**.00008**
Stddev	.00005	.00013	.00190	.00356	.00079
%RSD	88.090	76.790	97.425	414.24	992.93
#1	.00009	-.00008	-.00061	.00338	.00064
#2	.00002	-.00026	-.00329	-.00166	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494119/1-A Acquired: 9/26/2019 17:23:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00476**	**.00012**	**-.00072**	**.21455**	**-.00019**
Stddev	.00369	.00012	.00001	.00103	.00031
%RSD	77.482	103.64	1.2853	.47850	167.64
#1	.00215	.00020	-.00073	.21527	.00003
#2	.00737	.00003	-.00072	.21382	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0017**	**-.00062**	**.0179**	**-.00170**	**-.00394**
Stddev	.0016	.00047	.0064	.00222	.00274
%RSD	94.76	76.820	35.53	130.75	69.442
#1	-.0006	-.00095	.0134	-.00327	-.00587
#2	-.0029	-.00028	.0224	-.00013	-.00201
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02422**	**-.00015**	**.00026**	**.0009**	**-.00042**
Stddev	.01272	.00185	.00003	.0034	.00000
%RSD	52.528	1241.3	11.519	385.4	.21644
#1	-.01523	-.00146	.00024	-.0015	-.00042
#2	-.03322	.00116	.00028	.0032	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494119/1-A Acquired: 9/26/2019 17:23:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	i **.0273**	**-.00043**	**.00291**	**.0005**
Stddev	.00031	.0188	.00012	.00058	.0005
%RSD	34.572	68.79	27.195	19.885	89.61
#1	-.00110	i .0406	-.00035	.00250	.0009
#2	-.00067	i .0140	-.00052	.00332	.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1808.4**	**563.92**	**39306.**	**4166.0**
Stddev	4.0	1.62	33.	2.8
%RSD	.22230	.28666	.08506	.06708
#1	1811.3	565.06	39329.	4164.0
#2	1805.6	562.78	39282.	4168.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.19%	105.19%	101.15%	101.13%
Range				

Sample Name: LCS 480-494119/2-A Acquired: 9/26/2019 17:27:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05309**	**10.374**	**.20398**	**.20671**	**.21926**
Stddev	.00050	.046	.00281	.00051	.00069
%RSD	.94710	.43981	1.3781	.24473	.31274
#1	.05274	10.342	.20597	.20707	.21974
#2	.05345	10.407	.20200	.20635	.21877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21043**	**10.516**	**.20481**	i **-.0063**	**.20078**
Stddev	.00027	.032	.00098	.0058	.00053
%RSD	.12786	.30103	.48024	91.28	.26238
#1	.21062	10.538	.20551	i -.0104	.20041
#2	.21024	10.493	.20412	i -.0022	.20115
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20553**	**.19812**	**10.423**	**10.058**	**.20953**
Stddev	.00170	.00105	.018	.054	.00130
%RSD	.82912	.53021	.17500	.53383	.61845
#1	.20674	.19886	10.436	10.095	.21045
#2	.20433	.19738	10.410	10.020	.20862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494119/2-A Acquired: 9/26/2019 17:27:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.618**	**.20621**	**.20664**	**10.153**	**.20741**
Stddev	.001	.00035	.00150	.011	.00057
%RSD	.01213	.17112	.72369	.11147	.27568
#1	10.618	.20645	.20769	10.145	.20781
#2	10.617	.20596	.20558	10.161	.20701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5680**	**.19969**	**10.26**	**.22018**	**.19533**
Stddev	.0071	.00507	.04	.00467	.00224
%RSD	1.247	2.5373	.3810	2.1204	1.1455
#1	-.5730	.19610	10.28	.22348	.19375
#2	-.5630	.20327	10.23	.21688	.19692
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.7229**	**.19614**	**.20515**	**.0038**	**.20230**
Stddev	.0390	.00035	.00015	.0093	.00028
%RSD	.40099	.17858	.07504	241.7	.13783
#1	9.7505	.19589	.20504	-.0027	.20211
#2	9.6954	.19639	.20526	.0104	.20250
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494119/2-A Acquired: 9/26/2019 17:27:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20298**	i **-.0178**	**.20783**	**.22074**	**.0031**
Stddev	.00096	.0051	.00084	.00385	.0011
%RSD	.47079	28.75	.40447	1.7444	36.44
#1	.20366	i -.0142	.20843	.22346	.0038
#2	.20230	i -.0214	.20724	.21801	.0023
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1767.6**	**556.40**	**38454.**	**4185.6**
Stddev	1.7	1.84	35.	5.7
%RSD	.09532	.33117	.09092	.13541
#1	1768.8	555.10	38479.	4189.6
#2	1766.4	557.70	38429.	4181.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.926%	103.78%	98.962%	101.60%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 17:31:15 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98489	50.284	.94897	.96960	1.0150	.98594	49.814	.95867
Stddev	.00171	.017	.00196	.00025	.0013	.00122	.059	.00178
%RSD	.17396	.03466	.20626	.02629	.13078	.12425	.11765	.18532
#1	.98368	50.296	.94759	.96978	1.0160	.98507	49.772	.95993
#2	.98610	50.272	.95036	.96941	1.0141	.98680	49.855	.95742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.006	.99508	.98710	.96819	49.282	48.663	.99530	49.982
Stddev	.004	.00076	.00001	.00029	.055	.079	.00046	.010
%RSD	.3461	.07590	.00073	.03026	.11217	.16136	.04584	.02046
#1	i 1.009	.99454	.98710	.96798	49.242	48.608	.99562	49.989
#2	i 1.004	.99561	.98709	.96840	49.321	48.719	.99498	49.975
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98605	.96780	49.313	.98183	25.25	.99109	23.64	.96801
Stddev	.00093	.00301	.041	.00063	.04	.00035	.01	.00418
%RSD	.09410	.31113	.08322	.06426	.1389	.03494	.0424	.43174
#1	.98540	.96993	49.342	.98228	25.22	.99133	23.65	.97096
#2	.98671	.96568	49.284	.98138	25.27	.99084	23.64	.96505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 17:31:15 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93725	10.013	.98672	.99674	.9652	.97399	.99539	i 2.409
Stddev	.00984	.031	.00227	.00043	.0029	.00188	.00046	.010
%RSD	1.0498	.31352	.22986	.04344	.3003	.19332	.04646	.4013
#1	.94421	9.9909	.98832	.99705	.9673	.97266	.99506	i 2.416
#2	.93029	10.035	.98511	.99644	.9632	.97533	.99571	i 2.402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.99003	1.0130	.9732
Stddev	.00398	.0013	.0063
%RSD	.40164	.12641	.6438
#1	.98722	1.0121	.9688
#2	.99284	1.0139	.9776
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1643.0	550.05	36935.	4131.9
Stddev	.1	1.36	9.	3.8
%RSD	.00536	.24788	.02324	.09190
#1	1643.1	549.09	36941.	4129.3
#2	1642.9	551.01	36929.	4134.6

Sample Name: CCB-5508960 Acquired: 9/26/2019 17:34:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00238**	**.00024**	**-.00208**	**.00012**	**.00005**	**.00141**	**-.00008**
Stddev	.00007	.00011	.00132	.00006	.00000	.00001	.00254	.00000
%RSD	36.398	4.4695	538.92	3.0538	3.1144	11.297	180.57	5.8567
#1	.00024	.00245	-.00069	-.00213	.00012	.00004	-.00039	-.00008
#2	.00014	.00230	.00117	-.00204	.00012	.00005	.00320	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **-.0015**	**.00004**	**.00005**	**.00011**	**.00328**	**-.00506**	**.00049**	**.00259**
Stddev	.0178	.00023	.00009	.00013	.00081	.01949	.00002	.00047
%RSD	1221.	505.29	168.23	117.59	24.701	385.19	5.0388	18.326
#1	i .0111	.00020	.00012	.00021	.00385	-.01884	.00048	.00225
#2	i -.0141	-.00011	-.00001	.00002	.00271	.00872	.00051	.00292
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00128**	**.12520**	**.00006**	**.0012**	**.00045**	**.0087**	**-.00089**
Stddev	.00009	.00035	.00171	.00018	.0013	.00025	.0009	.00136
%RSD	348.90	27.484	1.3623	277.63	107.3	54.643	9.930	153.48
#1	.00009	.00103	.12400	-.00006	.0003	.00028	.0081	-.00185
#2	-.00004	.00153	.12641	.00019	.0021	.00062	.0093	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 17:34:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00268**	**-.02222**	**.00007**	**.00002**	**.0026**	**.00018**	**-.00008**	i **.0276**
Stddev	.00061	.00721	.00124	.00000	.0040	.00000	.00024	.0216
%RSD	22.744	32.438	1700.8	7.8748	155.2	2.6669	293.83	78.27
#1	-.00225	-.02732	-.00081	.00002	-.0003	.00019	-.00025	i .0428
#2	-.00311	-.01712	.00095	.00002	.0054	.00018	.00009	i .0123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00054**	**.00023**	**.0011**
Stddev	.00008	.00067	.0009
%RSD	14.762	295.29	84.18
#1	-.00060	-.00025	.0017
#2	-.00048	.00070	.0004
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1798.8**	**564.39**	**38889.**	**4129.9**
Stddev	2.9	.68	25.	.9
%RSD	.16181	.12018	.06508	.02148
#1	1800.9	564.87	38871.	4129.3
#2	1796.8	563.91	38907.	4130.6

Sample Name: CCVL-5514926 Acquired: 9/26/2019 17:38:48 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00596**	**.19509**	**.01347**	**.01883**	**.00220**	**.00210**	**.52905**	**.00206**
Stddev	.00069	.00602	.00009	.00050	.00002	.00003	.00079	.00002
%RSD	11.513	3.0851	.66151	2.6296	.70469	1.6234	.14971	.72685
#1	.00644	.19935	.01340	.01848	.00219	.00213	.52961	.00205
#2	.00547	.19084	.01353	.01918	.00221	.00208	.52849	.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0127**	**.00397**	**.00426**	**.00982**	**.05070**	**.50620**	**.03076**	**.21953**
Stddev	.0142	.00012	.00010	.00017	.00090	.00750	.00021	.00231
%RSD	111.5	3.1177	2.3511	1.6834	1.7833	1.4818	.67175	1.0544
#1	i .0027	.00389	.00433	.00970	.05134	.50090	.03090	.21789
#2	i .0227	.00406	.00419	.00993	.05007	.51151	.03061	.22117
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00304**	**.00969**	**1.0997**	**.01038**	**-.0311**	**.01048**	**.2013**	**.01980**
Stddev	.00007	.00018	.0103	.00025	.0023	.00034	.0003	.00074
%RSD	2.3199	1.8671	.94017	2.4395	7.355	3.2195	.1384	3.7201
#1	.00309	.00956	1.1070	.01020	-.0327	.01072	.2015	.02032
#2	.00299	.00982	1.0924	.01056	-.0295	.01024	.2011	.01928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 17:38:48 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02211	.46213	.00980	.00502	.0019	.00488	.01662	i .1002
Stddev	.00404	.00048	.00030	.00004	.0023	.00034	.00012	.1137
%RSD	18.284	.10377	3.0620	.77177	119.6	6.9662	.73035	113.5
#1	.02497	.46247	.00959	.00499	.0036	.00512	.01670	i .0198
#2	.01925	.46179	.01001	.00505	.0003	.00464	.01653	i .1806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00473	.01245	.0010
Stddev	.00004	.00070	.0005
%RSD	.87963	5.6350	54.59
#1	.00470	.01294	.0014
#2	.00476	.01195	.0006
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1807.3	567.51	39051.	4154.3
Stddev	1.1	1.58	81.	2.8
%RSD	.06148	.27827	.20865	.06828
#1	1808.0	566.39	39108.	4156.3
#2	1806.5	568.62	38993.	4152.3

Sample Name: 480-159611-C-1-B Acquired: 9/26/2019 17:42:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.01539**	**.00139**	**.07372**	**.06380**
Stddev	.00018	.00956	.00018	.00073	.00050
%RSD	287.37	62.143	13.272	.98384	.78040
#1	-.00019	.02215	.00152	.07424	.06345
#2	.00006	.00863	.00126	.07321	.06415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**127.22**	**.00020**	i **.0283**	**-.00018**
Stddev	.00003	.41	.00006	.0007	.00008
%RSD	481.88	.31849	30.810	2.403	42.315
#1	-.00001	127.51	.00016	i .0278	-.00013
#2	.00003	126.94	.00025	i .0288	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00512**	**.00275**	**.08857**	**8.4520**	**.00526**
Stddev	.00057	.00006	.00267	.0057	.00085
%RSD	11.205	2.1960	3.0139	.06766	16.089
#1	.00553	.00279	.08669	8.4479	.00466
#2	.00471	.00271	.09046	8.4560	.00586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-1-B Acquired: 9/26/2019 17:42:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**26.743**	**.09127**	**.00623**	**29.915**	**.00167**
Stddev	.022	.00045	.00003	.064	.00037
%RSD	.08402	.49018	.42216	.21292	22.032
#1	26.727	.09096	.00624	29.960	.00141
#2	26.759	.09159	.00621	29.870	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.1864**	**.00008**	**71.47**	**-.00179**	**-.00354**
Stddev	.0019	.00194	.24	.00115	.00751
%RSD	1.045	2301.3	.3350	64.087	212.33
#1	.1850	.00146	71.64	-.00260	-.00885
#2	.1878	-.00129	71.30	-.00098	.00177
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2498**	**.00087**	**1.5355**	**.0020**	**.00012**
Stddev	.0391	.00176	.0042	.0063	.00025
%RSD	.62518	202.93	.27018	313.3	212.90
#1	6.2222	.00212	1.5384	.0065	.00029
#2	6.2774	-.00038	1.5325	-.0025	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-1-B Acquired: 9/26/2019 17:42:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	i **.0093**	**.00004**	**.02018**	**.0007**
Stddev	.00231	.0189	.00011	.00193	.0003
%RSD	265.49	204.1	248.88	9.5521	52.67
#1	.00251	i -.0041	.00012	.02155	.0009
#2	-.00076	i .0226	-.00003	.01882	.0004
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1669.7**	**533.69**	**37304.**	**4130.0**
Stddev	1.3	.55	334.	7.5
%RSD	.07750	.10341	.89496	.18088
#1	1670.6	533.29	37540.	4124.7
#2	1668.7	534.08	37068.	4135.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.501%	99.546%	96.003%	100.25%
Range				

Sample Name: 480-159611-C-2-B Acquired: 9/26/2019 17:46:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.01487**	**.00119**	**.32201**	**.08179**
Stddev	.00019	.00182	.00231	.00070	.00018
%RSD	39.978	12.271	194.90	.21807	.21480
#1	-.00062	.01358	.00282	.32152	.08167
#2	-.00034	.01616	-.00045	.32251	.08192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**266.98**	**.00033**	i **.0164**	**.00026**
Stddev	.00001	4.66	.00002	.0172	.00009
%RSD	206.50	1.7465	4.8971	104.6	35.944
#1	-.00000	263.69	.00034	i .0043	.00033
#2	.00002	270.28	.00031	i .0285	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.00058**	**.07217**	**4.9513**	**.03643**
Stddev	.00059	.00026	.00403	.0048	.00021
%RSD	24.261	44.916	5.5775	.09753	.57540
#1	.00202	.00077	.06933	4.9479	.03628
#2	.00285	.00040	.07502	4.9547	.03658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-B Acquired: 9/26/2019 17:46:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**83.122**	**.05270**	**.01053**	**54.659**	**.00563**
Stddev	.182	.00009	.00027	.489	.00040
%RSD	.21871	.17898	2.5922	.89393	7.0849
#1	82.993	.05263	.01033	54.313	.00535
#2	83.250	.05277	.01072	55.004	.00591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0418**	**-.00084**	F **267.1**	**-.00086**	**-.00724**
Stddev	.0016	.00057	.5	.00224	.00291
%RSD	3.794	68.746	.1789	261.79	40.250
#1	.0430	-.00043	266.7	-.00244	-.00930
#2	.0407	-.00124	267.4	.00073	-.00518
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.3288**	**.00124**	**3.3438**	**.0042**	**.00018**
Stddev	.0202	.00183	.0181	.0050	.00021
%RSD	.46600	147.35	.54184	118.9	121.95
#1	4.3146	-.00005	3.3309	.0077	.00033
#2	4.3431	.00254	3.3566	.0007	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-B Acquired: 9/26/2019 17:46:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	i **.0904**	**-.00025**	**.00941**	**.0007**
Stddev	.00036	.0580	.00027	.00224	.0004
%RSD	24.571	64.22	106.28	23.805	49.28
#1	-.00122	i .0493	-.00006	.00782	.0010
#2	-.00174	i .1314	-.00044	.01099	.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1593.1**	**522.46**	**35890.**	**4082.4**
Stddev	.4	1.13	184.	32.1
%RSD	.02594	.21618	.51182	.78731
#1	1593.4	523.26	36020.	4105.1
#2	1592.8	521.66	35760.	4059.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.260%	97.452%	92.364%	99.100%
Range				

Sample Name: 480-159611-C-2-Bsd@5 Acquired: 9/26/2019 17:50:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.01254**	**-.00414**	**.06002**	**.01599**
Stddev	.00033	.00840	.00052	.00098	.00003
%RSD	775.97	66.942	12.513	1.6340	.19948
#1	.00019	-.00661	-.00377	.06071	.01602
#2	-.00027	-.01848	-.00450	.05933	.01597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**52.580**	**.00022**	i **.0189**	**-.00006**
Stddev	.00002	.358	.00003	.0013	.00010
%RSD	47.382	.68092	11.984	6.738	164.93
#1	-.00003	52.833	.00024	i .0198	.00001
#2	-.00007	52.327	.00021	i .0180	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00037**	**.00632**	**.92567**	**.00698**
Stddev	.00027	.00001	.00208	.01986	.00005
%RSD	82.489	2.3493	32.831	2.1453	.76866
#1	.00013	-.00038	.00486	.91163	.00702
#2	.00051	-.00037	.00779	.93971	.00694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-Bsd@5 Acquired: 9/26/2019 17:50:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.662**	**.01028**	**.00159**	**10.431**	**.00075**
Stddev	.029	.00003	.00012	.040	.00006
%RSD	.18769	.28268	7.3665	.38317	7.5125
#1	15.683	.01030	.00151	10.459	.00071
#2	15.642	.01026	.00167	10.402	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0073**	**-.00094**	**48.33**	**-.00172**	**-.00670**
Stddev	.0061	.00151	.40	.00016	.00636
%RSD	84.47	161.03	.8252	9.2597	94.853
#1	.0116	.00013	48.61	-.00160	-.01119
#2	.0029	-.00201	48.05	-.00183	-.00221
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.82606**	**-.00056**	**.65973**	**.0054**	**-.00020**
Stddev	.02160	.00252	.00307	.0071	.00006
%RSD	2.6151	453.40	.46459	131.6	28.219
#1	.84133	.00123	.66189	.0004	-.00016
#2	.81078	-.00234	.65756	.0104	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-Bsd@5 Acquired: 9/26/2019 17:50:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	i **.0835**	**.00012**	**.00134**	**.0006**
Stddev	.00071	.1016	.00035	.00046	.0002
%RSD	202.24	121.7	296.56	34.541	33.29
#1	.00015	i .0116	-.00013	.00167	.0004
#2	-.00086	i .1554	.00036	.00101	.0007
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1756.8**	**557.67**	**38175.**	**4164.4**
Stddev	.4	.58	86.	25.6
%RSD	.02305	.10403	.22646	.61540
#1	1756.5	557.26	38114.	4146.3
#2	1757.1	558.08	38236.	4182.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.326%	104.02%	98.244%	101.09%
Range				

Sample Name: 480-159611-C-2-Bpds Acquired: 9/26/2019 17:54:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05413**	**10.833**	**.21040**	**.52225**	**.29719**
Stddev	.00075	.040	.00308	.00107	.00019
%RSD	1.3918	.37372	1.4618	.20440	.06397
#1	.05359	10.862	.21258	.52300	.29732
#2	.05466	10.805	.20823	.52149	.29705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20779**	**271.30**	**.20923**	i **.0068**	**.20423**
Stddev	.00006	.34	.00012	.0218	.00040
%RSD	.02776	.12540	.05595	322.2	.19772
#1	.20775	271.06	.20915	i -.0087	.20452
#2	.20783	271.54	.20932	i .0222	.20395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20331**	**.20255**	**10.330**	**15.259**	**.25578**
Stddev	.00031	.00054	.018	.016	.00071
%RSD	.15263	.26507	.16943	.10323	.27743
#1	.20353	.20293	10.317	15.270	.25629
#2	.20309	.20217	10.342	15.248	.25528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-Bpds Acquired: 9/26/2019 17:54:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**91.045**	**.25037**	**.21418**	**65.851**	**.21443**
Stddev	.263	.00136	.00099	.369	.00041
%RSD	.28842	.54483	.46296	.55989	.19125
#1	91.230	.25133	.21488	66.112	.21414
#2	90.859	.24940	.21348	65.590	.21472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4794**	**.20827**	F **267.6**	**.22579**	**.19952**
Stddev	.0012	.00221	.6	.00120	.00176
%RSD	.2605	1.0599	.2384	.53035	.88431
#1	-.4786	.20983	268.1	.22494	.20076
#2	-.4803	.20671	267.2	.22664	.19827
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.521**	**.20126**	**3.5237**	**.0110**	**.20068**
Stddev	.040	.00149	.0152	.0026	.00020
%RSD	.27585	.74213	.43017	23.21	.09794
#1	14.493	.20232	3.5130	.0092	.20082
#2	14.549	.20021	3.5345	.0128	.20055
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-Bpds Acquired: 9/26/2019 17:54:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20668**	i **-.0145**	**.21038**	**.21948**	**.0060**
Stddev	.00087	.2014	.00012	.00161	.0013
%RSD	.42309	1387.	.05557	.73151	20.99
#1	.20730	i -.1570	.21046	.22062	.0051
#2	.20607	i .1279	.21030	.21835	.0068
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1574.8**	**525.78**	**35831.**	**4009.6**
Stddev	3.4	.97	69.	9.8
%RSD	.21365	.18356	.19199	.24537
#1	1577.2	526.46	35782.	4016.6
#2	1572.4	525.10	35879.	4002.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.246%	98.071%	92.211%	97.333%
Range				

Sample Name: 480-159611-C-2-C MS Acquired: 9/26/2019 17:58:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.04834**	**9.3413**	**.19109**	**.47423**	**.26317**
Stddev	.00057	.0175	.00006	.00145	.00056
%RSD	1.1713	.18760	.03263	.30498	.21404
#1	.04794	9.3536	.19104	.47526	.26277
#2	.04874	9.3289	.19113	.47321	.26357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18393**	**248.58**	**.18593**	i **.0105**	**.17947**
Stddev	.00015	.35	.00015	.0036	.00074
%RSD	.08095	.13973	.08264	33.98	.41486
#1	.18383	248.34	.18582	i .0131	.17999
#2	.18404	248.83	.18604	i .0080	.17894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.17817**	**.17974**	**9.0931**	**13.623**	**.22430**
Stddev	.00052	.00156	.0048	.011	.00053
%RSD	.29398	.87026	.05307	.08390	.23485
#1	.17780	.17863	9.0965	13.631	.22467
#2	.17854	.18084	9.0896	13.614	.22393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-C MS Acquired: 9/26/2019 17:58:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**82.845**	**.22355**	**.19106**	**58.475**	**.18927**
Stddev	.283	.00039	.00049	.105	.00119
%RSD	.34173	.17424	.25462	.18010	.62665
#1	82.645	.22327	.19140	58.401	.18843
#2	83.045	.22382	.19071	58.550	.19011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4228**	**.18229**	F **248.3**	**.19813**	**.17536**
Stddev	.0057	.00146	.5	.00018	.00544
%RSD	1.359	.80229	.1946	.09089	3.1022
#1	-.4269	.18332	248.7	.19826	.17151
#2	-.4187	.18125	248.0	.19801	.17921
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.451**	**.17848**	**3.1627**	**.0079**	**.17832**
Stddev	.044	.00104	.0360	.0000	.00091
%RSD	.34985	.58114	1.1386	.2655	.50842
#1	12.420	.17921	3.1373	.0079	.17768
#2	12.482	.17774	3.1882	.0079	.17896
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-C MS Acquired: 9/26/2019 17:58:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18324**	i **.0552**	**.18237**	**.19215**	**.0009**
Stddev	.00040	.1471	.00028	.00160	.0004
%RSD	.21880	266.4	.15598	.83463	47.20
#1	.18352	i .1593	.18257	.19102	.0006
#2	.18296	i -.0488	.18217	.19329	.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1586.6**	**523.49**	**36080.**	**4054.0**
Stddev	1.6	.10	101.	13.0
%RSD	.10157	.01829	.28124	.32057
#1	1587.7	523.56	36152.	4063.2
#2	1585.4	523.43	36009.	4044.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.898%	97.645%	92.854%	98.411%
Range				

Sample Name: 480-159611-C-2-D MSD Acquired: 9/26/2019 18:01:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.05442	10.609	.20856	.53192	.29671
Stddev	.00006	.036	.00409	.00031	.00054
%RSD	.10686	.33646	1.9595	.05870	.18138
#1	.05437	10.634	.20567	.53214	.29709
#2	.05446	10.584	.21145	.53170	.29633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.20681	278.81	.20788	i .0188	.20186
Stddev	.00063	1.67	.00074	.0064	.00004
%RSD	.30522	.59964	.35413	34.10	.01749
#1	.20726	279.99	.20840	i .0143	.20183
#2	.20637	277.63	.20736	i .0233	.20188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.20097	.20263	10.204	15.419	.25443
Stddev	.00091	.00046	.033	.004	.00097
%RSD	.45144	.22861	.32052	.02887	.38318
#1	.20032	.20296	10.227	15.416	.25512
#2	.20161	.20231	10.180	15.422	.25374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-D MSD Acquired: 9/26/2019 18:01:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**93.093**	**.25005**	**.21390**	**66.654**	**.21187**
Stddev	.108	.00035	.00070	.020	.00003
%RSD	.11625	.13989	.32885	.02985	.01637
#1	93.170	.25030	.21440	66.640	.21189
#2	93.017	.24981	.21340	66.668	.21185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4640**	**.20336**	F **276.2**	**.22376**	**.20381**
Stddev	.0009	.00020	.7	.00278	.00526
%RSD	.1979	.09773	.2475	1.2442	2.5790
#1	-.4634	.20322	276.7	.22573	.20753
#2	-.4647	.20350	275.7	.22179	.20010
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.173**	**.20149**	**3.5956**	**.0008**	**.19989**
Stddev	.089	.00136	.0257	.0028	.00012
%RSD	.62725	.67694	.71463	359.1	.06009
#1	14.236	.20245	3.6138	.0028	.19980
#2	14.110	.20052	3.5775	-.0012	.19997
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-2-D MSD Acquired: 9/26/2019 18:01:50 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20351**	i **-.0042**	**.20558**	**.21533**	**.0018**
Stddev	.00109	.1033	.00056	.00152	.0003
%RSD	.53471	2476.	.27474	.70577	17.37
#1	.20274	i -.0772	.20518	.21641	.0015
#2	.20428	i .0689	.20598	.21426	.0020
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1577.2**	**524.10**	**35959.**	**4036.0**
Stddev	1.0	1.09	33.	1.9
%RSD	.06325	.20760	.09059	.04705
#1	1577.9	523.33	35936.	4034.6
#2	1576.5	524.87	35982.	4037.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.379%	97.758%	92.542%	97.973%
Range				

Sample Name: 480-159611-C-3-B Acquired: 9/26/2019 18:05:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.05279**	**.00190**	**.07371**	**.03166**
Stddev	.00003	.01811	.00021	.00042	.00007
%RSD	459.56	34.311	11.163	.56700	.22633
#1	.00003	.06560	.00175	.07341	.03171
#2	-.00002	.03998	.00205	.07400	.03161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**62.182**	**.00020**	i **.0125**	**.00025**
Stddev	.00002	.177	.00014	.0049	.00002
%RSD	143.49	.28534	71.423	39.55	8.1728
#1	.00003	62.308	.00010	i .0090	.00026
#2	-.00000	62.057	.00030	i .0159	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00071**	**.00045**	**.11495**	**11.471**	**.00492**
Stddev	.00008	.00003	.00220	.017	.00025
%RSD	11.392	7.1634	1.9161	.15040	5.0440
#1	.00076	.00043	.11650	11.483	.00474
#2	.00065	.00047	.11339	11.459	.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-3-B Acquired: 9/26/2019 18:05:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.864**	**.05627**	**.00176**	**2.8428**	**.00004**
Stddev	.007	.00005	.00034	.0123	.00051
%RSD	.06281	.09588	19.173	.43123	1346.2
#1	11.869	.05623	.00152	2.8342	.00040
#2	11.858	.05630	.00199	2.8515	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.8027**	**-.00220**	**19.80**	**.00115**	**-.00168**
Stddev	.0024	.00008	.02	.00202	.00524
%RSD	.2935	3.8310	.0912	175.94	312.95
#1	.8010	-.00214	19.79	-.00028	-.00538
#2	.8043	-.00226	19.82	.00257	.00203
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.75899**	**.00053**	**1.0195**	**.0047**	**.00128**
Stddev	.00336	.00056	.0005	.0090	.00005
%RSD	.44288	105.90	.04643	192.4	3.7124
#1	.76137	.00092	1.0198	.0110	.00131
#2	.75661	.00013	1.0191	-.0017	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159611-C-3-B Acquired: 9/26/2019 18:05:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	i **.0210**	**-.00004**	**.00824**	**.0003**
Stddev	.00189	.1290	.00023	.00120	.0009
%RSD	1638.1	614.5	595.77	14.519	288.4
#1	.00145	i -.0702	-.00020	.00909	-.0003
#2	-.00122	i .1122	.00013	.00740	.0010
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1734.7**	**552.20**	**38014.**	**4144.1**
Stddev	.8	.26	29.	7.0
%RSD	.04422	.04753	.07742	.16803
#1	1735.2	552.02	37993.	4139.1
#2	1734.2	552.39	38035.	4149.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.104%	103.00%	97.830%	100.60%
Range				

Sample Name: 480-158664-B-3-C Acquired: 9/26/2019 18:09:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**1.6546**	**-.00353**	**.01947**	**.06914**
Stddev	.00006	.0205	.00229	.00079	.00003
%RSD	102.48	1.2407	64.921	4.0366	.04131
#1	-.00009	1.6692	-.00514	.02002	.06912
#2	-.00001	1.6401	-.00191	.01891	.06916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**100.35**	**.00101**	i **.0085**	**.00010**
Stddev	.00001	.63	.00011	.0007	.00013
%RSD	13.850	.62946	11.348	8.496	132.83
#1	.00006	100.80	.00093	i .0090	.00001
#2	.00005	99.906	.00109	i .0080	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00287**	**.00500**	**1.3820**	**2.2559**	**.00526**
Stddev	.00058	.00013	.0030	.0109	.00047
%RSD	20.325	2.5639	.21951	.48325	8.9725
#1	.00246	.00491	1.3798	2.2481	.00493
#2	.00328	.00509	1.3841	2.2636	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158664-B-3-C Acquired: 9/26/2019 18:09:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**47.212**	**.03220**	**.00126**	**1.4395**	**.00392**
Stddev	.047	.00001	.00031	.0003	.00019
%RSD	.10032	.04528	25.007	.02135	4.8534
#1	47.178	.03221	.00103	1.4393	.00405
#2	47.245	.03219	.00148	1.4398	.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0248**	**.00265**	**6.467**	**-.00219**	**-.00660**
Stddev	.0016	.00053	.019	.00033	.00132
%RSD	6.596	19.909	.2903	15.098	20.002
#1	.0259	.00302	6.453	-.00242	-.00566
#2	.0236	.00228	6.480	-.00195	-.00753
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.2869**	**.00185**	**.13613**	**-.0007**	**.05104**
Stddev	.0845	.00010	.00017	.0065	.00351
%RSD	.90982	5.5804	.12723	946.2	6.8854
#1	9.3467	.00192	.13626	-.0053	.05353
#2	9.2272	.00178	.13601	.0039	.04856
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-158664-B-3-C Acquired: 9/26/2019 18:09:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	i **.0416**	**.00275**	**.02295**	**.0022**
Stddev	.00294	.0341	.00028	.00116	.0002
%RSD	234.37	82.03	10.155	5.0429	7.111
#1	-.00082	i .0657	.00255	.02377	.0023
#2	.00333	i .0175	.00294	.02213	.0020
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1692.0**	**549.85**	**37453.**	**4130.8**
Stddev	2.2	1.51	18.	17.0
%RSD	.13091	.27462	.04746	.41056
#1	1693.6	550.92	37466.	4118.8
#2	1690.4	548.79	37440.	4142.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.739%	102.56%	96.387%	100.27%
Range				

Sample Name: 480-159337-C-1-C Acquired: 9/26/2019 18:13:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00755**	**.00189**	**.27673**	**.03102**
Stddev	.00018	.00131	.00329	.00025	.00012
%RSD	92.442	17.341	173.79	.08928	.38544
#1	.00032	.00848	-.00043	.27655	.03111
#2	.00007	.00663	.00422	.27690	.03094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**1.0264**	**-.00007**	i **.0187**	**-.00003**
Stddev	.00017	.0047	.00011	.0004	.00008
%RSD	904.09	.45725	146.83	2.382	271.04
#1	.00010	1.0298	-.00015	i .0191	.00003
#2	-.00014	1.0231	.00000	i .0184	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00016**	**.01897**	**.47188**	**.00900**
Stddev	.00032	.00024	.00001	.00159	.00081
%RSD	66.664	145.41	.07458	.33635	8.9764
#1	.00025	-.00000	.01896	.47300	.00843
#2	.00071	.00033	.01898	.47076	.00957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159337-C-1-C Acquired: 9/26/2019 18:13:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18930**	**.00515**	**.00074**	**218.93**	**.00021**
Stddev	.00164	.00001	.00002	.73	.00008
%RSD	.86867	.22267	2.4692	.33450	39.222
#1	.19046	.00516	.00075	219.45	.00015
#2	.18814	.00514	.00072	218.41	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.1137**	**-.00007**	**.0993**	**-.00033**	**-.00451**
Stddev	.0040	.00164	.0063	.00082	.00368
%RSD	3.521	2356.5	6.336	249.02	81.611
#1	.1109	.00109	.1037	.00025	-.00191
#2	.1166	-.00123	.0948	-.00091	-.00711
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.4297**	**-.00124**	**.11324**	**-.0049**	**.00020**
Stddev	.0668	.00130	.00021	.0077	.00003
%RSD	1.9472	104.95	.18813	158.3	15.516
#1	3.4769	-.00032	.11339	.0006	.00018
#2	3.3825	-.00216	.11309	-.0103	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159337-C-1-C Acquired: 9/26/2019 18:13:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00171**	i **.0723**	**-.00019**	**.00129**	**.0011**
Stddev	.00164	.0301	.00033	.00017	.0010
%RSD	95.867	41.60	174.10	12.800	89.52
#1	-.00055	i .0935	-.00043	.00141	.0004
#2	-.00288	i .0510	.00004	.00118	.0019
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1654.0**	**553.36**	**36863.**	**4101.6**
Stddev	.1	1.25	6.	26.7
%RSD	.00467	.22633	.01533	.65205
#1	1654.0	554.24	36867.	4082.7
#2	1653.9	552.47	36859.	4120.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	91.633%	103.22%	94.867%	99.565%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 18:17:12 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99308**	**51.033**	**.93125**	**.95574**	**1.0289**	**.98761**	**50.224**	**.94335**
Stddev	.00155	.040	.00310	.00394	.0047	.00018	.001	.00305
%RSD	.15626	.07793	.33261	.41265	.45316	.01866	.00242	.32311
#1	.99198	51.061	.93344	.95295	1.0322	.98748	50.224	.94120
#2	.99418	51.005	.92906	.95852	1.0256	.98774	50.223	.94551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.9809**	**1.0016**	**.98107**	**.96126**	**48.990**	**48.553**	**1.0029**	**50.165**
Stddev	.0180	.0008	.00249	.00116	.067	.077	.0020	.023
%RSD	1.839	.07449	.25359	.12075	.13640	.15885	.19981	.04585
#1	i .9937	1.0011	.97931	.96208	48.943	48.607	1.0044	50.149
#2	i .9682	1.0021	.98282	.96044	49.038	48.498	1.0015	50.182
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98097**	**.94786**	**49.551**	**.98570**	**25.49**	**.99006**	**23.06**	**.95370**
Stddev	.00076	.00141	.122	.00019	.01	.00455	.10	.00339
%RSD	.07741	.14907	.24675	.01963	.0378	.45924	.4290	.35495
#1	.98044	.94686	49.637	.98556	25.49	.98685	22.99	.95130
#2	.98151	.94886	49.465	.98584	25.50	.99328	23.13	.95609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 18:17:12 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90588	10.142	.98980	1.0027	.9749	.96506	.99108	i 2.365
Stddev	.00026	.084	.00115	.0030	.0048	.00092	.00273	.097
%RSD	.02837	.82781	.11631	.29963	.4876	.09485	.27540	4.116
#1	.90606	10.083	.98899	1.0048	.9783	.96571	.98915	i 2.296
#2	.90570	10.202	.99062	1.0006	.9716	.96441	.99301	i 2.434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.98943	1.0132	.9695
Stddev	.00071	.0039	.0008
%RSD	.07181	.38795	.0819
#1	.98893	1.0104	.9689
#2	.98994	1.0159	.9700
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1640.7	562.22	37000.	4124.3
Stddev	2.9	.84	17.	4.7
%RSD	.17696	.14992	.04611	.11339
#1	1638.7	562.82	37012.	4121.0
#2	1642.8	561.63	36988.	4127.6

Sample Name: CCB-5508960 Acquired: 9/26/2019 18:20:53 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01629	.00211	-.00154	.00012	.00005	-.00046	.00001
Stddev	.00064	.01109	.00324	.00006	.00002	.00002	.00160	.00001
%RSD	1044.5	68.073	153.78	3.6678	14.842	34.083	346.29	123.45
#1	-.00039	.02414	-.00018	-.00150	.00011	.00006	.00067	.00000
#2	.00051	.00845	.00440	-.00158	.00014	.00004	-.00159	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0100	.00020	.00026	.00020	-.00136	-.03571	.00058	.00234
Stddev	.0038	.00003	.00006	.00025	.00341	.00148	.00022	.00167
%RSD	37.92	15.415	23.140	128.69	250.49	4.1397	38.920	71.558
#1	i .0126	.00022	.00022	.00002	.00105	-.03466	.00042	.00115
#2	i .0073	.00018	.00030	.00038	-.00378	-.03675	.00073	.00352
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00103	.07465	-.00012	.0002	-.00013	.0021	-.00192
Stddev	.00002	.00030	.00055	.00020	.0031	.00039	.0015	.00042
%RSD	13.146	29.316	.73353	168.70	1330.	291.75	68.68	21.742
#1	-.00017	.00082	.07504	.00002	-.0020	-.00041	.0032	-.00221
#2	-.00014	.00125	.07426	-.00026	.0025	.00014	.0011	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 18:20:53 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00271**	**-.03784**	**.00039**	**-.00004**	**-.0084**	**.00005**	**-.00021**	i **.0126**
Stddev	.00055	.00608	.00099	.00004	.0038	.00021	.00070	.0832
%RSD	20.140	16.058	254.88	99.987	45.43	431.15	342.09	662.5
#1	-.00232	-.03355	-.00031	-.00001	-.0057	-.00010	-.00070	i -.0463
#2	-.00310	-.04214	.00109	-.00007	-.0111	.00020	.00029	i .0714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00108**	**.0015**
Stddev	.00023	.00146	.0010
%RSD	490.57	135.33	70.28
#1	-.00021	.00005	.0022
#2	.00012	.00210	.0007
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1797.5**	**575.76**	**39303.**	**4142.9**
Stddev	5.3	.90	244.	19.0
%RSD	.29490	.15660	.62194	.45971
#1	1801.2	576.40	39130.	4129.5
#2	1793.7	575.12	39476.	4156.4

Sample Name: CCVL-5514926 Acquired: 9/26/2019 18:24:44 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00640	.20495	.01556	.01820	.00220	.00212	.53304	.00202
Stddev	.00003	.00606	.00365	.00013	.00001	.00001	.00164	.00000
%RSD	.48806	2.9547	23.458	.71145	.56583	.62034	.30787	.16312
#1	.00642	.20923	.01298	.01829	.00221	.00211	.53188	.00202
#2	.00638	.20067	.01814	.01811	.00220	.00213	.53420	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0161	.00416	.00432	.00961	.04944	.48649	.03131	.21938
Stddev	.0018	.00029	.00044	.00006	.00397	.02427	.00007	.00063
%RSD	11.14	7.0069	10.221	.66041	8.0369	4.9887	.23809	.28858
#1	i .0174	.00437	.00401	.00966	.04663	.46933	.03126	.21893
#2	i .0148	.00396	.00463	.00957	.05225	.50365	.03136	.21983
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	.00966	1.0629	.00984	-.0327	.00938	.1883	.02087
Stddev	.00009	.00012	.0055	.00013	.0016	.00072	.0069	.00330
%RSD	3.1455	1.1966	.52092	1.2775	5.010	7.7218	3.682	15.828
#1	.00307	.00974	1.0668	.00993	-.0315	.00989	.1932	.02320
#2	.00293	.00957	1.0590	.00976	-.0338	.00887	.1834	.01853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 18:24:44 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02391**	**.48028**	**.00908**	**.00500**	**.0013**	**.00470**	**.01989**	i **.0144**
Stddev	.00325	.01808	.00011	.00002	.0058	.00015	.00066	.1680
%RSD	13.579	3.7651	1.2587	.38521	429.3	3.1960	3.3211	1168.
#1	.02161	.46749	.00900	.00498	-.0027	.00460	.01943	i .1331
#2	.02620	.49307	.00916	.00501	.0054	.00481	.02036	i -.1044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00480**	**.01060**	**.0010**
Stddev	.00035	.00007	.0006
%RSD	7.3224	.66019	57.40
#1	.00505	.01055	.0014
#2	.00455	.01065	.0006
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1806.4**	**576.85**	**38952.**	**4145.9**
Stddev	1.7	3.27	19.	2.0
%RSD	.09659	.56644	.04984	.04741
#1	1805.2	574.54	38939.	4147.3
#2	1807.6	579.16	38966.	4144.5

Sample Name: MB 480-494147/1-A Acquired: 9/26/2019 18:28:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00862**	**-.00035**	**.00137**	**.00003**
Stddev	.00024	.00566	.00187	.00031	.00001
%RSD	111.08	65.622	527.74	22.449	20.669
#1	-.00005	.00462	.00097	.00158	.00003
#2	-.00038	.01262	-.00167	.00115	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.06027**	**-.00002**	i **.0035**	**.00008**
Stddev	.00002	.00189	.00002	.0037	.00005
%RSD	113.32	3.1379	74.987	106.2	58.584
#1	.00004	.05893	-.00004	i .0009	.00012
#2	.00000	.06161	-.00001	i .0061	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00049**	**.00084**	**.00332**	**.00066**
Stddev	.00016	.00014	.00216	.01048	.00036
%RSD	25.285	28.373	259.05	315.09	55.332
#1	.00075	.00039	.00236	-.00408	.00091
#2	.00052	.00059	-.00069	.01073	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494147/1-A Acquired: 9/26/2019 18:28:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00480**	**-.00029**	**-.00051**	**.11062**	**-.00001**
Stddev	.00187	.00007	.00005	.00594	.00007
%RSD	38.891	23.824	9.8428	5.3690	515.95
#1	.00348	-.00034	-.00055	.11482	.00003
#2	.00612	-.00024	-.00048	.10642	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0055**	**-.00081**	**.0080**	**-.00071**	**.00019**
Stddev	.0036	.00103	.0009	.00241	.00098
%RSD	66.34	127.62	11.40	339.94	503.03
#1	-.0081	-.00154	.0087	-.00242	-.00050
#2	-.0029	-.00008	.0074	.00100	.00089
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01870**	**-.00157**	**.00017**	**.0095**	**-.00027**
Stddev	.01715	.00004	.00001	.0054	.00014
%RSD	91.692	2.5427	6.4866	56.90	51.958
#1	-.03082	-.00159	.00016	.0134	-.00017
#2	-.00658	-.00154	.00017	.0057	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494147/1-A Acquired: 9/26/2019 18:28:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	i **.0343**	**-.00027**	**.00319**	**.0002**
Stddev	.00184	.0361	.00035	.00034	.0010
%RSD	217.79	105.3	128.92	10.518	524.9
#1	.00046	i .0088	-.00052	.00295	.0009
#2	-.00214	i .0599	-.00002	.00343	-.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1795.0**	**576.14**	**39245.**	**4195.2**
Stddev	1.6	1.76	28.	.6
%RSD	.08838	.30512	.07100	.01456
#1	1793.9	574.90	39264.	4195.6
#2	1796.2	577.38	39225.	4194.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.446%	107.46%	101.00%	101.84%
Range				

Sample Name: LCS 480-494147/2-A Acquired: 9/26/2019 18:32:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05246**	**10.175**	**.19177**	**.19923**	**.21386**
Stddev	.00005	.014	.00318	.00098	.00017
%RSD	.10344	.14234	1.6567	.49290	.08172
#1	.05250	10.165	.18953	.19853	.21398
#2	.05242	10.185	.19402	.19992	.21373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20457**	**10.275**	**.19566**	i **.0143**	**.19657**
Stddev	.00077	.051	.00026	.0124	.00074
%RSD	.37817	.49341	.13532	87.25	.37638
#1	.20512	10.311	.19585	i .0230	.19710
#2	.20402	10.239	.19548	i .0055	.19605
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19748**	**.19113**	**10.043**	**9.6841**	**.20570**
Stddev	.00015	.00015	.017	.0328	.00049
%RSD	.07497	.07814	.17279	.33859	.23863
#1	.19758	.19103	10.055	9.7073	.20605
#2	.19737	.19124	10.031	9.6609	.20535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494147/2-A Acquired: 9/26/2019 18:32:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.335**	**.19770**	**.19580**	**9.8128**	**.20144**
Stddev	.007	.00060	.00033	.0177	.00006
%RSD	.07041	.30425	.16623	.18076	.03121
#1	10.330	.19728	.19557	9.8254	.20149
#2	10.340	.19813	.19603	9.8003	.20140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5649**	**.19713**	**9.641**	**.21398**	**.18121**
Stddev	.0028	.00252	.025	.00310	.00207
%RSD	.4905	1.2792	.2620	1.4507	1.1427
#1	-.5669	.19535	9.623	.21178	.17974
#2	-.5630	.19892	9.659	.21617	.18267
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.6646**	**.19172**	**.19894**	**.0094**	**.19404**
Stddev	.0358	.00103	.00044	.0055	.00018
%RSD	.37087	.53933	.21877	58.88	.09222
#1	9.6899	.19098	.19925	.0055	.19416
#2	9.6392	.19245	.19864	.0133	.19391
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494147/2-A Acquired: 9/26/2019 18:32:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19475**	i **.0205**	**.20001**	**.21500**	**.0050**
Stddev	.00126	.0379	.00024	.00447	.0018
%RSD	.64639	184.8	.12147	2.0783	35.94
#1	.19386	i -.0063	.19984	.21184	.0063
#2	.19564	i .0473	.20019	.21816	.0037
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1760.6**	**571.02**	**38640.**	**4196.8**
Stddev	.6	1.51	29.	8.1
%RSD	.03202	.26527	.07574	.19188
#1	1760.2	572.09	38661.	4191.1
#2	1761.0	569.95	38619.	4202.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.538%	106.51%	99.441%	101.88%
Range				

Sample Name: 480-159680-B-1-A Acquired: 9/26/2019 18:36:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.02476**	**.84963**	**.01082**	**.02962**	**.01982**
Stddev	.00020	.00082	.00142	.00001	.00007
%RSD	.79903	.09657	13.138	.01709	.37782
#1	.02462	.85021	.01183	.02962	.01977
#2	.02490	.84905	.00982	.02962	.01987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**1.8477**	**.00022**	i **.0143**	**.00005**
Stddev	.00005	.0033	.00001	.0077	.00021
%RSD	143.42	.17708	3.0589	53.93	432.09
#1	-.00000	1.8454	.00022	i .0088	.00020
#2	.00007	1.8500	.00023	i .0197	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01202**	**.08287**	**.99594**	**89.415**	**.00118**
Stddev	.00048	.00026	.00204	.138	.00054
%RSD	4.0014	.31859	.20496	.15457	45.638
#1	.01236	.08268	.99449	89.317	.00156
#2	.01168	.08306	.99738	89.513	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-A Acquired: 9/26/2019 18:36:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.53153**	**.01340**	**.00368**	**309.76**	**.01180**
Stddev	.00136	.00006	.00015	.12	.00025
%RSD	.25570	.47675	3.9595	.03767	2.1236
#1	.53057	.01335	.00357	309.68	.01198
#2	.53250	.01344	.00378	309.84	.01162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.2032**	**.00505**	F **285.2**	**.00046**	**.00489**
Stddev	.0010	.00092	2.1	.00044	.00359
%RSD	.5097	18.157	.7224	96.183	73.432
#1	.2039	.00570	283.7	.00015	.00235
#2	.2025	.00440	286.6	.00077	.00743
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3776**	**.31158**	**.01251**	**.0071**	**.00409**
Stddev	.0316	.00100	.00005	.0040	.00029
%RSD	.58812	.32140	.36487	57.07	7.0247
#1	5.3552	.31229	.01248	.0099	.00429
#2	5.3999	.31087	.01254	.0042	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-A Acquired: 9/26/2019 18:36:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00205**	i **-.0130**	**.00122**	**.05958**	**.0019**
Stddev	.00033	.0050	.00005	.00065	.0004
%RSD	16.286	38.66	3.7802	1.0906	18.73
#1	-.00181	i -.0094	.00118	.05912	.0017
#2	-.00229	i -.0165	.00125	.06004	.0022
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1617.1**	**545.17**	**36378.**	**4164.8**
Stddev	1.7	2.29	155.	15.2
%RSD	.10677	.42096	.42550	.36573
#1	1618.3	546.80	36487.	4175.6
#2	1615.8	543.55	36268.	4154.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.587%	101.69%	93.619%	101.10%
Range				

Sample Name: 480-159680-B-1-Asd@5 Acquired: 9/26/2019 18:39:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00519**	**.16515**	**.00104**	**.00556**	**.00407**
Stddev	.00011	.02867	.00124	.00046	.00000
%RSD	2.1943	17.360	119.53	8.2505	.11907
#1	.00528	.18542	.00191	.00588	.00407
#2	.00511	.14488	.00016	.00524	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.39287**	**.00000**	i **.0088**	**.00009**
Stddev	.00004	.00478	.00007	.0011	.00005
%RSD	156.03	1.2168	1581.3	11.99	51.538
#1	-.00000	.39625	-.00004	i .0096	.00006
#2	.00005	.38949	.00005	i .0081	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00222**	**.01606**	**.19390**	**17.498**	**.00056**
Stddev	.00052	.00011	.00343	.048	.00074
%RSD	23.237	.70781	1.7710	.27235	131.47
#1	.00258	.01614	.19147	17.532	.00108
#2	.00185	.01598	.19633	17.464	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-Asd@5 Acquired: 9/26/2019 18:39:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11046**	**.00247**	**.00019**	**61.726**	**.00198**
Stddev	.00296	.00004	.00039	.270	.00009
%RSD	2.6823	1.8069	201.86	.43715	4.4417
#1	.11256	.00250	.00047	61.535	.00204
#2	.10837	.00244	-.00008	61.917	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0338**	**.00052**	**56.85**	**-.00145**	**-.00151**
Stddev	.0001	.00060	.05	.00093	.00109
%RSD	.3819	114.00	.0830	64.250	71.962
#1	.0339	.00010	56.82	-.00210	-.00074
#2	.0337	.00095	56.88	-.00079	-.00228
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.1586**	**.06064**	**.00262**	**.0079**	**.00093**
Stddev	.0073	.00036	.00002	.0073	.00012
%RSD	.63389	.58596	.72854	91.73	12.858
#1	1.1638	.06089	.00261	.0028	.00101
#2	1.1534	.06039	.00263	.0131	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-Asd@5 Acquired: 9/26/2019 18:39:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00170**	i **.0464**	**.00029**	**.00959**	**.0012**
Stddev	.00145	.0335	.00040	.00058	.0008
%RSD	85.089	72.23	139.97	6.0232	70.23
#1	-.00273	i .0227	.00057	.00918	.0018
#2	-.00068	i .0701	.00000	.01000	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1738.9**	**565.38**	**38334.**	**4190.6**
Stddev	1.9	1.09	71.	26.7
%RSD	.10869	.19228	.18400	.63732
#1	1737.6	566.15	38384.	4171.7
#2	1740.2	564.61	38284.	4209.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.337%	105.46%	98.654%	101.73%
Range				

Sample Name: 480-159680-B-1-Apds Acquired: 9/26/2019 18:43:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.07664**	**11.122**	**.21786**	**.23167**	**.23402**
Stddev	.00087	.013	.00011	.00075	.00006
%RSD	1.1396	.11498	.05057	.32271	.02620
#1	.07602	11.131	.21779	.23220	.23406
#2	.07725	11.113	.21794	.23114	.23398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21194**	**12.191**	**.20404**	i **-.0069**	**.20595**
Stddev	.00046	.010	.00089	.0227	.00022
%RSD	.21557	.08351	.43567	327.6	.10626
#1	.21162	12.199	.20467	i .0091	.20580
#2	.21226	12.184	.20341	i -.0230	.20611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21522**	**.28094**	**11.206**	**96.460**	**.21616**
Stddev	.00124	.00012	.006	.083	.00053
%RSD	.57565	.04239	.05096	.08587	.24351
#1	.21435	.28103	11.210	96.518	.21579
#2	.21610	.28086	11.202	96.401	.21654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-Apds Acquired: 9/26/2019 18:43:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.440**	**.21392**	**.20738**	**306.76**	**.22032**
Stddev	.004	.00058	.00108	.04	.00015
%RSD	.03951	.27337	.51988	.01373	.06866
#1	10.437	.21351	.20814	306.73	.22043
#2	10.443	.21433	.20661	306.79	.22021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.3369**	**.20548**	F **286.3**	**.22087**	**.22649**
Stddev	.0019	.00213	1.3	.00070	.00260
%RSD	.5724	1.0390	.4542	.31859	1.1498
#1	-.3382	.20397	287.2	.22038	.22833
#2	-.3355	.20699	285.4	.22137	.22465
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.470**	**.49785**	**.21595**	**.0109**	**.20646**
Stddev	.023	.00270	.00021	.0061	.00088
%RSD	.14568	.54238	.09901	55.44	.42466
#1	15.486	.49976	.21610	.0152	.20584
#2	15.454	.49594	.21580	.0066	.20708
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-Apds Acquired: 9/26/2019 18:43:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19443**	i **-.0974**	**.21199**	**.27479**	**.0032**
Stddev	.00053	.0752	.00046	.00138	.0007
%RSD	.27316	77.18	.21579	.50366	20.16
#1	.19480	i -.0442	.21167	.27381	.0037
#2	.19405	i -.1505	.21231	.27577	.0028
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1605.7**	**542.70**	**36342.**	**4202.6**
Stddev	1.7	1.13	105.	4.0
%RSD	.10617	.20859	.28784	.09542
#1	1606.9	541.90	36416.	4205.5
#2	1604.5	543.50	36268.	4199.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.959%	101.23%	93.528%	102.02%
Range				

Sample Name: 480-159680-B-1-B MS Acquired: 9/26/2019 18:47:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.08384**	**11.190**	**.21626**	**.22978**	**.23438**
Stddev	.00014	.013	.00338	.00076	.00007
%RSD	.16524	.11849	1.5630	.33216	.02919
#1	.08394	11.181	.21387	.22924	.23443
#2	.08375	11.200	.21865	.23032	.23433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20631**	**12.050**	**.19724**	i **.0074**	**.19962**
Stddev	.00021	.050	.00080	.0131	.00067
%RSD	.10337	.41115	.40468	177.5	.33588
#1	.20646	12.085	.19667	i .0167	.20009
#2	.20616	12.015	.19780	i -.0019	.19914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20221**	**.28176**	**11.044**	**101.59**	**.21398**
Stddev	.00076	.00067	.055	.06	.00030
%RSD	.37451	.23765	.49842	.05903	.13887
#1	.20274	.28129	11.083	101.63	.21377
#2	.20167	.28223	11.005	101.55	.21419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-B MS Acquired: 9/26/2019 18:47:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.132**	**.20765**	**.19966**	**331.03**	**.20951**
Stddev	.027	.00019	.00022	.39	.00046
%RSD	.26261	.08931	.10837	.11644	.21939
#1	10.150	.20778	.19950	330.76	.20984
#2	10.113	.20752	.19981	331.30	.20919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.3077**	**.19991**	F **300.9**	**.21298**	**.21705**
Stddev	.0055	.00136	.6	.00387	.00316
%RSD	1.793	.67816	.2073	1.8188	1.4579
#1	-.3116	.19896	300.4	.21572	.21482
#2	-.3038	.20087	301.3	.21024	.21929
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.185**	**.55087**	**.21616**	**-.0044**	**.19987**
Stddev	.028	.00195	.00041	.0050	.00059
%RSD	.16547	.35351	.18957	113.1	.29436
#1	17.205	.55224	.21587	-.0079	.19946
#2	17.165	.54949	.21645	-.0009	.20029
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-B MS Acquired: 9/26/2019 18:47:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18596**	i **-.0534**	**.20706**	**.27080**	**.0019**
Stddev	.00307	.0455	.00137	.00175	.0001
%RSD	1.6512	85.18	.65941	.64475	7.574
#1	.18813	i -.0212	.20610	.27203	.0020
#2	.18379	i -.0855	.20803	.26956	.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1606.5**	**545.72**	**36290.**	**4171.5**
Stddev	1.0	1.32	2.	5.9
%RSD	.05969	.24099	.00599	.14256
#1	1605.8	546.65	36291.	4175.7
#2	1607.2	544.79	36288.	4167.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.002%	101.79%	93.392%	101.26%
Range				

Sample Name: 480-159680-B-1-C MSD Acquired: 9/26/2019 18:51:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.07695**	**10.338**	**.19833**	**.21222**	**.21353**
Stddev	.00017	.055	.00285	.00041	.00030
%RSD	.21559	.53581	1.4375	.19493	.13950
#1	.07706	10.377	.19632	.21251	.21374
#2	.07683	10.298	.20035	.21193	.21332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19187**	**11.193**	**.18389**	i **.0074**	**.18570**
Stddev	.00024	.056	.00026	.0069	.00031
%RSD	.12485	.50416	.13879	93.22	.16679
#1	.19204	11.233	.18407	i .0122	.18592
#2	.19170	11.153	.18371	i .0025	.18548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18797**	**.26208**	**10.224**	**93.100**	**.19775**
Stddev	.00006	.00067	.038	.125	.00036
%RSD	.03422	.25415	.36840	.13400	.18140
#1	.18802	.26255	10.251	93.189	.19800
#2	.18793	.26161	10.198	93.012	.19749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-C MSD Acquired: 9/26/2019 18:51:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.5024**	**.19267**	**.18667**	**300.99**	**.19507**
Stddev	.0019	.00026	.00031	1.79	.00016
%RSD	.01943	.13381	.16343	.59429	.07992
#1	9.5011	.19249	.18645	302.26	.19518
#2	9.5037	.19285	.18688	299.73	.19496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.2970**	**.18518**	F **276.8**	**.19936**	**.20568**
Stddev	.0037	.00043	.9	.00116	.00214
%RSD	1.240	.23461	.3237	.57936	1.0385
#1	-.2996	.18548	276.2	.20018	.20719
#2	-.2944	.18487	277.5	.19855	.20417
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.754**	**.49794**	**.19805**	**.0067**	**.18535**
Stddev	.005	.00092	.00050	.0032	.00020
%RSD	.03443	.18410	.25237	48.35	.10570
#1	15.758	.49859	.19840	.0090	.18521
#2	15.750	.49729	.19769	.0044	.18549
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159680-B-1-C MSD Acquired: 9/26/2019 18:51:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.17304**	i **-.0486**	**.19046**	**.25580**	**.0028**
Stddev	.00183	.1363	.00001	.00144	.0003
%RSD	1.0561	280.4	.00548	.56319	10.46
#1	.17175	i -.1450	.19047	.25682	.0030
#2	.17434	i .0478	.19045	.25478	.0026
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1617.5**	**548.27**	**36595.**	**4192.7**
Stddev	.1	.82	29.	16.4
%RSD	.00309	.14880	.08008	.39051
#1	1617.5	548.84	36574.	4181.1
#2	1617.4	547.69	36616.	4204.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.609%	102.27%	94.179%	101.78%
Range				

Sample Name: 480-159672-B-1-A Acquired: 9/26/2019 18:55:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**1.9051**	**.00018**	**.01002**	**.02561**
Stddev	.00003	.0083	.00017	.00049	.00011
%RSD	28.977	.43425	95.151	4.9019	.44707
#1	-.00009	1.8992	.00006	.01037	.02569
#2	-.00014	1.9109	.00030	.00968	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**8.2578**	**.00011**	i **.0353**	**.00055**
Stddev	.00001	.0534	.00002	.0033	.00006
%RSD	11.629	.64642	17.650	9.276	11.831
#1	.00011	8.2955	.00010	i .0330	.00050
#2	.00013	8.2200	.00013	i .0376	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.02066**	**.01620**	**1.4430**	**2.1287**	**.00864**
Stddev	.00046	.00007	.0037	.0089	.00091
%RSD	2.2142	.41319	.25348	.41631	10.536
#1	.02034	.01616	1.4456	2.1225	.00800
#2	.02099	.01625	1.4404	2.1350	.00928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159672-B-1-A Acquired: 9/26/2019 18:55:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.3612**	**.10853**	**-.00004**	**39.301**	**.00047**
Stddev	.0058	.00021	.00011	.041	.00032
%RSD	.42484	.19481	288.30	.10460	68.743
#1	1.3653	.10868	-.00011	39.272	.00024
#2	1.3571	.10838	.00004	39.331	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0269**	**.00055**	**2.409**	**.00244**	**-.00645**
Stddev	.0030	.00255	.010	.00133	.00288
%RSD	11.03	460.34	.4175	54.601	44.644
#1	.0290	-.00125	2.402	.00339	-.00442
#2	.0248	.00235	2.416	.00150	-.00849
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.4942**	**-.00026**	**.05192**	**.0071**	**.07614**
Stddev	.0286	.00110	.00015	.0033	.00068
%RSD	.63758	428.61	.28819	46.17	.88906
#1	4.5145	.00052	.05181	.0048	.07662
#2	4.4739	-.00104	.05202	.0094	.07566
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159672-B-1-A Acquired: 9/26/2019 18:55:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	i **.0308**	**.00171**	**.01332**	**.0023**
Stddev	.00252	.0408	.00010	.00052	.0007
%RSD	1771.2	132.1	5.6285	3.8786	31.85
#1	.00164	i .0597	.00164	.01295	.0028
#2	-.00192	i .0020	.00178	.01368	.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1767.6**	**580.94**	**38904.**	**4247.7**
Stddev	.7	1.34	72.	18.6
%RSD	.04167	.23148	.18564	.43879
#1	1767.1	581.89	38853.	4234.5
#2	1768.2	579.98	38956.	4260.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.928%	108.36%	100.12%	103.11%
Range				

Sample Name: 480-159689-A-1-A Acquired: 9/26/2019 18:58:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**2.7201**	**.21385**	**.01753**	**.02234**
Stddev	.00012	.0205	.00041	.00043	.00000
%RSD	29.291	.75482	.19109	2.4368	.00557
#1	.00049	2.7346	.21414	.01723	.02234
#2	.00032	2.7056	.21356	.01783	.02234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**28.288**	**.00041**	i **.0147**	**.00087**
Stddev	.00000	.150	.00004	.0063	.00018
%RSD	.97672	.53191	9.5060	42.95	20.258
#1	.00010	28.395	.00043	i .0102	.00074
#2	.00010	28.182	.00038	i .0192	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00447**	**.01241**	**3.3318**	**2.4017**	**.00455**
Stddev	.00017	.00006	.0381	.0085	.00129
%RSD	3.7106	.49916	1.1419	.35338	28.397
#1	.00459	.01236	3.3587	2.4077	.00546
#2	.00435	.01245	3.3049	2.3957	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159689-A-1-A Acquired: 9/26/2019 18:58:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.683**	**.16768**	**-.00014**	**4.0934**	**.00349**
Stddev	.008	.00008	.00008	.0267	.00021
%RSD	.06487	.04951	56.159	.65097	5.8820
#1	12.689	.16774	-.00019	4.1123	.00334
#2	12.677	.16762	-.00008	4.0746	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.2636**	**.02138**	**4.445**	**.00117**	**-.00595**
Stddev	.0028	.00126	.019	.00166	.00083
%RSD	1.049	5.8953	.4227	141.88	13.990
#1	.2616	.02049	4.459	.00235	-.00536
#2	.2655	.02227	4.432	-.00000	-.00653
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.2371**	**.00165**	**.03388**	**-.0018**	**.05168**
Stddev	.0419	.00120	.00020	.0096	.00190
%RSD	.98852	72.436	.59706	528.3	3.6804
#1	4.2668	.00081	.03402	-.0086	.05033
#2	4.2075	.00250	.03373	.0050	.05302
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159689-A-1-A Acquired: 9/26/2019 18:58:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	i **-.0503**	**.00664**	**.16778**	**.0022**
Stddev	.00215	.0589	.00007	.00177	.0006
%RSD	1150.4	117.3	1.0988	1.0573	27.16
#1	-.00170	i -.0919	.00659	.16903	.0018
#2	.00133	i -.0086	.00669	.16653	.0026
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1777.0**	**580.87**	**39008.**	**4261.4**
Stddev	1.0	.13	14.	26.5
%RSD	.05867	.02220	.03674	.62187
#1	1777.7	580.97	39018.	4242.6
#2	1776.2	580.78	38998.	4280.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.445%	108.35%	100.39%	103.44%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 19:02:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99497**	**51.605**	**.90914**	**.94155**	**1.0378**	**.98734**	**50.645**
Stddev	.00335	.045	.00493	.00089	.0015	.00116	.062
%RSD	.33654	.08710	.54174	.09455	.14476	.11710	.12208
#1	.99260	51.574	.90566	.94092	1.0367	.98816	50.688
#2	.99734	51.637	.91263	.94218	1.0389	.98652	50.601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93160**	i **1.014**	**1.0060**	**.96923**	**.95384**	**49.140**	**48.562**
Stddev	.00159	.016	.0002	.00139	.00051	.134	.012
%RSD	.17104	1.596	.01863	.14352	.05396	.27363	.02434
#1	.93047	i 1.026	1.0058	.96825	.95421	49.045	48.554
#2	.93273	i 1.003	1.0061	.97022	.95348	49.235	48.570
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**50.135**	**.97373**	**.93016**	**49.631**	**.98564**	**25.76**
Stddev	.0003	.133	.00176	.00174	.052	.00168	.05
%RSD	.02867	.26473	.18055	.18756	.10561	.17027	.1786
#1	1.0119	50.042	.97249	.92893	49.594	.98446	25.73
#2	1.0115	50.229	.97498	.93140	49.668	.98683	25.80
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/26/2019 19:02:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99241	22.63	.94892	F .88253	10.280	.99169	1.0038
Stddev	.00160	.03	.00318	.00349	.032	.00166	.0014
%RSD	.16080	.1204	.33559	.39489	.31554	.16773	.14005
#1	.99128	22.62	.94666	.88500	10.257	.99051	1.0028
#2	.99354	22.65	.95117	.88007	10.302	.99286	1.0048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.0000			
Range				-10.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9843	.95743	.98697	i 2.349	.97868	1.0099	.9557
Stddev	.0112	.00011	.00228	.074	.00193	.0027	.0009
%RSD	1.143	.01192	.23120	3.138	.19676	.26345	.0906
#1	.9923	.95751	.98858	i 2.401	.97732	1.0080	.9551
#2	.9763	.95735	.98535	i 2.297	.98005	1.0118	.9563
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1650.7	576.83	37466.	4144.0
Stddev	1.5	.15	110.	8.6
%RSD	.08932	.02600	.29283	.20722
#1	1649.6	576.72	37544.	4137.9
#2	1651.7	576.93	37389.	4150.0

Sample Name: CCB-5508960 Acquired: 9/26/2019 19:06:26 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00186**	**.00091**	**-.00200**	**.00015**	**.00010**	**-.00087**	**.00008**
Stddev	.00012	.00805	.00042	.00002	.00001	.00000	.00056	.00015
%RSD	217.75	432.56	45.946	.91311	4.7694	1.4430	64.338	193.19
#1	.00003	.00755	.00120	-.00201	.00015	.00010	-.00126	.00019
#2	-.00014	-.00383	.00061	-.00198	.00016	.00010	-.00047	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0330**	**.00012**	**-.00005**	**-.00007**	**-.00145**	**.00130**	**.00055**	**.00058**
Stddev	.0060	.00002	.00030	.00033	.00049	.01450	.00004	.00454
%RSD	18.10	14.023	624.59	469.58	33.791	1112.6	6.8741	785.00
#1	i .0372	.00011	-.00026	.00016	-.00179	.01156	.00053	.00379
#2	i .0288	.00013	.00017	-.00030	-.00110	-.00895	.00058	-.00263
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00119**	**.06752**	**-.00025**	**.0014**	**-.00104**	**.0098**	**-.00161**
Stddev	.00002	.00028	.00515	.00019	.0001	.00023	.0016	.00159
%RSD	35.134	23.893	7.6302	75.887	9.003	22.202	16.79	98.432
#1	-.00004	.00099	.06388	-.00012	.0013	-.00087	.0086	-.00049
#2	-.00007	.00139	.07116	-.00038	.0015	-.00120	.0109	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 19:06:26 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	-.01924	-.00052	.00006	.0002	.00015	.00159	i .0890
Stddev	.00462	.01043	.00119	.00000	.0075	.00043	.00021	.0652
%RSD	475.72	54.188	230.51	3.4061	4198.	280.98	13.465	73.25
#1	-.00230	-.01187	-.00136	.00005	-.0052	-.00015	.00174	i .1352
#2	.00424	-.02661	.00033	.00006	.0055	.00045	.00144	i .0429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	-.00011	.00193	.0023
Stddev	.00010	.00023	.0007
%RSD	87.299	12.168	30.83
#1	-.00018	.00176	.0028
#2	-.00004	.00209	.0018
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1806.9	588.65	39409.	4151.8
Stddev	.0	.60	30.	7.9
%RSD	.00184	.10141	.07558	.19001
#1	1806.9	589.07	39430.	4146.2
#2	1807.0	588.23	39387.	4157.4

Sample Name: CCVL-5514926 Acquired: 9/26/2019 19:10:17 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00663	.21107	.01329	.01751	.00223	.00216	.54044	.00201
Stddev	.00046	.01284	.00028	.00006	.00002	.00003	.00572	.00005
%RSD	6.8674	6.0826	2.1108	.31871	.93773	1.1830	1.0589	2.6834
#1	.00631	.20199	.01349	.01747	.00221	.00218	.54449	.00205
#2	.00695	.22014	.01309	.01754	.00224	.00214	.53640	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0171	.00381	.00406	.00925	.05098	.47680	.03018	.21799
Stddev	.0047	.00027	.00011	.00035	.00227	.00544	.00034	.00236
%RSD	27.66	7.0195	2.8118	3.7868	4.4506	1.1410	1.1186	1.0809
#1	i .0204	.00400	.00398	.00950	.05258	.48065	.02994	.21966
#2	i .0138	.00362	.00414	.00900	.04937	.47296	.03042	.21633
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00308	.00960	1.0570	.01036	-.0271	.01008	.1977	.01777
Stddev	.00001	.00006	.0048	.00003	.0048	.00169	.0008	.00125
%RSD	.20108	.65790	.45814	.33664	17.73	16.729	.4145	7.0517
#1	.00308	.00956	1.0536	.01039	-.0305	.01128	.1971	.01866
#2	.00307	.00965	1.0604	.01034	-.0237	.00889	.1983	.01688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 19:10:17 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02160	.47399	.00902	.00498	.0075	.00463	.01834	i .0532
Stddev	.00125	.00316	.00069	.00000	.0039	.00016	.00057	.0311
%RSD	5.8030	.66616	7.6330	.08528	51.49	3.5144	3.0989	58.44
#1	.02248	.47175	.00951	.00497	.0048	.00451	.01794	i .0312
#2	.02071	.47622	.00854	.00498	.0103	.00474	.01874	i .0752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00479	.01115	.0020
Stddev	.00026	.00067	.0005
%RSD	5.4117	5.9729	24.44
#1	.00460	.01162	.0017
#2	.00497	.01068	.0024
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1816.6	586.33	39435.	4149.7
Stddev	1.7	.60	9.	9.1
%RSD	.09573	.10197	.02277	.21830
#1	1815.4	585.91	39441.	4156.1
#2	1817.8	586.75	39429.	4143.3

Sample Name: 480-159682-C-1-A Acquired: 9/26/2019 19:14:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.03871**	**.22160**	F **20.319**	**.94219**
Stddev	.00043	.00037	.00009	.035	.00435
%RSD	50.134	.95100	.04150	.17088	.46159
#1	-.00056	.03897	.22167	20.343	.94526
#2	-.00117	.03845	.22154	20.294	.93911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				18.000	
Low Limit				-.02000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**351.86**	**.00024**	i **.0264**	**.00264**
Stddev	.00004	.36	.00016	.0051	.00015
%RSD	81.129	.10311	68.456	19.48	5.6324
#1	.00008	352.11	.00012	i .0300	.00254
#2	.00002	351.60	.00035	i .0227	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03850**	**.05847**	**1.8506**	**180.34**	**.08240**
Stddev	.00050	.00032	.0066	.06	.00040
%RSD	1.2999	.54732	.35731	.03483	.49032
#1	.03815	.05825	1.8553	180.38	.08269
#2	.03886	.05870	1.8459	180.30	.08212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159682-C-1-A Acquired: 9/26/2019 19:14:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**309.86**	**2.0057**	**.00673**	F **1088.1**	**.04324**
Stddev	.52	.0008	.00026	4.1	.00025
%RSD	.16889	.04166	3.8434	.37763	.58010
#1	310.23	2.0052	.00655	1091.0	.04306
#2	309.49	2.0063	.00691	1085.2	.04342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.331**	**.00025**	F **129.4**	**.06428**	**-.01746**
Stddev	.001	.00277	.4	.00019	.00199
%RSD	.0162	1097.8	.3018	.29193	11.380
#1	3.331	-.00171	129.7	.06441	-.01887
#2	3.332	.00221	129.1	.06414	-.01606
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**26.194**	**.00314**	**2.2830**	**-.0046**	**.09157**
Stddev	.009	.00127	.0032	.0046	.00056
%RSD	.03433	40.354	.14177	102.0	.61356
#1	26.188	.00404	2.2853	-.0078	.09197
#2	26.200	.00225	2.2807	-.0013	.09117
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159682-C-1-A Acquired: 9/26/2019 19:14:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	i **-.0719**	**.06315**	**.10035**	**.0288**
Stddev	.00012	.0301	.00028	.00153	.0012
%RSD	107.20	41.82	.44433	1.5206	4.191
#1	-.00020	i -.0506	.06335	.10143	.0280
#2	-.00003	i -.0931	.06295	.09927	.0297
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1361.7**	**496.39**	**32942.**	**3962.9**
Stddev	.4	.68	1.	1.7
%RSD	.03189	.13707	.00275	.04358
#1	1362.0	495.91	32943.	3964.1
#2	1361.4	496.87	32942.	3961.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	75.438%	92.589%	84.778%	96.198%
Range				

Sample Name: 480-159682-C-2-A Acquired: 9/26/2019 19:18:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**.02829**	**.22424**	F **19.900**	**.92077**
Stddev	.00005	.00314	.00101	.009	.00389
%RSD	7.7609	11.109	.45049	.04609	.42277
#1	-.00058	.03052	.22352	19.894	.92352
#2	-.00064	.02607	.22495	19.907	.91802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				18.000	
Low Limit				-.02000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**342.23**	**.00015**	i **.0008**	**.00219**
Stddev	.00002	1.97	.00000	.0116	.00014
%RSD	84.900	.57585	.38248	1437.	6.2438
#1	.00004	343.63	.00015	i .0090	.00229
#2	.00001	340.84	.00015	i -.0074	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.03771**	**.03907**	**1.0877**	**174.79**	**.08014**
Stddev	.00074	.00016	.0041	.55	.00077
%RSD	1.9638	.39906	.37956	.31248	.95790
#1	.03823	.03896	1.0906	175.18	.08069
#2	.03719	.03918	1.0847	174.40	.07960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159682-C-2-A Acquired: 9/26/2019 19:18:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**301.50**	**1.9906**	**.00610**	F **1060.9**	**.04124**
Stddev	.52	.0029	.00007	4.1	.00009
%RSD	.17275	.14698	1.1856	.38383	.22460
#1	301.87	1.9927	.00605	1063.8	.04118
#2	301.14	1.9886	.00615	1058.1	.04131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.239**	**-.00031**	F **97.42**	**.06327**	**-.01206**
Stddev	.002	.00137	.18	.00326	.00122
%RSD	.0702	443.11	.1838	5.1557	10.100
#1	3.240	.00066	97.55	.06096	-.01120
#2	3.237	-.00127	97.29	.06558	-.01292
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**25.418**	**.00416**	**2.2282**	**-.0063**	**.08815**
Stddev	.044	.00098	.0092	.0123	.00017
%RSD	.17437	23.605	.41147	196.3	.18997
#1	25.449	.00486	2.2347	-.0150	.08827
#2	25.387	.00347	2.2218	.0024	.08803
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159682-C-2-A Acquired: 9/26/2019 19:18:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	i **-.1231**	**.06158**	**.10909**	**.0272**
Stddev	.00247	.0303	.00077	.00065	.0025
%RSD	156.24	24.63	1.2564	.59286	9.133
#1	.00333	i -.1446	.06104	.10863	.0289
#2	-.00017	i -.1017	.06213	.10955	.0254
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1365.3**	**492.72**	**32833.**	**3957.4**
Stddev	1.0	.36	57.	.9
%RSD	.07174	.07296	.17490	.02245
#1	1366.0	492.46	32874.	3956.8
#2	1364.6	492.97	32793.	3958.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	75.637%	91.904%	84.498%	96.065%
Range				

Sample Name: 480-159691-F-1-A Acquired: 9/26/2019 19:22:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.05656**	**.08003**	**12.126**	**.14909**
Stddev	.00019	.02162	.00220	.030	.00026
%RSD	100.25	38.221	2.7434	.24908	.17135
#1	-.00033	.07185	.08159	12.148	.14927
#2	-.00006	.04128	.07848	12.105	.14891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**96.737**	**-.00003**	i **.0210**	**.02924**
Stddev	.00002	.370	.00018	.0125	.00005
%RSD	59.662	.38247	559.01	59.39	.15479
#1	-.00005	96.998	.00009	i .0122	.02927
#2	-.00002	96.475	-.00016	i .0298	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.10275**	**.00587**	**5.2247**	**432.48**	**.09012**
Stddev	.00028	.00006	.0408	2.56	.00021
%RSD	.27371	1.0951	.78086	.59240	.23558
#1	.10295	.00582	5.2536	434.29	.09027
#2	.10255	.00591	5.1959	430.67	.08997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-F-1-A Acquired: 9/26/2019 19:22:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**66.779**	**.09037**	**.00685**	F **1386.2**	**.17713**
Stddev	.080	.00022	.00057	8.2	.00046
%RSD	.12022	.24039	8.2955	.58940	.26005
#1	66.836	.09022	.00645	1392.0	.17746
#2	66.722	.09052	.00725	1380.4	.17681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.920**	**-.00062**	**25.03**	**.01368**	**-.01433**
Stddev	.005	.00463	.09	.00002	.00155
%RSD	.1067	746.67	.3732	.16806	10.846
#1	4.924	-.00389	25.10	.01370	-.01543
#2	4.917	.00265	24.96	.01367	-.01324
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**16.989**	**.01785**	**.84897**	**-.0006**	**.04604**
Stddev	.095	.00018	.00530	.0047	.00022
%RSD	.55662	.99452	.62410	744.1	.46874
#1	17.056	.01772	.85272	-.0039	.04619
#2	16.922	.01797	.84522	.0027	.04588
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-F-1-A Acquired: 9/26/2019 19:22:11 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00217**	i **.0894**	**.06146**	**.01312**	**.0284**
Stddev	.00097	.0944	.00002	.00110	.0002
%RSD	44.651	105.5	.03103	8.3851	.5681
#1	-.00149	i .0227	.06147	.01389	.0283
#2	-.00286	i .1562	.06145	.01234	.0285
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1383.6**	**510.01**	**33075.**	**3982.7**
Stddev	.6	1.06	21.	14.5
%RSD	.04687	.20837	.06391	.36392
#1	1384.1	509.26	33060.	3972.4
#2	1383.1	510.76	33090.	3992.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	76.653%	95.130%	85.120%	96.679%
Range				

Sample Name: 480-159691-F-2-A Acquired: 9/26/2019 19:26:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.09074**	**.08545**	**12.042**	**.27416**
Stddev	.00003	.00856	.00377	.021	.00058
%RSD	5.2885	9.4333	4.4140	.17143	.21021
#1	-.00062	.09679	.08812	12.027	.27375
#2	-.00058	.08468	.08278	12.056	.27457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**133.72**	**.00015**	i **.0064**	**.02941**
Stddev	.00009	.17	.00005	.0061	.00007
%RSD	133.09	.12814	32.488	94.87	.22104
#1	-.00013	133.84	.00018	i .0021	.02946
#2	-.00000	133.60	.00012	i .0107	.02937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11158**	**.00295**	**10.420**	**430.95**	**.09187**
Stddev	.00031	.00001	.014	.01	.00084
%RSD	.27743	.36855	.13291	.00163	.91665
#1	.11136	.00296	10.430	430.95	.09128
#2	.11180	.00294	10.410	430.94	.09247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-F-2-A Acquired: 9/26/2019 19:26:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**68.035**	**.32493**	**.00642**	F **1390.8**	**.17626**
Stddev	.025	.00064	.00052	5.0	.00073
%RSD	.03730	.19692	8.0618	.35841	.41492
#1	68.017	.32539	.00605	1387.3	.17678
#2	68.053	.32448	.00678	1394.3	.17575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.169**	**.00045**	**24.82**	**.01432**	**-.01520**
Stddev	.004	.00142	.09	.00019	.00166
%RSD	.0593	316.52	.3479	1.3212	10.895
#1	7.172	.00146	24.76	.01446	-.01403
#2	7.166	-.00056	24.89	.01419	-.01637
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.116**	**.02812**	**1.0079**	**.0063**	**.07172**
Stddev	.016	.00164	.0024	.0098	.00001
%RSD	.09635	5.8246	.23288	154.0	.01969
#1	17.104	.02928	1.0063	.0132	.07171
#2	17.127	.02696	1.0096	-.0006	.07173
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-F-2-A Acquired: 9/26/2019 19:26:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	i **.0345**	**.06501**	**.01323**	**.0277**
Stddev	.00172	.0089	.00019	.00011	.0001
%RSD	216.87	25.85	.29340	.85191	.4655
#1	.00042	i .0409	.06514	.01315	.0277
#2	-.00201	i .0282	.06487	.01331	.0276
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1378.8**	**511.48**	**33046.**	**3980.5**
Stddev	.7	1.86	9.	8.3
%RSD	.05116	.36272	.02620	.20893
#1	1378.3	512.79	33052.	3986.4
#2	1379.3	510.16	33040.	3974.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	76.386%	95.404%	85.045%	96.627%
Range				

Sample Name: 480-159691-E-3-A Acquired: 9/26/2019 19:29:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.10592**	**.10302**	**12.344**	**.32652**
Stddev	.00030	.00632	.00326	.005	.00028
%RSD	390.30	5.9690	3.1615	.03964	.08655
#1	-.00029	.10145	.10533	12.348	.32632
#2	.00013	.11039	.10072	12.341	.32672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**137.32**	**.00016**	i **.0239**	**.02979**
Stddev	.00007	.43	.00017	.0102	.00005
%RSD	136.17	.31569	102.73	42.52	.17705
#1	.00000	137.01	.00028	i .0311	.02976
#2	.00010	137.62	.00004	i .0167	.02983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.11990**	**.00193**	**12.421**	**430.74**	**.09280**
Stddev	.00046	.00018	.040	.08	.00060
%RSD	.37949	9.3833	.32359	.01797	.64186
#1	.12022	.00181	12.392	430.69	.09322
#2	.11958	.00206	12.449	430.80	.09237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-E-3-A Acquired: 9/26/2019 19:29:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**69.792**	**.42825**	**.00664**	F **1424.4**	**.17973**
Stddev	.036	.00010	.00046	.5	.00030
%RSD	.05090	.02278	6.9571	.03765	.16842
#1	69.817	.42818	.00631	1424.8	.17952
#2	69.767	.42832	.00697	1424.0	.17995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.284**	**.00188**	**25.74**	**.01432**	**-.01199**
Stddev	.011	.00110	.16	.00369	.00115
%RSD	.2513	58.678	.6116	25.789	9.6229
#1	4.292	.00266	25.86	.01171	-.01117
#2	4.277	.00110	25.63	.01693	-.01281
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.331**	**.03098**	**1.0718**	**.0013**	**.09626**
Stddev	.026	.00128	.0005	.0046	.00002
%RSD	.14784	4.1451	.04931	346.9	.02339
#1	17.313	.03007	1.0714	.0046	.09624
#2	17.349	.03189	1.0722	-.0019	.09627
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159691-E-3-A Acquired: 9/26/2019 19:29:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	i **.0056**	**.07739**	**.05566**	**.0320**
Stddev	.00095	.0286	.00039	.00306	.0002
%RSD	43.377	514.4	.50568	5.5059	.7794
#1	-.00151	i .0258	.07711	.05350	.0319
#2	-.00285	i -.0147	.07767	.05783	.0322
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1375.8**	**506.71**	**32911.**	**3979.0**
Stddev	.8	.60	7.	16.9
%RSD	.06160	.11747	.02098	.42471
#1	1375.2	506.28	32915.	3990.9
#2	1376.4	507.13	32906.	3967.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	76.223%	94.514%	84.696%	96.589%
Range				

Sample Name: MB 480-493281/1-A Acquired: 9/26/2019 19:33:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01698**	**-.00120**	F **.02437**	**-.00000**
Stddev	.00032	.01793	.00155	.00171	.00001
%RSD	95.925	105.62	128.71	7.0070	512.80
#1	.00011	.02966	-.00230	.02558	-.00001
#2	.00055	.00430	-.00011	.02316	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				.02000	
Low Limit				-.00800	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.05493**	**-.00006**	i **.0047**	**-.00013**
Stddev	.00000	.00148	.00007	.0024	.00028
%RSD	2.4505	2.6897	115.51	51.29	214.73
#1	-.00002	.05388	-.00011	i .0030	.00007
#2	-.00002	.05597	-.00001	i .0064	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00009**	**.00521**	**.17309**	**.00046**
Stddev	.00000	.00027	.00212	.03528	.00009
%RSD	.77825	315.77	40.751	20.380	19.954
#1	.00032	-.00028	.00371	.19803	.00053
#2	.00031	.00011	.00671	.14814	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493281/1-A Acquired: 9/26/2019 19:33:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.00047**	**-.00083**	**.31150**	**-.00035**
Stddev	.00208	.00003	.00004	.01085	.00003
%RSD	85.904	6.0021	5.2473	3.4822	8.3624
#1	.00095	.00045	-.00080	.31917	-.00033
#2	.00390	.00049	-.00086	.30383	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0042**	**-.00113**	**.0149**	**.00187**	**-.00291**
Stddev	.0023	.00025	.0006	.00250	.00047
%RSD	54.75	22.356	3.881	133.24	16.328
#1	.0059	-.00095	.0145	.00364	-.00324
#2	.0026	-.00130	.0153	.00011	-.00257
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.12597**	**.00036**	**.00031**	**-.0001**	**-.00020**
Stddev	.01331	.00032	.00004	.0053	.00021
%RSD	10.570	89.852	13.853	5599.	103.58
#1	.13538	.00013	.00034	-.0038	-.00035
#2	.11655	.00058	.00028	.0036	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-493281/1-A Acquired: 9/26/2019 19:33:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	i **-.0347**	**-.00050**	**.00241**	**.0012**
Stddev	.00121	.0269	.00002	.00123	.0013
%RSD	681.46	77.57	4.5950	50.971	111.4
#1	-.00103	i -.0538	-.00049	.00328	.0022
#2	.00068	i -.0157	-.00052	.00154	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1807.0**	**581.59**	**39615.**	**4176.6**
Stddev	.3	1.73	38.	21.4
%RSD	.01439	.29741	.09687	.51307
#1	1806.8	582.81	39588.	4191.7
#2	1807.1	580.37	39642.	4161.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.11%	108.48%	101.95%	101.39%
Range				

Sample Name: LCS 480-493281/2-A Acquired: 9/26/2019 19:37:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05063**	**9.9667**	**.18282**	**.20920**	**.20865**
Stddev	.00020	.0240	.00720	.00070	.00000
%RSD	.40167	.24105	3.9394	.33276	.00207
#1	.05077	9.9497	.17773	.20871	.20865
#2	.05048	9.9837	.18791	.20970	.20864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20107**	**10.138**	**.19051**	i **-.0002**	**.19326**
Stddev	.00053	.011	.00085	.0143	.00042
%RSD	.26368	.10708	.44536	9435.	.21497
#1	.20144	10.146	.18991	i -.0103	.19356
#2	.20069	10.131	.19111	i .0100	.19297
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19428**	**.18656**	**9.9123**	**9.5506**	**.20026**
Stddev	.00017	.00035	.0256	.0291	.00057
%RSD	.08627	.18838	.25788	.30507	.28576
#1	.19440	.18681	9.8942	9.5300	.20067
#2	.19416	.18631	9.9304	9.5712	.19986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-493281/2-A Acquired: 9/26/2019 19:37:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.149**	**.19562**	**.19090**	**9.6400**	**.19896**
Stddev	.001	.00004	.00090	.0293	.00005
%RSD	.00811	.01904	.47227	.30355	.02380
#1	10.148	.19564	.19027	9.6607	.19892
#2	10.149	.19559	.19154	9.6193	.19899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5566**	**.19479**	**9.144**	**.21001**	**.17876**
Stddev	.0009	.00184	.030	.00049	.00787
%RSD	.1598	.94641	.3316	.23159	4.3999
#1	-.5559	.19349	9.122	.20966	.17320
#2	-.5572	.19610	9.165	.21035	.18432
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.6585**	**.18914**	**.19439**	**.0092**	**.19004**
Stddev	.0046	.00126	.00074	.0048	.00054
%RSD	.04782	.66663	.38318	52.18	.28489
#1	9.6552	.18825	.19492	.0058	.19043
#2	9.6618	.19003	.19386	.0126	.18966
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-493281/2-A Acquired: 9/26/2019 19:37:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19483**	i **-.0806**	**.19681**	**.20767**	**.0037**
Stddev	.00064	.0353	.00017	.00231	.0000
%RSD	.33037	43.80	.08723	1.1135	1.183
#1	.19529	i -.0557	.19669	.20603	.0037
#2	.19438	i -.1056	.19694	.20930	.0036
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1769.0**	**578.13**	**38697.**	**4173.6**
Stddev	1.5	3.33	19.	2.1
%RSD	.08247	.57560	.04827	.04991
#1	1770.1	580.48	38710.	4172.1
#2	1768.0	575.77	38684.	4175.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.007%	107.84%	99.588%	101.31%
Range				

Sample Name: 480-159440-A-1-A Acquired: 9/26/2019 19:41:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.21130**	**.00835**	**.12251**	**.25212**
Stddev	.00078	.00846	.00046	.00045	.00017
%RSD	244.04	4.0045	5.5276	.36966	.06668
#1	.00023	.21728	.00802	.12283	.25200
#2	-.00087	.20532	.00868	.12219	.25224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**54.307**	**.00021**	i **.0022**	**.00300**
Stddev	.00002	.059	.00001	.0078	.00024
%RSD	256.30	.10857	4.4236	351.0	8.0109
#1	.00000	54.266	.00020	i .0077	.00283
#2	-.00002	54.349	.00022	i -.0033	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00753**	**.00081**	**1.3653**	**2.0094**	**.01525**
Stddev	.00029	.00021	.0000	.0259	.00091
%RSD	3.9182	26.260	.00046	1.2868	5.9990
#1	.00732	.00097	1.3653	2.0277	.01589
#2	.00774	.00066	1.3653	1.9911	.01460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-1-A Acquired: 9/26/2019 19:41:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.411**	**1.6365**	**.07947**	**321.94**	**.00486**
Stddev	.015	.0012	.00036	1.13	.00044
%RSD	.09622	.07524	.45648	.34953	8.9494
#1	15.421	1.6356	.07973	322.74	.00456
#2	15.400	1.6374	.07921	321.14	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0138**	**-.00063**	**5.286**	**-.00023**	**-.00928**
Stddev	.0020	.00181	.022	.00176	.00378
%RSD	14.38	286.07	.4164	762.83	40.751
#1	.0153	-.00191	5.270	.00102	-.00661
#2	.0124	.00065	5.302	-.00148	-.01196
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.123**	**-.00006**	**.19644**	**.0026**	**.00253**
Stddev	.060	.00002	.00052	.0033	.00098
%RSD	.59620	27.700	.26586	129.6	38.682
#1	10.081	-.00007	.19681	.0049	.00184
#2	10.166	-.00005	.19607	.0002	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-1-A Acquired: 9/26/2019 19:41:14 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	i **-.0370**	**.00037**	**.10558**	**.0013**
Stddev	.00056	.0481	.00022	.00208	.0001
%RSD	142.82	129.9	59.763	1.9732	10.74
#1	.00000	i -.0710	.00053	.10411	.0012
#2	-.00079	i -.0030	.00022	.10706	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1602.8**	**546.57**	**36160.**	**4069.2**
Stddev	.6	.04	5.	9.2
%RSD	.03559	.00814	.01362	.22548
#1	1603.2	546.54	36163.	4075.7
#2	1602.4	546.61	36156.	4062.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.799%	101.95%	93.058%	98.779%
Range				

Sample Name: 480-159440-A-2-A Acquired: 9/26/2019 19:45:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.15496**	**.00226**	**.48870**	**.12684**
Stddev	.00031	.01143	.00300	.00298	.00010
%RSD	46.525	7.3737	132.96	.60880	.07749
#1	-.00044	.16304	.00438	.49081	.12691
#2	-.00088	.14688	.00013	.48660	.12678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**238.71**	**.00061**	i **.0155**	**.00059**
Stddev	.00005	.36	.00014	.0104	.00014
%RSD	89.796	.14898	23.315	67.04	24.248
#1	-.00002	238.97	.00051	i .0228	.00069
#2	-.00009	238.46	.00072	i .0081	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00727**	**-.00092**	**3.2178**	**8.8198**	**.06794**
Stddev	.00022	.00013	.0013	.0050	.00018
%RSD	3.0878	13.996	.04094	.05608	.27124
#1	.00711	-.00083	3.2187	8.8163	.06781
#2	.00743	-.00101	3.2168	8.8233	.06807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-2-A Acquired: 9/26/2019 19:45:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**60.450**	**.25841**	**.01254**	**824.11**	**.00261**
Stddev	.053	.00087	.00013	2.87	.00034
%RSD	.08824	.33491	1.0491	.34829	12.850
#1	60.412	.25902	.01245	822.08	.00238
#2	60.488	.25780	.01264	826.14	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0288**	**.00114**	**47.69**	**-.00226**	**-.01036**
Stddev	.0009	.00018	.12	.00030	.00070
%RSD	3.070	15.977	.2584	13.089	6.7833
#1	.0281	.00102	47.78	-.00247	-.01086
#2	.0294	.00127	47.60	-.00205	-.00987
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.7732**	**.00095**	**.82902**	**.0070**	**.00241**
Stddev	.0314	.00277	.00179	.0036	.00048
%RSD	.35754	292.59	.21633	50.40	19.871
#1	8.7510	.00291	.82775	.0096	.00275
#2	8.7954	-.00101	.83029	.0045	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-2-A Acquired: 9/26/2019 19:45:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	i **-.0473**	**-.00021**	**.00403**	**.0001**
Stddev	.00072	.0541	.00015	.00105	.0000
%RSD	741.71	114.4	70.854	26.027	22.25
#1	.00041	i -.0855	-.00010	.00477	.0002
#2	-.00060	i -.0090	-.00031	.00329	.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1453.3**	**520.89**	**34041.**	**3936.8**
Stddev	1.4	.83	36.	4.4
%RSD	.09746	.15929	.10683	.11183
#1	1454.3	520.30	34067.	3939.9
#2	1452.3	521.48	34015.	3933.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	80.516%	97.160%	87.606%	95.566%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 19:48:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99877	51.813	.93365	.96946	1.0417	.99201	50.865	.95152
Stddev	.00221	.023	.00258	.00146	.0026	.00090	.107	.00005
%RSD	.22159	.04366	.27602	.15069	.24853	.09103	.20961	.00503
#1	.99721	51.829	.93183	.97049	1.0435	.99265	50.940	.95149
#2	1.0003	51.797	.93548	.96842	1.0398	.99137	50.790	.95156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.016	1.0079	.98875	.96142	49.767	48.737	1.0091	50.344
Stddev	.016	.0013	.00133	.00055	.148	.044	.0003	.007
%RSD	1.607	.13189	.13425	.05728	.29768	.09041	.03127	.01479
#1	i 1.028	1.0088	.98968	.96103	49.871	48.768	1.0094	50.339
#2	i 1.005	1.0070	.98781	.96181	49.662	48.706	1.0089	50.350
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98498	.95098	50.077	.99338	25.59	.99730	23.09	.95938
Stddev	.00066	.00231	.129	.00036	.01	.00114	.05	.00204
%RSD	.06713	.24263	.25784	.03595	.0329	.11461	.2111	.21220
#1	.98545	.95261	50.168	.99363	25.58	.99649	23.05	.96082
#2	.98452	.94935	49.985	.99313	25.59	.99811	23.12	.95794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 19:48:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.90714**	**10.336**	**.99814**	**1.0123**	**.9790**	**.96599**	**.98955**	i **2.391**
Stddev	.00576	.088	.00990	.0017	.0018	.00256	.00151	.064
%RSD	.63541	.85438	.99197	.17110	.1798	.26552	.15216	2.679
#1	.91121	10.273	1.0051	1.0136	.9803	.96780	.98848	i 2.436
#2	.90306	10.398	.99114	1.0111	.9778	.96418	.99061	i 2.346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.99797**	**1.0244**	**.9560**
Stddev	.00109	.0109	.0028
%RSD	.10910	1.0634	.2971
#1	.99874	1.0321	.9540
#2	.99720	1.0167	.9580
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1639.1**	**562.24**	**37032.**	**4081.1**
Stddev	2.4	.78	11.	13.8
%RSD	.14384	.13820	.02925	.33691
#1	1637.4	561.69	37040.	4071.4
#2	1640.8	562.79	37024.	4090.8

Sample Name: CCB-5508960 Acquired: 9/26/2019 19:52:39 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.01790**	**-.00005**	**.00656**	**.00013**	**-.00003**	**-.00094**	**.00002**
Stddev	.00045	.00311	.00094	.00107	.00000	.00004	.00288	.00005
%RSD	1350.0	17.382	1857.9	16.338	3.1373	141.75	304.86	194.69
#1	-.00028	.01570	.00062	.00732	.00013	-.00005	.00109	.00006
#2	.00035	.02010	-.00072	.00580	.00013	.00000	-.00298	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0052**	**-.00015**	**.00032**	**-.00002**	**-.00034**	**.03471**	**.00009**	**-.00140**
Stddev	.0078	.00008	.00008	.00020	.00352	.02093	.00035	.00362
%RSD	149.3	56.513	25.959	1026.9	1041.4	60.315	378.21	258.33
#1	i -.0003	-.00020	.00026	-.00016	-.00283	.04951	.00034	-.00396
#2	i .0108	-.00009	.00038	.00012	.00215	.01991	-.00016	.00116
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00122**	**.14013**	**.00001**	**.0043**	**-.00123**	**-.0008**	**-.00295**
Stddev	.00004	.00011	.00340	.00007	.0057	.00085	.0001	.00237
%RSD	37.911	9.0609	2.4287	514.25	132.6	69.527	10.89	80.454
#1	-.00015	.00114	.13772	.00006	.0083	-.00183	-.0009	-.00463
#2	-.00009	.00130	.14253	-.00004	.0003	-.00062	-.0007	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 19:52:39 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00264	-.00067	.00007	-.0070	-.00005	.00035	i -.0617
Stddev	.00484	.01360	.00117	.00005	.0148	.00004	.00073	.0029
%RSD	1111.4	515.60	175.03	72.937	211.0	76.393	207.83	4.628
#1	-.00299	-.00698	.00016	.00003	-.0175	-.00008	.00086	i -.0597
#2	.00386	.01226	-.00149	.00011	.0035	-.00002	-.00016	i -.0638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	-.00047	.00034	.0003
Stddev	.00011	.00084	.0006
%RSD	23.182	246.34	192.1
#1	-.00055	.00093	.0007
#2	-.00039	-.00025	-.0001
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1802.0	581.53	39150.	4108.0
Stddev	3.4	1.66	83.	5.0
%RSD	.18937	.28538	.21121	.12065
#1	1804.4	582.70	39091.	4104.5
#2	1799.6	580.35	39208.	4111.5

Sample Name: CCVL-5514926 Acquired: 9/26/2019 19:56:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00643	.21088	.01332	.02524	.00222	.00213	.54007	.00199
Stddev	.00033	.01091	.00131	.00003	.00002	.00000	.00248	.00005
%RSD	5.1046	5.1721	9.8442	.13084	1.0310	.10445	.45838	2.2596
#1	.00619	.21859	.01425	.02526	.00220	.00214	.53832	.00202
#2	.00666	.20317	.01239	.02522	.00224	.00213	.54182	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0059	.00407	.00417	.00927	.04831	.49811	.03071	.21895
Stddev	.0078	.00004	.00019	.00002	.00180	.00763	.00036	.00376
%RSD	132.2	1.0819	4.5761	.19173	3.7173	1.5319	1.1821	1.7176
#1	i .0115	.00404	.00403	.00928	.04704	.49272	.03097	.22161
#2	i .0004	.00410	.00430	.00925	.04958	.50351	.03045	.21629
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00303	.00964	1.1028	.01037	-.0290	.00851	.1841	.02047
Stddev	.00004	.00011	.0008	.00012	.0014	.00048	.0032	.00257
%RSD	1.4358	1.1416	.07373	1.1707	4.660	5.6346	1.711	12.551
#1	.00300	.00972	1.1022	.01028	-.0300	.00885	.1819	.01866
#2	.00306	.00957	1.1033	.01045	-.0280	.00818	.1863	.02229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 19:56:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02222	.48011	.01009	.00504	.0027	.00479	.01894	i .0483
Stddev	.00479	.00466	.00106	.00001	.0017	.00017	.00024	.0652
%RSD	21.540	.96967	10.498	.13175	64.92	3.6365	1.2491	135.0
#1	.02560	.48340	.01084	.00503	.0039	.00467	.01910	i .0943
#2	.01883	.47682	.00934	.00504	.0014	.00491	.01877	i .0022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00475	.01149	.0007
Stddev	.00009	.00020	.0008
%RSD	1.9690	1.7610	110.8
#1	.00468	.01134	.0013
#2	.00481	.01163	.0002
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1805.6	582.88	39200.	4131.6
Stddev	1.2	.19	23.	2.5
%RSD	.06459	.03278	.05825	.06025
#1	1806.4	582.75	39216.	4133.4
#2	1804.7	583.02	39184.	4129.8

Sample Name: 480-159440-A-3-A Acquired: 9/26/2019 20:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.04778**	**-.00123**	**.07282**	**.04102**
Stddev	.00055	.00798	.00272	.00012	.00002
%RSD	223.23	16.710	220.69	.16714	.04757
#1	.00014	.05343	-.00316	.07274	.04101
#2	-.00063	.04214	.00069	.07291	.04103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**195.38**	**.00023**	i **.0247**	**.00048**
Stddev	.00003	1.18	.00012	.0133	.00005
%RSD	102.62	.60271	52.451	54.03	10.483
#1	.00001	194.54	.00014	i .0341	.00051
#2	.00005	196.21	.00031	i .0152	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**-.00043**	**.89219**	**4.4198**	**.07168**
Stddev	.00063	.00012	.00192	.0111	.00043
%RSD	110.96	28.195	.21571	.25109	.60219
#1	.00101	-.00035	.89082	4.4276	.07199
#2	.00012	-.00052	.89355	4.4119	.07138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-A Acquired: 9/26/2019 20:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**61.269**	**.09091**	**.00592**	**105.81**	**.00110**
Stddev	.062	.00010	.00020	.52	.00012
%RSD	.10136	.10645	3.3917	.49082	10.895
#1	61.225	.09085	.00578	105.44	.00118
#2	61.313	.09098	.00606	106.18	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0051**	**-.00137**	**67.56**	**-.00228**	**-.00906**
Stddev	.0027	.00221	.14	.00041	.00764
%RSD	52.37	162.07	.2006	17.974	84.352
#1	.0070	-.00293	67.46	-.00199	-.01446
#2	.0032	.00020	67.65	-.00257	-.00365
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.0724**	**-.00006**	**.79529**	**-.0034**	**.00054**
Stddev	.0637	.00055	.00119	.0013	.00025
%RSD	.90092	961.62	.14960	38.49	45.602
#1	7.0274	-.00044	.79445	-.0025	.00037
#2	7.1175	.00033	.79613	-.0043	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-A Acquired: 9/26/2019 20:00:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00085**	i **.0917**	**-.00024**	**.22971**	**.0007**
Stddev	.00370	.0592	.00014	.00052	.0008
%RSD	436.41	64.53	57.360	.22547	110.6
#1	-.00177	i .0499	-.00014	.23008	.0002
#2	.00346	i .1336	-.00034	.22935	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1604.7**	**542.90**	**36106.**	**4015.2**
Stddev	1.0	.38	52.	19.0
%RSD	.06001	.07020	.14415	.47295
#1	1604.1	543.17	36143.	4028.7
#2	1605.4	542.63	36070.	4001.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.904%	101.27%	92.921%	97.469%
Range				

Sample Name: 480-159440-A-3-Asd@5 Acquired: 9/26/2019 20:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.03349**	**-.00247**	**.01895**	**.00884**
Stddev	.00028	.00001	.00140	.00075	.00004
%RSD	132.81	.04465	56.634	3.9543	.42726
#1	.00001	.03350	-.00148	.01948	.00887
#2	.00040	.03348	-.00346	.01842	.00882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**42.010**	**.00009**	i **.0124**	**-.00000**
Stddev	.00004	.080	.00003	.0070	.00012
%RSD	189.66	.19100	32.014	56.37	3266.0
#1	-.00005	42.066	.00011	i .0174	.00008
#2	.00001	41.953	.00007	i .0075	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00028**	**.19468**	**.90217**	**.01484**
Stddev	.00000	.00039	.00024	.01347	.00013
%RSD	3.3446	138.21	.12512	1.4933	.84658
#1	.00004	.00001	.19451	.89264	.01493
#2	.00004	.00056	.19485	.91169	.01475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-Asd@5 Acquired: 9/26/2019 20:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.002**	**.01990**	**.00086**	**21.357**	**-.00016**
Stddev	.018	.00010	.00000	.066	.00001
%RSD	.13811	.48838	.10160	.31070	6.5303
#1	12.989	.01996	.00086	21.404	-.00016
#2	13.014	.01983	.00086	21.310	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0027**	**.00156**	**13.58**	**-.00099**	**-.00791**
Stddev	.0017	.00015	.02	.00114	.00149
%RSD	62.75	9.8542	.1703	114.43	18.824
#1	.0039	.00167	13.60	-.00180	-.00686
#2	.0015	.00145	13.56	-.00019	-.00897
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.4671**	**.00037**	**.17003**	**.0001**	**.00002**
Stddev	.0027	.00066	.00052	.0106	.00006
%RSD	.18693	178.72	.30300	8262.	304.44
#1	1.4690	-.00010	.17039	.0076	-.00002
#2	1.4651	.00084	.16966	-.0073	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-Asd@5 Acquired: 9/26/2019 20:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00041	i .1346	-.00006	.04881	.0011
Stddev	.00013	.0435	.00007	.00038	.0004
%RSD	31.554	32.33	101.88	.76863	37.54
#1	.00051	i .1654	-.00002	.04854	.0008
#2	.00032	i .1039	-.00011	.04907	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1753.4	566.41	38233.	4115.0
Stddev	.2	.68	7.	12.0
%RSD	.01147	.11925	.01738	.29242
#1	1753.3	565.93	38237.	4106.5
#2	1753.6	566.89	38228.	4123.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.142%	105.65%	98.393%	99.891%
Range				

Sample Name: 480-159440-A-3-Apds Acquired: 9/26/2019 20:07:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05389**	**10.670**	**.20475**	**.28188**	**.25571**
Stddev	.00026	.004	.00203	.00043	.00031
%RSD	.47800	.03340	.99064	.15291	.12011
#1	.05407	10.672	.20332	.28219	.25593
#2	.05371	10.667	.20619	.28158	.25549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20937**	**211.92**	**.20666**	i **.0202**	**.20527**
Stddev	.00048	.13	.00036	.0031	.00090
%RSD	.22819	.06025	.17283	15.51	.44037
#1	.20903	211.83	.20692	i .0225	.20591
#2	.20971	212.01	.20641	i .0180	.20463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20031**	**.19975**	**11.111**	**14.859**	**.28848**
Stddev	.00109	.00020	.020	.047	.00094
%RSD	.54331	.09862	.17660	.31536	.32742
#1	.20108	.19962	11.097	14.826	.28915
#2	.19954	.19989	11.124	14.892	.28782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-Apds Acquired: 9/26/2019 20:07:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**73.730**	**.29217**	**.20757**	**117.84**	**.20981**
Stddev	.080	.00038	.00049	.10	.00147
%RSD	.10801	.13024	.23838	.08147	.70259
#1	73.673	.29190	.20792	117.77	.21085
#2	73.786	.29244	.20722	117.91	.20876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5183**	**.20625**	**79.61**	**.22111**	**.19278**
Stddev	.0004	.00095	.43	.00229	.00867
%RSD	.0755	.46058	.5364	1.0374	4.4983
#1	-.5186	.20558	79.91	.22273	.19891
#2	-.5181	.20692	79.31	.21949	.18665
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.129**	**.20523**	**1.0216**	**.0116**	**.20038**
Stddev	.027	.00108	.0006	.0126	.00019
%RSD	.15592	.52483	.06093	108.4	.09357
#1	17.110	.20447	1.0212	.0206	.20025
#2	17.147	.20599	1.0221	.0027	.20052
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-Apds Acquired: 9/26/2019 20:07:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20911**	i **-.0106**	**.20605**	**.44606**	**.0057**
Stddev	.00386	.0766	.00044	.00239	.0011
%RSD	1.8436	720.9	.21345	.53613	19.98
#1	.21183	i -.0648	.20636	.44775	.0066
#2	.20638	i .0435	.20574	.44437	.0049
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1583.7**	**538.35**	**36220.**	**4033.8**
Stddev	.3	1.01	30.	4.3
%RSD	.01724	.18698	.08173	.10562
#1	1583.9	537.64	36199.	4036.8
#2	1583.5	539.07	36241.	4030.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.739%	100.42%	93.214%	97.918%
Range				

Sample Name: 480-159440-A-3-B MS Acquired: 9/26/2019 20:11:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05081**	**10.089**	**.19396**	**.26737**	**.24552**
Stddev	.00033	.025	.00250	.00051	.00061
%RSD	.65051	.24930	1.2866	.19059	.25009
#1	.05105	10.071	.19572	.26701	.24595
#2	.05058	10.106	.19219	.26773	.24508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19837**	**212.57**	**.19341**	i **.0099**	**.19354**
Stddev	.00008	.06	.00032	.0027	.00025
%RSD	.04281	.03024	.16691	27.45	.13171
#1	.19831	212.61	.19363	i .0119	.19336
#2	.19843	212.52	.19318	i .0080	.19372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.18784**	**.18675**	**10.515**	**14.324**	**.27825**
Stddev	.00038	.00014	.004	.018	.00047
%RSD	.20177	.07500	.03971	.12367	.17046
#1	.18757	.18665	10.512	14.336	.27859
#2	.18811	.18685	10.518	14.311	.27792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-B MS Acquired: 9/26/2019 20:11:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**73.720**	**.28111**	**.19578**	**119.01**	**.19718**
Stddev	.004	.00037	.00122	.03	.00042
%RSD	.00483	.13089	.62522	.02198	.21547
#1	73.723	.28085	.19664	119.03	.19748
#2	73.718	.28137	.19491	118.99	.19688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4856**	**.19519**	**79.56**	**.20845**	**.17972**
Stddev	.0022	.00144	.06	.00046	.00384
%RSD	.4544	.73688	.0721	.21975	2.1356
#1	-.4872	.19417	79.52	.20812	.17700
#2	-.4841	.19621	79.60	.20877	.18243
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**16.688**	**.19427**	**1.0171**	**.0121**	**.18829**
Stddev	.028	.00121	.0000	.0000	.00038
%RSD	.16917	.62132	.00286	.2896	.20157
#1	16.708	.19341	1.0171	.0121	.18802
#2	16.668	.19512	1.0171	.0122	.18856
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-B MS Acquired: 9/26/2019 20:11:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19262**	i **.0100**	**.19467**	**.43597**	**.0013**
Stddev	.00133	.0765	.00006	.00010	.0018
%RSD	.69104	763.6	.03007	.02310	139.1
#1	.19356	i .0641	.19471	.43590	.0026
#2	.19168	i -.0441	.19463	.43604	.0000
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1580.8**	**541.63**	**36126.**	**4033.5**
Stddev	1.1	.24	39.	5.2
%RSD	.06649	.04354	.10733	.12872
#1	1580.1	541.46	36098.	4037.2
#2	1581.6	541.80	36153.	4029.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.579%	101.03%	92.971%	97.913%
Range				

Sample Name: 480-159440-A-3-C MSD Acquired: 9/26/2019 20:15:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05112**	**10.232**	**.19864**	**.27512**	**.24772**
Stddev	.00010	.020	.00087	.00008	.00052
%RSD	.18818	.19334	.43961	.02738	.20833
#1	.05106	10.246	.19802	.27507	.24808
#2	.05119	10.218	.19926	.27517	.24735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20277**	**212.42**	**.19798**	i **.0185**	**.19809**
Stddev	.00007	.27	.00035	.0165	.00003
%RSD	.03453	.12535	.17666	89.00	.01291
#1	.20282	212.61	.19773	i .0069	.19808
#2	.20272	212.23	.19823	i .0302	.19811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19185**	**.19210**	**10.782**	**14.507**	**.28245**
Stddev	.00086	.00042	.010	.016	.00087
%RSD	.44983	.21697	.09422	.10981	.30657
#1	.19246	.19240	10.775	14.518	.28306
#2	.19124	.19181	10.789	14.496	.28184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-C MSD Acquired: 9/26/2019 20:15:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**73.649**	**.28474**	**.20029**	**118.25**	**.20210**
Stddev	.103	.00051	.00074	.19	.00029
%RSD	.14042	.18077	.37179	.16448	.14438
#1	73.722	.28511	.19976	118.38	.20189
#2	73.576	.28438	.20081	118.11	.20231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.4978**	**.19981**	**79.54**	**.21508**	**.18003**
Stddev	.0050	.00055	.08	.00374	.00526
%RSD	1.003	.27532	.1037	1.7371	2.9195
#1	-.5013	.20020	79.60	.21772	.18375
#2	-.4942	.19942	79.49	.21244	.17632
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**16.904**	**.19989**	**1.0199**	**-.0055**	**.19346**
Stddev	.071	.00028	.0027	.0000	.00017
%RSD	.42297	.13796	.26723	.3573	.08616
#1	16.854	.19970	1.0218	-.0055	.19334
#2	16.955	.20009	1.0180	-.0055	.19358
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-3-C MSD Acquired: 9/26/2019 20:15:18 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20036**	i **.0591**	**.19812**	**.43743**	**.0012**
Stddev	.00140	.0252	.00009	.00045	.0006
%RSD	.69671	42.69	.04579	.10221	50.20
#1	.20134	i .0770	.19818	.43775	.0008
#2	.19937	i .0413	.19805	.43712	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1584.3**	**540.78**	**36304.**	**4056.1**
Stddev	.1	.35	.	7.7
%RSD	.00756	.06545	.00087	.19020
#1	1584.3	540.53	36304.	4061.5
#2	1584.2	541.03	36303.	4050.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.769%	100.87%	93.428%	98.460%
Range				

Sample Name: 480-159440-A-4-A Acquired: 9/26/2019 20:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.08756**	**.00154**	**.38726**	**.05909**
Stddev	.00024	.01994	.00296	.00058	.00001
%RSD	38.925	22.778	192.43	.14968	.00972
#1	-.00044	.10166	.00364	.38685	.05910
#2	-.00077	.07345	-.00056	.38767	.05909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**363.74**	**.00019**	i **.0165**	**-.00016**
Stddev	.00012	3.53	.00003	.0090	.00012
%RSD	593.42	.97061	16.469	54.52	76.513
#1	.00007	366.23	.00022	i .0102	-.00025
#2	-.00011	361.24	.00017	i .0229	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00199**	**5.1737**	**7.3479**	**.20639**
Stddev	.00033	.00011	.0299	.0068	.00003
%RSD	45.879	5.4535	.57717	.09314	.01629
#1	.00049	-.00191	5.1949	7.3528	.20636
#2	.00096	-.00207	5.1526	7.3431	.20641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-4-A Acquired: 9/26/2019 20:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**126.09**	**.18054**	**.00316**	**310.72**	**-.00018**
Stddev	.11	.00031	.00004	.57	.00029
%RSD	.08692	.17049	1.3280	.18247	164.35
#1	126.01	.18032	.00319	311.12	.00003
#2	126.17	.18076	.00313	310.32	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0064**	**-.00081**	F **114.9**	**-.00471**	**-.01667**
Stddev	.0020	.00224	.3	.00311	.00142
%RSD	30.82	278.08	.2680	66.030	8.5015
#1	.0078	.00078	114.7	-.00251	-.01566
#2	.0050	-.00239	115.1	-.00691	-.01767
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2056**	**.00141**	**1.9662**	**.0062**	**.00137**
Stddev	.0404	.00186	.0037	.0072	.00064
%RSD	.65141	131.74	.18812	116.1	46.991
#1	6.2342	.00010	1.9688	.0112	.00183
#2	6.1771	.00273	1.9636	.0011	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-4-A Acquired: 9/26/2019 20:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	i **.0481**	**.00005**	**.01984**	**.0003**
Stddev	.00144	.0284	.00043	.00144	.0004
%RSD	1088.4	58.93	917.37	7.2686	139.0
#1	.00115	i .0682	.00035	.01882	.0006
#2	-.00089	i .0281	-.00026	.02086	.0000
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1499.6**	**524.94**	**34755.**	**3955.0**
Stddev	.7	.43	32.	15.5
%RSD	.04391	.08179	.09305	.39126
#1	1500.0	525.24	34778.	3944.1
#2	1499.1	524.63	34732.	3965.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	83.078%	97.915%	89.443%	96.007%
Range				

Sample Name: 480-159440-A-5-A Acquired: 9/26/2019 20:22:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.11913**	**.00008**	**1.0259**	**2.7865**
Stddev	.00007	.00995	.00083	.0016	.0008
%RSD	113.93	8.3515	987.31	.15573	.02779
#1	-.00012	.11209	.00067	1.0248	2.7871
#2	-.00001	.12616	-.00050	1.0270	2.7860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**110.35**	**.00015**	i **.0192**	**-.00060**
Stddev	.00001	.18	.00015	.0090	.00033
%RSD	29.759	.16629	97.748	46.93	54.637
#1	.00002	110.48	.00005	i .0129	-.00037
#2	.00002	110.22	.00025	i .0256	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**-.00045**	**1.5798**	**5.9546**	**.34702**
Stddev	.00030	.00001	.0048	.0029	.00091
%RSD	75.214	2.6527	.30289	.04839	.26200
#1	.00019	-.00044	1.5832	5.9566	.34767
#2	.00061	-.00046	1.5764	5.9526	.34638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-5-A Acquired: 9/26/2019 20:22:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**40.497**	**.07940**	**.00036**	**223.63**	**.00006**
Stddev	.026	.00006	.00033	.33	.00008
%RSD	.06357	.07975	92.261	.14926	147.14
#1	40.515	.07944	.00013	223.39	-.00000
#2	40.479	.07935	.00060	223.86	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0163**	**-.00118**	**.4646**	**-.00296**	**-.01034**
Stddev	.0026	.00096	.0017	.00578	.00267
%RSD	15.66	81.402	.3567	195.03	25.857
#1	.0145	-.00050	.4634	.00112	-.00845
#2	.0181	-.00186	.4658	-.00705	-.01223
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.2399**	**-.00027**	**1.3231**	**-.0015**	**.00163**
Stddev	.0298	.00087	.0005	.0017	.00009
%RSD	.56945	318.41	.03735	119.3	5.6295
#1	5.2610	.00034	1.3235	-.0027	.00156
#2	5.2188	-.00089	1.3228	-.0002	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-5-A Acquired: 9/26/2019 20:22:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	i **.0249**	**.00003**	**.00288**	**.0010**
Stddev	.00205	.0002	.00032	.00030	.0005
%RSD	163.21	.8307	926.29	10.503	50.06
#1	.00271	i .0247	.00026	.00267	.0014
#2	-.00019	i .0250	-.00019	.00310	.0007
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1599.0**	**549.60**	**36176.**	**4006.2**
Stddev	.3	1.41	22.	5.2
%RSD	.01613	.25602	.06008	.13095
#1	1598.8	550.59	36192.	4002.5
#2	1599.1	548.60	36161.	4009.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.583%	102.51%	93.101%	97.250%
Range				

Sample Name: 480-159440-A-7-A Acquired: 9/26/2019 20:26:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06537**	**.00303**	**.71332**	**.55941**
Stddev	.00060	.00255	.00534	.00125	.00419
%RSD	209.93	3.9003	176.14	.17593	.74835
#1	-.00071	.06718	-.00074	.71243	.56237
#2	.00014	.06357	.00680	.71421	.55645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**125.53**	**.00018**	i **.0033**	**-.00046**
Stddev	.00001	.28	.00015	.0027	.00021
%RSD	12.932	.22696	80.240	82.90	45.350
#1	-.00005	125.73	.00008	i .0014	-.00061
#2	-.00004	125.33	.00029	i .0052	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00074**	**1.3172**	**3.3961**	**.17185**
Stddev	.00025	.00024	.0044	.0220	.00012
%RSD	66.395	32.866	.33666	.64639	.07209
#1	.00020	-.00092	1.3204	3.4116	.17176
#2	.00055	-.00057	1.3141	3.3806	.17194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-7-A Acquired: 9/26/2019 20:26:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**36.807**	**.06596**	**.00132**	**386.04**	**.00020**
Stddev	.185	.00039	.00040	.15	.00008
%RSD	.50337	.58638	30.102	.03840	39.374
#1	36.938	.06624	.00104	385.93	.00014
#2	36.676	.06569	.00161	386.14	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0001**	**.00091**	**3.116**	**-.00083**	**-.01020**
Stddev	.0020	.00023	.010	.00027	.00130
%RSD	2384.	25.785	.3249	32.471	12.727
#1	.0014	.00074	3.123	-.00064	-.00928
#2	-.0015	.00107	3.109	-.00102	-.01112
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.7976**	**.00087**	**.73824**	**-.0008**	**.00062**
Stddev	.0096	.00209	.00015	.0032	.00020
%RSD	.16564	240.02	.02066	404.3	31.949
#1	5.7908	.00235	.73813	.0015	.00048
#2	5.8044	-.00061	.73835	-.0030	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-7-A Acquired: 9/26/2019 20:26:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	i **.0495**	**-.00064**	**.00474**	**-.0001**
Stddev	.00436	.0343	.00023	.00240	.0001
%RSD	1004.9	69.29	35.446	50.530	253.3
#1	-.00265	i .0252	-.00048	.00305	.0000
#2	.00352	i .0737	-.00080	.00644	-.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1549.4**	**539.49**	**35478.**	**4022.9**
Stddev	2.2	1.49	158.	4.3
%RSD	.14239	.27577	.44392	.10739
#1	1551.0	540.54	35367.	4019.8
#2	1547.9	538.44	35589.	4025.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.840%	100.63%	91.304%	97.654%
Range				

Sample Name: 480-159440-A-8-A Acquired: 9/26/2019 20:30:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.10951**	**.00067**	**.12074**	**.03483**
Stddev	.00057	.00781	.00294	.00027	.00001
%RSD	123.98	7.1327	438.40	.22721	.02252
#1	-.00006	.11503	-.00141	.12054	.03484
#2	-.00087	.10399	.00275	.12093	.03483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**304.02**	**.00131**	i **.0165**	**.00002**
Stddev	.00004	2.50	.00008	.0000	.00011
%RSD	39.092	.82087	5.9782	.2159	549.13
#1	-.00013	305.79	.00125	i .0166	-.00006
#2	-.00008	302.26	.00136	i .0165	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**-.00141**	**3.8156**	**3.5337**	**.05198**
Stddev	.00023	.00053	.0125	.0171	.00004
%RSD	98.950	37.702	.32669	.48331	.07122
#1	.00040	-.00103	3.8244	3.5216	.05200
#2	.00007	-.00178	3.8068	3.5458	.05195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-8-A Acquired: 9/26/2019 20:30:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**90.563**	**.69171**	**.00204**	**39.978**	**.00110**
Stddev	.048	.00215	.00040	.097	.00015
%RSD	.05342	.31042	19.521	.24154	13.175
#1	90.597	.69322	.00232	40.046	.00100
#2	90.528	.69019	.00175	39.909	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0218**	**-.00079**	F **131.1**	**-.00448**	**-.00933**
Stddev	.0010	.00044	.5	.00018	.00254
%RSD	4.422	55.888	.3467	4.1285	27.207
#1	.0225	-.00110	131.4	-.00461	-.00753
#2	.0211	-.00048	130.7	-.00434	-.01112
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.0281**	**.00048**	**.98494**	**.0024**	**.00126**
Stddev	.0193	.00058	.00295	.0013	.00028
%RSD	.24039	120.06	.29986	56.55	22.159
#1	8.0418	.00089	.98702	.0014	.00146
#2	8.0145	.00007	.98285	.0033	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-8-A Acquired: 9/26/2019 20:30:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	i **.0418**	**.00028**	**.00239**	**.0006**
Stddev	.00332	.0311	.00003	.00047	.0001
%RSD	1151.0	74.40	10.230	19.606	9.259
#1	-.00206	i .0198	.00026	.00272	.0006
#2	.00264	i .0637	.00030	.00206	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1581.6**	**533.32**	**36149.**	**4015.3**
Stddev	.3	1.08	38.	28.5
%RSD	.01798	.20283	.10464	.71021
#1	1581.8	532.55	36122.	3995.1
#2	1581.4	534.08	36175.	4035.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.619%	99.477%	93.030%	97.471%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 20:34:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0024**	**51.942**	**.92647**	**.95382**	**1.0431**	**.99155**	**51.065**
Stddev	.0028	.092	.00019	.00201	.0019	.00124	.011
%RSD	.27978	.17643	.02030	.21063	.18176	.12502	.02101
#1	1.0044	52.006	.92634	.95239	1.0444	.99243	51.072
#2	1.0005	51.877	.92660	.95524	1.0417	.99068	51.057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94199**	i **1.017**	**1.0107**	**.98810**	**.95758**	**49.638**	**48.646**
Stddev	.00218	.012	.0004	.00141	.00001	.000	.078
%RSD	.23174	1.198	.04156	.14249	.00145	.00041	.16059
#1	.94044	i 1.009	1.0110	.98710	.95759	49.637	48.702
#2	.94353	i 1.026	1.0104	.98909	.95757	49.638	48.591
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0094**	**50.548**	**.98300**	**.94268**	**49.927**	**.99150**	**25.77**
Stddev	.0013	.001	.00010	.00177	.063	.00073	.02
%RSD	.12810	.00217	.01047	.18750	.12655	.07376	.0783
#1	1.0103	50.549	.98292	.94143	49.971	.99099	25.76
#2	1.0084	50.547	.98307	.94393	49.882	.99202	25.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/26/2019 20:34:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99902	23.02	.95119	F .89908	10.324	.99791	1.0104
Stddev	.00151	.03	.00242	.00031	.045	.00078	.0002
%RSD	.15090	.1254	.25443	.03470	.43298	.07842	.01700
#1	1.0001	22.99	.95290	.89930	10.293	.99735	1.0105
#2	.99796	23.04	.94948	.89886	10.356	.99846	1.0102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.0000			
Range				-10.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9732	.96407	1.0028	i 2.365	.99754	1.0278	.9539
Stddev	.0061	.00169	.0016	.185	.00138	.0052	.0046
%RSD	.6315	.17486	.16341	7.834	.13818	.50340	.4834
#1	.9689	.96288	1.0017	i 2.234	.99657	1.0315	.9506
#2	.9776	.96526	1.0040	i 2.497	.99852	1.0242	.9571
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1645.3	571.00	37088.	4068.3
Stddev	2.3	.33	79.	19.2
%RSD	.14106	.05814	.21230	.47231
#1	1643.7	571.24	37033.	4054.7
#2	1647.0	570.77	37144.	4081.9

Sample Name: CCB-5508960 Acquired: 9/26/2019 20:38:28 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00829	.00123	.00164	.00012	.00001	.00064	-.00011
Stddev	.00026	.00493	.00207	.00002	.00000	.00005	.00067	.00013
%RSD	1357.5	59.419	167.71	.95500	1.1609	312.85	104.72	122.90
#1	-.00016	-.01178	.00269	.00163	.00012	.00005	.00112	-.00001
#2	.00020	-.00481	-.00023	.00165	.00012	-.00002	.00017	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0188	-.00004	-.00065	.00034	.00209	.01316	.00052	.00199
Stddev	.0075	.00019	.00046	.00009	.00083	.01674	.00057	.00273
%RSD	39.83	431.98	70.107	25.750	39.867	127.18	109.86	137.53
#1	i .0135	.00009	-.00033	.00028	.00268	.02499	.00092	.00392
#2	i .0241	-.00018	-.00097	.00040	.00150	.00132	.00012	.00005
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00124	.07901	.00008	.0033	-.00055	-.0032	-.00104
Stddev	.00001	.00010	.00114	.00009	.0025	.00111	.0026	.00046
%RSD	11.765	7.7420	1.4367	113.30	74.24	203.92	81.33	44.440
#1	-.00013	.00117	.07821	.00002	.0050	-.00133	-.0051	-.00071
#2	-.00011	.00131	.07981	.00014	.0016	.00024	-.0014	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 20:38:28 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00215**	**-.01704**	**-.00043**	**-.00001**	**-.0005**	**.00003**	**-.00015**	i **.0303**
Stddev	.00057	.00881	.00119	.00006	.0043	.00012	.00147	.0899
%RSD	26.456	51.731	275.51	638.10	939.5	479.18	1015.1	296.4
#1	-.00175	-.01080	-.00127	-.00005	-.0035	.00011	-.00119	i -.0333
#2	-.00255	-.02327	.00041	.00003	.0026	-.00006	.00090	i .0939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00024**	**.00040**	**.0006**
Stddev	.00039	.00047	.0009
%RSD	163.79	118.61	149.3
#1	.00004	.00006	.0013
#2	-.00051	.00073	-.0000
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1799.5**	**582.80**	**39280.**	**4114.9**
Stddev	3.6	.17	51.	6.5
%RSD	.20087	.02904	.12972	.15817
#1	1802.1	582.92	39316.	4110.3
#2	1796.9	582.68	39244.	4119.5

Sample Name: CCVL-5514926 Acquired: 9/26/2019 20:42:18 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00614	.19959	.01164	.02095	.00219	.00217	.54177	.00196
Stddev	.00025	.00209	.00567	.00059	.00000	.00003	.00064	.00010
%RSD	4.1237	1.0469	48.686	2.8191	.00580	1.3917	.11836	5.0867
#1	.00632	.20107	.00763	.02137	.00219	.00215	.54131	.00189
#2	.00596	.19812	.01565	.02054	.00219	.00219	.54222	.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0243	.00400	.00390	.00924	.05235	.47012	.03063	.21588
Stddev	.0116	.00004	.00021	.00016	.00054	.00642	.00110	.00206
%RSD	47.59	.93568	5.4815	1.7668	1.0348	1.3648	3.6000	.95408
#1	i .0161	.00403	.00375	.00913	.05197	.47466	.02985	.21443
#2	i .0325	.00398	.00406	.00936	.05274	.46558	.03141	.21734
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00303	.00945	1.0542	.01059	-.0307	.01011	.1910	.01999
Stddev	.00010	.00031	.0002	.00031	.0007	.00046	.0012	.00061
%RSD	3.3032	3.2660	.01922	2.9651	2.340	4.5808	.6096	3.0480
#1	.00296	.00923	1.0544	.01037	-.0313	.01043	.1902	.01956
#2	.00310	.00967	1.0541	.01081	-.0302	.00978	.1918	.02042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 20:42:18 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01952	.47746	.00960	.00494	-.0004	.00479	.02007	i .0605
Stddev	.00496	.01543	.00054	.00001	.0008	.00018	.00067	.0320
%RSD	25.432	3.2309	5.6270	.27403	177.7	3.7078	3.3626	52.90
#1	.01601	.48836	.00998	.00493	-.0010	.00492	.02055	i .0831
#2	.02303	.46655	.00922	.00495	.0001	.00467	.01960	i .0379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00455	.01191	.0012
Stddev	.00047	.00004	.0001
%RSD	10.264	.33131	10.78
#1	.00422	.01194	.0012
#2	.00488	.01188	.0011
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1805.7	585.90	39401.	4144.5
Stddev	3.8	1.22	9.	6.6
%RSD	.21274	.20775	.02328	.15883
#1	1808.4	586.76	39407.	4149.1
#2	1803.0	585.03	39394.	4139.8

Sample Name: 480-159440-A-9-A Acquired: 9/26/2019 20:46:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.05774**	**.00391**	**.72818**	**.06179**
Stddev	.00041	.01485	.00340	.00047	.00019
%RSD	74.992	25.719	86.948	.06501	.31248
#1	-.00026	.04724	.00151	.72785	.06166
#2	-.00084	.06824	.00631	.72851	.06193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**213.77**	**.00043**	i **.0264**	**.00033**
Stddev	.00004	.11	.00005	.0037	.00003
%RSD	153.57	.05295	11.703	14.10	8.3886
#1	-.00005	213.85	.00047	i .0291	.00035
#2	.00000	213.69	.00040	i .0238	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.9916**	**-.00032**	**.02643**	**7.1163**	**.15535**
Stddev	.0036	.00015	.00070	.0076	.00016
%RSD	.17899	45.374	2.6481	.10638	.10571
#1	1.9891	-.00022	.02593	7.1110	.15547
#2	1.9941	-.00042	.02692	7.1217	.15524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-9-A Acquired: 9/26/2019 20:46:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**78.618**	**.06700**	**.38559**	**757.19**	**.00327**
Stddev	.104	.00006	.00155	2.00	.00017
%RSD	.13249	.08376	.40109	.26354	5.2987
#1	78.544	.06704	.38449	755.78	.00315
#2	78.692	.06696	.38668	758.60	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0040**	**.00067**	**59.74**	**-.00267**	**-.01390**
Stddev	.0036	.00028	.33	.00024	.00068
%RSD	90.13	42.369	.5471	8.9252	4.8885
#1	.0014	.00047	59.51	-.00284	-.01342
#2	.0065	.00087	59.97	-.00250	-.01438
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.9264**	**-.00182**	**1.2770**	**.0020**	**.00029**
Stddev	.0152	.00032	.0049	.0036	.00064
%RSD	.25664	17.277	.38239	175.1	222.33
#1	5.9156	-.00160	1.2736	-.0005	-.00016
#2	5.9371	-.00205	1.2805	.0046	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-9-A Acquired: 9/26/2019 20:46:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00300**	i **.1038**	**-.00077**	**.00164**	**.0017**
Stddev	.00139	.0909	.00020	.00072	.0000
%RSD	46.193	87.53	26.119	43.900	2.290
#1	.00398	i .1681	-.00063	.00113	.0017
#2	.00202	i .0396	-.00091	.00216	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1461.2**	**525.13**	**34129.**	**3940.4**
Stddev	.2	1.32	87.	3.1
%RSD	.01476	.25055	.25582	.07860
#1	1461.3	526.06	34191.	3942.6
#2	1461.0	524.20	34068.	3938.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	80.951%	97.950%	87.833%	95.653%
Range				

Sample Name: 480-159440-A-10-A Acquired: 9/26/2019 20:50:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.03717**	**.00519**	**.45263**	**.06244**
Stddev	.00021	.01369	.00066	.00157	.00001
%RSD	71.045	36.837	12.624	.34784	.00815
#1	-.00015	.04685	.00473	.45152	.06243
#2	-.00045	.02748	.00565	.45375	.06244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**310.83**	**.00087**	i **.0232**	**-.00053**
Stddev	.00002	1.14	.00001	.0150	.00007
%RSD	31.838	.36641	.64669	64.56	13.272
#1	.00008	311.63	.00088	i .0338	-.00048
#2	.00005	310.02	.00087	i .0126	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.5073**	**-.00111**	**.07675**	**8.1223**	**.11447**
Stddev	.0003	.00017	.00689	.0308	.00082
%RSD	.00599	14.840	8.9797	.37857	.71547
#1	5.5075	-.00123	.08162	8.1441	.11389
#2	5.5071	-.00100	.07188	8.1006	.11505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-10-A Acquired: 9/26/2019 20:50:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**107.90**	**.03211**	**.27045**	F **1059.1**	**.00460**
Stddev	.08	.00003	.00014	1.4	.00003
%RSD	.07269	.09257	.05175	.13486	.72990
#1	107.96	.03213	.27035	1058.0	.00458
#2	107.85	.03209	.27055	1060.1	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0075**	**.00004**	**80.00**	**-.00740**	**-.01372**
Stddev	.0005	.00021	.34	.00034	.00145
%RSD	6.186	498.79	.4234	4.5610	10.564
#1	.0078	.00019	79.76	-.00716	-.01269
#2	.0071	-.00011	80.24	-.00764	-.01474
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9636**	**.00087**	**1.3849**	**-.0008**	**.00106**
Stddev	.0420	.00069	.0008	.0041	.00043
%RSD	.60301	79.605	.06104	545.9	40.056
#1	6.9340	.00038	1.3855	.0022	.00076
#2	6.9933	.00135	1.3843	-.0037	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-10-A Acquired: 9/26/2019 20:50:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	i **.0971**	**-.00096**	**.03280**	**-.0002**
Stddev	.00189	.0265	.00061	.00223	.0015
%RSD	58.155	27.25	63.750	6.8045	730.2
#1	.00458	i .0784	-.00139	.03122	.0008
#2	.00191	i .1159	-.00053	.03438	-.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1407.3**	**517.84**	**33214.**	**3876.6**
Stddev	1.5	1.47	35.	5.7
%RSD	.10637	.28323	.10522	.14627
#1	1408.4	518.88	33189.	3880.6
#2	1406.2	516.81	33238.	3872.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	77.966%	96.591%	85.476%	94.105%
Range				

Sample Name: 480-159440-A-11-A Acquired: 9/26/2019 20:53:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.04925**	**-.00152**	**.55642**	**.08417**
Stddev	.00047	.01139	.00130	.00080	.00002
%RSD	143.19	23.132	85.747	.14329	.02211
#1	-.00066	.05731	-.00244	.55698	.08416
#2	.00000	.04120	-.00060	.55585	.08418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**133.32**	**.00663**	i **.0061**	**-.00036**
Stddev	.00002	.72	.00005	.0029	.00000
%RSD	42.042	.54249	.72384	47.81	1.1314
#1	-.00004	133.83	.00667	i .0040	-.00037
#2	-.00007	132.81	.00660	i .0082	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.00009**	**.69826**	**6.1021**	**.05868**
Stddev	.00001	.00007	.00407	.0161	.00125
%RSD	1.1205	79.628	.58269	.26375	2.1282
#1	.00076	.00004	.70114	6.1134	.05956
#2	.00077	.00014	.69539	6.0907	.05780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-11-A Acquired: 9/26/2019 20:53:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**49.681**	**.09924**	**.00937**	**157.98**	**.00424**
Stddev	.060	.00034	.00019	.04	.00035
%RSD	.12176	.34324	2.0787	.02526	8.3363
#1	49.638	.09900	.00923	158.01	.00449
#2	49.724	.09948	.00951	157.96	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0336**	**.00164**	**27.23**	**-.00294**	**-.01056**
Stddev	.0022	.00006	.06	.00334	.00212
%RSD	6.590	3.7171	.2035	113.61	20.084
#1	.0351	.00168	27.27	-.00530	-.00906
#2	.0320	.00160	27.19	-.00058	-.01206
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.0595**	**-.00030**	**.69653**	**.0066**	**.00142**
Stddev	.0663	.00132	.00108	.0037	.00030
%RSD	.82266	442.51	.15476	56.19	21.446
#1	8.1064	.00063	.69729	.0093	.00120
#2	8.0126	-.00123	.69577	.0040	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-11-A Acquired: 9/26/2019 20:53:57 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	i **.0881**	**.00055**	**.01616**	**.0004**
Stddev	.00090	.0602	.00062	.00073	.0001
%RSD	388.97	68.27	112.09	4.5367	30.84
#1	-.00087	i .1307	.00099	.01564	.0005
#2	.00040	i .0456	.00012	.01667	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1607.2**	**547.22**	**36502.**	**4070.2**
Stddev	3.4	.39	90.	30.6
%RSD	.21160	.07085	.24776	.75280
#1	1609.6	546.95	36566.	4048.5
#2	1604.8	547.50	36438.	4091.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.041%	102.07%	93.938%	98.802%
Range				

Sample Name: 480-159440-A-12-A Acquired: 9/26/2019 20:57:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.02043**	**-.00072**	**.95261**	**1.6414**
Stddev	.00019	.02132	.00423	.00072	.0067
%RSD	139.45	104.34	589.68	.07587	.41045
#1	.00027	.03550	-.00371	.95210	1.6462
#2	.00000	.00536	.00227	.95312	1.6367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**105.25**	**.00017**	i **.0220**	**-.00037**
Stddev	.00007	.40	.00011	.0142	.00027
%RSD	700.11	.37663	64.792	64.57	72.725
#1	.00004	105.53	.00024	i .0120	-.00018
#2	-.00006	104.97	.00009	i .0321	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00044**	**.16630**	**4.9278**	**.22416**
Stddev	.00033	.00034	.00349	.0671	.00180
%RSD	284.68	76.893	2.1000	1.3623	.80418
#1	.00012	-.00020	.16383	4.9753	.22543
#2	-.00035	-.00068	.16877	4.8804	.22288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-12-A Acquired: 9/26/2019 20:57:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**39.112**	**.03985**	**-.00045**	**130.65**	**-.00039**
Stddev	.065	.00011	.00000	.42	.00032
%RSD	.16642	.28767	.08472	.32276	82.121
#1	39.066	.03977	-.00045	130.95	-.00016
#2	39.158	.03993	-.00045	130.36	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0073**	**-.00149**	**3.821**	**-.00214**	**-.00692**
Stddev	.0014	.00018	.007	.00109	.00349
%RSD	19.64	11.977	.1775	50.844	50.476
#1	.0084	-.00137	3.826	-.00137	-.00445
#2	.0063	-.00162	3.816	-.00290	-.00940
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.6403**	**.00071**	**1.1942**	**.0000**	**.00025**
Stddev	.0238	.00112	.0061	.0083	.00033
%RSD	.51340	156.78	.50762	421400.	128.23
#1	4.6235	.00151	1.1985	.0059	.00048
#2	4.6572	-.00008	1.1899	-.0059	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159440-A-12-A Acquired: 9/26/2019 20:57:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	i **.0463**	**-.00014**	**.00432**	**.0004**
Stddev	.00347	.1187	.00027	.00041	.0010
%RSD	1669.0	256.6	195.26	9.5211	246.4
#1	-.00224	i -.0377	-.00033	.00461	-.0003
#2	.00266	i .1302	.00005	.00403	.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1633.2**	**552.70**	**36728.**	**4034.4**
Stddev	.3	.17	91.	.5
%RSD	.01670	.03146	.24750	.01198
#1	1633.0	552.58	36793.	4034.8
#2	1633.4	552.82	36664.	4034.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	90.480%	103.09%	94.521%	97.935%
Range				

Sample Name: 480-159441-C-1-A Acquired: 9/26/2019 21:01:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01135**	**-.00146**	**.00409**	**.00007**
Stddev	.00042	.00135	.00097	.00022	.00000
%RSD	245.64	11.868	66.374	5.3068	6.4983
#1	.00046	.01230	-.00078	.00424	.00007
#2	-.00012	.01039	-.00215	.00393	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.05076**	**-.00004**	i **.0190**	**.00004**
Stddev	.00006	.00058	.00015	.0065	.00012
%RSD	214.70	1.1438	416.72	34.29	314.78
#1	-.00001	.05035	.00007	i .0144	.00012
#2	.00007	.05117	-.00014	i .0236	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00009**	**.00830**	**.02769**	**.00032**
Stddev	.00026	.00008	.00356	.01717	.00032
%RSD	395.56	86.677	42.835	61.995	99.316
#1	.00025	-.00003	.01082	.03983	.00009
#2	-.00012	-.00014	.00579	.01555	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159441-C-1-A Acquired: 9/26/2019 21:01:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00334**	**.00147**	**-.00039**	**.17843**	**-.00035**
Stddev	.00057	.00003	.00010	.00146	.00023
%RSD	17.006	2.0378	24.356	.81985	67.175
#1	.00374	.00145	-.00046	.17739	-.00018
#2	.00294	.00150	-.00033	.17946	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0002**	**-.00099**	**-.0026**	**.00071**	**.00276**
Stddev	.0015	.00008	.0011	.00052	.00203
%RSD	706.9	8.0538	43.64	72.590	73.484
#1	-.0009	-.00105	-.0018	.00108	.00133
#2	.0013	-.00093	-.0034	.00035	.00419
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00840**	**.00003**	**.00024**	**-.0065**	**-.00016**
Stddev	.00325	.00058	.00006	.0118	.00011
%RSD	38.710	1864.4	24.834	180.0	73.154
#1	-.01070	.00044	.00020	-.0149	-.00024
#2	-.00610	-.00038	.00029	.0018	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159441-C-1-A Acquired: 9/26/2019 21:01:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	i **-.0077**	**-.00042**	**.00392**	**.0000**
Stddev	.00144	.0214	.00017	.00047	.0011
%RSD	165.49	278.6	40.539	12.014	15980.
#1	-.00188	i .0075	-.00054	.00359	-.0007
#2	.00015	i -.0228	-.00030	.00425	.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1804.7**	**585.31**	**39563.**	**4181.7**
Stddev	3.8	.99	8.	1.8
%RSD	.20944	.16923	.02081	.04235
#1	1802.0	586.01	39557.	4180.4
#2	1807.4	584.61	39569.	4182.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.983%	109.18%	101.82%	101.51%
Range				

Sample Name: MB 480-494122/1-A Acquired: 9/26/2019 21:05:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00919**	**-.00053**	**.00198**	**-.00002**
Stddev	.00043	.00994	.00025	.00019	.00001
%RSD	97.708	108.06	46.842	9.6521	50.166
#1	.00074	.01622	-.00035	.00184	-.00003
#2	.00014	.00217	-.00070	.00211	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.02758**	**-.00000**	i **.0094**	**-.00001**
Stddev	.00002	.00030	.00013	.0162	.00004
%RSD	283.83	1.0750	3450.6	172.2	336.21
#1	.00001	.02737	-.00010	i .0209	.00002
#2	-.00002	.02779	.00009	i -.0020	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00023**	**-.00415**	**.02002**	**-.00039**
Stddev	.00035	.00033	.00426	.01799	.00100
%RSD	274.25	141.50	102.67	89.845	259.47
#1	.00012	.00000	-.00716	.03274	.00032
#2	-.00037	-.00047	-.00114	.00730	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494122/1-A Acquired: 9/26/2019 21:05:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**-.00009**	**-.00084**	**.09983**	**-.00041**
Stddev	.00014	.00001	.00012	.00549	.00005
%RSD	3.3961	11.510	13.996	5.5040	11.116
#1	.00408	-.00009	-.00075	.09594	-.00044
#2	.00428	-.00008	-.00092	.10371	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0029**	**-.00052**	**-.0068**	**-.00118**	**-.00363**
Stddev	.0001	.00128	.0003	.00061	.00034
%RSD	2.594	247.64	4.401	51.422	9.3928
#1	-.0029	.00039	-.0066	-.00161	-.00387
#2	-.0030	-.00142	-.0070	-.00075	-.00339
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01720**	**.00060**	**.00013**	**-.0035**	**-.00032**
Stddev	.00158	.00057	.00003	.0037	.00036
%RSD	9.1895	93.906	20.661	106.2	113.97
#1	-.01608	.00020	.00011	-.0009	-.00057
#2	-.01832	.00101	.00014	-.0062	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494122/1-A Acquired: 9/26/2019 21:05:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	i **.0589**	**-.00028**	**.00245**	**.0004**
Stddev	.00211	.0324	.00004	.00118	.0006
%RSD	167.78	54.91	14.214	48.057	154.5
#1	.00023	i .0361	-.00031	.00162	-.0000
#2	-.00276	i .0818	-.00025	.00329	.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1794.8**	**583.35**	**39340.**	**4137.0**
Stddev	1.6	1.41	6.	5.6
%RSD	.08712	.24168	.01645	.13639
#1	1793.7	584.35	39345.	4141.0
#2	1795.9	582.36	39336.	4133.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.435%	108.81%	101.24%	100.42%
Range				

Sample Name: LCS 480-494122/2-A Acquired: 9/26/2019 21:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05391**	**10.447**	**.19812**	**.20278**	**.21894**
Stddev	.00066	.021	.00030	.00179	.00102
%RSD	1.2261	.20461	.15349	.88176	.46720
#1	.05437	10.432	.19790	.20152	.21967
#2	.05344	10.462	.19833	.20405	.21822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21134**	**10.707**	**.20092**	i **-.0093**	**.20338**
Stddev	.00025	.011	.00093	.0001	.00118
%RSD	.11818	.09980	.46371	1.355	.57903
#1	.21117	10.699	.20026	i -.0092	.20421
#2	.21152	10.714	.20158	i -.0093	.20254
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20494**	**.19595**	**10.422**	**9.9577**	**.21090**
Stddev	.00015	.00045	.020	.0357	.00036
%RSD	.07441	.22790	.19564	.35884	.16971
#1	.20483	.19564	10.408	9.9324	.21065
#2	.20505	.19627	10.437	9.9829	.21115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494122/2-A Acquired: 9/26/2019 21:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.678**	**.20450**	**.20028**	**10.034**	**.20860**
Stddev	.032	.00046	.00106	.033	.00026
%RSD	.29814	.22726	.52681	.32453	.12283
#1	10.701	.20483	.19953	10.011	.20879
#2	10.656	.20417	.20103	10.057	.20842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5902**	**.20363**	**9.874**	**.21607**	**.18486**
Stddev	.0013	.00055	.080	.00089	.00016
%RSD	.2280	.27247	.8049	.41300	.08603
#1	-.5892	.20324	9.818	.21670	.18474
#2	-.5911	.20402	9.930	.21544	.18497
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.8995**	**.19745**	**.20355**	**.0181**	**.19959**
Stddev	.0290	.00009	.00038	.0022	.00005
%RSD	.29290	.04699	.18756	12.11	.02751
#1	9.9200	.19738	.20328	.0197	.19955
#2	9.8790	.19751	.20382	.0166	.19963
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494122/2-A Acquired: 9/26/2019 21:09:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20504**	i **-.0523**	**.20655**	**.22426**	**.0045**
Stddev	.00217	.0390	.00107	.00376	.0000
%RSD	1.0584	74.61	.51890	1.6768	.7697
#1	.20657	i -.0799	.20731	.22160	.0045
#2	.20351	i -.0247	.20580	.22692	.0045
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1760.2**	**575.83**	**38684.**	**4164.3**
Stddev	5.2	2.64	88.	4.3
%RSD	.29382	.45806	.22850	.10286
#1	1756.5	577.69	38622.	4167.3
#2	1763.8	573.96	38747.	4161.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.515%	107.41%	99.555%	101.09%
Range				

Sample Name: 480-159276-A-26-B Acquired: 9/26/2019 21:13:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.06487**	**.00105**	**.01336**	**.03020**
Stddev	.00035	.01620	.00534	.00007	.00005
%RSD	704.85	24.966	507.88	.51059	.16773
#1	.00020	.05342	-.00272	.01331	.03016
#2	-.00030	.07632	.00482	.01341	.03024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**74.750**	**.00013**	i **.0145**	**-.00025**
Stddev	.00001	.089	.00003	.0036	.00016
%RSD	22.994	.11876	23.437	24.89	65.468
#1	.00004	74.812	.00016	i .0171	-.00013
#2	.00006	74.687	.00011	i .0120	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.00175**	**.00337**	**.52144**	**.00117**
Stddev	.00019	.00013	.00097	.00548	.00001
%RSD	14.849	7.3088	28.817	1.0504	.45847
#1	.00142	.00184	.00406	.52531	.00117
#2	.00115	.00166	.00268	.51757	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-B Acquired: 9/26/2019 21:13:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**40.356**	**.00506**	**.00012**	**2.8219**	**-.00071**
Stddev	.025	.00003	.00031	.0061	.00005
%RSD	.06185	.55268	266.20	.21579	6.5545
#1	40.339	.00508	-.00010	2.8262	-.00074
#2	40.374	.00504	.00034	2.8176	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0055**	**-.00110**	**1.970**	**-.00234**	**-.00411**
Stddev	.0035	.00060	.009	.00074	.00403
%RSD	63.66	54.767	.4758	31.578	98.042
#1	.0030	-.00067	1.976	-.00286	-.00126
#2	.0080	-.00153	1.963	-.00182	-.00696
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.7815**	**-.00019**	**.05570**	**.0058**	**.00023**
Stddev	.0034	.00170	.00014	.0003	.00027
%RSD	.04390	914.33	.25628	4.755	116.20
#1	7.7839	.00102	.05580	.0059	.00043
#2	7.7791	-.00139	.05560	.0056	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-B Acquired: 9/26/2019 21:13:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	i **.1191**	**.00050**	**.00671**	**.0006**
Stddev	.00063	.0659	.00022	.00006	.0006
%RSD	147.34	55.34	43.626	.92291	102.8
#1	-.00002	i .0725	.00035	.00666	.0002
#2	.00087	i .1658	.00066	.00675	.0010
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1713.2**	**565.67**	**37791.**	**4099.4**
Stddev	.7	1.61	20.	5.0
%RSD	.03980	.28534	.05214	.12223
#1	1712.8	564.53	37805.	4095.9
#2	1713.7	566.81	37777.	4102.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.915%	105.51%	97.255%	99.512%
Range				

Sample Name: 159276-A-26-Bsd@5 Acquired: 9/26/2019 21:16:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.01195**	**-.00152**	**.00219**	**.00599**
Stddev	.00031	.00160	.00142	.00040	.00000
%RSD	243.11	13.383	93.567	18.190	.00032
#1	.00009	.01082	-.00052	.00191	.00599
#2	-.00035	.01308	-.00253	.00247	.00599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**15.008**	**-.00005**	i **.0119**	**-.00011**
Stddev	.00001	.000	.00006	.0069	.00006
%RSD	16.441	.00327	113.61	57.79	54.854
#1	.00003	15.009	-.00001	i .0070	-.00015
#2	.00004	15.008	-.00010	i .0167	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00039**	**-.00571**	**.11217**	**.00117**
Stddev	.00003	.00027	.00051	.00462	.00073
%RSD	30.031	68.907	8.9333	4.1153	62.095
#1	.00007	.00020	-.00607	.11543	.00066
#2	.00010	.00058	-.00535	.10891	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159276-A-26-Bsd@5 Acquired: 9/26/2019 21:16:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.8603**	**.00089**	**-.00044**	**.61870**	**-.00062**
Stddev	.0068	.00002	.00014	.00582	.00045
%RSD	.08678	2.0332	31.362	.94050	72.863
#1	7.8651	.00090	-.00054	.62282	-.00030
#2	7.8555	.00088	-.00034	.61459	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0026**	**.00060**	**.3733**	**-.00140**	**-.00272**
Stddev	.0020	.00002	.0055	.00111	.00317
%RSD	75.93	3.4013	1.466	79.170	116.55
#1	-.0041	.00062	.3694	-.00219	-.00048
#2	-.0012	.00059	.3772	-.00062	-.00497
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.5263**	**.00104**	**.01103**	**.0021**	**-.00005**
Stddev	.0163	.00002	.00006	.0160	.00007
%RSD	1.0664	2.0361	.53599	748.1	122.12
#1	1.5148	.00102	.01099	-.0092	-.00001
#2	1.5378	.00105	.01107	.0134	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159276-A-26-Bsd@5 Acquired: 9/26/2019 21:16:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	i **.0453**	**-.00013**	**.00024**	**-.0007**
Stddev	.00094	.0536	.00004	.00009	.0015
%RSD	462.21	118.3	30.618	35.872	212.2
#1	-.00046	i .0832	-.00016	.00030	.0004
#2	.00087	i .0074	-.00010	.00018	-.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1794.2**	**584.98**	**39139.**	**4160.4**
Stddev	2.7	.74	29.	5.0
%RSD	.15253	.12604	.07526	.11981
#1	1792.3	584.46	39118.	4163.9
#2	1796.2	585.50	39160.	4156.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.402%	109.11%	100.73%	100.99%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 21:20:42 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0028**	**51.840**	**.91422**	**.94552**	**1.0405**	**.99318**	**51.292**
Stddev	.0024	.068	.00360	.00041	.0031	.00406	.341
%RSD	.23972	.13202	.39366	.04348	.29867	.40887	.66530
#1	1.0045	51.888	.91168	.94522	1.0427	.99605	51.533
#2	1.0011	51.792	.91677	.94581	1.0383	.99031	51.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93652**	i **1.027**	**1.0142**	**.98385**	**.95382**	**49.756**	**48.569**
Stddev	.00210	.005	.0010	.00310	.00361	.590	.084
%RSD	.22406	.4836	.09852	.31488	.37892	1.1858	.17201
#1	.93504	i 1.024	1.0149	.98604	.95638	50.173	48.628
#2	.93801	i 1.031	1.0134	.98166	.95126	49.339	48.510
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0074**	**50.607**	**.98283**	**.93649**	**49.747**	**.99378**	**25.85**
Stddev	.0034	.036	.00164	.00131	.135	.00107	.02
%RSD	.33541	.07168	.16700	.14003	.27179	.10788	.0688
#1	1.0098	50.632	.98399	.93557	49.843	.99302	25.84
#2	1.0050	50.581	.98167	.93742	49.652	.99453	25.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/26/2019 21:20:42 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0016	22.81	.94543	F .88929	10.239	1.0039	1.0061
Stddev	.0017	.03	.00065	.00497	.028	.0003	.0029
%RSD	.16490	.1254	.06854	.55939	.27075	.02732	.29196
#1	1.0028	22.79	.94497	.89281	10.259	1.0037	1.0082
#2	1.0005	22.83	.94589	.88577	10.219	1.0041	1.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.0000			
Range				-10.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9757	.96182	1.0026	i 2.386	.99304	1.0274	.9562
Stddev	.0048	.00086	.0004	.047	.00079	.0034	.0057
%RSD	.4893	.08955	.04478	1.982	.07982	.32856	.5999
#1	.9790	.96243	1.0022	i 2.353	.99360	1.0298	.9521
#2	.9723	.96121	1.0029	i 2.419	.99248	1.0250	.9602
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1644.9	576.39	37208.	4077.3
Stddev	.1	.70	114.	22.3
%RSD	.00345	.12210	.30706	.54685
#1	1644.9	576.89	37127.	4061.6
#2	1644.8	575.89	37288.	4093.1

Sample Name: CCB-5508960 Acquired: 9/26/2019 21:24:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.01043**	**.00162**	**-.00066**	**.00012**	**.00001**	**-.00116**	**-.00001**
Stddev	.00030	.00949	.00088	.00072	.00000	.00003	.00076	.00010
%RSD	229.60	91.001	54.019	109.96	2.7326	350.54	65.698	1140.2
#1	.00034	-.01714	.00100	-.00015	.00012	.00003	-.00170	-.00008
#2	-.00008	-.00372	.00224	-.00117	.00012	-.00001	-.00062	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0159**	**.00013**	**.00005**	**.00000**	**.00126**	**-.00430**	**-.00006**	**.00091**
Stddev	.0009	.00003	.00008	.00018	.00174	.00284	.00039	.00117
%RSD	5.977	23.741	159.33	4327.2	138.32	66.029	647.79	128.32
#1	i .0152	.00011	.00011	.00013	.00249	-.00631	-.00034	.00173
#2	i .0166	.00015	-.00001	-.00012	.00003	-.00229	.00022	.00008
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00130**	**.06730**	**.00005**	**.0002**	**-.00143**	**-.0067**	**-.00054**
Stddev	.00003	.00028	.00243	.00001	.0004	.00084	.0030	.00025
%RSD	24.911	21.809	3.6062	9.4772	178.5	59.018	45.03	46.164
#1	-.00015	.00110	.06901	.00006	.0005	-.00202	-.0088	-.00072
#2	-.00010	.00150	.06558	.00005	-.0001	-.00083	-.0045	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 21:24:22 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**-.02466**	**.00112**	**.00006**	**-.0009**	**-.00008**	**.00031**	i **.0752**
Stddev	.00163	.00279	.00007	.00002	.0008	.00034	.00009	.0325
%RSD	215.26	11.300	5.9366	30.245	84.99	400.84	29.439	43.22
#1	.00191	-.02269	.00117	.00005	-.0014	.00016	.00038	i .0522
#2	-.00039	-.02663	.00107	.00008	-.0004	-.00032	.00025	i .0982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00031**	**.00064**	**.0001**
Stddev	.00010	.00008	.0005
%RSD	32.773	11.792	555.4
#1	-.00038	.00058	-.0003
#2	-.00024	.00069	.0005
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1800.5**	**589.12**	**39338.**	**4128.7**
Stddev	5.2	3.14	90.	5.1
%RSD	.28671	.53350	.22923	.12246
#1	1804.2	591.34	39402.	4132.3
#2	1796.9	586.90	39275.	4125.1

Sample Name: CCVL-5514926 Acquired: 9/26/2019 21:28:13 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00623	.21595	.01316	.01883	.00220	.00213	.54405	.00183
Stddev	.00037	.01169	.00036	.00014	.00001	.00004	.00262	.00004
%RSD	6.0057	5.4147	2.7316	.73510	.28059	1.8534	.48197	1.9252
#1	.00649	.22421	.01291	.01892	.00220	.00210	.54220	.00180
#2	.00596	.20768	.01342	.01873	.00221	.00216	.54590	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0180	.00392	.00407	.00947	.04708	.49967	.03051	.21952
Stddev	.0021	.00007	.00006	.00041	.00177	.00325	.00081	.00146
%RSD	11.68	1.8934	1.3694	4.3144	3.7517	.64971	2.6388	.66301
#1	i .0195	.00387	.00410	.00918	.04583	.49737	.03108	.22054
#2	i .0166	.00398	.00403	.00975	.04833	.50197	.02994	.21849
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	.00938	1.0463	.01052	-.0311	.00900	.1841	.02048
Stddev	.00006	.00045	.0049	.00002	.0003	.00052	.0016	.00152
%RSD	2.0393	4.7583	.46398	.19130	.9566	5.7338	.8459	7.4337
#1	.00293	.00906	1.0497	.01050	-.0313	.00936	.1852	.01940
#2	.00301	.00969	1.0428	.01053	-.0309	.00863	.1830	.02156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 21:28:13 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02109	.47898	.00899	.00502	-.0024	.00473	.01809	i .0627
Stddev	.00131	.00778	.00066	.00001	.0096	.00007	.00113	.0177
%RSD	6.2161	1.6250	7.3554	.20333	402.9	1.5567	6.2419	28.25
#1	.02201	.47348	.00852	.00501	-.0092	.00468	.01729	i .0753
#2	.02016	.48448	.00945	.00503	.0044	.00478	.01889	i .0502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00471	.01145	.0011
Stddev	.00029	.00093	.0004
%RSD	6.0604	8.1413	33.98
#1	.00450	.01079	.0013
#2	.00491	.01211	.0008
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1808.3	591.43	39238.	4120.0
Stddev	1.2	.70	41.	5.2
%RSD	.06672	.11894	.10570	.12673
#1	1807.5	591.93	39209.	4123.7
#2	1809.2	590.94	39268.	4116.3

Sample Name: 480-159276-A-26-Bpds Acquired: 9/26/2019 21:32:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.05331	10.513	.20540	.21688	.24409
Stddev	.00015	.022	.00110	.00034	.00048
%RSD	.28028	.20670	.53694	.15576	.19737
#1	.05342	10.498	.20462	.21712	.24443
#2	.05321	10.528	.20618	.21664	.24375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.21156	83.242	.20356	i .0024	.20375
Stddev	.00068	.404	.00076	.0133	.00008
%RSD	.32210	.48579	.37222	551.3	.03946
#1	.21204	83.528	.20409	i .0118	.20369
#2	.21108	82.956	.20302	i -.0070	.20380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.20387	.20027	10.291	10.597	.21322
Stddev	.00066	.00096	.053	.005	.00079
%RSD	.32234	.47718	.51816	.04725	.37280
#1	.20341	.20094	10.329	10.600	.21378
#2	.20434	.19959	10.253	10.593	.21266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-Bpds Acquired: 9/26/2019 21:32:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**49.966**	**.20784**	**.20068**	**12.693**	**.20787**
Stddev	.084	.00024	.00000	.047	.00002
%RSD	.16723	.11680	.00092	.36631	.00751
#1	50.025	.20767	.20068	12.726	.20785
#2	49.907	.20801	.20068	12.660	.20788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5517**	**.20730**	**11.93**	**.22413**	**.18935**
Stddev	.0030	.00009	.04	.00173	.00091
%RSD	.5357	.04557	.3341	.77116	.48058
#1	-.5496	.20737	11.96	.22535	.19000
#2	-.5537	.20724	11.91	.22291	.18871
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.521**	**.20225**	**.25507**	**.0034**	**.20216**
Stddev	.134	.00005	.00128	.0067	.00003
%RSD	.76626	.02679	.50046	197.4	.01519
#1	17.616	.20229	.25597	-.0013	.20218
#2	17.426	.20221	.25417	.0081	.20214
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-Bpds Acquired: 9/26/2019 21:32:04 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20880**	i **-.1154**	**.20616**	**.22564**	**.0055**
Stddev	.00023	.0440	.00018	.00051	.0011
%RSD	.11156	38.11	.08667	.22772	20.49
#1	.20863	i -.1465	.20629	.22600	.0063
#2	.20896	i -.0843	.20604	.22528	.0047
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1685.0**	**562.76**	**37836.**	**4136.9**
Stddev	1.9	.23	76.	15.9
%RSD	.11564	.04168	.20212	.38445
#1	1686.4	562.92	37782.	4125.6
#2	1683.6	562.59	37890.	4148.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.349%	104.97%	97.373%	100.42%
Range				

Sample Name: 480-159276-A-26-C MS Acquired: 9/26/2019 21:35:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05417**	**10.582**	**.19829**	**.21395**	**.24842**
Stddev	.00098	.053	.00155	.00068	.00069
%RSD	1.8145	.50381	.78412	.31688	.27746
#1	.05348	10.545	.19720	.21347	.24891
#2	.05487	10.620	.19939	.21443	.24794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21089**	**86.464**	**.20102**	i **.0049**	**.20218**
Stddev	.00110	.266	.00099	.0198	.00000
%RSD	.52192	.30810	.49036	407.7	.00081
#1	.21011	86.275	.20032	i -.0091	.20218
#2	.21166	86.652	.20171	i .0188	.20218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20215**	**.20043**	**10.240**	**10.654**	**.21522**
Stddev	.00013	.00033	.035	.040	.00096
%RSD	.06266	.16311	.33995	.37982	.44722
#1	.20206	.20066	10.216	10.626	.21454
#2	.20224	.20020	10.265	10.683	.21590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-C MS Acquired: 9/26/2019 21:35:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**51.794**	**.20556**	**.19902**	**12.887**	**.20655**
Stddev	.132	.00109	.00057	.023	.00087
%RSD	.25580	.53252	.28813	.18229	.42260
#1	51.888	.20633	.19861	12.871	.20593
#2	51.700	.20479	.19942	12.904	.20716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5522**	**.20551**	**12.09**	**.21793**	**.18631**
Stddev	.0002	.00067	.02	.00191	.00423
%RSD	.0423	.32648	.1774	.87553	2.2725
#1	-.5520	.20503	12.07	.21658	.18332
#2	-.5524	.20598	12.10	.21928	.18931
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**16.460**	**.20172**	**.25836**	**.0070**	**.20010**
Stddev	.011	.00098	.00060	.0024	.00006
%RSD	.06459	.48468	.23058	34.07	.03064
#1	16.468	.20103	.25794	.0086	.20005
#2	16.453	.20242	.25878	.0053	.20014
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159276-A-26-C MS Acquired: 9/26/2019 21:35:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20583**	i **.0101**	**.20508**	**.22477**	**.0035**
Stddev	.00053	.0085	.00029	.00131	.0001
%RSD	.25931	83.85	.14266	.58178	4.015
#1	.20545	i .0041	.20488	.22569	.0034
#2	.20620	i .0162	.20529	.22385	.0036
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1684.3**	**566.27**	**37690.**	**4126.3**
Stddev	1.5	3.28	84.	11.6
%RSD	.08998	.58006	.22230	.27995
#1	1685.3	568.60	37630.	4134.5
#2	1683.2	563.95	37749.	4118.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.310%	105.62%	96.995%	100.17%
Range				

Sample Name: 159276-A-26-D MSd Acquired: 9/26/2019 21:39:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05134**	**9.9252**	**.18605**	**.20047**	**.25776**
Stddev	.00033	.0287	.00011	.00005	.00074
%RSD	.64784	.28880	.06020	.02712	.28754
#1	.05110	9.9050	.18613	.20051	.25829
#2	.05157	9.9455	.18597	.20044	.25724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19682**	**79.757**	**.18797**	i **-.0003**	**.18949**
Stddev	.00011	.436	.00000	.0124	.00001
%RSD	.05550	.54614	.00115	3566.	.00515
#1	.19690	80.065	.18797	i -.0091	.18948
#2	.19675	79.449	.18797	i .0084	.18949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19060**	**.18465**	**9.6026**	**9.9338**	**.19922**
Stddev	.00062	.00073	.0066	.0221	.00026
%RSD	.32309	.39465	.06863	.22203	.13252
#1	.19017	.18413	9.6072	9.9182	.19941
#2	.19104	.18516	9.5979	9.9494	.19904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159276-A-26-D MSd Acquired: 9/26/2019 21:39:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**47.995**	**.19350**	**.18558**	**12.047**	**.19342**
Stddev	.148	.00032	.00019	.003	.00031
%RSD	.30810	.16581	.10393	.02365	.16226
#1	48.099	.19373	.18544	12.045	.19320
#2	47.890	.19327	.18572	12.049	.19365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5179**	**.19087**	**11.37**	**.20024**	**.17265**
Stddev	.0005	.00108	.02	.00024	.00515
%RSD	.1034	.56836	.1767	.11941	2.9843
#1	-.5175	.19010	11.38	.20007	.17630
#2	-.5183	.19164	11.36	.20041	.16901
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.687**	**.18922**	**.26121**	**.0044**	**.18656**
Stddev	.162	.00033	.00007	.0033	.00002
%RSD	1.1040	.17634	.02561	75.35	.01270
#1	14.802	.18945	.26116	.0067	.18654
#2	14.572	.18898	.26126	.0020	.18657
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159276-A-26-D MSd Acquired: 9/26/2019 21:39:25 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	i **-.0577**	**.19347**	**.21158**	**.0015**
Stddev	.00054	.0522	.00010	.00255	.0003
%RSD	.27801	90.35	.05266	1.2034	20.54
#1	.19337	i -.0946	.19354	.21338	.0018
#2	.19413	i -.0208	.19340	.20978	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1692.8**	**567.18**	**37612.**	**4130.3**
Stddev	1.3	.28	55.	16.6
%RSD	.07612	.04880	.14514	.40185
#1	1693.7	567.38	37573.	4118.6
#2	1691.9	566.99	37650.	4142.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.783%	105.79%	96.795%	100.26%
Range				

Sample Name: 480-159254-C-6-D Acquired: 9/26/2019 21:43:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.02064**	**.00167**	**.61548**	**.02607**
Stddev	.00074	.02035	.00021	.00025	.00002
%RSD	863.00	98.625	12.456	.04130	.08921
#1	-.00044	.00625	.00182	.61530	.02608
#2	.00061	.03503	.00153	.61566	.02605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**24.176**	**-.00007**	i **.0209**	**-.00019**
Stddev	.00000	.011	.00002	.0109	.00007
%RSD	43.412	.04559	26.329	52.32	35.805
#1	-.00000	24.184	-.00006	i .0132	-.00014
#2	-.00001	24.168	-.00008	i .0286	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.00110**	**.13170**	**2.3276**	**.03298**
Stddev	.00016	.00008	.00083	.0096	.00016
%RSD	30.332	6.9561	.63071	.41317	.47916
#1	.00042	.00104	.13229	2.3344	.03309
#2	.00065	.00115	.13111	2.3208	.03287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159254-C-6-D Acquired: 9/26/2019 21:43:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.4234**	**.05988**	**.00515**	**572.78**	**.00543**
Stddev	.0127	.00026	.00014	.20	.00054
%RSD	.19695	.42919	2.6274	.03433	9.8910
#1	6.4323	.06006	.00525	572.92	.00505
#2	6.4145	.05970	.00506	572.64	.00581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0119**	**.00002**	F **266.3**	**-.00052**	**-.01384**
Stddev	.0060	.00098	.1	.00179	.00085
%RSD	50.43	4316.2	.0302	347.86	6.1387
#1	.0161	.00071	266.3	.00075	-.01323
#2	.0076	-.00067	266.2	-.00178	-.01444
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.7114**	**.00129**	**.78147**	**.0152**	**.00006**
Stddev	.0120	.00007	.00072	.0042	.00002
%RSD	.44221	5.4349	.09153	27.55	28.142
#1	2.7030	.00134	.78097	.0182	.00005
#2	2.7199	.00124	.78198	.0122	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159254-C-6-D Acquired: 9/26/2019 21:43:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00174	i .0114	-.00020	.00485	.0011
Stddev	.00113	.0180	.00059	.00161	.0003
%RSD	64.744	158.5	295.13	33.166	23.96
#1	.00254	i -.0014	-.00062	.00599	.0009
#2	.00094	i .0241	.00022	.00371	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1566.9	554.51	35628.	4023.8
Stddev	3.3	.46	37.	3.0
%RSD	.20875	.08380	.10373	.07382
#1	1569.3	554.84	35654.	4025.9
#2	1564.6	554.18	35602.	4021.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	86.810%	103.43%	91.690%	97.677%
Range				

Sample Name: MB 480-494097/1-A Acquired: 9/26/2019 21:46:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00209**	**.00021**	**.00077**	**-.00004**
Stddev	.00037	.00698	.00239	.00001	.00001
%RSD	178.17	334.22	1138.3	1.4708	32.873
#1	.00005	-.00285	-.00148	.00077	-.00003
#2	-.00047	.00702	.00190	.00076	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.03474**	**-.00008**	i **.0113**	**-.00005**
Stddev	.00000	.00263	.00003	.0056	.00009
%RSD	7.9365	7.5630	39.247	50.03	177.08
#1	-.00004	.03289	-.00010	i .0153	.00001
#2	-.00005	.03660	-.00006	i .0073	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00040**	**-.00122**	**.00891**	**.00023**
Stddev	.00028	.00020	.00055	.00445	.00082
%RSD	113.10	49.139	45.556	49.992	354.00
#1	.00044	.00026	-.00161	.01206	.00081
#2	.00005	.00054	-.00083	.00576	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494097/1-A Acquired: 9/26/2019 21:46:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00392**	**-.00022**	**-.00056**	**.10049**	**-.00058**
Stddev	.00178	.00000	.00001	.00388	.00005
%RSD	45.466	1.7941	2.3883	3.8605	8.3038
#1	.00266	-.00022	-.00055	.10323	-.00055
#2	.00518	-.00022	-.00057	.09775	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0026**	**.00019**	**.0079**	**-.00110**	**-.00042**
Stddev	.0015	.00023	.0030	.00045	.00327
%RSD	58.45	124.09	37.75	40.650	769.21
#1	-.0015	.00002	.0101	-.00078	.00189
#2	-.0037	.00035	.0058	-.00141	-.00274
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02390**	**-.00062**	**.00013**	**.0055**	**-.00037**
Stddev	.00724	.00061	.00002	.0048	.00029
%RSD	30.284	98.716	17.759	87.38	77.444
#1	-.02901	-.00019	.00014	.0089	-.00058
#2	-.01878	-.00106	.00011	.0021	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494097/1-A Acquired: 9/26/2019 21:46:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	i **.0977**	**-.00013**	**.00336**	**.0003**
Stddev	.00132	.0529	.00053	.00109	.0002
%RSD	324.91	54.12	411.45	32.482	74.71
#1	-.00134	i .1351	.00025	.00259	.0001
#2	.00053	i .0603	-.00051	.00413	.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1798.4**	**589.02**	**39645.**	**4199.0**
Stddev	3.3	1.50	75.	8.1
%RSD	.18350	.25482	.18931	.19339
#1	1796.1	587.96	39592.	4193.3
#2	1800.8	590.08	39698.	4204.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.635%	109.87%	102.03%	101.93%
Range				

Sample Name: LCS 480-494097/2-A Acquired: 9/26/2019 21:50:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05193**	**10.043**	**.18824**	**.18971**	**.20995**
Stddev	.00018	.044	.00340	.00131	.00046
%RSD	.34921	.44151	1.8057	.69152	.22119
#1	.05181	10.074	.18584	.19064	.20962
#2	.05206	10.011	.19065	.18878	.21028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20449**	**10.356**	**.19209**	i **.0042**	**.19857**
Stddev	.00038	.034	.00087	.0182	.00020
%RSD	.18347	.33157	.45524	431.8	.09854
#1	.20475	10.380	.19270	i .0171	.19843
#2	.20422	10.332	.19147	i -.0086	.19870
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19657**	**.18953**	**10.063**	**9.4900**	**.20237**
Stddev	.00107	.00068	.051	.0425	.00038
%RSD	.54605	.35886	.50679	.44759	.18542
#1	.19581	.18905	10.099	9.5200	.20264
#2	.19733	.19001	10.027	9.4599	.20211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494097/2-A Acquired: 9/26/2019 21:50:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.426**	**.19802**	**.19081**	**9.5765**	**.20250**
Stddev	.032	.00044	.00084	.0295	.00091
%RSD	.31038	.22295	.43951	.30807	.45099
#1	10.403	.19771	.19140	9.5973	.20185
#2	10.449	.19833	.19021	9.5556	.20314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5823**	**.19939**	**9.169**	**.21056**	**.17634**
Stddev	.0039	.00139	.031	.00267	.00306
%RSD	.6666	.69679	.3402	1.2669	1.7329
#1	-.5795	.19840	9.191	.21245	.17417
#2	-.5850	.20037	9.147	.20868	.17850
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.5797**	**.19016**	**.19459**	**.0135**	**.19306**
Stddev	.0345	.00134	.00027	.0039	.00045
%RSD	.35987	.70335	.13958	29.09	.23319
#1	9.6041	.19111	.19478	.0107	.19275
#2	9.5554	.18922	.19440	.0162	.19338
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494097/2-A Acquired: 9/26/2019 21:50:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19596**	i **-.1151**	**.20022**	**.21559**	**.0026**
Stddev	.00146	.0973	.00193	.00045	.0002
%RSD	.74527	84.52	.96304	.21015	5.781
#1	.19493	i -.0463	.19886	.21591	.0027
#2	.19699	i -.1839	.20159	.21527	.0025
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1768.7**	**589.96**	**38796.**	**4191.1**
Stddev	2.5	2.15	81.	22.8
%RSD	.14118	.36518	.20807	.54411
#1	1770.4	588.43	38853.	4175.0
#2	1766.9	591.48	38739.	4207.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.985%	110.04%	99.844%	101.74%
Range				

Sample Name: LCSD 480-494097/3-A Acquired: 9/26/2019 21:54:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05341**	**10.385**	**.19474**	**.19958**	**.21687**
Stddev	.00022	.062	.00120	.00145	.00008
%RSD	.41211	.60090	.61576	.72741	.03629
#1	.05325	10.429	.19559	.20061	.21693
#2	.05356	10.341	.19389	.19855	.21682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20863**	**10.548**	**.19714**	i **.0066**	**.20130**
Stddev	.00109	.057	.00074	.0067	.00023
%RSD	.52109	.53730	.37335	101.9	.11350
#1	.20940	10.588	.19767	i .0018	.20146
#2	.20786	10.508	.19662	i .0114	.20113
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20040**	**.19361**	**10.260**	**9.8567**	**.20888**
Stddev	.00037	.00083	.026	.0001	.00092
%RSD	.18413	.42665	.25307	.00117	.44162
#1	.20066	.19303	10.279	9.8568	.20953
#2	.20014	.19419	10.242	9.8567	.20823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCSD 480-494097/3-A Acquired: 9/26/2019 21:54:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.536**	**.20104**	**.19623**	**9.8946**	**.20573**
Stddev	.002	.00024	.00154	.0240	.00025
%RSD	.01509	.11936	.78615	.24308	.12345
#1	10.535	.20087	.19732	9.9116	.20555
#2	10.537	.20121	.19514	9.8776	.20591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5854**	**.20116**	**9.502**	**.21870**	**.18219**
Stddev	.0005	.00198	.044	.00002	.00153
%RSD	.0933	.98276	.4614	.00745	.83860
#1	-.5850	.19976	9.533	.21868	.18111
#2	-.5858	.20256	9.471	.21871	.18327
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.8237**	**.19317**	**.20135**	**.0037**	**.19675**
Stddev	.0669	.00037	.00027	.0059	.00022
%RSD	.68045	.18924	.13537	156.9	.11170
#1	9.8710	.19292	.20154	.0079	.19691
#2	9.7764	.19343	.20116	-.0004	.19660
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCSD 480-494097/3-A Acquired: 9/26/2019 21:54:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19994**	i **.0282**	**.20330**	**.21845**	**.0017**
Stddev	.00081	.0470	.00017	.00216	.0003
%RSD	.40726	166.5	.08395	.99052	19.48
#1	.19937	i -.0050	.20318	.21998	.0019
#2	.20052	i .0615	.20342	.21692	.0015
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1763.6**	**582.68**	**38875.**	**4206.8**
Stddev	1.2	1.49	36.	27.4
%RSD	.06948	.25592	.09294	.65166
#1	1764.4	581.62	38901.	4187.4
#2	1762.7	583.73	38850.	4226.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.704%	108.68%	100.05%	102.12%
Range				

Sample Name: 480-159555-D-1-B Acquired: 9/26/2019 21:58:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**-.00097**	**-.00034**	**.00301**	**.00031**
Stddev	.00008	.00538	.00199	.00024	.00002
%RSD	30.763	554.63	578.72	8.0229	7.0842
#1	.00020	-.00478	-.00175	.00318	.00030
#2	.00031	.00284	.00106	.00284	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**2.7182**	**.00010**	i **.0191**	**.00006**
Stddev	.00000	.0063	.00001	.0110	.00007
%RSD	15.161	.23159	14.123	57.47	113.30
#1	-.00001	2.7138	.00011	i .0113	.00011
#2	-.00001	2.7227	.00009	i .0268	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**-.00007**	**.00377**	**.10918**	**.00056**
Stddev	.00036	.00013	.00203	.00629	.00019
%RSD	99.031	186.54	53.667	5.7570	35.062
#1	-.00011	.00002	.00521	.11363	.00042
#2	-.00062	-.00016	.00234	.10474	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159555-D-1-B Acquired: 9/26/2019 21:58:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.83243**	**.00206**	**-.00024**	**.61194**	**-.00024**
Stddev	.00801	.00005	.00023	.00306	.00016
%RSD	.96267	2.4557	96.268	.49929	68.817
#1	.82677	.00202	-.00040	.61410	-.00012
#2	.83810	.00209	-.00008	.60978	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0062**	**-.00032**	**2.303**	**-.00254**	**-.00471**
Stddev	.0009	.00086	.001	.00132	.00100
%RSD	13.73	265.90	.0606	51.914	21.147
#1	-.0068	.00028	2.302	-.00347	-.00541
#2	-.0056	-.00093	2.304	-.00161	-.00401
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05576**	**-.00002**	**.01280**	**.0005**	**-.00021**
Stddev	.02288	.00173	.00007	.0076	.00001
%RSD	41.024	6966.2	.56337	1546.	3.3188
#1	.03959	.00120	.01275	-.0049	-.00020
#2	.07194	-.00125	.01285	.0059	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159555-D-1-B Acquired: 9/26/2019 21:58:10 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00184**	i **.0423**	**-.00038**	**.00232**	**.0000**
Stddev	.00120	.0456	.00027	.00022	.0001
%RSD	65.201	107.7	73.060	9.2706	931.2
#1	-.00099	i .0745	-.00018	.00217	-.0001
#2	-.00269	i .0101	-.00057	.00248	.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1807.1**	**590.91**	**39654.**	**4200.5**
Stddev	.7	.35	8.	1.9
%RSD	.04037	.05895	.02043	.04469
#1	1807.7	591.15	39660.	4199.2
#2	1806.6	590.66	39648.	4201.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.12%	110.22%	102.05%	101.97%
Range				

Sample Name: 480-159555-D-2-B Acquired: 9/26/2019 22:02:00 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.01428**	**.00216**	**.17604**	**.03423**
Stddev	.00055	.01763	.00264	.00011	.00008
%RSD	519.69	123.48	122.21	.06523	.23896
#1	.00028	-.00181	.00403	.17596	.03418
#2	-.00050	-.02674	.00029	.17612	.03429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**303.24**	**.00028**	i **.0145**	**.00067**
Stddev	.00005	.05	.00012	.0057	.00002
%RSD	128.94	.01528	45.041	39.06	2.9413
#1	-.00008	303.27	.00036	i .0105	.00068
#2	-.00000	303.20	.00019	i .0186	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**-.00167**	**.27447**	**8.4693**	**.04516**
Stddev	.00003	.00043	.00454	.0203	.00011
%RSD	4.4552	25.938	1.6534	.23928	.24922
#1	.00071	-.00197	.27768	8.4836	.04508
#2	.00076	-.00136	.27126	8.4550	.04524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159555-D-2-B Acquired: 9/26/2019 22:02:00 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**161.28**	**1.0040**	**-.00032**	**44.844**	**.00730**
Stddev	.35	.0001	.00030	.177	.00007
%RSD	.21898	.00782	95.369	.39438	1.0124
#1	161.03	1.0039	-.00053	44.719	.00725
#2	161.53	1.0041	-.00010	44.969	.00735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0127**	**-.00172**	F **309.8**	**-.00167**	**-.01244**
Stddev	.0021	.00102	.5	.00221	.00541
%RSD	16.47	59.361	.1579	132.42	43.527
#1	.0141	-.00100	310.1	-.00011	-.01627
#2	.0112	-.00245	309.4	-.00323	-.00861
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.7422**	**-.00107**	**3.4769**	**.0036**	**-.00093**
Stddev	.0386	.00014	.0196	.0052	.00021
%RSD	.81281	12.828	.56245	144.1	22.125
#1	4.7150	-.00097	3.4631	-.0001	-.00078
#2	4.7695	-.00117	3.4907	.0073	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159555-D-2-B Acquired: 9/26/2019 22:02:00 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	i **-.0053**	**-.00059**	**.01558**	**.0003**
Stddev	.00168	.0779	.00020	.00092	.0005
%RSD	189.67	1467.	34.184	5.8947	179.5
#1	.00207	i .0498	-.00073	.01623	-.0001
#2	-.00030	i -.0604	-.00044	.01493	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1571.3**	**540.87**	**35797.**	**4008.9**
Stddev	1.1	.44	94.	12.5
%RSD	.06767	.08196	.26395	.31191
#1	1572.0	540.56	35864.	4017.7
#2	1570.5	541.18	35731.	4000.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	87.050%	100.89%	92.126%	97.314%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 22:05:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0063**	**51.920**	**.91433**	**.94783**	**1.0433**	**.99844**	**51.321**
Stddev	.0006	.187	.00308	.00586	.0032	.00019	.005
%RSD	.05630	.36023	.33646	.61774	.30612	.01859	.01035
#1	1.0059	51.788	.91650	.95197	1.0411	.99857	51.317
#2	1.0067	52.052	.91215	.94369	1.0456	.99830	51.325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94060**	i **1.014**	**1.0176**	**.98740**	**.95845**	**49.783**	**48.761**
Stddev	.00381	.014	.0001	.00057	.00053	.019	.014
%RSD	.40467	1.351	.01252	.05722	.05504	.03824	.02899
#1	.94329	i 1.005	1.0175	.98780	.95808	49.770	48.751
#2	.93791	i 1.024	1.0177	.98700	.95883	49.797	48.771
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0109**	**50.764**	**.98653**	**.93778**	**49.914**	**.99806**	**25.93**
Stddev	.0023	.074	.00037	.00371	.087	.00054	.01
%RSD	.22951	.14611	.03739	.39591	.17487	.05431	.0509
#1	1.0092	50.817	.98627	.94040	49.852	.99768	25.94
#2	1.0125	50.712	.98679	.93515	49.976	.99844	25.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/26/2019 22:05:58 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0022	22.63	.95057	F .89252	10.358	1.0024	1.0105
Stddev	.0018	.06	.00770	.00411	.055	.0003	.0023
%RSD	.18398	.2527	.81012	.46008	.53318	.02445	.22886
#1	1.0009	22.67	.95601	.89542	10.319	1.0026	1.0089
#2	1.0035	22.59	.94512	.88961	10.398	1.0023	1.0121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.0000			
Range				-10.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9861	.96741	.99490	i 2.294	.99733	1.0357	.9643
Stddev	.0105	.00061	.00139	.070	.00147	.0027	.0036
%RSD	1.064	.06284	.13994	3.034	.14752	.26297	.3724
#1	.9786	.96698	.99588	i 2.343	.99837	1.0376	.9618
#2	.9935	.96784	.99391	i 2.244	.99629	1.0338	.9668
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1643.2	575.39	37209.	4099.1
Stddev	1.3	2.72	103.	2.2
%RSD	.07861	.47237	.27726	.05378
#1	1642.2	573.46	37136.	4097.5
#2	1644.1	577.31	37282.	4100.7

Sample Name: CCB-5508960 Acquired: 9/26/2019 22:09:39 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02942**	**.00054**	**-.00101**	**.00014**	**.00000**	**.05421**	**.00006**
Stddev	.00094	.01899	.00150	.00012	.00002	.00007	.00235	.00010
%RSD	409.02	64.527	276.48	11.887	12.324	70340.	4.3304	183.44
#1	-.00089	.01600	.00160	-.00092	.00013	.00005	.05587	.00013
#2	.00043	.04285	-.00052	-.00109	.00015	-.00005	.05255	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0009**	**-.00002**	**-.00005**	**.00016**	**-.00170**	**.02173**	**.00058**	**.00443**
Stddev	.0111	.00024	.00041	.00009	.00046	.02583	.00029	.00081
%RSD	1200.	1082.2	802.02	57.615	27.149	118.84	49.604	18.308
#1	i -.0069	.00015	-.00034	.00010	-.00137	.03999	.00038	.00385
#2	i .0088	-.00019	.00024	.00023	-.00203	.00347	.00079	.00500
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00090**	**.05727**	**-.00012**	**.0013**	**-.00119**	**-.0011**	**-.00223**
Stddev	.00000	.00011	.00394	.00014	.0018	.00060	.0022	.00125
%RSD	3.2864	12.400	6.8875	116.82	137.6	50.488	203.4	55.896
#1	.00013	.00097	.05448	-.00022	.0000	-.00076	.0005	-.00135
#2	.00012	.00082	.06005	-.00002	.0026	-.00161	-.0026	-.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 22:09:39 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**-.01404**	**.00011**	**.00000**	**-.0112**	**.00012**	**-.00120**	i **.0639**
Stddev	.00202	.00522	.00047	.00002	.0063	.00003	.00092	.0717
%RSD	279.88	37.174	425.86	722.69	56.55	26.258	76.823	112.2
#1	-.00215	-.01773	.00044	.00002	-.0067	.00014	-.00055	i .0132
#2	.00071	-.01035	-.00022	-.00001	-.0156	.00009	-.00185	i .1147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00009**	**.00646**	**.0001**
Stddev	.00038	.00011	.0010
%RSD	418.55	1.7023	1039.
#1	.00018	.00654	.0008
#2	-.00036	.00639	-.0006
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1803.5**	**593.45**	**39267.**	**4111.7**
Stddev	2.4	1.68	121.	7.4
%RSD	.13193	.28296	.30714	.18006
#1	1805.2	594.64	39352.	4106.5
#2	1801.9	592.26	39182.	4116.9

Sample Name: CCVL-5514926 Acquired: 9/26/2019 22:13:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00605**	**.20871**	**.01327**	**.01843**	**.00230**	**.00217**	**.62760**
Stddev	.00022	.00616	.00300	.00040	.00001	.00002	.00114
%RSD	3.6417	2.9519	22.624	2.1871	.33454	1.0416	.18129
#1	.00621	.20435	.01539	.01871	.00231	.00218	.62840
#2	.00589	.21306	.01114	.01814	.00230	.00215	.62679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00206**	i **.0098**	**.00411**	**.00424**	**.00951**	**.05141**	**.49272**
Stddev	.00010	.0040	.00001	.00007	.00029	.00281	.00827
%RSD	4.7754	40.37	.20180	1.5357	3.0620	5.4619	1.6783
#1	.00213	i .0126	.00411	.00429	.00971	.05339	.48687
#2	.00199	i .0070	.00410	.00420	.00930	.04942	.49856
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03072**	**.22615**	**.00311**	**.00953**	**1.0483**	**.01042**	**-.0304**
Stddev	.00010	.00453	.00004	.00011	.0093	.00040	.0002
%RSD	.32696	2.0029	1.1863	1.1591	.88413	3.7928	.5351
#1	.03079	.22295	.00314	.00961	1.0549	.01070	-.0302
#2	.03065	.22936	.00309	.00945	1.0417	.01014	-.0305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCVL-5514926 Acquired: 9/26/2019 22:13:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01102**	**.1828**	**.02084**	**.02089**	**.46821**	**.00962**	**.00504**
Stddev	.00007	.0027	.00110	.00271	.01030	.00086	.00002
%RSD	.64903	1.457	5.2889	12.993	2.1993	8.9692	.45385
#1	.01107	.1810	.02006	.01897	.47550	.01023	.00505
#2	.01097	.1847	.02161	.02281	.46093	.00901	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.0025**	**.00437**	**.01951**	i **.0054**	**.00466**	W **.01432**	**.0014**
Stddev	.0059	.00029	.00086	.0340	.00007	.00011	.0004
%RSD	240.7	6.6824	4.4330	625.1	1.4203	.80208	27.96
#1	-.0067	.00458	.01890	i .0295	.00471	.01424	.0011
#2	.0017	.00417	.02012	i -.0186	.00462	.01441	.0017
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Warn	None
Value						.01000	
Range						30.000%	

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1803.5**	**591.75**	**39327.**	**4135.6**
Stddev	2.3	.50	39.	6.4
%RSD	.12778	.08369	.09990	.15400
#1	1805.1	591.40	39300.	4131.1
#2	1801.9	592.10	39355.	4140.1

Sample Name: 480-159544-C-1-B Acquired: 9/26/2019 22:17:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01609**	**-.00371**	**.30167**	**.02898**
Stddev	.00048	.01442	.00149	.00131	.00004
%RSD	57.628	89.602	40.227	.43266	.15258
#1	-.00116	.02628	-.00477	.30074	.02895
#2	-.00049	.00590	-.00266	.30259	.02901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**261.23**	**.00022**	i **.0395**	**.00162**
Stddev	.00001	.42	.00000	.0028	.00003
%RSD	71.651	.15957	.23638	7.164	1.9408
#1	.00001	261.52	.00022	i .0415	.00160
#2	.00002	260.94	.00022	i .0375	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00096**	**.01318**	**7.2493**	**.03674**
Stddev	.00021	.00033	.00168	.0168	.00041
%RSD	1219.2	34.278	12.760	.23188	1.1195
#1	.00013	-.00119	.01199	7.2374	.03645
#2	-.00017	-.00072	.01437	7.2612	.03703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159544-C-1-B Acquired: 9/26/2019 22:17:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Na8183
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	818.326 { 41}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**80.718**	**.05750**	**-.00009**	**55.402**	**56.901**
Stddev	.046	.00008	.00011	.009	.023
%RSD	.05759	.14722	126.60	.01566	.03981
#1	80.685	.05756	-.00017	55.396	56.917
#2	80.750	.05744	-.00001	55.408	56.885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Line	231.604 {446}	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}
IS Ref	(In2306)	(none)	(In2306)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00102**	**.0107**	**-.00242**	F **249.3**	**-.00053**
Stddev	.00008	.0025	.00195	.1	.00373
%RSD	8.0719	23.71	80.342	.0496	698.20
#1	.00097	.0125	-.00380	249.4	.00210
#2	.00108	.0089	-.00105	249.2	-.00317
Check ?	Chk Pass	None	Chk Pass	Chk Fail	Chk Pass
High Limit				90.00	
Low Limit				-.2000	

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837
Line	196.090 {472}	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}
IS Ref	(Y_2243)	(Y_3774)	(In2306)	(Y_3774)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01574**	**7.0009**	**.00050**	**1.0903**	**.0053**
Stddev	.00056	.0051	.00105	.0003	.0050
%RSD	3.5847	.07285	211.08	.02325	94.10
#1	-.01534	6.9973	.00124	1.0901	.0089
#2	-.01614	7.0045	-.00024	1.0905	.0018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Sample Name: 480-159544-C-1-B Acquired: 9/26/2019 22:17:21 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ti3349	Tl1908	U_4090	V_2924	Zn2062
Line	334.904 {101}	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}
IS Ref	(Y_3600)	(In2306)	(none)	(Y_3600)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**-.00006**	i **.0798**	**-.00071**	**.00246**
Stddev	.00005	.00056	.0278	.00023	.00093
%RSD	19.627	979.54	34.89	32.808	37.680
#1	-.00023	-.00045	i .0601	-.00054	.00312
#2	-.00030	.00034	i .0994	-.00087	.00181
Check ?	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Zr3438
Line	343.823 { 98}
IS Ref	(none)
Units	ppm
Avg	**.0008**
Stddev	.0003
%RSD	37.59
#1	.0010
#2	.0006
Check ?	None
High Limit	
Low Limit	

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1605.2**	**547.61**	**36309.**	**4054.1**
Stddev	.0	.58	45.	4.4
%RSD	.00052	.10536	.12367	.10914
#1	1605.2	548.02	36341.	4057.2
#2	1605.2	547.20	36277.	4051.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.932%	102.14%	93.443%	98.412%
Range				

Sample Name: 480-159545-C-1-A Acquired: 9/26/2019 22:21:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.01581**	**.00472**	**.33468**	**.09279**
Stddev	.00007	.00336	.00142	.00072	.00000
%RSD	24.186	21.260	30.023	.21505	.00141
#1	-.00035	.01344	.00573	.33417	.09279
#2	-.00025	.01819	.00372	.33518	.09279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**3.7774**	**-.00001**	i **.0058**	**-.00001**
Stddev	.00004	.0050	.00010	.0062	.00021
%RSD	2015.5	.13356	1386.0	107.5	4085.0
#1	-.00003	3.7738	-.00008	i .0014	-.00015
#2	.00003	3.7809	.00006	i .0102	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00016**	**.04994**	**5.5158**	**.04221**
Stddev	.00010	.00023	.00278	.0321	.00089
%RSD	24.795	136.98	5.5678	.58186	2.0984
#1	.00049	.00001	.05190	5.4931	.04283
#2	.00034	.00032	.04797	5.5385	.04158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-1-A Acquired: 9/26/2019 22:21:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.6189**	**.00218**	**.00229**	**720.46**	**.00034**
Stddev	.0025	.00004	.00012	.05	.00000
%RSD	.15521	1.6506	5.3834	.00714	1.2362
#1	1.6207	.00216	.00237	720.50	.00034
#2	1.6172	.00221	.00220	720.43	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0346**	**.00036**	**1.737**	**.00132**	**-.00758**
Stddev	.0013	.00133	.005	.00138	.00576
%RSD	3.807	370.24	.2951	104.98	75.976
#1	.0355	-.00058	1.733	.00034	-.01165
#2	.0336	.00130	1.740	.00230	-.00351
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.2302**	**.00042**	**.42168**	**-.0116**	**-.00056**
Stddev	.0044	.00030	.00018	.0033	.00002
%RSD	.13498	72.763	.04222	28.62	2.8261
#1	3.2333	.00020	.42181	-.0092	-.00054
#2	3.2271	.00063	.42156	-.0139	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-1-A Acquired: 9/26/2019 22:21:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	i **-.0077**	**-.00037**	**-.00104**	**.0016**
Stddev	.00132	.0197	.00019	.00041	.0001
%RSD	333.21	256.9	52.086	39.150	8.426
#1	-.00133	i -.0216	-.00051	-.00075	.0015
#2	.00054	i .0063	-.00024	-.00133	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1551.6**	**560.47**	**35350.**	**4025.2**
Stddev	2.8	1.55	10.	13.4
%RSD	.17879	.27648	.02874	.33308
#1	1549.6	561.57	35357.	4034.6
#2	1553.5	559.38	35343.	4015.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.959%	104.54%	90.975%	97.710%
Range				

Sample Name: 480-159545-C-2-A Acquired: 9/26/2019 22:25:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**-.00635**	**.00060**	**.09396**	**.02229**
Stddev	.00066	.00275	.00425	.00036	.00002
%RSD	134.04	43.349	707.96	.37851	.09569
#1	-.00096	-.00441	-.00240	.09371	.02227
#2	-.00003	-.00830	.00360	.09421	.02230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**441.34**	**.00045**	i **.0218**	**.00031**
Stddev	.00003	.14	.00013	.0127	.00027
%RSD	180.13	.03217	28.357	58.22	88.781
#1	.00000	441.44	.00036	i .0307	.00050
#2	-.00003	441.24	.00054	i .0128	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00170**	**-.00240**	**.41679**	**9.6539**	**.30689**
Stddev	.00029	.00024	.00185	.0134	.00060
%RSD	16.753	10.139	.44416	.13922	.19508
#1	.00190	-.00223	.41548	9.6634	.30732
#2	.00150	-.00257	.41810	9.6444	.30647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-2-A Acquired: 9/26/2019 22:25:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**176.68**	**.13502**	**.00226**	**107.45**	**.00195**
Stddev	.01	.00021	.00015	.17	.00031
%RSD	.00732	.15842	6.6839	.15667	15.764
#1	176.67	.13487	.00215	107.57	.00173
#2	176.69	.13517	.00236	107.33	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0193**	**-.00297**	F **561.4**	**-.00287**	**-.01785**
Stddev	.0066	.00113	2.5	.00307	.00429
%RSD	34.23	37.861	.4407	106.97	24.040
#1	.0146	-.00377	563.2	-.00503	-.01482
#2	.0239	-.00218	559.7	-.00070	-.02089
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9181**	**.00026**	**3.8786**	**-.0033**	**-.00079**
Stddev	.0082	.00131	.0016	.0160	.00019
%RSD	.11798	501.17	.04108	482.0	23.498
#1	6.9123	-.00066	3.8797	.0080	-.00093
#2	6.9239	.00119	3.8774	-.0146	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-2-A Acquired: 9/26/2019 22:25:02 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	i **.0446**	**-.00082**	**.00514**	**-.0001**
Stddev	.00005	.1036	.00020	.00055	.0011
%RSD	5.0767	232.0	23.693	10.625	933.9
#1	-.00096	i .1179	-.00096	.00475	-.0009
#2	-.00104	i -.0286	-.00069	.00553	.0007
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1530.0**	**529.99**	**35255.**	**3969.3**
Stddev	1.8	1.52	16.	2.6
%RSD	.11490	.28706	.04594	.06511
#1	1531.2	528.91	35266.	3967.5
#2	1528.8	531.06	35244.	3971.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.763%	98.857%	90.730%	96.354%
Range				

Sample Name: 480-159545-C-3-A Acquired: 9/26/2019 22:29:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01211**	**-.00417**	**.03520**	**.01980**
Stddev	.00038	.02072	.00201	.00043	.00004
%RSD	227.12	171.14	48.286	1.2154	.20813
#1	-.00044	-.00254	-.00275	.03550	.01982
#2	.00010	.02676	-.00559	.03489	.01977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**323.10**	**.00023**	i **.0145**	**.01744**
Stddev	.00003	.34	.00015	.0030	.00046
%RSD	228.09	.10490	64.725	20.53	2.6266
#1	.00001	323.34	.00033	i .0166	.01777
#2	-.00003	322.86	.00012	i .0124	.01712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**-.00175**	**.00286**	**2.7468**	**.07332**
Stddev	.00075	.00047	.00212	.0230	.00015
%RSD	115.50	26.626	73.959	.83659	.19800
#1	.00118	-.00208	.00136	2.7306	.07342
#2	.00012	-.00142	.00436	2.7631	.07322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-3-A Acquired: 9/26/2019 22:29:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**104.70**	**.01794**	**-.00020**	**16.467**	**.00124**
Stddev	.10	.00006	.00007	.076	.00047
%RSD	.09845	.32670	35.858	.46397	38.074
#1	104.77	.01798	-.00015	16.413	.00090
#2	104.63	.01789	-.00025	16.521	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0081**	**-.00265**	F **275.0**	**-.00148**	**-.00913**
Stddev	.0042	.00077	.2	.00026	.00129
%RSD	52.60	29.165	.0603	17.845	14.134
#1	.0051	-.00211	274.9	-.00166	-.01004
#2	.0111	-.00320	275.1	-.00129	-.00821
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.6003**	**.00334**	**1.0837**	**.0043**	**-.00024**
Stddev	.0222	.00268	.0045	.0054	.00029
%RSD	.39573	80.108	.41249	128.1	120.68
#1	5.6160	.00524	1.0805	.0081	-.00004
#2	5.5847	.00145	1.0868	.0004	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-3-A Acquired: 9/26/2019 22:29:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00092**	i **.1055**	**-.00048**	**.00111**	**.0007**
Stddev	.00199	.0129	.00025	.00252	.0001
%RSD	216.89	12.22	53.058	227.80	19.24
#1	.00233	i .0964	-.00066	.00289	.0008
#2	-.00049	i .1147	-.00030	-.00068	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1597.8**	**547.44**	**36178.**	**4030.8**
Stddev	.4	1.24	53.	1.8
%RSD	.02674	.22683	.14721	.04501
#1	1598.1	548.32	36140.	4029.6
#2	1597.5	546.57	36215.	4032.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.519%	102.11%	93.105%	97.848%
Range				

Sample Name: 480-159545-C-4-A Acquired: 9/26/2019 22:32:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**-.00427**	**.00013**	**.13606**	**.03299**
Stddev	.00000	.02515	.00326	.00070	.00009
%RSD	.59200	588.80	2459.2	.51807	.27738
#1	-.00065	-.02206	-.00217	.13557	.03306
#2	-.00065	.01351	.00243	.13656	.03293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**144.83**	**.00012**	i **.0027**	**1.2238**
Stddev	.00001	.71	.00013	.0025	.0013
%RSD	29.498	.49277	104.06	90.45	.10296
#1	.00002	145.33	.00003	i .0045	1.2247
#2	.00003	144.32	.00022	i .0010	1.2230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00187**	**1.1524**	**4.4107**	**.03503**
Stddev	.00033	.00003	.0008	.0319	.00019
%RSD	65.569	1.5715	.07115	.72384	.52815
#1	.00027	.00189	1.1518	4.3882	.03490
#2	.00074	.00184	1.1529	4.4333	.03516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-4-A Acquired: 9/26/2019 22:32:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**39.405**	**.06582**	**.00740**	**398.66**	**.02214**
Stddev	.049	.00029	.00009	1.08	.00039
%RSD	.12325	.43445	1.2553	.27043	1.7775
#1	39.371	.06603	.00734	399.43	.02186
#2	39.440	.06562	.00747	397.90	.02242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0045**	**-.00204**	F **288.0**	**-.00371**	**-.01542**
Stddev	.0050	.00001	.1	.00031	.00158
%RSD	110.0	.68457	.0436	8.4978	10.266
#1	-.0010	-.00205	287.9	-.00348	-.01430
#2	-.0081	-.00203	288.1	-.00393	-.01654
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.0260**	**.00019**	**2.9801**	**.0006**	**-.00012**
Stddev	.0072	.00062	.0409	.0047	.00027
%RSD	.14365	331.52	1.3736	783.6	218.97
#1	5.0311	.00062	3.0091	-.0027	-.00031
#2	5.0209	-.00025	2.9512	.0039	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-4-A Acquired: 9/26/2019 22:32:54 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00281**	i **.0365**	**-.00033**	**.00248**	**-.0003**
Stddev	.00155	.0777	.00009	.00191	.0005
%RSD	55.242	212.9	26.550	77.049	155.5
#1	-.00171	i .0914	-.00039	.00113	-.0006
#2	-.00391	i -.0184	-.00027	.00383	.0000
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1551.2**	**544.81**	**35635.**	**4033.5**
Stddev	.3	.58	13.	14.3
%RSD	.01773	.10713	.03603	.35412
#1	1551.4	545.22	35644.	4023.4
#2	1551.0	544.39	35626.	4043.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.936%	101.62%	91.708%	97.912%
Range				

Sample Name: 480-159545-C-5-A Acquired: 9/26/2019 22:36:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**-.00388**	**-.00322**	**.17534**	**.02083**
Stddev	.00075	.00691	.00264	.00067	.00001
%RSD	174.59	178.10	82.040	.38290	.04082
#1	.00010	-.00877	-.00135	.17486	.02083
#2	-.00096	.00101	-.00509	.17581	.02082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**106.74**	**.00008**	i **.0286**	**-.00033**
Stddev	.00001	.23	.00010	.0189	.00007
%RSD	25.970	.21244	131.34	66.05	20.586
#1	-.00005	106.58	.00015	i .0419	-.00038
#2	-.00003	106.90	.00001	i .0152	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**-.00068**	**.08270**	**2.3591**	**.02424**
Stddev	.00036	.00011	.00027	.0276	.00078
%RSD	34.404	15.728	.32182	1.1718	3.2337
#1	.00080	-.00060	.08289	2.3787	.02369
#2	.00131	-.00075	.08251	2.3396	.02480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-5-A Acquired: 9/26/2019 22:36:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**36.875**	**.07655**	**-.00085**	**195.96**	**-.00031**
Stddev	.000	.00024	.00053	.38	.00063
%RSD	.00126	.31726	62.657	.19527	201.12
#1	36.875	.07672	-.00047	196.23	-.00075
#2	36.874	.07638	-.00123	195.69	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0088**	**-.00027**	F **167.9**	**-.00284**	**-.00920**
Stddev	.0040	.00052	.1	.00226	.00062
%RSD	46.01	190.59	.0847	79.577	6.7271
#1	.0116	.00009	168.0	-.00124	-.00876
#2	.0059	-.00064	167.8	-.00443	-.00964
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2544**	**.00019**	**2.8103**	**.0027**	**-.00033**
Stddev	.0485	.00179	.0025	.0008	.00003
%RSD	.77539	943.49	.08769	29.55	10.554
#1	6.2887	-.00108	2.8120	.0022	-.00030
#2	6.2201	.00146	2.8085	.0033	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-5-A Acquired: 9/26/2019 22:36:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00072	i .1066	-.00037	.00127	.0013
Stddev	.00219	.0432	.00059	.00073	.0007
%RSD	305.04	40.57	159.23	57.099	52.27
#1	.00226	i .1371	-.00079	.00076	.0017
#2	-.00083	i .0760	.00005	.00179	.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1621.8	559.06	36642.	4064.1
Stddev	2.2	.28	57.	17.1
%RSD	.13561	.05086	.15610	.42164
#1	1623.4	558.86	36682.	4076.3
#2	1620.3	559.26	36601.	4052.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.850%	104.28%	94.299%	98.656%
Range				

Sample Name: 480-159545-C-6-A Acquired: 9/26/2019 22:40:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.17744**	**.00432**	**.46776**	**.01200**
Stddev	.00074	.00635	.00257	.00049	.00004
%RSD	284.68	3.5799	59.582	.10369	.35705
#1	.00078	.17295	.00614	.46742	.01197
#2	-.00026	.18193	.00250	.46810	.01203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**2.0787**	**.00008**	i **.0015**	**-.00026**
Stddev	.00000	.0085	.00009	.0047	.00020
%RSD	66.012	.40691	119.24	308.0	75.224
#1	-.00000	2.0847	.00014	i -.0018	-.00012
#2	-.00000	2.0727	.00001	i .0048	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00109**	**.06653**	**.70620**	**.01237**
Stddev	.00004	.00000	.00188	.01396	.00098
%RSD	6.4396	.14881	2.8274	1.9772	7.9211
#1	.00071	.00109	.06786	.71608	.01168
#2	.00065	.00109	.06520	.69633	.01306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-6-A Acquired: 9/26/2019 22:40:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.58076**	**.00358**	**.00276**	**349.26**	**.00161**
Stddev	.00728	.00005	.00025	1.45	.00028
%RSD	1.2538	1.4990	9.2191	.41626	17.445
#1	.57561	.00354	.00294	348.23	.00180
#2	.58591	.00362	.00258	350.28	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0158**	**.00053**	**25.80**	**-.00075**	**-.00508**
Stddev	.0014	.00069	.06	.00167	.00388
%RSD	9.026	128.83	.2339	222.53	76.241
#1	.0148	.00005	25.76	.00043	-.00234
#2	.0168	.00102	25.84	-.00193	-.00782
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.0109**	**.00225**	**.10220**	**-.0054**	**.00051**
Stddev	.0027	.00161	.00017	.0012	.00008
%RSD	.06709	71.604	.16808	22.16	16.514
#1	4.0128	.00111	.10232	-.0046	.00045
#2	4.0090	.00339	.10208	-.0063	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-6-A Acquired: 9/26/2019 22:40:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	i **-.0318**	**.00025**	**.00178**	**.0008**
Stddev	.00293	.1246	.00011	.00077	.0007
%RSD	1140.8	391.9	43.864	43.157	83.80
#1	.00181	i -.1199	.00033	.00124	.0003
#2	-.00233	i .0563	.00018	.00232	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1631.8**	**568.28**	**36690.**	**4092.1**
Stddev	1.4	.60	112.	4.8
%RSD	.08790	.10472	.30507	.11699
#1	1630.8	568.70	36769.	4095.5
#2	1632.8	567.86	36611.	4088.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	90.402%	106.00%	94.422%	99.335%
Range				

Sample Name: 480-159545-C-7-D Acquired: 9/26/2019 22:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.01730**	**-.00117**	**.14795**	**.02837**
Stddev	.00034	.00112	.00257	.00112	.00003
%RSD	183.51	6.4513	219.22	.75392	.11443
#1	.00042	.01809	-.00298	.14716	.02834
#2	-.00005	.01651	.00064	.14874	.02839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**220.32**	**.00022**	i **.0076**	**.00666**
Stddev	.00006	.05	.00000	.0119	.00007
%RSD	213.04	.02102	.43974	156.7	1.0111
#1	-.00001	220.36	.00022	i .0160	.00661
#2	.00007	220.29	.00022	i -.0008	.00671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00172**	**-.00081**	**.33363**	**4.6757**	**.01858**
Stddev	.00041	.00009	.00132	.0036	.00017
%RSD	23.825	11.151	.39448	.07589	.92292
#1	.00143	-.00075	.33456	4.6732	.01870
#2	.00201	-.00088	.33270	4.6782	.01846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-7-D Acquired: 9/26/2019 22:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**104.85**	**.11768**	**.00005**	**29.812**	**.00136**
Stddev	.00	.00003	.00009	.039	.00029
%RSD	.00157	.02405	183.91	.13173	21.475
#1	104.85	.11766	.00012	29.840	.00115
#2	104.84	.11770	-.00002	29.784	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0015**	**-.00222**	F **217.6**	**-.00423**	**-.01478**
Stddev	.0016	.00102	.2	.00114	.00997
%RSD	103.4	46.000	.1117	27.045	67.491
#1	-.0027	-.00295	217.8	-.00342	-.02183
#2	-.0004	-.00150	217.5	-.00504	-.00772
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.7340**	**.00112**	**3.0395**	**-.0005**	**-.00021**
Stddev	.0181	.00134	.0028	.0187	.00014
%RSD	.48619	119.08	.09133	3840.	65.585
#1	3.7212	.00207	3.0415	.0127	-.00031
#2	3.7469	.00018	3.0376	-.0137	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-7-D Acquired: 9/26/2019 22:44:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	i **.1005**	**-.00040**	**.00132**	**-.0002**
Stddev	.00065	.0840	.00019	.00139	.0001
%RSD	123.79	83.60	48.444	105.45	61.01
#1	.00007	i .1599	-.00026	.00230	-.0001
#2	.00099	i .0411	-.00053	.00033	-.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1621.1**	**552.98**	**36588.**	**4042.6**
Stddev	2.1	.91	48.	12.7
%RSD	.12931	.16401	.13020	.31515
#1	1622.6	553.62	36554.	4033.6
#2	1619.7	552.33	36622.	4051.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.813%	103.14%	94.160%	98.133%
Range				

Sample Name: 480-159545-C-8-A Acquired: 9/26/2019 22:48:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**-.01226**	**-.00233**	**.08883**	**.02044**
Stddev	.00049	.00545	.00096	.00010	.00007
%RSD	94.585	44.438	41.360	.11796	.36534
#1	-.00086	-.01611	-.00301	.08876	.02049
#2	-.00017	-.00841	-.00165	.08891	.02038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**502.80**	**.00015**	i **-.0001**	**-.00018**
Stddev	.00004	1.72	.00008	.0015	.00030
%RSD	50.994	.34291	49.001	1567.	167.50
#1	-.00005	504.02	.00021	i -.0012	.00003
#2	-.00010	501.58	.00010	i .0010	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**-.00306**	**3.7379**	**4.7232**	**.03366**
Stddev	.00039	.00025	.0149	.0123	.00004
%RSD	48.801	8.0918	.39929	.25975	.13031
#1	.00108	-.00324	3.7484	4.7319	.03363
#2	.00052	-.00289	3.7273	4.7146	.03369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-8-A Acquired: 9/26/2019 22:48:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**120.01**	**.35434**	**-.00039**	**34.500**	**.00008**
Stddev	.20	.00064	.00015	.062	.00043
%RSD	.16672	.18178	37.333	.18104	523.49
#1	120.15	.35480	-.00029	34.544	.00038
#2	119.87	.35388	-.00050	34.456	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0101**	**-.00083**	F **370.3**	**-.00196**	**-.00881**
Stddev	.0018	.00017	.2	.00328	.00400
%RSD	17.65	21.061	.0493	166.86	45.372
#1	-.0114	-.00095	370.4	.00035	-.00598
#2	-.0088	-.00071	370.2	-.00428	-.01163
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9737**	**.00046**	**5.6668**	**.0041**	**-.00076**
Stddev	.0072	.00220	.0060	.0021	.00008
%RSD	.10256	477.92	.10586	50.67	10.935
#1	6.9686	.00202	5.6626	.0055	-.00082
#2	6.9787	-.00110	5.6711	.0026	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159545-C-8-A Acquired: 9/26/2019 22:48:38 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	i **-.0402**	**-.00086**	**.00087**	**.0010**
Stddev	.00150	.1307	.00032	.00103	.0001
%RSD	123.98	325.1	37.629	118.59	7.054
#1	-.00015	i -.1326	-.00109	.00160	.0010
#2	-.00226	i .0522	-.00063	.00014	.0011
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1539.0**	**532.33**	**35570.**	**3998.1**
Stddev	1.7	.48	85.	4.5
%RSD	.11202	.09071	.24016	.11199
#1	1540.2	532.67	35509.	3994.9
#2	1537.7	531.99	35630.	4001.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.260%	99.293%	91.540%	97.052%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 22:52:36 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0093**	**52.152**	**.91637**	**.94982**	**1.0458**	**.99675**	**51.651**
Stddev	.0013	.050	.00184	.00048	.0006	.00179	.038
%RSD	.12571	.09677	.20078	.05059	.05242	.17919	.07427
#1	1.0084	52.116	.91507	.95016	1.0462	.99549	51.624
#2	1.0102	52.188	.91767	.94948	1.0454	.99801	51.679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94170**	i **1.004**	**1.0210**	**.98704**	**.95712**	**49.969**	**48.721**
Stddev	.00050	.001	.0012	.00067	.00182	.176	.041
%RSD	.05345	.0488	.11830	.06755	.18975	.35234	.08329
#1	.94134	i 1.004	1.0201	.98657	.95840	49.845	48.693
#2	.94205	i 1.005	1.0218	.98751	.95584	50.094	48.750
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0134**	**50.908**	**.98623**	**.93510**	**49.865**	**.99865**	**26.00**
Stddev	.0002	.061	.00079	.00073	.058	.00170	.01
%RSD	.02115	.12050	.07973	.07808	.11597	.17068	.0283
#1	1.0135	50.865	.98679	.93562	49.824	.99744	26.00
#2	1.0132	50.951	.98568	.93459	49.906	.99985	25.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/26/2019 22:52:36 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0068	22.84	.95743	F .88878	10.343	1.0102	1.0089
Stddev	.0012	.07	.00199	.00514	.075	.0027	.0015
%RSD	.11888	.3032	.20828	.57882	.72156	.26691	.14898
#1	1.0059	22.80	.95602	.88514	10.290	1.0083	1.0079
#2	1.0076	22.89	.95884	.89242	10.396	1.0122	1.0100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				1.0000			
Range				-10.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9868	.96507	1.0029	i 2.369	.99334	1.0383	.9635
Stddev	.0029	.00222	.0045	.098	.00082	.0036	.0006
%RSD	.2980	.22984	.44450	4.140	.08276	.35038	.0660
#1	.9889	.96663	.99970	i 2.300	.99392	1.0358	.9630
#2	.9847	.96350	1.0060	i 2.439	.99275	1.0409	.9639
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1642.3	577.25	37221.	4081.3
Stddev	1.5	.69	97.	2.3
%RSD	.09097	.11911	.26108	.05650
#1	1643.3	577.74	37290.	4079.7
#2	1641.2	576.77	37153.	4082.9

Sample Name: CCB-5508960 Acquired: 9/26/2019 22:56:17 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01194**	**-.00060**	**-.00171**	**.00010**	**.00003**	**.04843**	**.00012**
Stddev	.00023	.00803	.00011	.00089	.00002	.00001	.00164	.00004
%RSD	69.100	67.235	17.828	51.815	17.136	26.823	3.3778	32.142
#1	.00017	.01762	-.00068	-.00108	.00009	.00003	.04959	.00015
#2	.00049	.00626	-.00053	-.00233	.00012	.00002	.04728	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **-.0021**	**.00008**	**.00011**	**-.00003**	**-.00047**	**-.01351**	**-.00035**	**.00246**
Stddev	.0026	.00023	.00041	.00020	.00026	.02570	.00030	.00294
%RSD	125.5	282.19	384.16	724.99	54.772	190.25	86.645	119.66
#1	i -.0040	.00025	.00040	.00012	-.00029	.00466	-.00013	.00454
#2	i -.0002	-.00008	-.00018	-.00017	-.00066	-.03168	-.00056	.00038
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00110**	**.06101**	**-.00000**	**.0027**	**-.00085**	**.0056**	**.00031**
Stddev	.00004	.00011	.00862	.00037	.0038	.00045	.0014	.00101
%RSD	29.457	9.9678	14.135	12988.	139.9	52.340	25.55	326.22
#1	.00017	.00102	.06711	-.00026	.0053	-.00117	.0045	-.00041
#2	.00011	.00118	.05491	.00026	.0000	-.00054	.0066	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 22:56:17 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00401**	**-.01355**	**.00075**	**.00000**	**.0052**	**-.00006**	**.00103**	i **.0629**
Stddev	.00300	.00641	.00157	.00005	.0017	.00019	.00011	.0066
%RSD	74.682	47.351	208.14	2052.1	32.52	319.34	10.359	10.44
#1	-.00613	-.01808	-.00036	-.00003	.0040	-.00020	.00111	i .0583
#2	-.00189	-.00901	.00186	.00004	.0064	.00008	.00096	i .0676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00010**	**.00601**	**.0007**
Stddev	.00005	.00009	.0009
%RSD	46.500	1.4778	136.1
#1	-.00007	.00607	.0013
#2	-.00014	.00595	.0000
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1807.4**	**593.64**	**39556.**	**4136.9**
Stddev	1.4	.10	14.	13.5
%RSD	.07524	.01701	.03495	.32721
#1	1808.3	593.71	39546.	4127.4
#2	1806.4	593.57	39566.	4146.5

Sample Name: CCVL-5514926 Acquired: 9/26/2019 23:00:07 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00629**	**.21292**	**.01167**	**.01758**	**.00221**	**.00212**	**.54563**
Stddev	.00015	.00248	.00151	.00040	.00001	.00004	.00678
%RSD	2.4544	1.1648	12.967	2.2966	.58879	1.9496	1.2419
#1	.00618	.21116	.01274	.01730	.00221	.00215	.55042
#2	.00640	.21467	.01060	.01787	.00222	.00209	.54084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	i **.0136**	**.00390**	**.00442**	**.00902**	**.05404**	**.47932**
Stddev	.00028	.0012	.00022	.00023	.00005	.00305	.00910
%RSD	13.925	9.087	5.5273	5.1794	.57360	5.6392	1.8986
#1	.00220	i .0145	.00375	.00426	.00905	.05619	.48576
#2	.00181	i .0128	.00405	.00458	.00898	.05188	.47289
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03113**	**.22058**	**.00306**	**.00919**	**1.0543**	**.01050**	**-.0309**
Stddev	.00016	.00725	.00014	.00008	.0090	.00021	.0011
%RSD	.50098	3.2848	4.4322	.91744	.85566	2.0154	3.693
#1	.03124	.22570	.00316	.00913	1.0606	.01064	-.0317
#2	.03102	.21545	.00297	.00925	1.0479	.01035	-.0301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCVL-5514926 Acquired: 9/26/2019 23:00:07 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01041	.1889	.01882	W .01552	.49806	.00892	.00501
Stddev	.00038	.0010	.00066	.00278	.01479	.00215	.00002
%RSD	3.6215	.5254	3.5276	17.895	2.9694	24.141	.31798
#1	.01068	.1882	.01929	.01356	.50852	.00740	.00502
#2	.01015	.1896	.01835	.01748	.48760	.01044	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
Value				.02500			
Range				-30.000%			

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0063	.00458	.01859	i .0246	.00446	.01063	.0009
Stddev	.0062	.00032	.00091	.0552	.00006	.00017	.0005
%RSD	97.75	6.9047	4.9002	223.9	1.3074	1.5845	51.90
#1	-.0019	.00436	.01923	i -.0144	.00450	.01075	.0012
#2	-.0107	.00480	.01794	i .0636	.00442	.01051	.0006
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1808.4	597.87	39399.	4121.3
Stddev	.1	1.94	127.	47.5
%RSD	.00654	.32458	.32313	1.1524
#1	1808.3	599.24	39309.	4087.7
#2	1808.5	596.49	39489.	4154.9

Sample Name: 480-159619-A-3-A Acquired: 9/26/2019 23:03:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00225**	**-.00555**	**.11602**	**.06718**
Stddev	.00019	.01093	.00144	.00047	.00011
%RSD	65.284	485.46	25.923	.40177	.15995
#1	-.00042	-.00548	-.00454	.11569	.06725
#2	-.00015	.00998	-.00657	.11635	.06710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**253.27**	**.00014**	i **.0172**	**-.00014**
Stddev	.00003	1.69	.00001	.0044	.00018
%RSD	291.35	.66897	5.6360	25.64	129.06
#1	-.00001	254.47	.00014	i .0141	-.00027
#2	.00003	252.07	.00013	i .0203	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00194**	**.00163**	**2.9603**	**.01151**
Stddev	.00068	.00023	.00212	.0075	.00048
%RSD	460.53	11.821	129.84	.25431	4.1939
#1	-.00033	-.00178	.00013	2.9656	.01117
#2	.00063	-.00210	.00313	2.9550	.01185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159619-A-3-A Acquired: 9/26/2019 23:03:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**49.026**	**.00716**	**.00038**	**27.782**	**-.00078**
Stddev	.081	.00007	.00019	.032	.00047
%RSD	.16446	1.0012	48.826	.11447	60.719
#1	49.083	.00711	.00052	27.804	-.00044
#2	48.969	.00721	.00025	27.759	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0051**	**-.00078**	F **160.2**	**-.00173**	**-.01350**
Stddev	.0018	.00188	.1	.00307	.00413
%RSD	34.60	241.09	.0660	177.62	30.570
#1	.0039	.00055	160.3	.00044	-.01058
#2	.0064	-.00211	160.2	-.00391	-.01642
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.2176**	**.00097**	F **11.653**	**.0045**	**-.00033**
Stddev	.0178	.00044	.194	.0035	.00004
%RSD	.55412	45.501	1.6610	77.27	10.810
#1	3.2302	.00066	11.790	.0069	-.00035
#2	3.2050	.00129	11.516	.0020	-.00030
Check ?	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass
High Limit			9.0000		
Low Limit			-.00500		

Sample Name: 480-159619-A-3-A Acquired: 9/26/2019 23:03:58 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00226	i .0610	-.00060	.00106	.0010
Stddev	.00458	.1525	.00006	.00071	.0017
%RSD	202.59	250.2	10.099	66.542	178.1
#1	.00550	i .1688	-.00065	.00156	-.0003
#2	-.00098	i -.0469	-.00056	.00056	.0022
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1627.8	547.69	36872.	4071.0
Stddev	2.6	.37	9.	25.3
%RSD	.16182	.06779	.02522	.62151
#1	1629.6	547.43	36865.	4053.1
#2	1625.9	547.96	36879.	4088.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	90.179%	102.16%	94.891%	98.822%
Range				

Sample Name: 480-159619-A-2-A Acquired: 9/26/2019 23:07:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.02364**	**-.00652**	**.14313**	**.04600**
Stddev	.00057	.00289	.00056	.00040	.00001
%RSD	181.89	12.219	8.6221	.27996	.02131
#1	.00009	.02568	-.00613	.14342	.04599
#2	-.00072	.02160	-.00692	.14285	.04601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**309.61**	**.00023**	i **.0143**	**-.00014**
Stddev	.00006	.39	.00000	.0140	.00001
%RSD	145.19	.12695	.34899	97.76	5.3819
#1	.00008	309.33	.00023	i .0242	-.00013
#2	-.00000	309.89	.00023	i .0044	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00207**	**.01643**	**2.3568**	**.01438**
Stddev	.00096	.00030	.00032	.0022	.00019
%RSD	1838.4	14.722	1.9664	.09452	1.3506
#1	.00063	-.00185	.01666	2.3584	.01452
#2	-.00073	-.00229	.01621	2.3553	.01424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159619-A-2-A Acquired: 9/26/2019 23:07:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**50.180**	**.00599**	**-.00006**	**28.371**	**-.00099**
Stddev	.081	.00016	.00005	.095	.00060
%RSD	.16084	2.6778	93.437	.33638	59.954
#1	50.237	.00610	-.00002	28.438	-.00057
#2	50.123	.00588	-.00009	28.303	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0035**	**.00043**	F **215.2**	**-.00172**	**-.00964**
Stddev	.0028	.00108	.5	.00102	.00198
%RSD	79.32	253.68	.2297	59.514	20.522
#1	.0015	-.00034	215.6	-.00245	-.00824
#2	.0054	.00119	214.9	-.00100	-.01104
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.4573**	**.00034**	F **15.793**	**-.0085**	**-.00053**
Stddev	.0110	.00081	.045	.0021	.00027
%RSD	.31929	238.21	.28389	24.72	50.638
#1	3.4651	-.00023	15.761	-.0070	-.00034
#2	3.4495	.00091	15.824	-.0100	-.00071
Check ?	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass
High Limit			9.0000		
Low Limit			-.00500		

Sample Name: 480-159619-A-2-A Acquired: 9/26/2019 23:07:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	i **.1210**	**-.00014**	**.00391**	**.0005**
Stddev	.00197	.0158	.00022	.00156	.0008
%RSD	181.79	13.02	150.65	39.808	160.5
#1	-.00031	i .1098	.00001	.00501	-.0001
#2	.00248	i .1321	-.00030	.00281	.0010
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1604.7**	**548.46**	**36404.**	**4049.5**
Stddev	1.5	.41	26.	1.2
%RSD	.09556	.07468	.07144	.02991
#1	1603.6	548.17	36385.	4050.4
#2	1605.8	548.75	36422.	4048.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.901%	102.30%	93.686%	98.301%
Range				

Sample Name: 480-159420-A-1-A Acquired: 9/26/2019 23:11:51 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00136**	**-.00101**	**.03275**	**.12927**
Stddev	.00018	.00020	.00316	.00006	.00050
%RSD	316.58	14.629	314.36	.17606	.38562
#1	.00018	-.00122	.00123	.03279	.12892
#2	-.00007	-.00150	-.00324	.03271	.12962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**80.442**	**.00041**	i **.0097**	**-.00045**
Stddev	.00003	.254	.00005	.0147	.00012
%RSD	128.88	.31637	11.208	151.9	25.830
#1	-.00000	80.622	.00044	i -.0007	-.00053
#2	-.00004	80.262	.00038	i .0200	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.12346**	**-.00054**	**.00178**	**9.2557**	**.00093**
Stddev	.00150	.00057	.00131	.0366	.00030
%RSD	1.2169	104.61	73.311	.39559	32.513
#1	.12240	-.00094	.00086	9.2298	.00115
#2	.12452	-.00014	.00270	9.2815	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-A Acquired: 9/26/2019 23:11:51 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.665**	**.12465**	**-.00070**	**265.33**	**-.00048**
Stddev	.022	.00019	.00022	1.47	.00037
%RSD	.10786	.15634	30.988	.55590	78.329
#1	20.649	.12452	-.00055	266.37	-.00074
#2	20.681	.12479	-.00086	264.28	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0072**	**-.00012**	**7.844**	**-.00149**	**-.00883**
Stddev	.0033	.00093	.016	.00117	.00476
%RSD	46.21	798.76	.2076	78.605	53.899
#1	.0049	.00054	7.832	-.00231	-.00546
#2	.0096	-.00078	7.855	-.00066	-.01219
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.0903**	**.00085**	**.62992**	**-.0000**	**.00010**
Stddev	.0158	.00035	.00410	.0047	.00046
%RSD	.25944	40.809	.65121	34370.	475.47
#1	6.1014	.00060	.63282	-.0033	.00042
#2	6.0791	.00109	.62702	.0033	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-A Acquired: 9/26/2019 23:11:51 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00105**	i **-.0213**	**-.00059**	**.00055**	**.0010**
Stddev	.00084	.0719	.00013	.00053	.0005
%RSD	80.657	338.0	21.242	97.709	51.88
#1	-.00045	i -.0722	-.00050	.00093	.0006
#2	-.00164	i .0296	-.00068	.00017	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1615.5**	**565.04**	**36364.**	**4064.1**
Stddev	.2	1.01	28.	15.2
%RSD	.00998	.17900	.07654	.37408
#1	1615.4	565.76	36384.	4053.3
#2	1615.6	564.33	36344.	4074.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.499%	105.40%	93.584%	98.655%
Range				

Sample Name: 480-159420-A-1-Asd@5 Acquired: 9/26/2019 23:15:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.01904**	**.00071**	**.00529**	**.02628**
Stddev	.00018	.00003	.00045	.00036	.00008
%RSD	988.88	.17479	64.113	6.8631	.29299
#1	-.00014	.01901	.00103	.00554	.02623
#2	.00011	.01906	.00039	.00503	.02634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**16.370**	**.00001**	i **.0093**	**-.00021**
Stddev	.00010	.021	.00013	.0046	.00013
%RSD	7143.1	.13133	1099.5	49.76	63.102
#1	-.00007	16.354	.00010	i .0125	-.00012
#2	.00007	16.385	-.00008	i .0060	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.02462**	**.00020**	**-.00621**	**1.8290**	**.00013**
Stddev	.00014	.00027	.00024	.0026	.00019
%RSD	.58724	133.90	3.8147	.14250	150.79
#1	.02452	.00039	-.00638	1.8272	-.00001
#2	.02472	.00001	-.00605	1.8309	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-Asd@5 Acquired: 9/26/2019 23:15:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.1762**	**.02541**	**-.00088**	**50.901**	**-.00068**
Stddev	.0016	.00016	.00015	.114	.00008
%RSD	.03780	.63556	16.973	.22456	11.973
#1	4.1773	.02552	-.00077	50.821	-.00062
#2	4.1751	.02530	-.00098	50.982	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0001**	**-.00044**	**1.534**	**-.00192**	**-.00539**
Stddev	.0006	.00190	.003	.00189	.00246
%RSD	899.2	427.41	.1704	98.438	45.571
#1	-.0004	-.00179	1.533	-.00058	-.00713
#2	.0005	.00090	1.536	-.00326	-.00366
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.2069**	**-.00017**	**.12718**	**-.0029**	**-.00038**
Stddev	.0087	.00047	.00032	.0057	.00010
%RSD	.72277	274.79	.25135	198.2	27.102
#1	1.2131	-.00050	.12695	-.0069	-.00031
#2	1.2008	.00016	.12740	.0012	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-Asd@5 Acquired: 9/26/2019 23:15:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00013	i -.0045	.00011	-.00133	.0019
Stddev	.00052	.0068	.00022	.00086	.0002
%RSD	408.12	151.3	199.32	64.458	11.44
#1	.00050	i .0003	-.00005	-.00193	.0021
#2	-.00024	i -.0092	.00027	-.00072	.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1751.9	583.12	38612.	4158.4
Stddev	.5	.22	68.	15.6
%RSD	.03137	.03693	.17645	.37511
#1	1751.5	582.97	38660.	4169.4
#2	1752.3	583.28	38564.	4147.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.056%	108.77%	99.368%	100.94%
Range				

Sample Name: 480-159420-A-1-Apds Acquired: 9/26/2019 23:19:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05320**	**10.379**	**.19520**	**.23127**	**.33133**
Stddev	.00018	.045	.00224	.00007	.00039
%RSD	.33849	.43631	1.1474	.03016	.11839
#1	.05307	10.411	.19678	.23122	.33105
#2	.05332	10.347	.19362	.23132	.33161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20832**	**88.606**	**.19847**	i **-.0036**	**.20433**
Stddev	.00073	.397	.00009	.0010	.00043
%RSD	.35233	.44757	.04448	27.68	.20822
#1	.20884	88.886	.19853	i -.0043	.20463
#2	.20780	88.325	.19841	i -.0029	.20403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.31568**	**.19423**	**10.030**	**19.010**	**.21052**
Stddev	.00040	.00066	.007	.012	.00168
%RSD	.12797	.33830	.07008	.06123	.79943
#1	.31596	.19469	10.035	19.018	.21171
#2	.31539	.19376	10.025	19.002	.20933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-Apds Acquired: 9/26/2019 23:19:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**30.123**	**.31548**	**.19230**	**265.28**	**.20694**
Stddev	.052	.00108	.00041	1.15	.00053
%RSD	.17411	.34249	.21573	.43330	.25711
#1	30.160	.31625	.19201	266.09	.20657
#2	30.086	.31472	.19259	264.47	.20732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5296**	**.20326**	**17.48**	**.21514**	**.17757**
Stddev	.0021	.00235	.00	.00297	.00302
%RSD	.3974	1.1544	.0228	1.3801	1.6988
#1	-.5281	.20492	17.49	.21304	.17544
#2	-.5310	.20160	17.48	.21724	.17971
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.924**	**.20294**	**.80763**	**.0052**	**.19595**
Stddev	.028	.00049	.00267	.0012	.00072
%RSD	.17613	.24361	.33003	24.14	.36653
#1	15.944	.20259	.80952	.0060	.19646
#2	15.905	.20329	.80575	.0043	.19544
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-Apds Acquired: 9/26/2019 23:19:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19968**	i **-.1559**	**.20212**	**.21482**	**.0049**
Stddev	.00088	.0404	.00014	.00284	.0006
%RSD	.44044	25.94	.06742	1.3207	11.43
#1	.19905	i -.1273	.20222	.21282	.0045
#2	.20030	i -.1845	.20203	.21683	.0053
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1600.1**	**560.33**	**36770.**	**4088.4**
Stddev	.4	.83	15.	15.6
%RSD	.02459	.14793	.04029	.38215
#1	1600.4	560.92	36760.	4077.4
#2	1599.8	559.75	36780.	4099.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.645%	104.52%	94.629%	99.246%
Range				

Sample Name: 480-159420-A-1-B MS Acquired: 9/26/2019 23:23:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05379**	**10.177**	**.19772**	**.23219**	**.33475**
Stddev	.00047	.024	.00194	.00003	.00121
%RSD	.86873	.23729	.98099	.01492	.36270
#1	.05412	10.160	.19909	.23217	.33561
#2	.05346	10.194	.19635	.23222	.33389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20972**	**90.923**	**.20143**	i **.0145**	**.20598**
Stddev	.00018	.063	.00010	.0149	.00015
%RSD	.08645	.06927	.05004	102.9	.07106
#1	.20959	90.878	.20136	i .0250	.20588
#2	.20985	90.967	.20151	i .0039	.20609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.32262**	**.19508**	**10.117**	**19.140**	**.20638**
Stddev	.00080	.00093	.015	.013	.00145
%RSD	.24704	.47603	.14417	.06730	.70476
#1	.32319	.19573	10.107	19.131	.20535
#2	.32206	.19442	10.127	19.150	.20740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-B MS Acquired: 9/26/2019 23:23:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**30.879**	**.32562**	**.19561**	**274.30**	**.20861**
Stddev	.098	.00146	.00087	.59	.00013
%RSD	.31800	.44903	.44708	.21459	.06122
#1	30.949	.32666	.19499	273.89	.20852
#2	30.810	.32459	.19623	274.72	.20870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5324**	**.20468**	**17.89**	**.21963**	**.18158**
Stddev	.0008	.00085	.03	.00354	.00378
%RSD	.1424	.41491	.1619	1.6137	2.0840
#1	-.5329	.20408	17.91	.22214	.18426
#2	-.5319	.20528	17.87	.21712	.17891
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.967**	**.20064**	**.82835**	**.0059**	**.19793**
Stddev	.056	.00012	.00197	.0062	.00018
%RSD	.35145	.05868	.23806	105.0	.09306
#1	15.928	.20073	.82696	.0103	.19806
#2	16.007	.20056	.82975	.0015	.19780
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-B MS Acquired: 9/26/2019 23:23:19 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19881**	i **.0088**	**.20410**	**.21678**	**.0020**
Stddev	.00372	.0168	.00178	.00004	.0001
%RSD	1.8690	190.3	.87153	.01661	5.550
#1	.20144	i -.0030	.20536	.21675	.0020
#2	.19618	i .0207	.20284	.21680	.0021
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1597.9**	**556.33**	**36554.**	**4099.1**
Stddev	.6	.11	43.	1.6
%RSD	.03804	.02061	.11771	.03852
#1	1597.5	556.41	36524.	4100.2
#2	1598.4	556.25	36584.	4098.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.527%	103.77%	94.073%	99.505%
Range				

Sample Name: 480-159420-A-1-C MSD Acquired: 9/26/2019 23:27:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05491**	**10.464**	**.19864**	**.23359**	**.34125**
Stddev	.00006	.067	.00291	.00010	.00024
%RSD	.11383	.64128	1.4649	.04382	.07104
#1	.05495	10.511	.19659	.23352	.34142
#2	.05486	10.416	.20070	.23366	.34108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21105**	**91.684**	**.20170**	i **.0093**	**.20663**
Stddev	.00076	.455	.00018	.0118	.00016
%RSD	.36038	.49650	.08750	127.1	.07701
#1	.21158	92.006	.20182	i .0177	.20674
#2	.21051	91.363	.20157	i .0009	.20651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.32548**	**.19730**	**10.135**	**19.579**	**.21221**
Stddev	.00211	.00053	.017	.087	.00074
%RSD	.64699	.26973	.17143	.44234	.34727
#1	.32399	.19692	10.147	19.641	.21273
#2	.32696	.19767	10.123	19.518	.21169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-C MSD Acquired: 9/26/2019 23:27:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**31.075**	**.33028**	**.19698**	**278.83**	**.20931**
Stddev	.017	.00064	.00008	.65	.00172
%RSD	.05384	.19523	.04086	.23311	.82247
#1	31.063	.33074	.19704	279.29	.21053
#2	31.087	.32982	.19693	278.37	.20809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5273**	**.20381**	**18.03**	**.21879**	**.17703**
Stddev	.0003	.00096	.10	.00004	.00232
%RSD	.0647	.47008	.5324	.01699	1.3115
#1	-.5270	.20313	17.96	.21877	.17867
#2	-.5275	.20448	18.10	.21882	.17539
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.027**	**.20195**	**.84258**	**.0056**	**.19890**
Stddev	.029	.00138	.00150	.0090	.00064
%RSD	.16755	.68300	.17776	159.6	.32016
#1	17.047	.20097	.84364	.0120	.19935
#2	17.007	.20292	.84152	-.0007	.19845
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-1-C MSD Acquired: 9/26/2019 23:27:06 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20083**	i **-.1489**	**.20564**	**.21531**	**.0012**
Stddev	.00075	.0294	.00040	.00137	.0004
%RSD	.37193	19.76	.19226	.63559	36.26
#1	.20030	i -.1697	.20536	.21627	.0009
#2	.20136	i -.1281	.20592	.21434	.0015
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1597.9**	**556.79**	**36610.**	**4105.1**
Stddev	.4	.78	90.	8.2
%RSD	.02673	.13946	.24494	.20028
#1	1597.6	557.34	36673.	4099.3
#2	1598.2	556.24	36547.	4110.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.526%	103.86%	94.217%	99.651%
Range				

Sample Name: 480-159420-A-2-A Acquired: 9/26/2019 23:30:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.01973**	**-.00097**	**.03297**	**.13120**
Stddev	.00013	.01141	.00060	.00045	.00017
%RSD	49.250	57.799	61.195	1.3559	.12998
#1	.00036	.02780	-.00140	.03329	.13132
#2	.00017	.01167	-.00055	.03266	.13108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**81.653**	**.00039**	i **.0012**	**-.00052**
Stddev	.00008	.093	.00005	.0030	.00029
%RSD	264.56	.11340	14.072	243.7	56.156
#1	.00009	81.719	.00035	i .0033	-.00031
#2	-.00003	81.588	.00043	i -.0009	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.12623**	**-.00072**	**.01330**	**9.4706**	**.00106**
Stddev	.00026	.00019	.00182	.0417	.00020
%RSD	.20469	26.428	13.690	.44026	18.696
#1	.12642	-.00059	.01201	9.5001	.00120
#2	.12605	-.00086	.01459	9.4411	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-2-A Acquired: 9/26/2019 23:30:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**21.006**	**.13214**	**-.00014**	**269.82**	**-.00078**
Stddev	.015	.00041	.00017	.00	.00035
%RSD	.07252	.31024	122.21	.00160	44.946
#1	20.996	.13185	-.00027	269.81	-.00103
#2	21.017	.13243	-.00002	269.82	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0073**	**-.00167**	**8.252**	**-.00103**	**-.00910**
Stddev	.0015	.00091	.005	.00109	.00140
%RSD	20.71	54.526	.0554	105.36	15.422
#1	.0063	-.00103	8.249	-.00180	-.01010
#2	.0084	-.00232	8.255	-.00026	-.00811
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2122**	**.00184**	**.64401**	**-.0081**	**.00032**
Stddev	.0241	.00109	.00074	.0080	.00037
%RSD	.38865	59.093	.11479	98.59	116.95
#1	6.1951	.00107	.64453	-.0137	.00006
#2	6.2293	.00261	.64349	-.0024	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159420-A-2-A Acquired: 9/26/2019 23:30:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00220**	i **-.0344**	**-.00010**	**.00125**	**-.0004**
Stddev	.00230	.0674	.00027	.00068	.0006
%RSD	104.29	195.8	253.64	54.563	165.6
#1	.00058	i -.0820	.00008	.00173	.0001
#2	.00383	i .0132	-.00029	.00076	-.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1613.6**	**554.77**	**36490.**	**4077.8**
Stddev	1.2	1.79	9.	6.1
%RSD	.07197	.32256	.02575	.14918
#1	1614.4	556.04	36483.	4082.1
#2	1612.8	553.51	36497.	4073.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.396%	103.48%	93.908%	98.988%
Range				

Sample Name: 480-159495-C-1-B Acquired: 9/26/2019 23:34:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00191**	**.00386**	**.00834**	**.03399**
Stddev	.00011	.02900	.00711	.00017	.00002
%RSD	23.557	1517.4	184.24	2.0191	.04899
#1	-.00040	.02242	.00889	.00822	.03400
#2	-.00056	-.01860	-.00117	.00846	.03398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**66.621**	**.00018**	i **.0088**	**-.00025**
Stddev	.00001	.275	.00002	.0095	.00041
%RSD	52.850	.41221	12.962	108.3	161.89
#1	-.00003	66.815	.00016	i .0020	-.00055
#2	-.00001	66.427	.00019	i .0155	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00045**	**1.9216**	**1.1721**	**.00286**
Stddev	.00012	.00012	.0004	.0052	.00012
%RSD	47.337	27.084	.01871	.43966	4.0228
#1	.00017	-.00037	1.9214	1.1685	.00294
#2	.00034	-.00054	1.9219	1.1758	.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159495-C-1-B Acquired: 9/26/2019 23:34:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.6739**	**.90300**	**.00143**	**14.566**	**-.00044**
Stddev	.0085	.00139	.00006	.055	.00004
%RSD	.12678	.15397	4.1572	.37453	8.6666
#1	6.6799	.90398	.00147	14.605	-.00042
#2	6.6679	.90202	.00139	14.527	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0229**	**-.00049**	**.5666**	**-.00247**	**-.00463**
Stddev	.0042	.00121	.0003	.00044	.00029
%RSD	18.15	244.63	.0491	17.851	6.2338
#1	.0259	.00036	.5668	-.00279	-.00443
#2	.0200	-.00135	.5664	-.00216	-.00484
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9850**	**.00005**	**.43247**	**-.0006**	**-.00053**
Stddev	.0307	.00012	.00113	.0085	.00028
%RSD	.44009	216.10	.26244	1414.	53.434
#1	6.9633	.00014	.43327	-.0066	-.00033
#2	7.0068	-.00003	.43166	.0054	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159495-C-1-B Acquired: 9/26/2019 23:34:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	i **-.0094**	**-.00038**	**.00077**	**.0002**
Stddev	.00010	.0924	.00003	.00085	.0001
%RSD	17.582	978.8	6.9784	110.06	57.52
#1	-.00062	i .0559	-.00040	.00137	.0002
#2	-.00048	i -.0748	-.00036	.00017	.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1747.5**	**571.55**	**38259.**	**4162.4**
Stddev	2.7	.89	27.	16.4
%RSD	.15544	.15559	.07095	.39447
#1	1749.4	572.18	38240.	4150.8
#2	1745.5	570.93	38279.	4174.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.811%	106.61%	98.462%	101.04%
Range				

Sample Name: CCV-5520066 Acquired: 9/26/2019 23:38:32 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0072**	**51.313**	**.92681**	**.95430**	**1.0291**	**.99970**	**51.447**	**.94663**
Stddev	.0013	.098	.00091	.00199	.0014	.00018	.113	.00221
%RSD	.13016	.19056	.09795	.20827	.13851	.01806	.22040	.23302
#1	1.0081	51.244	.92746	.95290	1.0281	.99983	51.527	.94507
#2	1.0062	51.382	.92617	.95571	1.0301	.99957	51.367	.94819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **1.014**	**1.0192**	**.98854**	**.96234**	**50.009**	**48.797**	**1.0031**	**50.738**
Stddev	.025	.0007	.00288	.00145	.001	.063	.0010	.045
%RSD	2.432	.07106	.29100	.15103	.00120	.12966	.09549	.08834
#1	i 1.032	1.0187	.99057	.96131	50.010	48.842	1.0025	50.769
#2	i .9966	1.0197	.98651	.96337	50.009	48.753	1.0038	50.706
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98910**	**.94363**	**49.426**	**.99972**	**26.14**	**1.0055**	**23.02**	**.95198**
Stddev	.00188	.00111	.009	.00071	.05	.0029	.04	.00263
%RSD	.19000	.11788	.01838	.07109	.1821	.28622	.1786	.27601
#1	.99043	.94285	49.420	.99922	26.10	1.0035	22.99	.95013
#2	.98777	.94442	49.433	1.0002	26.17	1.0076	23.05	.95384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/26/2019 23:38:32 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.90420**	**10.367**	**1.0096**	**1.0012**	**.9916**	**.97119**	**1.0067**	i **2.335**
Stddev	.00173	.067	.0048	.0007	.0170	.00081	.0023	.093
%RSD	.19101	.64653	.47786	.06692	1.715	.08377	.22900	3.989
#1	.90542	10.320	1.0130	1.0007	.9796	.97062	1.0083	i 2.401
#2	.90298	10.415	1.0062	1.0017	1.004	.97177	1.0051	i 2.269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.98930**	**1.0329**	**.9712**
Stddev	.00192	.0003	.0005
%RSD	.19360	.02767	.0501
#1	.99065	1.0331	.9716
#2	.98794	1.0327	.9709
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1654.9**	**577.20**	**37559.**	**4122.4**
Stddev	4.1	.10	137.	3.3
%RSD	.24609	.01652	.36470	.08061
#1	1652.0	577.27	37463.	4120.1
#2	1657.8	577.13	37656.	4124.8

Sample Name: CCB-5508960 Acquired: 9/26/2019 23:42:13 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00558**	**.00070**	**-.00178**	**.00015**	**-.00000**	**.04680**	**-.00007**
Stddev	.00019	.01000	.00374	.00029	.00000	.00005	.00085	.00011
%RSD	95.132	179.20	532.80	16.451	2.3243	1364.0	1.8063	152.37
#1	-.00006	-.01266	.00335	-.00199	.00015	.00003	.04739	.00001
#2	-.00033	.00149	-.00194	-.00157	.00015	-.00004	.04620	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0069**	**.00005**	**.00014**	**-.00006**	**-.00053**	**.01347**	**-.00065**	**.00248**
Stddev	.0068	.00007	.00014	.00002	.00007	.01844	.00018	.00229
%RSD	97.53	150.78	105.30	30.137	13.261	136.89	27.781	92.132
#1	i .0022	-.00000	.00003	-.00005	-.00058	.00043	-.00078	.00410
#2	i .0117	.00010	.00024	-.00008	-.00048	.02651	-.00052	.00087
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00103**	**.06199**	**-.00005**	**.0034**	**-.00203**	**-.0030**	**-.00052**
Stddev	.00001	.00008	.00074	.00001	.0008	.00005	.0009	.00108
%RSD	5.8655	8.1459	1.1963	26.282	23.50	2.5364	28.47	208.70
#1	.00011	.00097	.06252	-.00006	.0040	-.00207	-.0036	.00025
#2	.00010	.00109	.06147	-.00004	.0029	-.00199	-.0024	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/26/2019 23:42:13 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	-.03753	-.00018	.00004	-.0052	.00004	.00307	i .0194
Stddev	.00581	.00056	.00048	.00006	.0027	.00009	.00023	.0269
%RSD	410.40	1.4861	266.21	141.19	52.39	235.74	7.4422	138.6
#1	.00552	-.03793	-.00052	.00009	-.0033	-.00003	.00323	i .0385
#2	-.00269	-.03714	.00016	.00000	-.0072	.00010	.00290	i .0004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	-.00002	.00674	.0012
Stddev	.00035	.00001	.0004
%RSD	2024.0	.19259	32.59
#1	-.00027	.00675	.0014
#2	.00023	.00673	.0009
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1807.7	595.56	39458.	4121.6
Stddev	.1	1.32	52.	.9
%RSD	.00434	.22097	.13131	.02289
#1	1807.7	596.49	39421.	4121.0
#2	1807.8	594.63	39494.	4122.3

Sample Name: CCVL-5514926 Acquired: 9/26/2019 23:46:04 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00620	.19146	.01318	.01740	.00220	.00207	.54157	.00187
Stddev	.00011	.02344	.00126	.00020	.00001	.00002	.00610	.00013
%RSD	1.7966	12.243	9.5852	1.1531	.26865	.98354	1.1260	6.8564
#1	.00628	.20804	.01229	.01754	.00219	.00206	.54588	.00196
#2	.00612	.17489	.01408	.01726	.00220	.00208	.53726	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0205	.00418	.00435	.00930	.04634	.49585	.03111	.21532
Stddev	.0072	.00004	.00010	.00029	.00103	.00680	.00109	.00235
%RSD	35.23	1.0076	2.3022	3.0729	2.2326	1.3710	3.5172	1.0923
#1	i .0256	.00415	.00442	.00950	.04707	.49105	.03189	.21698
#2	i .0154	.00421	.00428	.00910	.04560	.50066	.03034	.21366
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00301	.00938	1.0414	.01034	-.0328	.01016	.1846	.01929
Stddev	.00004	.00001	.0074	.00027	.0023	.00039	.0081	.00004
%RSD	1.2337	.05730	.71310	2.5866	6.909	3.8205	4.368	.21315
#1	.00299	.00938	1.0467	.01053	-.0312	.01043	.1789	.01932
#2	.00304	.00938	1.0362	.01015	-.0344	.00988	.1903	.01926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/26/2019 23:46:04 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02055**	**.48145**	**.01048**	**.00502**	**.0074**	**.00448**	**.01932**	i **.0872**
Stddev	.00131	.00548	.00141	.00004	.0095	.00007	.00174	.0101
%RSD	6.3616	1.1381	13.447	.85988	129.2	1.5929	9.0019	11.64
#1	.02147	.48532	.01147	.00505	.0141	.00453	.02055	i .0800
#2	.01962	.47757	.00948	.00498	.0006	.00443	.01809	i .0943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00492**	**.01045**	**.0014**
Stddev	.00030	.00037	.0009
%RSD	6.1216	3.5747	65.24
#1	.00470	.01019	.0020
#2	.00513	.01071	.0007
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1814.6**	**593.01**	**39528.**	**4142.8**
Stddev	2.0	.40	28.	16.2
%RSD	.11288	.06750	.07041	.39017
#1	1816.0	592.73	39508.	4131.3
#2	1813.1	593.29	39547.	4154.2

Sample Name: 480-159552-C-2-A Acquired: 9/26/2019 23:49:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.02567**	**.00606**	**.33300**	**.03028**
Stddev	.00025	.01412	.00191	.00269	.00015
%RSD	49.759	54.995	31.496	.80871	.50361
#1	-.00033	.01569	.00741	.33491	.03039
#2	-.00068	.03565	.00471	.33110	.03017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**552.82**	**.00032**	i **.0017**	**.01465**
Stddev	.00005	1.55	.00009	.0057	.00021
%RSD	143.54	.28091	29.595	333.6	1.4574
#1	.00006	553.92	.00039	i -.0023	.01450
#2	-.00000	551.72	.00025	i .0058	.01480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00299**	**1.4362**	**13.546**	**.23781**
Stddev	.00005	.00009	.0007	.048	.00007
%RSD	17.629	2.9829	.04867	.35716	.03129
#1	-.00025	-.00305	1.4357	13.580	.23775
#2	-.00032	-.00292	1.4367	13.512	.23786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159552-C-2-A Acquired: 9/26/2019 23:49:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**249.42**	**6.8481**	**.00134**	**125.47**	**.02828**
Stddev	.52	.0031	.00020	.80	.00012
%RSD	.20958	.04517	14.837	.63426	.43976
#1	249.79	6.8459	.00148	126.03	.02819
#2	249.05	6.8503	.00120	124.90	.02837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0005**	**-.00164**	F **547.8**	**-.00255**	**-.01777**
Stddev	.0018	.00140	2.0	.00051	.00351
%RSD	345.3	85.169	.3663	19.985	19.740
#1	-.0007	-.00065	549.3	-.00291	-.02025
#2	.0018	-.00263	546.4	-.00219	-.01529
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.204**	**-.00206**	**3.5005**	**.0018**	**-.00232**
Stddev	.030	.00037	.0023	.0027	.00040
%RSD	.29225	17.948	.06588	146.8	17.236
#1	10.225	-.00232	3.5022	.0038	-.00204
#2	10.183	-.00180	3.4989	-.0001	-.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159552-C-2-A Acquired: 9/26/2019 23:49:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	i **-.4352**	**-.00117**	**.00312**	**-.0006**
Stddev	.00141	.0252	.00003	.00034	.0003
%RSD	1453.8	5.796	2.9555	10.934	56.57
#1	-.00109	i -.4530	-.00115	.00288	-.0004
#2	.00090	i -.4173	-.00119	.00336	-.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1489.6**	**520.49**	**34694.**	**3929.3**
Stddev	.3	1.68	52.	15.8
%RSD	.02175	.32352	.15124	.40239
#1	1489.9	519.30	34656.	3918.1
#2	1489.4	521.68	34731.	3940.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	82.527%	97.085%	89.285%	95.382%
Range				

Sample Name: 480-159523-A-10-B Acquired: 9/26/2019 23:53:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.03402**	**-.00124**	**.21568**	**.07171**
Stddev	.00050	.00219	.00120	.00054	.00000
%RSD	208.88	6.4519	96.863	.25035	.00183
#1	.00011	.03557	-.00039	.21530	.07171
#2	-.00059	.03246	-.00208	.21606	.07171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**68.527**	**.00006**	i **.0023**	**.00010**
Stddev	.00001	.269	.00014	.0013	.00005
%RSD	36.076	.39250	253.94	56.49	45.101
#1	-.00003	68.718	-.00004	i .0032	.00013
#2	-.00005	68.337	.00016	i .0014	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00058**	**14.257**	**21.136**	**.00822**
Stddev	.00010	.00014	.037	.084	.00037
%RSD	15.612	24.439	.26070	.39598	4.5453
#1	.00057	.00048	14.283	21.195	.00796
#2	.00071	.00068	14.231	21.077	.00849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159523-A-10-B Acquired: 9/26/2019 23:53:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**76.926**	**.78564**	**.00240**	**621.55**	**.00116**
Stddev	.057	.00158	.00006	.28	.00007
%RSD	.07462	.20070	2.5909	.04559	5.8317
#1	76.885	.78452	.00236	621.75	.00121
#2	76.967	.78675	.00245	621.35	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0566**	**.00021**	**22.34**	**-.00415**	**-.01367**
Stddev	.0031	.00067	.02	.00058	.00429
%RSD	5.535	320.93	.0868	14.002	31.368
#1	.0543	.00068	22.36	-.00374	-.01064
#2	.0588	-.00027	22.33	-.00456	-.01670
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.1878**	**.00116**	**.59730**	**.0100**	**.00179**
Stddev	.0199	.00050	.00098	.0143	.00063
%RSD	.47559	43.262	.16448	142.4	35.017
#1	4.2018	.00151	.59799	-.0001	.00224
#2	4.1737	.00080	.59660	.0201	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159523-A-10-B Acquired: 9/26/2019 23:53:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	i **-.0392**	**.00013**	**.01137**	**.0000**
Stddev	.00046	.0677	.00039	.00048	.0007
%RSD	130.78	172.8	300.65	4.2412	1941.
#1	.00068	i .0087	-.00014	.01103	.0005
#2	.00003	i -.0871	.00040	.01171	-.0005
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1518.9**	**539.36**	**35184.**	**4024.1**
Stddev	1.0	.47	33.	3.0
%RSD	.06730	.08803	.09516	.07473
#1	1519.6	539.69	35208.	4021.9
#2	1518.2	539.02	35160.	4026.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.148%	100.60%	90.547%	97.683%
Range				

Sample Name: 480-159523-A-11-B Acquired: 9/26/2019 23:57:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.02735**	**.00144**	**.52029**	**.02272**
Stddev	.00038	.00349	.00419	.00239	.00014
%RSD	115.33	12.750	292.13	.45943	.59683
#1	-.00006	.02982	-.00153	.52198	.02281
#2	-.00060	.02488	.00440	.51860	.02262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**72.678**	**.00018**	i **-.0006**	**-.00064**
Stddev	.00000	.089	.00003	.0049	.00060
%RSD	43.822	.12194	18.232	871.6	94.086
#1	.00001	72.741	.00020	i .0029	-.00021
#2	.00001	72.616	.00016	i -.0040	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00334**	**.05462**	**48.169**	**.02203**
Stddev	.00010	.00049	.00023	.041	.00039
%RSD	47.516	14.696	.42008	.08519	1.7832
#1	.00029	.00369	.05446	48.198	.02176
#2	.00014	.00299	.05478	48.140	.02231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159523-A-11-B Acquired: 9/26/2019 23:57:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**155.23**	**.05396**	**.00155**	F **1269.0**	**.00115**
Stddev	.33	.00027	.00048	3.6	.00006
%RSD	.21378	.49910	30.729	.28117	5.1315
#1	155.47	.05415	.00189	1266.5	.00111
#2	155.00	.05377	.00122	1271.6	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0407**	**-.00057**	F **108.5**	**-.00000**	**-.01475**
Stddev	.0017	.00031	.6	.00022	.00596
%RSD	4.276	54.340	.5350	4688.4	40.392
#1	.0420	-.00079	108.9	.00015	-.01897
#2	.0395	-.00035	108.1	-.00016	-.01054
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.1578**	**.00047**	**.92113**	**-.0074**	**.00132**
Stddev	.0113	.00121	.00057	.0124	.00038
%RSD	.52535	255.93	.06153	166.9	29.083
#1	2.1658	-.00038	.92073	-.0162	.00105
#2	2.1498	.00133	.92153	.0013	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159523-A-11-B Acquired: 9/26/2019 23:57:52 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	i **-.0081**	**-.00023**	**.00522**	**-.0001**
Stddev	.00062	.0592	.00035	.00088	.0009
%RSD	38.609	734.4	151.22	16.825	1065.
#1	.00203	i .0338	-.00047	.00584	-.0008
#2	.00116	i -.0499	.00002	.00460	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1431.7**	**526.20**	**33565.**	**3908.2**
Stddev	2.2	.32	78.	.2
%RSD	.15578	.06172	.23252	.00402
#1	1433.2	526.43	33510.	3908.1
#2	1430.1	525.97	33620.	3908.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	79.315%	98.150%	86.381%	94.872%
Range				

Sample Name: 480-159540-H-1-A Acquired: 9/27/2019 0:01:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**14.986**	**.00219**	**.01993**	**.15115**
Stddev	.00038	.042	.00396	.00046	.00014
%RSD	63.986	.27864	181.07	2.3139	.09047
#1	-.00032	14.956	.00499	.02026	.15105
#2	-.00086	15.015	-.00061	.01961	.15124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00096**	**106.65**	**.00047**	i **.1223**	**.01029**
Stddev	.00003	.09	.00000	.0012	.00021
%RSD	3.4066	.08016	.22854	.9798	2.0250
#1	.00094	106.59	.00047	i .1215	.01015
#2	.00099	106.71	.00047	i .1232	.01044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01427**	**.00766**	**26.148**	**2.8858**	**.00565**
Stddev	.00069	.00025	.020	.0093	.00016
%RSD	4.8343	3.2874	.07685	.32237	2.8598
#1	.01378	.00748	26.163	2.8924	.00554
#2	.01475	.00784	26.134	2.8792	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159540-H-1-A Acquired: 9/27/2019 0:01:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.7993**	**.46978**	**.00036**	**62.800**	**.01617**
Stddev	.0084	.00071	.00008	.283	.00031
%RSD	.14563	.15175	21.765	.45074	1.8880
#1	5.8053	.46927	.00031	62.600	.01596
#2	5.7934	.47028	.00042	63.000	.01639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.024**	**.00744**	**35.52**	**-.00648**	**-.00437**
Stddev	.002	.00062	.09	.00156	.00409
%RSD	.2356	8.3367	.2426	24.064	93.393
#1	1.025	.00788	35.46	-.00538	-.00726
#2	1.022	.00701	35.59	-.00759	-.00149
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**17.296**	**.00148**	**.49760**	**.0271**	**.60269**
Stddev	.023	.00078	.00065	.0000	.00040
%RSD	.13496	53.115	.12983	.0484	.06652
#1	17.313	.00203	.49714	.0271	.60297
#2	17.280	.00092	.49805	.0271	.60241
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159540-H-1-A Acquired: 9/27/2019 0:01:44 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	i **.2073**	**.03505**	**.18040**	**.0056**
Stddev	.00044	.0062	.00025	.00130	.0014
%RSD	110.61	3.000	.72444	.72082	25.08
#1	-.00009	i .2029	.03523	.17948	.0066
#2	-.00072	i .2117	.03487	.18132	.0046
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1674.9**	**576.78**	**38632.**	**4284.1**
Stddev	.8	2.06	2.	12.0
%RSD	.04864	.35701	.00483	.27896
#1	1674.3	578.24	38631.	4292.6
#2	1675.5	575.33	38634.	4275.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.791%	107.59%	99.422%	104.00%
Range				

Sample Name: MB 480-491981/1-A Acquired: 9/27/2019 0:05:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.01391**	**-.00148**	**.00299**	**.00001**
Stddev	.00074	.00595	.00203	.00055	.00001
%RSD	126.20	42.809	137.30	18.434	107.07
#1	.00111	.01812	-.00291	.00338	.00002
#2	.00006	.00970	-.00004	.00260	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.07435**	**-.00001**	i **.0206**	**.00027**
Stddev	.00004	.00060	.00004	.0156	.00008
%RSD	144.28	.80160	364.37	75.53	31.186
#1	.00000	.07393	.00002	i .0096	.00033
#2	-.00006	.07478	-.00004	i .0316	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00003**	**.00211**	**.01977**	**.00101**
Stddev	.00005	.00003	.00159	.01956	.00005
%RSD	13.091	83.465	75.387	98.939	5.1302
#1	.00034	.00001	.00099	.03359	.00105
#2	.00041	.00005	.00323	.00594	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-491981/1-A Acquired: 9/27/2019 0:05:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00783**	**.00176**	**-.00060**	**.15326**	**-.00026**
Stddev	.00230	.00003	.00017	.00122	.00005
%RSD	29.380	1.7815	28.659	.79850	19.442
#1	.00946	.00173	-.00047	.15412	-.00023
#2	.00621	.00178	-.00072	.15239	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0029**	**-.00111**	**.0088**	**-.00063**	**.00080**
Stddev	.0003	.00010	.0069	.00038	.00179
%RSD	10.59	8.9966	78.18	60.506	223.13
#1	.0031	-.00104	.0039	-.00090	.00206
#2	.0027	-.00118	.0136	-.00036	-.00046
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.02056**	**.00008**	**.00035**	**-.0046**	**.00007**
Stddev	.00595	.00047	.00002	.0089	.00014
%RSD	28.943	603.79	7.0890	192.7	190.44
#1	-.01635	.00041	.00036	.0017	.00017
#2	-.02476	-.00025	.00033	-.0109	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-491981/1-A Acquired: 9/27/2019 0:05:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	i **.0154**	**-.00042**	**.00866**	**.0004**
Stddev	.00166	.0783	.00011	.00101	.0004
%RSD	8266.6	507.0	24.986	11.666	99.91
#1	-.00119	i -.0399	-.00035	.00937	.0001
#2	.00115	i .0708	-.00050	.00794	.0007
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1814.2**	**588.53**	**39759.**	**4194.4**
Stddev	4.4	2.84	60.	19.7
%RSD	.24220	.48242	.14966	.46927
#1	1817.3	590.54	39717.	4180.5
#2	1811.1	586.52	39801.	4208.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.51%	109.78%	102.32%	101.82%
Range				

Sample Name: LCS 480-491981/2-A Acquired: 9/27/2019 0:09:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05367**	**10.434**	**.20175**	**.19950**	**.21745**
Stddev	.00055	.132	.00703	.00087	.00006
%RSD	1.0295	1.2645	3.4832	.43488	.02627
#1	.05406	10.528	.20672	.20011	.21741
#2	.05328	10.341	.19678	.19889	.21749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21327**	**10.794**	**.20377**	i **.0031**	**.20522**
Stddev	.00025	.039	.00064	.0136	.00049
%RSD	.11722	.35897	.31334	432.6	.23754
#1	.21345	10.822	.20422	i -.0065	.20556
#2	.21309	10.767	.20332	i .0128	.20487
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20784**	**.19949**	**10.550**	**9.9407**	**.20799**
Stddev	.00054	.00037	.059	.0511	.00038
%RSD	.25951	.18564	.56276	.51409	.18096
#1	.20745	.19923	10.592	9.9768	.20772
#2	.20822	.19976	10.508	9.9046	.20825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-491981/2-A Acquired: 9/27/2019 0:09:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.783**	**.20884**	**.20072**	**10.040**	**.21138**
Stddev	.007	.00020	.00091	.052	.00026
%RSD	.06178	.09518	.45371	.52090	.12348
#1	10.778	.20870	.20136	10.077	.21156
#2	10.787	.20898	.20007	10.003	.21120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5984**	**.20669**	**9.860**	**.22184**	**.19117**
Stddev	.0011	.00187	.027	.00144	.00456
%RSD	.1896	.90274	.2760	.64757	2.3853
#1	-.5992	.20801	9.879	.22285	.19440
#2	-.5976	.20537	9.841	.22082	.18795
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.7653**	**.19799**	**.20346**	**.0009**	**.20261**
Stddev	.0323	.00099	.00114	.0041	.00030
%RSD	.33119	.49966	.56064	433.4	.14685
#1	9.7882	.19869	.20427	.0038	.20240
#2	9.7425	.19730	.20266	-.0019	.20282
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-491981/2-A Acquired: 9/27/2019 0:09:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20458**	i **-.0110**	**.21002**	F **.23264**	**.0033**
Stddev	.00222	.0979	.00007	.00109	.0006
%RSD	1.0857	892.2	.03569	.47059	18.15
#1	.20301	i .0582	.20997	.23341	.0037
#2	.20615	i -.0802	.21007	.23186	.0029
Check ?	Chk Pass	None	Chk Pass	Chk Fail	None
High Limit				.23000	
Low Limit				.17000	

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1766.9**	**577.18**	**38671.**	**4150.6**
Stddev	3.7	.24	77.	6.0
%RSD	.21113	.04175	.19885	.14506
#1	1769.5	577.01	38726.	4146.3
#2	1764.2	577.35	38617.	4154.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.885%	107.66%	99.522%	100.75%
Range				

Sample Name: 480-159110-B-1-B Acquired: 9/27/2019 0:13:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**3.0032**	**.00147**	**.04598**	**.04361**
Stddev	.00059	.0008	.00157	.00026	.00001
%RSD	158.68	.02661	106.73	.56511	.01184
#1	-.00078	3.0038	.00036	.04580	.04360
#2	.00005	3.0027	.00259	.04617	.04361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**50.139**	**.00016**	i **.0213**	**.00011**
Stddev	.00003	.076	.00008	.0090	.00003
%RSD	16.578	.15229	48.611	42.33	30.642
#1	.00014	50.193	.00022	i .0277	.00008
#2	.00018	50.085	.00011	i .0149	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00309**	**.00107**	**1.8894**	**3.3904**	**.10546**
Stddev	.00000	.00006	.0113	.0343	.00122
%RSD	.01461	5.4920	.59528	1.0130	1.1582
#1	.00308	.00111	1.8815	3.4147	.10460
#2	.00309	.00103	1.8974	3.3661	.10633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-1-B Acquired: 9/27/2019 0:13:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.8399**	**.01541**	**.06213**	**85.331**	**.00152**
Stddev	.0107	.00002	.00002	.160	.00010
%RSD	.10863	.14444	.03621	.18695	6.5302
#1	9.8475	.01543	.06212	85.444	.00145
#2	9.8324	.01540	.06215	85.219	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0072**	**.00057**	**22.38**	**-.00094**	**-.00086**
Stddev	.0019	.00065	.00	.00023	.00412
%RSD	26.53	113.74	.0034	24.210	476.62
#1	.0058	.00103	22.38	-.00110	-.00377
#2	.0086	.00011	22.38	-.00078	.00205
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.8740**	**-.00123**	**.61525**	**.0054**	**.04533**
Stddev	.0119	.00062	.00148	.0064	.00032
%RSD	.13397	50.641	.24115	116.8	.71092
#1	8.8824	-.00079	.61630	.0099	.04510
#2	8.8656	-.00167	.61420	.0009	.04556
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-1-B Acquired: 9/27/2019 0:13:01 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	i **.1402**	**.00474**	**.01355**	**.0015**
Stddev	.00086	.0368	.00002	.00047	.0001
%RSD	69.854	26.25	.48537	3.4894	8.718
#1	.00183	i .1142	.00473	.01321	.0016
#2	.00062	i .1663	.00476	.01388	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1708.6**	**565.79**	**37709.**	**4105.1**
Stddev	4.2	.95	20.	.6
%RSD	.24531	.16730	.05415	.01450
#1	1711.6	566.46	37724.	4105.5
#2	1705.6	565.13	37695.	4104.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.659%	105.54%	97.046%	99.650%
Range				

Sample Name: 480-159110-B-2-B Acquired: 9/27/2019 0:16:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00665**	**.00062**	**.00475**	**.00025**
Stddev	.00021	.01103	.00269	.00056	.00000
%RSD	115.04	165.69	435.73	11.860	.01971
#1	-.00033	-.00114	-.00128	.00435	.00025
#2	-.00003	.01445	.00252	.00514	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.14611**	**-.00005**	i **.0130**	**-.00013**
Stddev	.00007	.00017	.00007	.0084	.00013
%RSD	2975.8	.11670	142.59	64.67	99.904
#1	.00005	.14623	.00000	i .0070	-.00004
#2	-.00006	.14599	-.00010	i .0189	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00212**	**-.00018**	**.01419**	**.01745**	**-.00039**
Stddev	.00015	.00023	.00100	.01533	.00080
%RSD	6.8818	123.89	7.0552	87.824	202.81
#1	.00223	-.00035	.01490	.02829	-.00096
#2	.00202	-.00002	.01348	.00661	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-2-B Acquired: 9/27/2019 0:16:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.02807**	**.00251**	**-.00062**	**.14864**	**.00073**
Stddev	.00300	.00006	.00023	.00521	.00013
%RSD	10.673	2.2590	37.902	3.5049	17.357
#1	.03018	.00247	-.00045	.15232	.00082
#2	.02595	.00255	-.00078	.14496	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0010**	**-.00010**	**.0184**	**-.00165**	**-.00392**
Stddev	.0017	.00136	.0029	.00108	.00033
%RSD	182.6	1421.1	15.86	65.526	8.5431
#1	-.0022	.00086	.0164	-.00089	-.00368
#2	.0003	-.00106	.0205	-.00242	-.00415
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**-.00009**	**.00067**	**.0034**	**.00003**
Stddev	.00628	.00083	.00006	.0054	.00024
%RSD	186.63	926.04	9.2486	158.4	837.07
#1	.00780	.00050	.00071	.0072	-.00014
#2	-.00108	-.00067	.00063	-.0004	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-2-B Acquired: 9/27/2019 0:16:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	i **.0399**	**-.00017**	**.00953**	**.0009**
Stddev	.00073	.0569	.00049	.00169	.0009
%RSD	61.561	142.6	289.82	17.751	98.81
#1	-.00067	i .0801	-.00051	.01072	.0003
#2	-.00170	i -.0003	.00018	.00833	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1807.7**	**581.01**	**39536.**	**4157.9**
Stddev	3.4	.78	106.	14.1
%RSD	.18610	.13460	.26924	.33893
#1	1810.1	581.56	39611.	4167.8
#2	1805.3	580.45	39461.	4147.9
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.15%	108.37%	101.75%	100.93%
Range				

Sample Name: 480-159110-B-3-B Acquired: 9/27/2019 0:20:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.03926**	**-.00330**	**.00488**	**.00001**
Stddev	.00043	.00539	.00262	.00057	.00001
%RSD	624.06	13.722	79.482	11.670	135.35
#1	.00024	.03545	-.00145	.00528	.00001
#2	-.00037	.04306	-.00515	.00448	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.03031**	**.00001**	i **.0048**	**-.00021**
Stddev	.00003	.00307	.00024	.0035	.00000
%RSD	138.76	10.144	3956.9	73.96	1.6073
#1	.00005	.02814	.00017	i .0073	-.00022
#2	.00000	.03248	-.00016	i .0023	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00003**	**-.00003**	**.00207**	**-.00001**
Stddev	.00026	.00046	.00519	.00633	.00007
%RSD	4325.8	1481.3	16849.	305.21	489.40
#1	-.00018	.00036	-.00370	-.00240	.00003
#2	.00019	-.00030	.00364	.00655	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-3-B Acquired: 9/27/2019 0:20:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**.00143**	**-.00056**	**.09232**	**-.00007**
Stddev	.00292	.00008	.00001	.00069	.00044
%RSD	99.951	5.9117	1.4867	.74904	597.51
#1	.00498	.00137	-.00055	.09281	.00024
#2	.00086	.00149	-.00056	.09183	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0016**	**-.00105**	**.0002**	**-.00191**	**-.00126**
Stddev	.0014	.00093	.0031	.00221	.00332
%RSD	87.31	88.917	1275.	115.85	263.58
#1	-.0026	-.00039	-.0019	-.00347	.00109
#2	-.0006	-.00171	.0024	-.00034	-.00361
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01141**	**-.00162**	**.00018**	**.0004**	**-.00003**
Stddev	.02111	.00024	.00001	.0093	.00013
%RSD	185.00	14.909	4.4140	2307.	370.60
#1	-.02634	-.00179	.00017	-.0061	.00005
#2	.00352	-.00145	.00019	.0070	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-3-B Acquired: 9/27/2019 0:20:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	i **.0540**	**.00004**	**.00543**	**.0002**
Stddev	.00083	.0341	.00025	.00036	.0000
%RSD	58.515	63.12	619.54	6.6902	18.00
#1	-.00083	i .0299	.00022	.00568	.0002
#2	-.00201	i .0781	-.00014	.00517	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1812.9**	**583.74**	**39566.**	**4175.4**
Stddev	.1	1.20	127.	11.5
%RSD	.00668	.20596	.32002	.27488
#1	1813.0	584.59	39477.	4167.3
#2	1812.8	582.89	39656.	4183.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.44%	108.88%	101.83%	101.36%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 0:24:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0049**	**51.688**	**.93790**	**.95801**	**1.0359**	**1.0011**	**51.266**	**.95262**
Stddev	.0021	.091	.00528	.00229	.0052	.0006	.101	.00104
%RSD	.20584	.17600	.56257	.23912	.50597	.06102	.19649	.10967
#1	1.0035	51.752	.94163	.95963	1.0396	1.0015	51.194	.95336
#2	1.0064	51.624	.93417	.95639	1.0322	1.0007	51.337	.95188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **1.011**	**1.0181**	**1.0017**	**.96627**	**50.122**	**48.948**	**1.0049**	**50.485**
Stddev	.017	.0006	.0005	.00135	.015	.011	.0034	.050
%RSD	1.681	.05434	.05321	.13926	.03069	.02242	.33794	.09997
#1	i .9990	1.0177	1.0021	.96722	50.133	48.956	1.0073	50.521
#2	i 1.023	1.0185	1.0013	.96532	50.111	48.940	1.0025	50.450
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99592**	**.95329**	**49.955**	**1.0006**	**25.88**	**1.0051**	**23.19**	**.96022**
Stddev	.00128	.00216	.197	.0008	.01	.0018	.03	.00379
%RSD	.12865	.22671	.39374	.07901	.0509	.18291	.1118	.39507
#1	.99683	.95481	50.094	1.0001	25.87	1.0064	23.21	.96291
#2	.99502	.95176	49.816	1.0012	25.89	1.0038	23.18	.95754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 0:24:30 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90803	10.261	1.0067	1.0119	.9831	.97644	1.0020	i 2.338
Stddev	.00502	.030	.0007	.0042	.0057	.00445	.0005	.089
%RSD	.55274	.29431	.07114	.41357	.5768	.45597	.05186	3.822
#1	.91158	10.239	1.0062	1.0149	.9791	.97959	1.0016	i 2.402
#2	.90448	10.282	1.0072	1.0089	.9871	.97329	1.0023	i 2.275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	1.0036	1.0393	.9695
Stddev	.0008	.0033	.0012
%RSD	.07975	.31786	.1271
#1	1.0031	1.0370	.9703
#2	1.0042	1.0417	.9686
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1645.5	568.35	37122.	4084.6
Stddev	1.8	1.02	61.	4.0
%RSD	.10981	.18018	.16467	.09805
#1	1644.2	567.63	37079.	4087.5
#2	1646.8	569.08	37165.	4081.8

Sample Name: CCB-5508960 Acquired: 9/27/2019 0:28:11 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01288	-.00331	-.00227	.00012	.00003	.04700	-.00007
Stddev	.00070	.00847	.00043	.00016	.00000	.00009	.00037	.00016
%RSD	8184.2	65.770	12.932	6.9540	3.6444	278.17	.79473	228.41
#1	.00050	.01887	-.00301	-.00216	.00012	.00010	.04726	.00004
#2	-.00048	.00689	-.00362	-.00238	.00011	-.00003	.04673	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0168	.00013	-.00005	-.00005	.00334	-.00673	.00063	.00265
Stddev	.0316	.00010	.00003	.00013	.00101	.00367	.00050	.00196
%RSD	188.0	80.350	56.027	247.47	30.340	54.472	80.095	74.082
#1	i -.0055	.00005	-.00007	-.00015	.00263	-.00932	.00027	.00126
#2	i .0392	.00020	-.00003	.00004	.00406	-.00414	.00099	.00403
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00125	.06196	.00015	.0020	.00032	-.0023	-.00253
Stddev	.00004	.00017	.00101	.00016	.0014	.00083	.0043	.00049
%RSD	194.19	13.715	1.6318	109.20	70.81	263.17	184.8	19.488
#1	.00005	.00113	.06268	.00003	.0010	.00091	.0007	-.00218
#2	-.00001	.00137	.06125	.00026	.0030	-.00027	-.0054	-.00288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 0:28:11 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**-.01152**	**.00036**	**-.00000**	**.0043**	**.00031**	**.00101**	i **.0873**
Stddev	.00412	.00718	.00087	.00003	.0063	.00008	.00092	.1287
%RSD	651.41	62.277	237.96	1138.5	148.9	27.279	91.407	147.3
#1	-.00355	-.01659	-.00025	.00002	-.0002	.00037	.00166	i -.0037
#2	.00228	-.00645	.00098	-.00003	.0088	.00025	.00036	i .1783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00555**	**.0000**
Stddev	.00029	.00091	.0004
%RSD	145.57	16.369	10980.
#1	-.00040	.00491	-.0003
#2	.00001	.00620	.0003
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1812.8**	**585.47**	**39340.**	**4113.7**
Stddev	4.6	.55	192.	14.7
%RSD	.25610	.09440	.48718	.35823
#1	1816.1	585.86	39476.	4124.2
#2	1809.5	585.08	39205.	4103.3

Sample Name: CCVL-5514926 Acquired: 9/27/2019 0:32:02 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00608	.19843	.01424	.01728	.00221	.00216	.55606	.00208
Stddev	.00003	.00379	.00078	.00019	.00001	.00006	.00263	.00000
%RSD	.41183	1.9102	5.4735	1.0716	.55415	2.6595	.47318	.08542
#1	.00610	.20111	.01369	.01715	.00222	.00220	.55792	.00208
#2	.00606	.19575	.01479	.01741	.00220	.00212	.55420	.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0019	.00379	.00414	.00947	.05453	.47559	.03027	.21862
Stddev	.0179	.00004	.00020	.00002	.00105	.01636	.00097	.00179
%RSD	944.8	1.0538	4.8554	.16519	1.9233	3.4392	3.2173	.81881
#1	i .0145	.00376	.00429	.00948	.05379	.46402	.03096	.21988
#2	i -.0107	.00382	.00400	.00946	.05527	.48715	.02958	.21735
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00309	.00961	1.0495	.01032	-.0327	.01009	.1874	.01989
Stddev	.00003	.00005	.0032	.00010	.0004	.00160	.0021	.00046
%RSD	.86883	.54816	.30255	.96128	1.114	15.820	1.097	2.2931
#1	.00311	.00957	1.0517	.01025	-.0329	.01122	.1859	.01957
#2	.00307	.00965	1.0472	.01039	-.0324	.00896	.1888	.02021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/27/2019 0:32:02 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02275	.46261	.01020	.00498	.0116	.00498	.01719	i .0644
Stddev	.00352	.00148	.00018	.00000	.0030	.00011	.00067	.0234
%RSD	15.462	.32098	1.7760	.06874	26.10	2.2994	3.8770	36.36
#1	.02523	.46366	.01008	.00499	.0095	.00506	.01766	i .0810
#2	.02026	.46156	.01033	.00498	.0137	.00490	.01672	i .0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00495	.01014	.0023
Stddev	.00016	.00046	.0009
%RSD	3.2034	4.5681	38.33
#1	.00484	.00981	.0017
#2	.00506	.01047	.0030
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1816.5	583.00	39222.	4121.7
Stddev	.7	1.11	38.	3.3
%RSD	.03678	.19044	.09808	.07907
#1	1817.0	583.78	39249.	4119.4
#2	1816.1	582.21	39195.	4124.0

Sample Name: 480-159110-B-4-D Acquired: 9/27/2019 0:35:53 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**1.1073**	**.00117**	**.04956**	**.03684**
Stddev	.00076	.0107	.00211	.00042	.00001
%RSD	153.58	.97053	180.76	.84493	.04001
#1	-.00103	1.0997	.00266	.04985	.03685
#2	.00004	1.1149	-.00032	.04926	.03682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**49.801**	**-.00003**	i **.0133**	**.00016**
Stddev	.00007	.166	.00018	.0214	.00021
%RSD	88.545	.33295	665.78	161.5	130.37
#1	.00013	49.918	.00010	i -.0019	.00001
#2	.00003	49.683	-.00016	i .0284	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00031**	**.69395**	**3.2046**	**.10286**
Stddev	.00000	.00012	.00160	.0180	.00105
%RSD	.33074	38.998	.23071	.56294	1.0236
#1	.00122	.00022	.69508	3.1918	.10360
#2	.00122	.00040	.69282	3.2173	.10211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-D Acquired: 9/27/2019 0:35:53 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.5507**	**.01280**	**.06983**	**85.916**	**.00083**
Stddev	.0037	.00004	.00022	.357	.00018
%RSD	.03911	.28253	.31408	.41562	22.370
#1	9.5533	.01282	.06968	86.168	.00069
#2	9.5480	.01277	.06999	85.663	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0098**	**.00187**	**23.13**	**-.00198**	**-.00317**
Stddev	.0028	.00149	.01	.00090	.00435
%RSD	28.29	79.282	.0290	45.346	137.18
#1	.0079	.00082	23.14	-.00262	-.00625
#2	.0118	.00293	23.13	-.00135	-.00010
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.2568**	**-.00101**	**.61088**	**.0070**	**.01730**
Stddev	.0001	.00108	.00114	.0027	.00019
%RSD	.00182	106.55	.18692	38.93	1.1208
#1	5.2569	-.00025	.61169	.0051	.01716
#2	5.2567	-.00178	.61008	.0090	.01744
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-D Acquired: 9/27/2019 0:35:53 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00086	i .0594	.00166	.00969	.0015
Stddev	.00011	.0001	.00005	.00076	.0004
%RSD	12.538	.1647	2.9324	7.7974	29.75
#1	.00094	i .0593	.00162	.01022	.0018
#2	.00079	i .0595	.00169	.00915	.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1708.8	562.07	37685.	4109.9
Stddev	2.0	1.14	112.	7.2
%RSD	.11765	.20203	.29614	.17606
#1	1710.3	562.87	37764.	4104.8
#2	1707.4	561.27	37606.	4115.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.671%	104.84%	96.983%	99.767%
Range				

Sample Name: 480-159110-B-4-Dsd@5 Acquired: 9/27/2019 0:39:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.23307**	**-.00302**	**.00762**	**.00713**
Stddev	.00035	.00421	.00177	.00031	.00000
%RSD	126.93	1.8056	58.768	4.0649	.06163
#1	-.00003	.23010	-.00176	.00784	.00713
#2	-.00052	.23605	-.00427	.00740	.00713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**9.4876**	**.00014**	i **.0032**	**-.00007**
Stddev	.00003	.0034	.00004	.0011	.00008
%RSD	118.04	.03597	26.635	34.52	107.62
#1	-.00000	9.4901	.00011	i .0040	-.00012
#2	-.00005	9.4852	.00016	i .0024	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00009**	**.13415**	**.60673**	**.01956**
Stddev	.00006	.00015	.00007	.01029	.00040
%RSD	8.7153	173.21	.05160	1.6963	2.0297
#1	.00059	.00019	.13410	.59945	.01928
#2	.00067	-.00002	.13420	.61401	.01984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-Dsd@5 Acquired: 9/27/2019 0:39:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.7969**	**.00242**	**.01354**	**15.729**	**.00011**
Stddev	.0038	.00005	.00001	.021	.00005
%RSD	.20900	1.9227	.08585	.13172	49.586
#1	1.7995	.00245	.01355	15.744	.00015
#2	1.7942	.00238	.01353	15.715	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0020**	**.00075**	**4.247**	**-.00189**	**-.00287**
Stddev	.0008	.00004	.003	.00134	.00377
%RSD	38.77	5.5300	.0795	70.896	131.10
#1	.0025	.00072	4.244	-.00283	-.00553
#2	.0015	.00078	4.249	-.00094	-.00021
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.99409**	**.00000**	**.11710**	**.0073**	**.00351**
Stddev	.02065	.00032	.00025	.0080	.00017
%RSD	2.0774	7364.8	.21424	109.9	4.8536
#1	.97948	.00023	.11727	.0016	.00339
#2	1.0087	-.00022	.11692	.0129	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-Dsd@5 Acquired: 9/27/2019 0:39:40 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	i **.0062**	**.00033**	**-.00025**	**.0006**
Stddev	.00030	.0289	.00025	.00011	.0004
%RSD	15.317	469.8	73.689	43.024	71.19
#1	-.00214	i -.0143	.00051	-.00033	.0009
#2	-.00172	i .0266	.00016	-.00018	.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1799.4**	**573.66**	**39027.**	**4143.0**
Stddev	.7	.70	44.	4.0
%RSD	.03728	.12157	.11224	.09546
#1	1798.9	574.15	38996.	4140.2
#2	1799.9	573.16	39058.	4145.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	99.687%	107.00%	100.44%	100.57%
Range				

Sample Name: 480-159110-B-4-Dpds Acquired: 9/27/2019 0:43:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05588**	**12.005**	**.21349**	**.26098**	**.25848**
Stddev	.00027	.088	.00531	.00039	.00081
%RSD	.48612	.73453	2.4855	.14953	.31423
#1	.05607	12.067	.20974	.26126	.25905
#2	.05568	11.942	.21724	.26071	.25790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.22216**	**58.352**	**.21480**	i **.0088**	**.21479**
Stddev	.00100	.222	.00069	.0047	.00008
%RSD	.45173	.37989	.31903	53.45	.03863
#1	.22287	58.509	.21529	i .0122	.21485
#2	.22145	58.195	.21432	i .0055	.21473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21611**	**.20776**	**11.577**	**13.632**	**.31639**
Stddev	.00147	.00003	.017	.031	.00224
%RSD	.67832	.01667	.14473	.22597	.70783
#1	.21714	.20779	11.588	13.654	.31797
#2	.21507	.20774	11.565	13.610	.31480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-Dpds Acquired: 9/27/2019 0:43:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.111**	**.22522**	**.27835**	**91.650**	**.22165**
Stddev	.048	.00055	.00141	.448	.00021
%RSD	.23668	.24551	.50507	.48857	.09550
#1	20.078	.22483	.27934	91.966	.22180
#2	20.145	.22562	.27735	91.333	.22150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5812**	**.21778**	**32.69**	**.23171**	**.20028**
Stddev	.0010	.00118	.04	.00068	.00133
%RSD	.1792	.53963	.1351	.29331	.66199
#1	-.5805	.21695	32.72	.23123	.20122
#2	-.5820	.21861	32.66	.23219	.19934
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.449**	**.21197**	**.78958**	**.0064**	**.22922**
Stddev	.015	.00055	.00331	.0008	.00005
%RSD	.09900	.26115	.41867	13.03	.01988
#1	15.460	.21236	.79192	.0058	.22926
#2	15.438	.21158	.78724	.0069	.22919
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-Dpds Acquired: 9/27/2019 0:43:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21737**	i **-.0892**	**.22175**	**.24132**	**.0068**
Stddev	.00137	.0188	.00053	.00263	.0004
%RSD	.63256	21.12	.24035	1.0919	5.377
#1	.21640	i -.1025	.22213	.24318	.0065
#2	.21834	i -.0759	.22138	.23945	.0070
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1688.5**	**561.29**	**37610.**	**4113.8**
Stddev	.9	1.15	41.	1.9
%RSD	.05340	.20532	.11000	.04578
#1	1689.2	560.47	37639.	4115.1
#2	1687.9	562.10	37580.	4112.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	93.547%	104.69%	96.789%	99.861%
Range				

Sample Name: 480-159110-B-4-E MS Acquired: 9/27/2019 0:47:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05507**	**12.483**	**.21475**	**.26236**	**.25876**
Stddev	.00043	.044	.00256	.00179	.00257
%RSD	.78474	.35373	1.1910	.68358	.99278
#1	.05537	12.514	.21294	.26109	.26057
#2	.05476	12.452	.21655	.26363	.25694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21984**	**62.303**	**.21329**	i **.0260**	**.21481**
Stddev	.00006	.108	.00161	.0119	.00064
%RSD	.02598	.17336	.75599	45.85	.29844
#1	.21980	62.379	.21215	i .0344	.21436
#2	.21988	62.226	.21443	i .0176	.21526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21256**	**.20359**	**11.599**	**13.795**	**.32184**
Stddev	.00129	.00248	.015	.024	.00171
%RSD	.60540	1.2183	.13108	.17413	.53051
#1	.21347	.20535	11.589	13.812	.32304
#2	.21165	.20184	11.610	13.778	.32063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-E MS Acquired: 9/27/2019 0:47:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.540**	**.22045**	**.28298**	**99.550**	**.22062**
Stddev	.203	.00247	.00080	.135	.00179
%RSD	.98878	1.1226	.28389	.13515	.81146
#1	20.684	.22220	.28241	99.455	.21936
#2	20.397	.21870	.28355	99.645	.22189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5768**	**.21682**	**34.43**	**.23313**	**.19684**
Stddev	.0008	.00067	.16	.00287	.00093
%RSD	.1395	.30889	.4519	1.2301	.47495
#1	-.5762	.21635	34.32	.23111	.19618
#2	-.5774	.21729	34.54	.23516	.19750
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**16.231**	**.20819**	**.84247**	**-.0001**	**.22854**
Stddev	.066	.00087	.00035	.0090	.00343
%RSD	.40559	.41931	.04173	6947.	1.4992
#1	16.278	.20757	.84272	-.0065	.23096
#2	16.185	.20880	.84222	.0062	.22612
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-E MS Acquired: 9/27/2019 0:47:09 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.21461	i -.0062	.21871	.23967	.0021
Stddev	.00190	.0625	.00255	.00043	.0004
%RSD	.88312	1008.	1.1664	.17946	17.95
#1	.21595	i .0380	.22051	.23997	.0024
#2	.21327	i -.0504	.21691	.23936	.0018
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1666.6	556.05	37804.	4088.4
Stddev	10.0	3.75	274.	3.3
%RSD	.59957	.67421	.72479	.08133
#1	1673.7	558.70	37610.	4086.1
#2	1659.5	553.40	37998.	4090.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.331%	103.72%	97.289%	99.245%
Range				

Sample Name: 480-159110-B-4-F MSD Acquired: 9/27/2019 0:50:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05542**	**12.159**	**.20966**	**.25540**	**.25644**
Stddev	.00028	.028	.00146	.00213	.00015
%RSD	.50748	.22889	.69769	.83256	.05826
#1	.05522	12.139	.20862	.25390	.25654
#2	.05562	12.178	.21069	.25691	.25633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21836**	**61.100**	**.21216**	i **.0169**	**.21219**
Stddev	.00079	.286	.00109	.0181	.00010
%RSD	.36379	.46846	.51237	107.6	.04612
#1	.21892	61.303	.21139	i .0040	.21212
#2	.21780	60.898	.21292	i .0297	.21226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21393**	**.20459**	**11.502**	**13.658**	**.31764**
Stddev	.00054	.00040	.036	.028	.00027
%RSD	.25283	.19791	.30879	.20163	.08443
#1	.21354	.20430	11.528	13.678	.31783
#2	.21431	.20487	11.477	13.639	.31745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-F MSD Acquired: 9/27/2019 0:50:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**20.567**	**.22226**	**.27923**	**96.287**	**.21832**
Stddev	.014	.00017	.00118	.210	.00126
%RSD	.06797	.07622	.42174	.21791	.57721
#1	20.557	.22214	.27840	96.138	.21743
#2	20.577	.22238	.28006	96.435	.21921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5670**	**.21424**	**33.89**	**.22939**	**.19744**
Stddev	.0068	.00187	.11	.00106	.00134
%RSD	1.194	.87069	.3360	.46143	.67941
#1	-.5718	.21556	33.81	.22864	.19649
#2	-.5622	.21292	33.97	.23014	.19839
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.381**	**.20475**	**.81950**	**.0042**	**.23131**
Stddev	.046	.00412	.00024	.0051	.00024
%RSD	.32173	2.0130	.02956	122.0	.10385
#1	14.414	.20766	.81967	.0078	.23114
#2	14.349	.20183	.81933	.0006	.23148
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-4-F MSD Acquired: 9/27/2019 0:50:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21405**	i **-.0103**	**.21848**	**.23930**	**.0023**
Stddev	.00108	.0015	.00021	.00068	.0009
%RSD	.50232	14.75	.09671	.28299	38.20
#1	.21481	i -.0093	.21863	.23883	.0017
#2	.21329	i -.0114	.21833	.23978	.0029
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1669.9**	**554.69**	**37239.**	**4072.3**
Stddev	3.2	3.65	40.	14.7
%RSD	.19232	.65782	.10838	.36124
#1	1672.2	557.27	37210.	4061.9
#2	1667.6	552.11	37267.	4082.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.514%	103.46%	95.835%	98.853%
Range				

Sample Name: 480-159110-B-5-B Acquired: 9/27/2019 0:54:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**2.6527**	**.00362**	**.05423**	**.02434**
Stddev	.00020	.0026	.00147	.00077	.00006
%RSD	120.58	.09811	40.505	1.4280	.23883
#1	.00030	2.6508	.00466	.05477	.02430
#2	.00002	2.6545	.00258	.05368	.02438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**32.164**	**.00001**	i **.0324**	**.00052**
Stddev	.00004	.021	.00003	.0119	.00008
%RSD	118.82	.06674	244.15	36.79	15.140
#1	.00001	32.179	.00003	i .0240	.00047
#2	.00006	32.148	-.00001	i .0408	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00224**	**.00140**	**1.4153**	**3.0447**	**.02607**
Stddev	.00004	.00014	.0070	.0015	.00113
%RSD	1.8106	9.8470	.49395	.04871	4.3520
#1	.00222	.00130	1.4103	3.0457	.02688
#2	.00227	.00150	1.4202	3.0436	.02527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-5-B Acquired: 9/27/2019 0:54:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3362**	**.00634**	**.05536**	**99.609**	**.00154**
Stddev	.0087	.00006	.00025	.053	.00032
%RSD	.16365	.92513	.44559	.05305	21.063
#1	5.3423	.00630	.05553	99.572	.00177
#2	5.3300	.00638	.05518	99.647	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0032**	**.00165**	**53.85**	**.00115**	**.02207**
Stddev	.0016	.00100	.07	.00236	.00149
%RSD	48.17	60.347	.1247	204.93	6.7692
#1	.0021	.00095	53.90	-.00052	.02101
#2	.0043	.00236	53.80	.00281	.02312
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.5837**	**.00047**	**.42875**	**.0001**	**.03262**
Stddev	.0065	.00219	.00030	.0006	.00041
%RSD	.09918	466.72	.06942	395.4	1.2583
#1	6.5790	-.00108	.42854	-.0003	.03233
#2	6.5883	.00202	.42896	.0005	.03291
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-5-B Acquired: 9/27/2019 0:54:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	i **.0379**	**.00717**	**.00842**	**.0032**
Stddev	.00042	.1184	.00005	.00205	.0006
%RSD	105.97	312.7	.68578	24.394	18.97
#1	-.00010	i -.0459	.00714	.00697	.0036
#2	-.00070	i .1216	.00721	.00987	.0027
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1710.6**	**559.31**	**37551.**	**4086.4**
Stddev	4.4	1.68	109.	.6
%RSD	.25462	.30034	.28895	.01356
#1	1713.7	560.50	37628.	4086.8
#2	1707.6	558.13	37474.	4086.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.771%	104.33%	96.639%	99.197%
Range				

Sample Name: 480-159110-B-6-B Acquired: 9/27/2019 0:58:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**8.0426**	**.00575**	**.26462**	**.07482**
Stddev	.00032	.0048	.00179	.00080	.00017
%RSD	77.267	.05921	31.104	.30358	.22215
#1	.00019	8.0459	.00449	.26519	.07493
#2	.00064	8.0392	.00702	.26405	.07470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00391**	**227.04**	**.00385**	i **.0444**	**.00863**
Stddev	.00007	.59	.00003	.0166	.00055
%RSD	1.9107	.25900	.74720	37.40	6.3220
#1	.00396	227.45	.00387	i .0327	.00902
#2	.00385	226.62	.00383	i .0562	.00824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01023**	**.01284**	**4.5977**	**11.824**	**.29711**
Stddev	.00044	.00007	.0003	.021	.00105
%RSD	4.3193	.53342	.00654	.17900	.35316
#1	.01054	.01279	4.5975	11.809	.29637
#2	.00992	.01289	4.5979	11.838	.29785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-6-B Acquired: 9/27/2019 0:58:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**119.94**	**.21916**	**.00709**	**168.42**	**.02254**
Stddev	.09	.00041	.00032	.76	.00041
%RSD	.07290	.18595	4.4479	.44946	1.8332
#1	119.88	.21887	.00687	168.96	.02224
#2	120.00	.21945	.00732	167.89	.02283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.742**	**.00804**	F **228.8**	**.00151**	**-.00146**
Stddev	.003	.00050	.3	.00513	.00529
%RSD	.1438	6.1746	.1188	339.64	363.28
#1	1.744	.00768	229.0	.00514	.00228
#2	1.741	.00839	228.7	-.00212	-.00520
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.347**	**.00240**	**3.5165**	**-.0051**	**.13688**
Stddev	.276	.00108	.0061	.0067	.00022
%RSD	1.8015	44.781	.17370	130.8	.16320
#1	15.543	.00164	3.5208	-.0004	.13704
#2	15.152	.00316	3.5122	-.0098	.13672
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-6-B Acquired: 9/27/2019 0:58:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00530**	i **.0735**	**.03368**	**.03663**	**.0079**
Stddev	.00113	.0966	.00013	.00047	.0001
%RSD	21.358	131.5	.37744	1.2965	.9607
#1	.00450	i .0052	.03359	.03629	.0079
#2	.00610	i .1418	.03377	.03696	.0078
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1552.2**	**527.02**	**35909.**	**4034.1**
Stddev	.5	.66	27.	1.4
%RSD	.03162	.12604	.07565	.03495
#1	1552.5	527.49	35929.	4033.1
#2	1551.8	526.55	35890.	4035.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.993%	98.303%	92.414%	97.928%
Range				

Sample Name: 480-159110-B-7-B Acquired: 9/27/2019 1:02:13 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**21.295**	**.00314**	**.07434**	**.06604**
Stddev	.00075	.072	.00168	.00119	.00025
%RSD	1405.9	.33893	53.480	1.6038	.37318
#1	.00058	21.346	.00196	.07519	.06622
#2	-.00048	21.244	.00433	.07350	.06587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00089**	**397.40**	**.00021**	i **.0757**	**.00727**
Stddev	.00001	2.74	.00005	.0065	.00023
%RSD	1.0265	.68974	24.951	8.646	3.1010
#1	.00090	399.34	.00017	i .0711	.00711
#2	.00088	395.46	.00024	i .0803	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01793**	**.01390**	**11.833**	**18.220**	**.32435**
Stddev	.00010	.00011	.021	.005	.00053
%RSD	.57750	.77111	.18173	.02789	.16448
#1	.01800	.01382	11.818	18.224	.32473
#2	.01786	.01398	11.848	18.217	.32397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-7-B Acquired: 9/27/2019 1:02:13 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**102.54**	**.06511**	**.00206**	**422.14**	**.03951**
Stddev	.08	.00003	.00029	.12	.00021
%RSD	.07472	.05160	13.894	.02898	.52963
#1	102.59	.06508	.00226	422.23	.03965
#2	102.48	.06513	.00185	422.05	.03936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.2618**	**.01261**	F **486.9**	**-.00362**	**-.00812**
Stddev	.0008	.00052	1.2	.00083	.00538
%RSD	.2960	4.1134	.2453	22.810	66.286
#1	.2623	.01225	487.8	-.00303	-.00431
#2	.2612	.01298	486.1	-.00420	-.01192
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**30.950**	**.00108**	**6.4790**	**.0020**	**.25602**
Stddev	.681	.00117	.0119	.0120	.00013
%RSD	2.2003	108.25	.18316	615.9	.05213
#1	31.431	.00190	6.4706	.0105	.25612
#2	30.468	.00025	6.4874	-.0066	.25593
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-7-B Acquired: 9/27/2019 1:02:13 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	i **.1712**	**.03945**	**.04699**	**.0099**
Stddev	.00083	.0875	.00087	.00045	.0013
%RSD	72.580	51.10	2.1999	.94955	13.65
#1	.00055	i .2330	.04006	.04730	.0108
#2	.00172	i .1093	.03883	.04667	.0089
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1474.0**	**515.51**	**35020.**	**3973.6**
Stddev	2.3	.76	46.	13.9
%RSD	.15473	.14764	.13188	.35007
#1	1475.6	514.97	34987.	3963.7
#2	1472.4	516.04	35053.	3983.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	81.660%	96.155%	90.125%	96.458%
Range				

Sample Name: 480-159110-B-8-B Acquired: 9/27/2019 1:06:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.09280**	**-.00128**	**.18399**	**.02013**
Stddev	.00005	.02358	.00788	.00027	.00006
%RSD	39.610	25.407	613.80	.14637	.29134
#1	-.00016	.07612	.00429	.18380	.02017
#2	-.00009	.10947	-.00686	.18418	.02008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**183.89**	**.00014**	i **.0208**	**.00101**
Stddev	.00009	.18	.00021	.0011	.00015
%RSD	909.65	.09758	151.31	5.418	14.763
#1	-.00007	183.76	-.00001	i .0216	.00090
#2	.00005	184.02	.00029	i .0200	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00139**	**-.00086**	**.17698**	**8.6898**	**.09292**
Stddev	.00002	.00070	.00597	.0048	.00112
%RSD	1.7433	80.867	3.3728	.05552	1.2054
#1	.00137	-.00135	.17276	8.6864	.09371
#2	.00141	-.00037	.18120	8.6932	.09213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-8-B Acquired: 9/27/2019 1:06:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**50.274**	**.02139**	**.00074**	**419.50**	**.00281**
Stddev	.093	.00003	.00008	1.68	.00036
%RSD	.18541	.14466	10.422	.40061	12.748
#1	50.340	.02137	.00069	418.31	.00306
#2	50.208	.02141	.00080	420.69	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0007**	**-.00151**	F **336.2**	**.00034**	**-.01432**
Stddev	.0062	.00449	.1	.00217	.00162
%RSD	893.7	297.91	.0187	636.87	11.315
#1	.0051	-.00468	336.2	.00187	-.01546
#2	-.0037	.00167	336.1	-.00119	-.01317
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2070**	**.00027**	**2.7723**	**.0021**	**.00164**
Stddev	.0469	.00104	.0106	.0096	.00013
%RSD	.75525	384.30	.38066	448.5	7.9070
#1	6.2402	.00101	2.7648	.0089	.00155
#2	6.1739	-.00046	2.7798	-.0046	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159110-B-8-B Acquired: 9/27/2019 1:06:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	i **.0624**	**-.00013**	**.00320**	**.0013**
Stddev	.00315	.0183	.00044	.00080	.0000
%RSD	2790.0	29.37	332.63	24.973	1.759
#1	.00234	i .0494	-.00044	.00376	.0013
#2	-.00212	i .0754	.00018	.00263	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1531.9**	**519.69**	**34824.**	**3951.0**
Stddev	.6	.55	27.	14.4
%RSD	.04207	.10634	.07892	.36400
#1	1532.3	520.08	34805.	3961.1
#2	1531.4	519.30	34843.	3940.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	84.868%	96.935%	89.621%	95.909%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 1:10:09 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0034**	**51.446**	**.95320**	**.97183**	**1.0311**	**1.0019**	**51.021**	**.96771**
Stddev	.0028	.089	.00402	.00612	.0023	.0028	.127	.00476
%RSD	.27950	.17262	.42199	.62942	.22184	.27817	.24981	.49150
#1	1.0053	51.509	.95035	.96750	1.0328	1.0038	51.111	.96435
#2	1.0014	51.384	.95604	.97615	1.0295	.99989	50.931	.97108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **1.027**	**1.0099**	**1.0124**	**.97589**	**50.206**	**49.100**	**1.0007**	**50.571**
Stddev	.022	.0012	.0022	.00379	.117	.093	.0021	.112
%RSD	2.121	.11760	.22169	.38863	.23361	.18867	.21058	.22104
#1	i 1.043	1.0107	1.0140	.97857	50.289	49.165	1.0022	50.650
#2	i 1.012	1.0090	1.0108	.97321	50.124	49.034	.99923	50.492
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0021**	**.97382**	**50.074**	**.99942**	**25.82**	**1.0019**	**23.73**	**.96999**
Stddev	.0012	.00485	.123	.00081	.02	.0017	.16	.00507
%RSD	.11656	.49840	.24621	.08150	.0803	.17041	.6915	.52221
#1	1.0029	.97039	50.161	1.0000	25.83	1.0031	23.61	.96641
#2	1.0013	.97726	49.987	.99885	25.80	1.0007	23.84	.97357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 1:10:09 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93434**	**10.294**	**1.0013**	**1.0138**	**.9854**	**.98284**	**1.0017**	i **2.394**
Stddev	.00387	.034	.0019	.0026	.0131	.00048	.0012	.029
%RSD	.41422	.33344	.19342	.25907	1.330	.04845	.12167	1.205
#1	.93161	10.318	1.0027	1.0156	.9761	.98317	1.0026	i 2.415
#2	.93708	10.270	.99994	1.0119	.9946	.98250	1.0009	i 2.374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**1.0107**	**1.0400**	**.9708**
Stddev	.0009	.0003	.0011
%RSD	.08543	.02794	.1098
#1	1.0101	1.0398	.9701
#2	1.0113	1.0402	.9716
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1654.3**	**558.22**	**37083.**	**4082.9**
Stddev	3.2	2.05	40.	18.0
%RSD	.19254	.36661	.10691	.44131
#1	1652.1	559.67	37055.	4070.1
#2	1656.6	556.77	37111.	4095.6

Sample Name: CCB-5508960 Acquired: 9/27/2019 1:13:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00547	-.00106	-.00208	.00012	-.00001	.04609	-.00011
Stddev	.00046	.01383	.00285	.00027	.00002	.00003	.00149	.00004
%RSD	144.01	252.69	270.01	12.794	12.938	229.04	3.2420	38.514
#1	-.00001	.01526	-.00307	-.00189	.00011	.00001	.04715	-.00015
#2	.00065	-.00431	.00096	-.00227	.00013	-.00003	.04504	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0041	-.00003	.00004	-.00006	-.00059	.00623	-.00010	.00517
Stddev	.0054	.00017	.00057	.00035	.00202	.03561	.00031	.00002
%RSD	129.7	597.07	1538.8	546.60	341.11	571.34	298.97	.42659
#1	i .0079	.00009	-.00037	.00018	-.00202	-.01895	-.00033	.00519
#2	i .0003	-.00015	.00044	-.00031	.00083	.03142	.00012	.00516
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00138	.07083	.00012	.0039	-.00068	.0123	-.00034
Stddev	.00000	.00000	.00402	.00015	.0022	.00077	.0033	.00247
%RSD	2.9920	.29734	5.6822	131.50	55.81	113.29	27.13	717.22
#1	.00008	.00138	.07368	.00023	.0023	-.00123	.0147	.00140
#2	.00008	.00138	.06799	.00001	.0054	-.00014	.0099	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 1:13:50 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00228**	**-.02612**	**.00022**	**.00008**	**.0010**	**-.00011**	**-.00017**	i **.0503**
Stddev	.00073	.01000	.00041	.00000	.0000	.00021	.00038	.0054
%RSD	32.058	38.284	188.18	3.1796	1.818	194.86	227.15	10.79
#1	-.00279	-.03319	.00051	.00008	.0010	-.00026	-.00044	i .0541
#2	-.00176	-.01905	-.00007	.00008	.0010	.00004	.00010	i .0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00030**	**.00469**	**.0011**
Stddev	.00046	.00002	.0001
%RSD	152.19	.43295	5.432
#1	-.00063	.00468	.0012
#2	.00002	.00471	.0011
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1810.4**	**574.73**	**39387.**	**4122.5**
Stddev	2.2	.47	26.	13.9
%RSD	.11901	.08251	.06602	.33704
#1	1811.9	574.40	39368.	4112.7
#2	1808.8	575.07	39405.	4132.3

Sample Name: CCVL-5514926 Acquired: 9/27/2019 1:17:41 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00680	.20543	.01331	.01765	.00221	.00217	.54604	.00216
Stddev	.00014	.00386	.00070	.00013	.00000	.00008	.00322	.00009
%RSD	2.0094	1.8803	5.2800	.73073	.19823	3.6067	.58893	4.2847
#1	.00670	.20816	.01281	.01774	.00220	.00211	.54376	.00210
#2	.00690	.20269	.01381	.01756	.00221	.00222	.54831	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0244	.00407	.00410	.00951	.04856	.48937	.03052	.21908
Stddev	.0091	.00021	.00015	.00005	.00265	.00859	.00010	.00499
%RSD	37.50	5.2180	3.6407	.57672	5.4583	1.7543	.34108	2.2792
#1	i .0179	.00422	.00421	.00954	.05043	.48330	.03059	.21555
#2	i .0309	.00392	.00400	.00947	.04668	.49544	.03045	.22261
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.00972	1.0583	.01060	-.0306	.01009	.1982	.01970
Stddev	.00004	.00017	.0020	.00001	.0001	.00039	.0011	.00020
%RSD	1.4176	1.7998	.18672	.08828	.2437	3.8708	.5763	.99674
#1	.00317	.00984	1.0569	.01059	-.0307	.00982	.1974	.01956
#2	.00311	.00959	1.0597	.01061	-.0306	.01037	.1991	.01984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/27/2019 1:17:41 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01958**	**.47078**	**.01065**	**.00505**	**.0054**	**.00513**	**.01889**	i **.0093**
Stddev	.00132	.01841	.00093	.00003	.0055	.00000	.00078	.0629
%RSD	6.7459	3.9098	8.7193	.63653	101.5	.03833	4.1111	677.5
#1	.02051	.45777	.00999	.00503	.0093	.00513	.01944	i .0537
#2	.01865	.48380	.01131	.00507	.0015	.00513	.01834	i -.0352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00470**	**.01124**	**.0010**
Stddev	.00024	.00090	.0004
%RSD	5.0426	8.0248	41.66
#1	.00453	.01060	.0013
#2	.00487	.01188	.0007
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1813.5**	**575.72**	**39028.**	**4083.2**
Stddev	1.5	.31	38.	6.2
%RSD	.08148	.05400	.09793	.15251
#1	1814.5	575.50	39001.	4087.6
#2	1812.4	575.93	39056.	4078.8

Sample Name: 480-159109-D-1-B Acquired: 9/27/2019 1:21:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.03522**	**.00507**	F **27.907**	**.60124**
Stddev	.00026	.02395	.00195	.067	.00112
%RSD	114.70	68.007	38.452	.23836	.18564
#1	-.00042	.05215	.00369	27.860	.60045
#2	-.00004	.01828	.00645	27.954	.60203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				18.000	
Low Limit				-.02000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**169.26**	**-.00011**	i **.0197**	**.00106**
Stddev	.00001	.08	.00000	.0101	.00025
%RSD	41.465	.04940	2.7838	51.25	23.449
#1	-.00001	169.32	-.00011	i .0126	.00124
#2	-.00002	169.20	-.00011	i .0268	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01259**	**.00013**	**3.6194**	**144.26**	**.72739**
Stddev	.00034	.00002	.0103	.48	.00309
%RSD	2.6961	17.696	.28452	.33482	.42469
#1	.01283	.00011	3.6121	143.91	.72521
#2	.01235	.00014	3.6266	144.60	.72958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159109-D-1-B Acquired: 9/27/2019 1:21:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**121.02**	**.24359**	**.00044**	**749.19**	**.02860**
Stddev	.23	.00001	.00053	3.68	.00018
%RSD	.18809	.00209	121.27	.49141	.62040
#1	120.86	.24360	.00006	746.59	.02873
#2	121.18	.24359	.00081	751.80	.02848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.9207**	**-.00128**	**88.44**	**-.00002**	**-.01808**
Stddev	.0049	.00266	.20	.00475	.00732
%RSD	.5372	208.17	.2311	24824.	40.475
#1	.9242	-.00315	88.30	-.00338	-.02325
#2	.9172	.00060	88.59	.00334	-.01290
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**13.634**	**.00254**	**2.4966**	**-.0061**	**.01016**
Stddev	.117	.00054	.0111	.0023	.00007
%RSD	.86072	21.119	.44510	37.13	.68376
#1	13.717	.00292	2.4887	-.0077	.01021
#2	13.551	.00216	2.5044	-.0045	.01011
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159109-D-1-B Acquired: 9/27/2019 1:21:31 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	i **.0120**	**.00922**	**.01527**	**.0147**
Stddev	.00135	.0057	.00038	.00115	.0001
%RSD	220.63	47.48	4.0899	7.5602	.3791
#1	-.00034	i .0161	.00949	.01609	.0147
#2	.00157	i .0080	.00896	.01445	.0147
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1463.0**	**509.50**	**34318.**	**4006.3**
Stddev	3.0	2.28	126.	12.5
%RSD	.20629	.44832	.36809	.31305
#1	1465.1	511.12	34408.	4015.1
#2	1460.8	507.89	34229.	3997.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	81.051%	95.035%	88.319%	97.251%
Range				

Sample Name: 480-159109-D-2-B Acquired: 9/27/2019 1:25:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.07296**	**.00083**	**10.927**	**.46462**
Stddev	.00055	.01584	.00242	.044	.00055
%RSD	302.18	21.715	291.46	.40230	.11937
#1	-.00057	.06176	.00254	10.896	.46422
#2	.00021	.08416	-.00088	10.958	.46501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**255.41**	**-.00012**	i **.0004**	**.00000**
Stddev	.00002	.42	.00022	.0006	.00011
%RSD	97.271	.16455	183.86	126.0	27951.
#1	-.00004	255.11	.00004	i .0000	.00008
#2	-.00001	255.71	-.00027	i .0008	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**-.00016**	**2.0655**	**42.448**	**.27930**
Stddev	.00004	.00009	.0056	.205	.00124
%RSD	3.4212	52.124	.27253	.48368	.44549
#1	.00123	-.00010	2.0695	42.303	.27842
#2	.00129	-.00023	2.0615	42.594	.28018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159109-D-2-B Acquired: 9/27/2019 1:25:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**152.09**	**1.2546**	**-.00002**	**143.64**	**.00512**
Stddev	.53	.0022	.00010	.55	.00080
%RSD	.35039	.17636	440.36	.37990	15.671
#1	151.71	1.2530	-.00010	143.25	.00455
#2	152.47	1.2562	.00005	144.03	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0439**	**-.00071**	**9.891**	**-.00327**	**-.01092**
Stddev	.0028	.00094	.039	.00404	.00217
%RSD	6.472	132.91	.3941	123.59	19.860
#1	.0459	-.00004	9.863	-.00613	-.00939
#2	.0419	-.00138	9.918	-.00041	-.01245
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**12.567**	**.00086**	**1.7297**	**-.0006**	**.00031**
Stddev	.082	.00025	.0057	.0053	.00019
%RSD	.64907	28.992	.33238	908.7	62.172
#1	12.625	.00104	1.7256	.0032	.00045
#2	12.510	.00068	1.7337	-.0044	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159109-D-2-B Acquired: 9/27/2019 1:25:28 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	i **-.0891**	**.00231**	**.00941**	**.0019**
Stddev	.00010	.0538	.00018	.00078	.0004
%RSD	18.591	60.37	7.8488	8.2847	19.14
#1	.00048	i -.1271	.00218	.00996	.0022
#2	.00063	i -.0511	.00244	.00886	.0017
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1552.3**	**520.22**	**35573.**	**3974.6**
Stddev	4.0	2.59	86.	20.6
%RSD	.25880	.49796	.24286	.51856
#1	1555.1	522.05	35634.	3989.2
#2	1549.5	518.38	35512.	3960.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	85.999%	97.034%	91.547%	96.482%
Range				

Sample Name: 480-159111-C-1-B Acquired: 9/27/2019 1:29:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**2.5674**	**.16165**	F **18.913**	**.27911**
Stddev	.00045	.0515	.00293	.072	.00069
%RSD	68.571	2.0067	1.8144	.38127	.24886
#1	-.00097	2.5310	.15957	18.964	.27960
#2	-.00034	2.6039	.16372	18.862	.27862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				18.000	
Low Limit				-.02000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**841.48**	**-.00083**	i **.0290**	**.02156**
Stddev	.00004	1.69	.00001	.0025	.00010
%RSD	46.616	.20140	1.6613	8.497	.46688
#1	-.00005	842.68	-.00082	i .0307	.02149
#2	-.00010	840.28	-.00084	i .0273	.02163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.41915**	**-.00367**	**129.75**	F **987.04**	**.27980**
Stddev	.00188	.00028	.74	3.69	.00227
%RSD	.44854	7.5374	.56767	.37386	.80988
#1	.42048	-.00386	129.23	989.65	.27820
#2	.41782	-.00347	130.27	984.43	.28141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				540.00	
Low Limit				-.50000	

Sample Name: 480-159111-C-1-B Acquired: 9/27/2019 1:29:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**265.86**	**6.1457**	**.00273**	F **2735.6**	**.09104**
Stddev	.71	.0057	.00056	14.4	.00081
%RSD	.26651	.09351	20.705	.52678	.89375
#1	266.36	6.1497	.00313	2725.4	.09046
#2	265.36	6.1416	.00233	2745.8	.09161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.733**	**.00648**	**61.20**	**-.01142**	**-.01447**
Stddev	.009	.00017	.43	.00062	.00118
%RSD	.3341	2.5622	.7082	5.4697	8.1528
#1	2.727	.00659	61.51	-.01186	-.01364
#2	2.740	.00636	60.90	-.01098	-.01530
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**34.970**	**.02596**	**5.1194**	**.0664**	**.04331**
Stddev	.196	.00004	.0429	.0070	.00031
%RSD	.55978	.14658	.83821	10.58	.72369
#1	34.831	.02598	5.0891	.0614	.04309
#2	35.108	.02593	5.1497	.0714	.04353
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159111-C-1-B Acquired: 9/27/2019 1:29:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	i **-.4088**	**.04446**	**.06353**	**.0401**
Stddev	.00263	.0341	.00047	.00067	.0017
%RSD	115.97	8.352	1.0575	1.0604	4.349
#1	-.00041	i -.3847	.04479	.06306	.0388
#2	-.00412	i -.4330	.04413	.06401	.0413
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1202.0**	**448.09**	**29722.**	**3740.3**
Stddev	.9	1.77	78.	2.5
%RSD	.07719	.39603	.26371	.06676
#1	1202.7	446.83	29667.	3742.0
#2	1201.3	449.34	29777.	3738.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	66.592%	83.580%	76.490%	90.794%
Range				

Sample Name: 480-159111-C-1-B@5 Acquired: 9/27/2019 1:33:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.55516**	**.02645**	**3.7899**	**.05682**
Stddev	.00014	.02157	.00267	.0009	.00003
%RSD	107.51	3.8857	10.106	.02467	.06133
#1	-.00003	.57041	.02456	3.7905	.05679
#2	-.00023	.53991	.02834	3.7892	.05684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**170.85**	**.00025**	i **.0236**	**.00360**
Stddev	.00004	.59	.00029	.0309	.00049
%RSD	45.651	.34648	118.03	130.7	13.456
#1	-.00005	171.27	.00045	i .0018	.00326
#2	-.00011	170.43	.00004	i .0454	.00395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.08486**	**-.00055**	**26.197**	**187.49**	**.05247**
Stddev	.00022	.00000	.095	.37	.00084
%RSD	.26284	.68811	.36355	.19598	1.5967
#1	.08470	-.00055	26.264	187.75	.05306
#2	.08501	-.00054	26.130	187.23	.05188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159111-C-1-B@5 Acquired: 9/27/2019 1:33:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**53.265**	**1.2389**	**-.00021**	**513.14**	**.01732**
Stddev	.050	.0008	.00005	1.37	.00044
%RSD	.09453	.06088	23.582	.26613	2.5142
#1	53.301	1.2383	-.00024	514.10	.01763
#2	53.230	1.2394	-.00017	512.17	.01702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.5480**	**.00121**	**11.25**	**-.00283**	**-.01185**
Stddev	.0020	.00118	.02	.00116	.00498
%RSD	.3684	97.280	.1391	40.938	42.010
#1	.5466	.00038	11.23	-.00365	-.00833
#2	.5495	.00205	11.26	-.00201	-.01537
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.9334**	**.00734**	**1.0221**	**.0148**	**.00849**
Stddev	.0554	.00148	.0049	.0102	.00001
%RSD	.79885	20.157	.48063	68.93	.09382
#1	6.8942	.00839	1.0255	.0076	.00848
#2	6.9726	.00630	1.0186	.0220	.00849
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159111-C-1-B@5 Acquired: 9/27/2019 1:33:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	i **-.0247**	**.00815**	**.01189**	**.0093**
Stddev	.00449	.2018	.00015	.00102	.0002
%RSD	367.39	815.4	1.7819	8.6156	2.189
#1	-.00440	i -.1674	.00804	.01262	.0092
#2	.00195	i .1179	.00825	.01117	.0095
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1482.3**	**502.18**	**34237.**	**3998.6**
Stddev	3.6	.70	29.	9.5
%RSD	.24250	.13845	.08489	.23665
#1	1479.7	501.69	34216.	3991.9
#2	1484.8	502.67	34257.	4005.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	82.119%	93.670%	88.109%	97.064%
Range				

Sample Name: MB 480-494142/1-A Acquired: 9/27/2019 1:37:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00278**	**.00090**	F **.02038**	**.00007**
Stddev	.00006	.00070	.00207	.00100	.00003
%RSD	9.6395	25.229	229.26	4.8951	44.397
#1	.00054	.00228	.00236	.02108	.00004
#2	.00061	.00328	-.00056	.01967	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				.02000	
Low Limit				-.00800	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.06636**	**-.00011**	i **.0030**	**-.00025**
Stddev	.00004	.00293	.00008	.0065	.00000
%RSD	67.443	4.4149	73.306	217.6	1.3000
#1	-.00003	.06428	-.00017	i .0076	-.00025
#2	-.00008	.06843	-.00005	i -.0016	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00004**	**.00602**	**.12315**	**-.00033**
Stddev	.00001	.00016	.00159	.02563	.00038
%RSD	2.2621	375.23	26.414	20.814	115.60
#1	-.00050	.00015	.00714	.14128	-.00060
#2	-.00049	-.00007	.00489	.10503	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494142/1-A Acquired: 9/27/2019 1:37:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00724**	**.00006**	**-.00056**	**.20185**	**-.00021**
Stddev	.00184	.00000	.00011	.00226	.00014
%RSD	25.435	2.8280	20.263	1.1172	66.203
#1	.00594	.00006	-.00064	.20345	-.00031
#2	.00854	.00006	-.00048	.20026	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**-.00099**	**.0189**	**-.00069**	**-.00244**
Stddev	.0015	.00206	.0004	.00039	.00332
%RSD	453.6	207.49	2.280	57.024	135.84
#1	-.0007	.00046	.0192	-.00041	-.00479
#2	.0014	-.00245	.0186	-.00096	-.00010
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.23944**	**.00061**	**.00027**	**-.0010**	**-.00032**
Stddev	.01064	.00101	.00004	.0013	.00042
%RSD	4.4434	166.36	14.310	135.2	129.91
#1	.24696	.00132	.00029	-.0000	-.00003
#2	.23192	-.00011	.00024	-.0019	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: MB 480-494142/1-A Acquired: 9/27/2019 1:37:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	i **-.0548**	**-.00031**	**.00270**	**.0007**
Stddev	.00242	.1099	.00007	.00056	.0004
%RSD	212.04	200.5	22.789	20.786	54.94
#1	-.00285	i -.1326	-.00026	.00310	.0005
#2	.00057	i .0229	-.00037	.00230	.0010
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1822.3**	**570.99**	**39495.**	**4165.5**
Stddev	2.0	1.21	6.	18.3
%RSD	.11043	.21256	.01542	.44028
#1	1820.9	570.13	39491.	4178.5
#2	1823.8	571.84	39500.	4152.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.96%	106.50%	101.64%	101.12%
Range				

Sample Name: LCS 480-494142/2-A Acquired: 9/27/2019 1:41:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05479**	**10.683**	**.20799**	**.22744**	**.22312**
Stddev	.00003	.020	.00096	.00085	.00093
%RSD	.05691	.18736	.46104	.37247	.41843
#1	.05477	10.697	.20732	.22804	.22378
#2	.05481	10.669	.20867	.22684	.22246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21621**	**10.810**	**.20994**	i **.0056**	**.20561**
Stddev	.00036	.045	.00083	.0050	.00040
%RSD	.16426	.41672	.39631	88.83	.19442
#1	.21647	10.842	.21053	i .0021	.20533
#2	.21596	10.778	.20936	i .0092	.20589
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21253**	**.20307**	**10.720**	**10.321**	**.21301**
Stddev	.00146	.00010	.016	.016	.00124
%RSD	.68635	.04799	.14809	.15084	.58437
#1	.21356	.20314	10.709	10.332	.21389
#2	.21150	.20300	10.731	10.310	.21213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494142/2-A Acquired: 9/27/2019 1:41:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.741**	**.21148**	**.21211**	**10.405**	**.21261**
Stddev	.008	.00028	.00130	.015	.00011
%RSD	.07627	.13376	.61447	.14192	.05035
#1	10.747	.21168	.21303	10.416	.21254
#2	10.735	.21128	.21119	10.395	.21269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5875**	**.20516**	**10.44**	**.22990**	**.19621**
Stddev	.0019	.00032	.03	.00083	.00012
%RSD	.3281	.15711	.2456	.36113	.06326
#1	-.5889	.20539	10.46	.22931	.19612
#2	-.5861	.20493	10.42	.23048	.19630
Check ?	None	Chk Pass	None	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.745**	**.20175**	**.21101**	**.0063**	**.20736**
Stddev	.000	.00164	.00014	.0119	.00045
%RSD	.00098	.81476	.06683	187.2	.21533
#1	10.745	.20058	.21111	-.0020	.20705
#2	10.746	.20291	.21091	.0147	.20768
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: LCS 480-494142/2-A Acquired: 9/27/2019 1:41:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20741**	i **-.0963**	**.21232**	**.22933**	**.0025**
Stddev	.00077	.0292	.00044	.00199	.0003
%RSD	.36921	30.32	.20929	.86654	11.99
#1	.20795	i -.0757	.21263	.22792	.0028
#2	.20687	i -.1169	.21201	.23073	.0023
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1773.6**	**559.14**	**38679.**	**4161.7**
Stddev	.3	1.00	16.	9.8
%RSD	.01793	.17873	.04062	.23648
#1	1773.4	558.43	38690.	4154.7
#2	1773.8	559.85	38668.	4168.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.258%	104.29%	99.542%	101.02%
Range				

Sample Name: 480-159681-C-1-A Acquired: 9/27/2019 1:44:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.04037**	**.00082**	**.07845**	**.03977**
Stddev	.00007	.02190	.00415	.00082	.00010
%RSD	193.15	54.244	507.37	1.0427	.25100
#1	.00001	.02489	.00375	.07788	.03984
#2	-.00008	.05586	-.00212	.07903	.03970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**37.390**	**.00011**	i **.0196**	**.00017**
Stddev	.00005	.159	.00008	.0076	.00026
%RSD	259.82	.42435	69.844	38.89	158.09
#1	.00002	37.278	.00016	i .0250	-.00002
#2	-.00006	37.502	.00006	i .0142	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00198**	**.19932**	**15.473**	**.00653**
Stddev	.00069	.00012	.00335	.029	.00021
%RSD	294.40	6.0678	1.6788	.19068	3.2130
#1	-.00025	.00189	.19695	15.494	.00668
#2	.00072	.00206	.20169	15.452	.00638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159681-C-1-A Acquired: 9/27/2019 1:44:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.699**	**.05508**	**.00371**	**120.76**	**.00414**
Stddev	.003	.00026	.00010	.10	.00037
%RSD	.02655	.46428	2.7035	.08617	8.9856
#1	10.697	.05490	.00364	120.83	.00387
#2	10.701	.05526	.00378	120.68	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0207**	**-.00002**	**7.942**	**-.00074**	**-.00612**
Stddev	.0006	.00073	.000	.00187	.00109
%RSD	3.048	3187.2	.0025	251.74	17.776
#1	.0203	.00050	7.942	-.00207	-.00535
#2	.0212	-.00054	7.943	.00058	-.00688
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.6058**	**.00079**	**.22004**	**.0031**	**.00009**
Stddev	.0060	.00156	.00033	.0017	.00002
%RSD	.37087	198.35	.14865	56.21	22.235
#1	1.6015	.00189	.21981	.0019	.00008
#2	1.6100	-.00032	.22027	.0043	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159681-C-1-A Acquired: 9/27/2019 1:44:49 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00144**	i **.0902**	**-.00025**	**.00579**	**.0001**
Stddev	.00018	.0345	.00035	.00032	.0005
%RSD	12.848	38.27	141.45	5.5793	728.6
#1	-.00131	i .0658	.00000	.00602	.0004
#2	-.00157	i .1147	-.00050	.00556	-.0003
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1697.4**	**554.69**	**37284.**	**4088.8**
Stddev	.0	1.83	15.	32.2
%RSD	.00002	.32954	.03924	.78830
#1	1697.4	553.40	37274.	4111.6
#2	1697.4	555.98	37294.	4066.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.035%	103.46%	95.952%	99.255%
Range				

Sample Name: 480-159681-C-2-A Acquired: 9/27/2019 1:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.02151**	**.00286**	**.08476**	**.03359**
Stddev	.00017	.00278	.00361	.00019	.00014
%RSD	143.12	12.938	125.89	.22708	.40873
#1	.00000	.01954	.00541	.08462	.03368
#2	-.00024	.02348	.00031	.08489	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**37.776**	**.00016**	i **.0218**	**-.00003**
Stddev	.00005	.167	.00023	.0094	.00004
%RSD	178.09	.44172	141.43	42.95	138.00
#1	-.00001	37.894	-.00000	i .0284	-.00000
#2	.00006	37.658	.00032	i .0152	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00223**	**.23317**	**17.400**	**.00637**
Stddev	.00047	.00046	.00094	.082	.00058
%RSD	98.647	20.636	.40336	.47284	9.1577
#1	.00081	.00191	.23384	17.458	.00678
#2	.00014	.00256	.23251	17.341	.00596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159681-C-2-A Acquired: 9/27/2019 1:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**10.703**	**.05475**	**.00304**	**131.87**	**.00482**
Stddev	.025	.00008	.00005	.91	.00046
%RSD	.23500	.15396	1.8085	.69171	9.4946
#1	10.720	.05481	.00308	132.52	.00514
#2	10.685	.05470	.00300	131.23	.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0151**	**-.00000**	**8.659**	**-.00096**	**-.00783**
Stddev	.0027	.00176	.026	.00091	.00302
%RSD	17.86	47583.	.2963	95.438	38.611
#1	.0132	-.00125	8.678	-.00031	-.00997
#2	.0170	.00124	8.641	-.00160	-.00569
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.6170**	**.00143**	**.22455**	**.0002**	**.00029**
Stddev	.0288	.00001	.00173	.0017	.00003
%RSD	1.7805	.46573	.76985	884.3	10.752
#1	1.6374	.00143	.22577	.0014	.00027
#2	1.5967	.00144	.22333	-.0010	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159681-C-2-A Acquired: 9/27/2019 1:48:36 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	i **.0286**	**-.00010**	**.00571**	**.0002**
Stddev	.00158	.0185	.00021	.00174	.0006
%RSD	265.94	64.53	206.35	30.478	308.8
#1	-.00171	i .0155	.00005	.00448	-.0002
#2	.00052	i .0416	-.00025	.00694	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1698.0**	**553.53**	**37404.**	**4100.6**
Stddev	2.6	.47	73.	2.5
%RSD	.15573	.08571	.19627	.05977
#1	1699.9	553.87	37352.	4098.8
#2	1696.2	553.20	37456.	4102.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	94.072%	103.25%	96.260%	99.540%
Range				

Sample Name: 480-159559-C-1-B Acquired: 9/27/2019 1:52:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.10847**	**.00321**	**.14194**	**.03959**
Stddev	.00002	.01089	.00018	.00072	.00011
%RSD	3.2726	10.043	5.6231	.50929	.27902
#1	-.00054	.11618	.00309	.14143	.03967
#2	-.00056	.10077	.00334	.14245	.03951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**327.44**	**.00037**	i **.0116**	**.00080**
Stddev	.00006	.15	.00022	.0087	.00001
%RSD	165.70	.04522	58.852	74.77	1.6713
#1	-.00008	327.34	.00022	i .0177	.00081
#2	.00001	327.54	.00052	i .0055	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00257**	**1.2906**	**8.1058**	**.03146**
Stddev	.00010	.00001	.0017	.0132	.00004
%RSD	25.531	.27060	.13123	.16335	.12451
#1	.00033	.00256	1.2894	8.0964	.03148
#2	.00048	.00257	1.2918	8.1151	.03143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159559-C-1-B Acquired: 9/27/2019 1:52:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**128.02**	**2.4370**	**-.00010**	**18.833**	**.00353**
Stddev	.09	.0027	.00020	.003	.00015
%RSD	.07225	.11303	205.56	.01332	4.1714
#1	127.96	2.4351	.00004	18.835	.00342
#2	128.09	2.4390	-.00024	18.831	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0463**	**-.00124**	F **270.2**	**-.00438**	**-.01020**
Stddev	.0012	.00226	1.3	.00138	.00865
%RSD	2.497	182.36	.4910	31.460	84.781
#1	.0455	.00036	269.2	-.00536	-.01631
#2	.0471	-.00284	271.1	-.00341	-.00408
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.2216**	**.00051**	**1.6746**	**-.0041**	**.00163**
Stddev	.0041	.00099	.0008	.0046	.00102
%RSD	.06622	193.60	.04971	109.8	62.867
#1	6.2187	.00121	1.6752	-.0074	.00235
#2	6.2246	-.00019	1.6741	-.0009	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159559-C-1-B Acquired: 9/27/2019 1:52:24 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	i **-.1539**	**-.00042**	**.00775**	**.0006**
Stddev	.00301	.0367	.00050	.00257	.0004
%RSD	134.90	23.88	117.85	33.158	57.16
#1	-.00010	i -.1799	-.00007	.00593	.0009
#2	-.00436	i -.1279	-.00077	.00956	.0004
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1593.4**	**527.65**	**36019.**	**4010.6**
Stddev	1.7	2.57	7.	4.5
%RSD	.10709	.48680	.02070	.11259
#1	1594.6	529.47	36014.	4013.8
#2	1592.2	525.84	36025.	4007.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.277%	98.421%	92.697%	97.357%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 1:56:16 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0057	51.694	.95477	.97256	1.0361	1.0038	51.171	.96303
Stddev	.0022	.073	.00159	.00062	.0005	.0019	.039	.00019
%RSD	.22035	.14079	.16630	.06358	.04419	.19013	.07678	.02014
#1	1.0041	51.642	.95365	.97300	1.0358	1.0051	51.143	.96289
#2	1.0073	51.745	.95589	.97212	1.0365	1.0024	51.199	.96317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.009	1.0127	1.0168	.97431	50.468	49.275	1.0036	50.682
Stddev	.002	.0002	.0028	.00231	.102	.106	.0002	.039
%RSD	.1571	.01821	.27181	.23759	.20254	.21504	.01962	.07754
#1	i 1.008	1.0126	1.0148	.97595	50.396	49.350	1.0034	50.654
#2	i 1.011	1.0128	1.0187	.97268	50.540	49.200	1.0037	50.710
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0047	.96945	50.240	1.0024	25.94	1.0050	23.54	.96900
Stddev	.0014	.00275	.017	.0001	.01	.0021	.00	.00164
%RSD	.14407	.28345	.03343	.01367	.0505	.21168	.0154	.16956
#1	1.0037	.97139	50.228	1.0025	25.95	1.0065	23.54	.97016
#2	1.0057	.96750	50.252	1.0023	25.93	1.0035	23.54	.96784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 1:56:16 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92008**	**10.495**	**1.0038**	**1.0182**	**.9978**	**.98500**	**.99994**	i **2.467**
Stddev	.00190	.045	.0061	.0005	.0171	.00144	.00474	.031
%RSD	.20609	.42820	.60755	.04574	1.717	.14666	.47399	1.270
#1	.91874	10.463	.99952	1.0185	.9857	.98397	1.0033	i 2.445
#2	.92142	10.527	1.0081	1.0178	1.010	.98602	.99659	i 2.489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**1.0197**	**1.0468**	**.9718**
Stddev	.0016	.0037	.0023
%RSD	.15436	.35131	.2341
#1	1.0186	1.0442	.9734
#2	1.0208	1.0494	.9701
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1656.0**	**562.01**	**37030.**	**4085.1**
Stddev	.3	.95	51.	9.4
%RSD	.01589	.16964	.13796	.22914
#1	1656.2	561.33	37066.	4078.5
#2	1655.8	562.68	36993.	4091.7

Sample Name: CCB-5508960 Acquired: 9/27/2019 1:59:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01163	-.00006	.00373	.00012	-.00000	.04485	-.00015
Stddev	.00026	.00091	.00050	.00067	.00000	.00002	.00215	.00002
%RSD	170.32	7.8387	829.85	17.873	2.4135	971.59	4.7962	16.517
#1	.00033	.01098	.00029	.00420	.00012	.00001	.04637	-.00016
#2	-.00003	.01227	-.00041	.00326	.00012	-.00002	.04333	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0022	.00003	.00004	-.00003	.00450	.03493	.00064	.00408
Stddev	.0033	.00023	.00016	.00004	.00444	.02237	.00024	.00122
%RSD	150.5	691.86	445.74	159.94	98.612	64.062	37.893	29.986
#1	i -.0001	.00020	.00015	.00000	.00764	.01910	.00081	.00495
#2	i .0045	-.00013	-.00008	-.00006	.00136	.05075	.00047	.00322
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00110	.08324	.00000	.0044	.00032	.0037	-.00206
Stddev	.00004	.00051	.00084	.00009	.0002	.00144	.0018	.00038
%RSD	28.250	45.864	1.0049	3725.1	4.454	443.65	47.00	18.263
#1	.00011	.00074	.08383	.00006	.0046	.00134	.0025	-.00233
#2	.00016	.00146	.08264	-.00006	.0043	-.00069	.0050	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 1:59:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00396**	**.02023**	**.00039**	**.00006**	**-.0062**	**.00048**	**-.00007**	i **.0149**
Stddev	.00163	.01194	.00026	.00001	.0042	.00001	.00144	.0424
%RSD	41.127	59.000	66.149	19.361	67.13	1.3290	2032.0	284.6
#1	-.00281	.02867	.00021	.00005	-.0033	.00047	-.00109	i -.0151
#2	-.00511	.01179	.00057	.00006	-.0092	.00048	.00095	i .0448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00057**	**.00654**	**.0004**
Stddev	.00029	.00259	.0008
%RSD	50.248	39.508	199.5
#1	-.00077	.00472	.0010
#2	-.00037	.00837	-.0002
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1839.2**	**583.02**	**39889.**	**4185.5**
Stddev	.5	.75	80.	6.5
%RSD	.02510	.12894	.19951	.15447
#1	1839.6	583.55	39945.	4180.9
#2	1838.9	582.49	39833.	4190.0

Sample Name: CCVL-5514926 Acquired: 9/27/2019 2:03:48 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00597	.21125	.01544	.02307	.00219	.00218	.53748	.00211
Stddev	.00036	.00601	.00059	.00014	.00000	.00005	.00084	.00008
%RSD	6.1047	2.8462	3.8010	.60664	.15397	2.2554	.15654	3.6900
#1	.00571	.21550	.01502	.02297	.00219	.00221	.53689	.00216
#2	.00623	.20700	.01585	.02317	.00219	.00214	.53808	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0100	.00396	.00403	.00938	.05247	.51273	.03111	.21445
Stddev	.0065	.00044	.00024	.00010	.00222	.00243	.00025	.00672
%RSD	65.35	11.081	5.8344	1.0733	4.2282	.47440	.81610	3.1315
#1	i .0054	.00427	.00420	.00931	.05090	.51445	.03094	.20970
#2	i .0146	.00365	.00386	.00945	.05404	.51101	.03129	.21920
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	.00958	1.0674	.01031	-.0282	.00992	.1937	.02081
Stddev	.00001	.00015	.0021	.00016	.0005	.00116	.0041	.00013
%RSD	.32044	1.6113	.20002	1.5332	1.868	11.695	2.132	.62865
#1	.00305	.00947	1.0659	.01042	-.0286	.01074	.1966	.02072
#2	.00304	.00968	1.0690	.01020	-.0278	.00910	.1908	.02091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/27/2019 2:03:48 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02188**	**.48814**	**.00964**	**.00501**	**.0050**	**.00475**	**.01866**	i **-.0499**
Stddev	.00061	.00205	.00171	.00001	.0013	.00011	.00129	.0105
%RSD	2.7787	.41987	17.705	.17029	25.26	2.2242	6.9383	21.06
#1	.02231	.48959	.00843	.00500	.0059	.00468	.01774	i -.0424
#2	.02145	.48669	.01085	.00501	.0041	.00483	.01957	i -.0573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00483**	**.01185**	**.0010**
Stddev	.00010	.00033	.0001
%RSD	2.0404	2.7649	14.81
#1	.00476	.01208	.0011
#2	.00490	.01162	.0009
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1837.8**	**581.71**	**39605.**	**4130.7**
Stddev	1.1	1.50	29.	10.5
%RSD	.05878	.25705	.07371	.25452
#1	1838.5	582.77	39626.	4138.1
#2	1837.0	580.66	39585.	4123.2

Sample Name: 480-159676-D-1-A Acquired: 9/27/2019 2:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.09192**	**-.00056**	**.04886**	**.09297**
Stddev	.00017	.01825	.00080	.00013	.00002
%RSD	44.045	19.854	143.15	.26287	.02269
#1	-.00052	.07902	.00001	.04877	.09295
#2	-.00027	.10483	-.00112	.04895	.09298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**43.553**	**.00307**	i **.0136**	**.00015**
Stddev	.00001	.036	.00003	.0021	.00002
%RSD	30.298	.08245	.85882	15.60	12.824
#1	-.00002	43.578	.00309	i .0151	.00014
#2	-.00001	43.527	.00305	i .0121	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00023**	**.12903**	**.97266**	**.01033**
Stddev	.00038	.00008	.00296	.01403	.00009
%RSD	349.43	34.530	2.2956	1.4419	.85730
#1	.00038	.00029	.13112	.98258	.01027
#2	-.00016	.00018	.12693	.96275	.01039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-1-A Acquired: 9/27/2019 2:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.7566**	**.05492**	**.00026**	**20.540**	**-.00002**
Stddev	.0002	.00026	.00007	.003	.00009
%RSD	.00202	.46797	26.739	.01648	556.89
#1	8.7568	.05510	.00021	20.543	.00005
#2	8.7565	.05474	.00031	20.538	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0267**	**-.00037**	**7.182**	**-.00042**	**-.00257**
Stddev	.0003	.00000	.038	.00261	.00496
%RSD	1.124	.42945	.5305	623.98	192.62
#1	.0264	-.00037	7.155	.00143	-.00608
#2	.0269	-.00037	7.209	-.00227	.00093
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.2192**	**-.00014**	**.13781**	**.0005**	**.00084**
Stddev	.0039	.00034	.00042	.0010	.00009
%RSD	.07393	249.43	.30169	207.2	11.277
#1	5.2165	.00010	.13810	-.0002	.00090
#2	5.2220	-.00037	.13752	.0012	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-1-A Acquired: 9/27/2019 2:07:39 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	i **-.0382**	**-.00001**	**.01331**	**.0016**
Stddev	.00015	.0147	.00023	.00030	.0001
%RSD	19.611	38.37	1968.4	2.2711	8.284
#1	-.00068	i -.0278	-.00018	.01310	.0017
#2	-.00090	i -.0486	.00015	.01352	.0015
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1767.2**	**558.42**	**38397.**	**4147.0**
Stddev	.9	1.79	40.	7.6
%RSD	.05249	.32115	.10533	.18262
#1	1767.8	559.69	38368.	4152.3
#2	1766.5	557.16	38425.	4141.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.903%	104.16%	98.815%	100.67%
Range				

Sample Name: 480-159676-D-2-A Acquired: 9/27/2019 2:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**3.3263**	**.00247**	**.06584**	**.13108**
Stddev	.00004	.0311	.00117	.00025	.00024
%RSD	10.395	.93601	47.179	.37577	.18277
#1	-.00043	3.3043	.00165	.06602	.13125
#2	-.00037	3.3484	.00329	.06567	.13091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**50.398**	**.00043**	i **-.0004**	**.00117**
Stddev	.00002	.043	.00013	.0165	.00008
%RSD	17.327	.08561	29.582	3945.	6.7537
#1	.00012	50.367	.00052	i .0113	.00123
#2	.00009	50.428	.00034	i -.0121	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00625**	**.00263**	**3.7509**	**2.6426**	**.01129**
Stddev	.00014	.00005	.0063	.0263	.00028
%RSD	2.2192	1.7711	.16778	.99400	2.4621
#1	.00615	.00260	3.7554	2.6611	.01110
#2	.00635	.00267	3.7465	2.6240	.01149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-2-A Acquired: 9/27/2019 2:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**14.599**	**.56790**	**.00058**	**19.261**	**.00331**
Stddev	.017	.00033	.00008	.038	.00024
%RSD	.11713	.05742	14.406	.19734	7.3074
#1	14.612	.56813	.00064	19.288	.00348
#2	14.587	.56767	.00052	19.234	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0733**	**.00364**	**7.358**	**-.00350**	**-.00548**
Stddev	.0023	.00012	.047	.00107	.00432
%RSD	3.175	3.2835	.6355	30.660	78.870
#1	.0717	.00372	7.391	-.00426	-.00854
#2	.0749	.00356	7.325	-.00274	-.00242
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.3745**	**.00113**	**.19530**	**.0010**	**.05105**
Stddev	.0416	.00023	.00022	.0034	.00468
%RSD	.44363	20.717	.11409	319.4	9.1579
#1	9.3451	.00129	.19515	-.0013	.04775
#2	9.4039	.00096	.19546	.0034	.05436
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-2-A Acquired: 9/27/2019 2:11:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	i **-.0713**	**.00495**	**.02036**	**.0021**
Stddev	.00006	.0219	.00039	.00002	.0011
%RSD	70.701	30.74	7.9686	.08441	53.17
#1	-.00013	i -.0868	.00523	.02034	.0029
#2	-.00004	i -.0558	.00467	.02037	.0013
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1737.5**	**551.64**	**37867.**	**4115.3**
Stddev	1.0	.99	44.	10.3
%RSD	.05527	.17884	.11560	.25073
#1	1738.1	550.94	37836.	4122.6
#2	1736.8	552.33	37898.	4108.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.256%	102.89%	97.453%	99.898%
Range				

Sample Name: 480-159676-D-3-A Acquired: 9/27/2019 2:15:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.09387**	**.00242**	**.04215**	**.16244**
Stddev	.00041	.02552	.00182	.00028	.00026
%RSD	1244.7	27.182	75.341	.65388	.15880
#1	.00026	.11192	.00113	.04235	.16263
#2	-.00033	.07583	.00370	.04196	.16226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**51.333**	**.00026**	i **-.0045**	**-.00017**
Stddev	.00014	.073	.00003	.0059	.00002
%RSD	958.46	.14208	12.815	129.3	9.0239
#1	.00008	51.385	.00028	i -.0087	-.00018
#2	-.00011	51.282	.00024	i -.0004	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00023**	**.11586**	**1.1195**	**.00822**
Stddev	.00037	.00042	.00330	.0008	.00129
%RSD	213.67	179.96	2.8500	.07400	15.760
#1	-.00043	.00006	.11352	1.1189	.00730
#2	.00009	-.00053	.11819	1.1201	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-3-A Acquired: 9/27/2019 2:15:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.489**	**.84120**	**-.00004**	**14.323**	**-.00059**
Stddev	.003	.00067	.00011	.001	.00010
%RSD	.02189	.07969	242.46	.00808	17.150
#1	11.491	.84167	.00003	14.324	-.00067
#2	11.488	.84072	-.00012	14.322	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0083**	**.00031**	**5.400**	**-.00165**	**-.00664**
Stddev	.0016	.00057	.021	.00213	.00155
%RSD	19.79	183.54	.3910	129.09	23.378
#1	.0071	.00071	5.385	-.00014	-.00774
#2	.0095	-.00009	5.415	-.00315	-.00554
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.3368**	**-.00044**	**.13907**	**.0017**	**.00099**
Stddev	.0257	.00039	.00020	.0107	.00016
%RSD	.48207	89.637	.14482	629.5	16.325
#1	5.3186	-.00072	.13921	-.0059	.00087
#2	5.3550	-.00016	.13893	.0093	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159676-D-3-A Acquired: 9/27/2019 2:15:12 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	i **-.0521**	**.00021**	**.00369**	**.0014**
Stddev	.00101	.0271	.00032	.00075	.0003
%RSD	523.12	52.12	150.18	20.244	24.82
#1	.00052	i -.0713	.00044	.00316	.0011
#2	-.00090	i -.0329	-.00001	.00422	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1768.8**	**562.35**	**38379.**	**4138.4**
Stddev	1.7	3.12	119.	1.8
%RSD	.09796	.55483	.31125	.04360
#1	1770.0	564.55	38463.	4137.1
#2	1767.6	560.14	38294.	4139.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.992%	104.89%	98.769%	100.46%
Range				

Sample Name: 480-159677-D-1-A Acquired: 9/27/2019 2:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.07098**	**-.00130**	**.09493**	**.13102**
Stddev	.00038	.01302	.00344	.00066	.00027
%RSD	116.47	18.348	265.61	.69622	.20603
#1	-.00060	.08019	.00114	.09446	.13121
#2	-.00006	.06177	-.00373	.09540	.13083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**40.758**	**.00016**	i **.0115**	**-.00010**
Stddev	.00001	.010	.00006	.0101	.00005
%RSD	18.365	.02370	35.702	88.12	49.629
#1	.00004	40.752	.00012	i .0043	-.00006
#2	.00006	40.765	.00020	i .0186	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00003**	**1.1096**	**3.0510**	**.00196**
Stddev	.00039	.00051	.0030	.0089	.00016
%RSD	226.95	1501.6	.27352	.29206	8.1128
#1	.00045	-.00033	1.1117	3.0447	.00184
#2	-.00010	.00040	1.1074	3.0573	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-A Acquired: 9/27/2019 2:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.2047**	**.50423**	**-.00072**	**12.415**	**.00089**
Stddev	.0130	.00085	.00007	.021	.00004
%RSD	.14125	.16887	10.322	.17126	4.8351
#1	9.1955	.50363	-.00078	12.430	.00086
#2	9.2139	.50483	-.00067	12.400	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0132**	**-.00050**	**.4901**	**-.00256**	**-.00383**
Stddev	.0048	.00020	.0025	.00002	.00104
%RSD	36.00	39.715	.5129	.87165	27.219
#1	.0098	-.00036	.4883	-.00254	-.00309
#2	.0166	-.00064	.4919	-.00257	-.00457
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.7809**	**.00074**	**.11968**	**.0121**	**.00011**
Stddev	.0254	.00124	.00016	.0037	.00023
%RSD	1.4252	167.98	.13028	30.87	202.00
#1	1.7989	.00162	.11979	.0095	-.00005
#2	1.7630	-.00014	.11957	.0148	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-A Acquired: 9/27/2019 2:18:59 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00135	i -.0061	.00000	.00191	.0001
Stddev	.00257	.0234	.00012	.00076	.0003
%RSD	190.56	385.5	776520.	40.022	223.3
#1	.00317	i -.0226	.00009	.00137	.0003
#2	-.00047	i .0105	-.00009	.00245	-.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1777.2	564.65	38633.	4163.3
Stddev	1.9	.06	54.	2.3
%RSD	.10412	.01012	.13980	.05423
#1	1778.5	564.61	38672.	4164.9
#2	1775.9	564.69	38595.	4161.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.457%	105.32%	99.424%	101.06%
Range				

Sample Name: 480-159677-D-1-Asd@5 Acquired: 9/27/2019 2:22:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.02254**	**-.00217**	**.02038**	**.02728**
Stddev	.00000	.01432	.00244	.00058	.00000
%RSD	13.595	63.503	112.59	2.8699	.01666
#1	.00002	.01242	-.00044	.02079	.02728
#2	.00003	.03266	-.00389	.01997	.02728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**8.4398**	**.00007**	i **.0121**	**.00003**
Stddev	.00001	.0381	.00009	.0105	.00026
%RSD	26.556	.45159	123.50	87.01	1045.4
#1	-.00004	8.4129	.00014	i .0047	.00021
#2	-.00003	8.4668	.00001	i .0196	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00014**	**.22670**	**.62463**	**-.00019**
Stddev	.00022	.00020	.00075	.01277	.00005
%RSD	68.559	140.74	.33198	2.0438	25.507
#1	-.00017	-.00028	.22616	.63365	-.00016
#2	-.00049	-.00000	.22723	.61560	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-Asd@5 Acquired: 9/27/2019 2:22:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.8540**	**.10399**	**-.00063**	**2.5985**	**-.00010**
Stddev	.0040	.00004	.00004	.0043	.00049
%RSD	.21283	.03597	5.6684	.16750	493.63
#1	1.8568	.10402	-.00066	2.6015	.00025
#2	1.8512	.10397	-.00061	2.5954	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0046**	**-.00150**	**.0925**	**-.00155**	**-.00242**
Stddev	.0012	.00092	.0040	.00067	.00594
%RSD	25.85	61.005	4.371	43.156	245.66
#1	.0054	-.00086	.0954	-.00108	-.00662
#2	.0038	-.00215	.0897	-.00203	.00178
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.35599**	**.00020**	**.02506**	**-.0018**	**-.00013**
Stddev	.01770	.00065	.00001	.0041	.00024
%RSD	4.9711	325.82	.03432	220.3	194.46
#1	.34348	-.00026	.02505	.0010	.00005
#2	.36851	.00066	.02507	-.0047	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-Asd@5 Acquired: 9/27/2019 2:22:47 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	i **.0227**	**-.00022**	**-.00098**	**-.0008**
Stddev	.00126	.0399	.00023	.00064	.0011
%RSD	163.01	176.2	102.12	65.082	143.1
#1	-.00167	i -.0056	-.00039	-.00053	-.0015
#2	.00012	i .0509	-.00006	-.00143	.0000
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1815.6**	**574.46**	**39203.**	**4129.6**
Stddev	.5	.95	.	7.9
%RSD	.02943	.16498	.00098	.19182
#1	1815.3	575.13	39204.	4135.2
#2	1816.0	573.79	39203.	4124.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.59%	107.15%	100.89%	100.24%
Range				

Sample Name: 480-159677-D-1-Apds Acquired: 9/27/2019 2:26:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05127**	**10.221**	**.20220**	**.29882**	**.34107**
Stddev	.00013	.064	.00233	.00017	.00116
%RSD	.24668	.62866	1.1525	.05815	.34039
#1	.05136	10.266	.20055	.29869	.34189
#2	.05118	10.176	.20384	.29894	.34025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20959**	**50.182**	**.20301**	i **.0030**	**.19839**
Stddev	.00051	.342	.00021	.0116	.00042
%RSD	.24201	.68231	.10388	388.9	.20978
#1	.20995	50.424	.20316	i -.0052	.19868
#2	.20923	49.940	.20286	i .0112	.19809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20369**	**.19540**	**11.314**	**12.835**	**.20550**
Stddev	.00030	.00007	.083	.024	.00080
%RSD	.14568	.03770	.73416	.18917	.38793
#1	.20348	.19545	11.373	12.852	.20606
#2	.20390	.19535	11.255	12.818	.20494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-Apds Acquired: 9/27/2019 2:26:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**19.408**	**.69343**	**.20290**	**22.054**	**.20577**
Stddev	.017	.00019	.00129	.102	.00062
%RSD	.08878	.02742	.63541	.46227	.30364
#1	19.421	.69356	.20382	22.126	.20621
#2	19.396	.69329	.20199	21.982	.20532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5415**	**.20221**	**10.44**	**.22045**	**.18855**
Stddev	.0012	.00061	.05	.00260	.00047
%RSD	.2285	.30268	.4461	1.1808	.24941
#1	-.5424	.20178	10.47	.22229	.18822
#2	-.5406	.20264	10.41	.21861	.18889
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.483**	**.38937**	**.31712**	**.0060**	**.20054**
Stddev	.035	.00336	.00143	.0078	.00061
%RSD	.30378	.86354	.45199	130.1	.30296
#1	11.507	.39174	.31813	.0115	.20011
#2	11.458	.38699	.31611	.0005	.20097
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-Apds Acquired: 9/27/2019 2:26:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20116**	i **-.1235**	**.20606**	**.21582**	**.0058**
Stddev	.00079	.0181	.00015	.00094	.0006
%RSD	.39206	14.67	.07320	.43768	10.06
#1	.20060	i -.1363	.20616	.21649	.0063
#2	.20172	i -.1107	.20595	.21515	.0054
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1736.7**	**556.45**	**38246.**	**4158.7**
Stddev	.2	.59	107.	15.6
%RSD	.00964	.10559	.27936	.37528
#1	1736.5	556.03	38171.	4147.7
#2	1736.8	556.86	38322.	4169.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.213%	103.79%	98.428%	100.95%
Range				

Sample Name: 480-159677-D-1-B MS Acquired: 9/27/2019 2:30:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05277**	**10.314**	**.20511**	**.29312**	**.34222**
Stddev	.00028	.088	.00489	.00072	.00094
%RSD	.52602	.85049	2.3820	.24583	.27475
#1	.05297	10.376	.20857	.29362	.34289
#2	.05258	10.252	.20166	.29261	.34156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20858**	**50.005**	**.19970**	i **.0048**	**.19831**
Stddev	.00010	.168	.00078	.0244	.00032
%RSD	.04921	.33585	.39077	506.5	.16047
#1	.20865	50.124	.20025	i -.0124	.19854
#2	.20850	49.886	.19915	i .0221	.19809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20264**	**.19373**	**11.217**	**12.784**	**.20599**
Stddev	.00065	.00006	.036	.043	.00062
%RSD	.32213	.03156	.32356	.34006	.29978
#1	.20218	.19369	11.243	12.815	.20642
#2	.20311	.19378	11.192	12.754	.20555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-B MS Acquired: 9/27/2019 2:30:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**19.333**	**.68776**	**.20125**	**22.058**	**.20534**
Stddev	.029	.00022	.00025	.132	.00025
%RSD	.14835	.03245	.12537	.59749	.12008
#1	19.353	.68761	.20143	22.152	.20551
#2	19.313	.68792	.20107	21.965	.20517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5430**	**.19888**	**10.38**	**.21574**	**.18127**
Stddev	.0030	.00109	.08	.00240	.00275
%RSD	.5547	.54575	.7235	1.1142	1.5167
#1	-.5451	.19965	10.43	.21744	.18322
#2	-.5409	.19811	10.33	.21404	.17933
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.525**	**.19553**	**.31765**	**.0055**	**.19765**
Stddev	.081	.00018	.00247	.0008	.00044
%RSD	.70132	.09090	.77733	14.71	.22228
#1	11.582	.19565	.31940	.0049	.19796
#2	11.468	.19540	.31590	.0061	.19734
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-B MS Acquired: 9/27/2019 2:30:15 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.19786**	i **-.1059**	**.20543**	**.21646**	**.0017**
Stddev	.00084	.1012	.00054	.00291	.0003
%RSD	.42525	95.54	.26427	1.3464	17.31
#1	.19846	i -.1775	.20581	.21852	.0015
#2	.19727	i -.0344	.20504	.21440	.0019
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1739.4**	**563.29**	**38203.**	**4151.6**
Stddev	.3	.93	27.	13.7
%RSD	.01953	.16483	.07197	.32976
#1	1739.7	562.64	38183.	4141.9
#2	1739.2	563.95	38222.	4161.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.366%	105.07%	98.315%	100.78%
Range				

Sample Name: 480-159677-D-1-C MSD Acquired: 9/27/2019 2:33:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.05263**	**10.299**	**.20177**	**.30206**	**.34958**
Stddev	.00024	.036	.00045	.00017	.00077
%RSD	.46501	.35158	.22465	.05731	.21932
#1	.05246	10.273	.20145	.30218	.34904
#2	.05280	10.324	.20209	.30194	.35012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.21105**	**52.159**	**.20319**	i **.0010**	**.20029**
Stddev	.00036	.050	.00044	.0034	.00051
%RSD	.17088	.09676	.21772	336.1	.25665
#1	.21079	52.195	.20288	i -.0014	.19993
#2	.21130	52.123	.20351	i .0034	.20066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20361**	**.19567**	**11.391**	**13.088**	**.20720**
Stddev	.00015	.00052	.019	.046	.00026
%RSD	.07260	.26822	.16374	.35189	.12344
#1	.20371	.19530	11.377	13.120	.20738
#2	.20350	.19605	11.404	13.055	.20702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-C MSD Acquired: 9/27/2019 2:33:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**19.854**	**.71493**	**.20444**	**22.687**	**.20729**
Stddev	.018	.00046	.00072	.005	.00040
%RSD	.09110	.06365	.35181	.02378	.19157
#1	19.867	.71525	.20393	22.691	.20757
#2	19.841	.71461	.20495	22.683	.20701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.5440**	**.20337**	**10.67**	**.21762**	**.18854**
Stddev	.0037	.00151	.04	.00111	.00022
%RSD	.6806	.74003	.4168	.51107	.11767
#1	-.5466	.20231	10.64	.21841	.18870
#2	-.5413	.20444	10.70	.21684	.18839
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.687**	**.19588**	**.32397**	**.0089**	**.20089**
Stddev	.007	.00050	.00051	.0026	.00096
%RSD	.06389	.25284	.15790	28.76	.47765
#1	11.693	.19623	.32434	.0108	.20157
#2	11.682	.19553	.32361	.0071	.20022
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-1-C MSD Acquired: 9/27/2019 2:33:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.20271**	i **-.0120**	**.20622**	**.21820**	**.0023**
Stddev	.00196	.0983	.00031	.00125	.0006
%RSD	.96727	818.8	.15032	.57241	24.54
#1	.20133	i -.0815	.20600	.21732	.0019
#2	.20410	i .0575	.20643	.21909	.0028
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1735.1**	**559.37**	**38230.**	**4158.9**
Stddev	1.1	1.84	51.	1.9
%RSD	.06232	.32901	.13434	.04527
#1	1734.3	560.67	38193.	4157.6
#2	1735.8	558.07	38266.	4160.3
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.125%	104.34%	98.385%	100.96%
Range				

Sample Name: 480-159677-D-2-A Acquired: 9/27/2019 2:37:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.52842**	**-.00043**	**.03764**	**.11488**
Stddev	.00025	.00392	.00141	.00035	.00028
%RSD	219.33	.74213	325.57	.93687	.23950
#1	-.00029	.52565	.00056	.03739	.11469
#2	.00006	.53120	-.00143	.03789	.11508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**41.621**	**.00016**	i **.0132**	**.00010**
Stddev	.00000	.037	.00005	.0065	.00032
%RSD	78.375	.08909	28.708	49.62	335.87
#1	.00000	41.647	.00013	i .0086	.00033
#2	.00001	41.594	.00020	i .0178	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**.00135**	**.67110**	**2.4304**	**.00233**
Stddev	.00032	.00019	.00220	.0022	.00017
%RSD	42.029	14.058	.32751	.09229	7.4008
#1	.00098	.00148	.67266	2.4288	.00220
#2	.00053	.00121	.66955	2.4320	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-2-A Acquired: 9/27/2019 2:37:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.3991**	**.07655**	**.00017**	**9.2885**	**.00082**
Stddev	.0052	.00034	.00011	.0213	.00032
%RSD	.08134	.44844	65.298	.22949	38.760
#1	6.4028	.07631	.00025	9.3036	.00105
#2	6.3954	.07679	.00009	9.2735	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0344**	**-.00115**	**3.674**	**-.00128**	**-.00355**
Stddev	.0020	.00107	.014	.00343	.00287
%RSD	5.928	93.185	.3825	269.15	80.930
#1	.0358	-.00190	3.684	.00115	-.00152
#2	.0330	-.00039	3.664	-.00370	-.00557
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.5079**	**.00017**	**.33329**	**.0038**	**.00933**
Stddev	.0068	.00151	.00011	.0126	.00169
%RSD	.45080	911.54	.03292	332.5	18.083
#1	1.5127	.00123	.33337	.0127	.00814
#2	1.5031	-.00090	.33321	-.0051	.01053
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-2-A Acquired: 9/27/2019 2:37:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	i **.0204**	**.00073**	**.00548**	**.0018**
Stddev	.00110	.0429	.00002	.00017	.0006
%RSD	122.48	210.0	2.7793	3.1374	31.27
#1	-.00167	i -.0099	.00074	.00536	.0022
#2	-.00012	i .0508	.00072	.00560	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1778.1**	**561.81**	**38861.**	**4171.7**
Stddev	2.4	.55	119.	3.6
%RSD	.13230	.09868	.30737	.08524
#1	1779.8	562.21	38945.	4169.1
#2	1776.5	561.42	38777.	4174.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.509%	104.79%	100.01%	101.27%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 2:41:23 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0050**	**51.483**	**.95348**	**.97204**	**1.0315**	**1.0053**	**51.473**	**.96857**
Stddev	.0010	.249	.00075	.00598	.0056	.0016	.145	.00508
%RSD	.10241	.48321	.07874	.61559	.53852	.15516	.28195	.52465
#1	1.0043	51.659	.95401	.97627	1.0354	1.0064	51.575	.97217
#2	1.0057	51.307	.95295	.96781	1.0276	1.0042	51.370	.96498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **1.015**	**1.0158**	**1.0180**	**.97384**	**50.607**	**49.244**	**1.0004**	**50.696**
Stddev	.004	.0004	.0001	.00331	.065	.083	.0040	.097
%RSD	.4463	.03853	.01011	.33997	.12858	.16761	.39935	.19102
#1	i 1.012	1.0155	1.0181	.97150	50.561	49.302	1.0032	50.765
#2	i 1.018	1.0161	1.0180	.97618	50.653	49.185	.99759	50.628
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0081**	**.97298**	**50.066**	**1.0040**	**26.04**	**1.0078**	**23.62**	**.96900**
Stddev	.0006	.00668	.205	.0001	.01	.0003	.20	.00154
%RSD	.06328	.68685	.40947	.00859	.0319	.03311	.8586	.15920
#1	1.0086	.97770	50.211	1.0039	26.05	1.0081	23.77	.96791
#2	1.0077	.96825	49.921	1.0041	26.03	1.0076	23.48	.97009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 2:41:23 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92663**	**10.379**	**1.0039**	**1.0143**	**.9875**	**.98717**	**1.0032**	i **2.379**
Stddev	.00320	.030	.0045	.0044	.0122	.00268	.0068	.004
%RSD	.34521	.29338	.44425	.43324	1.237	.27182	.67556	.1457
#1	.92889	10.400	1.0071	1.0174	.9961	.98906	1.0080	i 2.376
#2	.92436	10.357	1.0007	1.0112	.9788	.98527	.99843	i 2.381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**1.0180**	**1.0537**	**.9745**
Stddev	.0009	.0003	.0009
%RSD	.08685	.02860	.0967
#1	1.0174	1.0535	.9752
#2	1.0186	1.0539	.9738
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1658.8**	**562.17**	**37246.**	**4073.4**
Stddev	.4	3.01	1.	16.7
%RSD	.02647	.53607	.00221	.41114
#1	1659.1	560.04	37247.	4061.6
#2	1658.5	564.30	37246.	4085.3

Sample Name: CCB-5508960 Acquired: 9/27/2019 2:45:04 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.01523**	**-.00494**	**.00060**	**.00015**	**.00009**	**.04321**	**.00002**
Stddev	.00063	.00436	.00038	.00011	.00001	.00005	.00212	.00004
%RSD	5293.2	28.640	7.7457	17.659	3.2482	51.238	4.8961	265.39
#1	-.00046	.01215	-.00521	.00068	.00015	.00012	.04172	.00005
#2	.00044	.01832	-.00467	.00053	.00016	.00006	.04471	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0006**	**-.00005**	**-.00030**	**.00002**	**.00330**	**.03594**	**.00016**	**.00339**
Stddev	.0029	.00016	.00024	.00011	.00076	.01471	.00124	.00165
%RSD	489.2	326.73	79.104	524.33	23.127	40.922	769.04	48.831
#1	i .0026	.00006	-.00046	.00010	.00384	.02554	-.00072	.00455
#2	i -.0015	-.00016	-.00013	-.00006	.00276	.04634	.00104	.00222
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00116**	**.05415**	**-.00015**	**.0025**	**-.00012**	**-.0079**	**-.00189**
Stddev	.00012	.00032	.00096	.00006	.0008	.00122	.0011	.00186
%RSD	88.235	27.165	1.7798	37.257	34.09	1048.3	14.04	98.345
#1	.00023	.00094	.05347	-.00011	.0019	.00075	-.0087	-.00058
#2	.00005	.00139	.05483	-.00019	.0031	-.00098	-.0071	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 2:45:04 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.01596	.00046	.00006	-.0056	.00002	-.00010	i -.0401
Stddev	.00279	.00167	.00045	.00006	.0060	.00012	.00050	.0484
%RSD	176.53	10.487	98.112	102.79	107.3	527.00	480.75	120.7
#1	.00355	-.01714	.00014	.00010	-.0098	-.00006	-.00045	i -.0059
#2	-.00039	-.01477	.00078	.00002	-.0013	.00010	.00025	i -.0744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00009	.00728	.0000
Stddev	.00014	.00201	.0007
%RSD	160.91	27.614	5171.
#1	-.00001	.00586	.0005
#2	.00019	.00871	-.0004
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1846.8	587.35	40015.	4177.3
Stddev	.1	.76	29.	8.8
%RSD	.00664	.12917	.07301	.21067
#1	1846.9	587.89	40036.	4183.5
#2	1846.7	586.82	39995.	4171.1

Sample Name: CCVL-5514926 Acquired: 9/27/2019 2:48:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00631	.20855	.01502	.01983	.00218	.00216	.53511	.00195
Stddev	.00000	.03262	.00251	.00003	.00000	.00000	.00306	.00005
%RSD	.02244	15.640	16.682	.16805	.07821	.21561	.57142	2.7581
#1	.00631	.18549	.01679	.01981	.00218	.00216	.53295	.00199
#2	.00631	.23162	.01325	.01986	.00219	.00216	.53727	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0183	.00394	.00436	.00964	.05343	.49172	.03068	.21994
Stddev	.0015	.00017	.00038	.00041	.00200	.03030	.00042	.00295
%RSD	7.971	4.2424	8.7473	4.2779	3.7366	6.1613	1.3532	1.3434
#1	i .0173	.00383	.00463	.00935	.05202	.51314	.03039	.22203
#2	i .0193	.00406	.00409	.00994	.05484	.47030	.03097	.21786
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.00993	1.0344	.01002	-.0293	.00954	.1901	.02081
Stddev	.00001	.00005	.0001	.00006	.0003	.00081	.0032	.00369
%RSD	.22607	.49420	.01156	.61794	.8955	8.5272	1.693	17.717
#1	.00312	.00989	1.0343	.01007	-.0291	.01011	.1924	.02342
#2	.00311	.00996	1.0344	.00998	-.0295	.00896	.1878	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/27/2019 2:48:55 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01946**	**.46778**	**.00913**	**.00499**	**-.0008**	**.00471**	**.01750**	i **.0186**
Stddev	.00319	.00380	.00107	.00003	.0001	.00018	.00087	.1453
%RSD	16.393	.81256	11.680	.68658	13.86	3.7303	4.9956	782.3
#1	.02172	.46509	.00838	.00496	-.0009	.00459	.01688	i -.0842
#2	.01721	.47047	.00989	.00501	-.0007	.00483	.01812	i .1213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**.00472**	**.01116**	**.0010**
Stddev	.00026	.00075	.0001
%RSD	5.5909	6.7063	12.50
#1	.00453	.01169	.0011
#2	.00490	.01063	.0009
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1840.7**	**578.86**	**39845.**	**4170.9**
Stddev	.4	.06	33.	6.9
%RSD	.02380	.01002	.08276	.16464
#1	1840.4	578.90	39821.	4166.0
#2	1841.0	578.82	39868.	4175.7

Sample Name: 480-159677-D-3-A Acquired: 9/27/2019 2:52:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.37535**	**-.00572**	**.03494**	**.09888**
Stddev	.00028	.00735	.00131	.00018	.00014
%RSD	56.018	1.9582	22.833	.50684	.14019
#1	-.00030	.38054	-.00480	.03482	.09897
#2	-.00069	.37015	-.00664	.03507	.09878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**48.053**	**.00003**	i **.0220**	**-.00004**
Stddev	.00004	.027	.00010	.0098	.00007
%RSD	112.84	.05592	341.61	44.34	168.21
#1	-.00001	48.034	-.00004	i .0289	.00001
#2	-.00006	48.072	.00010	i .0151	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00265**	**.43220**	**2.1200**	**.00145**
Stddev	.00021	.00017	.00327	.0037	.00002
%RSD	61.678	6.2963	.75752	.17318	1.4627
#1	.00019	.00253	.42989	2.1226	.00144
#2	.00050	.00276	.43452	2.1174	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-3-A Acquired: 9/27/2019 2:52:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**7.3941**	**.03125**	**-.00012**	**8.9823**	**.00053**
Stddev	.0085	.00000	.00004	.0005	.00046
%RSD	.11492	.00564	31.096	.00530	86.255
#1	7.3881	.03125	-.00015	8.9826	.00021
#2	7.4001	.03125	-.00009	8.9819	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0224**	**-.00044**	**3.747**	**-.00177**	**-.00613**
Stddev	.0009	.00221	.009	.00034	.00086
%RSD	3.810	500.82	.2489	19.200	13.987
#1	.0230	-.00200	3.753	-.00201	-.00553
#2	.0218	.00112	3.740	-.00153	-.00674
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**1.9065**	**.00058**	**.29643**	**-.0079**	**.00594**
Stddev	.0073	.00041	.00007	.0053	.00404
%RSD	.38526	69.657	.02358	67.70	68.053
#1	1.9013	.00087	.29648	-.0117	.00880
#2	1.9117	.00030	.29638	-.0041	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159677-D-3-A Acquired: 9/27/2019 2:52:45 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	i **.0931**	**.00030**	**.00326**	**.0006**
Stddev	.00092	.0548	.00002	.00103	.0006
%RSD	112.97	58.92	7.8168	31.715	103.1
#1	-.00016	i .1318	.00032	.00253	.0010
#2	-.00147	i .0543	.00028	.00399	.0002
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1775.9**	**562.83**	**38680.**	**4171.2**
Stddev	1.9	1.55	47.	9.0
%RSD	.10732	.27532	.12049	.21520
#1	1777.2	561.73	38713.	4177.5
#2	1774.5	563.92	38647.	4164.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	98.385%	104.98%	99.544%	101.25%
Range				

Sample Name: 480-159679-A-1-A Acquired: 9/27/2019 2:56:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.04779**	**-.00020**	**.10507**	**.09645**
Stddev	.00025	.00835	.00120	.00029	.00004
%RSD	85.931	17.468	591.10	.28049	.03807
#1	-.00012	.04188	-.00105	.10528	.09648
#2	-.00047	.05369	.00064	.10486	.09643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**139.66**	**.00026**	i **-.0055**	**.00020**
Stddev	.00004	.42	.00006	.0121	.00006
%RSD	272.27	.30234	21.027	221.8	27.944
#1	-.00001	139.95	.00022	i -.0140	.00016
#2	.00004	139.36	.00030	i .0031	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00220**	**.19527**	**3.3834**	**.00663**
Stddev	.00021	.00029	.00249	.0019	.00056
%RSD	105.86	13.188	1.2763	.05495	8.4715
#1	.00034	.00241	.19704	3.3847	.00703
#2	.00005	.00200	.19351	3.3821	.00624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-1-A Acquired: 9/27/2019 2:56:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**23.175**	**1.2737**	**-.00075**	**74.987**	**.00053**
Stddev	.007	.0001	.00001	.536	.00009
%RSD	.02837	.00558	.66544	.71434	17.346
#1	23.180	1.2738	-.00075	75.365	.00060
#2	23.171	1.2737	-.00076	74.608	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0345**	**.00056**	**24.91**	**-.00181**	**-.00519**
Stddev	.0006	.00018	.05	.00213	.00045
%RSD	1.642	31.965	.1880	117.27	8.6149
#1	.0341	.00068	24.88	-.00031	-.00487
#2	.0349	.00043	24.94	-.00331	-.00550
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**5.2169**	**-.00043**	**.21906**	**-.0005**	**.00039**
Stddev	.0264	.00061	.00130	.0054	.00063
%RSD	.50588	141.36	.59485	1151.	162.86
#1	5.2355	-.00000	.21998	-.0043	.00084
#2	5.1982	-.00086	.21814	.0034	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-1-A Acquired: 9/27/2019 2:56:33 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00073	i -.0196	-.00002	.00584	.0009
Stddev	.00290	.0057	.00010	.00226	.0010
%RSD	394.93	28.91	444.71	38.756	116.9
#1	-.00132	i -.0156	-.00009	.00744	.0002
#2	.00278	i -.0235	.00005	.00424	.0016
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1675.7	539.65	37350.	4116.9
Stddev	.6	.09	39.	13.8
%RSD	.03420	.01719	.10522	.33547
#1	1675.3	539.72	37322.	4107.2
#2	1676.1	539.59	37378.	4126.7
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.834%	100.66%	96.121%	99.937%
Range				

Sample Name: 480-159679-A-2-A Acquired: 9/27/2019 3:00:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.05474**	**-.00099**	**.10215**	**.07446**
Stddev	.00027	.00545	.00068	.00020	.00009
%RSD	50.518	9.9471	68.700	.19769	.12623
#1	-.00073	.05089	-.00147	.10229	.07452
#2	-.00035	.05859	-.00051	.10201	.07439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**149.26**	**.00034**	i **.0221**	**-.00045**
Stddev	.00000	.63	.00003	.0011	.00007
%RSD	20.895	.42229	8.2248	4.856	15.376
#1	-.00001	149.70	.00032	i .0228	-.00040
#2	-.00001	148.81	.00036	i .0213	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**-.00043**	**.04504**	**2.9818**	**.00524**
Stddev	.00004	.00035	.00086	.0112	.00099
%RSD	9.5352	81.057	1.9011	.37568	18.954
#1	.00037	-.00019	.04444	2.9897	.00454
#2	.00042	-.00068	.04565	2.9739	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-2-A Acquired: 9/27/2019 3:00:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**27.930**	**.05182**	**-.00060**	**79.547**	**-.00060**
Stddev	.067	.00012	.00026	.077	.00044
%RSD	.24060	.23115	43.646	.09706	74.046
#1	27.978	.05191	-.00042	79.602	-.00029
#2	27.883	.05174	-.00079	79.493	-.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0104**	**-.00036**	**32.04**	**-.00194**	**-.00612**
Stddev	.0002	.00037	.03	.00010	.00645
%RSD	1.705	103.76	.0811	5.0861	105.45
#1	.0105	-.00062	32.06	-.00187	-.01068
#2	.0102	-.00010	32.03	-.00200	-.00156
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.8230**	**-.00061**	**.20312**	**-.0006**	**.00054**
Stddev	.0246	.00267	.00056	.0044	.00027
%RSD	.51002	436.95	.27362	765.5	50.177
#1	4.8403	-.00250	.20351	-.0037	.00035
#2	4.8056	.00128	.20272	.0025	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-2-A Acquired: 9/27/2019 3:00:20 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	i **.0627**	**-.00035**	**.00222**	**.0009**
Stddev	.00411	.0619	.00004	.00096	.0007
%RSD	524.54	98.82	12.193	43.200	70.31
#1	.00212	i .0189	-.00032	.00154	.0005
#2	-.00369	i .1065	-.00038	.00290	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1671.2**	**542.45**	**37009.**	**4063.3**
Stddev	1.6	.12	54.	10.2
%RSD	.09443	.02124	.14577	.25054
#1	1670.0	542.53	36971.	4056.1
#2	1672.3	542.37	37047.	4070.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.583%	101.18%	95.244%	98.635%
Range				

Sample Name: 480-159679-A-3-A Acquired: 9/27/2019 3:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.10751**	**.00115**	**.09292**	**.07000**
Stddev	.00010	.00442	.00107	.00003	.00005
%RSD	18.079	4.1095	92.582	.03491	.06658
#1	-.00064	.10439	.00040	.09290	.06996
#2	-.00049	.11064	.00191	.09295	.07003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**135.15**	**.00025**	i **-.0045**	**-.00037**
Stddev	.00000	.10	.00005	.0005	.00003
%RSD	9.7326	.07582	21.419	12.16	8.3309
#1	-.00003	135.22	.00029	i -.0049	-.00035
#2	-.00003	135.07	.00021	i -.0041	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00021**	**.12078**	**3.2044**	**.00492**
Stddev	.00053	.00023	.00084	.0336	.00021
%RSD	559.91	108.84	.69697	1.0469	4.3618
#1	.00047	-.00037	.12138	3.2281	.00477
#2	-.00028	-.00005	.12019	3.1806	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-3-A Acquired: 9/27/2019 3:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**24.442**	**.65470**	**-.00049**	**92.587**	**.00033**
Stddev	.004	.00121	.00001	.467	.00039
%RSD	.01766	.18495	2.2196	.50414	118.52
#1	24.445	.65555	-.00050	92.257	.00060
#2	24.439	.65384	-.00048	92.917	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0218**	**-.00076**	**18.12**	**-.00133**	**-.00460**
Stddev	.0039	.00066	.03	.00381	.00370
%RSD	17.78	87.258	.1523	286.48	80.500
#1	.0191	-.00029	18.14	.00137	-.00198
#2	.0246	-.00123	18.10	-.00403	-.00722
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.8840**	**.00121**	**.26736**	**-.0036**	**.00136**
Stddev	.0111	.00048	.00157	.0072	.00044
%RSD	.22761	40.031	.58736	198.4	32.233
#1	4.8919	.00087	.26625	.0015	.00167
#2	4.8761	.00155	.26847	-.0087	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-3-A Acquired: 9/27/2019 3:04:08 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	i **-.0344**	**-.00021**	**.00059**	**.0001**
Stddev	.00170	.0475	.00035	.00205	.0002
%RSD	282.60	138.0	162.96	349.41	161.5
#1	.00060	i -.0680	-.00046	.00204	.0002
#2	-.00181	i -.0008	.00003	-.00086	-.0000
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1673.1**	**545.50**	**37366.**	**4078.4**
Stddev	2.1	.81	60.	7.1
%RSD	.12466	.14829	.16075	.17291
#1	1674.6	546.07	37408.	4083.4
#2	1671.6	544.93	37324.	4073.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.692%	101.75%	96.163%	99.002%
Range				

Sample Name: 480-159679-A-4-A Acquired: 9/27/2019 3:07:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**-.00092**	**-.00455**	**.10125**	**.07227**
Stddev	.00031	.00758	.00338	.00050	.00009
%RSD	87.587	823.53	74.157	.49126	.11973
#1	-.00013	-.00628	-.00694	.10160	.07221
#2	-.00057	.00444	-.00217	.10090	.07233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**154.90**	**.00031**	i **.0046**	**-.00035**
Stddev	.00002	.37	.00012	.0061	.00006
%RSD	54.564	.24121	37.844	132.8	16.602
#1	-.00005	154.63	.00023	i .0089	-.00031
#2	-.00002	155.16	.00040	i .0003	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**-.00071**	**.00848**	**3.4935**	**.00633**
Stddev	.00041	.00002	.00115	.0069	.00022
%RSD	474.66	2.9373	13.530	.19607	3.4756
#1	-.00038	-.00072	.00929	3.4886	.00617
#2	.00020	-.00070	.00767	3.4983	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-4-A Acquired: 9/27/2019 3:07:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**25.712**	**.02448**	**-.00077**	**52.122**	**-.00077**
Stddev	.017	.00006	.00041	.321	.00023
%RSD	.06474	.25420	52.899	.61639	29.989
#1	25.724	.02453	-.00106	51.895	-.00093
#2	25.700	.02444	-.00048	52.349	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0044**	**-.00016**	**26.32**	**-.00077**	**-.00932**
Stddev	.0038	.00055	.08	.00222	.00130
%RSD	84.97	336.74	.3142	287.10	13.945
#1	.0018	.00023	26.38	.00080	-.00840
#2	.0071	-.00055	26.26	-.00234	-.01024
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.9747**	**.00056**	**.20710**	**.0030**	**-.00021**
Stddev	.0285	.00042	.00116	.0055	.00004
%RSD	.57221	75.428	.56034	185.4	18.686
#1	4.9546	.00086	.20628	.0069	-.00024
#2	4.9948	.00026	.20792	-.0009	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159679-A-4-A Acquired: 9/27/2019 3:07:55 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	i **-.0252**	**-.00050**	**-.00089**	**.0004**
Stddev	.00054	.0477	.00058	.00008	.0000
%RSD	90.019	189.1	116.30	8.9736	.8205
#1	.00022	i .0085	-.00091	-.00084	.0004
#2	.00098	i -.0589	-.00009	-.00095	.0004
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1678.0**	**541.54**	**37198.**	**4097.9**
Stddev	.2	1.60	60.	17.6
%RSD	.01283	.29569	.16178	.43005
#1	1677.8	540.41	37156.	4110.4
#2	1678.1	542.67	37241.	4085.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	92.960%	101.01%	95.731%	99.476%
Range				

Sample Name: 480-159674-D-1-A Acquired: 9/27/2019 3:11:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.08473**	**-.00043**	**.01652**	**.13879**
Stddev	.00034	.00808	.00021	.00065	.00030
%RSD	103.03	9.5347	48.829	3.9269	.21783
#1	-.00057	.09044	-.00028	.01698	.13858
#2	-.00009	.07902	-.00058	.01607	.13900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**108.38**	**.00029**	i **.0063**	**-.00023**
Stddev	.00014	.43	.00002	.0071	.00010
%RSD	442.50	.39731	8.4579	111.5	44.870
#1	.00007	108.69	.00027	i .0113	-.00015
#2	-.00013	108.08	.00031	i .0013	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00011**	**.09634**	**1.1531**	**.00473**
Stddev	.00021	.00004	.00172	.0082	.00084
%RSD	44.026	34.301	1.7834	.71467	17.751
#1	.00032	.00009	.09755	1.1472	.00533
#2	.00061	.00014	.09512	1.1589	.00414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159674-D-1-A Acquired: 9/27/2019 3:11:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**15.248**	**.03583**	**-.00031**	**13.862**	**-.00046**
Stddev	.021	.00010	.00008	.035	.00016
%RSD	.14047	.26704	26.029	.25481	34.899
#1	15.263	.03590	-.00026	13.887	-.00058
#2	15.233	.03576	-.00037	13.837	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0065**	**-.00116**	**9.431**	**-.00256**	**-.00531**
Stddev	.0019	.00292	.049	.00282	.00233
%RSD	28.90	252.76	.5171	110.06	43.811
#1	.0079	-.00322	9.465	-.00455	-.00696
#2	.0052	.00091	9.396	-.00057	-.00367
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.6123**	**-.00008**	**.59775**	**.0062**	**.00131**
Stddev	.0124	.00052	.00112	.0086	.00030
%RSD	.34454	684.11	.18761	140.0	23.142
#1	3.6211	.00029	.59854	.0123	.00109
#2	3.6035	-.00044	.59696	.0001	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159674-D-1-A Acquired: 9/27/2019 3:11:42 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	i **-.0041**	**.00024**	**.00133**	**.0004**
Stddev	.00145	.0176	.00066	.00109	.0002
%RSD	367.53	431.0	279.04	81.422	57.06
#1	-.00142	i -.0166	.00071	.00210	.0003
#2	.00063	i .0084	-.00023	.00057	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1726.6**	**550.78**	**37975.**	**4121.6**
Stddev	.7	.41	6.	2.3
%RSD	.04240	.07436	.01506	.05519
#1	1726.0	551.07	37980.	4120.0
#2	1727.1	550.49	37971.	4123.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	95.652%	102.73%	97.731%	100.05%
Range				

Sample Name: 480-159674-D-2-A Acquired: 9/27/2019 3:15:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.03554**	**.00323**	**.02408**	**.10490**
Stddev	.00004	.00890	.00008	.00006	.00011
%RSD	354.42	25.046	2.4082	.23952	.10723
#1	.00002	.04184	.00329	.02404	.10498
#2	-.00004	.02925	.00318	.02412	.10482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**75.574**	**-.00006**	i **-.0050**	**-.00012**
Stddev	.00002	.027	.00014	.0010	.00032
%RSD	68.132	.03553	219.31	18.91	265.94
#1	-.00002	75.593	-.00017	i -.0057	-.00034
#2	-.00005	75.555	.00004	i -.0044	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.00019**	**1.7175**	**1.2056**	**.00424**
Stddev	.00010	.00011	.0109	.0053	.00094
%RSD	27.011	60.790	.63200	.44120	22.129
#1	.00043	.00027	1.7252	1.2018	.00491
#2	.00029	.00011	1.7098	1.2093	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159674-D-2-A Acquired: 9/27/2019 3:15:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**8.9604**	**1.0495**	**-.00063**	**11.707**	**.00007**
Stddev	.0053	.0025	.00001	.001	.00027
%RSD	.05859	.23523	.91870	.00872	384.91
#1	8.9641	1.0513	-.00063	11.707	-.00012
#2	8.9567	1.0478	-.00063	11.708	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0224**	**-.00090**	**5.377**	**-.00067**	**-.00792**
Stddev	.0015	.00056	.011	.00379	.00294
%RSD	6.532	61.765	.1965	567.21	37.113
#1	.0235	-.00051	5.370	.00201	-.00584
#2	.0214	-.00130	5.385	-.00334	-.01000
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**3.1651**	**-.00026**	**.50403**	**.0154**	**-.00051**
Stddev	.0110	.00044	.00011	.0095	.00019
%RSD	.34877	173.65	.02133	61.50	37.390
#1	3.1573	-.00057	.50395	.0221	-.00037
#2	3.1729	.00006	.50410	.0087	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159674-D-2-A Acquired: 9/27/2019 3:15:30 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	i **-.1145**	**.00022**	**.00088**	**.0015**
Stddev	.00019	.0875	.00033	.00106	.0020
%RSD	220.91	76.37	150.13	121.36	133.2
#1	.00021	i -.0527	.00046	.00012	.0029
#2	-.00005	i -.1764	-.00001	.00163	.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1758.3**	**555.18**	**38321.**	**4127.4**
Stddev	2.6	1.59	14.	3.7
%RSD	.14580	.28564	.03587	.08905
#1	1760.2	556.30	38311.	4130.0
#2	1756.5	554.05	38331.	4124.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.414%	103.55%	98.620%	100.19%
Range				

Sample Name: 480-159692-I-1-A Acquired: 9/27/2019 3:19:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6631**	**.18764**	F **23.227**	**.27535**
Stddev	.00038	.0333	.00515	.001	.00066
%RSD	3827.0	1.2495	2.7446	.00615	.23938
#1	.00028	2.6395	.18400	23.228	.27489
#2	-.00026	2.6866	.19128	23.226	.27582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				18.000	
Low Limit				-.02000	

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	F **926.29**	**-.00058**	i **.0245**	**.02775**
Stddev	.00004	4.07	.00024	.0001	.00018
%RSD	182.72	.43951	40.720	.5096	.63360
#1	-.00005	929.17	-.00041	i .0246	.02762
#2	.00001	923.41	-.00075	i .0244	.02787
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00			
Low Limit		-.50000			

Elem	Cr2677	Cu3273	Fe2714	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	271.441 {124}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.48761**	**-.00267**	**117.57**	F **1194.5**	**.35563**
Stddev	.00143	.00023	.55	8.9	.00007
%RSD	.29349	8.5948	.46772	.74468	.02108
#1	.48659	-.00251	117.96	1200.8	.35569
#2	.48862	-.00284	117.19	1188.2	.35558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				540.00	
Low Limit				-.50000	

Sample Name: 480-159692-I-1-A Acquired: 9/27/2019 3:19:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**305.77**	**4.3894**	**.00400**	F **3506.1**	**.12885**
Stddev	.40	.0020	.00008	5.3	.00005
%RSD	.12987	.04535	2.0396	.15021	.04159
#1	305.49	4.3880	.00395	3509.8	.12889
#2	306.06	4.3908	.00406	3502.4	.12881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit				900.00	
Low Limit				-1.0000	

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.863**	**.00171**	**82.82**	**.00026**	**.00139**
Stddev	.014	.00084	.14	.00337	.00282
%RSD	.4973	48.826	.1653	1294.7	202.50
#1	2.873	.00230	82.91	-.00212	.00339
#2	2.853	.00112	82.72	.00264	-.00060
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	F **56.533**	**.03101**	**6.0607**	**.0501**	**.04628**
Stddev	.110	.00068	.0095	.0143	.00108
%RSD	.19388	2.1869	.15735	28.52	2.3399
#1	56.610	.03149	6.0539	.0400	.04705
#2	56.455	.03053	6.0674	.0602	.04552
Check ?	Chk Fail	Chk Pass	Chk Pass	None	Chk Pass
High Limit	45.000				
Low Limit	-.50000				

Sample Name: 480-159692-I-1-A Acquired: 9/27/2019 3:19:17 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00545**	i **-.3223**	**.05153**	**.07041**	**.0462**
Stddev	.00224	.1421	.00055	.00012	.0009
%RSD	41.137	44.10	1.0586	.16606	1.920
#1	-.00704	i -.2218	.05114	.07049	.0456
#2	-.00387	i -.4228	.05192	.07033	.0469
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1166.8**	**430.43**	**28681.**	**3675.9**
Stddev	1.6	.81	13.	6.1
%RSD	.13968	.18720	.04617	.16498
#1	1167.9	431.00	28691.	3671.7
#2	1165.6	429.86	28672.	3680.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	64.641%	80.286%	73.813%	89.233%
Range				

Sample Name: 480-159692-I-1-A@5 Acquired: 9/27/2019 3:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.51680**	**.03700**	**4.7343**	**.05555**
Stddev	.00006	.00348	.00326	.0025	.00015
%RSD	47.697	.67317	8.8174	.05374	.26837
#1	.00008	.51926	.03931	4.7325	.05566
#2	.00017	.51434	.03470	4.7361	.05545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**191.49**	**.00013**	i **-.0028**	**.00526**
Stddev	.00006	.74	.00014	.0032	.00006
%RSD	182.18	.38415	106.24	114.9	1.1145
#1	.00001	190.97	.00003	i -.0050	.00530
#2	-.00008	192.01	.00023	i -.0005	.00522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.09790**	**-.00086**	**24.275**	**235.15**	**.06766**
Stddev	.00013	.00012	.009	.14	.00095
%RSD	.12910	14.289	.03546	.05770	1.4087
#1	.09799	-.00077	24.269	235.25	.06834
#2	.09781	-.00094	24.281	235.05	.06699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159692-I-1-A@5 Acquired: 9/27/2019 3:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**63.486**	**.89153**	**-.00071**	**669.17**	**.02473**
Stddev	.074	.00115	.00015	.10	.00011
%RSD	.11658	.12946	21.381	.01455	.44642
#1	63.538	.89235	-.00082	669.24	.02480
#2	63.433	.89071	-.00061	669.10	.02465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.5944**	**.00038**	**15.98**	**-.00383**	**-.01226**
Stddev	.0040	.00171	.05	.00230	.00060
%RSD	.6765	455.97	.3037	60.129	4.8674
#1	.5973	.00159	15.94	-.00546	-.01184
#2	.5916	-.00083	16.01	-.00220	-.01269
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**11.078**	**.00490**	**1.2225**	**.0129**	**.00879**
Stddev	.000	.00008	.0015	.0022	.00003
%RSD	.00227	1.6586	.12134	17.30	.39723
#1	11.078	.00496	1.2215	.0113	.00881
#2	11.078	.00485	1.2236	.0144	.00876
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 480-159692-I-1-A@5 Acquired: 9/27/2019 3:23:23 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	i **-.0239**	**.00966**	**.01305**	**.0094**
Stddev	.00028	.0067	.00033	.00111	.0010
%RSD	26.248	27.80	3.4349	8.5022	10.38
#1	-.00087	i -.0286	.00943	.01226	.0101
#2	-.00127	i -.0192	.00990	.01383	.0087
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1469.7**	**495.45**	**33964.**	**3996.6**
Stddev	.3	1.57	85.	10.3
%RSD	.01787	.31662	.24985	.25881
#1	1469.9	496.56	33904.	4003.9
#2	1469.5	494.34	34024.	3989.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	81.425%	92.414%	87.408%	97.015%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 3:27:14 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99955**	**51.162**	**.97108**	**.99754**	**1.0278**	**1.0040**	**51.006**
Stddev	.00110	.118	.00840	.00191	.0018	.0025	.065
%RSD	.11041	.23098	.86464	.19119	.17436	.24617	.12695
#1	1.0003	51.245	.96514	.99889	1.0291	1.0058	51.052
#2	.99877	51.078	.97702	.99619	1.0265	1.0023	50.960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97826**	i **1.018**	**1.0106**	**1.0192**	**.98057**	**50.519**	**49.482**
Stddev	.00197	.003	.0006	.0004	.00283	.103	.075
%RSD	.20127	.3098	.06063	.04165	.28828	.20342	.15257
#1	.97965	i 1.016	1.0110	1.0195	.97858	50.447	49.535
#2	.97687	i 1.020	1.0101	1.0189	.98257	50.592	49.428
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0002**	**50.469**	**1.0104**	**.98559**	**50.179**	**1.0015**	**25.87**
Stddev	.0001	.015	.0005	.00064	.077	.0008	.03
%RSD	.01173	.02902	.05052	.06508	.15296	.08263	.1101
#1	1.0003	50.479	1.0107	.98605	50.233	1.0021	25.85
#2	1.0001	50.458	1.0100	.98514	50.125	1.0009	25.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCV-5520066 Acquired: 9/27/2019 3:27:14 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0023**	**23.95**	**.97985**	**.94819**	F **14.414**	**.99874**	**1.0137**
Stddev	.0011	.09	.00766	.00159	.311	.00167	.0025
%RSD	.10575	.3730	.78189	.16770	2.1608	.16748	.24380
#1	1.0015	24.02	.98526	.94706	14.634	.99992	1.0154
#2	1.0030	23.89	.97443	.94931	14.194	.99756	1.0119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					10.000		
Range					10.000%		

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.9910**	**.99298**	**1.0039**	i **2.454**	**1.0179**	**1.0471**	**.9655**
Stddev	.0018	.00029	.0042	.029	.0031	.0013	.0010
%RSD	.1846	.02968	.42031	1.195	.30724	.12811	.1037
#1	.9923	.99278	1.0068	i 2.474	1.0157	1.0481	.9662
#2	.9897	.99319	1.0009	i 2.433	1.0201	1.0462	.9648
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1656.6**	**552.76**	**37265.**	**4094.8**
Stddev	1.8	1.19	1.	10.1
%RSD	.11151	.21615	.00187	.24571
#1	1655.3	551.92	37265.	4087.7
#2	1657.9	553.61	37264.	4101.9

Sample Name: CCB-5508960 Acquired: 9/27/2019 3:30:54 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00141	-.00062	.00744	.00009	.00008	-.00080	-.00016
Stddev	.00021	.00633	.00110	.00025	.00001	.00004	.00004	.00002
%RSD	103.56	449.19	175.95	3.3330	12.050	52.087	5.4578	14.467
#1	.00005	-.00589	.00015	.00761	.00009	.00011	-.00083	-.00015
#2	.00034	.00307	-.00140	.00726	.00008	.00005	-.00077	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0028	-.00005	.00005	.00026	.00076	.09348	.00035	.00021
Stddev	.0053	.00003	.00005	.00001	.00860	.00934	.00039	.00563
%RSD	191.5	50.329	116.02	3.0910	1134.3	9.9897	110.30	2738.8
#1	i .0065	-.00007	.00001	.00025	-.00532	.08687	.00062	.00419
#2	i -.0010	-.00003	.00009	.00026	.00684	.10008	.00008	-.00378
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00103	.14809	.00017	.0051	-.00114	-.0055	.00008
Stddev	.00011	.00067	.00409	.00014	.0030	.00064	.0083	.00236
%RSD	99.210	65.646	2.7605	81.352	58.92	56.298	151.9	3071.7
#1	-.00003	.00055	.15099	.00027	.0072	-.00069	.0004	.00175
#2	-.00019	.00150	.14520	.00007	.0030	-.00160	-.0113	-.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 3:30:54 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00296**	**.27636**	**.00050**	**.00004**	**.0004**	**.00016**	**-.00035**	i **.0159**
Stddev	.00502	.01517	.00093	.00003	.0105	.00058	.00045	.0397
%RSD	169.63	5.4897	185.35	69.873	2791.	363.54	126.66	249.1
#1	-.00650	.28709	.00116	.00007	.0078	-.00025	-.00067	i .0440
#2	.00059	.26563	-.00016	.00002	-.0070	.00057	-.00004	i -.0121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00025**	**.00088**	**.0004**
Stddev	.00017	.00156	.0002
%RSD	68.036	177.72	52.86
#1	-.00037	.00198	.0002
#2	-.00013	-.00023	.0005
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1842.0**	**579.88**	**39819.**	**4155.8**
Stddev	1.9	.62	219.	.2
%RSD	.10343	.10679	.54997	.00391
#1	1843.4	579.44	39974.	4155.9
#2	1840.7	580.32	39664.	4155.6

Sample Name: CCVL-5514926 Acquired: 9/27/2019 3:34:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00598**	**.20976**	**.01221**	W **.02628**	**.00214**	**.00213**	**.53095**
Stddev	.00040	.00298	.00156	.00029	.00000	.00003	.00326
%RSD	6.6618	1.4216	12.770	1.1142	.06967	1.2336	.61424
#1	.00570	.20765	.01331	.02649	.00214	.00215	.53326
#2	.00627	.21187	.01110	.02607	.00214	.00211	.52864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Warn	Chk Pass	Chk Pass	Chk Pass
Value				.02000			
Range				30.000%			

Elem	Cd2288	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00207**	i **.0099**	**.00389**	**.00430**	**.00946**	**.05196**	**.55766**
Stddev	.00000	.0083	.00021	.00022	.00002	.00063	.03742
%RSD	.04292	83.57	5.3303	5.2065	.20577	1.2032	6.7093
#1	.00207	i .0157	.00374	.00414	.00948	.05240	.58412
#2	.00207	i .0040	.00404	.00445	.00945	.05152	.53121
Check ?	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Li6707	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2136
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02990**	**.21621**	**.00317**	**.00970**	**1.1035**	**.01009**	**-.0296**
Stddev	.00102	.00132	.00005	.00016	.0052	.00017	.0017
%RSD	3.4112	.60961	1.5937	1.6277	.46695	1.6493	5.880
#1	.03062	.21528	.00314	.00958	1.1072	.00997	-.0284
#2	.02918	.21715	.00321	.00981	1.0999	.01021	-.0309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None
Value							
Range							

Sample Name: CCVL-5514926 Acquired: 9/27/2019 3:34:46 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Pb2203	S_1820	Sb2068	Se1960	Si2881	Sn1899	Sr4077
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01006**	**.1952**	**.02122**	**.02458**	**.61733**	**.01055**	**.00490**
Stddev	.00003	.0037	.00010	.00400	.01415	.00147	.00000
%RSD	.26882	1.917	.46334	16.286	2.2929	13.959	.02393
#1	.01004	.1925	.02115	.02741	.62733	.00951	.00490
#2	.01007	.1978	.02129	.02175	.60732	.01159	.00490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Th2837	Ti3349	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.0003**	**.00510**	**.01816**	i **.1631**	**.00478**	**.01114**	**.0014**
Stddev	.0015	.00051	.00050	.0249	.00011	.00028	.0004
%RSD	468.0	10.084	2.7791	15.29	2.3164	2.5280	26.01
#1	.0014	.00546	.01781	i .1807	.00470	.01134	.0016
#2	-.0007	.00474	.01852	i .1455	.00485	.01094	.0011
Check ?	None	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value							
Range							

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1840.6**	**571.41**	**39613.**	**4159.9**
Stddev	1.9	2.24	132.	1.9
%RSD	.10588	.39238	.33241	.04632
#1	1842.0	573.00	39707.	4161.3
#2	1839.2	569.83	39520.	4158.6

Sample Name: 159315-10 tot Acquired: 9/27/2019 3:38:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**-.00419**	**-.00132**	**.46560**	**.06642**
Stddev	.00008	.00208	.00545	.00027	.00014
%RSD	14.352	49.584	413.90	.05824	.20372
#1	-.00048	-.00272	-.00517	.46541	.06651
#2	-.00059	-.00566	.00254	.46580	.06632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**83.936**	**-.00018**	i **.0155**	**-.00012**
Stddev	.00003	.607	.00008	.0008	.00022
%RSD	104.64	.72358	42.474	4.898	190.94
#1	-.00001	84.366	-.00012	i .0160	.00004
#2	-.00005	83.507	-.00023	i .0150	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00253**	**-.00693**	**9.3670**	**.16092**
Stddev	.00026	.00018	.00282	.0170	.00154
%RSD	72.503	7.1554	40.731	.18137	.95459
#1	-.00053	.00240	-.00893	9.3790	.16201
#2	-.00017	.00266	-.00494	9.3550	.15983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159315-10 tot Acquired: 9/27/2019 3:38:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**49.959**	**.10953**	**-.00009**	**98.231**	**.00065**
Stddev	.167	.00036	.00026	.870	.00066
%RSD	.33479	.32950	300.99	.88545	101.78
#1	50.077	.10978	.00010	98.846	.00112
#2	49.840	.10927	-.00027	97.615	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0153**	**-.00044**	**28.69**	**-.00288**	**-.01083**
Stddev	.0004	.00052	.01	.00058	.00333
%RSD	2.836	119.18	.0501	19.952	30.783
#1	-.0157	-.00081	28.68	-.00248	-.01318
#2	-.0150	-.00007	28.70	-.00329	-.00847
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.0682**	**-.00090**	F **10.882**	**-.0031**	**-.00015**
Stddev	.0230	.00134	.075	.0172	.00027
%RSD	.37938	148.79	.69322	557.2	180.10
#1	6.0845	.00005	10.936	.0091	-.00034
#2	6.0520	-.00185	10.829	-.0152	.00004
Check ?	Chk Pass	Chk Pass	Chk Fail	None	Chk Pass
High Limit			9.0000		
Low Limit			-.00500		

Sample Name: 159315-10 tot Acquired: 9/27/2019 3:38:37 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	i **.0981**	**-.00037**	**.02028**	**.0010**
Stddev	.00097	.0383	.00018	.00081	.0003
%RSD	1145.6	39.09	46.861	4.0192	29.27
#1	-.00060	i .0710	-.00025	.02085	.0011
#2	.00077	i .1252	-.00050	.01970	.0008
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1732.0**	**569.36**	**38419.**	**4159.0**
Stddev	5.5	3.57	60.	10.0
%RSD	.31808	.62617	.15745	.23973
#1	1735.9	571.88	38376.	4152.0
#2	1728.1	566.84	38462.	4166.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	95.954%	106.20%	98.872%	100.96%
Range				

Sample Name: 159315-4 tot Acquired: 9/27/2019 3:42:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.08539**	**-.00153**	**.05672**	**.08807**
Stddev	.00025	.01875	.00088	.00048	.00026
%RSD	197.85	21.959	57.573	.83942	.29671
#1	.00005	.07214	-.00215	.05639	.08825
#2	-.00030	.09865	-.00090	.05706	.08788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**72.896**	**-.00020**	i **.0271**	**-.00015**
Stddev	.00000	.277	.00010	.0119	.00010
%RSD	10.823	.37959	50.846	43.89	67.226
#1	-.00002	73.092	-.00013	i .0187	-.00022
#2	-.00002	72.700	-.00027	i .0355	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00020**	**.06365**	**2.0562**	**.02696**
Stddev	.00044	.00000	.00111	.0162	.00024
%RSD	206.46	1.2419	1.7470	.78523	.89425
#1	-.00010	.00020	.06443	2.0448	.02713
#2	.00052	.00020	.06286	2.0676	.02679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159315-4 tot Acquired: 9/27/2019 3:42:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**84.391**	**.03717**	**.00026**	**23.806**	**.00009**
Stddev	.110	.00020	.00011	.063	.00012
%RSD	.12988	.52954	41.877	.26339	135.19
#1	84.469	.03731	.00034	23.851	.00000
#2	84.314	.03703	.00018	23.762	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0025**	**.00041**	**10.47**	**-.00317**	**-.00466**
Stddev	.0020	.00203	.00	.00010	.00285
%RSD	78.94	495.85	.0082	3.0192	61.120
#1	.0011	-.00102	10.47	-.00310	-.00265
#2	.0039	.00184	10.47	-.00324	-.00668
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.3029**	**.00102**	**1.1717**	**.0080**	**.00167**
Stddev	.0240	.00021	.0014	.0049	.00019
%RSD	.25839	20.157	.11719	60.92	11.618
#1	9.3199	.00088	1.1727	.0046	.00181
#2	9.2859	.00117	1.1708	.0115	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159315-4 tot Acquired: 9/27/2019 3:42:29 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00041	i .0581	.00015	.00099	-.0001
Stddev	.00126	.1290	.00004	.00163	.0014
%RSD	309.64	222.1	28.087	165.01	2163.
#1	-.00048	i .1493	.00018	.00214	-.0011
#2	.00130	i -.0331	.00012	-.00016	.0009
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1754.3	564.80	38521.	4139.8
Stddev	8.0	3.07	31.	5.3
%RSD	.45811	.54373	.07959	.12782
#1	1760.0	566.97	38542.	4136.1
#2	1748.6	562.63	38499.	4143.5
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	97.189%	105.35%	99.134%	100.49%
Range				

Sample Name: 159315-8 tot Acquired: 9/27/2019 3:46:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.07457**	**.03296**	**.03759**	**.11341**
Stddev	.00001	.00834	.00153	.00054	.00001
%RSD	4.6733	11.184	4.6381	1.4257	.00729
#1	-.00026	.08047	.03188	.03721	.11342
#2	-.00028	.06868	.03404	.03797	.11341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**99.034**	**-.00012**	i **.0245**	**.00049**
Stddev	.00009	.478	.00008	.0025	.00033
%RSD	532.94	.48248	66.856	10.30	68.170
#1	.00008	99.372	-.00006	i .0227	.00073
#2	-.00005	98.697	-.00017	i .0263	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00251**	**2.3053**	**4.7415**	**.03339**
Stddev	.00014	.00049	.0704	.0296	.00022
%RSD	25.426	19.413	3.0560	.62355	.66170
#1	-.00064	.00217	2.3551	4.7624	.03355
#2	-.00044	.00286	2.2555	4.7206	.03324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159315-8 tot Acquired: 9/27/2019 3:46:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**61.784**	**.23486**	**.00056**	**29.149**	**.00108**
Stddev	.187	.00070	.00034	.038	.00062
%RSD	.30226	.30007	60.405	.12988	58.081
#1	61.652	.23437	.00080	29.122	.00063
#2	61.916	.23536	.00032	29.176	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0233**	**-.00088**	**9.501**	**-.00499**	**-.00369**
Stddev	.0009	.00033	.000	.00058	.00159
%RSD	3.688	36.874	.0047	11.553	42.966
#1	.0239	-.00111	9.501	-.00458	-.00481
#2	.0227	-.00065	9.501	-.00540	-.00257
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**9.1819**	**-.00003**	**1.0904**	**.0012**	**-.00000**
Stddev	.0178	.00209	.0002	.0022	.00007
%RSD	.19340	7515.2	.01782	184.5	1406.3
#1	9.1945	-.00150	1.0906	.0027	-.00005
#2	9.1693	.00145	1.0903	-.0004	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159315-8 tot Acquired: 9/27/2019 3:46:16 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	i **.0369**	**.00564**	**.01125**	**.0013**
Stddev	.00040	.0273	.00031	.00085	.0004
%RSD	1636.2	73.79	5.5053	7.5174	32.10
#1	-.00026	i .0562	.00586	.01184	.0016
#2	.00031	i .0177	.00543	.01065	.0010
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1745.1**	**562.98**	**38385.**	**4161.4**
Stddev	8.2	1.73	135.	4.6
%RSD	.46803	.30653	.35248	.11119
#1	1750.9	564.20	38481.	4164.7
#2	1739.3	561.76	38290.	4158.1
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	96.680%	105.01%	98.786%	101.02%
Range				

Sample Name: 159347-1 tot Acquired: 9/27/2019 3:50:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.02923**	**-.00245**	**.06595**	**.05874**
Stddev	.00021	.00588	.00010	.00024	.00002
%RSD	39.884	20.115	4.2058	.36986	.03310
#1	-.00066	.02507	-.00252	.06578	.05875
#2	-.00037	.03338	-.00238	.06612	.05872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**168.51**	**-.00007**	i **-.0016**	**.00020**
Stddev	.00007	.69	.00006	.0040	.00002
%RSD	270.17	.40703	84.231	253.5	11.752
#1	-.00002	168.99	-.00003	i .0013	.00018
#2	.00007	168.02	-.00012	i -.0044	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.16166**	**.00163**	**1.1169**	**11.993**	**.02661**
Stddev	.00103	.00029	.0338	.037	.00074
%RSD	.63742	17.972	3.0224	.31174	2.7776
#1	.16239	.00183	1.1407	12.020	.02609
#2	.16094	.00142	1.0930	11.967	.02714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159347-1 tot Acquired: 9/27/2019 3:50:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**110.59**	**.13450**	**.01213**	**281.44**	**.01541**
Stddev	.17	.00022	.00106	.24	.00041
%RSD	.15150	.16533	8.7564	.08441	2.6521
#1	110.71	.13434	.01288	281.61	.01570
#2	110.47	.13465	.01138	281.27	.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0378**	**.00007**	F **178.3**	**-.00264**	**-.01426**
Stddev	.0040	.00153	.5	.00194	.00554
%RSD	10.61	2280.8	.2936	73.446	38.865
#1	.0350	-.00102	177.9	-.00127	-.01817
#2	.0407	.00115	178.6	-.00401	-.01034
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**6.4559**	**.00107**	**1.9700**	**.0015**	**.00051**
Stddev	.0187	.00105	.0015	.0114	.00024
%RSD	.29036	98.475	.07513	740.3	48.205
#1	6.4692	.00032	1.9689	.0096	.00033
#2	6.4427	.00181	1.9710	-.0065	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159347-1 tot Acquired: 9/27/2019 3:50:03 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	i **-.0371**	**-.00037**	**.11000**	**.0013**
Stddev	.00047	.1232	.00003	.00036	.0002
%RSD	501.85	332.3	8.1798	.32540	12.20
#1	.00042	i -.1242	-.00039	.10974	.0014
#2	-.00024	i .0500	-.00035	.11025	.0012
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1610.1**	**542.85**	**36433.**	**4065.1**
Stddev	5.4	4.68	95.	14.7
%RSD	.33535	.86295	.26197	.36044
#1	1613.9	546.17	36501.	4075.5
#2	1606.2	539.54	36366.	4054.8
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.198%	101.26%	93.762%	98.680%
Range				

Sample Name: 159347-2 tot Acquired: 9/27/2019 3:53:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.01423**	**-.00200**	**.05532**	**.06101**
Stddev	.00045	.00666	.00306	.00036	.00007
%RSD	89.494	46.799	153.20	.64539	.11763
#1	-.00019	.01894	.00017	.05557	.06106
#2	-.00083	.00952	-.00416	.05507	.06096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**194.81**	**-.00002**	i **.0199**	**.00021**
Stddev	.00002	1.09	.00005	.0118	.00010
%RSD	30.672	.55942	233.30	59.17	48.507
#1	-.00007	195.58	.00001	i .0116	.00028
#2	-.00005	194.04	-.00006	i .0283	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.17959**	**.00090**	**1.2261**	**10.801**	**.01904**
Stddev	.00177	.00015	.0436	.047	.00048
%RSD	.98679	16.298	3.5591	.43707	2.4996
#1	.17833	.00080	1.2569	10.834	.01938
#2	.18084	.00100	1.1952	10.767	.01871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159347-2 tot Acquired: 9/27/2019 3:53:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**121.57**	**.34951**	**.02484**	**249.30**	**.02743**
Stddev	.07	.00032	.00196	1.14	.00018
%RSD	.05684	.09289	7.8729	.45776	.66194
#1	121.62	.34974	.02622	250.11	.02756
#2	121.52	.34929	.02346	248.50	.02730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0005**	**.00136**	F **224.2**	**-.00446**	**-.01493**
Stddev	.0009	.00150	.5	.00120	.00097
%RSD	170.4	110.46	.2015	27.011	6.4898
#1	-.0011	.00241	224.5	-.00361	-.01425
#2	.0001	.00030	223.9	-.00531	-.01562
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.7181**	**-.00054**	**1.7168**	**-.0026**	**-.00019**
Stddev	.0005	.00233	.0053	.0002	.00028
%RSD	.01908	434.04	.31185	9.086	151.59
#1	2.7177	-.00219	1.7206	-.0028	-.00038
#2	2.7184	.00111	1.7130	-.0025	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159347-2 tot Acquired: 9/27/2019 3:53:56 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	i **.0230**	**.00034**	**.01970**	**.0006**
Stddev	.00181	.1624	.00053	.00098	.0011
%RSD	93.441	705.9	156.29	4.9981	185.5
#1	.00066	i -.0919	-.00004	.02039	-.0002
#2	.00322	i .1379	.00071	.01900	.0014
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1603.0**	**536.33**	**36362.**	**4040.8**
Stddev	5.4	.62	145.	13.5
%RSD	.33759	.11570	.39784	.33439
#1	1606.9	536.76	36464.	4031.3
#2	1599.2	535.89	36260.	4050.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.809%	100.04%	93.579%	98.090%
Range				

Sample Name: 159350-3 tot Acquired: 9/27/2019 3:57:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**1.6599**	**.02634**	**.07974**	**.04831**
Stddev	.00031	.0276	.00216	.00052	.00006
%RSD	49.216	1.6602	8.2098	.64598	.12010
#1	-.00084	1.6794	.02787	.07938	.04827
#2	-.00041	1.6404	.02481	.08011	.04835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**196.97**	**-.00014**	i **.0211**	**-.00033**
Stddev	.00011	.33	.00005	.0135	.00004
%RSD	104.71	.16823	38.186	64.05	10.523
#1	-.00003	197.21	-.00017	i .0306	-.00031
#2	-.00018	196.74	-.00010	i .0115	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**-.00074**	**.04448**	**18.254**	**.00355**
Stddev	.00024	.00024	.00242	.062	.00039
%RSD	34.076	31.880	5.4474	.34081	10.937
#1	-.00052	-.00057	.04277	18.210	.00383
#2	-.00086	-.00090	.04620	18.298	.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159350-3 tot Acquired: 9/27/2019 3:57:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.01929**	**-.00045**	**.09020**	**239.15**	**.01388**
Stddev	.00041	.00001	.00888	1.00	.00009
%RSD	2.1162	1.9018	9.8472	.42003	.63524
#1	.01958	-.00046	.09649	239.86	.01395
#2	.01900	-.00045	.08392	238.44	.01382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0553**	**-.00089**	**8.798**	**-.00508**	**-.00404**
Stddev	.0039	.00018	.068	.00196	.00260
%RSD	6.974	20.154	.7691	38.674	64.332
#1	.0580	-.00077	8.846	-.00369	-.00588
#2	.0526	-.00102	8.750	-.00646	-.00220
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**4.6606**	**-.00003**	**1.6726**	**.0033**	**.00060**
Stddev	.0446	.00009	.0008	.0035	.00016
%RSD	.95743	323.18	.04662	108.2	27.240
#1	4.6921	-.00009	1.6731	.0057	.00071
#2	4.6290	.00004	1.6720	.0008	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159350-3 tot Acquired: 9/27/2019 3:57:48 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00121	i .0954	.00237	.00142	.0015
Stddev	.00113	.1117	.00019	.00046	.0022
%RSD	93.258	117.0	8.1805	32.209	152.4
#1	.00041	i .1744	.00223	.00109	-.0001
#2	.00200	i .0165	.00251	.00174	.0030
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1624.2	547.10	36977.	4119.0
Stddev	5.9	2.95	42.	10.7
%RSD	.36556	.53898	.11437	.26011
#1	1628.4	549.18	37007.	4126.6
#2	1620.0	545.01	36947.	4111.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	89.982%	102.05%	95.162%	99.988%
Range				

Sample Name: 159349-3 tot Acquired: 9/27/2019 4:01:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00103**	**.00423**	**.05494**	**.06100**
Stddev	.00001	.00756	.00133	.00004	.00002
%RSD	4.8582	733.80	31.467	.06502	.03618
#1	-.00026	-.00638	.00517	.05496	.06102
#2	-.00024	.00431	.00329	.05491	.06099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**194.02**	**-.00012**	i **.0276**	**.00017**
Stddev	.00002	.96	.00003	.0074	.00031
%RSD	19.291	.49622	27.531	26.77	178.97
#1	-.00010	194.70	-.00010	i .0328	.00039
#2	-.00008	193.34	-.00014	i .0224	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.17729**	**.00086**	**1.2279**	**10.856**	**.01954**
Stddev	.00026	.00031	.0420	.030	.00016
%RSD	.14774	35.695	3.4247	.27516	.80240
#1	.17747	.00107	1.2576	10.835	.01943
#2	.17710	.00064	1.1982	10.877	.01965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: 159349-3 tot Acquired: 9/27/2019 4:01:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na8183	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	818.326 { 41}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**121.55**	**.34742**	**.02556**	**248.67**	**.02624**
Stddev	.21	.00054	.00208	1.51	.00011
%RSD	.17602	.15500	8.1229	.60703	.42193
#1	121.70	.34780	.02702	249.73	.02616
#2	121.40	.34704	.02409	247.60	.02632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.0019**	**.00049**	F **222.5**	**-.00394**	**-.01295**
Stddev	.0005	.00154	.2	.00390	.00121
%RSD	27.10	317.54	.0888	98.938	9.3089
#1	.0015	-.00060	222.4	-.00119	-.01380
#2	.0022	.00157	222.7	-.00670	-.01210
Check ?	None	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit			90.00		
Low Limit			-.2000		

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**2.7438**	**-.00040**	**1.7103**	**.0117**	**-.00023**
Stddev	.0071	.00139	.0076	.0082	.00016
%RSD	.25775	349.40	.44379	70.04	70.067
#1	2.7488	-.00138	1.7156	.0175	-.00012
#2	2.7388	.00059	1.7049	.0059	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: 159349-3 tot Acquired: 9/27/2019 4:01:43 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	i **.0887**	**-.00017**	**.01997**	**.0003**
Stddev	.00026	.0472	.00018	.00047	.0005
%RSD	45.628	53.23	104.87	2.3763	177.6
#1	-.00039	i .0553	-.00004	.02031	.0006
#2	-.00076	i .1220	-.00030	.01964	-.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1598.4**	**538.47**	**36348.**	**4056.0**
Stddev	2.3	2.17	51.	1.0
%RSD	.14672	.40267	.14143	.02361
#1	1600.0	540.00	36312.	4055.3
#2	1596.7	536.93	36384.	4056.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	88.552%	100.44%	93.543%	98.457%
Range				

Sample Name: blank Acquired: 9/27/2019 4:05:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.01321**	**.00027**	**.00049**	**.00004**
Stddev	.00016	.03392	.00272	.00052	.00000
%RSD	94.310	256.85	1019.2	107.79	10.243
#1	-.00029	-.03719	-.00165	.00086	.00004
#2	-.00006	.01078	.00219	.00012	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00905**	**-.00005**	i **.0101**	**-.00001**
Stddev	.00002	.00526	.00016	.0148	.00017
%RSD	241.68	58.166	302.27	146.2	1494.0
#1	.00001	.01277	.00006	i .0206	.00011
#2	-.00002	.00533	-.00017	i -.0003	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00008**	**.00309**	**.03875**	**.00003**
Stddev	.00036	.00010	.00132	.01531	.00053
%RSD	165.15	134.81	42.831	39.517	2089.9
#1	.00047	.00015	.00216	.02792	.00040
#2	-.00004	.00000	.00403	.04958	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/27/2019 4:05:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00666**	**-.00010**	**.00379**	**.10092**	**-.00003**
Stddev	.00051	.00008	.00082	.00268	.00014
%RSD	7.6355	84.889	21.587	2.6568	412.55
#1	.00702	-.00004	.00322	.10282	-.00013
#2	.00630	-.00016	.00437	.09903	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0034**	**-.00034**	**.0324**	**-.00130**	**-.00250**
Stddev	.0013	.00025	.0001	.00079	.00068
%RSD	38.06	75.665	.2281	61.208	27.322
#1	-.0025	-.00016	.0324	-.00074	-.00202
#2	-.0043	-.00052	.0323	-.00186	-.00299
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.01524**	**-.00098**	**.00010**	**.0007**	**-.00044**
Stddev	.00177	.00127	.00004	.0125	.00002
%RSD	11.632	129.59	39.491	1855.	4.4131
#1	-.01649	-.00188	.00007	.0095	-.00043
#2	-.01399	-.00008	.00013	-.0082	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/27/2019 4:05:35 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	.00035	i .1111	-.00021	.00155	.0008
Stddev	.00093	.0761	.00049	.00069	.0002
%RSD	268.51	68.50	230.55	44.159	30.70
#1	.00100	i .1649	-.00056	.00107	.0010
#2	-.00031	i .0573	.00013	.00204	.0006
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1812.2	569.19	39276.	4123.5
Stddev	.1	.45	.	18.3
%RSD	.00746	.07940	.00027	.44402
#1	1812.3	569.51	39276.	4110.5
#2	1812.1	568.87	39276.	4136.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.40%	106.17%	101.08%	100.10%
Range				

Sample Name: blank Acquired: 9/27/2019 4:09:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2
Line	328.068 {103}	308.215 {109}	189.042 {478}	208.959 {461}	455.403 { 74}2
IS Ref	(Y_3600)	(Y_3774)	(Y_2243)	(Y_2243)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01458**	**-.00064**	**.00019**	**-.00001**
Stddev	.00011	.01135	.00202	.00004	.00001
%RSD	63.986	77.860	316.84	18.398	86.096
#1	-.00025	.00655	-.00206	.00022	-.00000
#2	-.00010	.02260	.00079	.00017	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Be3130	Ca3179	Cd2288	**Ce4040	Co2286
Line	313.042 {108}	317.933 {106}	228.802 {447}	404.076 { 83}	228.616 {447}
IS Ref	(Y_3774)	(Y_3774)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00557**	**-.00007**	i **.0039**	**-.00000**
Stddev	.00004	.00411	.00000	.0120	.00005
%RSD	103.30	73.745	5.5283	310.7	1967.0
#1	-.00007	.00847	-.00006	i -.0046	-.00004
#2	-.00001	.00266	-.00007	i .0124	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Cr2677	Cu3273	Fe2599	K_7664	Li6707
Line	267.716 {126}	327.396 {103}	259.940 {130}	766.490 { 44}	670.784 { 50}
IS Ref	(Y_3600)	(Y_3600)	(Y_3774)	(Y_3774)	(Y_3774)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00003**	**-.00321**	**.04124**	**-.00001**
Stddev	.00012	.00030	.00206	.00379	.00034
%RSD	1777.6	1083.4	64.345	9.1828	2673.8
#1	-.00008	.00018	-.00467	.03856	.00023
#2	.00009	-.00024	-.00175	.04392	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/27/2019 4:09:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316
Line	279.079 {121}2	257.610 {131}3	202.030 {467}	589.592 { 57}	231.604 {446}
IS Ref	(Y_3600)	(Y_3600)	(Y_2243)	(Y_3774)	(In2306)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**-.00011**	**.00040**	**.08074**	**-.00003**
Stddev	.00453	.00003	.00016	.00101	.00058
%RSD	584.89	24.171	40.952	1.2488	2094.5
#1	-.00243	-.00013	.00028	.08002	.00038
#2	.00398	-.00009	.00052	.08145	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	P_2136	Pb2203	S_1820	Sb2068	Se1960
Line	213.618 {458}	220.353 {453}	182.034 {485}	206.833 {463}	196.090 {472}
IS Ref	(none)	(In2306)	(Y_2243)	(Y_2243)	(Y_2243)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.0023**	**-.00028**	**.0104**	**-.00244**	**.00202**
Stddev	.0016	.00101	.0024	.00195	.00034
%RSD	72.40	356.58	23.05	80.071	16.738
#1	-.0034	-.00100	.0121	-.00382	.00178
#2	-.0011	.00043	.0087	-.00106	.00226
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit					
Low Limit					

Elem	Si2881	Sn1899	Sr4077	Th2837	Ti3349
Line	288.158 {117}2	189.989 {477}	407.771 { 83}	283.730 {119}	334.904 {101}
IS Ref	(Y_3774)	(In2306)	(Y_3774)	(none)	(Y_3600)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00208**	**.00073**	**.00006**	**.0031**	**-.00040**
Stddev	.00352	.00069	.00004	.0100	.00006
%RSD	169.39	94.200	67.777	324.5	16.264
#1	.00041	.00122	.00009	-.0040	-.00035
#2	-.00457	.00024	.00003	.0101	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit					
Low Limit					

Sample Name: blank Acquired: 9/27/2019 4:09:26 Type: Unk
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Tl1908	U_4090	V_2924	Zn2062	Zr3438
Line	190.856 {477}	409.014 { 82}	292.402 {115}	206.200 {163}	343.823 { 98}
IS Ref	(In2306)	(none)	(Y_3600)	(Y_3600)	(none)
Units	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	i **.0551**	**-.00049**	**.00085**	**-.0000**
Stddev	.00229	.0496	.00008	.00037	.0001
%RSD	196.20	89.90	17.157	43.071	729700.
#1	-.00279	i .0902	-.00043	.00059	-.0001
#2	.00045	i .0201	-.00054	.00111	.0001
Check ?	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit					
Low Limit					

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Line	230.606 {446}	224.306 {450}	360.073 { 94}	377.433 { 89}
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1820.3**	**572.61**	**39243.**	**4087.3**
Stddev	.0	1.37	8.	4.4
%RSD	.00100	.23965	.01923	.10785
#1	1820.3	573.58	39237.	4084.1
#2	1820.3	571.64	39248.	4090.4
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	100.85%	106.81%	100.99%	99.217%
Range				

Sample Name: CCV-5520066 Acquired: 9/27/2019 4:13:16 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0004**	**50.717**	**.96919**	**.98266**	**1.0196**	**1.0075**	**51.100**	**.97895**
Stddev	.0029	.098	.00418	.00668	.0027	.0024	.012	.00563
%RSD	.29485	.19384	.43095	.67965	.26194	.23408	.02267	.57487
#1	1.0025	50.786	.97214	.98738	1.0215	1.0092	51.108	.98293
#2	.99828	50.647	.96623	.97793	1.0177	1.0059	51.091	.97497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **1.031**	**1.0124**	**1.0198**	**.98115**	**50.468**	**49.457**	**.99781**	**50.517**
Stddev	.008	.0010	.0027	.00118	.030	.145	.00126	.051
%RSD	.8152	.09490	.26088	.12054	.06005	.29381	.12623	.10005
#1	i 1.025	1.0131	1.0216	.98031	50.490	49.560	.99871	50.553
#2	i 1.037	1.0117	1.0179	.98198	50.447	49.355	.99692	50.482
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0123**	**.98519**	**49.780**	**1.0035**	**25.82**	**1.0036**	**23.95**	**.97739**
Stddev	.0016	.00737	.120	.0026	.05	.0025	.15	.00506
%RSD	.16052	.74804	.24056	.25893	.1756	.24942	.6425	.51735
#1	1.0135	.99040	49.864	1.0054	25.86	1.0019	24.06	.98097
#2	1.0112	.97997	49.695	1.0017	25.79	1.0054	23.84	.97382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 4:13:16 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94931	10.297	1.0008	1.0097	1.006	.99341	1.0067	i 2.477
Stddev	.00542	.058	.0001	.0015	.003	.00089	.0006	.013
%RSD	.57139	.55855	.00647	.15247	.3256	.08990	.05853	.5058
#1	.95315	10.256	1.0008	1.0108	1.009	.99278	1.0063	i 2.468
#2	.94548	10.338	1.0007	1.0086	1.004	.99404	1.0072	i 2.486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	1.0122	1.0480	.9843
Stddev	.0001	.0048	.0002
%RSD	.00569	.46045	.0248
#1	1.0122	1.0514	.9845
#2	1.0122	1.0446	.9841
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1653.1	552.48	36992.	4097.0
Stddev	2.1	2.49	91.	1.6
%RSD	.12466	.45082	.24660	.04026
#1	1654.5	550.72	36927.	4095.8
#2	1651.6	554.24	37056.	4098.1

Sample Name: CCB-5508960 Acquired: 9/27/2019 4:16:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	-.01059	.00036	-.00017	.00014	.00006	-.00246	-.00005
Stddev	.00020	.01431	.00042	.00016	.00002	.00003	.00305	.00011
%RSD	20291.	135.10	118.14	93.312	13.879	55.235	124.09	218.91
#1	-.00014	-.02071	.00065	-.00028	.00015	.00008	-.00030	.00003
#2	.00014	-.00047	.00006	-.00006	.00012	.00004	-.00462	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i .0126	-.00006	.00028	-.00007	.00400	-.00278	-.00018	.00165
Stddev	.0057	.00011	.00042	.00016	.00633	.00182	.00033	.00161
%RSD	45.17	172.37	152.70	217.88	158.28	65.396	185.82	97.148
#1	i .0167	-.00014	-.00002	.00004	-.00048	-.00407	-.00040	.00052
#2	i .0086	.00001	.00057	-.00018	.00847	-.00150	.00005	.00279
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00158	.06974	-.00015	.0018	-.00068	.0001	-.00201
Stddev	.00004	.00032	.00470	.00013	.0006	.00089	.0045	.00088
%RSD	61.796	19.998	6.7452	80.858	35.09	131.03	3726.	43.674
#1	-.00004	.00136	.06642	-.00024	.0022	-.00005	-.0031	-.00264
#2	-.00009	.00180	.07307	-.00007	.0013	-.00131	.0033	-.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 4:16:57 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00305**	**-.01293**	**-.00059**	**.00006**	**-.0067**	**.00032**	**-.00001**	i **-.0099**
Stddev	.00657	.00157	.00018	.00005	.0027	.00003	.00001	.0572
%RSD	215.00	12.156	29.857	82.639	40.78	8.7955	51.574	580.0
#1	.00159	-.01404	-.00046	.00009	-.0048	.00030	-.00001	i -.0503
#2	-.00770	-.01182	-.00071	.00002	-.0086	.00034	-.00001	i .0306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00140**	**.0007**
Stddev	.00025	.00059	.0011
%RSD	193.53	41.892	154.0
#1	-.00031	.00181	.0015
#2	.00005	.00098	-.0001
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1836.0**	**575.74**	**39475.**	**4119.1**
Stddev	.4	1.74	29.	1.5
%RSD	.02426	.30149	.07429	.03734
#1	1835.7	576.96	39455.	4120.2
#2	1836.3	574.51	39496.	4118.0

Sample Name: CCVL-5514926 Acquired: 9/27/2019 4:20:47 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00648**	**.19351**	**.01533**	**.02065**	**.00220**	**.00222**	**.55067**	**.00223**
Stddev	.00012	.01073	.00138	.00011	.00001	.00008	.00995	.00017
%RSD	1.7841	5.5423	8.9990	.51319	.52426	3.4237	1.8060	7.4171
#1	.00657	.20110	.01436	.02072	.00221	.00228	.55771	.00211
#2	.00640	.18593	.01631	.02057	.00219	.00217	.54364	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0192**	**.00406**	**.00496**	**.00972**	**.05460**	**.51278**	**.03044**	**.21768**
Stddev	.0301	.00002	.00084	.00053	.00255	.00138	.00071	.00253
%RSD	156.5	.54785	16.923	5.4396	4.6630	.26852	2.3277	1.1622
#1	i .0405	.00404	.00555	.01009	.05640	.51375	.02994	.21947
#2	i -.0021	.00408	.00437	.00934	.05280	.51180	.03094	.21589
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00315**	**.01013**	**1.0564**	**.01058**	**-.0289**	**.00904**	**.2037**	**.02078**
Stddev	.00004	.00003	.0102	.00007	.0008	.00030	.0001	.00028
%RSD	1.3379	.31071	.96794	.65466	2.930	3.2793	.0689	1.3534
#1	.00312	.01016	1.0636	.01062	-.0283	.00883	.2036	.02098
#2	.00318	.01011	1.0491	.01053	-.0295	.00925	.2038	.02059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCVL-5514926 Acquired: 9/27/2019 4:20:47 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02573	.48644	.00930	.00508	-.0037	.00478	.02028	i .0620
Stddev	.00236	.00564	.00048	.00001	.0041	.00006	.00096	.0199
%RSD	9.1570	1.1588	5.1395	.12170	110.6	1.2769	4.7160	32.17
#1	.02740	.48245	.00964	.00508	-.0065	.00483	.02096	i .0479
#2	.02407	.49042	.00896	.00509	-.0008	.00474	.01960	i .0761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.00487	.01159	.0006
Stddev	.00031	.00042	.0008
%RSD	6.3506	3.6482	124.1
#1	.00509	.01189	.0011
#2	.00465	.01130	.0001
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1820.9	565.54	39282.	4123.8
Stddev	1.4	1.01	4.	7.5
%RSD	.07907	.17827	.00996	.18273
#1	1821.9	564.83	39280.	4118.5
#2	1819.9	566.26	39285.	4129.1

Sample Name: ICSA-5486551 Acquired: 9/27/2019 4:24:38 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**512.04**	**-.00034**	**-.00066**	**.00155**	**-.00003**	**485.52**	**-.00112**
Stddev	.00018	2.30	.00107	.00133	.00001	.00003	1.23	.00012
%RSD	23.886	.44879	314.13	202.27	.50561	92.726	.25353	10.987
#1	.00064	513.67	.00041	.00028	.00155	-.00005	486.39	-.00120
#2	.00090	510.42	-.00109	-.00159	.00156	-.00001	484.65	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0241**	**-.00061**	**.00256**	**-.00441**	**189.16**	**.03556**	**.00371**	**516.02**
Stddev	.0066	.00034	.00006	.00010	.36	.00230	.00027	1.08
%RSD	27.42	55.987	2.3379	2.3020	.18892	6.4721	7.3907	.21004
#1	i .0194	-.00085	.00252	-.00448	189.41	.03393	.00351	515.25
#2	i .0288	-.00037	.00261	-.00434	188.91	.03718	.00390	516.78
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**-.00173**	**.26296**	**-.00314**	**-.4478**	**-.00781**	**-.0856**	**-.01298**
Stddev	.00005	.00046	.00081	.00047	.0016	.00003	.0041	.00321
%RSD	5.2568	26.577	.30621	15.024	.3542	.38136	4.753	24.704
#1	-.00096	-.00140	.26353	-.00280	-.4466	-.00778	-.0827	-.01071
#2	-.00089	-.00205	.26239	-.00347	-.4489	-.00783	-.0885	-.01524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICSA-5486551 Acquired: 9/27/2019 4:24:38 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00579**	**.01282**	**.00032**	**-.00929**	**.0899**	**.00073**	**-.00985**	i **.0246**
Stddev	.00729	.01037	.00009	.00006	.0001	.00008	.00094	.0077
%RSD	126.04	80.872	29.715	.64392	.0818	10.944	9.5940	31.23
#1	-.01094	.02015	.00025	-.00933	.0898	.00078	-.01051	i .0301
#2	-.00063	.00549	.00038	-.00925	.0899	.00067	-.00918	i .0192
Check ?	Chk Pass	None	Chk Pass	None	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00108**	**.00223**	**.0080**
Stddev	.00013	.00084	.0004
%RSD	11.840	37.645	5.441
#1	-.00117	.00164	.0077
#2	-.00099	.00283	.0083
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1428.2**	**504.17**	**34190.**	**3986.4**
Stddev	1.0	1.27	90.	5.9
%RSD	.07084	.25103	.26441	.14702
#1	1428.9	505.06	34254.	3990.5
#2	1427.5	503.27	34126.	3982.2

Sample Name: ICSAB-5486552 Acquired: 9/27/2019 4:28:38 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56140**	**525.40**	**.51293**	**4.9523**	**.52734**	**.24800**	**495.03**	**.52629**
Stddev	.00148	2.44	.00570	.0207	.00126	.00007	.31	.00309
%RSD	.26373	.46345	1.1106	.41770	.23900	.02891	.06304	.58798
#1	.56245	527.12	.51696	4.9669	.52823	.24805	495.25	.52847
#2	.56036	523.68	.50891	4.9376	.52645	.24795	494.81	.52410
Check ?	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0086**	**.51801**	**.49778**	**.52110**	**192.47**	**5.1954**	**.00366**	**517.70**
Stddev	.0016	.00107	.00534	.00031	.86	.0064	.00011	.31
%RSD	18.61	.20729	1.0728	.06043	.44848	.12316	2.8779	.05971
#1	i .0098	.51877	.50155	.52132	193.08	5.1999	.00359	517.92
#2	i .0075	.51725	.49400	.52087	191.86	5.1908	.00374	517.48
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	None	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49086**	**.48340**	**5.5347**	**.50693**	**3.917**	**.51562**	**-.1111**	**.49261**
Stddev	.00233	.00313	.0097	.00077	.015	.00363	.0041	.00077
%RSD	.47431	.64767	.17457	.15111	.3781	.70364	3.675	.15710
#1	.49250	.48561	5.5415	.50747	3.927	.51818	-.1082	.49316
#2	.48921	.48119	5.5279	.50639	3.907	.51305	-.1140	.49206
Check ?	Chk Pass	None	None	Chk Pass	None	Chk Pass	None	Chk Pass
Value								
Range								

Sample Name: ICSAB-5486552 Acquired: 9/27/2019 4:28:38 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48513	4.9320	.52348	.49222	.1119	.49163	.48901	i -.0960
Stddev	.00599	.0057	.00464	.00189	.0008	.00139	.00410	.0252
%RSD	1.2348	.11648	.88604	.38395	.7385	.28286	.83855	26.26
#1	.48089	4.9360	.52020	.49355	.1113	.49262	.49191	i -.0782
#2	.48936	4.9279	.52676	.49088	.1125	.49065	.48611	i -.1138
Check ?	Chk Pass	Chk Pass	None	None	None	None	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	.50509	.49306	.0086
Stddev	.00551	.00602	.0004
%RSD	1.0906	1.2204	4.945
#1	.50898	.49732	.0083
#2	.50119	.48881	.0089
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1418.3	504.04	34115.	3953.1
Stddev	.8	2.80	99.	9.4
%RSD	.05676	.55601	.29146	.23870
#1	1417.7	502.06	34045.	3946.4
#2	1418.9	506.02	34185.	3959.8

Sample Name: CCV-5520066 Acquired: 9/27/2019 4:32:33 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99642	51.000	.97624	.98749	1.0239	.99574	50.652	.98052
Stddev	.00277	.144	.00079	.00065	.0024	.00178	.049	.00079
%RSD	.27787	.28265	.08135	.06558	.23704	.17900	.09621	.08096
#1	.99838	51.102	.97680	.98794	1.0257	.99700	50.687	.98108
#2	.99446	50.898	.97567	.98703	1.0222	.99448	50.618	.97996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2714	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i 1.007	1.0050	1.0180	.97526	50.273	48.855	.99098	50.144
Stddev	.013	.0006	.0034	.00093	.086	.066	.00075	.004
%RSD	1.274	.06484	.33026	.09540	.17118	.13573	.07527	.00807
#1	i 1.016	1.0055	1.0156	.97461	50.212	48.902	.99151	50.147
#2	i .9980	1.0045	1.0204	.97592	50.334	48.808	.99046	50.141
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0077	.98889	49.976	.99872	25.77	.99788	24.07	.98046
Stddev	.0018	.00432	.146	.00022	.02	.00298	.01	.00928
%RSD	.17807	.43698	.29251	.02248	.0916	.29827	.0403	.94618
#1	1.0064	.99194	50.079	.99856	25.75	.99998	24.08	.98702
#2	1.0090	.98583	49.873	.99888	25.78	.99578	24.06	.97390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Sample Name: CCV-5520066 Acquired: 9/27/2019 4:32:33 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95002	10.231	.99526	1.0118	.9763	.98875	.99348	i 2.505
Stddev	.00014	.053	.00237	.0020	.0049	.00063	.00009	.060
%RSD	.01524	.51399	.23830	.19756	.5004	.06340	.00909	2.417
#1	.95013	10.194	.99358	1.0132	.9728	.98831	.99341	i 2.463
#2	.94992	10.268	.99693	1.0103	.9797	.98919	.99354	i 2.548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
Value								
Range								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	1.0142	1.0482	.9754
Stddev	.0004	.0021	.0030
%RSD	.04164	.19873	.3091
#1	1.0139	1.0468	.9733
#2	1.0145	1.0497	.9776
Check ?	Chk Pass	Chk Pass	None
Value			
Range			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	1659.2	550.29	37250.	4082.7
Stddev	.8	1.56	8.	12.0
%RSD	.04739	.28409	.02112	.29378
#1	1658.7	549.18	37256.	4074.2
#2	1659.8	551.40	37245.	4091.2

Sample Name: CCB-5508960 Acquired: 9/27/2019 4:36:15 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2089	Ba4554-2	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00901**	**.00072**	**.00157**	**.00014**	**-.00001**	**-.00095**	**.00001**
Stddev	.00003	.01985	.00284	.00071	.00002	.00000	.00367	.00007
%RSD	845.21	220.36	394.55	45.028	14.533	31.573	387.60	788.93
#1	.00002	-.02304	.00273	.00207	.00013	-.00002	.00165	.00006
#2	-.00002	.00503	-.00129	.00107	.00016	-.00001	-.00354	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	**Ce4040	Co2286	Cr2677	Cu3273	Fe2599	K_7664	Li6707	Mg2790
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	i **.0009**	**-.00012**	**.00007**	**.00012**	**.00654**	**.00046**	**-.00011**	**.00448**
Stddev	.0051	.00002	.00009	.00014	.00063	.00853	.00017	.00071
%RSD	551.8	19.708	138.05	110.86	9.6160	1858.7	156.88	15.833
#1	i .0046	-.00014	.00013	.00022	.00699	-.00558	.00001	.00398
#2	i -.0027	-.00011	.00000	.00003	.00610	.00649	-.00022	.00498
Check ?	None	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mn2576	Mo2020	Na5895	Ni2316	P_2136	Pb2203	S_1820	Sb2068
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00148**	**.05222**	**-.00007**	**.0043**	**-.00185**	**-.0029**	**.00020**
Stddev	.00000	.00005	.00039	.00001	.0022	.00052	.0001	.00203
%RSD	4.5335	3.3969	.75033	11.130	50.95	28.269	2.197	995.18
#1	-.00009	.00145	.05194	-.00006	.0027	-.00222	-.0029	-.00123
#2	-.00009	.00152	.05249	-.00007	.0058	-.00148	-.0029	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB-5508960 Acquired: 9/27/2019 4:36:15 Type: QC
Method: ICAP1 New Stds (v177) Mode: CONC Corr. Factor: 1.000000
User: emb Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Se1960	Si2881	Sn1899	Sr4077	Th2837	Ti3349	Tl1908	U_4090
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00408**	**-.00479**	**-.00010**	**.00003**	**.0067**	**.00028**	**-.00037**	i **-.0254**
Stddev	.00317	.01621	.00023	.00001	.0105	.00002	.00117	.0245
%RSD	77.777	338.25	228.36	20.111	156.0	8.5436	313.52	96.38
#1	-.00184	-.01625	-.00026	.00004	-.0007	.00027	-.00120	i -.0081
#2	-.00633	.00667	.00006	.00003	.0142	.00030	.00045	i -.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	None	Chk Pass	Chk Pass	None
High Limit								
Low Limit								

Elem	V_2924	Zn2062	Zr3438
Units	ppm	ppm	ppm
Avg	**-.00008**	**.00128**	**.0014**
Stddev	.00041	.00019	.0005
%RSD	499.42	14.904	34.77
#1	.00021	.00115	.0018
#2	-.00037	.00142	.0011
Check ?	Chk Pass	Chk Pass	None
High Limit			
Low Limit			

Int. Std.	In2306	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**1832.1**	**568.66**	**39494.**	**4130.0**
Stddev	2.0	2.43	8.	22.3
%RSD	.11070	.42781	.01987	.53917
#1	1833.5	570.38	39489.	4145.7
#2	1830.6	566.94	39500.	4114.2

Report Generated By Teledyne Leeman QuickTrace

Analyst: BufHG5

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\L20191011A.wszf

Creation Date: 10/11/2019 11:51:20 AM

Comment:

Results

Sample Name		Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
Single: rinse		UNK	10/11/19 11:55:06 am	0.00	136	25.94			1.0000	N/A
Replicates	99.9	113.7	155.9	175.3						
Single: ccv		UNK	10/11/19 11:58:50 am	0.00	33277	1.36			1.0000	N/A
Replicates	33141.5	33724.2	33540.6	32702.0						
Single: rinse		UNK	10/11/19 12:00:27 pm	0.00	-55	26.14			1.0000	N/A
Replicates	-75.5	-51.9	-47.7	-43.5						
Single: icv		UNK	10/11/19 12:01:59 pm	0.00	49231	1.38			1.0000	N/A
Replicates	49129.7	49907.9	49553.3	48332.9						
Single: rinse		UNK	10/11/19 12:04:14 pm	0.00	-56	25.56			1.0000	N/A
Replicates	-46.1	-71.4	-64.8	-41.8						
Calibration Blank		STD	10/11/19 12:05:44 pm	0.00	184	8.07	-6.61		1.0000	N/A
Replicates	164.9	183.2	200.6	188.8						
Standard #1 (0.1 ug/L)		STD	10/11/19 12:07:02 pm	0.10	1837	1.77	-0.49		1.0000	N/A
Replicates	1826.5	1878.5	1841.1	1800.7						
Standard #2 (0.5 ug/L)		STD	10/11/19 12:08:20 pm	0.50	8524	1.56	28.97		1.0000	N/A
Replicates	8483.4	8658.9	8595.9	8355.9						
Standard #3 (2.0 ug/L)		STD	10/11/19 12:09:39 pm	2.00	32706	1.36	82.06		1.0000	N/A
Replicates	32579.2	33159.7	32942.9	32140.5						
Standard #4 (10. ug/L)		STD	10/11/19 12:10:57 pm	10.00	161670	1.37	364.75		1.0000	N/A
Replicates	161045.1	163869.8	162922.0	158841.8						
Standard #5 (20. ug/L)		STD	10/11/19 12:12:16 pm	20.00	305490	1.23	-398.44		1.0000	N/A
Replicates	304809.1	309167.5	307456.5	300525.9						

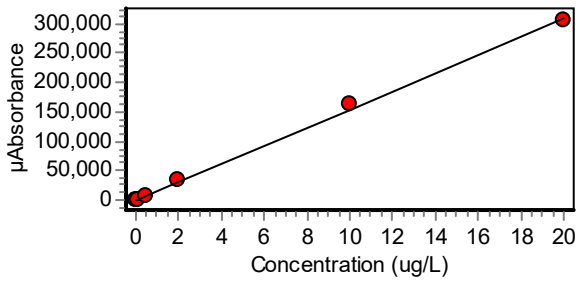
Calibration

Equation: Abs = 15570.313x + 287.272

R2: 0.99906

SEE: 4259.9270

Flags:



ICV		ICV	10/11/19 12:13:41 pm	3.17	49705	1.33		Q	1.0000	105.79
Replicates	49534.5	50372.2	50049.2	48863.8						
ICB		ICB	10/11/19 12:14:59 pm	-0.01	140	7.18			1.0000	N/A
Replicates	134.4	151.8	128.0	144.8						

Sample Name	Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual Flags	DF	% Recovery
ICVL	CRDL	10/11/19 12:16:19 pm	0.21	3505	1.13		1.0000	103.32
Replicates	3484.2	3548.2	3519.6	3466.6				
CCV	CCV	10/11/19 12:20:26 pm	2.13	33030	1.31		1.0000	106.30
Replicates	32878.6	33461.4	33284.8	32495.8				
CCB	CCB	10/11/19 12:21:44 pm	0.00	154	26.22		1.0000	N/A
Replicates	147.7	163.6	157.8	147.6				
MB 480-497285/1-A	UNK	10/11/19 12:23:01 pm	0.00	243	30.95		1.0000	N/A
Replicates	215.9	251.6	247.8	255.2				
LCSSRM 480-497285/2-A@5	UNK	10/11/19 12:24:19 pm	2.50	38822	1.67		1.0000	N/A
Replicates	38888.9	39456.6	39019.8	37922.0				
480-160219-A-1-E	UNK	10/11/19 12:25:36 pm	4.63	71639	1.71		1.0000	N/A
Replicates	71691.4	72897.8	71993.6	69971.8				
480-160219-A-1-Esd@5	UNK	10/11/19 12:26:54 pm	0.90	14121	1.51		1.0000	N/A
Replicates	14020.7	14332.2	14256.0	13874.8				
480-160219-A-1-F MS	UNK	10/11/19 12:28:12 pm	10.67	165043	1.56		1.0000	N/A
Replicates	164885.7	167549.7	166180.9	161556.9				
480-160219-A-1-G MSD	UNK	10/11/19 12:29:30 pm	8.16	126190	1.69		1.0000	N/A
Replicates	126032.6	128402.7	126980.9	123344.3				
480-160219-A-2-C	UNK	10/11/19 12:30:48 pm	2.72	42208	1.69		1.0000	N/A
Replicates	42181.0	42926.0	42477.6	41249.4				
480-160219-A-3-C	UNK	10/11/19 12:32:06 pm	2.20	34213	1.63		1.0000	N/A
Replicates	34171.6	34744.0	34479.0	33458.6				
480-160219-A-4-C	UNK	10/11/19 12:33:25 pm	2.27	35193	1.46		1.0000	N/A
Replicates	35106.4	35718.4	35424.4	34524.4				
480-160219-A-5-C	UNK	10/11/19 12:34:43 pm	2.75	42621	1.66		1.0000	N/A
Replicates	42528.6	43347.3	42912.7	41693.5				
CCV	CCV	10/11/19 12:36:03 pm	2.12	32909	1.45		1.0000	105.91
Replicates	32804.5	33338.9	33209.5	32285.1				
CCB	CCB	10/11/19 12:37:21 pm	0.00	147	18.55		1.0000	N/A
Replicates	145.0	154.7	150.9	139.1				
480-160219-A-6-C	UNK	10/11/19 12:38:40 pm	3.18	49274	1.60		1.0000	N/A
Replicates	49206.3	50065.8	49604.6	48219.6				
480-160219-A-7-C	UNK	10/11/19 12:39:59 pm	9.94	153708	1.73		1.0000	N/A
Replicates	153842.0	156304.4	154664.8	150022.2				
480-160219-A-8-C	UNK	10/11/19 12:41:16 pm	13.39	207029	1.75		1.0000	N/A
Replicates	207395.5	210699.4	207982.2	202037.6				
480-160219-A-9-C	UNK	10/11/19 12:42:33 pm	6.93	107203	1.72		1.0000	N/A
Replicates	107336.8	109003.3	107822.9	104650.3				

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-160219-A-10-					UNK	10/11/19 12:43:51 pm	5.10	78967	1.85			1.0000	N/A
	Replicates	79225.6	80377.1	79342.1	76922.9								
480-160219-A-11-C					UNK	10/11/19 12:45:09 pm	0.09	1523	1.60			1.0000	N/A
	Replicates	1514.7	1540.7	1539.3	1495.9								
480-160219-A-12-C					UNK	10/11/19 12:46:26 pm	1.09	17095	1.86			1.0000	N/A
	Replicates	17121.9	17394.1	17208.5	16654.7								
480-160219-A-13-C					UNK	10/11/19 12:47:45 pm	4.21	65286	1.90			1.0000	N/A
	Replicates	65354.6	66472.4	65754.6	63561.2								
480-160219-A-14-C					UNK	10/11/19 12:49:03 pm	1.22	19104	1.82			1.0000	N/A
	Replicates	19129.4	19446.7	19213.3	18627.9								
480-160219-A-15-C					UNK	10/11/19 12:50:21 pm	1.55	24203	1.75			1.0000	N/A
	Replicates	24204.0	24617.5	24366.5	23625.9								
CCV					CCV	10/11/19 12:51:41 pm	2.10	32682	1.31			1.0000	105.18
	Replicates	32515.6	33101.3	32947.5	32162.9								
CCB					CCB	10/11/19 12:52:58 pm	0.00	137	34.77			1.0000	N/A
	Replicates	155.8	116.4	134.0	142.0								
480-160219-A-16-C					UNK	10/11/19 12:54:17 pm	0.81	12773	1.76			1.0000	N/A
	Replicates	12773.2	12996.8	12852.4	12470.2								
480-160219-A-17-C					UNK	10/11/19 12:55:35 pm	1.10	17179	1.72			1.0000	N/A
	Replicates	17191.0	17470.9	17274.1	16778.3								
480-160219-A-18-C					UNK	10/11/19 12:56:54 pm	1.13	17593	1.80			1.0000	N/A
	Replicates	17619.0	17905.2	17689.4	17158.8								
480-160219-A-19-C					UNK	10/11/19 12:58:13 pm	0.80	12620	1.81			1.0000	N/A
	Replicates	12601.0	12843.4	12719.0	12316.8								
480-160219-A-20-C					UNK	10/11/19 12:59:30 pm	1.90	29570	1.84			1.0000	N/A
	Replicates	29628.5	30078.4	29762.6	28812.2								
MB 480-497286/1-A					UNK	10/11/19 01:00:48 pm	0.00	174	135.58			1.0000	N/A
	Replicates	180.4	189.7	168.1	158.1								
LCSSRM 480-497286/2-A@5					UNK	10/11/19 01:02:05 pm	2.42	37516	1.83			1.0000	N/A
	Replicates	37472.7	38218.8	37769.2	36602.2								
480-160219-A-21-C					UNK	10/11/19 01:03:23 pm	1.89	29367	1.84			1.0000	N/A
	Replicates	29417.3	29878.8	29557.0	28614.6								
480-160219-A-22-C					UNK	10/11/19 01:04:41 pm	2.78	43061	1.99			1.0000	N/A
	Replicates	43214.3	43880.0	43290.4	41859.6								
480-160219-A-23-C					UNK	10/11/19 01:05:59 pm	3.68	56988	2.04			1.0000	N/A
	Replicates	57241.6	58066.9	57297.3	55345.7								
CCV					CCV	10/11/19 01:07:19 pm	2.09	32509	1.39			1.0000	104.62
	Replicates	32390.8	32948.5	32766.9	31929.7								

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
CCB				CCB	10/11/19 01:08:36 pm	0.00	150	36.84			1.0000	N/A
Replicates	161.4	156.3	132.1	148.7								
480-160219-A-24-C				UNK	10/11/19 01:09:54 pm	2.96	45950	1.82			1.0000	N/A
Replicates	46031.1	46721.2	46267.4	44779.4								
480-160219-A-25-C				UNK	10/11/19 01:11:13 pm	1.34	20912	1.79			1.0000	N/A
Replicates	20918.6	21279.1	21047.9	20404.3								
480-160219-A-26-C				UNK	10/11/19 01:12:31 pm	1.58	24556	1.94			1.0000	N/A
Replicates	24627.2	25001.4	24704.2	23891.2								
480-160219-A-27-C				UNK	10/11/19 01:13:50 pm	0.81	12663	1.83			1.0000	N/A
Replicates	12677.0	12886.3	12741.1	12347.5								
480-160219-A-28-C				UNK	10/11/19 01:15:08 pm	0.55	8653	1.97			1.0000	N/A
Replicates	8685.4	8813.6	8692.8	8418.8								
480-160219-A-29-C				UNK	10/11/19 01:16:27 pm	1.03	16052	1.84			1.0000	N/A
Replicates	16079.4	16343.5	16139.1	15647.9								
480-160219-A-30-C				UNK	10/11/19 01:17:45 pm	0.48	7628	2.12			1.0000	N/A
Replicates	7650.0	7782.6	7672.4	7408.6								
480-160219-A-31-G				UNK	10/11/19 01:19:03 pm	0.28	4483	1.87			1.0000	N/A
Replicates	4500.3	4552.4	4511.6	4367.4								
480-160219-A-31-Gsd@5				UNK	10/11/19 01:20:20 pm	0.05	965	2.48			1.0000	N/A
Replicates	964.7	948.1	991.7	953.9								
480-160219-A-31-H MS				UNK	10/11/19 01:21:38 pm	4.34	67166	1.83			1.0000	N/A
Replicates	67282.7	68307.0	67630.6	65443.4								
CCV				CCV	10/11/19 01:22:58 pm	2.08	32391	1.41			1.0000	104.23
Replicates	32272.6	32845.7	32635.9	31808.7								
CCB				CCB	10/11/19 01:24:15 pm	0.00	141	38.19			1.0000	N/A
Replicates	156.2	153.8	133.0	122.2								
480-160219-A-31-I MSD				UNK	10/11/19 01:25:33 pm	4.38	67839	1.76			1.0000	N/A
Replicates	67889.3	68958.3	68330.5	66177.1								
480-160219-A-32-C				UNK	10/11/19 01:26:51 pm	0.19	3138	2.10			1.0000	N/A
Replicates	3162.8	3185.6	3157.0	3046.8								
480-160219-A-33-C				UNK	10/11/19 01:28:10 pm	1.20	18698	1.85			1.0000	N/A
Replicates	18742.3	19030.6	18800.8	18219.0								
480-160219-A-34-C				UNK	10/11/19 01:29:28 pm	0.91	14196	2.06			1.0000	N/A
Replicates	14238.9	14477.2	14276.8	13792.0								
480-160219-A-35-C				UNK	10/11/19 01:30:46 pm	0.64	10105	1.96			1.0000	N/A
Replicates	10135.2	10287.2	10166.4	9831.0								
480-160219-A-36-C				UNK	10/11/19 01:32:05 pm	0.84	13221	2.00			1.0000	N/A
Replicates	13273.2	13477.4	13273.6	12858.0								

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-160219-A-37-C					UNK	10/11/19 01:33:24 pm	0.85	13256	1.98			1.0000	N/A
	Replicates	13277.1	13511.9	13337.1	12898.5								
480-160219-A-38-C					UNK	10/11/19 01:34:42 pm	0.95	14859	1.95			1.0000	N/A
	Replicates	14893.4	15138.9	14943.3	14460.1								
480-160219-A-39-C					UNK	10/11/19 01:36:00 pm	1.23	19196	1.96			1.0000	N/A
	Replicates	19269.8	19538.1	19308.7	18667.3								
480-160219-A-40-C					UNK	10/11/19 01:37:18 pm	0.42	6741	1.97			1.0000	N/A
	Replicates	6775.1	6867.3	6761.3	6560.9								
CCV					CCV	10/11/19 01:38:38 pm	2.08	32313	1.43			1.0000	103.98
	Replicates	32150.1	32755.9	32605.1	31742.1								
CCB					CCB	10/11/19 01:39:56 pm	0.00	150	46.45			1.0000	N/A
	Replicates	133.3	145.8	171.8	147.8								
MB 480-497287/1-A					UNK	10/11/19 01:41:14 pm	0.00	200	154.79			1.0000	N/A
	Replicates	225.3	175.5	215.7	183.5								
LCSSRM 480-497287/2-A@5					UNK	10/11/19 01:42:32 pm	1.70	26458	1.74			1.0000	N/A
	Replicates	26395.8	26925.8	26657.6	25853.6								
480-160219-A-41-C					UNK	10/11/19 01:43:50 pm	0.52	8182	1.84			1.0000	N/A
	Replicates	8226.1	8318.3	8210.9	7973.9								
480-160219-A-42-C					UNK	10/11/19 01:45:08 pm	0.78	12203	2.08			1.0000	N/A
	Replicates	12243.4	12445.2	12271.0	11853.8								
480-160219-A-43-C					UNK	10/11/19 01:46:26 pm	0.64	10072	2.08			1.0000	N/A
	Replicates	10092.1	10256.5	10159.1	9780.9								
480-160219-A-44-C					UNK	10/11/19 01:47:44 pm	0.31	5035	1.95			1.0000	N/A
	Replicates	5044.2	5130.3	5062.5	4904.9								
480-160219-A-45-C					UNK	10/11/19 01:49:03 pm	0.45	7150	1.85			1.0000	N/A
	Replicates	7138.8	7258.0	7231.2	6972.8								
480-160219-A-46-C					UNK	10/11/19 01:50:21 pm	1.20	18773	1.86			1.0000	N/A
	Replicates	18815.2	19107.0	18877.8	18290.4								
480-160219-A-47-C					UNK	10/11/19 01:51:40 pm	1.70	26373	1.97			1.0000	N/A
	Replicates	26472.7	26855.4	26521.8	25642.6								
480-160219-A-48-C					UNK	10/11/19 01:52:59 pm	0.68	10682	1.92			1.0000	N/A
	Replicates	10698.6	10874.7	10753.7	10399.9								
CCV					CCV	10/11/19 01:54:19 pm	2.08	32297	1.50			1.0000	103.93
	Replicates	32122.2	32792.3	32566.5	31707.5								
CCB					CCB	10/11/19 01:55:36 pm	0.00	132	9.86			1.0000	N/A
	Replicates	126.9	133.6	138.8	130.0								
480-160219-A-49-C					UNK	10/11/19 01:56:54 pm	1.57	24403	1.91			1.0000	N/A
	Replicates	24443.2	24843.5	24567.7	23757.3								

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-160219-A-50-C				UNK	10/11/19 01:58:12 pm	1.17	18211	1.95			1.0000	N/A
Replicates	18267.8	18539.7	18321.3	17714.5								
480-160219-A-51-C				UNK	10/11/19 01:59:31 pm	0.67	10503	2.05			1.0000	N/A
Replicates	10517.7	10714.3	10569.1	10211.3								
480-160219-A-52-C				UNK	10/11/19 02:00:49 pm	0.30	4813	1.97			1.0000	N/A
Replicates	4819.3	4891.5	4858.7	4684.3								
480-160219-A-53-C				UNK	10/11/19 02:02:07 pm	0.14	2317	2.29			1.0000	N/A
Replicates	2314.6	2364.0	2340.2	2250.8								
480-160219-A-54-H				UNK	10/11/19 02:03:25 pm	0.27	4430	2.07			1.0000	N/A
Replicates	4446.5	4526.5	4434.1	4313.3								
480-160219-A-54-Hsd@5				UNK	10/11/19 02:04:44 pm	0.05	946	4.53			1.0000	N/A
Replicates	942.1	979.4	961.8	899.2								
480-160219-A-54-I MS				UNK	10/11/19 02:06:02 pm	4.50	69672	1.98			1.0000	N/A
Replicates	69787.5	71001.8	70147.0	67751.8								
480-160219-A-54-J MSD				UNK	10/11/19 02:07:20 pm	4.41	68238	1.80			1.0000	N/A
Replicates	68286.4	69428.4	68698.8	66539.4								
480-160219-A-55-C				UNK	10/11/19 02:08:39 pm	1.27	19813	1.99			1.0000	N/A
Replicates	19908.4	20165.1	19927.3	19252.9								
CCV				CCV	10/11/19 02:09:59 pm	2.07	32192	1.43			1.0000	103.59
Replicates	31954.7	32609.8	32537.6	31664.4								
CCB				CCB	10/11/19 02:11:16 pm	0.00	132	44.28			1.0000	N/A
Replicates	160.2	141.4	108.6	119.4								
480-160219-A-56-C				UNK	10/11/19 02:12:35 pm	1.75	27263	1.84			1.0000	N/A
Replicates	27286.9	27710.9	27493.7	26560.3								
480-160219-A-57-C				UNK	10/11/19 02:13:54 pm	7.91	122308	1.84			1.0000	N/A
Replicates	122458.7	124494.9	123094.3	119185.9								
480-160219-A-58-C				UNK	10/11/19 02:15:12 pm	2.67	41364	2.02			1.0000	N/A
Replicates	41472.6	42137.9	41658.7	40187.5								
480-159642-A-1-D				UNK	10/11/19 02:16:30 pm	1.31	20357	2.06			1.0000	N/A
Replicates	20465.5	20724.5	20477.9	19761.1								
CCV				CCV	10/11/19 02:17:50 pm	2.07	32134	1.51			1.0000	103.40
Replicates	31963.7	32583.3	32455.7	31532.7								
CCB				CCB	10/11/19 02:19:08 pm	0.00	172	155.32			1.0000	N/A
Replicates	190.8	156.8	186.0	156.0								
CCVL				CRDL	10/11/19 02:20:28 pm	0.21	3433	1.88			1.0000	105.14
Replicates	3412.8	3459.2	3501.0	3359.4								
CCV				CCV	10/11/19 02:35:55 pm	2.07	32138	1.44			1.0000	103.42
Replicates	31992.0	32612.2	32384.6	31563.4								

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
CCB				CCB	10/11/19 02:37:13 pm	0.00	170	76.67			1.0000	N/A
Replicates	181.3	173.2	169.8	154.6								
MB 480-497458/1-A				UNK	10/11/19 02:38:31 pm	0.00	112	13.24			1.0000	N/A
Replicates	113.6	116.5	98.5	120.3								
LCSSRM 480-497458/2-A@5				UNK	10/11/19 02:39:49 pm	1.73	26847	1.82			1.0000	N/A
Replicates	26760.9	27332.8	27085.6	26209.0								
480-159547-D-7-B				UNK	10/11/19 02:41:07 pm	0.44	7012	1.83			1.0000	N/A
Replicates	7006.8	7130.5	7068.5	6840.7								
480-159547-D-8-B				UNK	10/11/19 02:42:26 pm	0.35	5646	1.73			1.0000	N/A
Replicates	5645.7	5741.0	5680.6	5516.8								
480-159547-D-18-B				UNK	10/11/19 02:43:44 pm	0.23	3747	1.89			1.0000	N/A
Replicates	3728.0	3807.3	3793.1	3660.5								
480-159547-D-19-B				UNK	10/11/19 02:45:02 pm	0.16	2645	1.73			1.0000	N/A
Replicates	2637.9	2671.6	2681.8	2587.2								
480-159547-E-20-B				UNK	10/11/19 02:46:20 pm	0.21	3469	1.70			1.0000	N/A
Replicates	3485.4	3504.2	3500.0	3386.2								
480-159547-E-30-B				UNK	10/11/19 02:47:39 pm	0.20	3348	1.79			1.0000	N/A
Replicates	3341.0	3417.4	3356.0	3279.4								
480-159547-E-31-E				UNK	10/11/19 02:48:58 pm	0.21	3403	1.53			1.0000	N/A
Replicates	3398.8	3447.1	3430.1	3335.5								
480-159547-D-32-B				UNK	10/11/19 02:50:17 pm	0.16	2716	2.05			1.0000	N/A
Replicates	2695.9	2755.1	2760.3	2651.1								
CCV				CCV	10/11/19 02:51:36 pm	2.05	31882	1.57			1.0000	102.59
Replicates	31735.8	32376.3	32164.7	31252.1								
CCB				CCB	10/11/19 02:52:54 pm	0.00	151	53.35			1.0000	N/A
Replicates	158.7	149.6	168.2	126.4								
480-159547-D-39-B				UNK	10/11/19 02:54:13 pm	0.45	7189	1.99			1.0000	N/A
Replicates	7174.3	7335.8	7240.4	7004.2								
480-159547-E-40-B				UNK	10/11/19 02:55:31 pm	0.42	6670	1.67			1.0000	N/A
Replicates	6638.1	6784.8	6722.8	6535.8								
480-159944-P-1-D				UNK	10/11/19 02:56:50 pm	0.28	4568	2.15			1.0000	N/A
Replicates	4558.3	4679.3	4586.3	4450.1								
480-159880-D-1-C				UNK	10/11/19 02:58:08 pm	1.04	16265	1.68			1.0000	N/A
Replicates	16207.5	16533.3	16407.1	15913.3								
480-159894-A-1-B				UNK	10/11/19 02:59:27 pm	0.04	735	7.57			1.0000	N/A
Replicates	774.4	760.8	724.6	681.2								
480-159948-A-1-B				UNK	10/11/19 03:00:45 pm	0.24	3834	1.60			1.0000	N/A
Replicates	3842.1	3890.0	3851.2	3751.6								

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-159993-B-3-G					UNK	10/11/19 03:02:04 pm	O/R	379625	1.47		O	1.0000	N/A
	Replicates	379436.0	385134.4	381932.6	371998.2								
480-159993-B-4-I					UNK	10/11/19 03:04:45 pm	0.18	2932	2.19			1.0000	N/A
	Replicates	2922.3	2987.6	2968.0	2852.0								
480-160006-A-1-C					UNK	10/11/19 03:06:03 pm	0.34	5449	1.91			1.0000	N/A
	Replicates	5433.9	5570.0	5467.4	5325.8								
480-160006-A-2-C					UNK	10/11/19 03:07:22 pm	0.89	13945	1.71			1.0000	N/A
	Replicates	13949.4	14185.0	14021.6	13623.2								
CCV					CCV	10/11/19 03:08:42 pm	2.05	31908	1.56			1.0000	102.67
	Replicates	31781.1	32402.1	32177.1	31273.5								
CCB					CCB	10/11/19 03:10:00 pm	0.00	128	27.24			1.0000	N/A
	Replicates	112.5	148.3	120.7	129.9								
480-160006-A-3-G					UNK	10/11/19 03:11:18 pm	0.68	10681	1.99			1.0000	N/A
	Replicates	10664.8	10898.1	10757.3	10402.9								
480-160006-A-3-Gsd@5					UNK	10/11/19 03:12:37 pm	0.13	2217	2.02			1.0000	N/A
	Replicates	2249.0	2236.2	2225.8	2157.0								
480-160006-A-3-H MS					UNK	10/11/19 03:13:56 pm	4.77	73830	1.78			1.0000	N/A
	Replicates	73643.1	75138.8	74452.0	72084.8								
480-160006-A-3-I MSD					UNK	10/11/19 03:15:14 pm	4.70	72747	1.67			1.0000	N/A
	Replicates	72456.8	73985.4	73350.6	71195.6								
480-160006-A-4-C					UNK	10/11/19 03:16:33 pm	0.99	15413	1.70			1.0000	N/A
	Replicates	15353.8	15664.5	15559.5	15075.5								
LCDSRM 480-497458/25-A@5					UNK	10/11/19 03:17:51 pm	2.19	33956	1.76			1.0000	N/A
	Replicates	33971.4	34540.6	34176.8	33134.4								
MB 480-497459/1-A					UNK	10/11/19 03:19:10 pm	-0.01	83	13.35			1.0000	N/A
	Replicates	85.6	69.2	75.8	100.4								
LCSSRM 480-497459/2-A@5					UNK	10/11/19 03:20:28 pm	1.49	23219	1.58			1.0000	N/A
	Replicates	22958.2	23562.6	23501.6	22853.8								
480-160006-A-5-C					UNK	10/11/19 03:21:47 pm	1.26	19685	1.77			1.0000	N/A
	Replicates	19634.0	19998.9	19887.7	19219.9								
480-160006-A-6-C					UNK	10/11/19 03:23:05 pm	0.61	9654	1.76			1.0000	N/A
	Replicates	9632.2	9815.3	9736.3	9431.1								
CCV					CCV	10/11/19 03:24:25 pm	2.05	31895	1.44			1.0000	102.63
	Replicates	31704.5	32373.1	32153.1	31349.9								
CCB					CCB	10/11/19 03:25:43 pm	0.00	113	23.44			1.0000	N/A
	Replicates	98.4	126.5	128.7	99.1								
480-160370-A-1-E					UNK	10/11/19 03:27:01 pm	1.57	24455	1.74			1.0000	N/A
	Replicates	24365.2	24855.9	24699.5	23899.3								

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-160370-A-1-Esd@5				UNK	10/11/19 03:28:20 pm	0.30	4783	1.89			1.0000	N/A
Replicates	4680.3	4852.8	4857.4	4742.4								
480-160370-A-1-F MS				UNK	10/11/19 03:29:39 pm	5.73	88753	1.81			1.0000	N/A
Replicates	88832.0	90310.0	89337.2	86533.8								
480-160370-A-1-G MSD				UNK	10/11/19 03:30:58 pm	5.28	81711	1.62			1.0000	N/A
Replicates	81360.2	82990.4	82482.6	80010.0								
480-160370-A-2-C				UNK	10/11/19 03:32:16 pm	0.19	3156	2.41			1.0000	N/A
Replicates	3174.1	3244.6	3128.2	3075.8								
480-160370-A-3-C				UNK	10/11/19 03:33:35 pm	0.62	9742	1.70			1.0000	N/A
Replicates	9712.4	9908.8	9818.4	9529.6								
480-160370-A-4-C				UNK	10/11/19 03:34:54 pm	1.45	22514	1.70			1.0000	N/A
Replicates	22491.2	22890.2	22674.0	21999.4								
480-160370-A-5-C				UNK	10/11/19 03:36:13 pm	0.20	3300	2.03			1.0000	N/A
Replicates	3279.3	3352.0	3349.2	3219.4								
480-160370-A-6-C				UNK	10/11/19 03:37:31 pm	1.64	25510	2.03			1.0000	N/A
Replicates	25564.9	25975.5	25717.7	24783.3								
480-160370-A-7-C				UNK	10/11/19 03:38:50 pm	0.45	7163	1.65			1.0000	N/A
Replicates	7144.2	7284.3	7210.5	7013.1								
CCV				CCV	10/11/19 03:40:10 pm	2.06	31986	1.61			1.0000	102.93
Replicates	31871.4	32514.4	32233.6	31325.4								
CCB				CCB	10/11/19 03:41:28 pm	0.00	126	15.03			1.0000	N/A
Replicates	117.9	130.7	119.3	135.9								
480-160370-A-8-C				UNK	10/11/19 03:42:46 pm	0.19	3126	1.64			1.0000	N/A
Replicates	3119.2	3171.6	3151.2	3061.2								
480-160370-A-9-C				UNK	10/11/19 03:44:05 pm	3.88	60173	1.79			1.0000	N/A
Replicates	60131.3	61221.0	60634.0	58704.2								
480-160370-A-10-C				UNK	10/11/19 03:45:24 pm	2.07	32176	1.77			1.0000	N/A
Replicates	32112.1	32767.3	32396.7	31429.3								
480-160362-A-1-A				UNK	10/11/19 03:46:43 pm	2.73	42308	1.68			1.0000	N/A
Replicates	42251.6	43031.0	42590.2	41360.8								
480-160362-A-2-A				UNK	10/11/19 03:48:02 pm	2.87	44575	1.71			1.0000	N/A
Replicates	44407.1	45330.5	44975.9	43585.9								
480-159846-A-4-C				UNK	10/11/19 03:49:21 pm	1.30	20230	1.82			1.0000	N/A
Replicates	20231.5	20573.4	20389.4	19723.6								
480-159846-B-5-C				UNK	10/11/19 03:50:39 pm	1.40	21768	1.87			1.0000	N/A
Replicates	21766.1	22147.5	21947.3	21211.1								
480-159846-B-6-C				UNK	10/11/19 03:51:58 pm	0.67	10466	1.91			1.0000	N/A
Replicates	10452.1	10674.0	10530.8	10205.0								

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Residual	Flags	DF	% Recovery
480-159993-B-3-G@5				UNK	10/11/19 03:53:17 pm	5.50	85116	1.71			1.0000	N/A
	Replicates	84926.4	86539.9	85822.1	83174.1							
CCV				CCV	10/11/19 03:54:37 pm	2.04	31756	1.60			1.0000	102.18
	Replicates	31566.6	32277.7	32035.7	31142.1							
CCB				CCB	10/11/19 03:55:55 pm	0.00	125	23.90			1.0000	N/A
	Replicates	133.4	107.9	118.7	139.3							
CCVL				CRDL	10/11/19 03:57:15 pm	0.21	3473	1.68			1.0000	106.43
	Replicates	3463.6	3520.9	3507.9	3398.3							

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493602 Batch Start Date: 09/25/19 07:01 Batch Analyst: Wolfe, Nalyja S

Batch Method: 3050B Batch End Date: 09/25/19 12:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MED_01_Si 00133	MED_01_W1 00059	MED_02_W2 00057	MED_03_Ag 00147
MB 480-493602/1		3050B, 6010C		0.4993 g	50 mL				
LCSSRM 480-493602/2		3050B, 6010C		0.4901 g	50 mL				
480-159547-E-7	RUSSO-TS-COMP 1	3050B, 6010C	T	0.4891 g	50 mL				
480-159547-E-7 MS	RUSSO-TS-COMP 1	3050B, 6010C	T	0.5107 g	50 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL
480-159547-E-7 MSD	RUSSO-TS-COMP 1	3050B, 6010C	T	0.5244 g	50 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL
480-159547-F-8	RUSSO-TS-COMP 2	3050B, 6010C	T	0.5064 g	50 mL				
480-159547-F-18	RUSSO-CF-COMP 1	3050B, 6010C	T	0.5273 g	50 mL				
480-159547-F-19	RUSSO-CF-COMP 2	3050B, 6010C	T	0.5053 g	50 mL				
480-159547-D-20	RUSSO-CF-COMP 3	3050B, 6010C	T	0.5031 g	50 mL				
480-159547-D-30	GERNATT-CF-COMP 1	3050B, 6010C	T	0.5044 g	50 mL				
480-159547-F-31	GERNATT-CF-COMP 2	3050B, 6010C	T	0.4920 g	50 mL				
480-159547-D-32	GERNATT-CF-COMP 3	3050B, 6010C	T	0.4941 g	50 mL				
480-159547-D-39	GERNATT-TS-COMP 1	3050B, 6010C	T	0.5028 g	50 mL				
480-159547-E-40	GERNATT-TS-COMP 2	3050B, 6010C	T	0.4943 g	50 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	MED_04_Sn 00134	MED_05_S 00091	MED_SRM_D087 00024			
MB 480-493602/1		3050B, 6010C							
LCSSRM 480-493602/2		3050B, 6010C				0.4901 g			
480-159547-E-7	RUSSO-TS-COMP 1	3050B, 6010C	T						
480-159547-E-7 MS	RUSSO-TS-COMP 1	3050B, 6010C	T	0.5 mL	0.5 mL				
480-159547-E-7 MSD	RUSSO-TS-COMP 1	3050B, 6010C	T	0.5 mL	0.5 mL				
480-159547-F-8	RUSSO-TS-COMP 2	3050B, 6010C	T						
480-159547-F-18	RUSSO-CF-COMP 1	3050B, 6010C	T						
480-159547-F-19	RUSSO-CF-COMP 2	3050B, 6010C	T						
480-159547-D-20	RUSSO-CF-COMP 3	3050B, 6010C	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493602 Batch Start Date: 09/25/19 07:01 Batch Analyst: Wolfe, Nalyja S

Batch Method: 3050B Batch End Date: 09/25/19 12:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	MED_04_Sn 00134	MED_05_S 00091	MED_SRM_D087 00024			
480-159547-D-30	GERNATT-CF-COMP 1	3050B, 6010C	T						
480-159547-F-31	GERNATT-CF-COMP 2	3050B, 6010C	T						
480-159547-D-32	GERNATT-CF-COMP 3	3050B, 6010C	T						
480-159547-D-39	GERNATT-TS-COMP 1	3050B, 6010C	T						
480-159547-E-40	GERNATT-TS-COMP 2	3050B, 6010C	T						

Batch Notes	
Balance ID	25850472
Batch Comment	autoblock digestion
Blank Soil Lot Number	5146187
Temperature - Corrected - End	auto Degrees C
Temperature - Corrected - Start	92.2 Degrees C
Digestion End Time	09/25/2018 12:41
Digestion Start Time	09/25/2019 07:01
Digestion Unit ID	F
Digestion Tube/Cup ID	1904119
Filter ID	90219753 (push filters)
Hydrogen Peroxide ID	5424518
Hydrochloric Acid ID	5502846
Nitric Acid ID	548675+5510601
Pipette/Syringe/Dispenser ID	MDL-1
Thermometer ID	170435816
Temperature - Uncorrected - End	auto Degrees C
Temperature - Uncorrected - Start	91.2 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 497458 Batch Start Date: 10/11/19 13:45 Batch Analyst: Booth, Bryan M

Batch Method: 7471B Batch End Date: 10/11/19 14:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MED_SRM_D087 00025			
MB 480-497458/1		7471B, 7471B		0.6201 g	50 mL				
LCSSRM 480-497458/2		7471B, 7471B		0.1529 g	50 mL	0.1529 g			
480-159547-D-7	RUSSO-TS-COMP 1	7471B, 7471B	T	0.5850 g	50 mL				
480-159547-D-8	RUSSO-TS-COMP 2	7471B, 7471B	T	0.6265 g	50 mL				
480-159547-D-18	RUSSO-CF-COMP 1	7471B, 7471B	T	0.6007 g	50 mL				
480-159547-D-19	RUSSO-CF-COMP 2	7471B, 7471B	T	0.6528 g	50 mL				
480-159547-E-20	RUSSO-CF-COMP 3	7471B, 7471B	T	0.6019 g	50 mL				
480-159547-E-30	GERNATT-CF-COMP 1	7471B, 7471B	T	0.6324 g	50 mL				
480-159547-E-31	GERNATT-CF-COMP 2	7471B, 7471B	T	0.6106 g	50 mL				
480-159547-D-32	GERNATT-CF-COMP 3	7471B, 7471B	T	0.5828 g	50 mL				
480-159547-D-39	GERNATT-TS-COMP 1	7471B, 7471B	T	0.6143 g	50 mL				
480-159547-E-40	GERNATT-TS-COMP 2	7471B, 7471B	T	0.5918 g	50 mL				
LCDSRM 480-497458/25		7471B, 7471B		0.2007 g	50 mL	0.2007 g			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 497458 Batch Start Date: 10/11/19 13:45 Batch Analyst: Booth, Bryan M

Batch Method: 7471B Batch End Date: 10/11/19 14:15

Batch Notes	
Balance ID	Balance-2
Batch Comment	spikes 1 & 2 1040
Blank Matrix ID	4837711
Temperature - Corrected - Start	96.2 Degrees C
Digestion End Time	10/11/2019 14:15
Digestion Start Time	10/11/2019 13:45
Digestion Unit ID	Hg-B
Hydrochloric Acid ID	5544341
Nitric Acid ID	5540189
Hydroxylamine ID	5394684
Potassium Permanganate ID	5544339
Pipette/Syringe/Dispenser ID	Hg-8
Analyst ID - Spike Analyst	BB
Thermometer ID	170435802
Digestion Tube/Cup ID	1812114
Temperature - Uncorrected - Start	96.4 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG No.:

Project: 1318 Niagara Street #E915213

Client Sample ID	Lab Sample ID
RUSSO-TS-GRAB 1	480-159547-1
RUSSO-TS-GRAB 2	480-159547-2
RUSSO-TS-GRAB 3	480-159547-3
RUSSO-TS-GRAB 4	480-159547-4
RUSSO-TS-GRAB 5	480-159547-5
RUSSO-TS-GRAB 6	480-159547-6
RUSSO-TS-COMP 1	480-159547-7
RUSSO-TS-COMP 2	480-159547-8
RUSSO-CF-GRAB 1	480-159547-9
RUSSO-CF-GRAB 2	480-159547-10
RUSSO-CF-GRAB 3	480-159547-11
RUSSO-CF-GRAB 4	480-159547-12
RUSSO-CF-GRAB 5	480-159547-13
RUSSO-CF-GRAB 6	480-159547-14
RUSSO-CF-GRAB 7	480-159547-15
RUSSO-CF-GRAB 8	480-159547-16
RUSSO-CF-GRAB 9	480-159547-17
RUSSO-CF-COMP 1	480-159547-18
RUSSO-CF-COMP 2	480-159547-19
RUSSO-CF-COMP 3	480-159547-20
GERNATT-CF-GRAB 1	480-159547-21
GERNATT-CF-GRAB 2	480-159547-22
GERNATT-CF-GRAB 3	480-159547-23
GERNATT-CF-GRAB 4	480-159547-24
GERNATT-CF-GRAB 5	480-159547-25
GERNATT-CF-GRAB 6	480-159547-26
GERNATT-CF-GRAB 7	480-159547-27
GERNATT-CF-GRAB 8	480-159547-28
GERNATT-CF-GRAB 9	480-159547-29
GERNATT-CF-COMP 1	480-159547-30
GERNATT-CF-COMP 2	480-159547-31
GERNATT-CF-COMP 3	480-159547-32
GERNATT-TS-GRAB 1	480-159547-33
GERNATT-TS-GRAB 2	480-159547-34
GERNATT-TS-GRAB 3	480-159547-35
GERNATT-TS-GRAB 4	480-159547-36
GERNATT-TS-GRAB 5	480-159547-37
GERNATT-TS-GRAB 6	480-159547-38
GERNATT-TS-COMP 1	480-159547-39
GERNATT-TS-COMP 2	480-159547-40

Comments:

COVER PAGE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job Number: 480-159547-1

SDG No.:

Project: 1318 Niagara Street #E915213

Client Sample ID	Lab Sample ID
RUSSO-TS-COMP 1	480-159547-7
RUSSO-TS-COMP 2	480-159547-8
RUSSO-CF-COMP 1	480-159547-18
RUSSO-CF-COMP 2	480-159547-19
RUSSO-CF-COMP 3	480-159547-20
GERNATT-CF-COMP 1	480-159547-30
GERNATT-CF-COMP 2	480-159547-31
GERNATT-CF-COMP 3	480-159547-32
GERNATT-TS-COMP 1	480-159547-39
GERNATT-TS-COMP 2	480-159547-40

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:35

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 78.5

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.2		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:40

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 72.2

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.3		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.7

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.1		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:52

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 90.6

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.0		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:55

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 89.8

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.1		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 93.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.0		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:53

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 94.1

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.0		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:57

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 92.9

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.0		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 14:30

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.4

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.1		mg/Kg		H F1	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-TS-COMP 2 | Lab Sample ID: 480-159547-40

Lab Name: Eurofins TestAmerica, Buffalo | Job No.: 480-159547-1

SDG ID.:

Matrix: Solid | Date Sampled: 09/16/2019 14:35

Reporting Basis: DRY | Date Received: 09/16/2019 16:10

% Solids: 87.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
57-12-5	Cyanide, Total	ND	1.1		mg/Kg		H	1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-TS-COMP 1 Lab Sample ID: 480-159547-7

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:35

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 78.5

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.5		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.6		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-TS-COMP 2 Lab Sample ID: 480-159547-8

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 09:40

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 72.2

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.7		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.8		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 1 Lab Sample ID: 480-159547-18

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.7

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.3		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 2 Lab Sample ID: 480-159547-19

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:52

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 90.6

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RUSSO-CF-COMP 3 Lab Sample ID: 480-159547-20

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 11:55

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 89.8

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.3		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 1 Lab Sample ID: 480-159547-30

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:50

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 93.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 2 Lab Sample ID: 480-159547-31

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:53

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 94.1

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.1		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-CF-COMP 3 Lab Sample ID: 480-159547-32

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 13:57

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 92.9

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.1		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-TS-COMP 1 Lab Sample ID: 480-159547-39

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 14:30

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 88.4

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.3		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.3		mg/Kg			1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: GERNATT-TS-COMP 2 Lab Sample ID: 480-159547-40

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG ID.:

Matrix: Solid Date Sampled: 09/16/2019 14:35

Reporting Basis: DRY Date Received: 09/16/2019 16:10

% Solids: 87.0

CAS No.	Analyte	Result	RL		Units	C	Q	DIL	Method
18540-29-9	Cr (VI)	ND	2.2		mg/Kg			1	7196A
18540-29-9	Cr (VI)	ND	2.3		mg/Kg			1	7196A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Analyst: MDL Batch Start Date: 10/02/2019

Reporting Units: mg/L Analytical Batch No.: 495424

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	09:18	Cyanide, Total	0.262	0.250	105	90-110		CN CCV_01169
2	CCB	09:19	Cyanide, Total	ND					
13	CCV	09:35	Cyanide, Total	0.268	0.250	107	90-110		CN CCV_01169
14	CCB	09:37	Cyanide, Total	ND					
25	CCV	09:53	Cyanide, Total	0.271	0.250	108	90-110		CN CCV_01169
26	CCB	09:54	Cyanide, Total	ND					
29	CCV	09:58	Cyanide, Total	0.273	0.250	109	90-110		CN CCV_01169
30	CCB	10:00	Cyanide, Total	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Analyst: MDL Batch Start Date: 10/02/2019

Reporting Units: mg/L Analytical Batch No.: 495460

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	12:03	Cyanide, Total	0.257	0.250	103	90-110		CN CCV_01169
2	CCB	12:05	Cyanide, Total	ND					
13	CCV	12:21	Cyanide, Total	0.249	0.250	100	90-110		CN CCV_01169
14	CCB	12:22	Cyanide, Total	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Analyst: RAK Batch Start Date: 10/08/2019

Reporting Units: ug/L Analytical Batch No.: 645561

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	14:00	Cr (VI)	509.5	500	102	90-110		WThcrIM3_00049
8	ICB	14:00	Cr (VI)	ND					
19	CCV	14:25	Cr (VI)	504.5	500	101	90-110		WThcrIM3_00049
20	CCB	14:25	Cr (VI)	ND					
31	CCV	15:40	Cr (VI)	492.2	500	98	90-110		WThcrIM3_00049
32	CCB	15:40	Cr (VI)	ND					
41	CCV	16:50	Cr (VI)	489.8	500	98	90-110		WThcrIM3_00049
42	CCB	16:50	Cr (VI)	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Analyst: RAK Batch Start Date: 10/08/2019

Reporting Units: ug/L Analytical Batch No.: 645571

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	17:00	Cr (VI)	516.8	500	103	90-110		WThcrIM3_00049
8	ICB	17:00	Cr (VI)	ND					
19	CCV	17:00	Cr (VI)	514.4	500	103	90-110		WThcrIM3_00049
20	CCB	17:00	Cr (VI)	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Analyst: RPR Batch Start Date: 10/10/2019

Reporting Units: ug/L Analytical Batch No.: 646036

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	11:46	Cr (VI)	509.1	500	102	90-110		WThcrIM3_00049
8	ICB	11:46	Cr (VI)	ND					
18	CCV	14:13	Cr (VI)	509.1	500	102	90-110		WThcrIM3_00049
19	CCB	14:13	Cr (VI)	ND					
22	CCV	14:13	Cr (VI)	509.1	500	102	90-110		WThcrIM3_00049
23	CCB	14:13	Cr (VI)	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Analyst: RPR Batch Start Date: 10/10/2019

Reporting Units: ug/L Analytical Batch No.: 646037

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
7	ICV	11:46	Cr (VI)	509.1	500	102	90-110		WThcrIM3_00049
8	ICB	11:46	Cr (VI)	ND					
19	CCV	15:38	Cr (VI)	507.8	500	102	90-110		WThcrIM3_00049
20	CCB	15:38	Cr (VI)	ND					
31	CCV	16:24	Cr (VI)	507.8	500	102	90-110		WThcrIM3_00049
32	CCB	16:24	Cr (VI)	ND					
41	CCV	16:48	Cr (VI)	507.8	500	102	90-110		WThcrIM3_00049
42	CCB	16:48	Cr (VI)	ND					

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 495424	Date: 10/02/2019 09:21	Prep Batch: 495078	Date: 09/30/2019 20:45				
9012B	MB 480-495078/1-A	Cyanide, Total	ND		mg/Kg	0.98	1
Batch ID: 495460	Date: 10/02/2019 12:06	Prep Batch: 495079	Date: 09/30/2019 21:50				
9012B	MB 480-495079/1-A	Cyanide, Total	ND		mg/Kg	0.95	1

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 645561	Date: 10/08/2019 14:00	Prep Batch: 645413	Date: 10/08/2019 08:53				
7196A	MB 460-645413/1-A	Cr (VI)	ND		mg/Kg	2.0	1
Batch ID: 645571	Date: 10/08/2019 17:00	Prep Batch: 645471	Date: 10/08/2019 10:53				
7196A	MB 460-645471/1-A	Cr (VI)	ND		mg/Kg	2.0	1
Batch ID: 646036	Date: 10/10/2019 14:13	Prep Batch: 645708	Date: 10/09/2019 07:53				
7196A	MB 460-645708/1-A	Cr (VI)	ND		mg/Kg	2.0	1
Batch ID: 646037	Date: 10/10/2019 15:38	Prep Batch: 645709	Date: 10/09/2019 07:53				
7196A	MB 460-645709/1-A	Cr (VI)	ND		mg/Kg	2.0	1

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 495424	Date: 10/02/2019 09:57		Prep Batch: 495078		Date: 09/30/2019 20:45						
9012B	480-159547-39	Cyanide, Total	ND		mg/Kg						H F1
9012B	480-159547-39 MS	Cyanide, Total	1.88		mg/Kg	1.31	144	85-115			F1

Calculations are performed before rounding to avoid round-off errors in calculated results.
Note - Results and Reporting Limits have been adjusted for dry weight.

FORM V-IN

7A-IN
LCS-CERTIFIED REFERENCE MATERIAL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 495424	Date: 10/02/2019 09:22		Prep Batch: 495078			Date: 09/30/2019 20:45					
						LCS Source: WC_CNsoil_ERA_00019					
9012B	LCSSRM 480-495078/2-A ^10	Cyanide, Total	55.16		mg/Kg	86.4	63.8	29.1-11	9.2		
Batch ID: 495460	Date: 10/02/2019 12:08		Prep Batch: 495079			Date: 09/30/2019 21:50					
						LCS Source: WC_CNsoil_ERA_00019					
9012B	LCSSRM 480-495079/2-A ^10	Cyanide, Total	34.22		mg/Kg	86.4	39.6	29.1-11	9.2		

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LCS-CERTIFIED REFERENCE MATERIAL
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 645561	Date: 10/08/2019 14:00		Prep Batch: 645413			Date: 10/08/2019 08:53					
						LCS Source: WThcrsLCS_00103					
7196A	LCSSRM 460-645413/2-A	Cr (VI)	14.47		mg/Kg	14.4	100.5	84.2-11 4.4			
Batch ID: 645571	Date: 10/08/2019 17:00		Prep Batch: 645471			Date: 10/08/2019 10:53					
						LCS Source: WThcrsLCS_00103					
7196A	LCSSRM 460-645471/2-A	Cr (VI)	14.28		mg/Kg	14.4	99.2	84.2-11 4.4			
Batch ID: 646036	Date: 10/10/2019 14:13		Prep Batch: 645708			Date: 10/09/2019 07:53					
						LCS Source: WThcrsLCS_00103					
7196A	LCSSRM 460-645708/2-A	Cr (VI)	14.05		mg/Kg	14.4	97.6	84.2-11 4.4			
Batch ID: 646037	Date: 10/10/2019 15:38		Prep Batch: 645709			Date: 10/09/2019 07:53					
						LCS Source: WThcrsLCS_00103					
7196A	LCSSRM 460-645709/2-A	Cr (VI)	13.61		mg/Kg	14.4	94.5	84.2-11 4.4			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE INSOLUBLE
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 645561	Date: 10/08/2019 14:00		Prep Batch: 645413			Date: 10/08/2019 08:53					
						LCS Source: WThcrPbCr_00005					
7196A	LCSI 460-645413/3-A	Cr (VI)	711.4		mg/Kg	708	100	80-120			
Batch ID: 645571	Date: 10/08/2019 17:00		Prep Batch: 645471			Date: 10/08/2019 10:53					
						LCS Source: WThcrPbCr_00005					
7196A	LCSI 460-645471/3-A	Cr (VI)	704.1		mg/Kg	708	99	80-120			
Batch ID: 646036	Date: 10/10/2019 14:13		Prep Batch: 645708			Date: 10/09/2019 07:53					
						LCS Source: WThcrPbCr_00005					
7196A	LCSI 460-645708/3-A	Cr (VI)	705.1		mg/Kg	708	100	80-120			
Batch ID: 646037	Date: 10/10/2019 15:38		Prep Batch: 645709			Date: 10/09/2019 07:53					
						LCS Source: WThcrPbCr_00005					
7196A	LCSI 460-645709/3-A	Cr (VI)	749.9		mg/Kg	708	106	80-120			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: LACHAT2

Method: 9012B MDL Date: 06/19/2019 16:56

Prep Method: 9012B

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Cyanide, Total		1	0.483

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: LACHAT2

Method: 9012B XMDL Date: 02/05/2010 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.005

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: Moisture RL Date: 08/17/2009 12:10

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: NOEQUIP

Method: Moisture XRL Date: 08/17/2009 12:10

Analyte	Wavelength/ Mass	XRL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: WetHexSpec

Method: 7196A MDL Date: 09/07/2018 15:24

Prep Method: 3060A

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Cr (VI)		2	0.716

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job Number: 480-159547-1

SDG Number:

Matrix: Solid Instrument ID: WetHexSpec

Method: 7196A XMDL Date: 09/07/2018 14:43

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Cr (VI)		10	3.01

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 480-495078/1-A	09/30/2019 20:45	495078	0.5102		6
LCSSRM 480-495078/2-A ^10	09/30/2019 20:45	495078	0.5265		6
480-159547-7	09/30/2019 20:45	495078	0.5192		6
480-159547-8	09/30/2019 20:45	495078	0.5332		6
480-159547-18	09/30/2019 20:45	495078	0.5017		6
480-159547-19	09/30/2019 20:45	495078	0.5432		6
480-159547-20	09/30/2019 20:45	495078	0.5163		6
480-159547-30	09/30/2019 20:45	495078	0.5329		6
480-159547-32	09/30/2019 20:45	495078	0.5256		6
480-159547-31	09/30/2019 20:45	495078	0.5173		6
480-159547-39	09/30/2019 20:45	495078	0.5123		6
480-159547-39 MS	09/30/2019 20:45	495078	0.5187		6

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 480-495079/1-A	09/30/2019 21:50	495079	0.5269		6
LCSSRM 480-495079/2-A ^10	09/30/2019 21:50	495079	0.5085		6
480-159547-40	09/30/2019 21:50	495079	0.5280		6

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Prep Method: 3060A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 460-645413/1-A	10/08/2019 08:53	645413	2.50		100
LCSSRM 460-645413/2-A	10/08/2019 08:53	645413	2.50		100
LCSI 460-645413/3-A	10/08/2019 08:53	645413	2.50		100
480-159547-7	10/08/2019 08:53	645413	2.58		100
480-159547-8	10/08/2019 08:53	645413	2.54		100
480-159547-18	10/08/2019 08:53	645413	2.55		100
480-159547-19	10/08/2019 08:53	645413	2.48		100
480-159547-20	10/08/2019 08:53	645413	2.42		100
480-159547-30	10/08/2019 08:53	645413	2.50		100
480-159547-31	10/08/2019 08:53	645413	2.43		100
480-159547-32	10/08/2019 08:53	645413	2.59		100
480-159547-39	10/08/2019 08:53	645413	2.48		100

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Prep Method: 3060A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 460-645471/1-A	10/08/2019 10:53	645471	2.50		100
LCSSRM 460-645471/2-A	10/08/2019 10:53	645471	2.50		100
LCSI 460-645471/3-A	10/08/2019 10:53	645471	2.50		100
480-159547-40	10/08/2019 10:53	645471	2.56		100

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Prep Method: 3060A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 460-645708/1-A	10/09/2019 07:53	645708	2.50		100
LCSSRM 460-645708/2-A	10/09/2019 07:53	645708	2.50		100
LCSI 460-645708/3-A	10/09/2019 07:53	645708	2.50		100
480-159547-40	10/09/2019 07:53	645708	2.48		100

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Prep Method: 3060A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight (g)	Initial Volume	Final Volume (mL)
MB 460-645709/1-A	10/09/2019 07:53	645709	2.50		100
LCSSRM 460-645709/2-A	10/09/2019 07:53	645709	2.50		100
LCSI 460-645709/3-A	10/09/2019 07:53	645709	2.50		100
480-159547-7	10/09/2019 07:53	645709	2.48		100
480-159547-8	10/09/2019 07:53	645709	2.47		100
480-159547-18	10/09/2019 07:53	645709	2.49		100
480-159547-19	10/09/2019 07:53	645709	2.50		100
480-159547-20	10/09/2019 07:53	645709	2.48		100
480-159547-30	10/09/2019 07:53	645709	2.49		100
480-159547-31	10/09/2019 07:53	645709	2.49		100
480-159547-32	10/09/2019 07:53	645709	2.47		100
480-159547-39	10/09/2019 07:53	645709	2.48		100

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 10/02/2019 09:18 End Date: 10/02/2019 10:00

Lab Sample ID	D / F	Type	Time	Analytes																			
				CN																			
CCV 480-495424/1	1		09:18	X																			
CCB 480-495424/2	1		09:19	X																			
MB 480-495078/1-A	1	T	09:21	X																			
LCSSRM 480-495078/2-A ^10	10	T	09:22	X																			
ZZZZZZ			09:24																				
ZZZZZZ			09:25																				
ZZZZZZ			09:27																				
ZZZZZZ			09:28																				
ZZZZZZ			09:29																				
ZZZZZZ			09:31																				
ZZZZZZ			09:32																				
ZZZZZZ			09:34																				
CCV 480-495424/13	1		09:35	X																			
CCB 480-495424/14	1		09:37	X																			
ZZZZZZ			09:38																				
ZZZZZZ			09:40																				
480-159547-7	1	T	09:41	X																			
480-159547-8	1	T	09:42	X																			
480-159547-18	1	T	09:44	X																			
480-159547-19	1	T	09:45	X																			
480-159547-20	1	T	09:47	X																			
480-159547-30	1	T	09:48	X																			
480-159547-32	1	T	09:50	X																			
480-159547-31	1	T	09:51	X																			
CCV 480-495424/25	1		09:53	X																			
CCB 480-495424/26	1		09:54	X																			
480-159547-39	1	T	09:55	X																			
480-159547-39 MS	1	T	09:57	X																			
CCV 480-495424/29	1		09:58	X																			
CCB 480-495424/30	1		10:00	X																			

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: LACHAT2 Method: 9012B

Start Date: 10/02/2019 12:03 End Date: 10/02/2019 12:45

Lab Sample ID	D / F	Type	Time	Analytes																			
				CN																			
CCV 480-495460/1	1		12:03	X																			
CCB 480-495460/2	1		12:05	X																			
MB 480-495079/1-A	1	T	12:06	X																			
LCSSRM 480-495079/2-A ^10	10	T	12:08	X																			
ZZZZZZ			12:09																				
ZZZZZZ			12:11																				
ZZZZZZ			12:12																				
480-159547-40	1	T	12:13	X																			
ZZZZZZ			12:15																				
ZZZZZZ			12:16																				
ZZZZZZ			12:18																				
ZZZZZZ			12:19																				
CCV 480-495460/13	1		12:21	X																			
CCB 480-495460/14	1		12:22	X																			
ZZZZZZ			12:24																				
ZZZZZZ			12:25																				
ZZZZZZ			12:26																				
ZZZZZZ			12:28																				
ZZZZZZ			12:29																				
ZZZZZZ			12:31																				
ZZZZZZ			12:32																				
ZZZZZZ			12:34																				
ZZZZZZ			12:35																				
ZZZZZZ			12:37																				
CCV 480-495460/25			12:38																				
CCB 480-495460/26			12:39																				
ZZZZZZ			12:41																				
ZZZZZZ			12:42																				
CCV 480-495460/29			12:44																				
CCB 480-495460/30			12:45																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: NOEQUIP Method: Moisture

Start Date: 09/24/2019 08:59 End Date: 09/24/2019 08:59

Lab Sample ID	D / F	Type	Time	Analytes																			
				% Sol	Moist																		
480-159547-1	1	T	08:59	X	X																		
480-159547-2	1	T	08:59	X	X																		
480-159547-3	1	T	08:59	X	X																		
480-159547-4	1	T	08:59	X	X																		
480-159547-5	1	T	08:59	X	X																		
480-159547-6	1	T	08:59	X	X																		
480-159547-9	1	T	08:59	X	X																		
480-159547-10	1	T	08:59	X	X																		
480-159547-11	1	T	08:59	X	X																		
480-159547-12	1	T	08:59	X	X																		
480-159547-13	1	T	08:59	X	X																		
480-159547-14	1	T	08:59	X	X																		
480-159547-15	1	T	08:59	X	X																		
480-159547-16	1	T	08:59	X	X																		
480-159547-17	1	T	08:59	X	X																		
480-159547-21	1	T	08:59	X	X																		
480-159547-22	1	T	08:59	X	X																		
480-159547-23	1	T	08:59	X	X																		
480-159547-24	1	T	08:59	X	X																		
480-159547-25	1	T	08:59	X	X																		
480-159547-26	1	T	08:59	X	X																		
480-159547-27	1	T	08:59	X	X																		
480-159547-28	1	T	08:59	X	X																		
480-159547-29	1	T	08:59	X	X																		
480-159547-33	1	T	08:59	X	X																		
480-159547-34	1	T	08:59	X	X																		
480-159547-35	1	T	08:59	X	X																		
480-159547-36	1	T	08:59	X	X																		
480-159547-37	1	T	08:59	X	X																		
480-159547-38	1	T	08:59	X	X																		

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: NOEQUIP Method: Moisture

Start Date: 09/24/2019 09:31 End Date: 09/24/2019 09:31

Lab Sample ID	D / F	Type	Time	Analytes																				
				% Sol	Moist																			
ZZZZZZ			09:31																					
ZZZZZZ			09:31																					
ZZZZZZ			09:31																					
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ZZZZZZ			09:31																					
ZZZZZZ			09:31																					
ZZZZZZ			09:31																					
ZZZZZZ			09:31																					
480-159547-7	1	T	09:31	X	X																			
480-159547-8	1	T	09:31	X	X																			
480-159547-18	1	T	09:31	X	X																			
480-159547-19	1	T	09:31	X	X																			
480-159547-20	1	T	09:31	X	X																			
480-159547-30	1	T	09:31	X	X																			
480-159547-31	1	T	09:31	X	X																			

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Instrument ID: NOEQUIP Method: Moisture

Start Date: 09/24/2019 09:31 End Date: 09/24/2019 09:31

Lab Sample ID	D / F	Type	Time	Analytes																			
				% Sol	Moist																		
480-159547-32	1	T	09:31	X	X																		
480-159547-39	1	T	09:31	X	X																		
480-159547-40	1	T	09:31	X	X																		
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				
ZZZZZZ			09:31																				

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/08/2019 11:06 End Date: 10/08/2019 17:00

Lab Sample ID	D / F	Type	Time	Analytes																			
				Cr6																			
IC 460-645571/1			11:06	X																			
IC 460-645571/2			11:06	X																			
IC 460-645571/3			11:06	X																			
IC 460-645571/4			11:06	X																			
IC 460-645571/5			11:06	X																			
IC 460-645571/6			11:06	X																			
ICV 460-645571/7	1		17:00	X																			
ICB 460-645571/8	1		17:00	X																			
MB 460-645471/1-A	1	T	17:00	X																			
LCSSRM 460-645471/2-A	1	T	17:00	X																			
LCSI 460-645471/3-A	50	T	17:00	X																			
ZZZZZZ			17:00																				
ZZZZZZ			17:00																				
ZZZZZZ			17:00																				
ZZZZZZ			17:00																				
ZZZZZZ			17:00																				
ZZZZZZ			17:00																				
480-159547-40	1	T	17:00	X																			
CCV 460-645571/19	1		17:00	X																			
CCB 460-645571/20	1		17:00	X																			
ZZZZZZ			17:00																				
CCV 460-645571/22			17:00																				
CCB 460-645571/23			17:00																				
ZZZZZZ			17:00																				

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/08/2019 11:06 End Date: 10/08/2019 16:50

Lab Sample ID	D / F	Type	Time	Analytes																			
				Cr6																			
IC 460-645561/1			11:06	X																			
IC 460-645561/2			11:06	X																			
IC 460-645561/3			11:06	X																			
IC 460-645561/4			11:06	X																			
IC 460-645561/5			11:06	X																			
IC 460-645561/6			11:06	X																			
ICV 460-645561/7	1		14:00	X																			
ICB 460-645561/8	1		14:00	X																			
MB 460-645413/1-A	1	T	14:00	X																			
LCSSRM 460-645413/2-A	1	T	14:00	X																			
LCSI 460-645413/3-A	50	T	14:00	X																			
ZZZZZZ			14:00																				
ZZZZZZ			14:00																				
ZZZZZZ			14:00																				
ZZZZZZ			14:00																				
ZZZZZZ			14:00																				
ZZZZZZ			14:25																				
ZZZZZZ			14:25																				
CCV 460-645561/19	1		14:25	X																			
CCB 460-645561/20	1		14:25	X																			
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
ZZZZZZ			15:40																				
480-159547-7	1	T	15:40	X																			
CCV 460-645561/31	1		15:40	X																			
CCB 460-645561/32	1		15:40	X																			
480-159547-8	1	T	16:50	X																			
480-159547-18	1	T	16:50	X																			
480-159547-19	1	T	16:50	X																			
480-159547-20	1	T	16:50	X																			
480-159547-30	1	T	16:50	X																			
480-159547-31	1	T	16:50	X																			
480-159547-32	1	T	16:50	X																			
480-159547-39	1	T	16:50	X																			
CCV 460-645561/41	1		16:50	X																			
CCB 460-645561/42	1		16:50	X																			

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/08/2019 11:06 End Date: 10/08/2019 16:50

Prep Types
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/10/2019 11:46 End Date: 10/10/2019 14:13

Lab Sample ID	D / F	Type	Time	Analytes																			
				Cr6																			
IC 460-646036/1			11:46	X																			
IC 460-646036/2			11:46	X																			
IC 460-646036/3			11:46	X																			
IC 460-646036/4			11:46	X																			
IC 460-646036/5			11:46	X																			
IC 460-646036/6			11:46	X																			
ICV 460-646036/7	1		11:46	X																			
ICB 460-646036/8	1		11:46	X																			
MB 460-645708/1-A	1	T	14:13	X																			
LCSSRM 460-645708/2-A	1	T	14:13	X																			
LCSI 460-645708/3-A	50	T	14:13	X																			
ZZZZZZ			14:13																				
ZZZZZZ			14:13																				
ZZZZZZ			14:13																				
ZZZZZZ			14:13																				
ZZZZZZ			14:13																				
ZZZZZZ			14:13																				
CCV 460-646036/18	1		14:13	X																			
CCB 460-646036/19	1		14:13	X																			
ZZZZZZ			14:13																				
480-159547-40	1	T	14:13	X																			
CCV 460-646036/22	1		14:13	X																			
CCB 460-646036/23	1		14:13	X																			

Prep Types

T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/10/2019 11:46 End Date: 10/10/2019 16:48

Lab Sample ID	D / F	Type	Time	Analytes																			
				Cr6																			
IC 460-646037/1			11:46	X																			
IC 460-646037/2			11:46	X																			
IC 460-646037/3			11:46	X																			
IC 460-646037/4			11:46	X																			
IC 460-646037/5			11:46	X																			
IC 460-646037/6			11:46	X																			
ICV 460-646037/7	1		11:46	X																			
ICB 460-646037/8	1		11:46	X																			
MB 460-645709/1-A	1	T	15:38	X																			
LCSSRM 460-645709/2-A	1	T	15:38	X																			
LCSI 460-645709/3-A	50	T	15:38	X																			
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
ZZZZZZ			15:38																				
CCV 460-646037/19	1		15:38	X																			
CCB 460-646037/20	1		15:38	X																			
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
ZZZZZZ			16:24																				
480-159547-7	1	T	16:24	X																			
CCV 460-646037/31	1		16:24	X																			
CCB 460-646037/32	1		16:24	X																			
480-159547-8	1	T	16:48	X																			
480-159547-18	1	T	16:48	X																			
480-159547-19	1	T	16:48	X																			
480-159547-20	1	T	16:48	X																			
480-159547-30	1	T	16:48	X																			
480-159547-31	1	T	16:48	X																			
480-159547-32	1	T	16:48	X																			
480-159547-39	1	T	16:48	X																			
CCV 460-646037/41	1		16:48	X																			
CCB 460-646037/42	1		16:48	X																			

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Instrument ID: WetHexSpec Method: 7196A

Start Date: 10/10/2019 11:46 End Date: 10/10/2019 16:48

Prep Types
T = Total/NA

495424

Solutions:

Potassium Phosphate Buffer	**5529009 Exp: 03/29/2020**
Pyridine Barbituric Acid	**5529010 Exp: 10/06/2019**
Chloramine-T	**5537090 Exp. 10/02/2019**
50ppm INT STD	**5519339 Exp. 10/02/2019**
CN .25ppm CCV Std	**5537091 Exp. 10/02/2019**

LCS = 0.4mg/L, 0.25mg/L
CCV = 0.25mg/L
MS/SD = 0.1mg/L

Cyanide Curve Lachat 2 : 09/29/2019
Curve Standard(50 ppm) : 5519339
ICV (0.250 ppm): 494747/3

495424

Author: BufLachat2

Date : 10/2/2019

Original Run Filename: OM_10-2-2019_09-17-37AM.OMN Created: 10/2/2019 9:17:37 AM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_10-2-2019_09-17-37AM.OMN Last Modified: 10/2/2019 10:03:09 AM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.262	4.97	0.166	10/2/2019@9:18:20 AM
	Known Conc:		1.50			
CCB	1	S10	1.58e-3	0.0308	1.09e-3	10/2/2019@9:19:46 AM
	Known Conc:		0.00			
	Calibration:		Table/Fig. : 1			
MB 480-495078/1-A	1	1	4.14e-3	0.0792	2.54e-3	10/2/2019@9:21:13 AM
LCSSRM 480-495078/2-A^10	1	2	0.484	9.18	0.308	10/2/2019@9:22:41 AM
480-159250-C-1-K	1	3	0.0153	0.291	0.0102	10/2/2019@9:24:08 AM
480-159250-C-1-L MS	1	4	0.124	2.35	0.0791	10/2/2019@9:25:35 AM
480-159250-C-1-M MSD	1	5	0.127	2.40	0.0808	10/2/2019@9:27:02 AM
480-159250-C-3-E	1	6	0.0620	1.18	0.0411	10/2/2019@9:28:29 AM
480-159250-C-5-E	1	7	0.0265	0.503	0.0169	10/2/2019@9:29:55 AM
480-159136-B-3-C	1	8	0.0160	0.304	9.71e-3	10/2/2019@9:31:22 AM
480-159136-B-8-C	1	9	0.301	5.70	0.191	10/2/2019@9:32:49 AM
480-159230-F-1-A	1	10	5.67e-3	0.108	3.24e-3	10/2/2019@9:34:15 AM
CCV	1	S9	0.268	5.09	0.170	10/2/2019@9:35:41 AM
	Known Conc:		100			
CCB	1	S10	-1.21e-3	-0.0221	-1.14e-3	10/2/2019@9:37:07 AM
	Known Conc:		100			
480-159230-H-2-A	1	11	3.74e-3	0.0717	2.64e-3	10/2/2019@9:38:34 AM
480-159246-A-1-B	1	12	8.31e-3	0.158	5.11e-3	10/2/2019@9:40:00 AM
480-159547-F-7-B	1	13	0.0151	0.287	9.25e-3	10/2/2019@9:41:26 AM
480-159547-F-8-D	1	14	8.96e-3	0.171	6.03e-3	10/2/2019@9:42:52 AM
480-159547-F-18-D	1	15	5.85e-3	0.112	3.27e-3	10/2/2019@9:44:18 AM
480-159547-F-19-D	1	16	5.56e-3	0.106	3.48e-3	10/2/2019@9:45:45 AM
480-159547-D-20-D	1	17	5.61e-3	0.107	3.47e-3	10/2/2019@9:47:12 AM
480-159547-D-30-D	1	18	3.75e-3	0.0719	2.11e-3	10/2/2019@9:48:40 AM
480-159547-E-32-D	1	19	4.19e-3	0.0802	2.89e-3	10/2/2019@9:50:07 AM
480-159547-E-31-D	1	20	4.43e-3	0.0849	2.56e-3	10/2/2019@9:51:34 AM
CCV	1	S9	0.271	5.14	0.171	10/2/2019@9:53:00 AM
	Known Conc:		100			
CCB	1	S10	5.54e-5	1.85e-3	8.14e-4	10/2/2019@9:54:26 AM
	Known Conc:		100			
480-159547-E-39-B	1	21	0.0156	0.296	9.78e-3	10/2/2019@9:55:53 AM
480-159547-E-39-C MS	1	22	0.144	2.72	0.0922	10/2/2019@9:57:20 AM
CCV	1	S9	0.273	5.18	0.174	10/2/2019@9:58:46 AM
	Known Conc:		100			
CCB	1	S10	1.53e-3	0.0298	1.55e-3	10/2/2019@10:00:12 AM
	Known Conc:		100			

500ul → 5ml

Table : 1 (Cyanide)

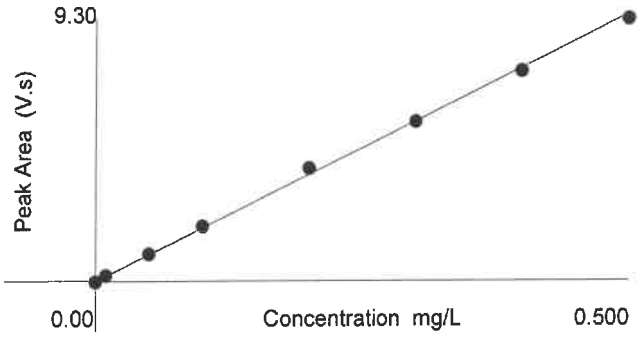
	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	9.30	0.315	0.0	1.8	0.491	9/29/2019	12:22:17 PM
2	0.400	1	7.46	0.253	0.0	1.6	0.393	9/29/2019	12:23:44 PM
3	0.300	1	5.67	0.192	0.0	0.2	0.299	9/29/2019	12:25:10 PM
4	0.200	1	4.01	0.135	0.0	-5.7	0.211	9/29/2019	12:26:37 PM
5	0.100	1	1.95	0.0663	0.0	-2.8	0.103	9/29/2019	12:28:04 PM
6	0.0500	1	0.969	0.0336	0.0	-2.1	0.0511	9/29/2019	12:29:32 PM
7	0.0100	1	0.203	7.12e-3	0.0	-6.5	0.0107	9/29/2019	12:31:00 PM
8	0.00	1	-0.0244	-1.62e-3			-1.33e-3	9/29/2019	12:32:27 PM

495424

Author: BufLachat2

Date : 10/2/2019

Figure : 1 (Cyanide)



Area = 18.9 * Conc + 1.30e-3
Conc = 0.0527 * Area - 4.22e-5
Correlation Coefficient (r) = 0.99992

Weighting : 1/x

B

Analyst: LAW Date: 9/30/19
TALS Batch #: 495078

TestAmerica BUFFALO
Cyanide Micro-Distillation Logbook **Logbook # A19-47**

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	B	1		0.5102g			
LCSSRM	ERA SOIL	2		0.5265g			
159250	C1	3		0.5143g			
	C1-MS	4		0.5167g	60ul	✓	
	C1-MSD	5		0.5170g	60ul	✓	
	C3	6		0.5063g			
	C5	7		0.5215g			
159136	B3	8		0.5172g			
	B8	9		0.5017g			
159230	F1	10		0.5276g			
	H2	11		0.5020g			
159246	A1	12		0.5008g			
159347	F7	13		0.5192g			
	F8	14		0.5332g			
	F18	15		0.5017g			
	F19	16		0.5432g			
	D20	17		0.5163g			
	D30	18		0.5329g			
	E32	19		0.5256g			
	E31	20		0.5173g			
	E39	21		0.5123g			
	E39-MS	22		0.5187g	60ul	✓	

Start Time: 20:45
End Time: 21:15

Cl_2 Check: ✓
H_2S Check: ✓

0.400 mg/L Complex CN LCS: NA
0.250 mg/L Complex CN LCS: NA
0.100 mg/L Free CN CCVL: NA
10 ppm Complex CN MS: 559585
10 ppm Free CN MS: NA
ERA Soil Lot: 4104694 (0097-541) SAND; 172155 203

1.0 N NaOH: NA
7.11M H_2SO_4 / 0.79M $MgCl_2$: 559586
H_3NSO_3: 552400
$NaCH_3COO$: NA
$ZnCH_3COO$: NA

SimpleDist Block A: Set Temp. (°C): 120.0 Measured Start Temp. (°C): 119.2 Measured End Temp. (°C): 119.1

Reviewed By: LAW Date: 9/30/19

W.C. BAL. #16

495460

Solutions:

Potassium Phosphate Buffer	**5529009 Exp: 03/29/2020**
Pyridine Barbituric Acid	**5529010 Exp: 10/06/2019**
Chloramine-T	**5537090 Exp. 10/02/2019**
50ppm INT STD	**5519339 Exp. 10/02/2019**
CN .25ppm CCV Std	**5537091 Exp. 10/02/2019**

LCS = 0.4mg/L, 0.25mg/L
CCV = 0.25mg/L
MS/SD = 0.1mg/L

Cyanide Curve Lachat 2 : 10/02/2019
Curve Standard(50 ppm) : 5519339
ICV (0.250 ppm): 495214/3

Author: BufLachat2

Date : 10/2/2019

Original Run Filename: OM_10-2-2019_12-02-36PM.OMN Created: 10/2/2019 12:02:36 PM
Original Run Author's Signature: [BufLachat2]
Current Run Filename: OM_10-2-2019_12-02-36PM.OMN Last Modified: 10/2/2019 12:48:36 PM
Current Run Author's Signature: [BufLachat2]
Description: 10-204-00-1-A

Sample	Rep.	Cup No.	Channel 1 Cyanide Conc. (mg/L)	Area (V.s)	Height (V)	Detection Time
CCV	1	S9	0.257	6.89	0.230	10/2/2019@12:03:47 PM
	Known Conc:		1.50			
	Calibration:		Table/Fig. : 1			
CCB	1	S10	-2.12e-3	-0.0244	-1.12e-3	10/2/2019@12:05:14 PM
	Known Conc:		0.00			
MB 480-495079/1-A	1	1	3.97e-4	0.0427	1.80e-3	10/2/2019@12:06:41 PM
LCSSRM 480-495079/2-A^10	1	2	0.290	7.77	0.258	10/2/2019@12:08:09 PM
480-159499-B-5-D	1	3	0.0386	1.06	0.0353	10/2/2019@12:09:36 PM
480-159499-B-5-E MS	1	4	0.100	2.70	0.0896	10/2/2019@12:11:03 PM
480-159499-B-5-F MSD	1	5	0.0930	2.52	0.0849	10/2/2019@12:12:30 PM
480-159547-F-40-D	1	6	0.0122	0.358	0.0118	10/2/2019@12:13:57 PM
480-159415-C-1-B	1	7	0.0285	0.793	0.0265	10/2/2019@12:15:23 PM
480-159415-C-2-B	1	8	2.26e-3	0.0926	3.13e-3	10/2/2019@12:16:50 PM
480-159415-C-3-B	1	9	2.48e-3	0.0983	2.91e-3	10/2/2019@12:18:16 PM
480-159415-C-4-B	1	10	5.09e-3	0.168	6.11e-3	10/2/2019@12:19:43 PM
CCV	1	S9	0.249	6.70	0.221	10/2/2019@12:21:09 PM
	Known Conc:		100			
CCB	1	S10	-1.28e-3	-2.03e-3	-7.34e-4	10/2/2019@12:22:36 PM
	Known Conc:		100			
480-159415-C-5-B	1	11	1.72e-3	0.0781	2.60e-3	10/2/2019@12:24:02 PM
480-159417-C-2-B	1	12	0.0285	0.793	0.0258	10/2/2019@12:25:28 PM
480-159417-C-3-B	1	13	0.0135	0.394	0.0132	10/2/2019@12:26:54 PM
480-159499-B-1-A	1	14	4.19e-3	0.144	4.63e-3	10/2/2019@12:28:20 PM
480-159499-B-2-A	1	15	6.13e-3	0.196	5.74e-3	10/2/2019@12:29:46 PM
480-159499-B-3-A	1	16	0.0257	0.720	0.0233	10/2/2019@12:31:13 PM
480-159499-B-4-A	1	17	5.73e-3	0.185	5.72e-3	10/2/2019@12:32:40 PM
480-159499-B-6-A	1	18	5.26e-3	0.173	5.63e-3	10/2/2019@12:34:08 PM
480-159499-B-7-A	1	19	0.0158	0.455	0.0151	10/2/2019@12:35:34 PM
480-159499-B-7-B MS	1	20	0.157	4.23	0.141	10/2/2019@12:37:02 PM
CCV	1	S9	0.251	6.74	0.222	10/2/2019@12:38:28 PM
	Known Conc:		100			
CCB	1	S10	-1.65e-3	-0.0120	-1.37e-3	10/2/2019@12:39:54 PM
	Known Conc:		100			
480-159531-A-1-B	1	21	1.86e-3	0.0817	3.13e-3	10/2/2019@12:41:21 PM
480-159574-C-1-B	1	22	0.0224	0.630	0.0207	10/2/2019@12:42:48 PM
CCV	1	S9	0.247	6.64	0.220	10/2/2019@12:44:14 PM
	Known Conc:		100			
CCB	1	S10	-2.55e-3	-0.0361	-9.59e-4	10/2/2019@12:45:40 PM
	Known Conc:		100			

500 µl -> 5 ml

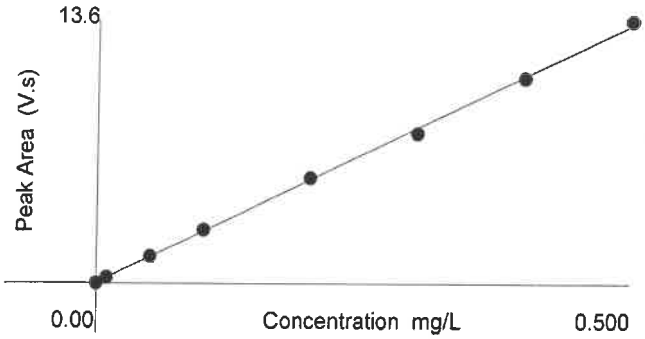
Table : 1 (Cyanide)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	0.500	1	13.6	0.451	0.0	-1.5	0.507	10/2/2019	11:33:04 AM
2	0.400	1	10.6	0.352	0.0	1.0	0.396	10/2/2019	11:34:30 AM
3	0.300	1	7.75	0.257	0.0	3.6	0.289	10/2/2019	11:35:57 AM
4	0.200	1	5.45	0.181	0.0	-1.5	0.203	10/2/2019	11:37:24 AM
5	0.100	1	2.78	0.0929	0.0	-2.7	0.103	10/2/2019	11:38:51 AM
6	0.0500	1	1.41	0.0466	0.0	-3.1	0.0516	10/2/2019	11:40:19 AM
7	0.0100	1	0.307	9.28e-3	0.0	-2.3	0.0103	10/2/2019	11:41:47 AM
8	0.00	1	0.0142	7.78e-4			-6.70e-4	10/2/2019	11:43:13 AM

Author: BufLachat2

Date : 10/2/2019

Figure : 1 (Cyanide)



Area = 26.7 * Conc + 0.0325
Conc = 0.0374 * Area - 1.20e-3
Correlation Coefficient (r) = 0.99995

Weighting : 1/x

C

495079

Analyst: LAW Date: 9/30/19
TALS Batch #: _____

TestAmerica BUFFALO
Cyanide Micro-Distillation Logbook **Logbook # A19-47**

Job #	Sample I.D.	Dist. Flask	Sample Volume (mL)	Soil Weight (g)	Spike Volume	If Spiked Please Check:	Comments
MB	BLANK	1		0.5269g			
LCSSRM	ERA-SOIL	2		0.5085g			
159499	B5	3		0.5160g			
	B5-MS	4		0.5147g	60ul		
	B5-MSD	5		0.5074g	60ul		
159547	F40	6		0.5280g			
159515	C1	7		0.5012g			
	C2	8		0.5164g			
	C3	9		0.5208g			
	C4	10		0.5183g			
	C5	11		0.5131g			
159417	C2	12		0.5089g			
	C3	13		0.5053g			
159499	B1	14		0.5276g			
	B2	15		0.5279g			
	B3	16		0.5119g			
	B4	17		0.5115g			
	B6	18		0.5054g			
	B7	19		0.5099g			
	B7-MS	20		0.5176g	60ul		
159531	A1	21		0.5269g			
159574	C1	22		0.5392g			

Start Time: 2215
End Time: 2220

Cl₂ Check: ✓
H₂S Check: ✓

0.400 mg/L Complex CN LCS: NA
0.250 mg/L Complex CN LCS: NA
0.100 mg/L Free CN CCVL: NA
10 ppm Complex CN MS: 5519585
10 ppm Free CN MS: NA
ERA Soil Lot: 4104644 (0097-541)

1.0 N NaOH: NA
7.11M H_2SO_4 / 0.79M $MgCl_2$: 5519586
H_3NSO_3: 5521400
$NaCH_3COO$: NA
$ZnCH_3COO$: NA
SAND: 171135203

SimpleDist Block A : Set Temp. (°C): 120 Measured Start Temp. (°C): 119.1 / 119.0 Measured End Temp. (°C): 119.2

Reviewed By: LAW Date: 9/3/19

W.C. BAL #16

Batch # 645561

Sample ID	Conc	Abs	B6/pa	Run/Read	Final pa
0.0		0.0		10:55 — 11:01	1.88
0.05		0.041			2.00
0.1		0.082			2.06
0.5		0.402			2.16
0.75		0.612			2.04
1.25		1.016		10:50 — 11:06	2.17
ICV		0.414		13:40 — 13:50	1.53
ICB		0.00			1.92
MB		0.00			1.86
LCS		0.294			1.93
LCS,dup	1/50	0.289			2.10
ERA	SV	0.439			1.74
192722-1		0.011	0.007/1.85		1.58
192722-1 dup		0.009	0.008/2.05		1.66
192722-1 spk		0.531	0.002/1.77		1.78
192722-1 MS	1/50x	0.222	0.008/2.00	13:45 - 14:00	1.92
192722-1 MSD		0.882	0.007/1.88	14:10 - 14:18	2.11
192722-3		0.027	0.015/1.92		1.83
CCV		0.410			1.55
CCB		0.00		14:13 - 14:28	1.92
192722-4		0.012	0.002/2.04	15:10 - 15:20	1.98
192722-7		0.008	0.008/1.85		2.09
192722-8		0.011	0.005/1.77		1.73
192722-9		0.009	0.004/2.22		2.30
192722-10		0.012	0.002/1.59		1.64
192722-11		0.017	0.009/1.73		1.57
192722-13		0.026	0.009/1.59		1.85
192722-14		0.009	0.004/2.10		1.74
192722-15		0.007	0.003/2.04		1.54
15-9547-1		0.005	0.002/1.68		1.66
CCV		0.400			1.55
CCB		0.00		15:45	1.92

Continued on Page 6

Read and Understood By

RA — Signed
10/8/19 — Date
Signed
Date

PROJECT CR6+ Run log book Notebook No. 06978 3

Continued from Page

Sample ID	16s	BG/pu	Tpu/Tload	Truck/pu	
159547-8	0.014	0.015/2.22	16:30 – 16:40	2.13	
159547-18	0.004	0.0/1.70		1.73	
159547-19	0.006	0.0/1.59		1.54	
159547-20	0.004	0.002/2.11		2.16	
159547-30	0.009	0.005/1.66		1.80	
159547-31	0.007	0.004/1.90		1.89	
159547-32	0.008	0.007/1.75		1.74	
159547-39	0.009	0.006/2.00		2.05	
CC	0.398			1.55	
CCB	0.00		16:35 – 16:50	1.92	

Continued on Page

Read and Understood By

RK 10/8/19

Signed Date Signed Date

Batch # 624513

Sample	color	Init	pH	Time
0.0			7.68	10:37
0.05			7.96	
0.1			7.87	
0.5			7.80	
0.75			7.88	
1.25			7.95	10:50
ICV			7.20	13:10
ICB			7.92	
MB			7.15	
LCS			7.44	
LCSD			7.59	
ERA			7.61	
192722-1	L.Br.		7.88	
192722-1 dil			7.53	
192722-1 dil			7.49	
192722-1 MS	Yell.		7.32	
192722-3	L.Br		7.74	
CCV			7.20	
CCB			7.92	13:30
192722-4	L.Br.		7.55	14:30
192722-7			7.19	
192722-8			7.22	
192722-9			7.56	
192722-10	clear		7.74	
192722-11	L.Br		7.37	
192722-13			7.47	
192722-14			7.25	
192722-15			7.04	
159547-7	clear		7.41	
CCV			7.20	
CCB			7.92	15:00

Continued on Page

Read and Understood By

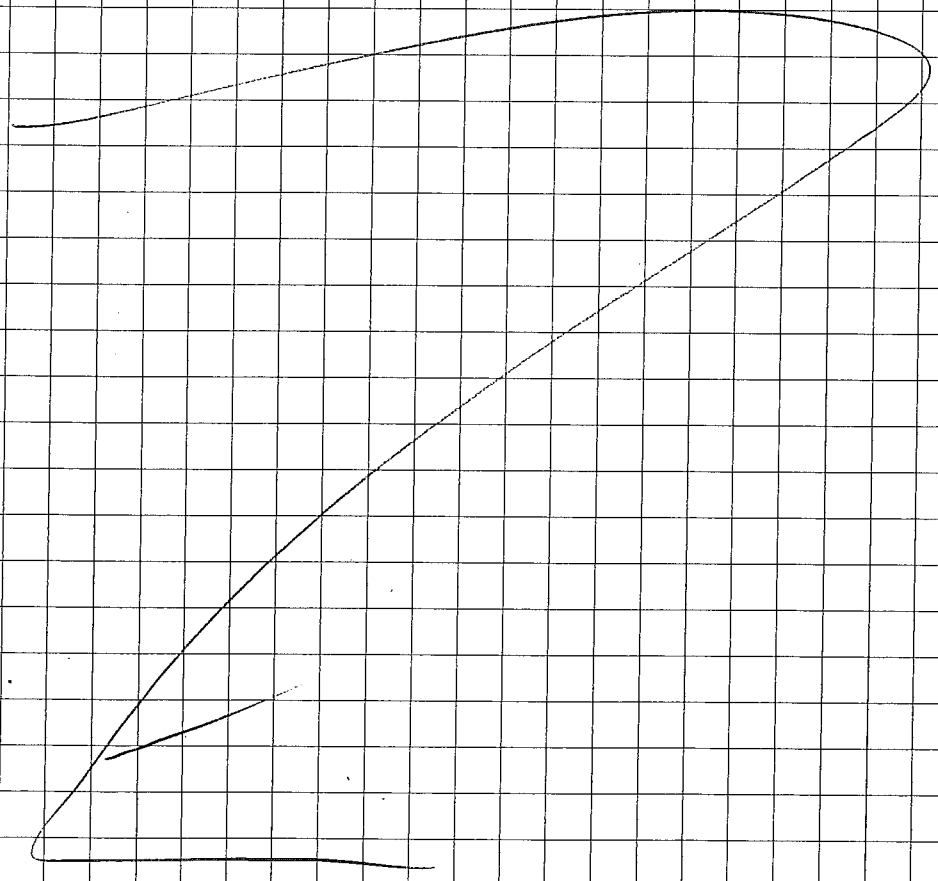
Signed	Date	Signed	Date
DE	10/8/19		

PROJECT CR6+ prep log book

Notebook No. 06961 47

Continued from Page

Sample	Color	Init pH	Time
159547-8	Br	7.92	16:00
159547-18	clear	7.89	
159547-19		7.10	
159547-20		7.07	
159547-30		7.36	
159547-31		7.28	
159547-32		7.15	
159547-39	Br	7.06	
CCV		7.20	
QCB		7.92	16:20



Continued on Page

Read and Understood By

RW — Signed

10/18/19 — Date

Signed

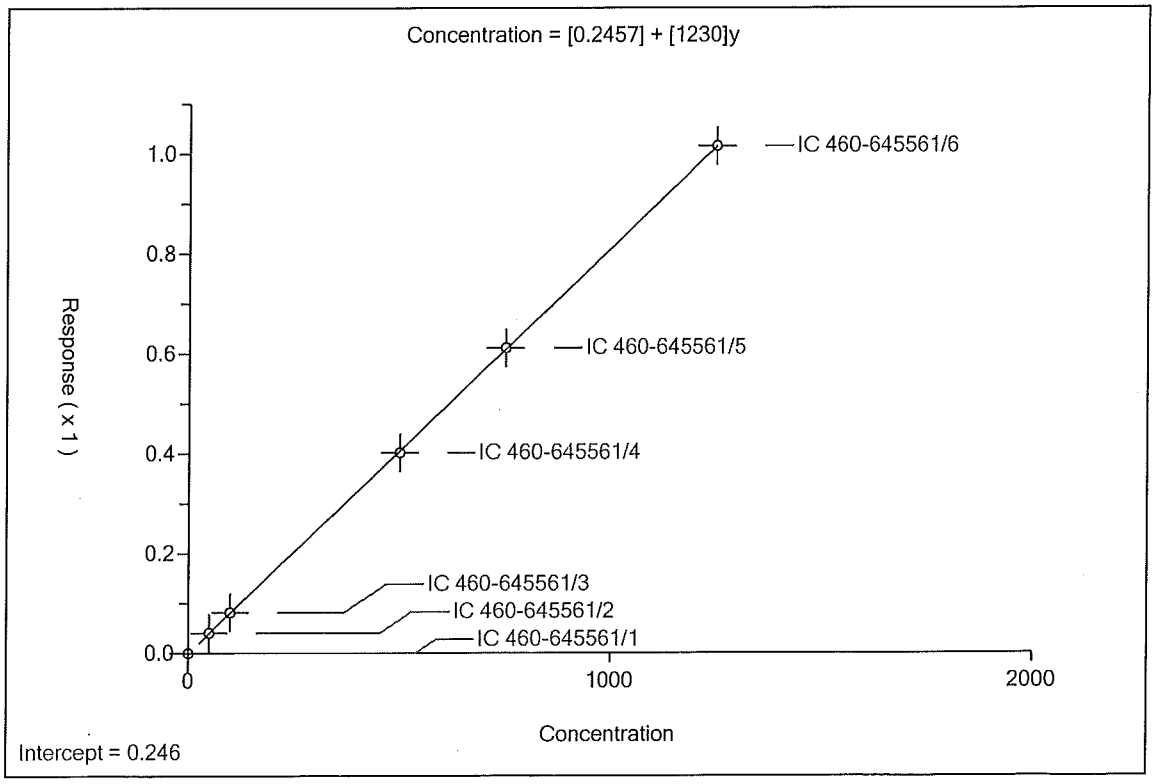
Date

Curve Type:	Linear
Weighting:	None
Origin:	None
Dependency:	Concentration
Calib Mode:	ESTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients	
Intercept:	0.2457
Slope:	1230

Error Coefficients	
Standard Error:	3.11
Relative Standard Error:	1.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000 (1.000)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 460-645561/1	0.0	0.0			NaN	Y
2	IC 460-645561/2	50.0	0.041			0.00082	Y
3	IC 460-645561/3	100.0	0.082			0.00082	Y
4	IC 460-645561/4	500.0	0.402			0.000804	Y
5	IC 460-645561/5	750.0	0.612			0.000816	Y
6	IC 460-645561/6	1250.0	1.016			0.000813	Y



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Dilution Log
Wet Chemistry

Method No.: 6455G1

Analyst: PR

Prep Batch: _____

Analysis Date: 10/8/19

Analytical Batch: 71968

Job/Sample Number	Dilution Factor	Sample Volume (ml)	Final Volume (ml)	Diluent
192722-1 ICS	50x	1	50	DI

EDS-WI-101, Rev 0
05/24/11

PROJECT CRG + Rem log book Notebook No. 06978 1

Continued from Page

Batch # 645571

Sample	Air	16s	BG/pp	T/a/Tread	Final	pH
0.0		0.00		10:55 – 11:01		1.88
0.05		0.041				2.00
0.1		0.082				2.06
0.5		0.402				2.16
0.75		0.612				2.04
1.25		1.016		10:56 – 11:06		2.17
ICV		0.420		16:20 – 16:35		1.54
ICB		0.00				1.83
MB		0.00				1.92
LCS		0.298				1.78
LCSiup	1/00	0.286				1.51
ERA	57	0.426				1.65
192722-2		0.014	0.013/2.04			2.24
192722-2 dup		0.018	0.015/1.87			2.10
192722-2 MS		0.427	0.013/1.55			1.90
192722-2 MSD	50	0.207	0.0/1.90			1.56
192722-2 PS		0.784	0.013/2.04			1.88
159547-40		0.006	0.008/1.59			2.17
CCV		0.418				1.54
CCB		0.00				1.83
193270-1		0.009	0.006/2.06			2.22
CCV		0.418				1.54
CCB		0.00		16:40 – 17:00		1.83

Continued on Page

Read and Understood By

RM 10/8/19

Signed Date Signed Date

Batch# 645471

Sample	color	Thi/ pe	Time
0		7.68	10:37
0.05		7.96	
0.1		7.87	
0.5		7.80	
0.75		7.88	
1.25		7.95	10:50
TCW		7.29	16:00
TCB		7.36	
MB		7.15	
LCBS		7.42	
LCBSWS		7.59	
ERA		7.66	
192722-2	BR	7.58	
192722-2dil	|	7.81	
192722-2sol	|	7.62	
192722-2WS	|	7.53	
159547-40	|	7.48	
CCW		7.29	
CCB		7.36	
1193270-1	BR	7.53	
CCW		7.29	
CCB		7.36	16:15

Continued on Page

Read and Understood By

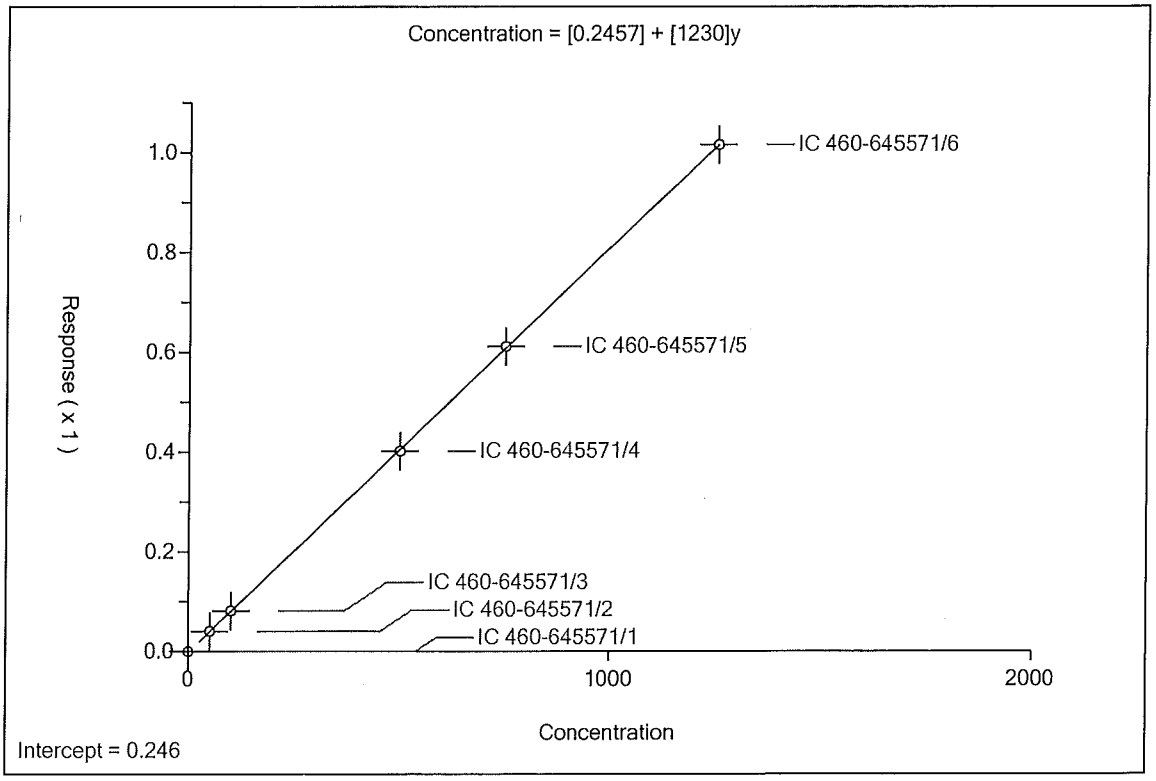
Lee — Signed
10/8/19 — Date
Signed
Date

Curve Type:	Linear
Weighting:	None
Origin:	None
Dependency:	Concentration
Calib Mode:	ESTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients	
Intercept:	0.2457
Slope:	1230

Error Coefficients	
Standard Error:	3.11
Relative Standard Error:	1.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000 (1.000)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 460-645571/1	0.0	0.0			NaN	Y
2	IC 460-645571/2	50.0	0.041			0.00082	Y
3	IC 460-645571/3	100.0	0.082			0.00082	Y
4	IC 460-645571/4	500.0	0.402			0.000804	Y
5	IC 460-645571/5	750.0	0.612			0.000816	Y
6	IC 460-645571/6	1250.0	1.016			0.000813	Y



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Dilution Log
Wet Chemistry

Method No.: 7196 A

Analyst: KLL

Prep Batch: _____

Analysis Date: 10/8/19

Analytical Batch: 642471

Job/Sample Number	Dilution Factor	Sample Volume (ml)	Final Volume (ml)	Diluent
192722-2 LCS	50	1	50	DI

EDS-WI-101, Rev 0
05/24/11

PROJECT Carb+ Prep log book

Notebook No. 06973

Continued from Page

Batch # 460-645708

Sample	Color	Initial pH	Time
0.00		7.95	11:18
0.05		7.89	
0.10		7.96	
0.50		7.93	
0.75		7.86	
1.25		7.99	
ICV		7.92	
ICB		7.90	11:32
MB	clr	7.77	13:26
LCS_{aq}	clr	7.61	
LCS_{TMS}	l. green	7.98	
ERA	tan	7.95	
J92722-2	tan	7.87	
J92722-2d4	tan	7.62	
J92722-2MSS	tan	7.83	
J92722-2MSI	tan	7.80	
CCV		7.92	
CCB		7.90	
J93270-1	tan	7.75	
460-J59547-40	tan	7.88	
CCV		7.92	
CCB		7.90	13:44

Continued on Page

Read and Understood By

RR — Signed

10/04/19 — Date

Signed

Date

Batch # 460-646036

Sample	dil	ABS	Bkgd	Read-Time	Final
0.00		0.000		11:35-11:41	2.00
0.05		0.041			1.98
0.10		0.082			2.02
0.50		0.410			1.94
0.75		0.608			2.03
1.25		1.005			1.93
ICV		0.412			2.00
ICB		0.000		11:36-11:46	2.01
MB		0.000		13:50-13:57	1.92
LCS_{Sali}		0.285			2.05
LCS_{INS}	50x	0.286			2.29
ERA	5x	0.480			2.20
JQ2722-2		0.009	0.012-1.72		1.97
JQ2722-2d4		0.011	0.009-2.25		1.90
JQ2722-2MSS		0.399	0.010-2.37		2.20
JQ2722-2MSS	50x	0.378	0.000-1.92		2.28
JQ2722-2PDS		0.836	0.012-1.72		1.98
CCV		0.412			2.00
CCB		0.000			2.01
J93270-1		0.007	0.006-2.07		1.87
480-J59547-40		0.012	0.012-2.32		2.03
CCV		0.412			2.00
CCB		0.000		13:52-14:13	2.01

Continued on Page

Read and Understood By

RR — Signed

10/09/20 — Date

Signed

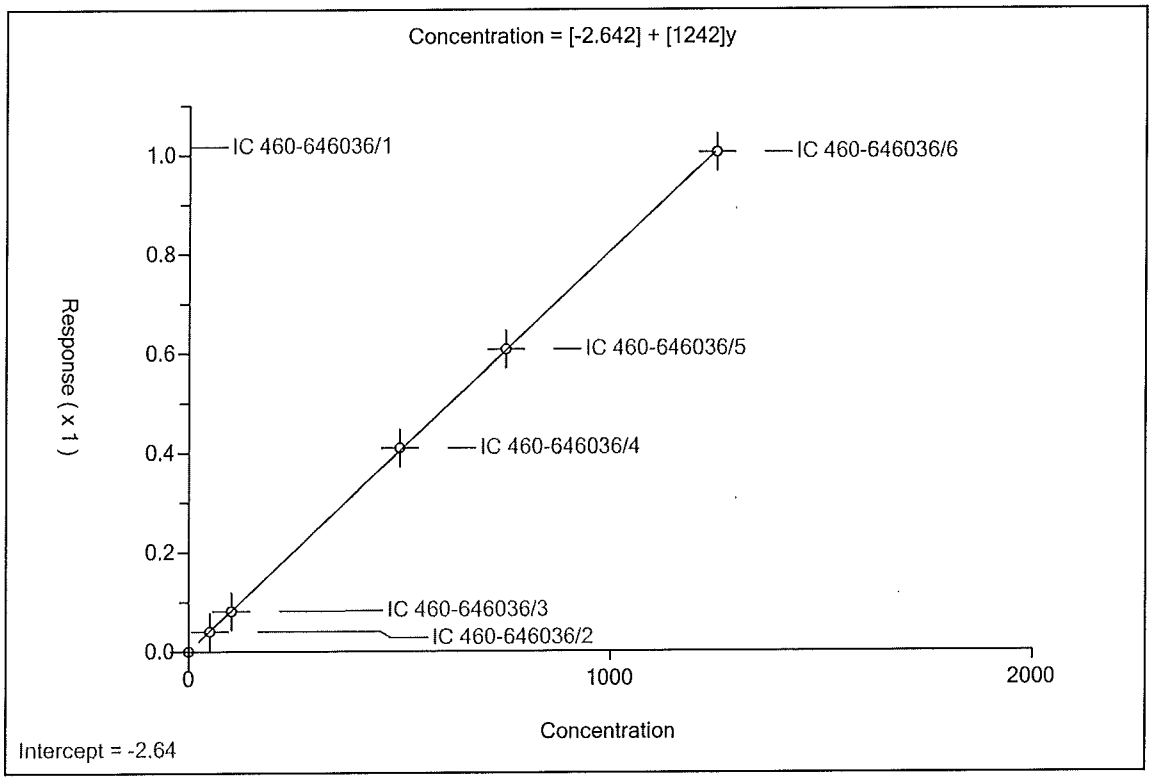
Date

Curve Type:	Linear
Weighting:	None
Origin:	None
Dependency:	Concentration
Calib Mode:	ESTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients	
Intercept:	-2.642
Slope:	1242

Error Coefficients	
Standard Error:	4.46
Relative Standard Error:	2.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000 (1.000)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 460-646036/1	0.0	0.0			NaN	Y
2	IC 460-646036/2	50.0	0.041			0.00082	Y
3	IC 460-646036/3	100.0	0.082			0.00082	Y
4	IC 460-646036/4	500.0	0.41			0.00082	Y
5	IC 460-646036/5	750.0	0.608			0.000811	Y
6	IC 460-646036/6	1250.0	1.005			0.000804	Y



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Dilution Log
Wet Chemistry

Method No.: 7196A

Analyst: RR

Prep Batch: 460-645708

Analysis Date: 10/29/19

Analytical Batch: 460-646036

Job/Sample Number	Dilution Factor	Sample Volume (ml)	Final Volume (ml)	Diluent
LCSJ	50X	1.00 ml	100 ml	DI water
192722-2-MSJ	50X	1.000 ml	100 ml	DI water

Batch # 460-645709

Sample	Color	Initial pH	Time
0.00		7.95	11:18
0.05		7.89	
0.10		7.96	
0.50		7.93	
0.75		7.86	
1.25		7.99	
ICV		7.92	
ICB		7.90	11:32
MB	clr	7.94	15:05
LCS_{sal}	clr	7.92	
LCS_{INS}	1.green	7.86	
ERA	tan	7.88	
J92722-1	yellow	7.86	
J92722-JJ4	yellow	7.66	
J92722-JMSS	yellow	7.83	
J92722-JMS5	yellow	7.91	
J92722-3	yellow	7.77	
CCV		7.92	
CCB		7.90	15:34
J92722-4	tan	7.81	15:47
J92722-7	tan	7.94	
J92722-8	clr	7.90	
J92722-9	tan	7.96	
J92722-10	yellow	7.76	
J92722-11	yellow	7.83	
J92722-13	yellow	7.84	
J92722-14	yellow	7.96	
J92722-15	yellow	7.77	
480-159547-1	yellow	7.95	
CCV		7.92	
CCB		7.90	15:58

Continued on Page

Read and Understood By

RR — 10/09/19 — Signed — Date — Signed — Date

Batch # 460-645709

Sample	Color	Initial pH	Time
480-JS9547-8	tan	7.64	16:15
480-JS9547-38	clr	7.60	
480-JS9547-39	clr	7.88	
480-JS9547-20	clr	7.96	
480-JS9547-30	clr	7.90	
480-JS9547-31	clr	7.72	
480-JS9547-32	clr	7.93	
480-JS9547-39	tan	7.89	
CCV		7.92	
CCB		7.90	16:35

Continued on Page

Read and Understood By

NR Signed | 10/09/19 Date | Signed | Date

Batch H460-646037

Sample	dil	ABS	Bkgd	Read-Time	Final
0.00		0.000		JJ:35 - JJ:41	2.00
0.05		0.047			1.98
0.10		0.082			2.02
0.50		0.410			1.94
0.75		0.608			2.03
1.25		1.005			1.93
ICV		0.412			2.00
ICB		0.000		JJ:36 - JJ:46	2.01
MB		0.000		JJ:28 - JJ:30	2.29
LCS Soil		0.276			2.27
LCS JNS	50X	0.304			2.27
ERA	5X	0.450			2.42
J92722-1		0.008	0.005 - 2.27		2.02
J92722-JJ4		0.008	0.007 - 2.30		1.96
J92722-1MSS		0.520	0.007 - 2.27		1.93
J92722-JMSS	50X	0.233	0.000 - 2.03		2.38
J92722-JPDS		0.895	0.005 - 2.27		2.27
J92722-3		0.009	0.003 - 2.28		1.78
CCV		0.417			2.00
CCB		0.000		JJ:25 - JJ:38	2.01
J92722-4		0.008	0.004 - 2.26	16:05 - 16:12	2.00
J92722-7		0.015	0.008 - 2.19		2.45
J92722-8		0.004	0.000 - 2.02		2.05
J92722-9		0.010	0.008 - 2.43		2.05
J92722-10		0.017	0.008 - 1.89		2.04
J92722-11		0.009	0.026 - 2.13		2.03
J92722-13		0.006	0.008 - 2.33		2.03
J92722-14		0.008	0.005 - 2.29		1.97
J92722-15		0.008	0.008 - 2.40		2.07
460-J59447-1		0.021	0.020 - 2.39		2.30
CCV		0.411			2.00
CCB		0.000		16:07 - 16:24	2.01

Continued on Page

Read and Understood By

PR Signed 10/09/19 Date Signed Date

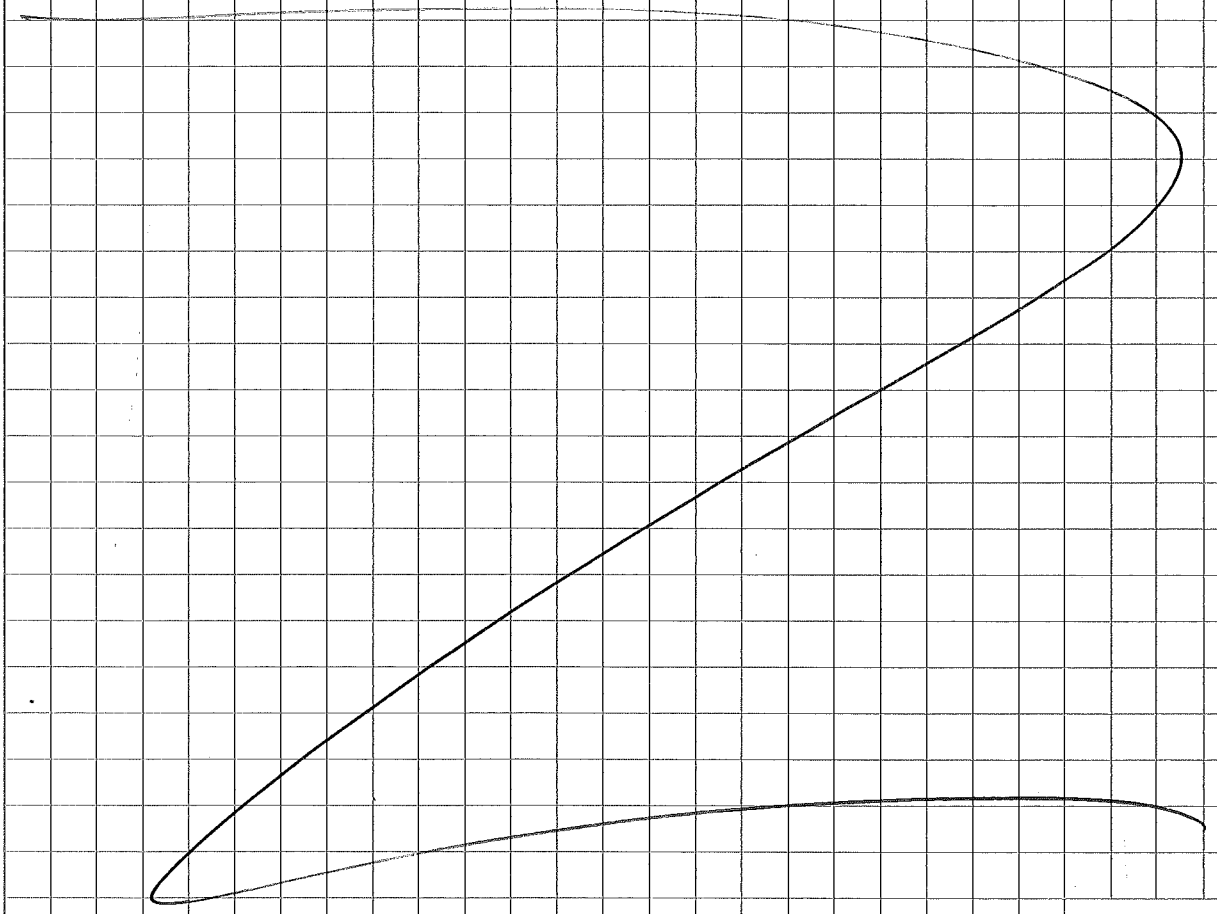
PROJECT CO6+ Rum log book

Notebook No. 06974

Continued from Page

Batch H460-646037

Sample	dil	ABS	Bapm		Tread-Tue	Final pM
480-J59547-8		0.018	0.032	-2.08	J6:38-J6:44	2.36
480-J59547-18		0.003	0.000	-2.21		2.34
480-J59547-19		0.001	0.000	-2.39		2.39
480-J59547-20		0.001	0.000	-2.27		2.27
480-J59547-30		0.000	0.000	-2.18		2.09
480-J59547-31		0.003	0.000	-2.32		2.01
480-J59547-32		0.001	0.000	-2.40		2.18
480-J59547-39		0.010	0.010	-2.00		2.00
CCV		0.433				2.00
CCB		0.000			J6:47-J6:48	2.01



Continued on Page

Read and Understood By

RR — Signed

10/09/19 — Date

Signed

Date

Calibration

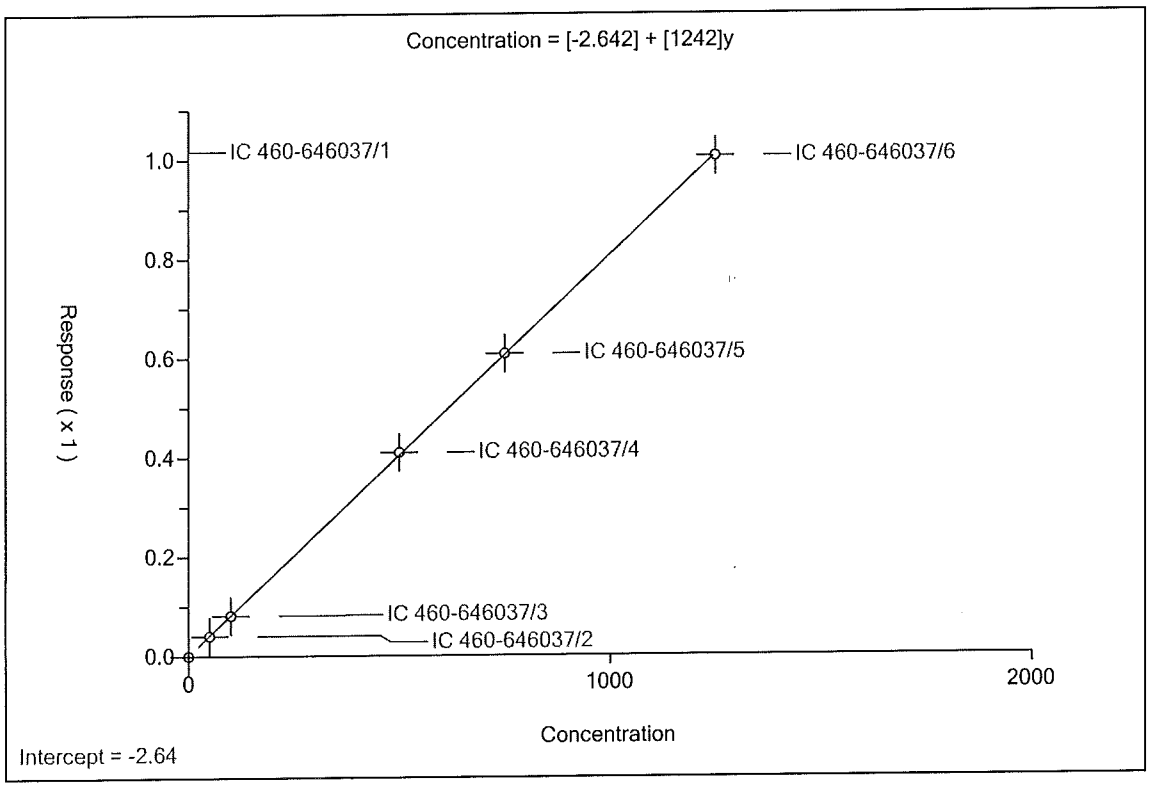
Calib 646037-0 / Cr (VI)

Curve Type:	Linear
Weighting:	None
Origin:	None
Dependency:	Concentration
Calib Mode:	ESTD
Response Base:	AREA
RF Rounding:	0

Curve Coefficients	
Intercept:	-2.642
Slope:	1242

Error Coefficients	
Standard Error:	4.46
Relative Standard Error:	2.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000 (1.000)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 460-646037/1	0.0	0.0			NaN	Y
2	IC 460-646037/2	50.0	0.041			0.00082	Y
3	IC 460-646037/3	100.0	0.082			0.00082	Y
4	IC 460-646037/4	500.0	0.41			0.00082	Y
5	IC 460-646037/5	750.0	0.608			0.000811	Y
6	IC 460-646037/6	1250.0	1.005			0.000804	Y



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Dilution Log
Wet Chemistry

Method No.: 7196A

Analyst: RR

Prep Batch: 460-645709

Analysis Date: 10/09/19

Analytical Batch: 460-646037

Job/Sample Number	Dilution Factor	Sample Volume (ml)	Final Volume (ml)	Diluent
LCSJ	50X	1.00 ml	100 ml	DI water
J01722-J MSJ	50X	1.00 ml	100 ml	DI water

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 495078 Batch Start Date: 09/30/19 20:45 Batch Analyst: Wolfe, Larry A

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	10ppm CN MS 00079	WC_CNsoil_ERA 00019		
MB 480-495078/1		9012B, 9012B		0.5102 g	6 mL				
LCSSRM 480-495078/2		9012B, 9012B		0.5265 g	6 mL		0.5265 g		
480-159547-F-7	RUSSO-TS-COMP 1	9012B, 9012B	T	0.5192 g	6 mL				
480-159547-F-8	RUSSO-TS-COMP 2	9012B, 9012B	T	0.5332 g	6 mL				
480-159547-F-18	RUSSO-CF-COMP 1	9012B, 9012B	T	0.5017 g	6 mL				
480-159547-F-19	RUSSO-CF-COMP 2	9012B, 9012B	T	0.5432 g	6 mL				
480-159547-D-20	RUSSO-CF-COMP 3	9012B, 9012B	T	0.5163 g	6 mL				
480-159547-D-30	GERNATT-CF-COMP 1	9012B, 9012B	T	0.5329 g	6 mL				
480-159547-E-32	GERNATT-CF-COMP 3	9012B, 9012B	T	0.5256 g	6 mL				
480-159547-E-31	GERNATT-CF-COMP 2	9012B, 9012B	T	0.5173 g	6 mL				
480-159547-E-39	GERNATT-TS-COMP 1	9012B, 9012B	T	0.5123 g	6 mL				
480-159547-E-39 MS	GERNATT-TS-COMP 1	9012B, 9012B	T	0.5187 g	6 mL	60 uL			

Batch Notes	
Distillation End Time	09/30/2019 21:15
Distillation Start Time	09/30/2019 20:45

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 495079 Batch Start Date: 09/30/19 21:50 Batch Analyst: Wolfe, Larry A

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	WC_CNsoil_ERA 00019			
MB 480-495079/1		9012B, 9012B		0.5269 g	6 mL				
LCSSRM 480-495079/2		9012B, 9012B		0.5085 g	6 mL	0.5085 g			
480-159547-F-40	GERNATT-TS-COMP 2	9012B, 9012B	T	0.5280 g	6 mL				

Batch Notes	
Distillation End Time	09/30/2019 22:20
Distillation Start Time	09/30/2019 21:50

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 495424 Batch Start Date: 10/02/19 09:18 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CCV 01169			
CCV 480-495424/1		9012B		5 mL	5 mL	5 mL			
CCB 480-495424/2		9012B		5 mL	5 mL				
MB 480-495078/1-A		9012B		5 mL	5 mL				
LCSSRM 480-495078/2-A ^10		9012B		5 mL	5 mL				
CCV 480-495424/13		9012B		5 mL	5 mL	5 mL			
CCB 480-495424/14		9012B		5 mL	5 mL				
480-159547-F-7-B	RUSSO-TS-COMP 1	9012B	T	5 mL	5 mL				
480-159547-F-8-D	RUSSO-TS-COMP 2	9012B	T	5 mL	5 mL				
480-159547-F-18-D	RUSSO-CF-COMP 1	9012B	T	5 mL	5 mL				
480-159547-F-19-D	RUSSO-CF-COMP 2	9012B	T	5 mL	5 mL				
480-159547-D-20-D	RUSSO-CF-COMP 3	9012B	T	5 mL	5 mL				
480-159547-D-30-D	GERNATT-CF-COMP 1	9012B	T	5 mL	5 mL				
480-159547-E-32-D	GERNATT-CF-COMP 3	9012B	T	5 mL	5 mL				
480-159547-E-31-D	GERNATT-CF-COMP 2	9012B	T	5 mL	5 mL				
CCV 480-495424/25		9012B		5 mL	5 mL	5 mL			
CCB 480-495424/26		9012B		5 mL	5 mL				
480-159547-E-39-B	GERNATT-TS-COMP 1	9012B	T	5 mL	5 mL				
480-159547-E-39-C MS	GERNATT-TS-COMP 1	9012B	T	5 mL	5 mL				
CCV 480-495424/29		9012B		5 mL	5 mL	5 mL			
CCB 480-495424/30		9012B		5 mL	5 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 495424 Batch Start Date: 10/02/19 09:18 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 495460 Batch Start Date: 10/02/19 12:03 Batch Analyst: Leader, Michael D

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CCV 01169			
CCV 480-495460/1		9012B		5 mL	5 mL	5 mL			
CCB 480-495460/2		9012B		5 mL	5 mL				
MB 480-495079/1-A		9012B		5 mL	5 mL				
LCSSRM 480-495079/2-A ^10		9012B		5 mL	5 mL				
480-159547-F-40 -D	GERNATT-TS-COMP 2	9012B	T	5 mL	5 mL				
CCV 480-495460/13		9012B		5 mL	5 mL	5 mL			
CCB 480-495460/14		9012B		5 mL	5 mL				

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493698 Batch Start Date: 09/24/19 08:59 Batch Analyst: Velickovic, Snezana 1

Batch Method: Moisture Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
480-159547-A-1	RUSSO-TS-GRAB 1	Moisture	T	1	1.06 g	11.71 g	9.85 g		
480-159547-A-2	RUSSO-TS-GRAB 2	Moisture	T	2	1.06 g	18.13 g	13.96 g		
480-159547-A-3	RUSSO-TS-GRAB 3	Moisture	T	3	1.08 g	13.03 g	9.85 g		
480-159547-A-4	RUSSO-TS-GRAB 4	Moisture	T	4	1.07 g	13.46 g	11.19 g		
480-159547-A-5	RUSSO-TS-GRAB 5	Moisture	T	5	1.07 g	16.69 g	13.49 g		
480-159547-A-6	RUSSO-TS-GRAB 6	Moisture	T	6	1.05 g	13.03 g	10.82 g		
480-159547-A-9	RUSSO-CF-GRAB 1	Moisture	T	7	1.06 g	19.67 g	17.58 g		
480-159547-A-10	RUSSO-CF-GRAB 2	Moisture	T	8	1.06 g	19.29 g	17.40 g		
480-159547-A-11	RUSSO-CF-GRAB 3	Moisture	T	9	1.07 g	20.62 g	18.52 g		
480-159547-A-12	RUSSO-CF-GRAB 4	Moisture	T	10	1.09 g	24.01 g	19.83 g		
480-159547-A-13	RUSSO-CF-GRAB 5	Moisture	T	11	1.07 g	17.80 g	16.26 g		
480-159547-A-14	RUSSO-CF-GRAB 6	Moisture	T	12	1.09 g	19.28 g	17.98 g		
480-159547-A-15	RUSSO-CF-GRAB 7	Moisture	T	13	1.07 g	20.09 g	18.04 g		
480-159547-A-16	RUSSO-CF-GRAB 8	Moisture	T	14	1.07 g	14.44 g	13.14 g		
480-159547-A-17	RUSSO-CF-GRAB 9	Moisture	T	15	1.06 g	16.38 g	15.18 g		
480-159547-A-21	GERNATT-CF-GRAB 1	Moisture	T	16	1.05 g	21.07 g	18.20 g		
480-159547-A-22	GERNATT-CF-GRAB 2	Moisture	T	17	1.06 g	17.22 g	16.16 g		
480-159547-A-23	GERNATT-CF-GRAB 3	Moisture	T	18	1.07 g	14.28 g	13.31 g		
480-159547-A-24	GERNATT-CF-GRAB 4	Moisture	T	19	1.06 g	19.30 g	17.95 g		
480-159547-A-25	GERNATT-CF-GRAB 5	Moisture	T	20	1.07 g	17.19 g	16.02 g		
480-159547-A-26	GERNATT-CF-GRAB 6	Moisture	T	21	1.08 g	17.02 g	15.83 g		
480-159547-A-27	GERNATT-CF-GRAB 7	Moisture	T	22	1.06 g	10.32 g	9.59 g		
480-159547-A-28	GERNATT-CF-GRAB 8	Moisture	T	23	1.07 g	18.18 g	17.02 g		
480-159547-A-29	GERNATT-CF-GRAB 9	Moisture	T	24	1.06 g	20.55 g	19.25 g		
480-159547-A-33	GERNATT-TS-GRAB 1	Moisture	T	25	1.06 g	14.18 g	12.65 g		
480-159547-A-34	GERNATT-TS-GRAB 2	Moisture	T	26	1.08 g	14.64 g	13.01 g		

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493698 Batch Start Date: 09/24/19 08:59 Batch Analyst: Velickovic, Snezana 1

Batch Method: Moisture Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
480-159547-A-35	GERNATT-TS-GRAB 3	Moisture	T	27	1.05 g	12.28 g	10.85 g		
480-159547-A-36	GERNATT-TS-GRAB 4	Moisture	T	28	1.07 g	14.01 g	12.81 g		
480-159547-A-37	GERNATT-TS-GRAB 5	Moisture	T	29	1.06 g	11.87 g	10.62 g		
480-159547-A-38	GERNATT-TS-GRAB 6	Moisture	T	30	1.08 g	12.49 g	11.24 g		

Batch Notes	
Balance ID	B202613314
Batch Comment	20181102
Date samples were placed in the oven	09/24/2019
Oven Temp In	108 Degrees C
Time samples were place in the oven	09:30
Date samples were removed from oven	09/18/2019
Oven Temp Out	98 Degrees C
Time Samples were removed from oven	09:15
Oven ID	MV
Thermometer ID	MV
Temperature - Start - Uncorrected	129 Degrees C
Temperature - End - Uncorrected	98 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-159547-1

SDG No.:

Batch Number: 493706 Batch Start Date: 09/24/19 09:31 Batch Analyst: Kolb, Chris M

Batch Method: Moisture Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
480-159547-A-7	RUSSO-TS-COMP 1	Moisture	T	36	4.30 g	11.69 g	10.10 g		
480-159547-A-8	RUSSO-TS-COMP 2	Moisture	T	37	4.30 g	13.56 g	10.99 g		
480-159547-A-18	RUSSO-CF-COMP 1	Moisture	T	38	4.30 g	14.15 g	13.04 g		
480-159547-A-19	RUSSO-CF-COMP 2	Moisture	T	39	4.30 g	16.83 g	15.65 g		
480-159547-A-20	RUSSO-CF-COMP 3	Moisture	T	40	4.30 g	17.24 g	15.92 g		
480-159547-A-30	GERNATT-CF-COMP 1	Moisture	T	41	4.30 g	13.89 g	13.22 g		
480-159547-A-31	GERNATT-CF-COMP 2	Moisture	T	42	4.30 g	15.34 g	14.69 g		
480-159547-A-32	GERNATT-CF-COMP 3	Moisture	T	43	4.30 g	15.78 g	14.96 g		
480-159547-A-39	GERNATT-TS-COMP 1	Moisture	T	44	4.30 g	18.77 g	17.09 g		
480-159547-A-40	GERNATT-TS-COMP 2	Moisture	T	45	4.30 g	13.58 g	12.37 g		

Batch Notes	
Balance ID	sc
Date samples were placed in the oven	09/24/2019
Oven Temp In	110 Degrees C
Time samples were place in the oven	09:31
Date samples were removed from oven	09/25/2019
Oven Temp Out	110 Degrees C
Time Samples were removed from oven	08:51
Oven ID	sc
Thermometer ID	sc

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645413 Batch Start Date: 10/08/19 08:53 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 3060A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	AdjustedpH	WThcrPbCr 00005	WThcrsLCS 00103	
MB 460-645413/1		3060A, 7196A		2.50 g	100 mL	n/a SU			
LCSSRM 460-645413/2		3060A, 7196A		2.50 g	100 mL	n/a SU		5 mL	
LCSI 460-645413/3		3060A, 7196A		2.50 g	100 mL	n/a SU	0.011 g		
480-159547-C-7	RUSSO-TS-COMP 1	3060A, 7196A	T	2.58 g	100 mL	n/a SU			
480-159547-C-8	RUSSO-TS-COMP 2	3060A, 7196A	T	2.54 g	100 mL	n/a SU			
480-159547-C-18	RUSSO-CF-COMP 1	3060A, 7196A	T	2.55 g	100 mL	n/a SU			
480-159547-C-19	RUSSO-CF-COMP 2	3060A, 7196A	T	2.48 g	100 mL	n/a SU			
480-159547-C-20	RUSSO-CF-COMP 3	3060A, 7196A	T	2.42 g	100 mL	n/a SU			
480-159547-C-30	GERNATT-CF-COMP 1	3060A, 7196A	T	2.50 g	100 mL	n/a SU			
480-159547-C-31	GERNATT-CF-COMP 2	3060A, 7196A	T	2.43 g	100 mL	n/a SU			
480-159547-C-32	GERNATT-CF-COMP 3	3060A, 7196A	T	2.59 g	100 mL	n/a SU			
480-159547-C-39	GERNATT-TS-COMP 1	3060A, 7196A	T	2.48 g	100 mL	n/a SU			

Batch Notes	
Alkaline Digestion Solution pH	13.39 SU
Alkaline Digestion Solution ID	C-8540-19 exp
Balance ID	30
Buffer Reagent ID	C-8336-19 exp. 02/14/20
First End time	10/08/2019 12:00
Magnesium Chloride ID	Across/ A 0388567
Oven, Bath or Block Temperature 1	93.6 Degrees C
pH Meter Calibration Slope	Lead chromate Acros/BCBL8355V
First Start time	10/08/2019 11:00
Ending Temperature	93.6 Degrees C
Thermometer ID	N2
Uncorrected Temperature	95.6 Degrees C

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645413 Batch Start Date: 10/08/19 08:53 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 3060A Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645471 Batch Start Date: 10/08/19 10:53 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 3060A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	AdjustedpH	WThcrPbCr 00005	WThcrsLCS 00103	
MB 460-645471/1		3060A, 7196A		2.50 g	100 mL	N/A SU			
LCSSRM 460-645471/2		3060A, 7196A		2.50 g	100 mL	N/A SU		5 mL	
LCSI 460-645471/3		3060A, 7196A		2.50 g	100 mL	N/A SU	0.011 g		
480-159547-C-40	GERNATT-TS-COMP 2	3060A, 7196A	T	2.56 g	100 mL	N/A SU			

Batch Notes	
Alkaline Digestion Solution pH	13.39 SU
Alkaline Digestion Solution ID	C-8540-19 exp
Balance ID	30
Buffer Reagent ID	C-8336-19 exp. 02/14/20
First End time	10/08/2019 13:00
Magnesium Chloride ID	Across/ A 0388567
Oven, Bath or Block Temperature 1	93.6 Degrees C
pH Meter Calibration Slope	Lead chromate Acros/BCBL8355V
First Start time	10/08/2019 12:00
Ending Temperature	93.6 Degrees C
Thermometer ID	N2
Uncorrected Temperature	95.6 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645561 Batch Start Date: 10/08/19 09:00 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM 00074
IC 460-645561/1		7196A		100 mL		0.000 Absorbance	7.68 SU	1.88 SU	
IC 460-645561/2		7196A		100 mL		0.041 Absorbance	7.96 SU	2.00 SU	0.05 mL
IC 460-645561/3		7196A		100 mL		0.082 Absorbance	7.87 SU	2.06 SU	0.1 mL
IC 460-645561/4		7196A		100 mL		0.402 Absorbance	7.80 SU	2.16 SU	0.5 mL
IC 460-645561/5		7196A		100 mL		0.612 Absorbance	7.88 SU	2.04 SU	0.75 mL
IC 460-645561/6		7196A		100 mL		1.016 Absorbance	7.95 SU	2.17 SU	1.25 mL
ICV 460-645561/7		7196A		100 mL		0.414 Absorbance	7.20 SU	1.55 SU	
ICB 460-645561/8		7196A		100 mL		0.000 Absorbance	7.92 SU	1.92 SU	
MB 460-645413/1-A		7196A		100 mL		0.000 Absorbance	7.15 SU	1.86 SU	
LCSSRM 460-645413/2-A		7196A		100 mL		0.294 Absorbance	7.44 SU	1.93 SU	
LCSI 460-645413/3-A		7196A		100 mL		0.289 Absorbance	7.59 SU	2.10 SU	
CCV 460-645561/19		7196A		100 mL		0.410 Absorbance	7.20 SU	1.55 SU	
CCB 460-645561/20		7196A		100 mL		0.000 Absorbance	7.92 SU	1.92 SU	
480-159547-C-7-A	RUSSO-TS-COMP 1	7196A	T	100 mL	0.002 Absorbance	0.005 Absorbance	7.41 SU	1.66 SU	
CCV 460-645561/31		7196A		100 mL		0.400 Absorbance	7.20 SU	1.55 SU	
CCB 460-645561/32		7196A		100 mL		0.000 Absorbance	7.92 SU	1.92 SU	
480-159547-C-8-A	RUSSO-TS-COMP 2	7196A	T	100 mL	0.015 Absorbance	0.014 Absorbance	7.92 SU	2.13 SU	
480-159547-C-18-A	RUSSO-CF-COMP 1	7196A	T	100 mL	0.000 Absorbance	0.004 Absorbance	7.29 SU	1.73 SU	
480-159547-C-19-A	RUSSO-CF-COMP 2	7196A	T	100 mL	0.000 Absorbance	0.006 Absorbance	7.10 SU	1.54 SU	
480-159547-C-20-A	RUSSO-CF-COMP 3	7196A	T	100 mL	0.002 Absorbance	0.004 Absorbance	7.07 SU	2.16 SU	
480-159547-C-30-A	GERNATT-CF-COMP 1	7196A	T	100 mL	0.005 Absorbance	0.00 Absorbance	7.36 SU	1.80 SU	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645561 Batch Start Date: 10/08/19 09:00 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM 00074
480-159547-C-31-A	GERNATT-CF-COMP 2	7196A	T	100 mL	0.004 Absorbance	0.007 Absorbance	7.28 SU	1.89 SU	
480-159547-C-32-A	GERNATT-CF-COMP 3	7196A	T	100 mL	0.007 Absorbance	0.008 Absorbance	7.15 SU	1.74 SU	
480-159547-C-39-A	GERNATT-TS-COMP 1	7196A	T	100 mL	0.006 Absorbance	0.009 Absorbance	7.06 SU	2.05 SU	
CCV 460-645561/41		7196A		100 mL		0.398 Absorbance	7.20 SU	1.55 SU	
CCB 460-645561/42		7196A		100 mL		0.000 Absorbance	7.92 SU	1.92 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
IC 460-645561/1		7196A							
IC 460-645561/2		7196A							
IC 460-645561/3		7196A							
IC 460-645561/4		7196A							
IC 460-645561/5		7196A							
IC 460-645561/6		7196A							
ICV 460-645561/7		7196A		0.5 mL					
ICB 460-645561/8		7196A							
MB 460-645413/1-A		7196A							
LCSSRM 460-645413/2-A		7196A							
LCSI 460-645413/3-A		7196A							
CCV 460-645561/19		7196A		0.5 mL					
CCB 460-645561/20		7196A							
480-159547-C-7-A	RUSSO-TS-COMP 1	7196A	T		1.68				
CCV 460-645561/31		7196A		0.5 mL					
CCB 460-645561/32		7196A							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645561 Batch Start Date: 10/08/19 09:00 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
480-159547-C-8-A	RUSSO-TS-COMP 2	7196A	T		2.22				
480-159547-C-18-A	RUSSO-CF-COMP 1	7196A	T		1.70				
480-159547-C-19-A	RUSSO-CF-COMP 2	7196A	T		1.59				
480-159547-C-20-A	RUSSO-CF-COMP 3	7196A	T		2.11				
480-159547-C-30-A	GERNATT-CF-COMP 1	7196A	T		1.66				
480-159547-C-31-A	GERNATT-CF-COMP 2	7196A	T		1.90				
480-159547-C-32-A	GERNATT-CF-COMP 3	7196A	T		1.75				
480-159547-C-39-A	GERNATT-TS-COMP 1	7196A	T		2.00				
CCV 460-645561/41		7196A		0.5 mL					
CCB 460-645561/42		7196A							

Batch Notes	
Acid Used for pH Adjustment ID	10% H2SO4 C-8315-19 exp 02/08/20
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	C-8436-19 exp 10/13/19
Phosphoric Acid ID	HNO3 1:1 C-8383-19 exp 02/27/20

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645571 Batch Start Date: 10/08/19 10:00 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM3 00049
ICV 460-645571/7		7196A		100 mL		0.420 Absorbance	7.29 SU	1.54 SU	0.5 mL
ICB 460-645571/8		7196A		100 mL		0.000 Absorbance	7.36 SU	1.83 SU	
MB 460-645471/1-A		7196A		100 mL		0.000 Absorbance	7.15 SU	1.92 SU	
LCSSRM 460-645471/2-A		7196A		100 mL		0.290 Absorbance	7.42 SU	1.78 SU	
LCSI 460-645471/3-A		7196A		100 mL		0.286 Absorbance	7.59 SU	1.51 SU	
480-159547-C-40 -A	GERNATT-TS-COMP 2	7196A	T	100 mL	0.008 Absorbance	0.006 Absorbance	7.48 SU	2.17 SU	
CCV 460-645571/19		7196A		100 mL		0.418 Absorbance	7.29 SU	1.54 SU	0.5 mL
CCB 460-645571/20		7196A		100 mL		0.000 Absorbance	7.36 SU	1.83 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
ICV 460-645571/7		7196A							
ICB 460-645571/8		7196A							
MB 460-645471/1-A		7196A							
LCSSRM 460-645471/2-A		7196A							
LCSI 460-645471/3-A		7196A							
480-159547-C-40 -A	GERNATT-TS-COMP 2	7196A	T	1.59					
CCV 460-645571/19		7196A							
CCB 460-645571/20		7196A							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645571 Batch Start Date: 10/08/19 10:00 Batch Analyst: Kamenetskaya, Raisa

Batch Method: 7196A Batch End Date:

Batch Notes	
Acid Used for pH Adjustment ID	10% H2SO4 C-8315-19 exp 02/08/20
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	C-8436-19 exp 10/13/19
Phosphoric Acid ID	HNO3 1:1 C-8383-19 exp 02/27/20

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645708 Batch Start Date: 10/09/19 07:53 Batch Analyst: Rana, Riya P

Batch Method: 3060A Batch End Date: 10/09/19 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	WThcrPbCr 00005	WThcrsLCS 00103		
MB 460-645708/1		3060A, 7196A		2.50 g	100 mL				
LCSSRM 460-645708/2		3060A, 7196A		2.50 g	100 mL		5 mL		
LCSI 460-645708/3		3060A, 7196A		2.50 g	100 mL	0.011 g			
480-159547-C-40	GERNATT-TS-COMP 2	3060A, 7196A	T	2.48 g	100 mL				

Batch Notes	
Alkaline Digestion Solution pH	13.39 SU
Alkaline Digestion Solution ID	C-8540-19 exp
Balance ID	30
Buffer Reagent ID	C-8336-19 exp. 02/14/20
First End time	10/09/2019 10:40
Magnesium Chloride ID	Across/ A 0388567
Oven, Bath or Block Temperature 1	93.6 Degrees C
pH Meter Calibration Slope	Lead chromate Acros/BCBL8355V
First Start time	10/09/2019 09:40
Ending Temperature	93.6 Degrees C
Thermometer ID	N2
Uncorrected Temperature	95.6 Degrees C

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645709 Batch Start Date: 10/09/19 07:53 Batch Analyst: Rana, Riya P

Batch Method: 3060A Batch End Date: 10/09/19 09:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	WThcrPbCr 00005	WThcrsLCS 00103		
MB 460-645709/1		3060A, 7196A		2.50 g	100 mL				
LCSSRM 460-645709/2		3060A, 7196A		2.50 g	100 mL		5 mL		
LCSI 460-645709/3		3060A, 7196A		2.50 g	100 mL	0.011 g			
480-159547-C-7	RUSSO-TS-COMP 1	3060A, 7196A	T	2.48 g	100 mL				
480-159547-C-8	RUSSO-TS-COMP 2	3060A, 7196A	T	2.47 g	100 mL				
480-159547-C-18	RUSSO-CF-COMP 1	3060A, 7196A	T	2.49 g	100 mL				
480-159547-C-19	RUSSO-CF-COMP 2	3060A, 7196A	T	2.50 g	100 mL				
480-159547-C-20	RUSSO-CF-COMP 3	3060A, 7196A	T	2.48 g	100 mL				
480-159547-C-30	GERNATT-CF-COMP 1	3060A, 7196A	T	2.49 g	100 mL				
480-159547-C-31	GERNATT-CF-COMP 2	3060A, 7196A	T	2.49 g	100 mL				
480-159547-C-32	GERNATT-CF-COMP 3	3060A, 7196A	T	2.47 g	100 mL				
480-159547-C-39	GERNATT-TS-COMP 1	3060A, 7196A	T	2.48 g	100 mL				

Batch Notes	
Alkaline Digestion Solution pH	13.39 SU
Alkaline Digestion Solution ID	C-8540-19 exp
Balance ID	30
Buffer Reagent ID	C-8336-19 exp. 02/14/20
First End time	10/09/2019 10:40
Magnesium Chloride ID	Across/ A 0388567
Oven, Bath or Block Temperature 1	94.00 Degrees C
pH Meter Calibration Slope	Lead chromate Acros/BCBL8355V
First Start time	10/09/2019 09:40
Ending Temperature	93.6 Degrees C
Thermometer ID	N2
Uncorrected Temperature	96.00 Degrees C

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 645709 Batch Start Date: 10/09/19 07:53 Batch Analyst: Rana, Riya P

Batch Method: 3060A Batch End Date: 10/09/19 09:30

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 646036 Batch Start Date: 10/10/19 09:16 Batch Analyst: Rana, Riya P

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM 00074
IC 460-646036/1		7196A		100 mL		0.000 Absorbance	7.95 SU	2.00 SU	
IC 460-646036/2		7196A		100 mL		0.041 Absorbance	7.89 SU	1.98 SU	0.05 mL
IC 460-646036/3		7196A		100 mL		0.082 Absorbance	7.96 SU	2.02 SU	0.1 mL
IC 460-646036/4		7196A		100 mL		0.410 Absorbance	7.93 SU	1.94 SU	0.5 mL
IC 460-646036/5		7196A		100 mL		0.608 Absorbance	7.86 SU	2.03 SU	0.75 mL
IC 460-646036/6		7196A		100 mL		1.005 Absorbance	7.99 SU	1.93 SU	1.25 mL
ICV 460-646036/7		7196A		100 mL		0.412 Absorbance	7.92 SU	2.00 SU	
ICB 460-646036/8		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	
MB 460-645708/1-A		7196A		100 mL		0.000 Absorbance	7.77 SU	1.92 SU	
LCSSRM 460-645708/2-A		7196A		100 mL		0.285 Absorbance	7.61 SU	2.05 SU	
LCSI 460-645708/3-A		7196A		100 mL		0.286 Absorbance	7.98 SU	2.29 SU	
CCV 460-646036/18		7196A		100 mL		0.412 Absorbance	7.92 SU	2.00 SU	
CCB 460-646036/19		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	
480-159547-C-40 -B	GERNATT-TS-COMP 2	7196A	T	100 mL	0.012 Absorbance	0.012 Absorbance	7.88 SU	2.03 SU	
CCV 460-646036/22		7196A		100 mL		0.412 Absorbance	7.92 SU	2.00 SU	
CCB 460-646036/23		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
IC 460-646036/1		7196A							
IC 460-646036/2		7196A							
IC 460-646036/3		7196A							
IC 460-646036/4		7196A							
IC 460-646036/5		7196A							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 646036 Batch Start Date: 10/10/19 09:16 Batch Analyst: Rana, Riya P

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
IC 460-646036/6		7196A							
ICV 460-646036/7		7196A		0.5 mL					
ICB 460-646036/8		7196A							
MB 460-645708/1-A		7196A							
LCSSRM 460-645708/2-A		7196A							
LCSI 460-645708/3-A		7196A							
CCV 460-646036/18		7196A		0.5 mL					
CCB 460-646036/19		7196A							
480-159547-C-40-B	GERNATT-TS-COMP 2	7196A	T		2.32				
CCV 460-646036/22		7196A		0.5 mL					
CCB 460-646036/23		7196A							

Batch Notes	
Acid Used for pH Adjustment ID	10% H2SO4 C-8549-19 exp 4/9/20
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	C 8530-19 exp 11/4/19
Phosphoric Acid ID	HNO3 1:1 C 8491-19 exp 3/25/20

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 646037 Batch Start Date: 10/10/19 09:17 Batch Analyst: Rana, Riya P

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM 00074
IC 460-646037/1		7196A		100 mL		0.000 Absorbance	7.95 SU	2.00 SU	
IC 460-646037/2		7196A		100 mL		0.041 Absorbance	7.89 SU	1.98 SU	0.05 mL
IC 460-646037/3		7196A		100 mL		0.082 Absorbance	7.96 SU	2.02 SU	0.1 mL
IC 460-646037/4		7196A		100 mL		0.410 Absorbance	7.93 SU	1.94 SU	0.5 mL
IC 460-646037/5		7196A		100 mL		0.608 Absorbance	7.86 SU	2.03 SU	0.75 mL
IC 460-646037/6		7196A		100 mL		1.005 Absorbance	7.99 SU	1.93 SU	1.25 mL
ICV 460-646037/7		7196A		100 mL		0.412 Absorbance	7.92 SU	2.00 SU	
ICB 460-646037/8		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	
MB 460-645709/1-A		7196A		100 mL		0.000 Absorbance	7.94 SU	2.29 SU	
LCSSRM 460-645709/2-A		7196A		100 mL		0.276 Absorbance	7.92 SU	2.27 SU	
LCSI 460-645709/3-A		7196A		100 mL		0.304 Absorbance	7.86 SU	2.21 SU	
CCV 460-646037/19		7196A		100 mL		0.411 Absorbance	7.92 SU	2.00 SU	
CCB 460-646037/20		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	
480-159547-C-7-B	RUSSO-TS-COMP 1	7196A	T	100 mL	0.020 Absorbance	0.021 Absorbance	7.95 SU	2.30 SU	
CCV 460-646037/31		7196A		100 mL		0.411 Absorbance	7.92 SU	2.00 SU	
CCB 460-646037/32		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	
480-159547-C-8-B	RUSSO-TS-COMP 2	7196A	T	100 mL	0.032 Absorbance	0.018 Absorbance	7.64 SU	2.36 SU	
480-159547-C-18-B	RUSSO-CF-COMP 1	7196A	T	100 mL	0.000 Absorbance	0.003 Absorbance	7.60 SU	2.34 SU	
480-159547-C-19-B	RUSSO-CF-COMP 2	7196A	T	100 mL	0.000 Absorbance	0.001 Absorbance	7.88 SU	2.39 SU	
480-159547-C-20-B	RUSSO-CF-COMP 3	7196A	T	100 mL	0.000 Absorbance	0.001 Absorbance	7.96 SU	2.27 SU	
480-159547-C-30-B	GERNATT-CF-COMP 1	7196A	T	100 mL	0.000 Absorbance	0.000 Absorbance	7.90 SU	2.09 SU	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 646037 Batch Start Date: 10/10/19 09:17 Batch Analyst: Rana, Riya P

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH	WThcrIM 00074
480-159547-C-31-B	GERNATT-CF-COMP 2	7196A	T	100 mL	0.000 Absorbance	0.003 Absorbance	7.72 SU	2.01 SU	
480-159547-C-32-B	GERNATT-CF-COMP 3	7196A	T	100 mL	0.000 Absorbance	0.001 Absorbance	7.93 SU	2.18 SU	
480-159547-C-39-B	GERNATT-TS-COMP 1	7196A	T	100 mL	0.010 Absorbance	0.010 Absorbance	7.69 SU	2.00 SU	
CCV 460-646037/41		7196A		100 mL		0.411 Absorbance	7.92 SU	2.00 SU	
CCB 460-646037/42		7196A		100 mL		0.000 Absorbance	7.90 SU	2.01 SU	

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
IC 460-646037/1		7196A							
IC 460-646037/2		7196A							
IC 460-646037/3		7196A							
IC 460-646037/4		7196A							
IC 460-646037/5		7196A							
IC 460-646037/6		7196A							
ICV 460-646037/7		7196A		0.5 mL					
ICB 460-646037/8		7196A							
MB 460-645709/1-A		7196A							
LCSSRM 460-645709/2-A		7196A							
LCSI 460-645709/3-A		7196A							
CCV 460-646037/19		7196A		0.5 mL					
CCB 460-646037/20		7196A							
480-159547-C-7-B	RUSSO-TS-COMP 1	7196A	T		2.39				
CCV 460-646037/31		7196A		0.5 mL					
CCB 460-646037/32		7196A							

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Edison Job No.: 480-159547-1

SDG No.:

Batch Number: 646037 Batch Start Date: 10/10/19 09:17 Batch Analyst: Rana, Riya P

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	WThcrIM3 00049	AnalysisComment				
480-159547-C-8-B	RUSSO-TS-COMP 2	7196A	T		2.08				
480-159547-C-18-B	RUSSO-CF-COMP 1	7196A	T		2.21				
480-159547-C-19-B	RUSSO-CF-COMP 2	7196A	T		2.39				
480-159547-C-20-B	RUSSO-CF-COMP 3	7196A	T		2.01				
480-159547-C-30-B	GERNATT-CF-COMP 1	7196A	T		2.18				
480-159547-C-31-B	GERNATT-CF-COMP 2	7196A	T		2.32				
480-159547-C-32-B	GERNATT-CF-COMP 3	7196A	T		2.40				
480-159547-C-39-B	GERNATT-TS-COMP 1	7196A	T		2.00				
CCV 460-646037/41		7196A		0.5 mL					
CCB 460-646037/42		7196A							

Batch Notes	
Acid Used for pH Adjustment ID	10% H2SO4 C-8549-19 exp 4/9/20
Spectrophotometer Cell Path Length	1 cm
Color Reagent ID	C 8530-19 exp 11/4/19
Phosphoric Acid ID	HNO3 1:1 C 8491-19 exp 3/25/20

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolm (GES)

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Russo - TS - Grab 1		9.16.19	925	B.Mikolm	Soil	1					X										X			
	Russo - TS - Grab 2			926			1					X										X			
	Russo - TS - Grab 3			927			1					X										X			
	Russo - TS - Grab 4			928			1					X										X			
	Russo - TS - Grab 5			929			1					X										X			
	Russo - TS - Grab 6			930			1					X										X			
	Russo - TS - Comp 1			935			6					X					X	X	X	X	X		X		
	Russo - TS - Comp 2			940			6					X					X	X	X	X	X		X		
	Russo - CF - Grab 1			1140			1					X										X			
	Russo - CF - Grab 2			1141			1					X										X			
	Russo - CF - Grab 3			1142			1					X										X			
	Russo - CF - Grab 4			1143			1					X										X			

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☐ Standard 14 Days _____/_____
- ☐ 1 day RUSH _____/_____
- ☑ Other _____ _____/_____

Laboratory Information

Lab:	Buffalo TestAmerica
Address:	10 Hazelwood Dr, Amherst, NY 14228
Phone:	716-691-2600
Lab PM:	Orlette Johnson
Lab PM Email:	Orlette.Johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☑ NYASP Category B
- ☐ State Forms
- ☑ EQEDD (for GES)
- ☑ NYDEC EDD (for NYSDEC)

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Date / Time:	Received By:
Relinquished By Sampler: 1	1 9-20-19 / 1415	1 Brandon Mikolm 9/20/19 1415
Relinquished By : 2	Date / Time: 2	Received By: 2
Relinquished By :	Date / Time: 3	Received By: 3

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp _____

480-159547 Chain of Custody

10/28/2019

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Milcolm (GES)

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		
	Russo-CF-Grab 5		9-16-19	1144	B.Milcolm	Soil	1					X										X			
	Russo-CF-Grab 6			1145			1					X										X			
	Russo-CF-Grab 7			1146			1					X										X			
	Russo-CF-Grab 8			1147			1					X										X			
	Russo-CF-Grab 9			1148			1					X										X			
	Russo-CF-Comp 1			1150			6					X					X	X	X	X	X		X		
	Russo-CF-Comp 2			1152			6					X					X	X	X	X	X		X		
	Russo-CF-Comp 3			1155			6					X					X	X	X	X	X		X		
	Gernatt-CF-Grab 1			1340			1					X										X			
	Gernatt-CF-Grab 2			1341			1					X										X			
	Gernatt-CF-Grab 3			1342			1					X										X			
	Gernatt-CF-Grab 4			1343			1					X										X			

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☑ Standard 14 Days
- ☐ 1 day RUSH
- ☐ Other _____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☑ NYASP Category B
- ☐ State Forms
- ☑ EQEDD for GES
- ☑ NYDEC EDD for NYSDEC

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

Relinquished By Sampler: 1	Date / Time: 9-20-19 / 1415 1	Received By: 1
Relinquished By: 2	Date / Time: 2	Received By: 2
Relinquished By: 3	Date / Time: 3	Received By: 3

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp _____

Page 3331 of 3341
10/28/2019

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer — **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com — fax: **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolon (GES) — Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Gernatt - CF - Grab 5		9-16-19	1344	B.Mikolon	Soil	1			•		X										X			
	Gernatt - CF - Grab 6			1345			1					X										X			
	Gernatt - CF - Grab 7			1346			1					X										X			
	Gernatt - CF - Grab 8			1347			1					X										X			
	Gernatt - CF - Grab 9			1348			1					X										X			
	Gernatt - CF - Comp 1			1350			6					X					X	X	X	X	X		X		
	Gernatt - CF - Comp 2			1353			6					X					X	X	X	X	X		X		
	Gernatt - CF - Comp 3			1357			6					X					X	X	X	X	X		X		
	Gernatt - TS - Grab 1			1415			1					X										X			
	Gernatt - TS - Grab 2			1416			1					X										X			
	Gernatt - TS - Grab 3			1417			1					X										X			
	Gernatt - TS - Grab 4			1418			1					X										X			

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☑ Standard 14 Days ____/____
- ☐ 1 day RUSH ____/____
- ☐ Other ____ ____/____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Relinquished by [signature] 9-20-19 1415

Received by [signature] 9/20/19 1415

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

PAGE 4 OF 4

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 PM Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolm (GES)	Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)		LAB USE ONLY
	Gernatt - TS - Grab 5		9-16-19	1419	BMikolm	Soil	1					X										X			
	Gernatt - TS - Grab 6			1420			1					X										X			
	Gernatt - TS - Comp 1			1430			6					X					X	X	X	X	X		X		
	Gernatt - TS - Comp 2			1435			6					X					X	X	X	X	X		X		

Turnaround Time (Business Days) **Approved By (Lab PM) / Date**

- ☑ Standard 14 Days _____/_____
- ☐ 1 day RUSH _____/_____
- ☐ Other _____ _____/_____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Please Email the EQ EDD Package to ges@equisonline.com
EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Relinquished by _____ 9/20/19 1415
Received by Brandon Mikolb 09/20/19 1415

Page 3333 of 3341

10/28/2019

CHAIN OF CUSTODY

Client: New York State Dept. of Environmental Conservation

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job #

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Drive, Williamsville, NY 14221 **Project Manager:** Thomas Palmer **Phone #:** 800-287-7857 Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** NYSDEC/Buffalo/NiagaraSt/1318 **Project Address:** 1318 Niagara Street, Buffalo, NY **Project PSID #:** 787371	**NYSDEC Region 9** **NYSDEC PM:** Heidi Dudek **NYSDEC Phone #:** 518-402-9813 **Lab PM:** Orlette Johnson **NYSDEC Site No.:** E915213

Sampler(s) Name: Brandon Mikolajczak / GES

Sampler(s) Name:

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	number of preserved bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	REQUESTED ANALYSIS (see Test Code sheet): PFC_IDA (MOD) PFAS, Standard List (21 Analytes)	7196A - Hexavalent Chromium - 7196	9012B- Cyanide	6010C, 7471B	8081B, 8082A_LL, 8151A, 8270D	8260C - VOCs DER-10	SPLP - PFC_IDA PFAS (17 Analytes)	LAB USE ONLY
	Russo - TS - Grab 1		9/16/19	0925	B. Mikolajczak	Soil	6					6										X		
	Russo - TS - COMP 1			0935			12					12					X	X	X	X	X		X	
	Russo - CF - Grab 1			1140			9					9										X		
	Russo - CF - COMP 1			1150			18					18					X	X	X	X	X	X	X	
	Cernatt - CF - COMP 1			1350			18					18					X	X	X	X	X		X	
	Cernatt - CF - GRAB 1			1340			9					9										X		
	Cernatt - TS - GRAB 1			1415			6					6										X		
	Cernatt - TS - COMP 1		↓	1430	↓	↓	12					12					X	X	X	X	X		X	

Turnaround Time (Business Days) — **Approved By (Lab PM) / Date**

- ☐ Standard 14 Days ____/____
- ☐ 1 day RUSH ____/____
- ☑ Other ____ ____/____

Laboratory Information

Lab: Buffalo TestAmerica
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 716-691-2600
Lab PM: Orlette Johnson
Lab PM Email: Orlette.Johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULLT1 (Level 3 & 4)
- ☐ NJ Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ *NJ Data of Known Quality Protocol Reporting*
- ☐ NYASP Category A
- ☑ NYASP Category B
- ☐ State Forms
- ☑ EQEDD (for GES)
- ☑ NYDEC EDD (for NYSDEC)

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Buffalo/NiagaraSt/1318_LabReport#.26963.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.

	Relinquished By Sampler:	Date / Time:	Received By:
1	Brandon Mikolajczak / GES	9/16/19 16:10	Kara Mahrer 9-16-19 4:01
2	Relinquished By:	Date / Time:	Received By:
3	Relinquished By:	Date / Time:	Received By:

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice Cooler Temp ____

4 coolers
2.8
2.9
3.1
3.0

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51839.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 9/26/2019			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/Shake_Bath_14D (MOD) PFAS, Standard List (21 Analytes)	PFC_IDA/1312_E (MOD) SPLP PFAS, Standard List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
RUSSO-TS-COMP 1 (480-159547-7)	9/16/19	09:35 Eastern		Solid			X	X	2	
RUSSO-TS-COMP 2 (480-159547-8)	9/16/19	09:40 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 1 (480-159547-18)	9/16/19	11:50 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 2 (480-159547-19)	9/16/19	11:52 Eastern		Solid			X	X	2	
RUSSO-CF-COMP 3 (480-159547-20)	9/16/19	11:55 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 1 (480-159547-30)	9/16/19	13:50 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 2 (480-159547-31)	9/16/19	13:53 Eastern		Solid			X	X	2	
GERNATT-CF-COMP 3 (480-159547-32)	9/16/19	13:57 Eastern		Solid			X	X	2	
GERNATT-TS-COMP 1 (480-159547-39)	9/16/19	14:30 Eastern		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
1	Cinthia Cikolb	9/24/19 1700	TA		9/25/19 905	ETA
2						
3						

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51839.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 9/26/2019			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/Shake_Bath_14D (MOD) PFAS, Standard List (21 Analytes)	PFC_IDA/1312_E (MOD) SPLP PFAS, Standard List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
GERNATT-TS-COMP 2 (480-159547-40)	9/16/19	14:35 Eastern		Solid			X	X	2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Chunkow Civolib	9/24/19 1700	TA		9/25/19 905	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51806.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 777 New Durham Road,	Due Date Requested: 9/26/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7196A/3060A Hexavalent Chromium - 7196	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
RUSSO-TS-COMP 1 (480-159547-7)	9/16/19	09:35 Eastern		Solid			X	1	
RUSSO-TS-COMP 2 (480-159547-8)	9/16/19	09:40 Eastern		Solid			X	1	
RUSSO-CF-COMP 1 (480-159547-18)	9/16/19	11:50 Eastern		Solid			X	1	
RUSSO-CF-COMP 2 (480-159547-19)	9/16/19	11:52 Eastern		Solid			X	1	
RUSSO-CF-COMP 3 (480-159547-20)	9/16/19	11:55 Eastern		Solid			X	1	
GERNATT-CF-COMP 1 (480-159547-30)	9/16/19	13:50 Eastern		Solid			X	1	
GERNATT-CF-COMP 2 (480-159547-31)	9/16/19	13:53 Eastern		Solid			X	1	
GERNATT-CF-COMP 3 (480-159547-32)	9/16/19	13:57 Eastern		Solid			X	1	
GERNATT-TS-COMP 1 (480-159547-39)	9/16/19	14:30 Eastern		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 9/18/19 1500	Company TAB	Received by: Angela Pinilla via FEDEX	Date/Time: 9/25/19	Company TA Edison
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:20	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

993385

2.0°C IR#9

10/28/2019

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Johnson, Orlette S	Carrier Tracking No(s):	COC No: 480-51806.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: orlette.johnson@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-159547-1
Address: 777 New Durham Road,	Due Date Requested: 9/26/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: 1318 Niagara Street #E915213	Project #: 48020737			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7196A/3060A Hexavalent Chromium - 7196	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
GERNATT-TS-COMP 2 (480-159547-40)	9/16/19	14:35 Eastern		Solid			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: Cwattele	Date/Time: 9/24/19 1500	Company TAB	Received by: Angela Pinilla via FEDEX	Date/Time: 9/25/19 9:20	Company TAEdison		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: 993385		Cooler Temperature(s) °C and Other Remarks: 2.0°C IR#9				

Ver: 01/16/2019

10/28/2019

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-159547-1

Login Number: 159547 **List Source: Eurofins TestAmerica, Buffalo**
List Number: 1
Creator: Kolb, Chris M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ges
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-159547-1

Login Number: 159547
List Number: 2
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 09/25/19 11:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	993385
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-159547-1

Login Number: 159547 **List Source: Eurofins TestAmerica, Sacramento**
List Number: 3 **List Creation: 09/25/19 12:58 PM**
Creator: Kintaudi, Pauline W

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	993398
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **13 – 4" and 6" pipe Product Data**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Lindsey Hunka Date: 5-7-2020

ADS N-12® ST IB PIPE (per ASTM F2648) SPECIFICATION

Scope
This specification describes 4- through 60-inch (100 to 1500 mm) ADS N-12 ST IB pipe (per ASTM F2648) for use in gravity-flow land drainage applications.

Pipe Requirements
ADS N-12 ST IB pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations.
- 4- through 60-inch (100 to 1500 mm) shall meet ASTM F2648.
- Manning's "n" value for use in design shall be 0.012.

Joint Performance
Pipe shall be joined using a bell & spigot joint meeting ASTM F2648. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

Fittings
Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the soil-tight joint performance requirements of ASTM F 2306.

Material Properties
Material for pipe production shall be an engineered compound of virgin and recycled high density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4- through 10-inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The design engineer shall verify compatibility with overall system including structural, hydraulic, material and installation requirements for a given application.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch (100 to 1200 mm) diameters shall be one foot. (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.02. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

Nominal Diameter, in (mm)													
Pipe I.D. in (mm)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D.** in (mm)	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)
Perforations	All diameters available with or without perforations.												

*Check with sales representative for availability by region.
**Pipe O.D. values are provided for reference purposes only, values stated for 12- through 60-inch are ± 1 inch. Contact a sales representative for exact values.

© ADS, Inc., October 2009

ADS SINGLE WALL HIGHWAY PIPE SPECIFICATION

Scope
This specification describes 3- through 24-inch (75 to 600 mm) single wall high density corrugated polyethylene highway pipe, for drainage applications.

Pipe Requirements
ADS single wall corrugated highway pipe shall have annular interior and exterior corrugations.
- 3- through 10-inch (75 to 250 mm) shall meet AASHTO M252, Type C or CP.
- 12- through 24-inch (300 to 600 mm) shall meet AASHTO M294, Type C or CP.

Joint Performance
Joints for 3- to 24- inch (75 – 600 mm) shall be made with split or snap couplings. Standard connection shall meet the soil-tightness requirements of AASHTO M252 or M294. Gasketed connections shall incorporate a closed-cell synthetic expanded rubber gasket meeting the requirements of ASTM D1056 Grade 2A2. Gaskets, when applicable, shall be installed by the pipe manufacturer.

Fittings
Fittings shall conform to AASHTO M252 or AASHTO M294.

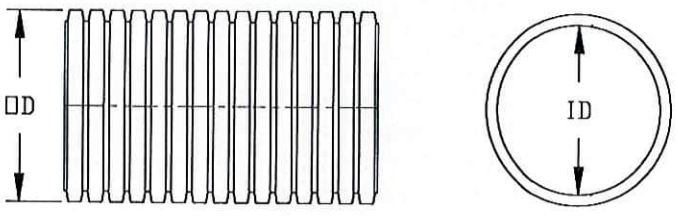
Material Properties
Pipe and fittings shall be made of virgin polyethylene compounds that comply with the cell classification 424420C for 4- through 10-inch (100 to 250mm) diameters, or 435400C for 12- through 24-inch (300 to 600mm) diameters, as defined and described in ASTM D3350, except that carbon black content should not exceed 4%. The 12- through 24-inch (300 to 600mm) virgin pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.5 of AASHTO M294.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines with the exception that minimum cover in trafficked areas shall be one foot (0.3 m). Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.03. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

	Nominal Diameter, in (mm)									
Pipe I.D. in (mm)	3 (75)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)
Pipe O.D.* in (mm)	3.6 (91)	4.6 (117)	5.8 (147)	7 (178)	9.5 (241)	12 (305)	14.5 (368)	18 (457)	22 (559)	28 (711)
Perforations	All diameters available with or without perforations.									

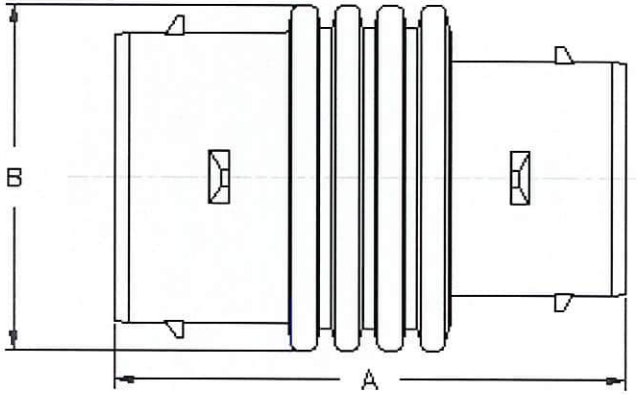
*Pipe O.D. values are provided for reference purposes only, values stated for 3- through 24-inch are ± 0.5 inch. Contact a sales representative for exact values.



© ADS, Inc., August 2015

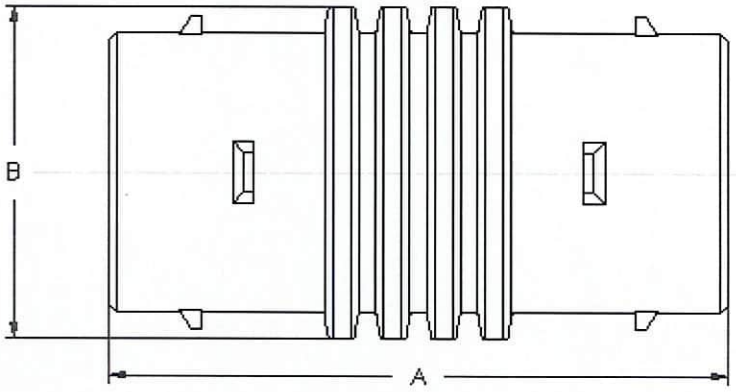
INTERNAL REDUCING COUPLER

PART #	PIPE SIZE	A	B
0425AA	5 x 4 in (125 x 100 mm)	8.8 in (222 mm)	5.9 in (149 mm)
0526AA	6 x 5 in (150 x 125 mm)	8.8 in (222 mm)	7.0 in (178 mm)



INTERNAL COUPLER

PART #	PIPE SIZE	A	B
0315AA	3 in (75 mm)	6.0 in (152 mm)	3.5 in (89 mm)
0415AA	4 in (100 mm)	8.3 in (210 mm)	4.8 in (121 mm)
0417AA	4 in (100 mm)	6.1 in (156 mm)	4.8 in (121 mm)
0515AA	5 in (125 mm)	8.3 in (210 mm)	5.9 in (149 mm)
0615AA	6 in (150 mm)	8.3 in (210 mm)	7.0 in (178 mm)
0815AA	8 in (200 mm)	11.5 in (292 mm)	9.1 in (232 mm)
1015AA	10 in (250 mm)	12.0 in (305 mm)	9.0 in (229 mm)



NOTE: ALL DIMENSIONS ARE NOMINAL

ADVANCED DRAINAGE SYSTEMS, INC.

DRAWING #:	1010	
DRAWN BY:	CRM	09.11.06
APPROVED BY:	JCB	06.22.07
REVISIONS:	NJP	06.12.07

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **14 – Drainage Structure with H20**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

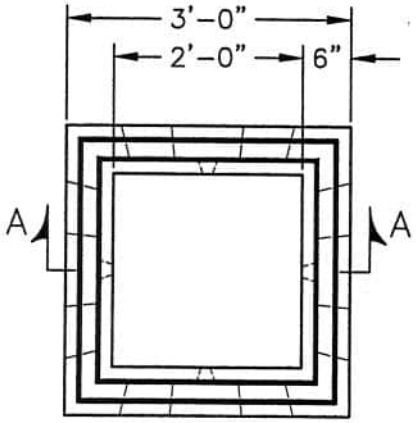
REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: Lindsey Hunka Date: 5-14-2020

KISTNER CONCRETE PRODUCTS INC. 8713 READ ROAD E. PEMBROKE, N.Y. 14056 (716) 894-2267	PRODUCT DESIGNATION	DWG. NO.
	24" SQ. X 24" CATCH BASIN	CB-CB2424 © 1/05/07



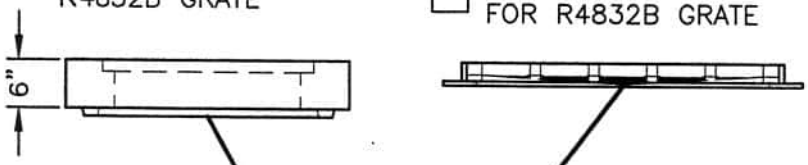
PLAN

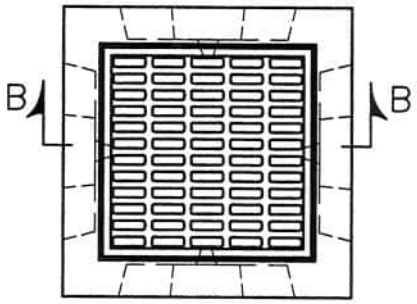
SPECIFICATIONS:

CONCRETE:	4,000 PSI @ 28 DAYS
ENTRAINED AIR:	5%-9%
STEEL:	ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING:	AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT:	1,718 LBS.
KNOCKOUT:	20"H x 20"W ALL KNOCKOUTS HAVE 2" -2 1/2" CONCRETE THICKNESS.
DRAIN HOLE:	ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.

RAISED FRAME & GRATE

- ☐ CONTRACTOR TO SUPPLY
- ☐ 2" HIGH STEEL FRAME FOR R4832B GRATE
- ☐ 4" HIGH STEEL FRAME FOR R4832B GRATE
- ☐ 6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE

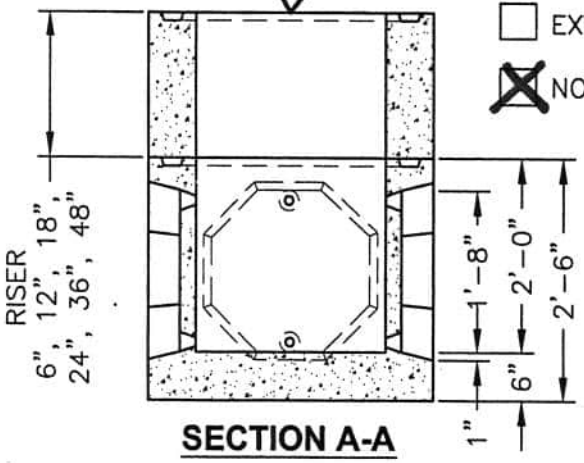




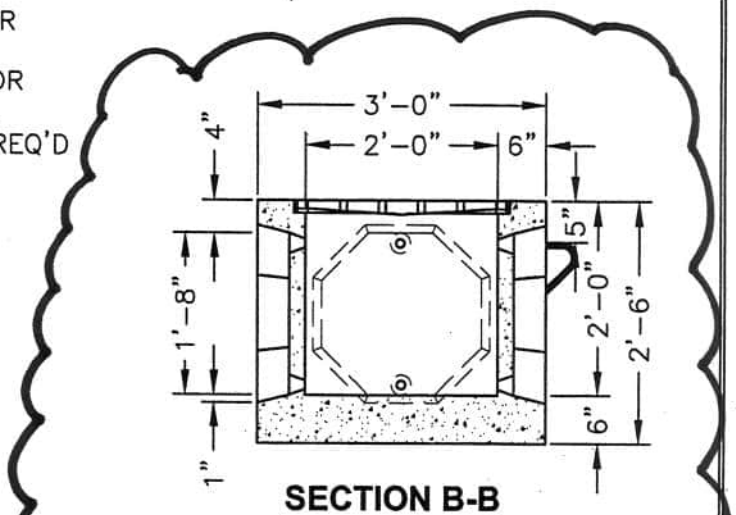
PLAN

BITUMASTIC COATING
(IF REQUIRED)

- ☐ INTERIOR
- ☐ EXTERIOR
- ☒ NONE REQ'D



SECTION A-A



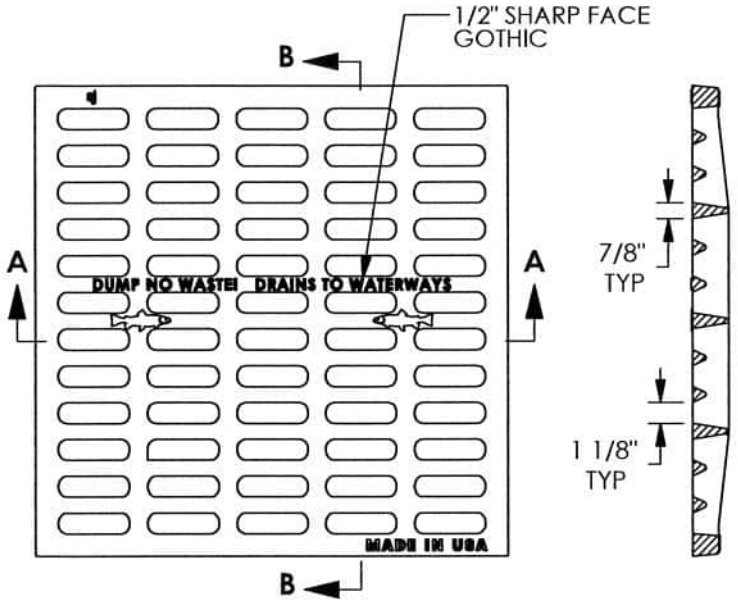
SECTION B-B

☐ **CODE: 315BSS** FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.

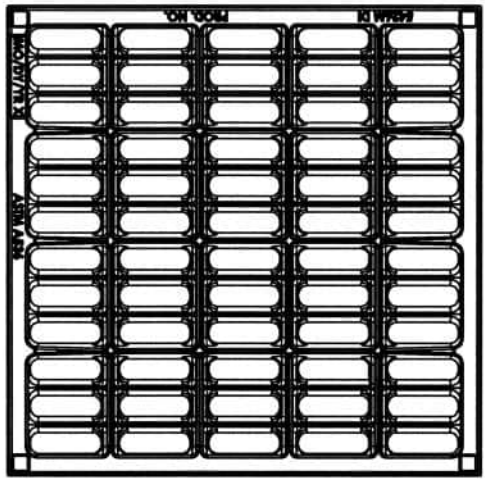
☒ **CODE: 316BSS** WITH NEENAH R4832B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH

Z:\Drawings\CATCH BASINS\24 SQ\CB2424.dwg

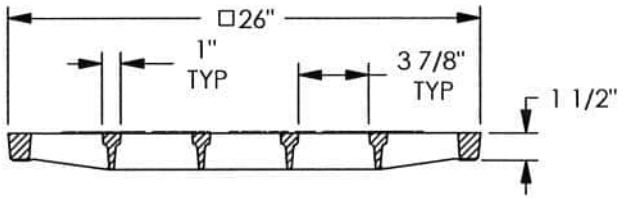
5426M Grate



SECTION B-B



BOTTOM VIEW



SECTION A-A

Product Number

00542631

Design Features

-Materials
Ductile Iron (70-50-05)
-Design Load
Heavy Duty
-Open Area
257 sq in
-Coating
Undipped
-√ Designates Machined Surface

- Estimated Weight: 104 lbs.

Certification

-ASTM A536
-H25
-
-Country of Origin: USA

Drawing Revision

4/1/2010 Designer: DEW
4/25/2014 Revised By: MAH

Disclaimer

Weights (lbs/kg), dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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Contact

800 626 4653
ejco.com

URS SHOP DRAWING/SUBMITTAL REVIEW COMMENTS

PROJECT: **NYSDEC – Lackawanna Incinerator Site (RA)**

CONTRACTOR: **Groundwater Environmental Services**

PROJECT FILE NO.: **60594844**

CONTRACT NO.: **D007622-54**

DESCRIPTION: **15– Crushed Washed #1 Stone**

REVIEW STATUS: *Choose one of the following:*

- ☒ **APPROVED**
- ☐ **APPROVED AS NOTED**
- ☐ **RESUBMIT WITH REVISIONS**
- ☐ **DISAPPROVED**

REVIEW COMMENTS:

No comments.

Review is for general compliance with contract documents. Sole responsibility for correctness of dimensions, details, quantities, and compliance with performance specifications, and safety during fabrication and construction shall remain with the Contractor.

Reviewed by: __Lindsey Hunka_____ Date: 5-18-2020

NEW ENTERPRISE STONE & LIME CO., INC.

500 Como Park Boulevard • Buffalo NY 14227

Office: (716) 826-7310
Fax: (716) 826-1342
Dispatch: (716) 566-9690

April 24, 2020

Steve Leitten

Russo Development, Inc.

Re: Lackawanna Incinerator Site

Dear Steve,

The crushed limestone 2" Crusher Run Subbase, Clean #1 stone, 1" Crusher Run stone and Light Stone Fill to be supplied to the above referenced project was extracted, crushed and screened at our Lancaster, NY facility. The material is produced from a virgin stone source, un-impacted by hazardous materials or contaminants and free of loom, organic matter including clay. The quarry is a NYSDOT approved source; the source number is 5-3R and our mining permit # is 90018.

Sincerely,

Robert Warrington

GES HEALTH AND SAFETY PLAN

GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR

NYSDEC- Lackawanna Incinerator Site

2960 South Park Avenue

Lackawanna, NY 14218

ANNUAL UPDATE COMPLETED ON (DATE): **12/23/2019**

EMERGENCY PHONE NUMBERS:

Local Police 911

Local Fire 911

Local Rescue 911

Local Hospital Name, Phone Number & Address (Map and directions are attached):

Hospital Name	Mercy Hospital of Buffalo
Street Address	565 Abbott Road
City, State, Zip	Buffalo, NY 14220
Phone Number	(716)826-7000

National Response Center (NRC): 1-800-424-8802
The NRC should be contacted in the event of a significant chemical release. Once notified, the NRC will activate a federal response to the spill. *Please confirm with the client and project manager to determine if the spill should be reported*.

Poison Control Center: 1-800-222-1222
The Poison Control Center should be contacted in the event of accidental poisoning. They will provide information on immediate treatment for the poisoning.

Project Contact Information:

Role	Name	Phone Number	Cell Phone Number
Site Supervisor	GES Personnel	(800)287-7857	(Individual cell phone)
Project Manager	Tom Palmer	(800)287-7857 x4346	(716)866-3590
Vice President of Corporate Health and Safety	Tom Baylis	(800)426-9871 x3021	(610)587-1124
Client Representative	Ben Rung	(518)402-9826	

DO NOT TRANSPORT SERIOUSLY INJURED PERSONNEL TO THE HOSPITAL
CALL 911

HOSPITAL ROUTE MAPS

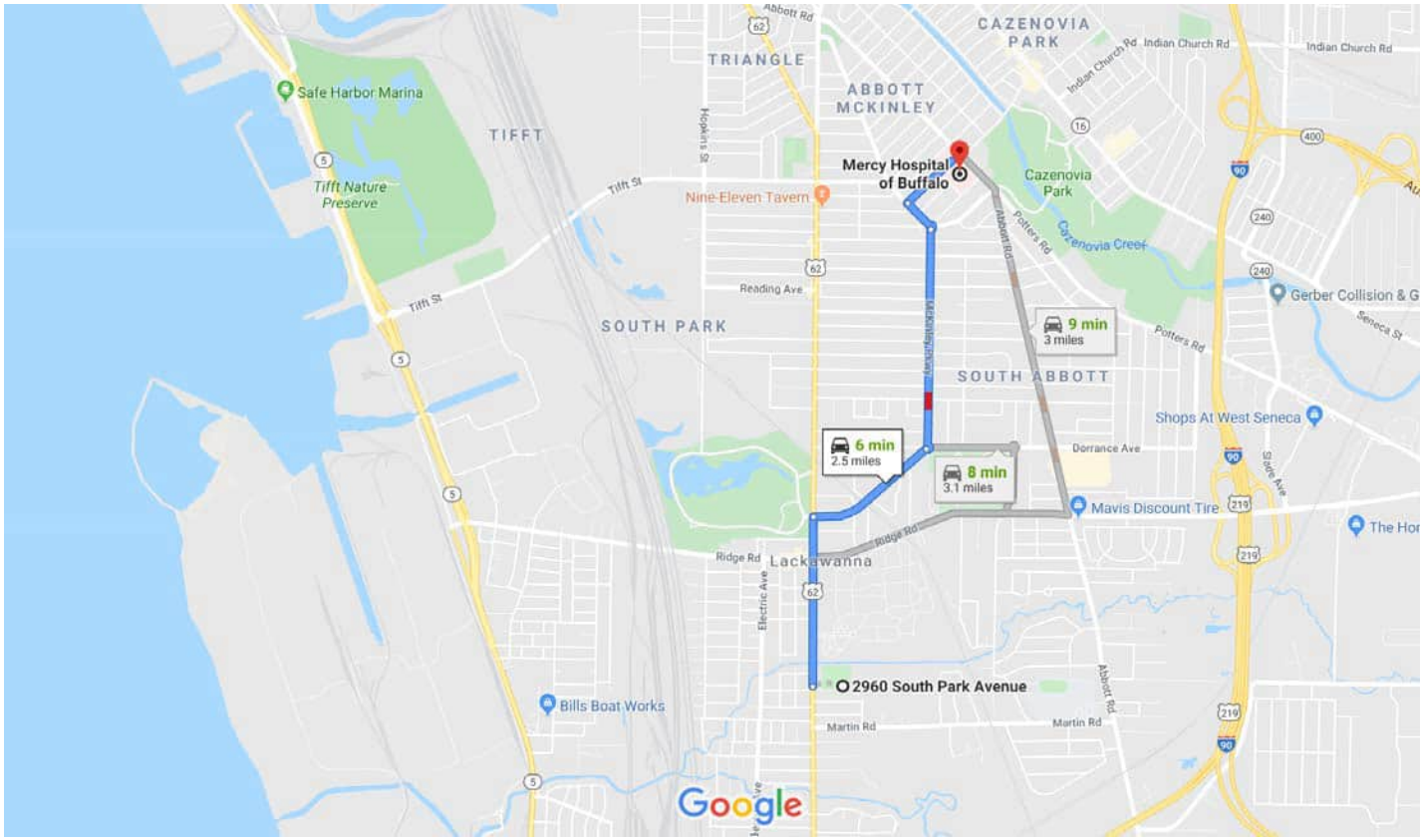
AND

LOCAL GES OFFICE CLINIC MAPS

Google Maps

2960 South Park Avenue, Buffalo, NY to Mercy Hospital of Buffalo

Drive 2.5 miles, 6 min



Map data ©2019 2000 ft

2960 South Park Ave

Buffalo, NY 14218

1. Head north on South Park Ave toward Newman St — 0.7 mi
2. Turn right onto McKinley Pkwy — 0.5 mi
3. At the traffic circle, take the 2nd exit and stay on McKinley Pkwy — 0.9 mi
4. At McClellan Cir, take the 2nd exit and stay on McKinley Pkwy — 0.2 mi
5. Turn right onto Lorraine Ave
   Destination will be on the right — 0.2 mi

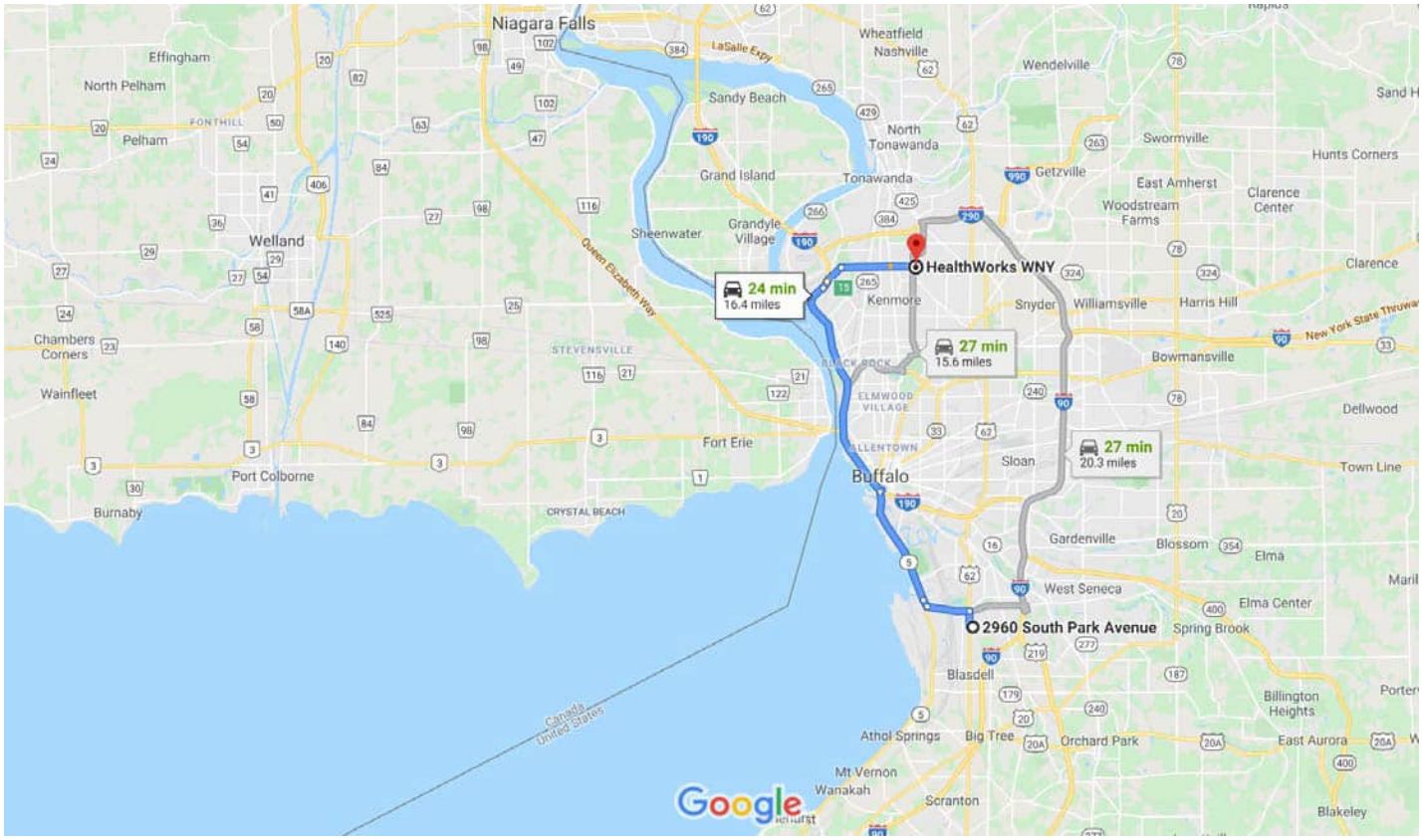
Mercy Hospital of Buffalo

565 Abbott Rd, Buffalo, NY 14220

Google Maps

2960 South Park Avenue, Buffalo, NY to HealthWorks WNY

Drive 16.4 miles, 24 min



Map data ©2019 Google 2 mi

2960 South Park Ave

Buffalo, NY 14218

1. Head north on South Park Ave toward Newman St

1 min (0.5 mi)

Get on NY-5 E

4 min (1.6 mi)

2. Turn left onto Ridge Rd

Pass by KeyBank (on the left)

1.3 mi

3. Turn right to merge onto NY-5 E

0.3 mi

[illegible]

13 min (11.3 mi)

[illegible]

3.7 mi

5. Use the right lane to take the ramp onto I-190 N

7.4 mi

6. Take exit 15 for Sheridan Dr toward NY-324/Kenmore Ave

0.2 mi

Follow Sheridan Dr to your destination

8 min (3.0 mi)

7. Turn right onto Sheridan Dr

0.6 mi

8. Use any lane to turn right to stay on Sheridan Dr

2.3 mi

9. Turn right

92 ft

10. Turn right

Destination will be on the left

82 ft

HealthWorks WNY

2075 Sheridan Dr, Kenmore, NY 14223

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

1.0 INTRODUCTION

1.1 APPROVALS

	Name	Title	Date	Signature
Prepared By	Joe Halleck	Staff Geologist		
Reviewed By (Project Manager)	Thomas Palmer	Project Manager		
Approved By	Thomas Baylis	VP of Corporate Health and Safety		

1.2 SITE BACKGROUND

Project Name	NYSDEC Lackawanna Incinerator Site
Site Address	2960 South Park Ave. Lackawanna, NY
Nearest Intersection	Reddon Street and South Park
Township/Municipality	City of Lackawanna
County	Erie
Additional Information	

1.3 SCOPE OF WORK

Task 1 – Tree Removal

Task 2 – Soil Excavation

Task 3 – Soil loadout

Task 4 —Fill installation/compaction

Task 5 – Hydroseeding

Task 6 – Equipment Decontamination

Task 7 –

Task 8 –

Task 9 –

Task 10 –

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

Responsibility	Name	Task Description
Project Manager	Thomas Palmer	Oversee and coordinate all budget and technical aspects for the project
Regional Health & Safety Manager/Officer	Mark Lancaster	Coordinate all health and safety operations for the project site
Site Supervisor	GES Personnel	Oversee and coordinate all health and safety aspects from the project site

ACCIDENT / INCIDENT MEDICAL SURVEILLANCE

As a follow-up to a work-related injury, all employees are entitled and encouraged to seek medical attention. All accidents and potential exposures must be reported **immediately** to the office leadership and / or RHSSE, who will coordinate with CHSSE to arrange for appropriate medical attention. Depending on the type of incident, it may be critical to perform tests within 24 to 48 hours. *Failure to report an injury or incident immediately will result in disciplinary action*. The *GES Incident/Injury Case Management Procedure* can be found in **Attachment G**.

Events surrounding Near Loss incidents will be recorded in the daily log and documented in accordance with the GES Incident Reporting Procedures.

FIRST AID INCIDENTS

GES field personnel have all received, and are current in certification for First Aid / CPR and all GES vehicles have First Aid Kits readily available. First Aid kits are inspected monthly to ensure all items are present and that no items have expired. If medical attention is beyond standard First Aid care, GES personnel will work with our contracted medical clinic or call 911 for medical attention as appropriate based on medical need.

STAFF TRAINING CERTIFICATES

GES field personnel and subcontractor personnel have received OSHA Hazwopper training as well as current refresher training. Current OSHA refresher certificates are included in **Attachment H**. If any staffing changes occur, the certificates for additional staff will be added to the HASP.

3.0 HAZARD ASSESSMENT

Job Loss Analyses (JLAs) are required for most site activities. Each JLA must identify and quantify the health and safety hazards associated with each task and site operation, and to evaluate risks to workers. Using this information, appropriate control methods are selected to mitigate or (preferably) eliminate the identified risks.

Site Security

- Do not permit anyone who is not properly trained and outfitted with the appropriate PPE to enter the Exclusion or Contamination Reduction Zones (this includes GES personnel, clients, etc.)
- Use caution tape or barricade fencing where warranted to keep unauthorized personnel from entering the work area.
- On sites where it is believed that security is an issue, two employees will be used for all field work. The "buddy-system" will be in place and the two employees will be in constant communication and within each other's line of sight. There will be a cellular phone available to call 911 if a violent condition presents itself.
- When acts of violence occur or when an employee(s) feels that they are being placed in a threatening position they must immediately leave the site.
- All potential acts of violence or threats by non-GES personnel must be immediately reported to the Office leadership and / or Project Manager and Regional HSSE. The situation will be discussed to determine future action on the site in question.
- If any GES employee notices suspicious persons or activities in a GES office or in the vicinity of a work area, he or she should immediately report the observation to his or her supervisor or Regional Operations Manager.

SITE SPECIFIC HAZZARDS

Site specific hazards include the following:

- Lead and Arsenic contamination- Metals contamination are hazardous to field personnel and surrounding persons if inhaled or ingested. Work will follow the Community Air Monitoring Plan (CAMP) located in the Excavation Workplan, and no work will be performed if visible dust is present. To prevent ingestion food and water will be kept in the support zone, and handwashing will be performed before any eating or drinking.
- Working on Slopes- Working on slopes will be required during knotweed and tree removal, as well as possibly during other tasks. While working on steep slopes workers will wear OSHA approved harnesses and will be tethered to an immoveable object to ensure safe working along the slope. While working on slopes, crews will work in pairs or a spotter will be used to ensure safe work.
- Slip/Trip Hazzards – The site has debris both at the surface and partially buried across much of the work area. Initial site work will involve cleaning up some of this material; however, care must be taken while working on-site. Due to the time of year, icy conditions are likely and care will be taken to avoid excess water usage on site, and salt will be on hand in case ice issues develop.
- Site Traffic- The work site is on City of Lackawanna property that house the City DPW as well as a fueling station for City equipment. Work areas will be clearly delineated with fencing, signs, and cones. Work areas will be configured to avoid hindering any DPW activity, and if necessary will be coordinated ahead of time with DPW personnel.
- Proceed to the nearest phone and call 911 and provide the emergency operator all required information. This will activate the emergency response system.

SPILL PROCEDURES

Site work will involve the fueling of equipment and the use of hydraulic powered equipment. GES' contractor will maintain a spill kit on-site at all times to prevent the spread of any spills. In the case of a spill, work will stop until the spill can be cleaned up and GES personnel will inform the NYSDEC and project engineer immediately to discuss spill response.

If any equipment or vehicle is found to be leaking any fuel/lubricants/or fluids the equipment will be taken out of service immediately. Spill absorbent will be placed to collect any leaks and the equipment will be repaired on-site (if possible) or the equipment owner will make arrangements to have the equipment removed from the site in a manner to ensure no more is spilled in the process. Contractors will be responsible for spill clean up caused by their equipment.

EMERGENCY SERVICES COORDINATION

In the case of an emergency, on-site staff will stop all work and gather the crew at the pre-determined muster point to discuss the emergency. Incidents that pose an immediate threat will trigger a call to 911 annd then to GES management who will contact the NYSDEC, the City of Lackawanna DPW, and AECOM.

In the case of a utility impact, the crew will immediately report the strike to GES management, the utility company, the NYSDEC, the City of Lackawanna DPW, and AECOM.

FIRE/EXPLOSION

If a fire is observed in the incipient phase (i.e., when it begins) and if the site personnel witnessing the fire feel secure in attempting to control the fire, the individual can attempt to extinguish the fire by using the onsite fire extinguisher. The fire extinguisher should be a 10 or 20 pound (lb.) dry chemical, Class A, B, and C extinguisher and is adequate for paper and wood based products (A), flammable and combustible liquids (B), and electrical (C) type fires.

If there is no fire extinguisher available or if site personnel do not feel secure in attempting to extinguish the fire, site personnel shall perform the following:

- Secure the site, if possible.
- Evacuate the area using the nearest safe pathway from the area.
- Proceed to the nearest phone and call 911 and provide the emergency operator all required information. This will activate the emergency response system.

If more than one individual is on the site team, the individual activating the evacuation plan shall verbally communicate to the other site personnel that there is an emergency condition and that they should evacuate from the work area. If contact cannot be made verbally with the other site personnel, any of the following systems can be used as long as the system is audible above background noise. The system can be the site vehicle horn, a whistle, an air horn, or other acceptable device. The system used for initiating an evacuation from the site shall be discussed during the tailgate meeting with the other site personnel prior to beginning the workday. The system that is decided upon shall be documented in the site logbook.

If an explosion or other unsafe condition occurs that the site supervisor had determined will place the other site personnel at risk, then the evacuation system described above should be activated immediately.

OSHA Compliance

All work on-site will be performed in compliance with OSHA rules/regulations. All equipment brought onto the site will meet OSHA rules/regualtions and will be inspected prior to use to ensure safe operation.

GES WORK PERMITS

Work permits will be required for Confined Space Entry, Hot Work and Lockout/Tag out as well as any Federal and client permitted activity. These permits must be obtained from the Project Manager or RHSSE prior to site work.

GENERAL SITE RULES

The following general site rules apply to all personnel while on the site:

- Before daily site operations begin, the daily site safety checklist will be completed, the subcontractor's training documentation will be reviewed (as required by section 3 of this plan), and a pre-entry briefing will be held to review the site's health and safety plan concerns and emergency procedures. This meeting will be registered in this Health and Safety Plan. Attendance will be documented.

- One site worker will be assigned to keep the daily log for all health and safety-specific site

activities, unless otherwise specified.

- All personnel will wear steel-toe safety boots. Hard hats will be worn when working near heavy equipment (drill rigs, excavating equipment, etc.), when individuals are working with overhead hazards present, when required in the Job Loss Analysis (JLA), or when required by the client.

- Eye protection and high visibility clothing/reflective safety vests will be donned at all times while on site.

- Possession of alcohol or illegal substances on the job site or consumption during hours of site operations is strictly prohibited.

- Food and/or beverages are not permitted in the site's Exclusion or Contamination Reduction Zones. Food and/or beverages will be permitted in the Support Zone, if proper decontamination procedures are being followed.

- Smoking, including the use of e-cigarettes, is not permitted on any site. Chewing tobacco, snuff, application of cosmetics and/or lip balm is not permitted in the site's Exclusion or Contamination Reduction Zones.

- A change in level of protection will be based on air monitoring equipment readings taken in the breathing zone.

- Field personnel will use air monitoring equipment and not their nose to determine site contamination (i.e., sniffing sampled soils or water in jars, confined spaces, open bore holes or trenches, etc.). Odors detected during the course of standard operating procedures, however, should be noted in the daily log.

- Field personnel should not stand with their head directly over a well when it is being opened.

- First Aid Kit(s) and Fire Extinguisher(s) will be available in all company vehicles and/or within 50 feet of the working area.

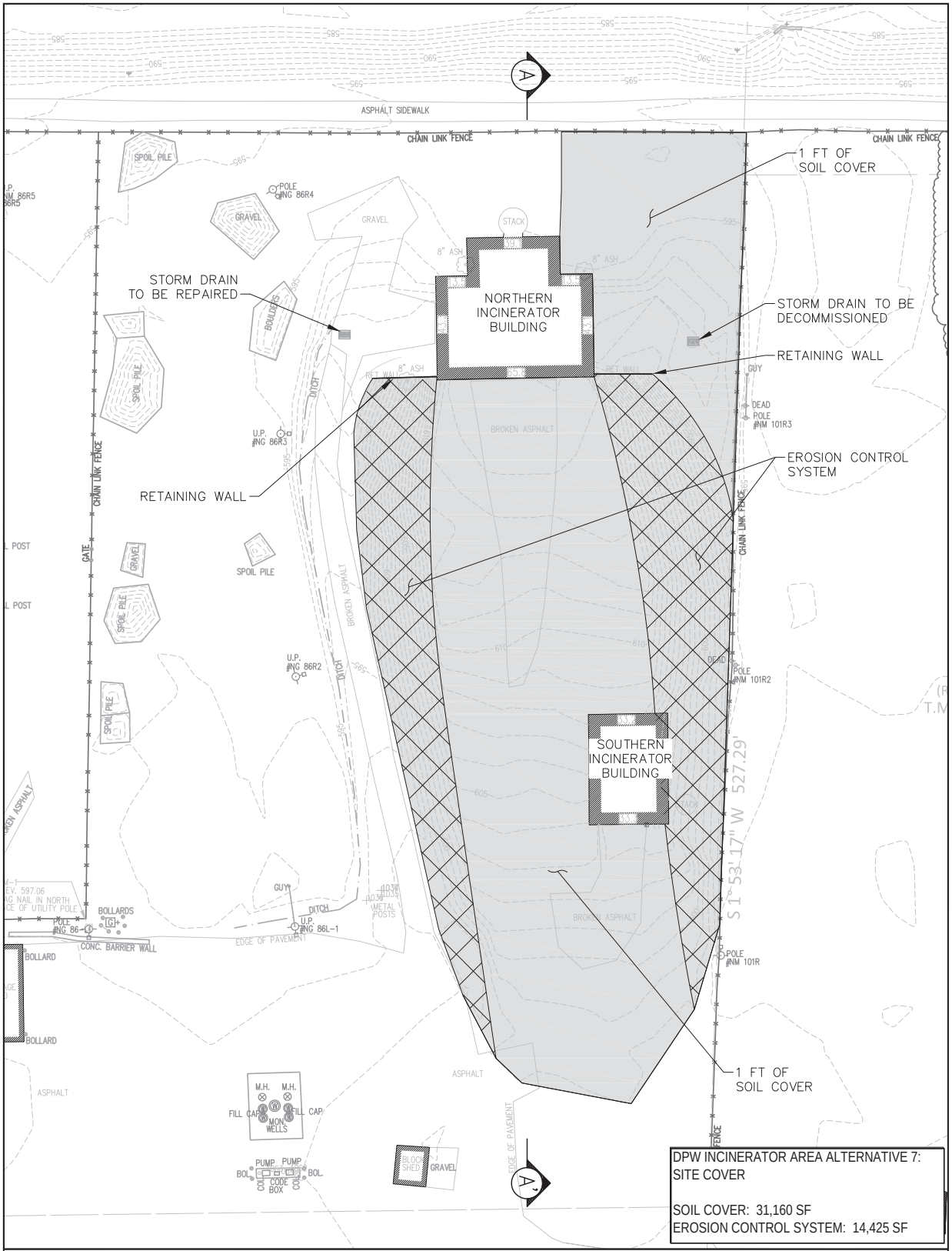
Note: Hot work activities require that a person onsite shall act as a fire watch with a Class A, B, C dry chemical extinguisher within 10 feet of the activity, and all necessary work requirements are satisfied.

Any revisions to the final Site-Specific Health and Safety Plan must be reviewed by the Project/Case Manager and approved by RHSSE or a Principal Hydrogeologist, at a minimum.

ATTACHMENT A

SITE MAPS

FILE PATH: \\WARWICK\WARWICKFP\PROJECTS\14907.10 – LACKAWANNA\CAD\14907.10-LACKAWANNA-MODIFIED4B.DWG [MOD.4B] 1/5/16



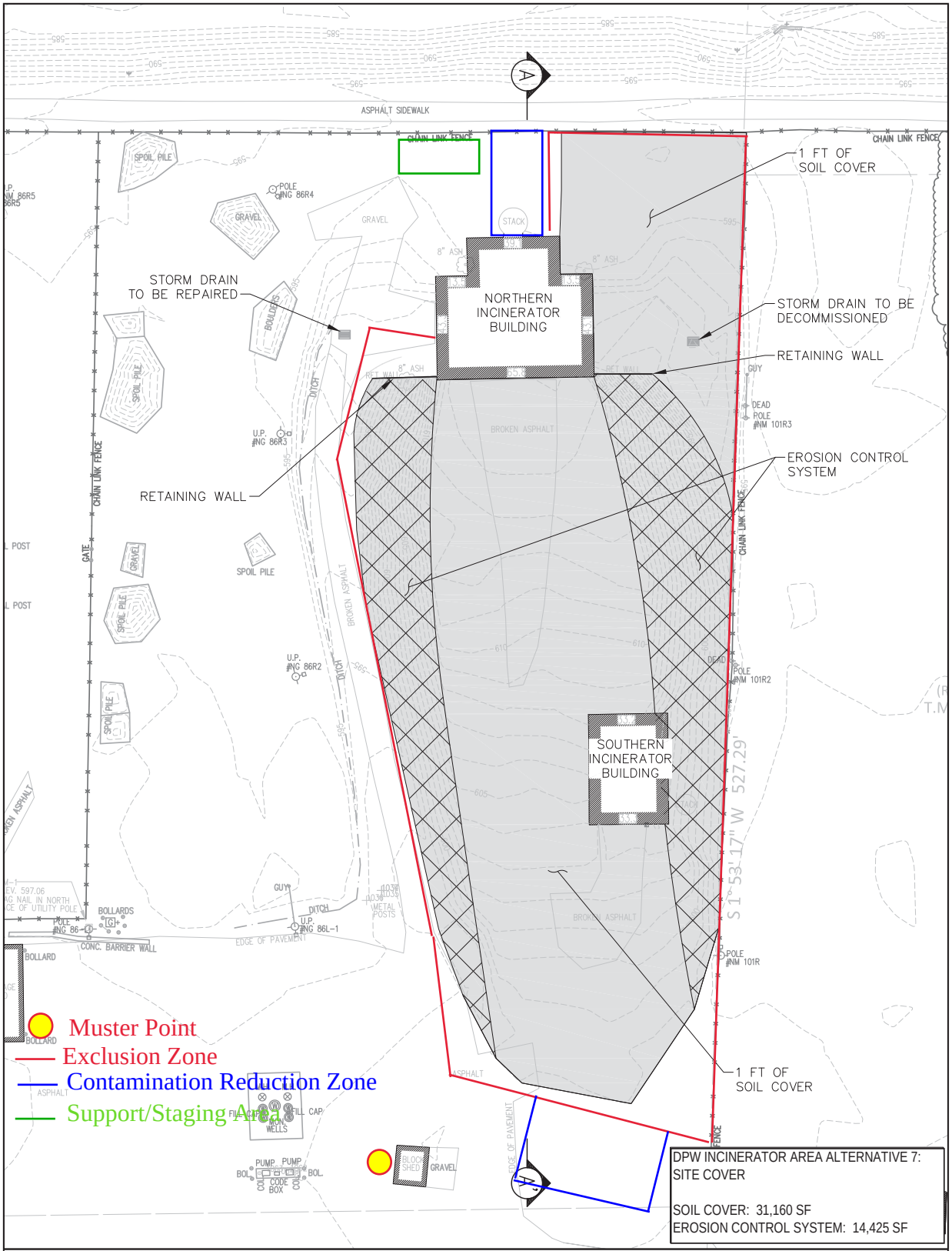
NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

LACKAWANNA INCINERATOR (SITE NO. 915206)
PROPOSED REMEDIAL ACTION PLAN/
RECORD OF DECISION
LACKAWANNA, NEW YORK

FIGURE 10
DPW INCINERATOR AREA ALTERNATIVE 7
FINAL CONDITIONS

PROJECT MGR	DESIGNED BY	CREATED BY	CHECKED BY	SCALE	DATE	PROJECT NO.	FILE NO.
JMB	MEM	DPA	JH	1" = 40'	JAN 2016	14907.10	Lackawanna-Figures

FILE PATH: \\WARWICK\WARWICKFP\PROJECTS\14907.10 – LACKAWANNA\CAD\14907.10-LACKAWANNA-MODIFIED4B.DWG [MOD.4B] 1/5/16



LEGEND:

--595-- EXISTING MAJOR CONTOUR

------ EXISTING MINOR CONTOUR

EROSION CONTROL SYSTEM

DPW INCINERATOR AREA ALTERNATIVE 7 COVER AREA

40 20 0 40

GRAPHIC SCALE IN FEET

SOURCE:
SURVEY BY POPLI, ARCHITECTURE AND ENGINEERING & L.S., P.C. ON OCTOBER 4, 2012.

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

LACKAWANNA INCINERATOR (SITE NO. 915206)
PROPOSED REMEDIAL ACTION PLAN/
RECORD OF DECISION
LACKAWANNA, NEW YORK

FIGURE 10
DPW INCINERATOR AREA ALTERNATIVE 7
FINAL CONDITIONS

PROJECT MGR	DESIGNED BY	CREATED BY	CHECKED BY	SCALE	DATE	PROJECT NO.	FILE NO.
JMB	MEM	DPA	JH	1" = 40'	JAN 2016	14907.10	Lackawanna-Figures

ATTACHMENT B

EXPOSURE MONITORING PROGRAM

FOR THE CONTAMINANTS OF CONCERN

EXPOSURE MONITORING PROGRAM

REAL-TIME MONITORING

Photo-ionization Detector (PID): Real-time monitoring for volatile organic compounds (VOCs) will be conducted (when needed) using a photo-ionization detector (PID). The PID will be used to monitor employee breathing zones during all invasive activities. **Table 1** lists PID action levels and response requirements

Combustible Gas Indicator/Oxygen Level Meter: Real-time monitoring for combustible gases and oxygen levels will be conducted using a Combustible Gas Indicator (CGI)/Oxygen Level Meter. The CGI will test for the presence of combustible gases by continuously monitoring the lower explosive limit (LEL) of organic vapors. The CGI will be used to monitor the LEL prior to, and during, Confined Space (CS) entries and during work near an excavation in contaminated soil. The Oxygen Level Meter will detect an oxygen-deficient or oxygen-enriched atmosphere, and will be used prior to, and during, all CS entry activities. If ionizing radiation is suspected at a site, a Geiger counter will be used to measure exposure under guidance of a Health Physicist. **Table 2** lists CGI, Oxygen Level Meter, and ionizing radiation action levels and response requirements.

Depending on the Contaminants of Concern, other forms of real-time monitoring equipment may be required to quantify chemical hazards and protect workers from exposure. These may include, but are not limited to bio-aerosol monitors, detector tubes, dust monitors, FROG meters, etc.

- Calibration of Real-Time Monitoring Equipment: Monitoring and calibration protocols will be performed in accordance with the manufacturer's guidelines. Calibration will be performed, at a minimum, prior to each day's use.

- Calibration logs will be maintained by the field personnel performing the calibrations.

ACTION LEVELS

Tables 1 and 2 list the action levels and response requirements for a PID and CGI/Oxygen Level Meter. Changing levels of protection, upgrading respiratory protection, or changing work practices is based on maintaining the upper limit of the action level for approximately **10 minutes** sustained in the breathing zone (i.e., a non-transient reading) or at the discretion of the Site Supervisor. If changes in protection levels are required, the Site Supervisor will, stop the job, notify the Project Manager who will contact Regional Engineering and CHSSE to determine if administrative or engineering controls can be implemented to mitigate or eliminate the hazard.

Table 1 provides action levels that must be complied with when petroleum products such as gasoline are the known site contaminants.

Tables 4 & 5 provide space to document site-specific action levels, should the site contain other potential site contaminants. Action levels must be determined by consultation with/approval by CHSSE, based on established chemical exposure limits and monitoring instrument response factors.

TABLE 1 OVM ACTION LEVELS	
Meter Response (Breathing Zone)	**Action Required**
PID response <5 units above background	No respiratory protection required (i.e., Level D)
PID response >5 units above background (Bkgd.) and < 50 units above Bkgd.	Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, half- face respiratory protection.
PID response >50 units and < 250 units above Bkgd.	Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, full- face respiratory protection.
PID response > 250 above Bkgd.	Retreat from site [1,2]

[1] If a retreat becomes necessary, CHSSE or Regional Engineering will be consulted in regard to adding mechanical ventilation or possible changes in work practices. Work will not resume until appropriate corrective measures are implemented.

[2] Because direct reading instruments cannot indicate or are not compound specific, concentrations shown on the instruments shall be related to units above background and not parts per million (ppm).

TABLE 2 CGI/O2/RADIATION LEVEL ACTION LEVELS	
Meter Response	**Action**
CGI response < 10 % LEL	Continue normal operations.
CGI response > 10 % and <20 % LEL	Eliminate all sources of ignition from the work area; implement continuous monitoring. However if work is being done in a confined space, retreat from work area.[1]
CGI response > 20 % LEL	Discontinue operations; allow to vent; retreat from work area.[1]
Oxygen level < 19.5%	Retreat from work area. [1]
Oxygen level > 23.5%	Retreat from work area. [1]
3X background to <2 mR/hr.	Radiation above background levels (normally 0.01-0.02 mR/hr.) signifies possible source(s) radiation present. Continue investigation with caution. Perform thorough monitoring. **Consult with a health physicist**.
>2mR/hr.	Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of a health physicist

[1] If a retreat becomes necessary, CHSSE or Regional Engineering will be consulted in regard to adding mechanical ventilation or possible changes in work practices. Work will not resume until appropriate corrective measures are implemented.

TABLE 3
Retail Petroleum Materials of Concern

Contaminant	OSHA TWA (ppm)	ACGIH TLV (ppm)	Hazards	Entry Routes	IP
Benzene	1	10	1,2,4,5,6,9	Inh, Abs, Ing, Con	9.24
Xylene	100	100	1,2,3,4,5,6,7,10	Inh, Abs, Ing, Con	8.56
Ethylbenzene	100	100	1,2,3,10	Inh, Ing, Con	8.76
Toluene	200	50	1,2,3,4,5,7,10	Inh, Abs, Ing, Con	8.82

TWA = Time Weighted Average in parts per million (ppm)
C = Ceiling
IP = Ionization Potential

1 = irritant to skin
2 = irritant to eyes
3 = irritant to respiratory system
4 = may cause headache
5 = may cause dizziness, lightheadedness
6 = may cause nausea and vomiting
7 = may cause liver and kidney damage
8 = irritant to GI tract
9 = carcinogen/possible carcinogen
10 = may cause damage to CNS

TABLE 4
Inorganic Gases and Vapors of Concern

Contaminant	OSHA TWA (ppm)	ACGIH TLV (ppm)	Hazards	Entry Routes	IP

TWA = Time Weighted Average in parts per million (ppm)
C = Ceiling
IP = Ionization Potential

1 = irritant to skin
2 = irritant to eyes
3 = irritant to respiratory system
4 = may cause headache
5 = may cause dizziness, lightheadedness
6 = may cause nausea and vomiting
7 = may cause liver and kidney damage
8 = irritant to GI tract
9 = carcinogen/possible carcinogen
10 = may cause damage to CNS

Note: Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. These Action Levels, if not defined by regulation, is some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

TABLE 5
***Site Specific hazards (chemicals) of Concern**

Contaminant	OSHA TWA (ppm)	ACGIH TLV (ppm)	Hazards	Entry Routes	IP
Lead					
Arsenic					

TWA = Time Weighted Average in parts per million (ppm)

C = Ceiling

IP = Ionization Potential

1 = irritant to skin
2 = irritant to eyes
3 = irritant to respiratory system
4 = may cause headache
5 = may cause dizziness, lightheadedness
6 = may cause nausea and vomiting
7 = may cause liver and kidney damage
8 = irritant to GI tract
9 = carcinogen/possible carcinogen
10 = may cause damage to CNS

Note: Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV. These Action Levels, if not defined by regulation, is some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

ATTACHMENT C

SITE SAFETY DATA SHEETS (SDS)

ATTACHMENT D

JOB LOSS ANALYSES AND

DAILY SITE SAFETY CHECKLISTS

GES DAILY SITE SAFETY CHECKLIST

Site Name: NYSDEC Lackawanna Incinerator Site
Address: 2960 South Park Avenue
Lackawanna, NY 14218

Task, Name, and date of entry: _____

This checklist is to be completed on a daily basis. The date should be noted in the space provided. The employee completing the checklist should verify that each item is correct and initial in the last space provided.

Date of field work:						
1. Proper training certificates have been obtained from all onsite personnel.						
2. The site-specific HASP has been reviewed and signed by GES employees and GES-hired subcontractors.						
3. The daily site-safety meeting has been conducted.						
4. Applicable JLAs are onsite, reviewed by staff to ensure all tasks/jobs are covered, and site specific JLA modifications occur when needed.						
5. Fire extinguishers are available for use and are fully charged.						
6. A fully-stocked first aid kit & eye wash bottle is readily available.						
7. Any potential tripping hazards have been removed from site.						
8. All vessels containing flammable or corrosive material are properly labeled.						
9. Proper personal protective equipment is being used for present conditions.						
10. Equipment onsite is checked and in safe working order.						
11. Safety cones and flags or barricades have been utilized to mark out work area along with all required signage (No Smoking, No Trespassing, Work Area...).						
12. No person onsite has the appearance of being under the influence of motor skill altering substances.						
13. All workers onsite are clothed in an appropriate manner (highly visible clothing, no tank tops, muscle shirts or shorts).						
14. Electrical power-operated tools shall be properly grounded and used with a Ground-Fault Circuit Interrupter (GFCI).						
15. All required permits (GES and/or client) are completed by an authorized individual.						
16. When working alone, has a phone call been placed to the PM to discuss site conditions, review the Scope of Work, LPS requirements, and coordinate communications for the day? Note: The frequency/ amount of additional calls from the field should be established during the PM's discussion with the individual. A call must always occur prior to leaving the site. **(FILL IN OFFICE COMMUNICATION TIME)**	TIME	TIME	TIME	TIME	TIME	TIME
17. Prior to leaving the site for the day, the GES site supervisor has conducted a meeting with onsite staff to review worker conditions (possible injuries), JLA revisions, discuss possible Near Losses/ Losses, and activities scheduled for the next day.						
18. All health and safety concerns have been communicated to the Regional HSSE Manager/Officer and Project Manager						
I verify and initial that the above information is correct by initialing in the boxes to the right:						

GES DAILY SITE SAFETY CHECKLIST

Site Name: _____
Address: _____

Task, Name, and date of entry: _____

This checklist is to be completed on a daily basis. The date should be noted in the space provided. The employee completing the checklist should verify that each item is correct and initial in the last space provided.

Date of field work:						
1. Proper training certificates have been obtained from all onsite personnel.						
2. The site-specific HASP has been reviewed and signed by GES employees and GES-hired subcontractors.						
3. The daily site-safety meeting has been conducted.						
4. Applicable JLAs are onsite, reviewed by staff to ensure all tasks/jobs are covered, and site specific JLA modifications occur when needed.						
5. Fire extinguishers are available for use and are fully charged.						
6. A fully-stocked first aid kit & eye wash bottle is readily available.						
7. Any potential tripping hazards have been removed from site.						
8. All vessels containing flammable or corrosive material are properly labeled.						
9. Proper personal protective equipment is being used for present conditions.						
10. Equipment onsite is checked and in safe working order.						
11. Safety cones and flags or barricades have been utilized to mark out work area along with all required signage (No Smoking, No Trespassing, Work Area...).						
12. No person onsite has the appearance of being under the influence of motor skill altering substances.						
13. All workers onsite are clothed in an appropriate manner (highly visible clothing, no tank tops, muscle shirts or shorts).						
14. Electrical power-operated tools shall be properly grounded and used with a Ground-Fault Circuit Interrupter (GFCI).						
15. All required permits (GES and/or client) are completed by an authorized individual.						
16. When working alone, has a phone call been placed to the PM to discuss site conditions, review the Scope of Work, LPS requirements, and coordinate communications for the day? Note: The frequency/ amount of additional calls from the field should be established during the PM's discussion with the individual. A call must always occur prior to leaving the site. **(FILL IN OFFICE COMMUNICATION TIME)**	TIME	TIME	TIME	TIME	TIME	TIME
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GES DAILY SITE SAFETY CHECKLIST

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18. All health and safety concerns have been communicated to the Regional HSSE Manager/Officer and Project Manager						
I verify and initial that the above information is correct by initialing in the boxes to the right:						

ATTACHMENT E

WORK PERMITS

ATTACHMENT F

PRE-ENTRY MEETING NOTES

PRE-ENTRY MEETING NOTES/ATTENDANCE

(Include date, length of meeting, names of personnel in attendance, topics of discussion, comments and concerns, etc.)

ATTACHMENT G

INJURY CASE MANAGEMENT FLOWCHART

GES PROJECT INJURY CASE MANAGEMENT

If an incident/injury occurs on-site to a GES or a subcontractor employee, the incident/injury must be immediately reported to the GES Onsite Supervisor. If a subcontractor is injured, also notify subcontractor management.

DOES THE INJURY REQUIRE EMERGENCY MEDICAL ATTENTION?

Yes

Response 1

1. ***Call 911!!!!***
2. **Provide support/first aid to Injured Person (IP) until Emergency Management Services (EMS) arrives**
3. **GES onsite Supervisor notifies:**
   a) VP, HSSE Tom Baylis at **610 587-1124** *(Tom's backup is Basith at 954 304-7043)* **AND**
   b) GES Project Manager (PM) **or** GES Regional HSSE Officer/Manager (RHSSE). *(If IP is subcontractor, follow same approach and PM to notify sub management)*
4. **GES onsite Supervisor accompanies IP to emergency room (ER).** If IP was a lone worker, a member of management meets them at the site or the ER. *(If IP is subcontractor, subcontractor management meets them at ER)*
   a) Ensure that the IP receives the necessary support and medical care with guidance from VP HSSE.
5. GES PM or GES RHSSE notifies GES Regional Operations Manager (ROM)
6. VP, HSSE (or backup) notifies GES Program Manager (PGM), COO, CEO
7. GES PGM or GES PM notifies Client
8. GES RHSSE generates report and initiates incident investigation
9. GES PM and RHSSE will initiate and complete any client required forms

Note: VP, HSSE will notify third party injury support mgmt. company regarding IPs condition and to obtain injury case management support

No

DOES THE INJURY REQUIRE TREATMENT?

No

Response 3

Report incident to GES PM and continue to monitor IP's condition

Yes

CAN THE INJURY BE TREATED WITH ONLY FIRST AID?

No

Response 4

Provide First Aid/ Support and THEN...

1. Provide Notifications per **Response 1, item 3**
2. At IP's request **or** per decision of VP, HSSE, IP will be scheduled for an evaluation at a GES contracted Occupational Clinic (OC) *(or subcontractor's chosen OC)*
3. Lead GES person accompanies IP to OC. If IP is alone, a member of management meets them at OC *(or subcontractor management meets them at OC)*
4. GES RHSSEM generates report and initiates incident investigation

Note: VP, HSSE will notify third party injury support mgmt. company regarding IPs condition and to obtain injury case management support

Yes

Response 2

Provide First Aid

GES staff certified in first aid will evaluate IP's condition and provide first aid/support

Then provide notifications per **Response 1, item 3**

Always Remember

It is extremely important to report incidents immediately to the GES onsite supervisor. Even if the injury is minor or if there is no initial injury and you feel it is not worth reporting, the incident must be managed and documented. Minor injuries may worsen over time.

GES

Last Update: January, 2019

GES Health, Safety, Security & Environment (HSSE): An unwavering commitment to safeguard people, property, and the environment!

ATTACHMENT H

WORK CREW CERTIFICATIONS

OSEA

The Workplace Experts

Training Certificate

this certifies that:

Thomas Palmer

HAS COMPLETED A TRAINING PROGRAM IN

40-Hr. Hazardous Waste Site Worker to include: Confined Space Competent Person, Trenching & Excavation Competent Person and First Aid/CPR

Trainer's Signature

OSEA Inc. - Buffalo

Place of Training

September 22-26,2003

Dates of Training

OCCUPATIONAL SAFETY & ENVIRONMENTAL ASSOC., INC.

Safety, Environmental, Risk Management
Consultants/Engineers/Trainers
Buffalo ◆ Syracuse ◆ Charlotte

Groundwater & Environmental Services, Inc.

Certifies that

Thomas Palmer

Has satisfied the 8 hour Refresher Training Requirements
that Comply with [OSHA 29 CFR 1910.120 (e)(q)]

January 10, 2019

Program Director:

Thomas M. Baylis, CIH

Course Instructor: Mark Lancaster

Expires: 1/10/2020

HAZWOPER

8-Hour Refresher Training

Certification Card

Thomas Palmer

Name

Mark Lancaster

Course Instructor

January 10, 2019

Date

Expires: 1/10/2020

An LPS Licensed Company

Groundwater & Environmental Services, Inc.

Certifies that

Tom Palmer

Has satisfied the 8 hour Supervisor Training
Requirements that Comply with
[OSHA 29 CFR 1910.120 (e)(q)]
6/3/09

Program Director: _____

Thomas M. Baylis, CIH

Course Instructor: Cris Altman

8 Hour Hazwoper Refresher
TRAINING CERTIFICATE
to:

JOE HALLECK

The above student has successfully completed
classroom instruction as required per 29CFR1910.120

Date of Training: December 20, 2018
Expiration Date: December 20, 2019

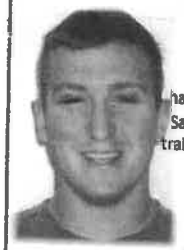
Jeffrey Malo: Instructor Ph# (518) 453-4702

CHA

le Albany, NY 12203

Buffalo State College

Health and Safety Training Course
Certificate of Instruction



This is to certify that on May 18, 2012
Joseph Halleck
has successfully completed the Occupational Health and Safety Administration (OSHA) 40-hour health and safety training course for hazardous waste operation as specified in: 29 CFR 1910.120 (e).

Instructor
Karen S. Wehn

Groundwater & Environmental Services, Inc.

Certifies that

Joseph Halleck

Has satisfied the 8 hour Refresher Training Requirements
that Comply with [OSHA 29 CFR 1910.120 (e)(q)]

December 13, 2019

Program Director: _____

Thomas M. Baylis, CIH

Course Instructor: Kyle Slabik

Expires: 12/13/2020

HAZWOPER

8-Hour Refresher Training

Certification Card

Joseph Halleck

Name

Kyle Slabik

Course Instructor

December 13, 2019

Date

Expires: 12/13/2020

An LPS Licensed Company

Groundwater & Environmental Services, Inc.

Certifies that

Joseph Halleck

Has satisfied 8 hour OSHA Supervisor Training requirements
that comply with [OSHA 29 CFR 1910.120 (e)]

September 13, 2019

Program Director:

Thomas M. Baylis, CIH

Course Instructor: Mark Lancaster

Expires: N/A

HAZWOPER

Supervisor Training

Certification Card

Joseph Halleck

Name

Mark Lancaster

Course Instructor

September 13, 2019

Date

An LPS Licensed Company

OSEA
The Workplace Experts

Occupational Safety & Environmental Assoc., Inc.
3730 A California Road, Orchard Park, NY 1412
www.osea.com

This is to certify that

Brandon Mikolin

Has successfully completed a training session in

40-Hr Hazwoper

In Accordance w/ Federal OSHA Regulation 29CFR 1910.120(e)

Murray Tate
Instructor

Training Dates: *11/16/15 – 11/20/15* Certificate #: *B15-40*

360training.com ASU ISHM

This certifies that the person named below successfully completed a

Brandon Mikolin

HAZWOPER 8 hr Annual Refresher

F. Marie Athey, OHST
Trainer Name

11/04/2016
Completed

OSHA Occupational Safety and Health Administration

This card acknowledges that the recipient has successfully completed a 10-hour Occupational Safety and Health Training Course in

Construction Safety and Health

BRANDON MIKOLIN

Marie Athey
(Trainer name – print or type)

1/29/2016
(Course end date)

Groundwater & Environmental Services, Inc.

Certifies that

Brandon Mikolin

Has satisfied the 8 hour Refresher Training Requirements
that Comply with [OSHA 29 CFR 1910.120 (e)(q)]

January 10, 2019

Program Director:

Thomas M. Baylis, CIH

Course Instructor: Mark Lancaster

Expires: 1/10/2020

HAZWOPER

8-Hour Refresher Training

Certification Card

Brandon Mikolin

Name

Mark Lancaster

Course Instructor

January 10, 2019

Date

Expires: 1/10/2020

An LPS Licensed Company

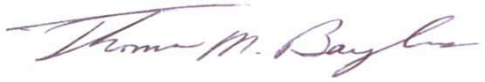
Groundwater & Environmental Services, Inc.

Certifies that

Brandon Mikolin

Has satisfied 8 hour OSHA Supervisor Training requirements
that comply with [OSHA 29 CFR 1910.120 (e)]

9/11/2017

Program Director: 

Thomas M. Baylis, CIH

Course Instructor: Mark Lancaster

Expires: N/A

HAZWOPER

Supervisor Training

Certification Card

Brandon Mikolin

Name

Mark Lancaster

Course Instructor

9/11/2017

Date

An LPS Licensed Company

TRAINING CERTIFICATE

Joe Russo

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

David Schunk

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Steven Leitten

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL
& SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Jeff Sills

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL
& SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Darren Hurlburt

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Joseph Krzemien

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Chris Galati

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Justin Bradley

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Joe Boyles

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Jacob Cooper

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Ryan Mitchell

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Michael Grimaldi

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Brandon Ellis

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Timothy Manning

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Andy Wittmeyer

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

TRAINING CERTIFICATE

Vince Andriaccio

Has successfully completed an 8-Hour HAZWOPER Refresher Training Course per OSHA 29 CFR 1910.120 requirements

Completion Date: December 20, 2019

Expires: December 20, 2020

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

ATTACHMENT I

SIGN OFF SHEET

SITE SAFETY AND HEALTH PLAN COMPLIANCE AGREEMENT

All project personnel, including visitors, must follow the requirements of this Site Safety Plan. In order to document individual agreement with this requirement, all personnel must complete this "Site Safety and Health Plan Compliance Agreement." These agreements will be kept in this Site Safety Plan and will become part of the permanent project record upon completion of site activities.

By signing below, I have read the Site Health and Safety Plan (HASP), or I have been verbally advised of its contents. I understand, and I agree to comply with all of its provisions. I understand that I could be prohibited from working on the project, and I may be subject to disciplinary actions for violating any of the health and safety requirements specified in the HASP.

Name	Signature	Date	Time	LPS Card	OSHA Card

Name	Signature	Date	Time	LPS Card	OSHA Card

AECOM HEALTH AND SAFETY PLAN

HAZWOPER Health and Safety Plan (DCSA)

Remedial Design

Lackawanna Incinerator Site
2960 South Park Ave.
Lackawanna, New York 14218

Expiration Date: **March 20, 2020**
(Max. 1-Year from signature date)

Prepared for: NYSDEC
625 Broadway, 12th Floor
Albany, NY 12233-7017

Prepared by: URS
257 W. Genesee St., Suite 400
Buffalo, Ny 14202

Prepared By:
Name Kevin J. McGovern, PG, CHMM Signature:
Title Sr. Environmental Scientist Date: 3/13/2019

Reviewer: Area/Regional/ Business Line/Client SHEM:
Name Cristopher Altman, CSP, STSC Signature:
Title NE EBL SH&E Manager Date: 3/13/2019

Approval: Project Manager:
Name Mike Gutmann, PG Signature:
Title Project Manager Date: 3/13/2019

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HASP Summary

Note: This Summary is intended to provide key information only and cannot be substituted for reading, understanding, and complying with the full HASP. This summary may be continually updated as tasks and personnel change. Use Continuation Sheets if necessary.

Project Name:	Lackawanna Incinerator Site	**Project Number:**	60594844
Summary Revision Date:	3/13/2019	**Client Name:**	NYSDEC

Report ALL SH&E Incidents, no matter how minor, to the Incident Hotline: 800-348-5046
Injury, Property Damage, Vehicle, Security, Regulatory Inspection, Environmental Impact, and any potentially work-related injury, discomfort/ pain, or damage.

Identify the nearest Occupational Clinic and Hospital to the Site that accepts URS Workers Compensation Insurance (see **Attachment A** for instructions). If the nearest such clinic or hospital is an unreasonable distance from the Site, identify nearer hospitals or clinics. Attach maps and directions to the clinics and hospitals in **Attachment A**.

Occupational Clinic:	Western New York Immediate Care - Orchard Park	**Nearest Hospital:**	Mercy Hospital of Buffalo
Address:	3050 Orchard Park Rd, Buffalo, NY 14224	**Address:**	565 Abbott Rd, Buffalo, NY 14220
Phone Number:	(716) 675-3700	**Phone Number:**	(716) 826-7000

Key Personnel

Project Manager (PM):	Mike Gutmann, PG	**Cell Phone:**	(716) 345-4649
Site Supervisor (SS)	David Cofield	**Cell Phone:**	(716) 818-1592
Safety Officer (SSO):			
URS SH&E Mgr.	Cristopher Altman, CSP, STSC	**Cell Phone:**	(484) 598-3834
Client PM:	Benjamin Rung P.E	**Cell Phone:**	(518) 703-3943

List ALL Short-Service Employees, including subcontractors (<6 Months with Company in Current Area/Job Description):
NA

List ALL Subcontractors and their Site Safety Officers:
TBD

PM must positively verify subcontractors, including lower-tier subs (i.e. 'subs of subs') are approved in Subport (or by an equivalent evaluation process) for the work described. If there were any limitations/ conditions of approval, describe them and how they are being met.

☒ I have verified that all subcontractors are approved in Subport (or equivalent), and that all conditions of approval are met.

Mike Gutmann, PG		3/13/2019
Project Manager Name	**Project Manager Signature**	**Date**

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Applicable References

This Health and Safety Plan (HASP) conforms to the regulatory requirements and guidelines established in the following documents:

- Title 29, Part 1910 of the Code of Federal Regulations (29 CFR 1910), Occupational Safety and Health Standards (with special attention to Section 120, Hazardous Waste Operations and Emergency Response).
- 29 CFR 1926, Safety and Health Regulations for Construction.
- National Institute for Occupational Safety and Health/Occupational Safety and Hazards Administration/U.S. Coast Guard/U.S. Environmental Protection Agency, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication No. 85-115, 1985.
- The requirements in this HASP also conform to URS' Safety for Life Program requirements as specified in the URS Safety, Health and Environment (SH&E) Manual.
- Scope of Work, Work Assignment D007622-54, Lackawanna Incinerator Site No. 915206, Remedial Design (URS, 2019).

Template Revision Log

Version	Revised By	Date	Summary of Revisions
1.0	Kevin J. McGovern, PG, CHMM	March 2019	Initial Version

1. Introduction

This written HASP is designed to identify, evaluate, and control safety and health hazards, and to outline emergency response actions for URS-managed activities. This HASP must be kept on site during wok activities and made available to all workers including subcontractors and other site occupants for informational purposes. URS subcontractors are expected to independently characterize, assess, and control site hazards created by their specific scope of work.

This section of the HASP summarizes important URS SH&E Procedures that apply to all Design and Consulting Services (DCS) Americas jobs. See **Attachment B** for the Task Hazard Assessments and Blank Task Hazard Assessment forms and **Attachment C** for complete copies of applicable field SH&E Procedures. This template has been designed primarily for use in the United States; see procedure attachment S3AM-320-ATT2 for Canadian Specific Requirements on URS' ecosystem.

In October 2014, URS was acquired by AECOM Technical Services (AECOM) and continues to operate as a subsidiary of URS. Standby Contract D007622 predates this acquisition, and URS continues to perform work under this contract until the Contract expires (February 2019).

1.1 Applicable References

This Health and Safety Plan (HASP) conforms to the regulatory requirements and guidelines established in the following documents:

- Title 29, Part 1910 of the Code of Federal Regulations (29 CFR 1910), Occupational Safety and Health Standards (with special attention to Section 120, Hazardous Waste Operations and Emergency Response).
- 29 CFR 1926, Safety and Health Regulations for Construction.
- National Institute for Occupational Safety and Health/Occupational Safety and Hazards Administration/U.S. Coast Guard/U.S. Environmental Protection Agency, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication No. 85-115, 1985.
- The requirements in this HASP also conform to URS' Safety for Life Program requirements as specified in the URS Safety, Health and Environment (SH&E) Manual.
- Scope of Work, Work Assignment D007622-54, Lackawanna Incinerator Site No. 915206, Remedial Design (URS, 2019).

Project Assumptions

- This site is an URS-controlled site.
- Site management will assist in locating subsurface utilities, vessels, and structures located on the property and outside the scope of the utility locator service.
- No confined spaces will be entered on this project.
- No excavations will be entered.
- Work will be performed during daylight hours.

2. Site Information and Scope of Work

2.1 Site Description

Currently the Lackawanna Incinerator Site (the Site) consists of approximately 7.6 acres of city-owned land located at 2960 South Park Avenue and along the south embankment of the north branch of Smokes Creek in an urban area of the City of Lackawanna, Erie County, NY (Figure 1).

The Site is comprised of two Areas of Concern (Figure 2), the DPW Incinerator Area and the Smokes Creek Corridor. The DPW Incinerator Area's main structural features are two red-brick, multi-story buildings and associated chimneys that housed municipal solid waste incinerators. The southern incinerator building was constructed in 1927 and the northern incinerator building was constructed circa 1950. In the center of the Site is a large ramp-like mound of fill (approximately 20 feet in elevation at its highest) that provides access to the northern incinerator's third floor. There is a primarily unpaved area on the southern portion of the property with a framed shed currently used to house equipment for the City DPW. The Smokes Creek Corridor comprises the northern portion of the Site, where an asphalt paved recreational trail runs east to west along the top of the embankment to Smokes Creek. The DPW Incinerator Area is enclosed and secured by varying heights of chain link fencing (4-8') with access via a locking gate at the southwest corner of the area, adjacent to the DPW garage. The Smokes Creek Corridor portion of the Site is not fenced and is accessible by the public. To the north of the Site lies the north branch of Smokes Creek; to the east is a grassy field that is part of the Baker Hall School property; and to the west is a sports athletic field and stadium with a 70+ space asphalt parking area along South Park Avenue that serves the athletic field. A storm sewer system exists on-site with two (2) catch basins on the east and west of the northern incinerator building. Two reinforced concrete conduits (one 12-inch, one 24-inch) carry storm water flow from the Site to Smokes Creek.

The on-site DPW Incinerator Area is zoned as Property Class 662 - Police Fire. The primary use of the DPW Incinerator Area is for commercial purposes, such as materials staging and equipment/vehicle storage for the City Department of Public Works. The city-owned Smokes Creek Corridor is zoned as Property Class 330 - Vacant Commercial. The primary use of the Corridor is for commercial purposes, i.e. passive recreation activities which include walking, cycling and fishing. The Office of Sanitation is housed across Reddon St. to the south. The basement of the north incinerator is currently being used by the City animal control officer for the temporary caging of animals. The Site is immediately surrounded by mixed-commercial-residential space. A few commercial parcels are immediately adjacent to the Site with numerous single-family residential properties just beyond to the west and south. To the north is Smokes Creek (flows west to Lake Erie) and then the Holy Cross Cemetery. To the east is the Baker Hall School. Immediately to the west is a recreational athletic field and stadium, currently known as Lackawanna's Veterans Stadium (formerly known as the Ron Jaworski Stadium and the South Park Stadium).

2.2 Site Background/History

Operations at the Site began in 1927 with the first fire of the municipal incinerator (southern). The southern incinerator operated until about 1950 when the second incinerator (northern) went into operation. Operation of the northern incinerator ceased in 1980. During construction of the northern incinerator fill was placed as a ramp to allow dump truck traffic to access the third floor of the incinerator. Initially the ramp was constructed from a mix of soil and steel foundry slag and was over time widened to the east and west through the addition of street sweepings and discarded refractory brick from the incinerator chimneys during routine repair and maintenance activities. The date of construction of the recreational trail along Smokes Creek is unknown.

In 2005 the City conducted an environmental investigation of the Site with field activities taking place in April 2005. Results indicate the fill material in the ramp contain elevated lead and polycyclic aromatic hydrocarbons (PAHs). Sampling and analysis detected lead concentrations in fill material up to 23,600 ppm, however most of the samples contained levels of lead of around 1,000 ppm or less.

2.3 Client or Third-Party Operations at Site

The City of Lackawanna's Department of Public Works uses the Site for materials staging and equipment/vehicle storage.

2.4 Scope of Work

The Scope of Work (SOW) at the Site consists of the following:

- Environmental sampling using a bucket auger along seven transects beside the Smokes Creek Corridor;
- Sampling monitoring wells;
- Survey transect and sampling locations;

2.5 Scope of Work Risk Assessment

☐ **Low Risk** *(examples: non-intrusive work, occasional exposure and/or low risk hazards)*

☒ **Medium Risk** *(examples: intrusive work, heavy equipment use, frequent exposure and/or moderate hazards)*

☐ **High Risk** *(examples: complicated scope, large/multiple work crews, and/or constant exposure to hazards).*

The following tasks/hazards automatically trigger high risk ranking. Check all which apply. Include hazard mitigation procedures later in the appropriate Physical, Chemical, or Environmental section of the HASP.

☐ Asbestos Removal / Contact
☐ ATV Use
☐ Bridge / Dam Inspections/ Snooper Truck Use
☐ Confined Space
☐ Cranes and Rigging Use
☐ Demolition
☐ Diving – Scientific or Commercial
☐ High Speed Traffic Exposure
☐ Hot Work
☐ Conditions Immediately Dangerous to Life or Health (IDLH)
☐ Laboratory Operations
☐ LOTO or Live Energy Source Work
☐ On-rail / Near Rail Work
☐ Ordnance, Munitions, Explosives Use
☐ Pile Driving
☐ Radiation or Radioactive Instrument Use
☐ Remote Location or Lone Worker
☐ Respirator Use (does not include dust mask)
☐ Scaffolding Use
☐ Use or Exposure to Toxic Chemicals
☐ Trenching / Excavation
☐ Tunnel / Underground Work
☐ UXO / MMR
☐ Work at Heights >4 ft.
☐ Work at Angle >30 deg.
☐ Work On / Over Water

URS

3. URS Safety Health and Environment Program

3.1 URS Policy

AECOM Imagine it. Delivered.

Safety, Health & Environment Policy

Purpose

This policy establishes the framework to attain best-in-class Safety, Health and Environmental (SH&E) performance in the interest of benefitting AECOM's employees and stakeholders in the global marketplace.

Policy

AECOM is committed to exceptional levels of performance in safeguarding our people and the environment as one of our Core Values. Keeping our people safe is our most important measure of success. We strive to be the beacon of safety excellence in the industries and global communities in which we work.

To advance our SH&E program, we are committed to:

- Zero work-related injuries to AECOM employees and protection of the environment as a result of our activities.
- Providing a highly effective SH&E management system that drives continual review and improvement.
- Meeting client requirements and properly incorporating all safety, health and environmental rules and regulations at the local, state, provincial and national levels.
- Developing an exceptional safety culture where our people embrace ownership for the safety of themselves and others.
- Advancing our goals of pollution prevention, resource conservation and environmental sustainability.
- Setting and meeting aggressive SH&E performance goals and Core Value Metrics to promote continuous improvement.
- Working with employees and business partners to continuously improve SH&E performance.
- Recognizing and celebrating those who contribute to excellent SH&E performance.
- Striving to make AECOM the provider of choice for the safe execution of design, build, finance, operate and maintenance work globally.

The commitment to this policy by the leadership, management and employees of AECOM provides the foundation for a safe workplace, operational excellence and long-term business success.

Expectations

Safety is a core value and a key to our success. We demand continuous improvement in our journey toward a "zero" incident culture, where everyone is committed to safety, health and environmental excellence.

To that end, we demand:

- Our leaders, managers, supervisors and employees demonstrate their commitment in their actions and decisions to assure that every person goes home safe every day.
- Our employees embrace safety as a core value both on and off the job.
- Each employee is committed to his/her own safety and that of his/her fellow employees.
- We will incorporate AECOM's Life-Preserving Principles into our work planning and execution.
- We proactively and aggressively identify, manage and eliminate hazards in the workplace.
- We train and prepare our people to have the knowledge, skills, competency and equipment required to work safely.
- We stop our employees from working if the work cannot be executed safely or if conditions or behaviors on the work activity are unsafe.
- All employees immediately report safety, health and/or environmental incidents, near-misses, unsafe conditions, and at-risk behaviors to their supervisor; and that we diligently work to correct the problem.

Our SH&E expectations will be accomplished by the demonstrated leadership of management, compliance with regulatory requirements and participation of AECOM personnel.

Review and Communication

This Policy will be reviewed annually to ensure it meets the needs of the company, and will be made available to all persons under the control of the company.

M. Burke March 4, 2018

Michael S. Burke Date

Chairman and Chief Executive Officer

3.2 Safety for Life

"Safety for Life" is a comprehensive integrated URS Safety Management System that drives our nearly 100,000 employees toward URS' commitment to achieving zero work-related injuries and/or illnesses; preventing damage to property and the environment; and maintaining an environmentally friendly and sustainable workplace. Our Safety for Life program is supported by nine Life Preserving Principles that apply to all URS activities.

3.3 Life Preserving Principles

Demonstrated Management Commitment
Our Executive, senior and project managers will lead the SH&E improvement process and continuously demonstrate support and commitment.

Employee Participation
Our employees will be encouraged and empowered to become actively engaged in our safety processes through their active participation in safety committees, training, audits, observations and inspections. Employees will be encouraged to participate in health initiatives and adopt a healthy lifestyle.

Budgeting and Staffing for Safety
Our safety staff will be competent, fully trained and qualified to provide technical resources to our internal and external clients. A budget to support safety activities will be included in project proposals.

Pre-Planning
Our design, engineering, project and construction management staff will deploy effective risk mitigation efforts to design, plan and build safety into every project. Pre-Project and Pre-Task planning will be an effective tool in protecting our employees and the environment.

Contractor Management
Our project staff will work closely with our sub-consultants, subcontractors, contractors and Joint Venture Partners to provide a safe work environment for employees and members of the public. Our goal of SH&E performance excellence will be equally shared by all project participants.

Recognition and Rewards
Our employees will be recognized for their efforts in working safely and their support of our safety efforts.

Safety Orientation and Training
Our employees will be provided with effective safety training in order to identify and mitigate hazards in the workplace to prevent injuries to themselves and others who may be affected by their actions.

Incident Investigation
Our managers and safety professionals will investigate all recordable incidents and serious near misses to identify contributing factors and root causes in order to prevent a reoccurrence. Lessons learned shall be identified, communicated and implemented.

Fit for Duty
Our employees are responsible to report to work each day fit for duty and not to pose a health and safety hazard to themselves or others.

3.4 Driving and Vehicle Safety

The proper operation of vehicles is critical to protecting the safety of URS employees and subcontractors. Drivers face numerous hazards while operating vehicles. Some of the hazards include collision with another vehicle, collision with a fixed object, vehicle break down or failure, or falling asleep or becoming otherwise incapacitated while driving. All employees will adhere to Driving procedure S3AM-005-PR, which includes the following key practices:

1. **Authorized Drivers**
   Managers must authorize drivers following evaluation of driver criteria to drive and maintain an URS-owned, leased or rented vehicle, a client or customer-owned vehicle, or a personal vehicle operated in the course of conducting URS business.

2. **Electronic Devices Prohibited**

URS prohibits use of all portable electronic devices while operating a motor vehicle/equipment which includes being stopped at a traffic light or stop sign. This includes cell phones, two-way radios and other items whether hand-held or hands-free. Electronic devices include, but are not limited to, all mobile phones, pagers, iPods, MP3s, GPS, DVD players, tablets laptops and other portable electronic devices that can cause driver distraction. Hands-free device use is not allowed.

- GPS units and devices used for navigation may only be used if factory installed or secured to the vehicle with a bracket that allows the driver to view the image without having to take their eyes off the road. Electronic devices shall be setup for operation prior to commencing driving activities and shall not be changed by the driver while driving.

3. **Vehicle Inspections**

The driver shall conduct pre-trip vehicle inspections prior to each trip. A vehicle inspection checklist, S3AM-005_FM2, can be used to guide and document the inspection process. Vehicle inspection is to include a 360-degree walk around and visual inspection under the vehicle for leaks and obstructions prior to moving the vehicle.

4. **Training**

All drivers shall complete defensive driver training. Additional training (i.e., hands-on defensive driver training) may apply for medium and high-risk drivers; see Driving procedure S3AM-005-PR and SHE Training procedure S3AM-003-PR for more details.

5. **Journey Management Plan**

Drivers who undertake trips in excess of 250 miles (400 kilometers) one way, drive in remote or hazardous areas, or when otherwise deemed necessary, shall develop and document a Journey Management Plan using S3AM-005-FM1 or equivalent.

6. **Secure Loads**

Cargo is only to be carried within the passenger compartment of a vehicle when segregated and restrained to prevent objects from becoming distractions, obstructions or projectiles to occupants should emergency vehicle maneuvers be required (e.g., harsh braking or crash). All goods transported on flatbed trucks or in pickup beds must be securely fastened to prevent them from becoming hazards. All applicable laws and regulations regarding securing of loads must be met. It is prudent to check the load after a few miles to ensure that load has not shifted or loosened prior to completing the remainder of the trip.

7. **Backing Up**

Reversing the vehicle is to be avoided if at all possible. If backing up is necessary, use the following guidelines:

- Pre-plan all vehicle movements.
- If the pull-through method of parking is not possible, drivers will scan parking spot/area for hazards and back in; thereby, facilitating departure where the first move is forward.
- A light tap of the horn should be used to alert others of your intention to back up.
- Avoid tight spaces.
- Vehicles over 10,000 pounds gross vehicular weight are required to have a competent spotter in place when backing. A competent spotter is one that has received spotter training.
- All vehicles shall have a competent spotter in place when backing in an active work zone. Parking and public access areas are recommended but not required to have a spotter.

3.5 Fitness for Duty

One of URS' nine Life-Preserving Principles is Fitness for Duty (see Fitness for Duty procedure S3AM-008-PR). Fitness for Duty means that individuals are in a state (physical, mental, and emotional) that enables them to perform assignments competently and in a manner that does not threaten the health and safety of themselves or others. On certain projects or for specific tasks, fit for duty certifications may be requested of medical providers by SH&E Managers or Human Resources (HR). Employees should report to work fit for duty and unimpaired by substances or fatigue. Supervisors must observe their employees and work with the employee, SH&E staff, and HR to address deficiencies. URS will not tolerate retaliation against any employee for filing a complaint or concern regarding their fitness for duty or participating in any way in an investigation.

3.5.1 Medical Surveillance

URS' S3AM-128-PR, Medical Screening and Surveillance, details the requirements to participate in a medical monitoring program. Medical Surveillance provides a streamlined process to determine if employees meet the physical requirements to perform assigned duties as defined by applicable regulations. It is also designed to provide a means to collect data relevant to exposure to chemical and physical agents for the protection of the workers and to confirm the effectiveness of health and safety programs.

3.5.2 Proactive Health

URS is committed to promoting proactive health activities in addition to the planning for prevention of safety and environmental incidents. Proactive health activities will be completed on an on-going basis at URS on a corporate-wide basis (i.e. Wellness program associated with employee benefits), at offices, and at this project site. Management will be actively involved in providing and encouraging opportunities for health and wellness education and improvement. Health initiatives and education will be discussed periodically during office-based meetings as the safety moment or during the daily tailgate meeting as a toolbox talk. Topics may be related to, but are not limited to:

- Heart health;
- Stress management;
- Smoking cessation;
- Diabetes prevention;
- Diet; and
- Exercise benefits.

Topics and educational materials can be located on the URS Wellness page, National Institutes of Health website, Centers for Disease Control and Prevention website and other reputable sources online.

In addition, the field team will be encouraged to participate in a daily stretch and flex routine (a standardized way to avoid soft tissue damage from work activities) to the best of their abilities, given their own personal limits. It is particularly beneficial to warm and loosen muscles before repetitive work, manual handling of loads, and when working in cold temperatures or with static postures. The Stretch and Flex manual and poster (Attachment D) serve as guidance for the leader to follow.

3.5.3 Fatigue

One aspect of fit for duty is fatigue management. URS has developed procedures that limit work periods or requires additional rest under certain circumstances, including during long-distance travel or when working at high altitudes. These procedures also set limits on extended work periods of 14 hours per day or 60 hours per week. A fatigue management plan is required if longer working hours are necessary (see Fatigue Management Procedure S3AM-009-PR).

3.5.4 Substance Abuse

Drug and alcohol abuse pose a serious threat to the health and safety of employees, clients, and the general public as well as the security of our job sites, equipment and facilities. URS is committed to the elimination of illegal drug use and alcohol abuse in its workplace and regards any misuse of drugs or alcohol by employees to be unacceptable. URS Substance Abuse Prevention Procedure (S3AM-019-PR) prohibits the use, possession, presence in the body, manufacture, concealment, transportation, promotion or sale of the following items or substances on company premises. Company premises refer to all

property, offices, facilities, land, buildings, structures, fixtures, installations, aircraft, automobiles, vessels, trucks and all other vehicles and equipment - whether owned, leased, or used.

- Illegal drugs (or their metabolites), designer and synthetic drugs, mood or mind altering substances, and drug use related paraphernalia unless authorized for administering currently prescribed medication;
- Controlled substances that are not used in accordance with physician instructions or non-prescribed controlled substances; and
- Alcoholic beverages while at work or while on any customer- or URS-controlled property.

This policy does not prohibit lawful use and possession of current medication prescribed in the employee's name or over-the-counter medications. Employees must consult with their health care provider about any prescribed medication's effect on their ability to perform work safely and disclose any restrictions to their supervisor.

Although some states may pass laws legalizing medical or recreational marijuana use, the use, sale, distribution and possession of marijuana are violations of federal law and URS policy, and will subject an employee to disciplinary action up to and including termination in accordance with controlling law.

3.6 Rewards and Recognition

One of URS' Life Preserving Principles is Recognition and Rewards for proactive safety, health and environmentally focused behaviors. All projects are expected to participate in the rewards and recognition programs available on the Corporate and DCS Americas SH&E ecosystem pages. Large, long term projects are encouraged to establish a project specific rewards and recognition program which incorporates project specific goals and activities (template available S3AM-020-FM1). ***All rewards and recognition programs must emphasize the 9 Life Preserving Principles and proactive SH&E activities NOT solely the achievement of lagging metrics ("injury/incident-free" hours, etc.) as those may discourage incident reporting.***

There are several possible appropriate methods of rewarding and recognizing employees and contractors:

1. **Informal** – recognition via verbal acknowledgment, email, spot awards, luncheons, etc.
2. **Formal** – Safety Star Award nomination (link)
3. **Formal** – SH&E Challenge Coins (see local SH&E manager for details)

3.7 Hand Safety

The hands are exposed to hazards more than any body part. SH&E Hand Safety Procedure S3AM-317-PR describes requirements and best practices including these notable practices:

- **All personnel shall have gloves in their immediate possession 100%** of the time when in a shop or on a work site. Gloves that address the hazard shall be worn when employees work with or near any materials or equipment that present the potential for hand injury due to sharp edges, corrosives, flammable and irritating materials, extreme temperatures, splinters, etc. Use the Gloves Needs Assessment (S3AM-317-FM1) to help determine the appropriate glove for the hazard(s).
- **Fixed open-blade knives are prohibited** from use during the course of URS work. Examples of fixed open-blade knives include pocket knives, multi-tools, hunting knives, and standard utility knives. For more information about cutting tools, see S3AM-317-ATT1 Safe Alternative Tools.

3.8 Hazard Communication

Hazardous materials that may be encountered on-site as existing environmental or physical/health contaminants are addressed in this HASP. Their properties, hazards, and associated required controls will be communicated to all affected staff and

subcontractors in accordance with the requirements of URS Procedure S3AM-115-PR1 Hazardous Materials Communication including these key elements:

- All personnel shall be briefed on the hazards of any chemical product they use and shall be aware of and have access to the Safety Data Sheets (SDS).
- All containers on site shall be properly labeled to indicate their contents. Labeling on any containers not intended for single-day, individual use shall contain additional information indicating potential health and safety hazards (flammability, reactivity, etc.).

In addition, any employee or organization (contractor or subcontractor) intending to bring any hazardous material onto this URS-controlled work site must first provide a copy of the item's SDS to the Site Supervisor or Site Safety Officer for review and filing. The Site Supervisor or Site Safety Officer will maintain copies of all SDS on site and in **Attachment E**. SDS may not be available for locally obtained products, in which case an alternate form of product hazard documentation will be acceptable.

3.9 Hazardous Material handling and Waste Management

If hazardous, solid, and/or municipal wastes are generated during any phase of the project, the waste shall be accumulated, labeled, and disposed of in accordance with applicable Federal, State, Provincial, Territorial and/or local regulations and SH&E Procedure S3AM-116-PR Hazardous Materials Shipping. A site-specific Entity Letter may be required for the Site/client; if so, only persons named on the entity letter are allowed to sign waste shipping papers "***on behalf of [client name]***". Any individual signing shipping papers must have valid Department of Transportation and Resource Conservation and Recovery Act training for waste shipment. Consult the HZM/HZW & TDG page on ecosystem or the SH&E Manager for further guidance on URS and regulatory procedures and training requirements.

3.10 Housekeeping and Personal Hygiene

Basic housekeeping requirements for offices and work sites, as well as personal hygiene and sanitation standards can be found in S3AM-013-PR Housekeeping. Inspections should be performed at the regular interval specified below. The housekeeping inspection form S3AM-013-FM1 is available for use.

Complete the table below regarding site-specific Housekeeping and Personal Hygiene requirements:

Housekeeping:	*Inspection Frequency:*	Daily	*Inspector:*	SS/ SSO or designee
Eating, Drinking, Smoking:	Permitted only in designated area(s) located in the support zone (See Section 11.2)			
Handwashing:	Water, soap and paper towels or equivalent supplies are located in the support zone (See Section 11.2). Site staff will wash hands and face after completing work activities and prior to breaks or meals.			
Toilets:	**Toilets** are located in the support zone (See Section 11.2) *NOTE: A minimum of one toilet must be provided for every 20 personnel on site. For mobile crews where work activities and locations permit transportation to nearby toilet facilities on-site facilities are not required.*			

Water:	**Water** is located in the support zone (See Section 11.2). A water supply meeting the following requirements will be utilized: *Potable Water:* An adequate supply of potable water will be available for field personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Disposable drinking cups for single use and a waste receptacle will be provided as needed. Water containers will be refilled daily and disinfected regularly. Potable water containers will be properly identified in order to distinguish them from non-potable water sources. *Non-Potable Water:* Non-potable water may be used for hand washing and cleaning activities. Non-potable water will not be used for drinking purposes. All containers of non-potable water will be marked with a label stating ***"Non-Potable Water, Not Intended for Drinking Water Consumption"***
Illumination:	**Illumination** will be provided in the form of spot lights if natural light or installed lighting fixtures are not sufficient in the work area, toilet, and/or break area.

3.11 Lone Worker

URS discourages employees from working alone (i.e. where URS personnel are out of visual and audio range of others) when performing field tasks (see SH&E Procedure S3AM-314-PR, Working Alone).

3.12 Safety Observations

Safety observations are observations made by employees or subcontractors of a condition or behavior which could contribute to an incident, prior to the incident occurring. Observations can also identify positive behaviors or interventions which contribute to the prevention of incidents. Large, long-term projects may benefit from the use of LifeGuard to track and trend observations on a site level. All other projects should log their observations using IndustrySafe. Both reporting systems can be accessed on any safety page of ecosystem. Or the QR codes below can be used while off the URS network from a smartphone/device.

LifeGuard

IndustrySafe
Safety Management Software

3.13 Short Service Employee

A Short Service Employee is an employee with fewer than 6 months experience working on field projects or an employee who has not completed the required training or received required certifications (see the Short Service Employee procedure, S3AM-002-PR). The Project Manager will identify all Short Service Employees working on the project, and each Short Service

Employee will be assigned to an experienced team member, so all activities may be monitored. Short Service Employees shall be easily identified in the field environment, such as through wearing a specific colored hardhat, a manufacturer-approved orange stripe applied to their hardhat or be clearly identified by some other system. Any new employee shall wear the designated Short Service Employee identifier until the Project Manager determines the employee has the knowledge, skills, and ability related to the specific hazard on the project.

3.14 Stop Work Authority

URS empowers and expects all employees to exercise their Stop Work Authority (see Stop Work Authority Procedure S3AM-002-PR) if an incident appears imminent, or when hazardous behaviors or conditions are observed. A stop work request can be informal if the situation can be easily corrected or may require shutting down operations if revised procedures are necessary to mitigate the hazard. If an URS employee observes an imminently hazardous situation on a site controlled by others (i.e., a client-managed contractor), the employee can always stop work for themselves by removing themselves from the situation. Employees also may attempt to stop work to avoid allowing the contractor to come to harm by immediately notifying the contractor foreman or site engineer, or if necessary, the client or party managing the contractor.

No employee should object to the issuance of a stop-work request, nor can any disciplinary action be levied against the employee. All employees must agree that the situation has been mitigated before resuming work. No employee will be disciplined for refusing to work if they feel it is unsafe.

4. Roles and Responsibilities

Roles and responsibilities for the project team are defined in SH&E Procedure S3AM-117-PR1, Hazardous Waste Operations. The Project Manager (PM) is ultimately responsible for the development of this HASP and establishing a budget to implement the controls and training required. The Project Manager is also responsible for ensuring that the plan is implemented, that appropriate documentation is generated, and that records are maintained. The SH&E Manager is responsible for reviewing and approving this HASP and assisting with other SH&E matters upon request. A Site Safety Officer may be appointed to oversee implementation of the HASP in the field. All project team members are responsible for reviewing and abiding by this HASP, performing daily (or more frequent) task hazard assessments, stopping work when necessary to correct unsafe behaviors or conditions, and reporting incidents promptly to the PM and URS Incident Reporting Hotline (Incident Hotline 800-348-5046).

4.1 Project Manager

The Project Manager has overall management authority and responsibility for all site operations, including safety. The Project Manager will provide the site supervisor with work plans, staff, and budgetary resources, which are appropriate to meet the safety needs of the project operations. Some of the Project Manager's specific responsibilities include:

- Project start-up activities require appropriate SH&E planning prior to work commencing, including identification of hazards, associated risk, and appropriate controls for each task and operation found in the work scope.
- Completed project risk registers /task hazard assessments shall be incorporated into the Project's SH&E Plan.
- Verifying that personnel, to whom this HASP applies, including URS subcontractors, have received a copy of it, with ample opportunity to review the document and to ask questions.
- Providing the concurring SH&E Manager with updated information regarding conditions at the Site and the scope of site work if changes occur that will affect the accuracy of this HASP.
- Providing adequate authority and resources to the Site Supervisor or Site Safety Officer to allow for the successful implementation of all necessary SH&E Procedures.
- Maintaining regular communications with the Site Supervisor or Site Safety Officer and, when necessary, the URS Client SH&E Program Manager.
- Coordinating the activities of URS subcontractors and ensuring that they are aware of the pertinent health and safety requirements for these projects, when applicable.
- Conducting Safety System Auditing by way of Management Site Visits and/or Project Manager Self-Assessments on a regular basis.
- Approving amendments to the HASP (in conjunction with the Site Supervisor or Site Safety Officer).
- Coordinating activities with the client as needed to ensure the safe implementation of this HASP.

4.2 Site Supervisor

The Site Supervisor has the overall responsibility and authority to direct work operations at the job site according to the provided work plans and HASP. The Project Manager may act as the Site Supervisor while on site. The Site Supervisor's responsibilities include:

- Discussing deviations or drift from the work plan with the Site Safety Officer and Project Manager.
- Discussing safety issues with the Project Manager, Site Safety Officer, and field personnel.
- Assisting the Site Safety Officer with the development and implementation of corrective actions for site safety deficiencies.

- Assisting the Site Safety Officer with the implementation of this HASP and ensuring compliance.
- Assisting the Site Safety Officer with inspections of the Site for compliance with this HASP and applicable SH&E Procedures.
- Reviewing Project Risk Register/ Task Hazard Assessments and Task Hazard Assessments (THAs) with the work crew.
- Reporting incidents and ensuring incidents and observations are logged into Lifeguard or IndustrySafe.
- Verifying that all operations are in compliance with the requirements of this HASP and halting any activity that poses a potential hazard to personnel, property, or the environment.
- Temporarily suspending individuals from field activities for infractions against the HASP pending consideration by the Site Safety Officer, the SH&E Manager, and the Project Manager.

4.3 Site Safety Officer

The Site Safety Officer supports the Site Supervisor in providing a safe work environment. Not all sites will have a designated Site Safety Officer; the decision should be made by the Project Manager and SH&E Manager taking into consideration the complexity and risks of the scope of work. The Site Supervisor may act as the Site Safety Officer on sites without one. The Site Safety Officer's responsibilities include:

- Updating the site-specific HASP to reflect changes in site conditions or the scope of work. HASP updates must be reviewed and approved by the SH&E Manager.
- Inspecting the Site for compliance with this HASP and the SH&E Procedures using the appropriate field audit inspection checklist found in IndustrySafe.
- Coordinating with Site Supervisor to review THAs with the work crew.
- Assisting as needed to report incidents and verify that incidents and observations are logged into Lifeguard or IndustrySafe.
- Working with the Site Supervisor and Project Manager to develop and implement corrective action plans to correct deficiencies discovered during site inspections. Deficiencies will be discussed with project management to determine appropriate corrective action(s).
- Contacting the SH&E Manager for technical advice regarding safety issues.
- Determining emergency evacuation routes, establishing and posting local emergency telephone numbers, and arranging emergency transportation.
- Checking that all site personnel and visitors have received the proper training, orientation and medical clearance prior to entering the Site.
- Establishing controlled work areas (as designated in this HASP or other safety documentation).
- Facilitating or co-leading daily tailgate meetings and maintaining attendance logs and records.
- Discussing potential SH&E hazards with the Site Supervisor, the SH&E Manager and the Project Manager.
- Selecting an alternate Site Safety Officer by name and informing him/her of their duties, in the event that the Site Safety Officer must leave or is absent from the Site.
- Verifying that all operations are in compliance with the requirements of this HASP.
- Issuing a "Stop Work Order" under the conditions set forth in this HASP.
- Temporarily suspending individuals from field activities for infractions against the HASP pending consideration by the SH&E Manager and the Project Manager.

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4.4 Employees

Responsibilities of employees associated with this project include, but are not limited to:

- Understanding and abiding by the SH&E Procedures specified in the HASP and other applicable safety policies, and clarifying those areas where understanding is incomplete.
- Providing feedback to SH&E management for continuous improvement relating to omissions and modifications in the HASP or other safety policies and procedures.
- Notifying the Site Supervisor or Site Safety Officer of unsafe conditions and acts.
- Stopping work if there is doubt about how to safely perform a task or if unsafe acts or conditions are observed (including subcontractors or team contractors).
- Speaking up and refusing to work on any site or operation where the SH&E procedures specified in this HASP or other safety policies are not being followed.
- Contacting the Site Supervisor or Site Safety Officer or the SH&E Manager at any time to discuss potential concerns and update the THA in the field to reflect the modifications
- Provide THA feedback to the supervisor for continuous improvement

4.5 Subcontractors

The requirements for subcontractor selection and subcontractor safety responsibilities are outlined in URS Procedure *S3AM-213-PR Subcontractor Management*. Each URS subcontractor is responsible for assigning specific work tasks to their employees. Each subcontractor's management will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete assigned tasks. In particular, each subcontractor is responsible for equipping its personnel with any required personnel protective equipment (PPE) and all required training.

URS considers each subcontractor to be an expert in all aspects of the work operations for which they are tasked to provide, and each subcontractor is responsible for compliance with the regulatory requirements that pertain to those services as well as all other requirements applicable to their work. Each subcontractor is expected to perform its operations in accordance with its own unique safety policies and procedures, in order to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation for a subcontractor's work activities will be provided to URS for review prior to the start of on-site activities.

Hazards not listed in this HASP but known to any subcontractor, or known to be associated with a subcontractor's services, must be identified and addressed to the URS Project Manager or the Site Supervisor prior to beginning work operations. The Site Supervisor or authorized representative has the authority to halt any subcontractor operations, and to remove any subcontractor or subcontractor employee from the Site for failure to comply with established health and safety procedures or for operating in an unsafe manner.

4.6 Visitors

Authorized visitors (e.g., client representatives, regulators, URS management staff, etc.) requiring entry to any work location on the Site will be briefed by the Project Manager, Site Supervisor, or Site Safety Officer on the hazards present at that location. Visitors will be escorted at all times at the work location and will be responsible for compliance with their employer's health and safety policies. In addition, this HASP specifies the minimum acceptable qualifications, training and PPE that are required for entry to any controlled work area; visitors must comply with these requirements at all times.

If the site visitor requires entry to any exclusion zone (EZ), but does not comply with the above requirements, all work activities within the EZ must be suspended. Unauthorized visitors, and visitors not meeting the specified qualifications, will not be permitted within established controlled work areas.

5. Training and Documentation

The following sections describe the standard practices or programs that URS will establish to prepare employees to perform work safely and consistent with URS policy and Procedures.

5.1 HASP/SITE Orientation

The Project Manager shall conduct a project/site-specific HASP orientation prior to the start of field operations, with support as needed by the SH&E Manager, Site Safety Officer, or Site Supervisor. This meeting will involve representatives from all organizations with a direct contractual relationship with URS on the job site. Minimum items to be covered are listed in **Attachment F**. Participants will then sign the HASP Personnel Acknowledgement register at the end of the HASP.

5.2 Daily Tailgate Meetings and THA Review

The Site Supervisor, Site Safety Officer or designee shall facilitate a tailgate meeting to discuss the specific requirements of this HASP and review the applicable THAs prior to the commencement of daily project activities. Attendance at the daily tailgate meeting is mandatory for all employees and subcontractors at the Site contracted to URS. Simultaneous operations are encouraged to attend each other's tailgate meetings or at the very least the supervisors shall discuss the coordination of activities and associated hazards of each other's tasks. The supervisor will then convey the information to the work crew. The Tailgate Meeting must be documented by the Site Supervisor or Site Safety Officer on a Daily Tailgate Meeting form, a blank copy of which is included in **Attachment B**.

As part of the daily tailgate meeting, employees and subcontractors will be encouraged to voluntarily warm up and stretch select muscle groups to the best of their ability and within each person's individual limitations. Stretching is particularly beneficial to warm and loosen muscles before repetitive work, manual handling of loads, and when working in cold temperatures or with static postures. The exercises included in Attachment D may be used to facilitate these efforts.

5.3 Worker Training and Qualifications

All personnel at this site must be qualified and experienced in the tasks they are assigned. SH&E Training Procedure S3AM-003-PR establishes the general training requirements for URS employees. In addition, S3AM-117-PR, Hazardous Waste Operations, explains the HAZWOPER training and S3AM-128-PR, Medical Screening and Surveillance, details the medical surveillance requirements.

Check all required training on the table below. Verify training records of employees and subcontractors.

Site-Specific Training Requirements	
Training	**Applies to**
☒ HASP Orientation	All Employees and Subcontractors
☒ HAZWOPER 40 –HR	On HAZWOPER sites, in EZ, exposed to hazardous contamination
☒ HAZWOPER Supervisor	Employees managing others in HAZWOPER activities
☒ Field Safety	Anyone visiting the field that does not require HAZWOPER
☐ Speak-Up/Listen Up	All Field Employees and Supervisors
☐ Fit Test/ Respiratory Protection	Employees needing to wear respirators
☐ Hazardous Materials Shipping	Employee responsible for shipping HZM/HZW/DG and/or signing manifests
☒ Annual Medical Surveillance/ Clearance	Employees working in an exclusion zone and the regulatory required exposure limit **is** exceeded for 30 or more days a year

Site-Specific Training Requirements	
Training	**Applies to**
☐ Biennial Medical Surveillance/ Clearance	Working in an exclusion zone more than 30 days a year and the regulatory required exposure limit is **not** exceeded
☒ OSHA 10 hr. Construction	Employees working near heavy equipment, including drill rigs and remediation equipment (see Section .5.3.1)
☐ OSHA 30 hr. Construction	Supervisor/SSO overseeing work with heavy equipment (see Section 5.3.1)
☐ Local requirements:	
☐ Client requirements:	

5.3.1 OSHA 10 Hr./OSHA 30 Hr. Training

OSHA 10/30 training is required for projects with construction or construction-like hazard, including. work where we, our client, or another contractor are presently building, removing, or disassembling structures or digging excavations of any size by mechanical means. This includes projects where we serve as PMCM, GC, Inspectors, or any work where our employees are exposed to construction site hazards. "Construction-like" hazards exist on sites where the focus is NOT construction/demolition, but where our work scope includes use of heavy machinery movement, work at heights, confined space, hot work, lifting/hoisting loads, and/or ground breaking (includes drill rig, direct push and vac truck use).If these hazards exist, OSHA 10 hr. training is required for field staff. ***All training OSHA must be complete by the end of FY2019.***

OSHA 30 hr. training is required for supervisors. The term "supervisor" has many different meanings. As with HAZWOPER supervisor training, the requirement to complete the OSHA 30 hr. construction course will be based on field supervisory roles and responsibilities, not administrative supervision roles. Field supervisors required to take the OSHA 30 construction course are defined as those individuals who provide work direction and leadership directly to URS field personnel and/or our subcontractors for construction/demolition activities or tasks that have construction-like hazards. These supervisors must be knowledgeable of construction hazards and controls because they are responsible for:

- Field implementation of a construction/demolition scope of work
- Controlling performance on the job site
- Evaluating and controlling hazards & preventing site safety risks
- Intervening to prevent unsafe actions or conditions of employees, clients, and subcontractors related to construction/demolition hazards

As with OSHA 10, OSHA 30 is being phased in and must be completed by the end of FY2019.

5.4 Competent Person

A competent person is an employee who, through education, training and experience, has knowledge of applicable regulatory requirements, is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

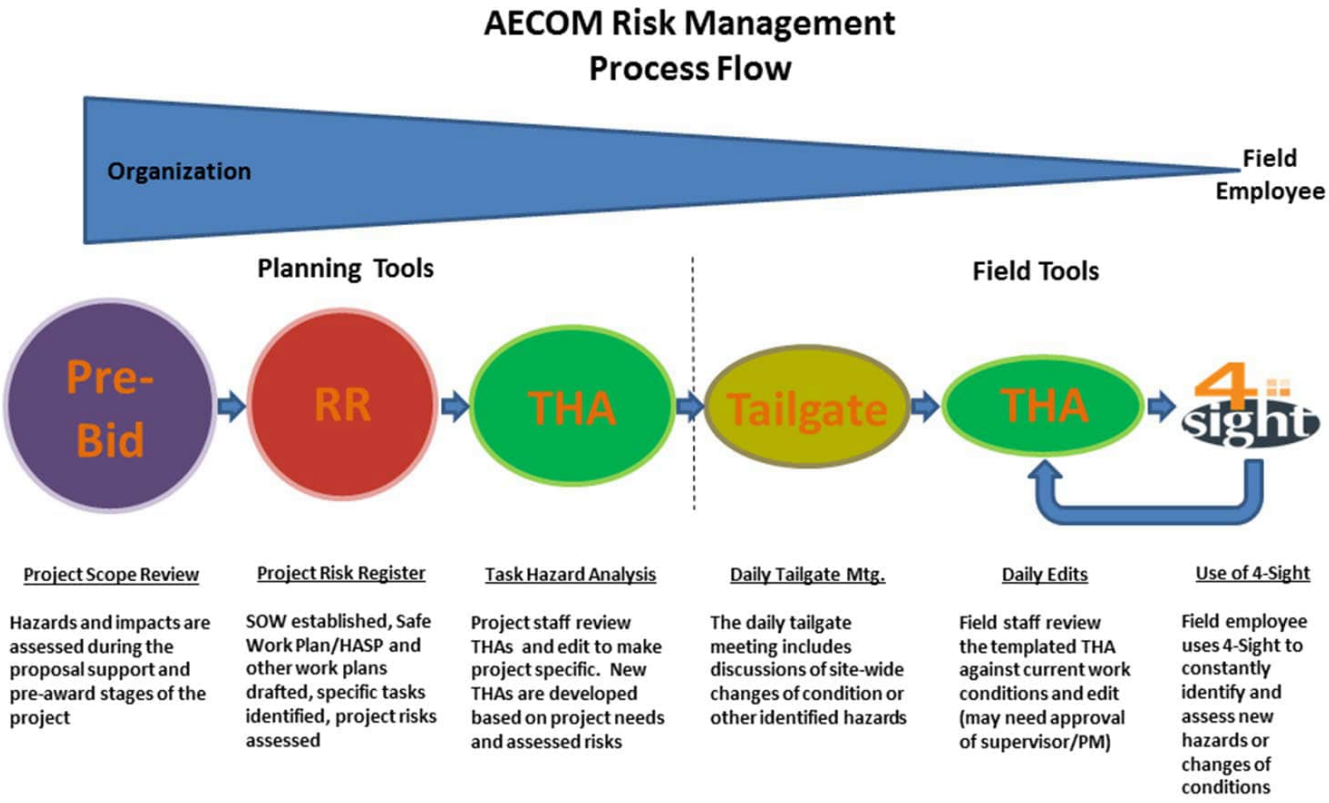
URS' Competent Person Designation Procedure, S3AM-202-PR, explains the roles, responsibilities and procedures of naming a competent person. Complete the table below and include a S3AM-202-FM1 Competent Person Designation Form for each URS competent person (subcontractors to use an equivalent process).

These activities require a competent person. Mark all that apply and list the name of the person.

	Activity	Name of Person
☐	Asbestos	
☐	Assured Equipment Grounding Conductor	
☐	Blasting & Explosives	
☐	Concrete & Masonry Construction	
☐	Confined Spaces	
☐	Control of Hazardous Energy (Lockout-Tagout)	
☐	Crane Assembly / Disassembly	
☐	Cranes & Derricks	
☐	Demolition	
☐	Electrical Wiring Design & Protections	
☐	Elevated Work Platforms & Aerial Lifts	
☐	Fall Protection	
☐	Hearing Protection	
☐	Heavy Equipment	
☐	Ionizing Radiation	
☐	Lead	
☐	Material Hoists & Personnel Hoists	
☐	Respiratory Protection	
☐	Rigging Equipment	
☐	Scaffolds	
☐	Stairways & Ladders	
☐	Steel Erection	
☐	Trench & Excavations	
☐	Underground Construction	
☐	Welding & Cutting	

6. Hazard Assessment and Control

URS has adopted an approach to hazard assessment and control that incorporates both qualitative and quantitative methods to identify hazards and the degree to which they may impact employees and URS operations. See S3AM-209-PR, Risk Assessment and Management, for details regarding URS' process. This approach is illustrated below and described in the following section.



6.1 SH&E Procedures

All URS SH&E procedures, in their controlled copy version, are available on the internal SH&E Policy and Procedures ecosystem page. Programmatic procedures referenced in this document (for example SH&E Training) do no need to be printed for inclusion in this HASP. Only procedures that are needed for field activity reference and application MUST be printed in full and included in this HASP. The applicable field procedures checklist is in the Physical Hazards section below and procedures are included in **Attachment C**.

6.2 Project Hazard Assessment

Project start-up activities require appropriate SH&E planning prior to work commencing, including identification of hazardous tasks required to complete the Scope of Work (SOW). A Project Hazard Assessment shall be developed to guide work. Form S4[DCS]AM-209-FM4-A may be used and should be included in **Attachment B**.

6.3 Task Hazard Assessments (THAs)

The task hazard assessment (THA) is a field form based on "Stop and Think" as the first thing you do before starting work activities. They are required to be used daily. Many times when employees arrive in the field, situations are different than originally planned for. The THA asks workers to assess risk by estimating the probability of negative consequences and reducing the potential severity. The THA requires the worker to describe steps to reduce the risk. If the hazard(s) cannot be successfully mitigated, the work is not allowed to proceed. **The preparer shall have one Task Hazard Assessment form (S4[DCS]AM-209-FM6-A) for each task** in the Scope of Work found in this work plan and include blank copies in **Attachment B.**

All employees and visitors must sign the THAs daily. All tasks to be performed must be discussed, including driving to the Site, parking, and walking as well as the hazards, associated risk, and appropriate controls for each step. Any project-specific THAs developed as part of this Scope of Work should be included in **Attachment B**. The DCS Americas Templated THA Library may also be used to find previously approved THAs.

6.3.1 Hazard Categories

THAs should include consideration of the following hazard categories when identifying hazards and task specific controls:

- Biological
- Chemical
- Electrical
- Gravity
- Mechanical
- Motion
- Pressure
- Noise
- Radiation
- Thermal

6.4 4-Sight

When preparing hazard assessments and throughout the day workers should use 4-Sight. This is a mental process through which workers ask themselves (and each other) four questions designed to effectively assess hazards. Using these questions during each task, especially those without established THAs, will help workers identify hazards and condition changes so that they can control them or stop work to seek assistance.

1) What am I about to do?
2) What could go wrong?
3) What could be done to make it safer?
4) What have I done to communicate the hazards?

6.5 Speak Up/Listen Up

All URS employees have a responsibility to help create the environment where the expectation is Safety for Life. Speak Up/Listen Up (SULU) is a technique to steward jobsite safety by utilizing 4-Sight as a basis for safety feedback conversations. SULU has two main parts:

- **Speak Up** where employees use three simple steps when providing feedback to others about unsafe acts:
  - Ask to discuss their hazard assessment or 4-Sight for the task
  - Get a commitment from the employee to apply the hazard controls and perform the task according to the accepted procedures
  - Follow up to ensure the employee is working safely

- **Listen Up** where employees use two simple steps when responding to safety feedback:
  - Listen – Focus on the message, not the messenger
  - Commit to performing the task the safer way

SULU conversations should happen consistently throughout the work day to create clear expectations of how work should be performed. All employees should recognize safe work behaviors in order to reinforce them and keep them going. An occasional correction is much more effective when employees are frequently encouraged and positively recognized for their safe actions. Managers and supervisors should be having SULU conversations during site visits and ensure peer to peer and site supervisor to crew SULU conversations are being held.

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7. Physical Hazard Assessment

7.1 Physical Hazards

A physical hazard is a hazard that threatens the physical safety of an individual; contact with the hazard typically results in an injury. The following table summarizes the physical hazards or activities containing physical hazards present at the Site and the associated procedures that address protection and prevention of harm.

All checked procedures MUST be included in **Attachment C** for implementation and reference.

Check all applicable hazards/activities and add site specific description of the hazard.

	Hazard/ Activity *(note: text in this column links to procedure)*	Site Specific Description *[where, what phase of work, frequency, etc.]*	Applicable Procedure
☐	**Abrasive Blasting**		S3AM-335-PR
☐	**Aerial Work Platforms**		S3AM-323-PR
☐	**All-Terrain Vehicles**		S3AM-319-PR
☐	**Blasting and Explosives**		S3AM-336-PR
☒	**Bloodborne Pathogens**	Potential exposure in the event of a cut.	S3AM-111-PR
☐	**Cofferdams**		S3AM-344-PR
☒	**Cold Stress**	Some work may take place in spring	S3AM-112-PR
☐	**Compressed Air Systems and Testing**		S3AM-337-PR
☐	**Compressed Gases**		S3AM-114-PR
☐	**Concrete Work**		S3AM-338-PR
☐	**Confined Spaces**		S3AM-301-PR
☐	**Corrosive Reactive Materials**		S3AM-125-PR
☐	**Cranes and Lifting Devices**		S3AM-310-PR
☐	**Demolition**		S3AM-339-PR
☐	**Diving (scientific and commercial)**		S3AM-334-PR
☐	**Drilling, Boring & Direct Push Probing**		S3AM-321-PR
☐	**Electrical Safety**		S3AM-302-PR
☐	**Excavation**		S3AM-303-PR
☐	**Fall Protection**		S3AM-304-PR
☐	**Flammable and Combustible Liquids**		S3AM-126-PR
☐	**Gauge Source Radiation**		S3AM-122-PR
☒	**Hand and Power Tools**	Hand and power tools to be used throughout project.	S3AM-305-PR
☐	**Hazardous Waste Operations**		S3AM-117-PR
☒	**Heat Stress**	Work is expected to take place during the summer, often outdoors.	S3AM-113-PR
☐	**Heavy Equipment**		S3AM-309-PR
☐	**High Altitude**		S3AM-124-PR
☐	**Highway and Road Work**		S3AM-306-PR
☐	**Hoists Elevators and Conveyors**		S3AM-343-PR
☐	**Hot Work**		S3AM-332-PR
☐	**Ladders**		S3AM-312-PR
☐	**Lockout Tagout**		S3AM-325-PR
☐	**Machine Guarding Safe Work Practice**		S3AM-326-PR
☐	**Marine Safety and Vessel Operations**		S3AM-333-PR

	Hazard/ Activity *(note: text in this column links to procedure)*	Site Specific Description *[where, what phase of work, frequency, etc.]*	Applicable Procedure
☐	**Material Storage**		S3AM-316-PR
☐	**Mine Site Activities**		S3AM-341-PR
☐	**Mining Operations**		S3AM-345-PR
☐	**Non-Ionizing Radiation**		S3AM-121-PR
☐	**Overhead Lines**		S3AM-322-PR
☐	**Powder-Actuated Tools**		S3AM-327-PR
☐	**Powered Industrial Trucks**		S3AM-324-PR
☐	**Radiation**		S3AM-120-PR
☐	**Railroad Safety**		S3AM-329-PR
☐	**Respiratory Protection**		S3AM-123-PR
☐	**Scaffolding**		S3AM-311-PR
☐	**Steel Erection**		S3AM-340-PR
☐	**Temp. Floors, Stairs, Railings, Toe-boards**		S3AM-342-PR
☐	**Underground Utilities**		S3AM-331-PR
☐	**Underground Work**		S3AM-330-PR
☒	**Wildlife, Plants and Insects**	Vegetation, deer, birds, rodents, insects on site, although sporadic.	S3AM-313-PR
☐	**Working Alone**		S3AM-314-PR
☐	**Working On and Near Water**		S3AM-315-PR

8. Chemical Hazard Assessment

URS will perform tasks that can expose personnel to a variety of hazards due to the operational activities, physical conditions of the work locations, and potential presence of environmental contaminants. This section presents a variety of potential chemical hazards, exposure pathways, and related mitigation actions. See S3AM-110-PR, Toxic and Hazardous Substances, for information on planning, training, monitoring, and details on several specific chemicals (Benzene, Cadmium, Chromium, Hydrogen Sulfide, Lead, and Silica).

8.1 Potential Chemical Hazards

The chemicals in the table below are known or suspected to be present at the Site.

Summary of Hazardous Properties of Contaminant Exposure Hazards

PEL:.....Permissible Exposure Limits

TLV: .....Threshold Limit Values

	Chemical Name	Media	Primary Routes of Exposure	PEL	TLV	IP electron volts (eV)
Metals	Arsenic	Soil, GW	Dermal	0.5 mg/m^3	0.2 mg/m^3	n/a
	Lead	Soil, GW	Dermal	0.05 mg/m^3	0.05 mg/m^3	n/a

8.2 Potential Exposure Pathways

Occupational exposure to chemical hazards associated with the work activities could potentially occur by two primary routes (inhalation and skin contact) and one indirect route (incidental ingestion).

8.2.1 Inhalation

The primary risks associated with URS' scope of work pertain to potential exposure to airborne contaminants and explosion hazards. Constituents that potentially pose an occupational concern to employees by the inhalation route are carbon monoxide, hydrogen sulfide, methane, and volatile organic compounds. Air monitoring will be performed within the employee breathing zone to assess the need to implement appropriate control measures or stop work. In addition, air monitoring will be performed at the source to assess potential explosion hazards.

8.2.2 Skin Contact

Personnel handling residual product or waste and associated equipment may be exposed to chemical hazards by skin contact or adsorption. However, exposure is expected to be limited since workers will be required to wear appropriate PPE (i.e. appropriate work gloves, body clothing, and/or face shield).

8.2.3 Ingestion

Personnel handling residual product or waste and associated equipment, including project hazardous materials, may be exposed by incidental ingestion. Typically, this exposure occurs if proper PPE was not used or personal hygiene was not practiced. Personal protection against exposure via ingestion can be accomplished by performance of proper decontamination procedures when exiting contaminated work areas as well as using the correct PPE.

8.3 Decontamination

All possible and necessary steps shall be taken to reduce or minimize contact with chemicals and contaminated/impacted materials while performing field activities. Decontamination steps are outlined in Hazardous Waste Operations procedure S3AM-117-PR. Some key elements are as follows:

- All persons and equipment entering the EZ shall be considered contaminated, and thus, must be properly decontaminated prior to exiting to clean areas of the Site.
- Avoid reactions between the solutions and contaminated materials. Review the applicable SDS.
- All contaminated PPE and decontamination materials shall be contained, stored and disposed of in accordance with site-specific requirements determined by site management.
- Use caution while working around decontamination stations, including the decontamination pad, which may be a slip or trip hazard.
- Use disposable equipment when possible and practical.
- All employees performing equipment decontamination shall wear the appropriate PPE to protect against exposure to contaminated materials. The level of PPE may be equivalent to the level of PPE required in the EZ. Other PPE may include splash protection, such as face-shields and splash suits, and knee protectors.
- All decontaminated equipment shall be visually inspected for contamination prior to leaving the Contaminant Reduction Zone (CRZ).

Decontamination Procedures & Equipment	
Procedure	***Equipment Needed***
Remove all equipment, sample containers, and notes to the CRZ. Obtain decontamination solutions and decontaminate the tools (shovels, auger flights, etc.) by brushing them under a water rinse. A high-pressure steam cleaner also may be used for decontamination. All waste and spent decontamination solutions will be properly contained. Remove disposable booties, or scrub boots with a stiff bristle brush and water, when necessary. Washtubs and chairs will be provided. Remove outer gloves (and boot covers, if used). If necessary to wear, remove Tyvek® coveralls; discard in provided container. Remove hardhat and eye protection. If necessary to wear, remove respirator. Remove inner gloves. Wash hands and face. The decontamination area will be covered with plastic sheeting that will be replaced when torn or heavily soiled and at the end of each shift.	Alconox solution Deionized water Brushes Plastic sheeting

Equipment Decontamination Procedures		
Type Equipment	***Decontamination Solution***	***Procedure***
Respirator (If worn)	Alconox solution and deionized water	**Washing**: Disassemble and wash with an Alconox solution in deionized water. A stiff bristle (not wire) brush may be used. **Rinsing**: Rinse in deionized water to remove all traces of detergent. This is important to prevent dermatitis.

		Disinfecting: Thoroughly rinse or immerse in a sanitizer provided by the manufacturer. **Final Rinsing**: Rinse thoroughly in clean water to remove all traces of disinfectant. **Drying**: Drain and dry by hanging by the straps from racks or by towel drying with clean, soft cloths or paper towels.
Reusable sampling tools/ equipment		**Washing**: Disassemble and wash with an Alconox solution in deionized water. **Rinsing**: Rinse in deionized water to remove all traces of detergent.
Excavator Bucket	High-pressure steam cleaner	Apply steam cleaner to used equipment/ tools

Waste Handling for Decontamination	
Waste Streams/Products	***Disposal Procedures***
Wash water	Containerize in 55-gallon DOT drums, and stage drums in temporary location pending shipment off site for treatment/ disposal.
Used PPE	
Spent plastic sheets/ consumables from decontamination procedures	

8.4 Air Monitoring

Monitoring shall be performed within the work area on site in order to detect the presence and relative levels of toxic substances. The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be in accordance with Exposure Monitoring Procedure S3AM-127-PR and specified in the work permit and/or THA for the tasks. Key elements of the procedure include:

- Calibration of monitoring equipment and/or daily bump tests to verify calibrations and confirm alarm function.
- Personal monitoring and result evaluation must be directed by a Certified Industrial Hygienist or Certified Safety Professional.

8.4.1 Real-Time Exposure Measurement/ Equipment

Monitoring shall be performed within the work area on site in order to detect the presence and relative levels of toxic substances. The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be conducted as specified in the work permit and THA as work is performed. All instrumentation needs to be rated intrinsically safe to prevent fire or explosion.

Check which real-time monitoring equipment will be used and update the model type if needed:

	Instrument	Manufacturer/Model	Substances Detected
☐	**Particulate Monitor**	MIE Model PDM-3 mini-RAM	• Aerosols, mist, dust, and fumes

8.4.2 Health and Safety Action Levels

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. The concentration level (above background level) and the ability of the PPE to protect against that specific contaminant determine each action level. The action levels are based on concentrations in the breathing zone.

If ambient levels are measured which exceed the action levels in areas accessible to unprotected personnel, necessary control measures (barricades, warning signs, and mitigation actions to limit, etc.) must be implemented prior to commencing activities at the specific work area.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of Site Supervisor or Site Safety Officer or the Safety Manager.

Reasons to Upgrade:

- Known or suspected presence of dermal hazards;
- Occurrence or likely occurrence of gas, vapor, or dust emission; or
- Change in work task that will increase the exposure or potential exposure to hazardous materials.

Reasons to Downgrade:

- New information indicating that the situation is less hazardous than was originally suspected;
- Change in site conditions that decrease the potential hazard; or
- Change in work task that will reduce exposure to hazardous materials.

8.4.3 Monitoring Procedures

The monitoring procedures shown below are general guidelines for sampling activities. A reading in excess of action level outlined below will require additional ventilation for 30 minutes, followed by re-monitoring.

Monitoring Procedures and Action Levels

Parameter	Zone Location and Monitoring Interval	Response Level	Response Activity
Dust not otherwise classified (total by aerosol monitor)	Breathing zone every 30 minutes during field activities where exposure to excessive dusts are possible	< 5 mg/m^3	Continue work in Level D and continue monitoring
		> 5 mg/m^3	Upgrade to Level C (P100 respirator cartridges), implement dust suppression measures; contact the Site Safety Officer & Site Supervisor.
		> 10 mg/m^3	Cease activities, implement more effective dust suppression measures; contact the Site Safety Officer & Site Supervisor.
Dust not otherwise classified (total by aerosol monitor)	Edge of Exclusion Zone, every 30 minutes during excavation activities	< 5 mg/m^3	Continue work in required PPE, monitor air, and implement engineering controls
		> 5 mg/m^3	Cease activities and contact the Site Safety Officer & Site Supervisor.

9. Environmental Impact Prevention

URS strives to avoid or control environmental impacts from our operations through planning and implementation of best practices as well as preparing responses to react to environmental incidents. Environmental Compliance procedure S3AM-204-PR provides details on permitting and planning requirements.

9.1 Incidental Spill Prevention and Containment

Spill prevention and containment planning must be conducted, and appropriate control measures established, consistent with regulatory requirements. Personnel are not expected to perform a response action related to an uncontrolled release of a hazardous substance. However, in the event of an incidental release of a hazardous material, a response will be performed to absorb, neutralize or otherwise control the release within the immediate work area. Procedures contained in the SDS of the hazardous material will be implemented to perform the response. The Emergency Response section of this HASP contains information on spill reporting, pre- and post- spill evaluation, and response

9.1.1 Spill Prevention and Containment Practices

Work activities may involve the use of hazardous materials (i.e. fuels, solvents) or work involving drums or other containers. When these activities exist the procedures outlined below will be used to prevent or contain spills:

- All hazardous material will be stored in appropriate containers and labelled.
- Tops/lids will be placed back on containers after use.
- Containers of hazardous materials will be stored appropriately away from moving equipment.
- Containers shall only be lifted using equipment specifically manufactured for that purpose.
- Drums/containers will be secured and handled in a manner which minimizes spillage and reduces the risk of musculoskeletal injuries.
- Equipment will be inspected daily for signs of leaks, wear, or strain on parts that, if ruptured or broken, would result in a spill.
- Refueling should occur in designated areas where incidental spills can be prevented from reaching permeable ground surfaces.
- Whenever possible, position parked or stationary equipment over secondary containment and/or absorbent materials to prevent spills from reaching permeable ground surfaces.
- A spill response kit, to include an appropriate empty container, materials to allow for booming or diking the area to minimize the size of the spill, and appropriate clean-up material (i.e. speedydri, absorbent pads, etc.) will be available on the project site and positioned for quick and easy access.

10. Personal Protective Equipment

PPE is considered the last line of defense in hazard control. PPE is meant to protect workers when all other methods (elimination, substitution, engineering, and administrative) have been exhausted. All employees must be trained in the proper use and maintenance of PPE. See Procedure S3AM-208-PR1, Personal Protective Equipment.

A PPE assessment (see S3AM-208-FM1) can be performed to help determine PPE requirements. PPE upgrades for individual tasks or steps of a task are to be identified in the appropriate THA(s).

Minimum Required PPE (per URS PPE and HAZWOPER Procedures):

- Hard hat
- Safety glasses w/ side shields (maybe clear or shaded)
- Safety toe work boots
- Long pants and shirts with sleeves (short or long- cover shoulders no tank or muscle shirt styles)

Complete the table below for site-specific PPE:

Additional PPE Needed On Site

(to encompass all task specific additions and upgrades)

Face/ Eyes		Head/ Ears	
☐ Spoggles (Safety Glasses with foam liner for dust protection)	☐ Chemical Goggles	☐ Helmet with Chin Strap	☐ Earplugs
☐ Welding Mask/Goggles	☐ Face Shield (splash)	☐ Wide Brimmed Hat	☐ Over-ear Hearing Protection
	☐ Face Shield (impact)		
Hands		**Legs/ Feet**	
☒ Nitrile	☐ Other Chemical Resistant : *(specify)*	☐ High Ankle Boots	☐ Metatarsal Guards
☒ Leather		☐ Snake Guards	☐ Electrically-resistant boots
☐ Cut, Abrasion and Puncture Resistant		☐ Rubber Boots/Waders	
☐ Impact-resistant			
Body		**Equipment**	
☒ Sunscreen		☒ **Air/Noise Monitoring Equipment:** *(specify)* Particulate Monitor	
☒ Insect Repellent (DEET)			
☐ Permethrin Applied to Clothing			
☒ Long-sleeved Shirt		☐ **Traffic/Work Zone Control Equipment:** *(specify)*	
☒ High-visibility Vest			
☐ High-visibility Pants			
☐ Disposable Coveralls		☐ **Communication Beyond Cell Phones:** *(specify)*	
☐ Flame Retardant Clothing			
☐ Fall Protection			
☐ Personal Floatation Device		☐ **Fire Controls:** *(specify)*	
☐ Other: *(specify)*			

11. Site Control

The purpose of site control is to protect the public from inadvertently coming into contact with site hazards and to protect URS employees being impacted by hazards. This section details the equipment and actions needed to promote optimal site control.

11.1 Site Work Zones

Site layout and site control need to be coordinated achieve a productive work environment and efficient work process while minimizing exposure of employees and the public to hazards associated with the work. Consider the following items when planning the Site layout and controls:

- "Line of Fire" hazards - overhead utilities, falling/ tipping equipment, release of energy/ pressure, flying debris,
- Noise, dust, odor suppression
- Contamination containment and decontamination area layout
- Traffic control for site vehicles/ equipment (public traffic control requires Traffic control Plan)
- Restricted access for areas requiring special training, skills, or certifications
- Restriction of work near railroads
- Presence or creation of excavations
- Loading/unloading areas
- Portable restrooms
- Dumpsters and bins
- Equipment laydown
- Heavy equipment parking
- Overnight safety and security needs

Check the description of the site controls **already** in place:

- ☒ Work area is within a facility/ property with secure and restricted access provided by client or third party
- ☐ Work area is enclosed within facility/ property, but access is not restricted via locks, guards, or gates
- ☐ Work area is on a property that is open and access by the public is likely
- ☐ Work area is on a property that is open but access by the public is unlikely
- ☐ Work area is in a roadway or right of way of a roadway (Traffic Control Plan required S3AM-306-PR)
- ☐ Work area is on or near railroad (including right of way, active lines, and crossings)
- ☐ Other: *(describe)*

_____

_____

Check and describe the site controls that need to be added to protect the public and the URS work team.

	Control Item	Description of Type and Application
☐	**Fence**	
☐	**Locks**	
☐	**Barricades**	
☒	**Cones**	Cones will be applied if working adjacent to a road. Such cones will adhere to DOT specifications.
☒	**Tape**	Tape around excavations and capping activities
☐	**Hole Covers**	
☐	**Other:**	

11.2 Site Control Map/ Diagram

See Figure 2.

11.3 Simultaneous and Neighboring Operations

Simultaneous and neighboring operations present a need for added coordination and communication to address hazards that are presented by multiple operations.

"

	Activity/ Company	Hazard	Controls/Mitigations and Communication Methods
Simultaneous Operation *(within the Site)*	City of Lackawanna Department of Public Works/ Materials staging and equipment/vehicle storage	Forklift/ vehicle/ equipment traffic	High visibility vests and traffic cones when necessary
Neighboring Operation *(outside/ bordering the Site)*	NA	NA	NA

11.4 Site Security

All projects should be reviewed for the potential for personal security issues (e.g., assault, robbery, threat, etc.). Check all of the following that apply:

- ☐ Project site located in a higher crime area or has a history of security incidents
- ☐ Working outside of regular cellular telephone service
- ☐ Idle property with potential for trespasser(s) to shelter in buildings/structures and assault personnel
- ☐ Working at night

12. Emergency Response

URS requires that all projects plan for reasonably foreseeable emergencies (see Emergency Response Planning Procedure S3AM-010-PR). Prior to the start of site operations, all personnel shall review the table below for site-specific information regarding evacuations, muster points, communication, and other site-specific emergency procedures. An Incident Response Flow Chart is included in **Attachment A**.

12.1 Incident/ Emergency Contact Information

URS Contacts			
Name	**Title**	**Telephone Number**	**Mobile Phone**
Mike Gutmann, PG	Project Manager	(716) 913-1120	(716) 345-4649
David Cofield	Site Supervisor	(716) 923-1330	(716) 818-1592
	Site Safety Officer		
Peter Gregory, CSP, MPH, STS	Region SH&E Manager	(973) 883-8683	(201) 602-3511
Cristopher Altman, CSP, STSC	NE EBL SH&E Manager		(484) 598-3834
Incident Reporting	DCS Incident Reporting & Help Line	800-348-5046	
URS Nurse direct	Use only after incident reporting line	877-878-9525	
Client Contacts			
Name	**Title**	**Telephone Number**	**Mobile Phone**
Benjamin Rung P.E	Client Project Manager	(518) 402-9826	(518) 703-3943
Organization/Agency			
Police Department (local)			911
Fire Department (local)			911
Ambulance Service (EMT will determine appropriate hospital for treatment)			911
Hospital: (Site personnel to use for emergency care) Mercy Hospital of Buffalo, 565 Abbott Rd, Buffalo, NY 14220			(716) 826-7000
Occupational Clinic: (Site personnel to use for non-emergency care) Western New York Immediate Care - Orchard Park, 3050 Orchard Park Rd, Buffalo, NY 14224			(716) 675-3700
Poison Control Center			(800) 222-1222
Pollution Emergency NYSDEC Spill Hotline			800-457-7362
INFOTRAC (URS' account number 74984)			800-535-5053
URS Hazardous Material Shipping Help Line			800-381-0664
Public Utilities			
Electric - National Grid			888-849-4310
Call Before You Dig			811

12.2 Muster Location

See Section 11.2.

12.3 Communication Procedures

Air horn, cell phones and others as dictated by the work assignment and THAs.

12.4 CPR/ First Aid Trained Personnel

SS/SSO

12.5 Incident Reporting

Incidents involving or affecting an URS employee will be reported in a prompt manner verbally to the site supervisor and project manager.

1. If the incident is a significant or life-threatening emergency, the employee or supervisor shall immediately dial 911 or the appropriate emergency contact phone number for your site.
2. The employee or supervisor shall contact the Incident Hotline (800-348-5046). *Note: Do not report subcontractor injuries to the Incident Hotline as URS Nurses cannot provide direction to subcontractors. The Subcontractor should follow their injury reporting and response procedure. The incident should be reported to IndustrySafe as described below.*
3. The employee or supervisor must notify their operational leaders and the Area SH&E Manager.
4. The supervisor, or delegate, must make initial notification in IndustrySafe within 4 hours for significant incidents, including subcontractor injuries, or 24 hours for less significant events event.
5. Client and account management notifications may also apply. The Project Manager will make any necessary notifications.

Any injury, even if no treatment is required, and any incident for which assistance by SH&E Management is needed must be immediately communicated to the Incident Hotline at 1-800-348-5046.

All incidents are also to be reported to IndustrySafe within the timeframes listed below:

Incident Type	IndustrySafe Reporting Time Frame
Significant Incident, including any injury to an URS Employee or Subcontractor	➔ 4 Hours
All Other Incidents	➔ 24 Hours

Significant Incident:

- Fatality;
- Amputation;
- Hospitalization for treatment for more than 24 hours (admission);
- Any single event resulting in more than one employee requiring medical treatment or more than one employee being away from work more than 3 days;
- Any SH&E-related Consent Agreement/Order/Lawsuit or enforcement action seeking more than $10,000 or alleging criminal activity;
- Any spill or release of a hazardous material that is reportable to a regulatory agency;
- Any Notices of Violation resulting from not operating within a regulatory agency permit/license or consent;
- Any incident resulting in property damage expected to exceed $10,000 United States (US) dollars;
- Any security-related incident that could have caused significant harm to an URS employee; and/or
- Any Near Miss event that may have resulted in any of the above consequences but because of "luck" did not result in harm to persons, property or the environment.

All Other Incidents:

- Any injury or illness to an URS employee or subcontractor, even if it does not require medical attention, including work-related injuries/illnesses that have become significantly aggravated by the work environment;
- An injury to a member of the public, or clients, occurring on an URS-controlled work site;
- Re-occurring conditions such as back pain or cumulative trauma disorders (e.g., carpal tunnel syndrome);
- Fire, explosion, or flash that is not an intended result of a planned event (e.g., remediation process, laboratory Procedure);
- Any incident involving company-owned, rented, or leased vehicles (including personal vehicles used for company business); and/or
- Any failure to comply with the requirements of a regulatory permit issued to URS.
- Scan the QR code below to access IndustrySafe reporting system from your smartphone/ device.

IndustrySafe
Safety Management Software

12.6 Medical Emergencies

In the event of a life-threatening or critical emergency, URS employees should dial 911 and follow the recommended instructions. However, in less serious situations, an injured employee or a co-worker should contact the Incident Hotline at 800-348-5046 to ensure that the employee receives the best care at the best time (i.e., within the first hour following an injury or potential injury). By contacting the Incident Hotline, the worker can be connected with URS' nurses for first aid advice. If recommended by the nurse, the supervisor or a co-worker should drive the injured employee to the project-designated clinic or hospital. A map to the designated hospital and clinic is attached as **Attachment A** and the locations and addresses are included in the table above as well as in the HASP Summary on Page i.

12.7 Vehicle Incidents

All vehicles should be rented through Carson Wagonlit Travel (accessible via Ecosystem) to ensure that URS insurance is included in the rental rate. All other insurances should be declined. URS' rental vehicle insurance policy for National/Enterprise or Avis can be found on the DCS Americas United States or Canada travel pages. **Drivers MUST print and carry the applicable insurance policy for the rental**.

In the event of a vehicle incident (including collisions as well as mechanical difficulties such as breakdowns and flat tires) the following responses are recommended:

- For breakdowns and flat tires, contact an emergency provider.
- For rental vehicles, contact the rental company.
- To the extent possible, URS personnel should not change flat tires or perform similar repairs.
- If a collision has occurred, assess the situation and move all occupants (except the injured) out of further harm's way. If safe to do so, remove the car from the traveled way. Call 911 if necessary and report the incident to the Incident Hotline at 800-348-5046 as soon as practical. If appropriate, wait for police to arrive before moving vehicles. Provide insurance information to other drivers if necessary or requested and collect the same. If possible, obtain names and phone numbers of witnesses. Take photographs of the scene if possible. DO NOT ADMIT LIABILITY, AGREE TO PAY FOR DAMAGE, OR SIGN A DOCUMENT RELATED TO AN INCIDENT EXCEPT AS REQUIRED BY LAW.

12.8 Spill or Release

URS employees are not expected to take action or to participate in rescues or responses to chemical releases (including of petroleum products) beyond the initial discovery of the release and immediate mitigation actions such as closing a valve, placing absorbents, and notifying the client and or public emergency response system (911), unless there is a contractual provision for this response and specially trained employees.

12.8.1 Environmental Spill/Release Reporting

All environmental spills or releases of hazardous materials (e.g., fuels, solvents, etc.), whether in excess of the Reportable Quantity or not, will be reported according to the incident reporting procedure. In determining whether a spill or release must be reported to a regulatory agency, the Site Supervisor or qualified worker will assess the quantity of the spill or release and evaluate the reporting criteria against the state-specific reporting requirements, applicable regulatory permit, and/or client-specific reporting procedures. **If reporting to a US state or Federal regulatory agency is required, URS has 15 minutes from the time of the spill/release to officially report it.**

Chemical-specific Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities for the known chemicals onsite are shown in the table below.

Table 12-1: CERCLA Reportable Quantities

Hazardous Substance	Regulatory Synonyms	Final RQ (lbs.)
Arsenic	N/A	1
Lead	N/A	10

CERCLA RQ's can be found at: http://www.epa.gov/oem/docs/er/302table01.pdf

NYSDEC Petroleum Spill Requirements

All petroleum spills that occur at the site must be reported to the NYSDEC Spill Hotline (1-800-457-7362) within 2 hours of discovery, except spills which meet all of the following criteria:

- The quantity is known to be less than 5 gallons; and
- The spill is contained and under the control of the spiller; and
- The spill has not and will not reach the State's water or any land; and
- The spill is cleaned up within 2 hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.

NYSDEC's Spill Regulations/Guidelines can be found at: https://www.dec.ny.gov/chemical/8692.html.

The spill containment program addresses the following site-specific information:

- Potential hazardous substance spills and available controls;
- Initial notification and response;
- Spill evaluation and response; and
- Post-spill evaluation.

12.8.2 Spill Evaluation and Response

The SSO is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area is isolated and demarcated to the extent possible. When an incidental release occurs, clean-up personnel receive instructions in a pre-clean-up meeting as to spill conditions, PPE, response activities, decontamination, and waste handling.

The procedures of the Emergency Response section of this HASP are immediately implemented when the spill is determined to require emergency precautions and action. If necessary to protect those outside the clean-up area, notification of the appropriate authorities is made. Table 12-1 lists the spill conditions that trigger notification of Federal, state, and local agencies.

The following are general measures that response/clean-up personnel take when responding to a spill:

- To minimize the potential for a hazardous spill, hazardous substances, control/absorbent media, drums and containers, and other contaminated materials are properly stored and labeled;
- When a spill occurs, only those persons involved in overseeing or performing spill containment operations will be allowed within the designated hazard areas. If necessary, the area will be roped or otherwise blocked off. Unauthorized personnel are kept clear of the spill area;
- Appropriate PPE is donned before entering the spill area;
- Appropriate spill control measures are applied during spill response;
- Whenever possible without endangerment of personnel, the spill is stopped at the source or as close to the source as possible;
- Ignition points are removed if fire or explosion hazards exist;
- Surrounding reactive materials are removed;
- Drains or drainage in the spill area are blocked or surrounded by berms to exclude the spilled waste and any materials applied to it;
- Provisions are made to contain and recover a neutralizing solution, if used;
- Small spills or leaks from a drum, tank, or pipe will require evacuation of at least Enter Distance feet in all directions to allow clean-up and to prevent employee exposure. For small spills, sorbent materials such as sand, sawdust, or commercial sorbents are placed directly on the spill to prevent further spreading and aid in recovery;
- Spill area is sprayed with appropriate foam where the possibility of volatile emissions exists;
- If the spill results in the formation of a toxic vapor cloud, from vaporization, reaction with surrounding materials, or the outbreak of fire, further evacuation may be required;
- To dispose of spill waste, all contaminated sorbents, liquid waste, or other spill clean-up will be placed in small quantities Enter QTY pounds) in approved drums for proper storage or disposal as hazardous waste; and

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12.8.3 Post Spill Evaluation

As part of the incident investigation and reporting documentation, a written spill response report shall be prepared at the conclusion of clean-up operations. The report will include, at a minimum, the following information:

- Date of spill incident;
- Cause of incident;
- Spill response actions;
- Any outside agencies involved, including their incident reports; and
- Lessons learned or suggested improvements.

The spill area is inspected to ensure the area has been satisfactorily cleaned. The use of surface and air sampling is utilized in this determination as necessary. The root cause of the spill is examined, and corrective steps taken to ensure the engineering and control measures in place have performed as required. If alternative precautions or measures are needed, they are made available and implemented.

All durable equipment placed into use during clean-up activities is decontaminated for future utilization. All spill response equipment and supplies are re-stocked as required.

12.9 Fire

URS employees are not expected to attempt to put out fires. Stop work; notify all URS personnel, move upwind and contact 911 and/or emergency response at the Site. If employees have been properly trained in the operation of a fire extinguisher, they may attempt to put out a small fire, provided that the following conditions are met:

- The fire must be small (i.e., smaller than a trash can) and in its early stages
- The employee must have an escape route
- The employee must be trained and know they have the right type of extinguisher
- The employee must be safe from toxic gases
- There must be no hazardous conditions that could quickly accelerate the fire (i.e., presence of chemicals, especially dry grass, etc.)
- Above all, if in doubt, the employee must not attempt to fight the fire

13. Personnel Acknowledgement and Disclaimer

By signing below, the undersigned acknowledges that he/she has reviewed the URS Health and Safety Plan for the Lackawanna Incinerator Site. The undersigned also acknowledges that he/she has been instructed in the contents of this document and understands the information pertaining to the specified work and will comply with the provisions contained therein. The employee understands that they are NOT to perform any work that they have not been adequately trained for and that they are to stop work if it is unsafe to proceed. Finally, the employee understands to notify the Site Supervisor and the Incident Hotline at 800-348-5046 for any incident, ***including ANY injury even if no first aid or medical treatment is required.***

Print Name	Signature	Organization	Date

13.1 Disclaimer:

This SH&E Plan, and each of its provisions, is applicable only to, and for use only by, URS, its affiliates, and its subcontractors. Any use of this Plan by other parties, including, without limitation, third party contractors on industrial sites or projects where URS is providing engineering, construction management or similar services, without the express written permission of URS, will be at that party's sole risk, and URS Corporation shall have no responsibility therefore. The existence and use of this Plan by URS shall not be deemed an admission or evidence of any acceptance of any safety responsibility by URS for other parties unless such responsibility is expressly assumed in writing by URS in a specific project contract.

Figures

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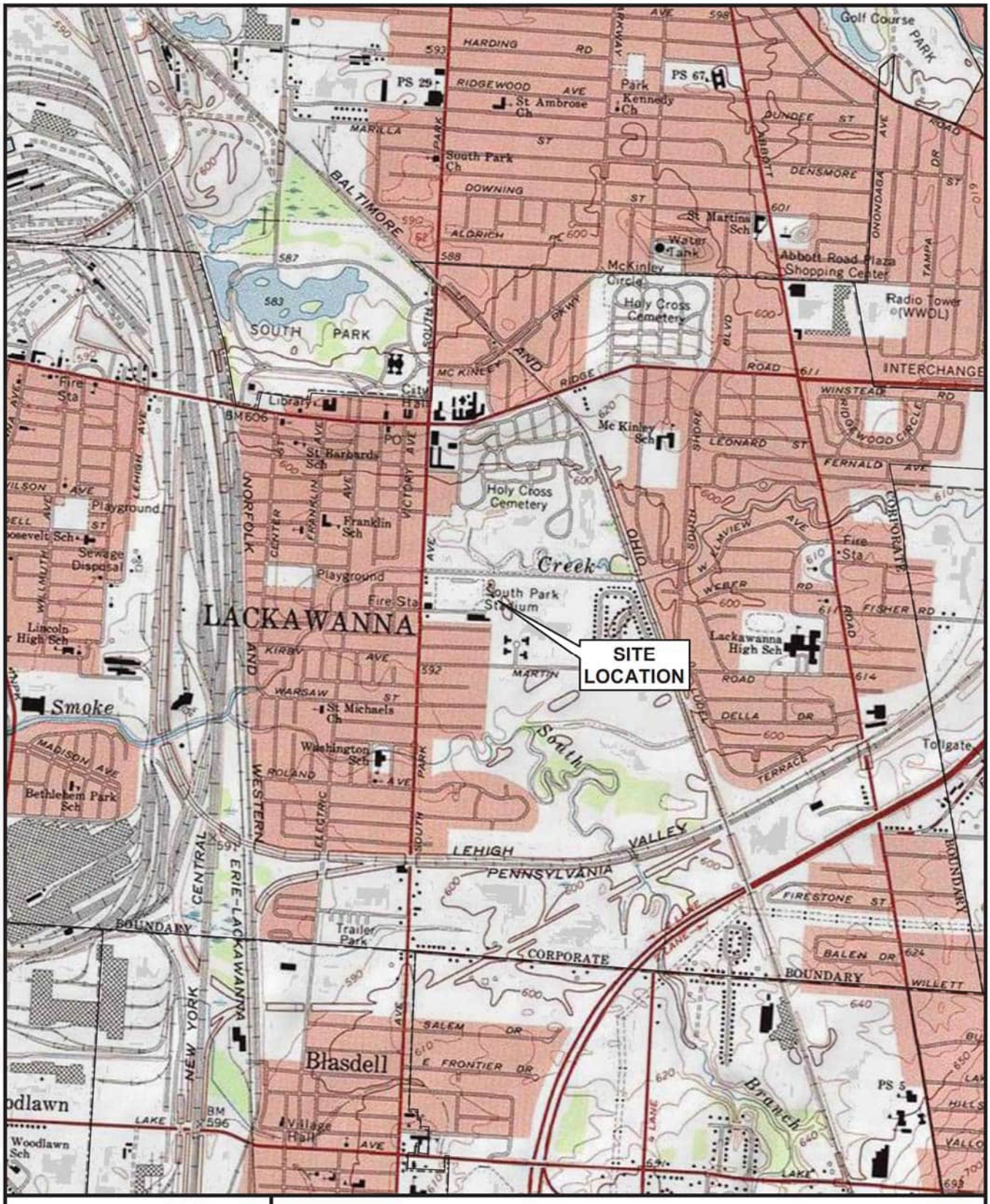

Figure 1

Site Location Map

Lackawanna Incinerator Site
City of Lackawanna, Erie
Site No. 915206

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •

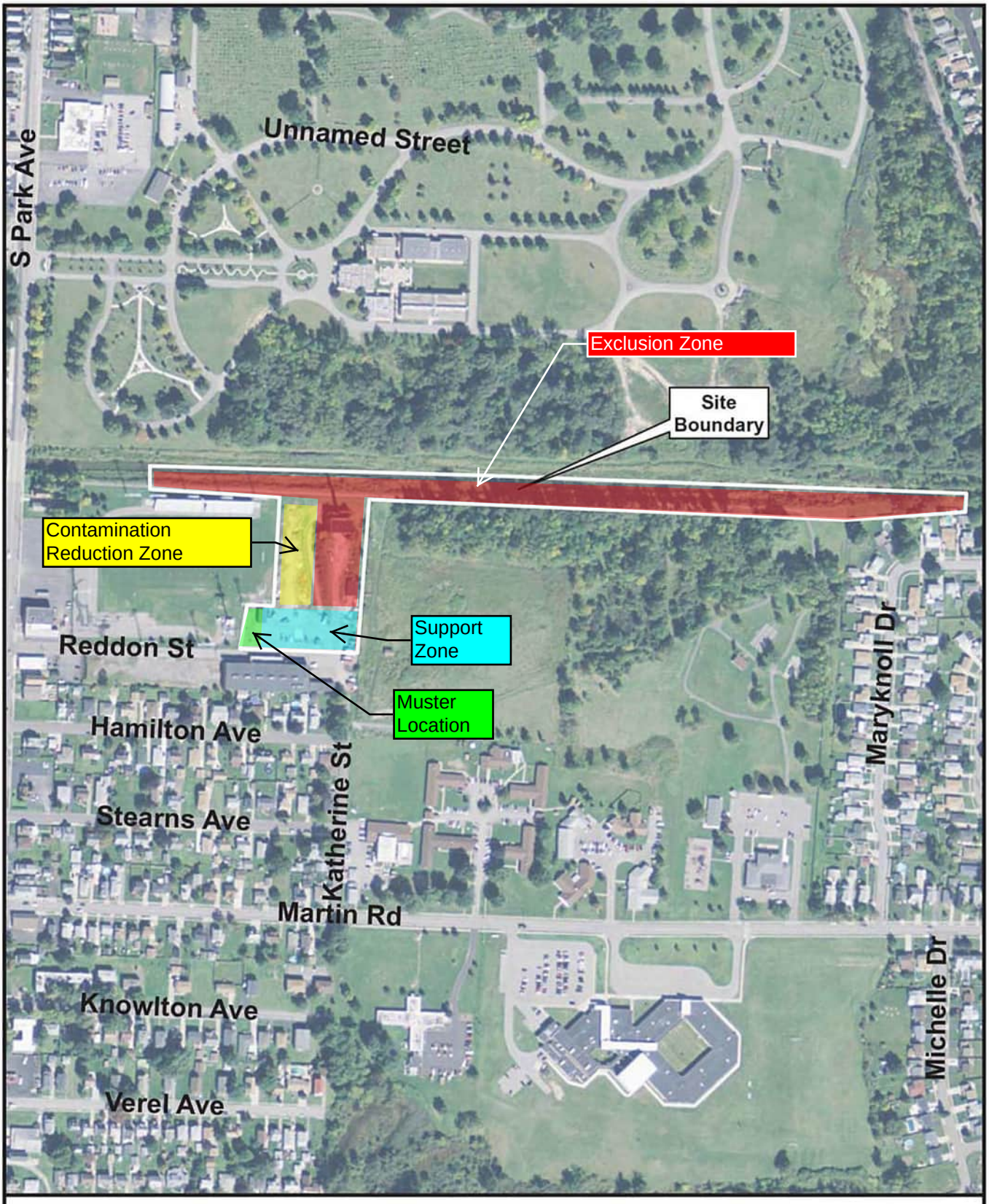

Figure 2

Site Map

Lackawanna Incinerator Site
City of Lackawanna, Erie County
Site No. 915206

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •

Attachment A

Hospital and Clinic Directions/ Maps
Incident Reporting and Response Flow Chart

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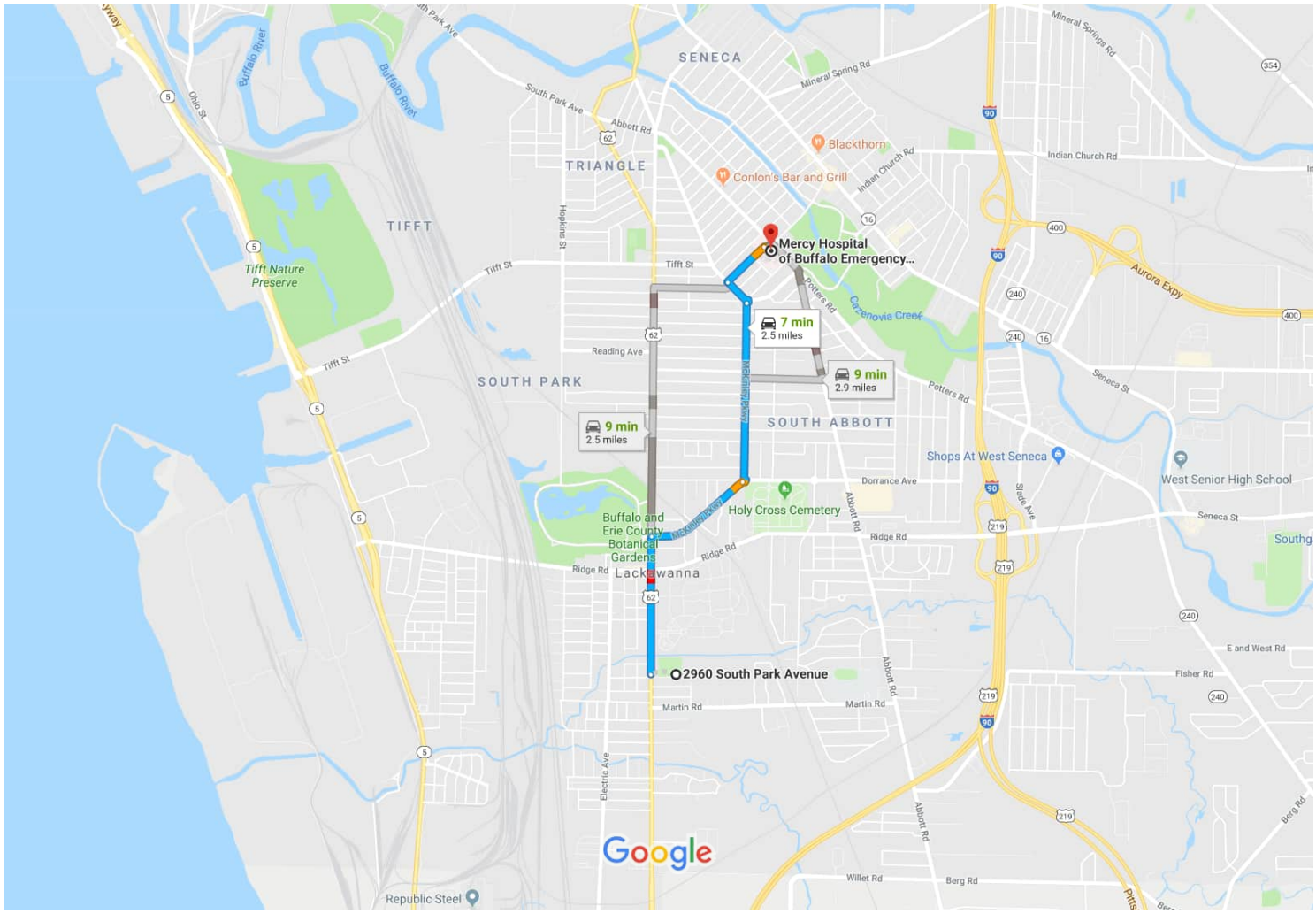
Google Maps

2960 South Park Ave, Buffalo, NY to Mercy Hospital of Buffalo Emergency Room

Drive 2.5 miles, 7 min



Map data ©2019 Google 2000 ft

2960 South Park Ave

Buffalo, NY 14218

1. Head north on South Park Ave toward Newman St — 0.7 mi
2. Turn right onto McKinley Pkwy — 0.5 mi
3. At the traffic circle, take the 2nd exit and stay on McKinley Pkwy — 0.9 mi
4. At McClellan Cir, take the 2nd exit and stay on McKinley Pkwy — 0.2 mi
5. Turn right onto Lorraine Ave — 0.2 mi

6. Turn right

Destination will be on the right

161 ft

Mercy Hospital of Buffalo Emergency Room

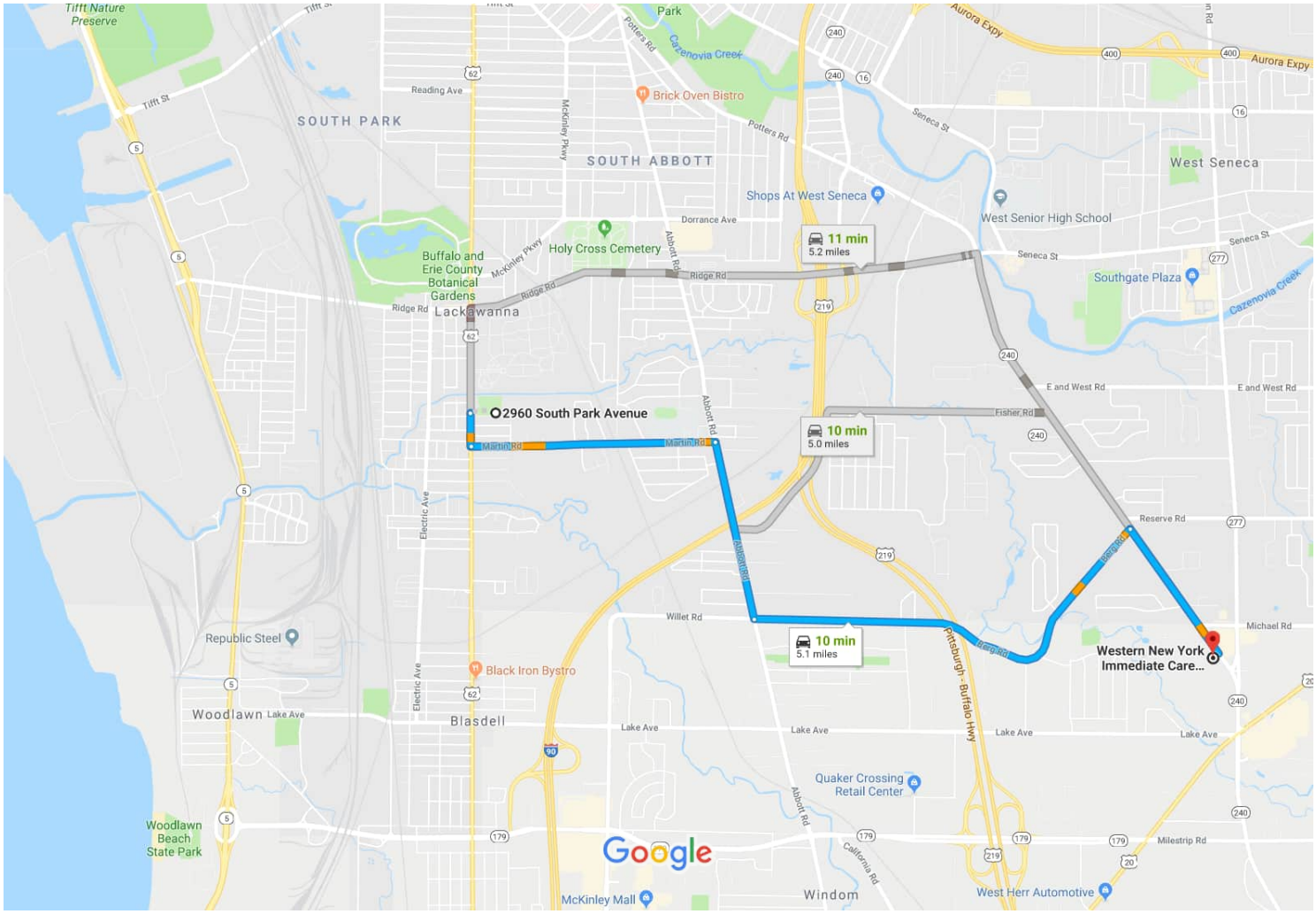
565 Abbott Rd, Buffalo, NY 14220

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Google Maps

2960 South Park Ave, Buffalo, NY to Western New York Immediate Care - Orchard Park

Drive 5.1 miles, 10 min



Map data ©2019 Google 2000 ft

2960 South Park Ave

Buffalo, NY 14218

1. Head south on South Park Ave toward Gibbons St — 0.2 mi
2. Turn left onto Martin Rd — 1.2 mi
3. Turn right onto Abbott Rd — 0.9 mi
4. Turn left onto Berg Rd — 2.2 mi
5. Turn right onto NY-240 S/Orchard Park Rd
   Destination will be on the right — 0.7 mi

Western New York Immediate Care - Orchard

Park

3050 Orchard Park Rd, Buffalo, NY 14224

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

URS

AECOM

Work-Related Incident Flowchart for Employees | Updated October 2016

DCS - Americas

NOTE: The direct number to AECOM nurses, 1-877-878-9525, is active and can be used by employees. However, the AECOM SH&E team prefers that employees call the AECOM Incident Reporting Hotline. The Hotline will route all medical cases to AECOM nurses, AND they will trigger text messages directly to the SH&E team.

* Supervisor or Responsible Manager will initiate Client or Site Notification Process as appropriate

** If injured person is an AECOM subcontractor, call AECOM's nurses at 877-878-9525, or direct sub to their own provider.

*** For all AECOM vehicles, call Element at 1-800-446-7052.

Updated October 2016

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Attachment B

Project Risk Register/ Hazard Assessment, THA Forms and Blank Tailgate Safety Meeting Forms

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DCS Americas

Project Risk Register/ Hazard Assessment (DCSA)

S4[DCS]AM-209-FM4-A

Location: Lackawanna Incinerator Site **Date:** 3/12/2019

Prepared By: Kevin J. McGovern, PG, CHMM **Approved By:** Cristopher Altman, CSP, STSC

Principal Tasks	Potential Safety/Health/Environmental Risks/Hazards	Risk/Hazard Control Methods
List principal tasks involved in the scope of work	Identify each safety, health, and environmental hazard associated with the completion of each task	Identify methods such as transfer of risk, creation of Safe Work Method Statements (SWMS), Task Hazard Assessments (THAs) & any specific required work plans (SWPP, SPCC, traffic control, hazardous weather contingency plan, etc.) to be drafted
TASK 1 – Gauging Liquid Levels in Groundwater Monitoring Wells	Exposure to biologic hazards: insects, poisonous plants and animals. Injuries could include anaphylactic shock, allergic reaction, rabies Damage to equipment or vehicles due to surface / subsurface obstructions Slips / trips / falls due to uneven terrain resulting in broken bones or torn ligaments. Struck by vehicle resulting in severe trauma or death Exposure to chemical hazards in groundwater resulting in inhalation hazard or illness Cross contamination of equipment Cuts / lacerations / bruises to knees (flush mount) Aches and strains from repetitive motion	Identify and avoid hazardous plants and animals on site. Look for signs (spider webs, droppings, etc.). Wear cut resistant gloves, insect repellant; use a broom or a rake to move vegetation, not your hand or foot; move slowly Investigate travel path. Look for surface obstructions such as rubble, debris, old foundations or rebar. Use spotter is available or park in such a manner as to not have to back-up. Identify, mark and avoid slip, trip and fall hazards (holes, obstructions protruding from the ground, or debris). Contact PM immediately and do not proceed if any conditions are observed that cannot be controlled to make well gauging in the area safe. Visually inspect roadway for moving equipment if walking and set up vehicle as a barrier if driving. Set up exclusion zone around each well. Don reflective vest Stay upwind to avoid vapor exposure. Clean the tape and probe using non-phosphate soap and distilled water. Wipe with clean paper towel. Collect decontamination materials for waste disposal. Wear disposable nitrile gloves. Don knee pads and inspect ground before kneeling down and take frequent breaks to stand and stretch. Do not use awkward positioning. Keep back straight, take regular rest/stretch breaks. Change position regularly. Check for location of measuring tape before walking or moving around.

Principal Tasks	Potential Safety/Health/Environmental Risks/Hazards	Risk/Hazard Control Methods
TASK 2 – Sampling Groundwater Monitoring Wells	Exposure to biologic hazards: insects, poisonous plants and animals. Injuries could include anaphylactic shock, allergic reaction, rabies Damage to equipment or vehicles due to surface / subsurface obstructions Slips / trips / falls due to uneven terrain resulting in broken bones or torn ligaments. Struck by vehicle resulting in severe trauma or death Exposure to chemical hazards in groundwater resulting in inhalation hazard or illness Cross contamination of equipment Cuts / lacerations / bruises to knees (flush mount) Aches and strains from repetitive motion	Identify and avoid hazardous plants and animals on site. Look for signs (spider webs, droppings, etc.). Wear cut resistant gloves, insect repellant; use a broom or a rake to move vegetation, not your hand or foot; move slowly Investigate travel path. Look for surface obstructions such as rubble, debris, old foundations or rebar. Use spotter is available or park in such a manner as to not have to back-up. Identify, mark and avoid slip, trip and fall hazards (holes, obstructions protruding from the ground, or debris). Contact PM immediately and do not proceed if any conditions are observed that cannot be controlled to make well gauging in the area safe. Visually inspect roadway for moving equipment if walking and set up vehicle as a barrier if driving. Set up exclusion zone around each well. Don reflective vest Stay upwind to avoid vapor exposure. Clean the tape and probe using non-phosphate soap and distilled water. Wipe with clean paper towel. Collect decontamination materials for waste disposal. Wear disposable nitrile gloves. Don knee pads and inspect ground before kneeling down and take frequent breaks to stand and stretch. Do not use awkward positioning. Keep back straight, take regular rest/stretch breaks. Change position regularly. Check for location of measuring tape before walking or moving around.
TASK 3 – Soil Sampling with Hand Auger	Cuts or hand injuries from pinch points Back strain/ overexertion when unloading equipment Contacting utilities causing serious personal injury or death. Back strain or pulled muscle from rotating hand auger. Injury from slip, trip, fall. Injury to eyes from flying debris Contact with contaminated soil. Cut from handling auger, sampling tools, jars	Inspect for broken welds on auger. If broken welds or cracks – STOP WORK. Wear cut resistant gloves at all times and avoid handling the sharp edges of the auger cup. Keep face, hands, fingers, and feet out of the line of fire of moving parts and tools Stretch before working. Bend and lift with legs and arms, not back. Team-lift any items that are awkward or over 50 pounds. If removing from the back of a truck, slide the case to the tailgate and lift from tailgate and not from the side of the truck bed Ensure subsurface clearance protocol and permit requirements are being followed before beginning work. Turn the auger slowly and if refusal is met, remove the auger from the borehole and inspect the cause of refusal. If a utility, pea gravel, or non-native fill material is encountered, STOP WORK and call the PM.

Principal Tasks	Potential Safety/Health/Environmental Risks/Hazards	Risk/Hazard Control Methods
	Muscle strain in back or legs from bending over or squatting	Do not yank on the auger handle. Do not turn at waist, turn with arms and shoulders, keep feet square and lift with legs, do not work with arms above head. Take breaks and rotate work. Use short extensions as you advance to avoid. Clear the work area of trip hazards. Walk around bore hole, never over it and cover hole with delineator when unattended. If it is windy, stand upwind and switch to goggles to prevent dirt entering eye. Use clean sampler to touch soil. Wear nitrile gloves over the cut resistant gloves at all times. If nitrile tears, stop work and replace glove. For samples with high volatile organics content (PID in breathing zone is constantly above site limits stated in HASP (>5 ppm)) wear breathing protection as stated in HASP. Change Nitriles between samples to avoid cross contamination Inspect containers before and during filling. Do not use if chipped or cracked. Pack containers in coolers so that they will not shift (spacers/ packing materials as needed). Do not over pack coolers. Evaluate work surface height (see if chair/ table needed) and sample jar placement to eliminate ergonomic issues. Avoid squatting and bending

Principal Tasks	Potential Safety/Health/Environmental Risks/Hazards	Risk/Hazard Control Methods
TASK 4 – Investigation Derived Waste Management	Struck by traffic Trips & falls Tools and emergency equipment not present Pinch points at drum ring Sharp edges on drum ring or rim Exertion/sprains/strains Exposure to contaminants	Establish work area so that each site vehicle used for activity are in close proximity of each other; this would prevent unnecessary trips outside of work zone and into potential traffic area. Establish barricaded area using cones and barricade tape. Wear required highly visible clothing. Clear any trip/fall hazards from work area. Scan ground prior to moving or walking Obtain tools and emergency equipment and stage adjacent to work area Use socket set to loosen drum ring, avoid placing fingers in to pinch points. Make sure cut-resistant gloves fit properly (not too big so fingertips get caught) Evaluate rim and ring for sharp edges, avoid handling as much as possible. Wear cut resistant gloves. Exertion/sprains/strains • Use proper lifting techniques; this consists of bending your knees and lifting with your back straight. • Shovel loads heavier than 50 lbs. or awkward to handle use a mechanical loading device or ask for help. • Grasp shovel handle properly: Position one hand at base of shovel handle and your other hand near the top of the handle. • Rotate task with others if needed and take breaks. Exposure • Set up upwind of drum. • Wear PPE (e.g., eye protection-goggles, long pants, Nitrile exam gloves, Nitrile over-gloves (11-mil), long wrist) Tyvek coveralls, shirt with sleeves, steel-toed shoes with boot covers, half-face air purifying respirator fitted with an organic vapor, acid, HEPA filter combination cartridge). • Perform air monitoring as per HASP. STOP WORK if action level is exceeded.
TASK 5 – Site Survey	Not having proper PPE Inappropriate vehicle for site Inclement weather Parking in inappropriate areas subjecting you and/or vehicle to construction hazards Biological hazards	Determine what the basic PPE requirements are in advance and have available or know that they will be available to you to borrow once on site. Determine what type of vehicle is needed for site conditions (4-wheel drive, truck or car). Plan for the anticipated weather conditions. Check the predicted weather for the worksite prior to departing. Reschedule site visit if

Principal Tasks	Potential Safety/Health/Environmental Risks/Hazards	Risk/Hazard Control Methods
	Feral & wild animals Heat stress Cold stress Sunburn Slips/trips/falls Transporting biological hazards into vehicle Hitting object when leaving	severe weather such as lightning storms, sleet/ice storms, blizzards, etc., are predicted. Know where you are supposed to park prior to arrival or check in at site so that you do not subject yourself or your vehicle to site hazards such as construction vehicle traffic, wet/muddy conditions, poor walking surfaces, etc. There are many different types of biological hazards that can be encountered on a work site. These include ticks, spiders, mosquitoes, chiggers, poisonous or other noxious plants, alligators, bears, small mammals, bird droppings, small mammals, snakes, etc. Consult S3AM-313-PR1 and the multiple attachments to determine the biological hazards that may be present and the mitigation measures for each. Do not attempt to pick up, handle, or otherwise handle stray or wild animals such as dogs, cats, raccoons, squirrels, etc., no matter how tame they may appear. Know the signs and symptoms of heat stress (refer to the procedure S3AM-113-PR1 for information. Have adequate drinking water available and drink frequently. Arrive at the site well hydrated and physically fit. Know the health concerns associated with working in cold weather including hypothermia, frost bite, etc. (see S3AM-112-PR1). Dress in layers and take warming breaks. Have sunblock available and apply and reapply as per directions. Avoid direct solar exposure when possible. Seek breaks in shaded areas. Be aware of walking surfaces at all times, wear footwear with good tread and ankle support, use handrails where available, avoid walking in muddy or wet areas when possible, identify and mark or have removed any obstructions that may be present in predicted walking paths. Inspect self for ticks before entering vehicle. If it possible that clothing and personal items such as jackets, backpacks, lunch bags, and so on have been exposed to poisonous plant oils or may harbor ticks or other insects, bag such items until they can be appropriately treated. Before moving the vehicle, perform a 360□walk around of the vehicle to verify that no changes have been made that may impact exit.

Task Hazard Assessment

AECOM Imagine it. Delivered.

Task Name:	Gauging Liquid Levels in Groundwater Monitoring Wells	**Control #:**	01-01-05-07

Project Name:	**Remedial Design**	**Client:**	NYSDEC	**Date:**	3/12/2019
Permits Required? (list):		**Work Location:**	Lackawanna Incinerator Site		

This THA must be fully reviewed with all staff members. All job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on the THA.

Required PPE:	☒ Hard Hat ☒ Safety Glasses ☒ HiVis Vest ☒ Safety Toe Boots ☒ Gloves: Leather, nitrile ☐ Hearing Protection ☐ Other:
Tools & Equipment:	Hand Tools Liquid level/Interface probe Decon materials

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	**Potential Hazards** *How could you be hurt? What would the injury be?*	**Risk** *(initial)*	**Critical Actions To Mitigate Hazards** *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	**Risk** *(final)*
1. Visually clear proposed gauging locations	1a. Exposure to biologic hazards: insects, poisonous plants and animals. Injuries could include anaphylactic shock, allergic reaction, rabies	6	1a. Identify and avoid hazardous plants and animals on site. Look for signs (spider webs, droppings, etc.). Wear cut resistant gloves, insect repellant; use a broom or a rake to move vegetation, not your hand or foot; move slowly	4
	1b. Damage to equipment or vehicles due to surface / subsurface obstructions	6	1b. Investigate travel path. Look for surface obstructions such as rubble, debris, old foundations or rebar. Use spotter is available or park in such a manner as to not have to back-up.	4
	1c. Slips / trips / falls due to uneven terrain resulting in broken bones or torn ligaments.	6	1c. Identify, mark and avoid slip, trip and fall hazards (holes, obstructions protruding from the ground, or debris). Contact PM immediately and do not proceed if any conditions are observed that cannot be controlled to make well gauging in the area safe.	4
	1d. Struck by vehicle resulting in severe trauma or death	**10**	1d. Visually inspect roadway for moving equipment if walking and set up vehicle as a barrier if driving. Set up exclusion zone around each well. Don reflective vest	4
On-Site Edits:				
2. Opening well casings / flush-mount covers and well plug lock	2a. Cuts / lacerations / crushing, bruises	6	2a. Avoid touching sharp materials/ edges. Wear cut resistant ANSI 2 gloves. Keep face, hands, fingers, and feet clear when opening and closing well cover. Inspect ground before kneeling, d on knee pads.	2
	2b. Back strain	4	2b. Stretch before working. DO NOT use awkward positioning. Keep back straight. Take regular rest/stretch breaks. Change position regularly.	2

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Gauging Liquid Levels in Groundwater Monitoring Wells	Control #:	01-01-05-07

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
	2c. Biologic hazards: insects, poisonous plants, and animals	4 6	2c. Slowly lift the well cover away from person and look for insects underneath the well. Use long handle tool to remove or kill any insects (i.e. screwdriver).	2 4
On-Site Edits:				
3. Lowering fluid meter probe and measuring tape to detect fluid level and total depth	3a. Cuts / lacerations / bruises to knees (flush mount) 3b. Aches and strains from repetitive motion 3c. Exposure to chemical hazards in groundwater resulting in skin irritation or illness	4 4 3	3a. Inspect ground before kneeling. Remove any objects. Don knee pads 3b. Do not use awkward positioning. Keep back straight, take regular rest/stretch breaks. Change position regularly. 3c. Use smooth movements to avoid splashes. Don nitrile gloves over cut resistant gloves and safety glasses with side shields. Check gloves for damages/ rips.	2 2 2
On-Site Edits:				
4. Removing fluid meter measuring tape and probe from well	4a. Exposure to chemical hazards in groundwater resulting in inhalation hazard or illness 4b. Cross contamination of equipment 4c. Cuts / lacerations / bruises to knees (flush mount) 4d. Aches and strains from repetitive motion 4e. Trips / falls from entanglement in measuring tape	4 4 4 4 3	4a. Stay upwind to avoid vapor exposure. 4b. Clean the tape and probe using non-phosphate soap and distilled water. Wipe with clean paper towel. Collect decontamination materials for waste disposal. Wear disposable nitrile gloves. 4c. Don knee pads and inspect ground before kneeling down and take frequent breaks to stand and stretch. 4d. See Step 3b. 4e. Check for location of measuring tape before walking or moving around.	2 2 2 2 2

Task Hazard Analysis

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Task Name:	Gauging Liquid Levels in Groundwater Monitoring Wells	Control #:	01-01-05-07

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
On-Site Edits:				
5. Closing well casings / flush-mount covers	5a. Cuts / lacerations / crushing / bruises	4	5a. Avoid touching sharp materials/ edges. Keep face, hands, fingers, and feet clear when opening and closing well cover. Don knee pads and inspect ground before kneeling down.	2
	5b. Back strain from heavy / awkward materials handling	4	5b. Keep back straight. Take regular rest/stretch breaks. Change position regularly. * Verify that well covers are secure upon departure.	2
On-Site Edits:				
6. Gather gauging equipment and tools, place in work vehicle	6a. Cuts / lacerations / crushing / bruises from gathering or dropping equipment	3	6a. Maintain a secure grip on equipment and only carry manageable amount of equipment when demobilizing.	2
	6b. Aches and strains from improper lifting	4	6b. Bend and lift with legs. Keep back straight. Take regular rest/ stretch breaks. Change position regularly. Team lift is required for items over 50 lbs. (or awkward items). * Verify all tools and equipment are removed from the site.	2
On-Site Edits:				

Additional Notes:

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Gauging Liquid Levels in Groundwater Monitoring Wells	Control #:	01-01-05-07

All Employees:

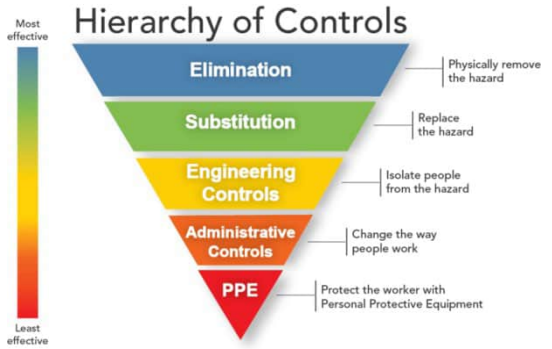
STOP WORK if uncertain about safety or if a hazard or additional precaution is not recorded on the THA.

Be alert, recognize and communicate any changes in scope, personnel or conditions at the worksite to the supervisor.

Use **4-Sight**, AECOM's last minute risk assessment process continuously throughout the day by asking yourself and your co-workers to assess your task, hazards, and mitigations. Amend the THA when needed.

- ***What am I about to do?***
- ***What can go wrong?***
- ***What can be done to make it safer?***
- ***What have I done to communicate the hazards?***

For a more thorough identification of hazards, ask "What else could go wrong?" using the Hazard Categories



- ***Most hazards need more than one control***
- ***What should you do? Stack your controls***
- ***PPE can NEVER be your only means of protection***

Worker Sign On	
I participated in the on-site review and fully understand the content of this Task Hazard Assessment.	
Printed Name	**Signature**
1. Supervisor:	
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Visitor Acknowledgement
Visitors review task hazards and acknowledge understanding
1.
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Submit a new THA for addition to the DCSA THA Library or send THA improvement suggestions to DCSA.THA.Library@AECOM.com

Task Hazard Analysis

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Task Name:	Gauging Liquid Levels in Groundwater Monitoring Wells	Control #:	01-01-05-07

Include a copy of the new THA or a photo of the THA modifications as appropriate.

Task Hazard Assessment – DCSA

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Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

Project Name:	Remedial Design	Client:	NYSDEC	Date:	3/12/2019
Permits Required? (list):		Work Location:	Lackawanna Incinerator Site		

This THA must be fully reviewed with all staff members. All job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on the THA.

Required PPE:	☒ Hard Hat ☒ Safety Glasses ☒ HiVis Vest ☒ Safety Toe Boots ☒ Gloves: Leather, nitrile ☐ Hearing Protection ☐ Other:
Tools & Equipment:	Hand Tools; Liquid level/Interface probe/Water Quality Meter; Decon Materials; Sampling Pumps, Tubing

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
1. Visually clear proposed sampling locations	1a. Exposure to biologic hazards: insects, poisonous plants and animals. Injuries could include anaphylactic shock, allergic reaction, rabies	6	1a. Identify and avoid hazardous plants and animals on site. Look for signs (spider webs, droppings, etc.). Wear cut resistant gloves, insect repellant; use a broom or a rake to move vegetation, not your hand or foot; move slowly	4
	1b. Damage to equipment or vehicles due to surface / subsurface obstructions	6	1b. Investigate travel path. Look for surface obstructions such as rubble, debris, old foundations or rebar. Use spotter is available or park in such a manner as to not have to back-up.	4
	1c. Slips / trips / falls due to uneven terrain resulting in broken bones or torn ligaments.	6	1c. Identify, mark and avoid slip, trip and fall hazards (holes, obstructions protruding from the ground, or debris). Contact PM immediately and do not proceed if any conditions are observed that cannot be controlled to make well gauging in the area safe.	4
	1d. Struck by vehicle resulting in severe trauma or death	10	1d. Visually inspect roadway for moving equipment if walking and set up vehicle as a barrier if driving. Set up exclusion zone around each well. Don reflective vest	4
On-Site Edits:				

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Task Hazard Assessment – DCSA

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Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
2. Opening well casings / flush-mount covers and well plug lock	2a. Cuts / lacerations / crushing, bruises	6	2a. Avoid touching sharp materials/ edges. Wear cut resistant ANSI 2 gloves. Keep face, hands, fingers, and feet clear when opening and closing well cover. Inspect ground before kneeling, d on knee pads.	2
	2b. Back strain	4	2b. Stretch before working. DO NOT use awkward positioning. Keep back straight. Take regular rest/stretch breaks. Change position regularly.	2
	2c. Vapor exposure resulting in inhalation hazards or illness	4	2c. Stand upwind from the well opening to avoid vapor exposure. Loosen well cap slowly, keeping control if pressure is released due to vapors. Keep face out of line-of-fire.	2
	2d. Biologic hazards: insects, poisonous plants, and animals	6	2d. Slowly lift the well cover away from person and look for insects underneath the well. Use long handle tool to remove or kill any insects (i.e. screwdriver).	4
On-Site Edits:				
3. Lowering sampling tubing into well	3a. Cuts / lacerations / bruises to knees (flush mount)	4	3a. Inspect ground before kneeling. Remove any objects. Don knee pads	2
	3b. Aches and strains from repetitive motion	4	3b. Do not use awkward positioning. Keep back straight, take regular rest/stretch breaks. Change position regularly.	2
	3c. Exposure to chemical hazards in groundwater resulting in skin irritation or illness	3	3c. Use smooth movements to avoid splashes. Don nitrile gloves over cut resistant gloves and safety glasses with side shields. Check gloves for damages/ rips.	2
On-Site Edits:				
4. Purging /sampling groundwater and removing sampling tubing from well	4a. Exposure to chemical hazards in groundwater, and sample preservatives, resulting in inhalation hazard or illness	4	4a. Stay upwind to avoid vapor exposure.	2
	4b. Cross contamination of equipment	4	4b. Clean the water quality meters using non-phosphate soap and distilled water. Wipe with clean paper towel. Collect decontamination materials for waste disposal. Wear disposable nitrile gloves.	2

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Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
	4c. Cuts / lacerations / bruises to knees (flush mount)	4	4c. Don knee pads and inspect ground before kneeling down and take frequent breaks to stand and stretch.	2
	4d. Aches and strains from repetitive motion	4	4d. See Step 3b.	2
	4e. Trips / falls from entanglement in sampling equipment	3	4e. Check for location of equipment before walking or moving around.	2
On-Site Edits:				
5. Closing well casings / flush-mount covers	5a. Cuts / lacerations / crushing / bruises	4	5a. Avoid touching sharp materials/ edges. Keep face, hands, fingers, and feet clear when opening and closing well cover. Don knee pads and inspect ground before kneeling down.	2
	5b. Back strain from heavy / awkward materials handling	4	5b. Keep back straight. Take regular rest/stretch breaks. Change position regularly. * Verify that well covers are secure upon departure.	2
On-Site Edits:				
6. Gather gauging equipment and tools, place in work vehicle	6a. Cuts / lacerations / crushing / bruises from gathering or dropping equipment	3	6a. Maintain a secure grip on equipment and only carry manageable amount of equipment when demobilizing.	2
	6b. Aches and strains from improper lifting	4	6b. Bend and lift with legs. Keep back straight. Take regular rest/ stretch breaks. Change position regularly. Team lift is required for items over 50 lbs. (or awkward items). * Verify all tools and equipment are removed from the site.	**2**
On-Site Edits:				

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Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
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On-Site Edits:				

Additional Notes:

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Task Hazard Assessment – DCSA

AECOM Imagine it. Delivered.

Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

All Employees:

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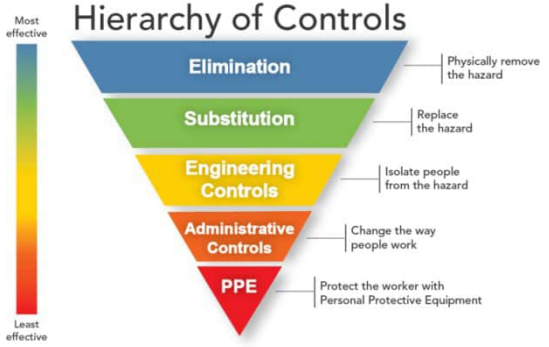

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Worker Sign On	
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Visitor Acknowledgement
Visitors review task hazards and acknowledge understanding
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Task Hazard Assessment – DCSA

Task Name:	Sampling Groundwater Monitoring Wells	Control #:	01-01-05-07

Include a copy of the new THA or a photo of the THA modifications as appropriate.

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Task Hazard Assessment

AECOM Imagine it. Delivered.

Task Name:	Soil Sampling with Hand Auger	**Control #:**	01-01-09-01

Project Name:	**Remedial Design**	**Client:**	NYSDEC	**Date:**	3/12/2019
Permits Required? (list):		**Work Location:**	Lackawanna Incinerator Site		

This THA must be fully reviewed with all staff members. All job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on the THA.

Required PPE:	☒ Hard Hat ☒ Safety Glasses ☒ HiVis Vest ☒ Safety Toe Boots ☒ Gloves: Leather, nitrile, CR ☐ Hearing Protection ☐ Other:
Tools & Equipment:	Hand auger w/extensions Sampling kit

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	**Potential Hazards** *How could you be hurt? What would the injury be?*	**Risk** *(initial)*	**Critical Actions To Mitigate Hazards** *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	**Risk** *(final)*
1. Setup equipment	1a. Cuts or hand injuries from pinch points	3	1a. Inspect for broken welds on auger. If broken welds or cracks – **STOP WORK**. Wear cut resistant gloves at all times and avoid handling the sharp edges of the auger cup. Keep face, hands, fingers, and feet out of the line of fire of moving parts and tools	2
	1b. Back strain/ overexertion when unloading equipment	4	1b. Stretch before working. Bend and lift with legs and arms, not back. Team-lift any items that are awkward or over 50 pounds. If removing from the back of a truck, slide the case to the tailgate and lift from tailgate and not from the side of the truck bed	2
On-Site Edits:				
2. Advancing hand auger	2a. Contacting utilities causing serious personal injury or death.	**10**	2a. Ensure subsurface clearance protocol and permit requirements are being followed before beginning work. Turn the auger slowly and if refusal is met, remove the auger from the borehole and inspect the cause of refusal. If a utility, pea gravel, or non-native fill material is encountered, **STOP WORK** and call the PM.	4
	2b. Back strain or pulled muscle from rotating hand auger.	6	2b. Do not yank on the auger handle. Do not turn at waist, turn with arms and shoulders, keep feet square and lift with legs, do not work with arms above head. Take breaks and rotate work. Use short extensions as you advance to avoid.	4
	2c. Injury from slip, trip, fall.	4	2c. Clear the work area of trip hazards. Walk around bore hole, never over it and cover hole with delineator when unattended.	3
	2d. Injury to eyes from flying debris.	3	2d. If it is windy, stand upwind and switch to goggles to prevent dirt entering eye.	2

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Soil Sampling with Hand Auger	Control #:	01-01-09-01

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
On-Site Edits:				
3. Collecting soil samples	3a. Contact with contaminated soil.	4	3a. Use clean sampler to touch soil. Wear nitrile gloves over the cut resistant gloves at all times. If nitrile tears, stop work and replace glove. For samples with high volatile organics content (PID in breathing zone is constantly above site limits stated in HASP (>5 ppm)) wear breathing protection as stated in HASP. Change Nitriles between samples to avoid cross contamination	2
	3b. Cut from handling auger, sampling tools, jars	6	3b. Inspect containers before and during filling. Do not use if chipped or cracked. Pack containers in coolers so that they will not shift (spacers/ packing materials as needed). Do not over pack coolers.	3
	3c. Muscle strain in back or legs from bending over or squatting	3	3c. Evaluate work surface height (see if chair/ table needed) and sample jar placement to eliminate ergonomic issues. Avoid squatting and bending	2
On-Site Edits:				
4. Adding extensions to auger	4a. Cuts or hand injuries from pinch points	3	4a. Avoid placing hands near connection points of extensions and avoid the sharp edges of the auger cup. Wear cut resistant gloves at all times	2
	4b. Striking another person	3	4b. Check that the swing radius of the auger is clear before moving it	2
	4c. Contacting overhead structure	**10**	4c. Before raising the auger vertically, verify that no overhead lines or structures are present **STOP WORK** and move if electrical lines are in the area	4
On-Site Edits:				
5. Breakdown and decontaminate equipment.	5a. Contact with contaminants and cut hazards	5	5a. Inspect before handling for chips or cracks in glass containers. Wear nitrile gloves over cut resistant gloves. If nitrile tears, stop work and replace glove.	2
	5b. Breaking a sample container resulting in cut, or contact with contents/preservatives	3	5b. Handle containers with care and position over padded or soft surface in case it slips from hand. Place in packing materials that will protect against collisions.	2

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Soil Sampling with Hand Auger	Control #:	01-01-09-01

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!				
Job Steps *List all steps required to perform a task in the sequence they are performed*	**Potential Hazards** *How could you be hurt? What would the injury be?*	**Risk** *(initial)*	**Critical Actions To Mitigate Hazards** *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	**Risk** *(final)*
	5c. Striking another person	4	5c. Before disassembling auger, verify that no one is in the swing radius.	3
On-Site Edits:				
6.	6a.		6a.	
On-Site Edits:				
7.	7a.		7a.	
On-Site Edits:				

Additional Notes:

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Soil Sampling with Hand Auger	Control #:	01-01-09-01

All Employees:

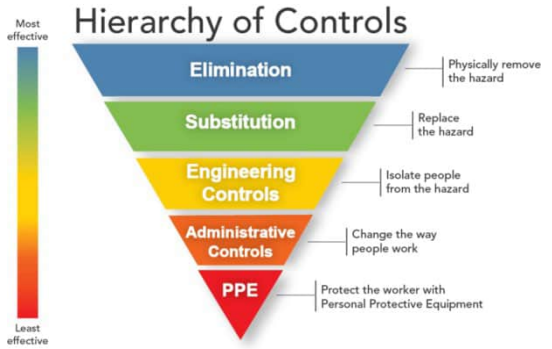
STOP WORK if uncertain about safety or if a hazard or additional precaution is not recorded on the THA.

Be alert, recognize and communicate any changes in scope, personnel or conditions at the worksite to the supervisor.

Use **4-Sight**, AECOM's last minute risk assessment process continuously throughout the day by asking yourself and your co-workers to assess your task, hazards, and mitigations. Amend the THA when needed.

- ***What am I about to do?***
- ***What can go wrong?***
- ***What can be done to make it safer?***
- ***What have I done to communicate the hazards?***

For a more thorough identification of hazards, ask "What else could go wrong?" using the Hazard Categories



- ***Most hazards need more than one control***
- ***What should you do? Stack your controls***
- ***PPE can NEVER be your only means of protection***

Worker Sign On	
I participated in the on-site review and fully understand the content of this Task Hazard Assessment.	
Printed Name	**Signature**
1. Supervisor:	
2.	
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Visitor Acknowledgement
Visitors review task hazards and acknowledge understanding
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Submit a new THA for addition to the DCSA THA Library or send THA improvement suggestions to DCSA.THA.Library@AECOM.com

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Soil Sampling with Hand Auger	Control #:	01-01-09-01

Include a copy of the new THA or a photo of the THA modifications as appropriate.

Task Hazard Assessment

AECOM Imagine it. Delivered.

Task Name:	Investigation Derived Waste Management	**Control #:**	01-01-14-02

Project Name:	**Remedial Design**	**Client:**	NYSDEC	**Date:**	3/12/2019
Permits Required? (list):		**Work Location:**	Lackawanna Incinerator Site		

This THA must be fully reviewed with all staff members. All job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on the THA.

Required PPE:	☒ Hard Hat ☒ Safety Glasses ☐ HiVis Vest ☒ Safety Toe Boots ☒ Gloves: Leather or work gloves with Nitrile undergloves	☐ Hearing Protection	☒ Other: Tyvek as needed to protect skin and clothing	
Tools & Equipment:	Socket set	55-gallon open top drum	Emergency eyewash and rinse water	Spill kit Photoionization detector with 11.7 eV lamp

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	**Potential Hazards** *How could you be hurt? What would the injury be?*	**Risk** *(initial)*	**Critical Actions To Mitigate Hazards** *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	**Risk** *(final)*
1. Secure work area from traffic	1a. Struck by traffic	**10**	1a. Establish work area so that each site vehicle used for activity are in close proximity of each other; this would prevent unnecessary trips outside of work zone and into potential traffic area. Establish barricaded area using cones and barricade tape. Wear required highly visible clothing.	**4**
On-Site Edits:				
2. Prepare work area	2a. Trips & falls 2b. Tools and emergency equipment not present	6 8	2a. Clear any trip/fall hazards from work area. Scan ground prior to moving or walking 2b. Obtain tools and emergency equipment and stage adjacent to work area	4 4
On-Site Edits:				
3. Remove drum lid	3a. Pinch points at drum ring 3b. Sharp edges on drum ring or rim	6 7	3a. Use socket set to loosen drum ring, avoid placing fingers in to pinch points. Make sure cut-resistant gloves fit properly (not too big so fingertips get caught) 3b. Evaluate rim and ring for sharp edges, avoid handling as much as possible. Wear cut resistant gloves	4 4

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Investigation Derived Waste Management	Control #:	01-01-14-02

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!				
Job Steps *List all steps required to perform a task in the sequence they are performed*	**Potential Hazards** *How could you be hurt? What would the injury be?*	**Risk** *(initial)*	**Critical Actions To Mitigate Hazards** *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	**Risk** *(final)*
On-Site Edits:				
4. Load soil into drums	4a. Exertion/sprains/strains	8	4a. Exertion/sprains/strains • Use proper lifting techniques; this consists of bending your knees and lifting with your back straight. • Shovel loads heavier than 50 lbs or awkward to handle use a mechanical loading device or ask for help. • Grasp shovel handle properly: Position one hand at base of shovel handle and your other hand near the top of the handle. • Rotate task with others if needed and take breaks.	7
	4b. Exposure to contaminants	6	4b. Exposure • Set up upwind of drum. • Wear PPE (e.g., eye protection-goggles, long pants, Nitrile exam gloves, Nitrile over-gloves (11-mil), long wrist) Tyvek coveralls, shirt with sleeves, steel-toed shoes with boot covers, half-face air purifying respirator fitted with an organic vapor, acid, HEPA filter combination cartridge). • Perform air monitoring as per HASP. **STOP WORK** if action level is exceeded.	4
	4c. Slips/trips/falls	6	4c. Be alert for uneven and slippery terrain. Keep tools and equipment away from walking paths.	4
	4d. Sharp edges on drum rim	6	4d. Inspect rim for sharp and rough edges, avoid leaning into drum or placing hands onto rim edge Wear cut-resistant gloves	2
On-Site Edits:				
5. Replacing drum ring	5a. Pinch points	7	5a. Use socket set to tighten drum ring, avoid placing fingers in to pinch points. Make sure gloves fit properly (not too big so fingertips get caught)	5

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Investigation Derived Waste Management	Control #:	01-01-14-02

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
On-Site Edits:				
6. Moving/relocating drums	6a. Exertion 6b. Trips and Falls	**15** **6**	6a. Exertion • If drums must be moved utilize a drum dolly. • DO NOT ATTEMPT TO "WALK" or "ROCK" DRUMS TO MOVE THEM. • Drums can become unstable and easily tip-over causing possible damage and personal injury as well as releasing the material contained. 6b. See 2a above	4 5
On-Site Edits:				
7.	7a.		7a.	
On-Site Edits:				

Additional Notes:

Task Hazard Analysis

AECOM Imagine it. Delivered.

Task Name:	Investigation Derived Waste Management	Control #:	01-01-14-02

All Employees:

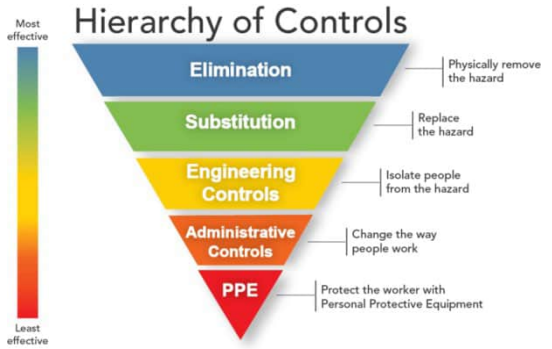
STOP WORK if uncertain about safety or if a hazard or additional precaution is not recorded on the THA.

Be alert, recognize and communicate any changes in scope, personnel or conditions at the worksite to the supervisor.

Use **4-Sight**, AECOM's last minute risk assessment process continuously throughout the day by asking yourself and your co-workers to assess your task, hazards, and mitigations. Amend the THA when needed.

- ***What am I about to do?***
- ***What can go wrong?***
- ***What can be done to make it safer?***
- ***What have I done to communicate the hazards?***

For a more thorough identification of hazards, ask "What else could go wrong?" using the Hazard Categories



- ***Most hazards need more than one control***
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- ***PPE can NEVER be your only means of protection***

Worker Sign On	
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Task Hazard Analysis

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Task Name:	Investigation Derived Waste Management	Control #:	01-01-14-02

Include a copy of the new THA or a photo of the THA modifications as appropriate.

Task Hazard Assessment

AECOM Imagine it. Delivered.

Task Name:	Site Survey	Control #:	01-01-10-01

Project Name:	Remedial Design	Client:	NYSDEC	Date:	3/12/2019
Permits Required? (list):		Work Location:	Lackawanna Incinerator Site		

This THA must be fully reviewed with all staff members. All job steps, hazards, work practices, and PPE are clearly understood and have been implemented. All necessary revisions have been written on the THA.

Required PPE:	☒ Hard Hat ☒ Safety Glasses ☒ HiVis Vest ☒ Safety Toe Boots ☒ Gloves: leather ☐ Hearing Protection ☐ Other:
Tools & Equipment:	Survey Equipment

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

Job Steps *List all steps required to perform a task in the sequence they are performed*	Potential Hazards *How could you be hurt? What would the injury be?*	Risk *(initial)*	Critical Actions To Mitigate Hazards *List control measures required to eliminate, control or protect against the potential hazards associated with each job step to minimize the risk of injury or environmental impact.* ***Identify any 'Stop Work' triggers.***	Risk *(final)*
1. Plan the site walk	1a. Not having proper PPE	4	1a. Determine what the basic PPE requirements are in advance and have available or know that they will be available to you to borrow once on site.	4
	1b. Inappropriate vehicle for site	4	1b. Determine what type of vehicle is needed for site conditions (4-wheel drive, truck or car).	4
	1c. Inadequate materials/supplies	4	1c. Determine what materials and supplies you must bring versus what is available on site such as insect spray, sunscreen, drinking water, food, etc.	4
	1d. Lack of site escort if needed	4	1d. Prearrange trip in advance where possible, determine who will be meeting you on site and when.	4
	1e. Inclement weather	6	1e. Plan for the anticipated weather conditions. Check the predicted weather for the worksite prior to departing. Reschedule site visit if severe weather such as lightning storms, sleet/ice storms, blizzards, etc., are predicted.	6
On-Site Edits:				
2. Arriving at site	2a. Parking in inappropriate areas subjecting you and/or vehicle to construction hazards	6	2a. Know where you are supposed to park prior to arrival or check in at site so that you do not subject yourself or your vehicle to site hazards such as construction vehicle traffic, wet/muddy conditions, poor walking surfaces, etc.	2
On-Site Edits:				

Task Hazard Analysis

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Task Name:	Site Survey	Control #:	01-01-10-01

REMINDER: Use 4-Sight at the start of, and continuously throughout the job/task to identify additional and/or hazards to act on!

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3. Walking Site/Observing Work	3a. Biological hazards	4	3a. There are many different types of biological hazards that can be encountered on a work site. These include ticks, spiders, mosquitoes, chiggers, poisonous or other noxious plants, alligators, bears, small mammals, bird droppings, small mammals, snakes, etc. Consult S3AM-313-PR1 and the multiple attachments to determine the biological hazards that may be present and the mitigation measures for each.	2
	3b. Feral & wild animals	4	3b. Do not attempt to pick up, handle, or otherwise handle stray or wild animals such as dogs, cats, raccoons, squirrels, etc., no matter how tame they may appear.	2
	3c. Heat stress	6	3c. Know the signs and symptoms of heat stress (refer to the procedure S3AM-113-PR1 for information. Have adequate drinking water available and drink frequently. Arrive at the site well hydrated and physically fit.	3
	3d. Cold stress	6	3d. Know the health concerns associated with working in cold weather including hypothermia, frost bite, etc. (see S3AM-112-PR1). Dress in layers and take warming breaks.	4
	3e. Sunburn	6	3e. Have sunblock available and apply and reapply as per directions. Avoid direct solar exposure when possible. Seek breaks in shaded areas.	3
	3f. Slips/trips/falls	6	3f. Be aware of walking surfaces at all times, wear footwear with good tread and ankle support, use handrails where available, avoid walking in muddy or wet areas when possible, identify and mark or have removed any obstructions that may be present in predicted walking paths.	4
On-Site Edits:				
4. Leaving the site	4a. Transporting biological hazards into vehicle	4	4a. Inspect self for ticks before entering vehicle. If it possible that clothing and personal items such as jackets, backpacks, lunch bags, and so on have been exposed to poisonous plant oils or may harbor ticks or other insects, bag such items until they can be appropriately treated.	2
	4b. Hitting object when leaving	6	4b. Before moving the vehicle, perform a 360° walk around of the vehicle to verify that no changes have been made that may impact exit.	4
On-Site Edits:				

Task Hazard Analysis

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On-Site Edits:				
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7.	7a.		7a.	
On-Site Edits:				

Additional Notes:

Task Hazard Analysis

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Task Name:	Site Survey	Control #:	01-01-10-01

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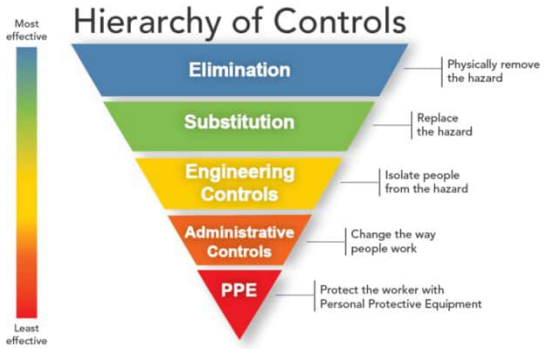

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Task Hazard Analysis

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Task Name:	Site Survey	Control #:	01-01-10-01

Include a copy of the new THA or a photo of the THA modifications as appropriate.

AECOM

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Instructions: Conduct meeting prior to sending crews to individual tasks. Require attendance of all AECOM employees and subcontractors. Invite personnel from simultaneous operations for coordination purposes. Review scope of work and briefly discuss required and applicable topics**. This meeting is a daily refresher, not a full orientation**. Task-specific discussions associated with Task Hazard Assessment (THA) follow this meeting at the task location immediately before individual task is started.

AECOM Supervisor Name:
Phone Number:

AECOM SH&E Rep. Name:
Phone Number:

Meeting Leader:

Date:	**Project Name/Location:** Remedial Design and Oversight/ Lackawanna Incinerator Site	**Project Number:** 60594844

Today's Scope of Work:

Muster Point Location:	**First Aid Kit Location:**	**Fire Extinguisher Location:**	**Spill Kit Location:**
Site Entrance	Vehicle		NA

1. Required Topics

- ☑ Fitness for Duty requirements, all sign in / sign out
- ☑ Required training (incl. task specific) completed and current
- ☑ SH&E Plan onsite - understood, reviewed, signed by all (incl. scope, preplanning hazard assessments / risk registers, controls, procedures, requirements, etc.)
- ☑ Task Hazard Assessments (THAs) are to be reviewed and completed for each task immediately prior to conducting
- ☑ STOP WORK Right & Responsibility- all task changes/changed conditions re-assess with THA
- ☑ Requirement to report to supervisor any injury, illness, damage, near miss, unsafe act / condition
- ☑ Emergency Response Plan – including muster point, first aid kit, fire extinguisher, clinic/hospital location
- ☑ Personal Protective Equipment (PPE) - Required items per hazard assessments in good condition / in use by all
- ☑ Equipment/machinery inspected (documented as required) and in good condition - operators properly trained/certified
- ☑ Work area set up and demarcation/ barricades in place to protect workers, site staff, and the public
- ☑ Required checklists/records available, understood (describe):
- ☑ Lessons Learned / SH&E improvements (describe):

2. Discuss if Applicable to Today's Work

☑	■	**Check ☑ as reviewed or mark ■ as not applicable**
☐	☐	Biological/ Chemical / Electrical Hazards
☐	☐	Ergonomics - Lifting, Body Position
☐	☐	Lock Out/ Tag Out
		Short Service Employees - visual identifier and mentor/ oversight assignment
☐	☐	Simultaneous/ Neighbouring Operations
☐	☐	Slip/ Trip/ Fall Hazards
☐	☐	Specialized PPE Needs
☐	☐	Traffic Control
☐	☐	Waste Management/ Decontamination
☐	☐	Weather Hazards / Heat Stress / Cold Stress
☐	☐	Subcontractor Requirements (e.g., JHAs, THAs, procedures, reporting, etc.)
☐	☐	Work Permits / Plans required (e.g., Fall Protection, Confined Space, Hot Work, Critical Lifts, etc.); in place, understood (identify/attach):
☐	☐	Other Topics (describe/attach):
☐	☐	Client specific requirements (describe):

3. Daily Check Out by Site Supervisor

Describe incidents, near misses, observations or Stop Work interventions from today:	Describe Lessons Learned/ Improvement Areas from today:

The site is being left in a safe condition and work crew checked out as fit unless otherwise specified as above.

Site Supervisor Name	**Signature**	**Date** **Time** **(at end of day / shift)**

Worker Acknowledgement / Sign In Sign Out sheets applicable to this meeting are on reverse and, if applicable, attached.

All employees:

- **STOP WORK if concerned / uncertain about safety / hazard or additional precaution is not recorded on the THA.**
- **Be alert and communicate any changes in personnel or conditions at the worksite to the supervisor.**
- **Reassess task, hazards, & mitigations on an ongoing basis; amend the THA if needed.**

SITE WORKERS (including AECOM Contractors and Subcontractors): Your signature below means that you understand:

* The requirement to participate in creating, reviewing, & updating hazard assessments (THA) applicable to your task(s).
* The hazards & control measures associated with each task you are about to perform.
* The permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
* That no tasks or work is to be performed without a hazard assessment.
* Your authority & obligation to "Stop Work" intervene, speak up/ listen up.

Your initials (right columns) certify that you arrived & departed fit for duty, & have reported all incidents/near misses; meaning:

* You are physically and mentally fit for duty and have inspected your required PPE to ensure satisfactory condition.
* You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
* You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or impairment/fatigue issue to the AECOM Supervisor.
* You signed out as fit / uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
		In & Fit	Out & Fit
		In & Fit	Out & Fit
		In & Fit	Out & Fit
		In & Fit	Out & Fit
		In & Fit	Out & Fit
		In & Fit	Out & Fit
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		In & Fit	Out & Fit
		In & Fit	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed) Identify number of attached sheets: _____

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

DCS Americas THA Review Guide

Task Hazard Assessment Instructions:

Each unique task or work group should have their own THAs. If workers have a THA for their task(s) in hand, they should simply review it and document the site-specific edits in red pen in the appropriate section. If workers do ***not*** have a THA for all tasks to be performed, a THA must be obtained or drafted *prior to starting work* on that task. Use additional pages as needed.

- Identify the basic steps of the task that must be performed in order and their associated hazards. Identify controls or barriers to mitigate each identified hazard.
- Clearly identify any **STOP WORK** triggers
- Document stop work and change management if conditions / scope changes.
- Use 4-Sight to identify and mitigate site-specific hazards throughout the day. Modify the THA as needed. Contact site supervisors or the PM for any significant scope changes or changes of expected conditions.
- All THAs shall be 3 pages (maximum) or less (preferred). If they are longer, the task is too broad
- All hazards will use standardized nomenclature (Hazard Wheel), should be specific, detail how someone could be hurt and what the outcome could be
- All actions to mitigate hazards must be specific, clearly aligned with its respective hazard and not generic. Avoid words such as "*proper*", "*correct*", or "*appropriate*"). Use specifics and numerical values (i.e. wear disposable nitrile gloves, stand back 6 feet/1.8 meters, take a 10-minute break every hour)
- PPE cannot be the only line of defense - PPE is always the last line of defense, so think through what other controls (engineering, administrative, etc.) could mitigate hazards

Discuss as Applicable and Modify THA as Needed

Check ☑ if reviewed or mark N/A

- ☐ *Biological/ Chemical/ Electrical Hazards*
- ☐ *Decontamination Procedures*
- ☐ *Ergonomics- Lifting, Body Position*
- ☐ *Lock Out/ Tag Out*
- ☐ *Short Service Employees- visual identifier and mentor/ oversight assignment*
- ☐ *Simultaneous/ Neighboring Operations*
- ☐ *Slip/ Trip/ Fall Hazards*
- ☐ *Specialized PPE Needs*
- ☐ *Traffic Control*
- ☐ *Waste Management/ Decontamination*
- ☐ *Weather Hazards/ Heat Stress/ Cold Stress*
- ☐ *Work Permit requirements (identify):*
- ☐ *Other (describe):*

Probability	Severity				
	5 - Catastrophic	4 - Critical	3 - Major	2 - Moderate	1 - Minor
5 - Frequent	25	20	15	10	5
4 - Probable	20	16	12	8	4
3 - Occasional	15	12	9	6	3
2 - Remote	10	8	6	4	2
1 - Improbable	5	4	3	2	1

Risk Rating (Probability x Severity)	Risk Acceptance Authority
1 to 4 (Low)	Risk is tolerable, manage at local level
5 to 9 (Medium)	Risk requires approval by Operations Lead/Supervisor & Safety Manager
10 to 25 (High)	Risk requires the approval of the Operations Manager & Safety Director

Severity – Potential Consequences				
	People	Property Damage	Environmental Impact	Public Image/Reputation
Catastrophic	Fatality, Multiple Major Incidents	>$1M USD, Structural collapse	Offsite impact requiring remediation	Government intervention
Critical	Permanent impairment, Long term injury/illness	>$250K to $1M USD	Onsite impact requiring remediation	Media intervention
Major	Lost/Restricted Work	> $10K to $250K USD	Release at/above reportable limit	Owner intervention
Moderate	Medical Treatment	> $1K to $10K USD	Release below reportable limit	Community or local attention
Minor	First Aid	</=$1K USD	Small chemical release contained onsite	Individual complaint

Probability		
Frequent	Expected to occur during task/activity	9/10
Probable	Likely to occur during task/activity	1/10
Occasional	May occur during the task/activity	1/100
Remote	Unlikely to occur during task/activity	1/1,000
Improbable	Highly unlikely to occur, but possible during task/activity	1/10,000

Using the Matrix:

1. Identify basic steps of the task and associated hazards.
2. Calculate the initial risk rating.
3. Identify control measure to eliminate or reduce the hazard's risk and calculate the residual risk rating.
4. If the risk rating (after controls are implemented) cannot be reduced to 4 or lower, additional approvals are needed before the activity can begin.

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Attachment C

URS SH&E Procedures

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Attachment C. URS SH&E Field Applicable Procedures

All URS SH&E Procedures, in their controlled copy version, are available on the internal SH&E Policy and Procedures ecosystem page.

Programmatic procedures referenced in this document (for example SH&E Training) DO NOT need to be printed for inclusion in this HASP. Only procedures that are needed for field activity reference and application MUST be printed in full and included in this section.

	Hazard/ Activity *(note: text in this column links to procedure)*	Site Specific Description *[where, what phase of work, frequency, etc.]*	Applicable Procedure
☒	**Bloodborne Pathogens**	Potential exposure in the event of a cut.	S3AM-111-PR
☒	**Cold Stress**	Some work may take place in spring	S3AM-112-PR
☒	**Hand and Power Tools**	Hand and power tools to be used throughout project.	S3AM-305-PR
☒	**Heat Stress**	Work is expected to take place during the summer, often outdoors.	S3AM-113-PR
☒	**Wildlife, Plants and Insects**	Vegetation, deer, birds, rodents, insects on site, although sporadic.	S3AM-313-PR

Americas

Bloodborne Pathogens

S3AM-111-PR1

1.0 Purpose and Scope

1.1 Define the AECOM procedures for eliminating and/or controlling occupational exposure to Bloodborne Pathogens on AECOM projects and activities.

1.2 A written Exposure Control Plan shall be developed and implemented during all AECOM operations where there is a reasonable potential for occupational exposure of AECOM employees and/or subcontractors to bloodborne pathogens as a regulated waste.

1.3 This procedures requirements apply to all AECOM Americas employees and operations. Any jurisdictional requirements exceeding those identified in this procedure shall be met when conduction work in the given jurisdiction.

2.0 Terms and Definitions

2.1 **Blood** – Human whole blood; human blood components such as plasma or platelets; and human blood products such as clotting factors.

2.2 **Bloodborne Pathogens (BBP)** – Pathogenic microorganisms that are present in human blood and that can infect and cause disease in persons who are exposed to blood containing these pathogens including but not limited to hepatitis B virus (HBV), human immunodeficiency virus (HIV), hepatitis C, malaria, syphilis, babesiosis, brucellosis, leptospirosis, arboviral infections, relapsing fever, human T-lymphotrophic virus Type I, and viral hemorrhagic fever (Ebola).

2.3 **Exposure Control Plan** *(S3AM-111-ATT1)* – A plan that addresses the requirements applicable to specific AECOM projects and activities designed to eliminate or minimize employee exposure. The Exposure Control Plan shall be incorporated into the location specific SH&E Plan and shall be accessible to all employees. The Exposure Control Plan shall include:

- Exposure determination.
- The schedule and method of implementation for:
  - Methods of compliance;
  - Hepatitis B Vaccination;
  - Post exposure Evaluation;
  - Communications of Hazards to employees; and
  - Record Keeping.
- Documentation methods for exposure incidents, to include:
  - Routes of exposure; and
  - The circumstances for which and exposure incident occurred.

Note: In the State of California this plan shall also address exposures to airborne pathogens.

2.4 **SH&E Plan** – A document prepared for a specific project or program that details the hazards, precautions, emergency planning, medical, and training requirements for that project or program.

2.5 **Occupational Exposure (Exposed) –** Reasonably anticipated skin, eye mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties. Employees will be considered to be potentially exposed, even though they are using the universal precautions specified for the project or program.

2.6 **Other Potentially Infectious Materials (OPIM)** – Body fluids and tissues including: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid, saliva, and any other body fluid that is visibly contaminated with blood. When it is difficult or impossible to differentiate between body fluids, all body fluids should be treated as if they are potentially infectious.

Note: In the State of California airborne pathogens are also considered infectious materials.

2.7 **Regulated Waste** – (1) liquid or semi-liquid blood or other potentially infectious materials; (2) contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; (3) items that are caked with dried blood or other potentially infectious materials and are capable of being released during handling; (4) objects contaminated with blood that can pierce the skin; and (5) pathological and microbiological wastes containing blood or other potentially infectious materials.

2.8 **Source Individual** – An individual, typically one who has been injured, whose blood or saliva has come in contact with another individual, typically one who has rendered first aid or Cardio Pulmonary Resuscitation (CPR) to the injured party.

2.9 **Universal Precautions** – All body fluids and materials potentially contaminated by body fluids will be considered to be infectious unless the fluids were from the person performing the clean up or decontamination activities. All employees coming in contact with another person's body fluids shall assume that the fluids are infectious and shall wear prescribed Personal Protective Equipment.

3.0 References

3.1 S3AM-003-PR1 SH&E Training

3.2 S3AM-004-PR1 Incident Reporting, Notifications & Investigation

3.3 S3AM-017-PR1 Injury & Illness Recordkeeping

3.4 S3AM-128-PR1 Medical Screening & Surveillance

3.5 S3AM-208-PR1 Personal Protective Equipment

3.6 S3AM-209-PR1 Risk Assessment & Management

4.0 Procedure

4.1 Roles and Responsibilities

4.1.1 **Occupational Health Manager**

- Will review and maintain all medical records generated as a result of post-exposure follow-up and maintain all medical records related to the follow-up.
- Will, where appropriate, consult with AECOM's local medical providers about follow-up recommendations.

4.1.2 **SH&E Manager**

- Will review project / program-specific Exposure Control Plans (normally part of the SH&E Plan) prior to the initial mobilization, at least annually for continuing projects or programs, and whenever necessary to reflect modified tasks or procedures that affect occupational exposure to bloodborne pathogens.
- Will consult with the Occupational Health Manager regarding all bloodborne pathogens exposure incidents.
- Will maintain training records and post-exposure follow-up information.
- Will confirm that site-specific training is conducted for all employees working at sites where regulated wastes were disposed or for employees who may be occupationally exposed while working at a facility that handles regulated wastes.

- Will confirm the Hepatitis B vaccine is made available to all employees with a potential occupational exposure (e.g. paramedic, medical laboratory employee, etc.).
- Will review all incident reports and arrange for post-exposure follow-up with AECOM's local medical provider.
- Will offer recommendations on how to prevent an incident from recurring.

4.1.3 **Manager**

- See that all recommendations made by the SH&E Manager are implemented.
- Support the SH&E Manager in their efforts to prevent occupational and non-occupational exposures to bloodborne pathogens.

4.1.4 **Employee**

- Use all PPE and universal precautions required to prevent exposure to infectious materials.
- Follow the exposure control methods outlined in their Exposure Control Plan.
- Report potential exposure incidents to their Supervisor or Manager immediately.

4.2 Potential Exposure Situations

4.2.1 There are a few activities within AECOM where potential occupational exposures to blood or other potentially infectious materials are of concern. These activities may include:

- Investigations of properties that received regulated wastes.
- Site visits or audits at Treatment Storage and Disposal facilities where medical waste is handled.
- Site visits or audits at medical or health care facilities.
- The provision of first-aid or cardiopulmonary resuscitation (CPR) to AECOM, subcontractor, or client personnel (if the action is part of the employee's occupations duties [e.g. paramedic] and not provided as a voluntary action).

4.2.2 Although AECOM does offer first-aid and CPR training to its employees on a regular basis, providing such aid is often on a voluntary basis and not directed by AECOM. As such, potential exposures may not be considered occupational exposures within the context of the OSHA Bloodborne Pathogens Standard. Site-specific Exposure Control Plans shall differentiate voluntary first-aid duties from occupational exposures as a component of the exposure determination. Refer to *S3AM-209-PR1 Risk Assessment & Management.*

4.3 Unforeseen Exposure Situations

4.3.1 Occasionally, potentially infectious material is encountered during a activity where none was expected; when this happens, the work shall be stopped, employee training conducted, and an exposure control plan prepared prior to resuming activities with potential exposures.

4.4 Employee Training

4.4.1 All personnel who will work on projects or programs which involve potential contact with regulated wastes will be required to attend a training class prior to the start of the project or program and annually for continuing projects or programs. Refer to *S3AM-003-PR1 SH&E Training.* The specific requirements and provisions of the written Exposure Control Plan shall be provided to each AECOM Employee and subcontractor assigned to work at the program / project.

4.4.2 Either of the following two sources of employee training will be used by AECOM to educate Employees on the hazards of exposure to bloodborne pathogens:

- The local chapter of the American Red Cross or other recognized training provider.
- AECOM's in-house training program.

4.4.3 Training sessions will review the following:

- Requirements of OSHA's Bloodborne Pathogens Standard or equivalent, applicable jurisdictional requirements.
- Review of AECOM's Bloodborne Pathogen Procedure (this document).
- Situations within AECOM that may involve exposure to bloodborne pathogens.
- Bloodborne diseases and symptoms of disease.
- Means of transmission.
- Work practice controls to reduce risk.
- Use of personal protective equipment to reduce risk.
- Incident reporting.
- AECOM's Post-Exposure Medical Follow-Up Procedures:

4.4.4 When contracting for CPR and first-aid training sessions, AECOM will request that each session include a section on the hazards associated with exposure to bloodborne pathogens and protective measures that shall be followed when administering first aid, CPR, or other emergency medical care. At the end of the session, Employees will be provided with a copy of this procedure. This procedure will be reviewed and a question-and-answer session will be conducted at the end of the presentation.

4.4.5 If the training provider cannot provide such training, AECOM will conduct a Blood Borne Pathogen training session prior to the start of the first aid or CPR class.

4.4.6 AECOM has and will have little control over employees who have not received AECOM provided first aid or CPR training, but who choose to perform Good Samaritan acts. Any Employee who does perform a Good Samaritan act that results in exposure to blood or other potentially infectious materials will, however, be provided with post-exposure medical follow-up as described in this procedure.

4.5 Personal Protective Equipment

4.5.1 All body fluids and materials potentially contaminated by body fluids will be considered to be infectious. All Employees coming in contact with another person’s body fluids shall assume that the fluids are infectious and shall wear prescribed personal protective equipment (PPE), refer to *S3AM-208-PR1 Personal Protective Equipment*.

4.5.2 The use of PPE to prevent exposure is more appropriate for the types of occupational and non-occupational exposures Employees might encounter than is the use of engineering or work practice controls that are more effectively instituted in medical care or laboratory facilities where employees are actually handling blood and other potentially infectious materials.

4.5.3 PPE such as Tyvek coveralls, shoe covers, and gloves will be provided to all field team members involved in site activities where regulated wastes may be present. Site-specific PPE requirements will be identified in the written Exposure Control Plan. The same type of PPE will also be available, if it is deemed necessary, for Employees involved with activities at TSD facilities that handle regulated wastes.

4.5.4 PPE will be provided to affected Employees at no cost.

4.6 Universal Precautions Kits

4.6.1 In those work areas where there is the potential for exposure to infectious materials, a universal precaution kit shall be readily available. The kit shall permit the clean-up, neutralization, transportation, and disposal of up to 1 litre of blood or body fluids. The kit shall contain the following items at a minimum:

- Safety shield/mask combination
- Liquid proof apron
- Medical-grade vinyl/nitrile gloves
- Liquid solidifier/deodorizer
- Pickup scoop with scraper
- Red biohazard waste bag with tie
- Germicidal solution with dry wipe
- Antimicrobial hand wipe
- ID tag
- Instructions for use

4.7 Personal Hygiene

4.7.1 Special provisions will be made so that hand washing facilities are available on-site for sites that are known to be contaminated with regulated wastes. Alcohol wipes will be available in the event that hand washing facilities are not immediately available.

4.7.2 To reduce the potential for infection, if skin contact with blood or other potentially infectious materials occurs, the exposed area should be washed with non-abrasive soap and water as soon as possible. Hand washing will also help to prevent the transfer of contamination from the hands to other areas of the body or other surfaces that may be contacted later. Even when protective gloves are worn, hands should be washed with non-abrasive soap and running water as soon as possible after the gloves are removed.

4.7.3 The use of an alcohol wipes should not be relied upon as the primary means of personal hygiene. Hands should be thoroughly washed with soap and running water as soon as possible.

4.7.4 If mucous membranes, such as the eyes, come in direct contact with blood or other potentially infectious materials, the area should be washed or flushed with water as soon as possible and reported immediately.

4.8 Reporting Exposure Incidents

4.8.1 All incidents in which an employee has been exposed to blood or other potentially infectious materials shall be reported to the employee's Supervisor and to the SH&E Manager immediately. An IndustrySafe on-line report shall be completed in accordance with *S3AM-004-PR1 Incident Reporting, Notifications & Investigation*. After reviewing the report, the SH&E Manager will provide recommendations, when appropriate, for preventing recurrence of the incident.

4.9 Medical Follow-Up to Exposure Incidents

4.9.1 Once notified, the SH&E Manager will in turn discuss the incident with AECOM's Occupational Health Manager and/or medical provider and make arrangements for an evaluation, refer to *S3AM-128-PR1 Medical Screening & Surveillance*. Prompt medical attention is important in the event of an exposure incident. If the incident occurs in the field, the Employee will either be asked to visit the local hospital or, if he/she chooses, return immediately to the office to visit AECOM's local medical provider.

4.9.2 An attempt will be made to test the affected employee, and if applicable, the source individual's blood, for bloodborne pathogens. No testing will be performed without the written consent of the exposed Employee or the source individual. If initially, the exposed Employee or the source individual does not consent to HIV serological testing, but does consent to HBV serological testing, AECOM will make provisions with the local medical provider to preserve the blood sample for at least 90 days in the event that after counselling efforts, the Employee voluntarily consents to HIV testing.

4.9.3 AECOM will rely on the professional judgment of its Occupational Health Manager and/or local medical providers in the event of an exposure incident. Evaluations and follow-up procedures will be provided according to the recommendations of the United States Public Health Service (USPHS), World Health Organization, or other Public Health organization in Canada and other countries in the Americas current at the time these evaluations and procedures take place. Minimally, a post-exposure evaluation and follow-up will include the following elements:

- Documentation of the route(s) of exposure
- Circumstances under which the exposure incident occurred
- Identification and documentation of the source individual in the case of first aid or emergency medical treatments
- Collection and testing of source individuals and exposed employee's blood for HBV and HIV serological status as soon as feasible and upon consent
- Post-exposure vaccination when medically indicated, as recommended by the USPHS
- Counselling, if necessary
- Evaluation of reported illnesses

4.9.4 Any and all follow-up recommendations offered by the physician will be immediately instituted by the SH&E Manager with the guidance of the Occupational Health Manager and/or the local medical provider and at no cost to the affected Employee. Repeat testing, counselling, and follow-up, if recommended, will also be provided at no cost to the Employee. AECOM will rely on the Occupational Health Manager and/or the local medical provider to provide counselling to Employees concerning infection status, including results of and interpretation of medical tests and advising the Employee about the protection of personal contacts.

4.9.5 All medical providers shall submit to AECOM's Occupational Health Manager and the affected Employee a written opinion of the post-exposure evaluation within 15 days of the completion of the evaluation.

4.9.6 All medical records generated as a result of the post-exposure evaluation will be retained in the office of the Occupational Health Manager, and as applicable AECOM's medical services provider, under lock and key and will be maintained with the strictest confidentiality. Refer to *S3AM-017-PR1 Injury & Illness Recordkeeping.*

4.10 Hepatitis Vaccination

4.10.1 Prior to performing site visits or field investigations where regulated wastes are stored, processed, or known to have been disposed of, AECOM will consult with the Occupational Health Manager and/or the local medical providers to determine if a hepatitis A or B vaccination is appropriate given the site conditions and the proposed scope of work. Where possible the first Hepatitis B vaccinations will be given prior to working at sites with known, potential occupational exposures.

4.10.2 Although AECOM does offer first-aid and CPR training to its Employees on a regular basis, providing such aid is often voluntary and not as a specified job duty of an Employee. As such, potential exposures may not be considered occupational within the context of the government Bloodborne Pathogens Standard. Pre-exposure hepatitis vaccinations will not typically be offered for voluntary roles.

4.10.3 Post-exposure hepatitis vaccination will be offered to Employees involved in an exposure incident within 24 hours of possible exposure.

4.10.4 The vaccinations discussed above shall be provided to Employees at no cost if required by the exposure determination.

4.11 Housekeeping

4.11.1 Other than through the provision of first aid or CPR, there is no potential for occupational exposure to blood or other potentially infectious materials within any of the AECOM offices. Therefore, the housekeeping requirements and requirements for warning signs and labels contained in the OSHA Bloodborne Pathogens standard are not applicable to our office operations.

4.11.2 When working at a site where regulated wastes have been disposed of, the specific housekeeping and warning sign requirements will be prescribed by the client and/or in the site-specific HASP.

4.11.3 When working at a client's facility, AECOM will review the facilities plan for compliance with all the requirements of the Bloodborne Pathogens Standard and will observe all housekeeping requirements, wear required PPE, and acknowledge all warning signs and labels as specified in the client's plan. If the client does not have an effective plan, AECOM will prepare a plan as part of the written Exposure Control Plan.

4.12 Regulated Waste Generated by AECOM

4.12.1 Any regulated waste generated by AECOM as a result of first aid activities or clean-up of potentially infectious material will be collected in sealed, watertight containers and disposed of according to the Host Employer's BBP program or disposed of through a permitted regulated waste facility.

4.12.2 Disposal manifests shall be maintained in accordance with local or governmental regulations.

4.13 Material Decontamination

4.13.1 Any areas or equipment that are contaminated by potentially infectious material will be decontaminated using a 10% solution of household bleach. Utilize appropriate personal protective equipment to control exposure to the bleach (e.g. safety goggles, gloves, etc.). Refer to *S3AM-208-PR1 Personal Protective Equipment*.

4.14 Procedure and Plan Review

4.14.1 All Exposure Control Plans for projects or programs extending over one year shall be reviewed annually by the SH&E Manager and affected Employees.

5.0 Records

5.1 Each SH&E Manager will maintain records and provide copies of the records to the Occupational Health Manager, related to bloodborne pathogens in accordance with the provisions of the standard and *S3AM-017-PR1 Injury & Illness Recordkeeping.*

5.2 Records maintained in accordance will include bloodborne pathogens exposure incidents, post-exposure follow-up, vaccination status, and training for all Employees with potential occupational exposure.

5.3 Employee medical and training records required by this procedure shall be provided upon request for examination and copying to the Employee, to anyone having written consent of the subject employee, or to State, Province, or Federal Occupational Safety and Health regulatory agencies.

6.0 Attachments

6.1 S3AM-111-ATT1 Bloodborne Pathogens Exposure Control Plan

6.2 S3AM-111-FM1 Hepatitis B Vaccination Declination

Americas

Bloodborne Pathogens Exposure Control Plan

S3AM-111-ATT1

1.0 Introduction

Employees are at risk for exposure to and possible transmission of infectious diseases each time they are in contact with blood or body fluids. Bloodborne pathogens are microorganisms present in human blood and other body fluids that can cause serious disease in humans and include, but are not limited to Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and Human Immunodeficiency Virus (HIV). Therefore, this exposure control plan (ECP) has been established to ensure that employees are effectively informed concerning potential workplace health hazards, and that protective measures necessary to eliminate or minimize bloodborne exposure incidents are used whenever possible.

2.0 Exposure Determination

2.1 The Medical Screening Evaluation form will be used to evaluate which employees may incur occupational exposure to blood or other potentially infectious materials when performing routine tasks and procedures. Refer to *S3AM- 128-PR1 Medical Screening & Surveillance*. These exposure determinations will be made without regard to the use of personal protective equipment, and regardless of exposure frequency.

2.1.1 The employees in the following job classifications may have occupational exposure to bloodborne pathogens, and are covered by this program:

- Occupational health nurse
- Paramedics
- Registered nurses
- Designated first aid providers (providing first aid identified as part of the employee's occupational duties and not a voluntary action)
- Medical laboratory employees
- Janitorial workers in medical facilities and clinics.

2.1.2 Tasks and procedures that may expose the above employees to bloodborne pathogens include:

- Treating cuts, abrasions, and burns
- Cleaning contaminated environmental surfaces
- Administering cardiopulmonary resuscitation (CPR).

3.0 Exposure Control

3.1 "Universal precautions" are a required method of control to prevent exposure to blood and body fluids. This term refers to the concept that all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, HCV, and other bloodborne pathogens, regardless of the perceived risk status of another individual. Universal precautions apply to blood, other body fluids containing visible blood, semen, and vaginal fluids. Universal precautions do not apply to feces, nasal secretions, saliva, sweat, tears, sputum, urine, and vomitus unless they contain visible blood. Although these fluids have an extremely low or nonexistent risk for bloodborne pathogens, they are a potential source for other infectious diseases, and precautions shall also be followed when these body fluids are present.

3.2 Engineering and Work Practice Controls

3.2.1 The following engineering controls will be in place in all areas of occupational exposure:

- Containers for disposable contaminated sharps shall be puncture-resistant, labeled a biohazard, leak-proof, and have a closable top.

- Containers for storage, transport, or shipment of blood or other potentially infectious materials, regulated waste, and contaminated laundry will be labeled with the biohazard symbol and site address, and have a securely closing lid.
- Engineering controls will be reviewed and maintained on a regular basis to ensure effectiveness.

3.2.2 The following work practice controls (administrative and personal protective equipment) shall be strictly followed to minimize exposure, and isolate or remove bloodborne pathogens from the workplace:

- Accessible handwashing facilities. If soap and running water are not available, an antiseptic hand cleaner in conjunction with clean paper towels or antiseptic towelettes are acceptable temporary alternatives to running water. When this alternative method is used, employees shall wash their hands with soap and running water as soon as feasible.
- Personal protective equipment (PPE) will be provided at no cost to the employee, and will be chosen based on the anticipated exposure to blood. PPE is considered appropriate if it does not permit blood or other potentially infectious materials to reach or pass through clothes, skin, or mucous membranes of the eyes or mouth under normal conditions of use, and for the duration of time the equipment will be used. PPE shall be readily accessible and will be removed prior to leaving the work area.
- Disposable single-use gloves shall be used as a protective barrier in all situations in which contact with body fluids is anticipated. Gloves of the correct size will be provided. Disposable gloves will not be washed or disinfected for reuse, and will be replaced between employees, and if they become torn or punctured. Gloves are especially important if the employee has cuts, abraded skin, chapped hands, or dermatitis.
- Liquid-impermeable gowns, boots, and masks, in combination with eye-protective devices such as goggles and shatterproof glasses with solid-side shields or chin-length face shields, shall be worn whenever splashing, spraying, or spattering of blood droplets or body fluids can be reasonably anticipated.
- Disposable pocket mask ventilation devices shall be provided in all first aid kits and used to avoid mouth-to-mouth contact during emergency cardiopulmonary resuscitation.
- Examples of Recommended PPE (depending on task, more PPE may be needed).

Task	Gloves	Gown	Mask	Goggles
Bleeding control w/ minimal bleeding	Yes	No	No	No
Bleeding control w /spurting blood	Yes	Yes	Yes	Yes
Cardiopulmonary resuscitation	No	No	Yes	No
Decontamination/clean-up	Yes	No	No	No
Medical laboratory activities	Yes	Yes	Yes	Yes

3.2.3 Eating, drinking, smoking, applying cosmetics, and handling of contact lenses is prohibited in work areas where there is a reasonable likelihood of occupational exposure. Food and drink cannot be kept in refrigerators, freezers, shelves, cabinets, or on counter tops where blood or body fluids are present.

3.2.4 Contaminated needles and other sharps shall not be bent or recapped unless a one-handed technique is used. They shall be disposed of in an appropriate sharps container.

3.2.5 All regulated biohazardous waste will be placed in a waste receptacle that has designated red biohazard bags and a closable top controlled by a foot peddle. When full, the bags shall be removed with gloved hands, tied off, and placed in a biohazard shipping carton, to be held for pick-

up. If any biohazard bag appears to be leaking, it shall be double-bagged. The waste will be incinerated per federal, provincial/territorial/state regulations.

3.3 Housekeeping

3.3.1 Universal precautions shall be used when cleaning or decontaminating any surface or equipment that may be contaminated. Appropriate PPE shall be used for protection during decontamination.

3.3.2 All contaminated environmental work surfaces such as countertops or floors will be cleaned according to regulatory requirements or with a household bleach solution diluted 1:10 with water directly following contamination with blood or body fluids.

3.3.3 Instruments such as tweezers, bandage scissors, and thermometers shall be disposable rather than reusable equipment, and shall be disposed of in an appropriate manner.

3.3.4 Broken, contaminated glassware shall not be picked up directly with the hands. It shall be cleaned up using a mechanical means such as a brush and dustpan or tongs.

4.0 Hepatitis B Vaccination

4.1 Within 10 working days of placement, all employees assigned to tasks with potential occupational exposure to bloodborne pathogens shall be offered the Hepatitis B vaccination at no cost to the employee, unless the employee has had a previous Hepatitis B vaccination series, antibody testing reveals the employee is immune, or the vaccine is contraindicated for medical reasons. Further, this vaccination series shall be made immediately available to employees who have an occupational exposure, whether as a result of their assigned tasks, or occurring from an incidental contact.

4.2 The local occupational medical facility used for routine medical surveillance will administer the vaccinations.

4.3 Employees who decline the Hepatitis B vaccine shall sign a copy of the waiver form located at the end of this Work Instruction. The signed waiver will be stored in the employee's medical record with the Occupational Health Manager. Employees may initially decline the vaccination, but may decide to take them at a later date, while still covered under this plan. The vaccinations will be made available to the employee at that time.

4.4 Employees choosing to take the vaccination series will sign a consent form at the occupational clinic prior to receiving the injections, and are advised to read the package insert regarding the efficacy, safety, method of administration, and benefits of the vaccine. Employees may also ask questions directly of the Medical Service Provider or local occupational physician. Employees are not required to participate in a prescreening program (to determine immunity) before receiving the vaccinations. If a routine booster of Hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) will be made available to affected employees.

5.0 Post-Exposure Incident Evaluation And Follow-Up

5.1 All occupational bloodborne pathogen exposures shall be reported to the HSE representative and Occupational Health Manager immediately after initial decontamination first aid is accomplished. Following the report of an exposure incident, a confidential medical evaluation with an occupational physician will be arranged as soon as possible, ideally no later than 1 to 2 hours after the incident has occurred. In some jurisdictions, depending on applicable workers' compensation law, employees may choose treatment from their personal physician. A copy of the OSHA Bloodborne Pathogen Standard, if applicable to the jurisdiction, will be provided if the physician does not have a copy. A written incident report shall be completed as soon as possible, fully describing the incident.

5.2 First aid protocol for treatment immediately after an exposure incident:

5.2.1 Lacerations, punctures, and abrasions should be washed under cool running water for at least 5 minutes, allowing free bleeding. Cleanse area well with soap or iodine solution. Apply sterile dressing as needed. Give tetanus booster if indicated (7 to10 years since last booster).

5.2.2 Ocular exposure requires irrigation of the eye with water or sterile normal saline solution for 15 minutes.

5.2.3 Mucous membrane exposure requires rinsing mouth with ½ strength 3 percent hydrogen peroxide for 30 seconds, four separate and consecutive times.

5.3 Confidential Medical Evaluation

5.3.1 The treating occupational physician will receive documentation of the routes of exposure, the circumstances surrounding the incident, and identification of the source individual (the individual the employee was exposed to). The blood of the source individual will be tested if possible, and after consent is obtained. When legally permissible, results of the source individual's tests will be made available to the exposed employee, with the exposed employee informed about the applicable laws and regulations concerning the disclosure of the identity and infectivity of the source individual.

5.3.2 Testing of the exposed employee's blood, if consented to (the employee may consent to baseline blood collection, but may request that the sample not be tested for HIV for up to 90 days, if at all), is recommended.

5.3.3 Post-exposure medical treatment will be offered in accordance with the current recommendations of the U.S. Public Health Services. This may include, but is not limited to:

- A series of HIV post-exposure blood tests
- Hepatitis B vaccination and/or Hepatitis B immune globulin
- HIV post-exposure prophylactic medications
- Evaluation of acute febrile illnesses following exposure
- Employee counseling concerning precautions to take during the period after the exposure incident, and information on signs and symptoms of potential illnesses.

5.4 Healthcare Professional's Written Opinion

5.4.1 The Occupational Health Manager shall obtain and provide the employee with a copy of the evaluating physician's written opinion within 15 days of the completion of the medical evaluation. A copy will be maintained in the employee's confidential medical record. The written opinion shall be in accordance with the requirements of the OSHA Bloodborne Pathogens Standard indicating that the employee has been informed of any medical conditions resulting from exposure that require further evaluation or treatment. All other findings or diagnoses shall remain confidential and will not be included in the report.

6.0 Hazard Communication

6.1 Fluorescent red or orange-red warning labels bearing the universal biohazard symbol and the legend BIOHAZARD shall be firmly affixed to all containers (e.g., waste cans, sharps containers, and refrigerators) used for the storage or shipment of blood or other potentially infectious materials.

6.2 All employees designated to perform tasks involving occupational exposure shall receive bloodborne pathogens training at the time of initial assignment to the job. This training will be given during working hours and at no cost to employees. Refresher courses will be provided annually (within 1 year of previous training), and if new tasks or procedures are implemented. Material appropriate in content and vocabulary to education level, literacy, and language of the employees shall be used for all required training.

6.3 Training will include: making accessible a copy of the regulatory text of the standard and explanation of its contents, general discussion on bloodborne diseases and their transmission, exposure control plan, engineering and work practice controls, personal protective equipment, Hepatitis B vaccine, response to emergencies involving blood, how to handle exposure incidents, the post-exposure evaluation and follow-up program, signs/labels/color-coding, and question and answer time with the trainer.

7.0 Exposure Incident Investigation

7.1 The SH&E Manager will review the circumstances of any exposure incident to determine corrective actions. The incident report will include:

7.1.1 Engineering controls in use at the time

7.1.2 Work practices followed

7.1.3 A description of any equipment being used

7.1.4 A description of the work being performed

7.1.5 PPE that was used at the time of the incident

7.1.6 Date, time, and location of the incident

7.1.7 Employee's training.

7.2 An incident report shall be completed within four hours of the incident and entered into AECOM's on-line incident reporting system (e.g., IndustrySafe) in accordance with *S3AM-004-PR1 Incident Reporting, Notifications & Investigations*. A copy of this incident report will be forwarded to the Occupational Health Manager, who will evaluate what follow-up actions should be addressed, including if revisions need to be made to the Exposure Control Plan.

8.0 Recordkeeping

8.1 The Occupational Health Manager will be responsible for establishing and maintaining accurate, confidential workers' compensation medical records for each employee with occupational exposure for the duration of employment plus 30 years, in accordance with OSHA 29 CFR 1910.1020 – Access to Employee Exposure and Medical Records.

8.2 The SH&E Manager will be responsible for maintaining the bloodborne pathogens training class records for at least 3 years from the date of training. The records will include the date of the training class, a summary of the class contents, the names of the qualified instructors, and the names and job titles of personnel attending the training.

8.3 Employee medical records shall be made available to employees (or their designated representative) with written consent by the employee within 15 working days of request.

8.4 An exposure incident will be evaluated by the Occupational Health Manager and SH&E Manager to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904).

Americas

Hepatitis B Vaccination Declination

S3AM-111-FM1

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring Hepatitis B virus (HBV) infection.

I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself; however, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease.

If, in the future, I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with the Hepatitis B vaccine, I can receive the vaccine series at no cost to me.

Name: _____

Date: _____

Witness: _____

Date: _____

Americas

Cold Stress

S3AM-112-PR1

1.0 Purpose and Scope

1.1 To protect employees from the severest effects of cold stress (hypothermia) and cold injury and to identify exposures to cold working conditions under which it is believed nearly all employees can be repeatedly exposed without adverse health effects.

1.2 This procedure applies to all AECOM Americas based employees and operations working outdoors in damp and cool (below 50 degrees Fahrenheit [°F] or 10 degrees Celsius [°C]) conditions or anytime temperatures are below 32°F or 0°C.

2.0 Terms and Definitions

2.1 **Cold Stress** – The production of physiological effects due to cold temperatures and\or wind chill.

2.2 **Equivalent Chill Temperature (ECT)** – Also known as Wind Chill (see below).

2.3 **Frostnip** – Superficial cooling of tissues without cellular destruction.

2.4 **Frostbite –** Freezing of tissue, resulting in tissue destruction.

2.5 **Hypothermia –** Condition of reduced core body temperature to 95^{o}F (35^{o}C) resulting in loss of dexterity, loss of mental alertness, collapse, and possible death.

2.6 **Wind Chill –** The combined effect of air temperature and wind. Also expressed as "equivalent chill temperature" (ECT), wind chill is defined as heat loss resulting from the effects of air temperature and wind velocity upon exposed skin.

3.0 References

3.1 S3AM-003-PR1 SH&E Training

3.2 S3AM-128-PR1 Medical Screening & Surveillance Program

3.3 S3AM-208-PR1 Personal Protective Equipment

3.4 S3AM-314-PR1 Working Alone

3.5 S3AM-315-PR1 Working On or Near Water

3.6 S3AM-333-PR1 Marine Safety & Vessel Operations

4.0 Procedure

4.1 Roles and Responsibilities

4.1.1 **Manager**

- Ensuring the safety of employees on their project sites, consistent with regulatory standards.
- Implement cold stress prevention measures as applicable at each work site.
- Develop/coordinate a work-warning regimen, as applicable.
- Confirm cold stress hazard assessments/evaluations were completed for the planned activities.
- Assign employees physically capable of performing the assigned tasks. Consider acclimation to cold weather when evaluating employee capability.
- Confirm employees are properly trained to recognize the symptoms of cold stress.

4.1.2 **Safety, Health and Environment (SH&E) Manager**

- Conduct/support cold stress assessments/evaluations.
- Conduct/support incident investigations related to potential cold stress-related illnesses.
- Assist project teams develop appropriate work-warming regimens.
- Provide cold stress awareness training.

4.1.3 **Supervisor**

- Identify the tasks that may be most impacted by cold stress and communicate the hazard to the assigned employees.
- Confirm that employees have been trained on the recognition of cold stress-related illnesses.
- Confirm that adequate supplies of warm fluids/drinks are readily available to employees.
- Confirm that a warm/sheltered rest area is available, as applicable.
- Conduct cold stress monitoring, as applicable.
- Implement the work-warming regimen.
- Confirm that first aid measures are implemented once cold stress symptoms are identified.
- Confirm that employees are physically capable of performing the assigned tasks and are not in a physically compromised condition.

4.1.4 **Employee**

- Observe each other for the early symptoms of cold stress-related illnesses.
- Maintain an adequate intake of available fluids.
- Report to work in a properly rested condition.
- Report all suspected cold stress-related illnesses.

4.2 Requirements

4.2.1 Carefully plan work anticipated to be performed in cool or cold conditions. If possible, heavy work should be scheduled during the warmer parts of the day or when the wind is most calm. Include costs in project budgets for specialized equipment and supplies needed to complete the field activities.

4.2.2 Staff working in extreme cold (wind chill or ECT below 10^{o}F or -12^{o}C) shall not work alone. The Buddy System shall be utilized to keep an eye on each other and to watch for signs of cold stress. Refer to *S3AM-314-PR1 Working Alone*. Watch for symptoms and signs of hypothermia

4.2.3 Monitor weather forecasts and weather conditions such as ambient temperature, wind speed, and precipitation. Use observations prior to entering and while in the field to ensure appropriate protections are in place:

- If possible, move the work to a warm location.
- If possible and as applicable, erect shelters or screens around the work area.
- If possible, heat the work area.
- If possible, adjust schedule according to the cold conditions, work level and worker acclimatization.
- Implement a work-warming regimen by taking breaks out of the cold. As applicable, consult *S3AM-112 ATT1 Temperature Thresholds* to determine wind chill and work-warming schedule.
- Take frequent short breaks in warm dry shelters to allow your body to warm up. Limit time of exposure to the cold. If shelter is not readily available, consider supplying temporary shelters.

- Provide assistance to prevent body heat loss, such as:
    - Providing appropriate sources of heat (e.g. warm packs, portable heaters, etc.).
    - Use of insulating materials on equipment handles when temperatures drop below 30°F (-1°C).

4.2.4 All staff working in extreme cold or snow conditions should understand the following guidelines for preventing and detecting hypothermia and frostbite; refer to *S3AM-112-ATT2 Symptoms & Treatment*:

- Ensure appropriate PPE requirements are established and adhered to.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Because prolonged exposure to cold air or to immersion in cold water at temperatures even well above freezing can lead to dangerous hypothermia, whole-body protection shall be used.
- Eat high calorie snacks to help maintain body metabolism.
- Confirm extra blankets or sleeping bags are on-site.
- Drink plenty of warm liquids. It is easy to become dehydrated in cold weather.
- Avoid caffeine and alcohol, which can act as diuretics. Alcohol consumption, depending upon quantity, can dilate blood vessels enhancing body heat loss or constrict blood vessels decreasing heat delivery to extremities.
- NEVER IGNORE SHIVERING. Persistent or violent shivering is a clear warning that you are on the verge of hypothermia.
- If you experience frost bite or hypothermia, find shelter and warmth and contact a medical practitioner if symptoms persist, refer to *S3AM-128-PR1 Medical Screening & Surveillance*.

4.3 Training

Before they begin work in a cold environment, employees that might be exposed to cold stress will be informed of the potential for cold stress and how to prevent cold stress. Employees that have not had the training within the twelve prior months shall repeat the training before exposure to cold stress, refer to *S3AM-003-PR1 SH&E Training*. Employees potentially exposed to cold stress will receive training including, but not limited to:

4.3.1 Sources of cold stress, the influence of protective clothing, and the importance of acclimatization.

4.3.2 How the body loses heat.

4.3.3 Recognition of cold-related illness symptoms.

4.3.4 Cold stress preventative/corrective measures including, but not limited to:

- Weather monitoring.
- Proper eating and drinking practices.
- Work-warming schedules and proper re-warming techniques.
- Buddy system.
- Safe cold work practices appropriate to the work that is to be performed.
- Proper use of cold environment personal protective clothing.

4.3.5 The harmful effects of excessive alcohol consumption in a cold stress environment.

4.3.6 The hazards associated with unstable snow or ice build ups.

4.3.7 First aid procedures for symptoms related to cold stress.

4.4 Personal Protective Equipment (PPE)

Wearing the right clothing is crucial to avoiding cold stress. The type of fabric also makes a difference. Cotton loses its insulation value when it becomes wet. Wool, on the other hand, retains its insulation even when wet. Adequate insulating dry clothing will be required in air or wind chill temperatures below 40 °F (4.4°C)

All PPE will comply with the requirements of *S3AM-208-PR1 Personal Protective Equipment* and consider the following requirements:

4.4.1 Wear at least 3 layers of clothing to help prevent cold stress. It is important to preserve the air space between the body and the outer layer of clothing to retain body heat.

- Wear a middle layer of down, wool, or similar materials to provide insulation.
- Avoid cotton, especially blue jeans.
- Wear an outer layer to break the wind and allow some ventilation (e.g., Gortex® or nylon)
- Do not wear tight clothing. Loose clothing allows better ventilation.

4.4.2 Wear proper clothing, including head coverings and gloves or mittens for cold, wet, and windy conditions.

4.4.3 Wear a hat or hardhat liner. Up to 40 percent of body heat can be lost when the head is left exposed.

4.4.4 Use insulated footwear with adequate traction to prevent slips and falls.

4.4.5 Wear insulated boots or other insulated footwear, and insulated gloves to help reduce the chance of frostbite.

4.4.6 Keep a change of dry clothing available in case work clothes become wet.

4.4.7 Eye and face protection for employees employed outdoors in a snow and/or ice-covered terrain should be supplied.

- Sunglasses (with UVA and UVB protection) and sunscreen should be used when there is a persistent combination of snow and direct sun.
- Special safety goggles to protect against blowing ice crystals and ultraviolet light and glare (which can produce temporary conjunctivitis and/or temporary loss of vision) should be required when there is an expanse of snow coverage causing a potential eye exposure hazard.
- Ensure face guards are used to protect skin in cold, windy conditions, including riding on an unshielded vehicle.

4.5 General Cold Stress Prevention Measures

4.5.1 In order to prevent hypothermia:

- Wear appropriate clothing and PPE as determined by the weather conditions.
- When active, ventilate excess heat by opening or removing outer layers of clothing to avoid sweating.
    - Start with the mitten or gloves, unless protection from ice, snow, or cold metal surfaces is needed.
    - Next remove head gear and neck wrappings.
    - Then coats/parkas should be opened at the waist and sleeves.
    - Finally, layers of clothing should be taken off.
    - When resting or tired, or colder conditions are encountered, add additional layers of clothing/ close outer layers in the reverse of the above order, or get out of the cold. Have a sweet drink but do not indulge in heavy eating.

- Garments worn to keep out rain and spray should also allow water vapor to escape.
- Take advantage of heat from the sun and stay out of the wind as much as possible.
- Have available emergency shelter providing protection from wind and rain and insulation from the ground.
- Replace wet clothing. If wet clothing cannot be replaced, then cover it with a layer of non-breathing material to prevent evaporation. Place an insulation layer over this non-breathing material.
- Get adequate rest; conserve energy.
- Get adequate nutrition to replenish energy stores; rest after meals.
- Drink adequate fluids to avoid dehydration.
- If any project / location staff member shows signs of hypothermia, stop and treat him/her.

4.5.2 In order to prevent frost bite:

- Dress to prevent hypothermia and protect the feet and hands.
- Avoid obstruction of circulation by, for example, tight boots or tightly fitting clothing.
- Avoid nicotine (particularly cigarettes) and do not consume alcohol.
- Keep ears and nose covered and out of the wind.
- Frostbite of the corneas of the eyes can be prevented by protective goggles.
- Adopt a “buddy system” of constantly watching the faces of others in the party for white skin tissue, which is evidence of frostbite (frostnip).
- Practice constant personal vigilance for signs of trouble in one’s own fingers and toes; when in doubt, investigate thoroughly before it is too late.

4.5.3 Adequate, insulating dry clothing that will help maintain core temperatures above 96.8°F (37°C) shall be provided to employees if work is performed in air temperatures below 40°F (4.4°C). Wind chill cooling rate and the cooling power of air are critical factors. The higher the wind speed and the lower the temperature in the work area, the greater the insulation value of the protective clothing required.

4.5.4 An Equivalent Chill Temperature (ECT) chart relating the actual dry bulb air temperature and the wind velocity is presented in *S3AM-112-ATT1 Temperature Thresholds*. Unless unusual or extenuating circumstances exist, cold injury to other than hands, feet, and head is not likely to occur without the development of the initial signs of hypothermia. Superficial or deep local tissue freezing will occur only at temperatures below 32°F (0°C) regardless of wind speed. However, older employees, those with circulatory problems and those with previous cold injuries require special precautionary protection against cold injury. The use of extra insulating clothing and/or a reduction in the duration of the exposure period are among the special precautions that should be considered.

4.5.5 Continuous exposure of skin should not be permitted when the air speed and temperature results in an ECT of –25°F (-32°C) or below.

4.5.6 At air temperatures of 40°F (4.4°C) or less, it is imperative that employees who become immersed in water or whose clothing becomes wet be immediately removed from the cold environment, provided a change of clothing, and be treated for hypothermia.

4.5.7 If the air velocity at the job site is increased by wind, draft, or artificial ventilating equipment, the cooling effect of the wind should be reduced by shielding the work area or by wearing an easily removable windbreak garment.

4.5.8 Adequate protection, such as general ventilation, shall be incorporated into any warming shelter design to prevent carbon monoxide poisoning.

4.5.9 Operation of internal combustion or similar devices within warming shelters is prohibited.

4.5.10 If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work should be modified or suspended until adequate clothing is made available or until weather conditions improve.

4.5.11 Walking and working surfaces shall be cleared of ice and snow to prevent slips and falls.

4.5.12 Confirm that employees carry fire starter materials if working in remote areas.

4.5.13 Supplies such as PPE, fuels, enclosures, de-icing, traction aids, warm drinks, and batteries will be specified by the SH&E Manager and/or the Manager and made available. These supplies will be inspected at least weekly during cold weather projects and replaced when necessary.

4.6 Cold Stress Prevention Measures for the Hands

4.6.1 Special protection of the hands is required to maintain manual dexterity for the prevention of accidents including, but not limited to the following:

- If fine work is to be performed with bare hands for more than 10 to 20 minutes in an environment below 60^{o}F (15^{o}C), special provisions should be established for keeping the employees' hands warm. For this purpose, warm air jets, radiant heaters (fuel burner or electric radiator), or contact warm plates may be utilized. Metal handles of tools and control bars should be covered by thermal insulating material at temperatures below 30^{o}F (-1^{o} C).
- If the air temperature falls below 60^{o}F (15^{o}C) for sedentary work, 40^{o}F (4.4^{o} C) for light work, or 20^{o}F (-6^{o}C) for moderate work, and fine manual dexterity is not required, employees should use gloves.

4.6.2 To prevent contact frostbite, employees should wear anti-contact gloves:

- When cold surfaces below 20°F (-6°C) are within reach, each employee should be warned to prevent inadvertent contact by bare skin.
- If the air temperature is 0°F (-18°C) or less, employees should protect their hands with mittens or appropriate gloves. Machine controls and tools for use in cold conditions should be designed so that they can be handled without removing the mittens or gloves.
- Ensure an adequate supply of dry gloves is available to replace wet gloves.

4.6.3 Provisions for additional total body protection are required if work is performed in an environment at or below 40^{o}F (4.4^{o}C). The employees should wear cold protective clothing appropriate for the level of cold and physical activity.

4.6.4 Additional Cold Stress Prevention Measures:

For work practices at or below 10^{o}F (-12^{o}C) ECT, the following will apply:

- The employee should be under constant protective observation (buddy system or supervision).
- The work rate should not be so high as to cause heavy sweating that will result in wet clothing. If heavy work is being performed, rest periods should be taken in heated shelters and opportunities to change into dry clothing should be provided.
- New employees should not be required to work full time in the cold during the first days of employment until they become acclimated to the working conditions and required protective clothing. Refer to *S3AM-112-ATT1 Temperature Thresholds* for guidance.
- The weight and bulkiness of clothing should be included in estimating the required work performance and weights to be lifted by the employee.
- The work should be arranged in such a way that sitting still or standing still for long periods is minimized. Unprotected metal chair seats should not be used. The employee should be protected from drafts to the greatest extent possible.

4.6.5 Employees handling evaporative liquid (gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F should take special precautions to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling. Special note should be taken of the particularly acute effects of splashes of "cryogenic fluids" or those liquids with a boiling point that is just above ambient temperature.

4.6.6 Trauma sustained in freezing or subzero conditions requires special attention, because an injured employee is predisposed to cold injury. Special provisions should be made to prevent hypothermia and freezing of damaged tissue in addition to providing for first aid treatment.

4.7 Hypothermia in Water

4.7.1 Loss of body heat heat to the water is a major cause of deaths in boating and working near water incidents. Often the cause of death is listed as drowning; however, the primary cause is often hypothermia. It should also be noted that alcohol lowers the body temperature around 2 to 3 degrees by dilating the blood vessels. Do not drink alcohol around cold water. The following table shows the effects of hypothermia in water:

WATER TEMPERATURE		EXHAUSTION	SURVIVAL TIME
32.5°F	(0°C)	Under 15 minutes	Under 15 to 45 minutes
32.5 to 40°F	(0 to 4°C)	15 to 30 minutes	30 to 90 minutes
40 to 50°F	(4 to 10°C)	30 to 60 minutes	1 to 3 hours
50 to 60°F	(10 to 16°C)	1 to 2 hours	1 to 6 hours
60 to 70°F	(16 to 21°C)	2 to 7 hours	2 to 40 hours
70 to 80°F	(21 to 27°C)	3 to 12 hours	3 hours to indefinite
Over 80°F	(27°C)	Indefinite	Indefinite

4.7.2 Some points to remember when water is a potential hazard:

- Wear a personal flotation device when drowning is a potential hazard. Refer to *S3AM-315-PR1 Working On or Near Water*, and *S3AM-333-PR1 Marine Safety & Vessel Operations*.
- If the water is less than 50°F (10°C), wear a wet suit or dry suit for work in water (e.g., wading, or if a significant potential to fall in water exists).
- While in the water, do not attempt to swim unless to reach nearby safety. Unnecessary swimming increases the rate of body heat loss. Keep the head out of the water. This will increase survival time.
- Keep a positive attitude about rescue. This will increase chances of survival.
- If there is more than one person in the water, huddling is recommended to conserve body heat.

4.7.3 If an employee or equipment is to work on ice and the water beneath the ice is or may be more than 3¼ feet (1m) deep at any point:

- Test the ice prior to commencing to ensure it will support the load to be placed on it. Ongoing testing may be necessary.
- If there is any risk of falling through the ice employees must wear personal protective equipment that will ensure buoyancy and protect against hypothermia at all times while on the ice.

4.8 Work-Warming Regimen

4.8.1 If work is performed continuously in the cold at an equivalent chill temperature (ECT) at or below 19°F (–7°C), heated warming shelters (tents, cabins, rest rooms, etc.) should be made available nearby. The employees should be encouraged to use these shelters at regular intervals; the frequency will depend on the severity of the environmental exposure. Refer to *S3AM-112-ATT1 Temperature Thresholds* for guidance.

4.8.2 The onset of heavy shivering, minor frostbite (frostnip), the feeling of excessive fatigue, drowsiness, irritability, or euphoria are indications for immediate return to the shelter.

4.8.3 When entering the heated shelter, the outer layer of clothing should be removed and the remainder of the clothing should be loosened to permit sweat evaporation or a change of dry work clothing provided.

4.8.4 A change of dry work clothing should be provided as necessary to prevent employees from returning to the cold environment with wet clothing.

5.0 Records

5.1 Exposure assessments will be documented in the location's files.

6.0 Attachments

6.1 S3AM-112-ATT1 Temperature Thresholds

6.2 S3AM-112-ATT2 Symptoms & Treatment

Americas

Temperature Thresholds

S3AM-112-ATT1

1.0 Purpose and Scope

1.1 The following Tables 1 and 2 give apparent temperatures (wind chill of equivalent chill temperature [ECT]) for various combinations of wind and air temperature, as well as guidelines to the danger of skin exposure.

Table 1. Wind Chill Chart (C)

Actual Temp (°C)	Wind Speed in km/hour									
	8	16	24	32	40	48	56	64	72	80
	Ambient Temperature (°C)									
0	-2	-8	-11	-14	-16	-17	-18	-19	-19	-20
-5	-7	-14	-18	-21	-23	-25	-26	-27	-28	-28
-10	-12	-20	-25	-28	-31	-33	-34	-35	-36	-36
-15	-18	-26	-32	-35	-38	-40	-42	-43	-43	-44
-20	-23	-32	-38	-43	-46	-48	-50	-51	-52	-52
-25	-28	-38	-45	-50	-53	-56	-57	-59	-59	-60
-30	-33	-45	-52	-57	-61	-63	-65	-67	-67	-68
-35	-39	-51	-59	-64	-68	-71	-73	-75	-75	-76
-40	-44	-57	-65	-71	-75	-79	-81	-83	-83	-84
-45	-49	-63	-72	-78	-83	-86	-89	-90	-91	-92
-50	-54	-69	-79	-85	-90	-94	-96	-98	-99	-100

Note: A. Little Danger: if less than one hour of exposure to dry skin.
B. Danger: Exposed flesh freezes within one minute.
C. Great Danger: Flesh may freeze within 30 seconds.

*Source: *2014 Threshold Limit Values (TLV™) and Biological Exposure Indices (BEI™) booklet; published by ACGIH, Cincinnati, Ohio.*

Table 2. Equivalent Chill Temperature Chart (F)

Estimated Wind Speed (mph)	Actual Temperature Reading (°F)									
	50	40	30	20	10	0	-10	-20	-30	-40
	Equivalent Chill Temperature (°F)									
Calm	50	40	30	20	10	0	-10	-20	-30	-20
5	48	37	27	16	6	-5	-15	-26	-36	-47
10	40	28	16	4	-9	-24	-33	-46	-58	-70
15	36	22	9	-5	18	-32	-45	-58	-72	-85
20	32	18	4	-10	-25	-39	-53	-67	-82	-96
25	30	16	0	-15	-29	-44	-59	-75	-88	-104
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109
35	27	11	-4	-20	35	-51	-67	-82	-98	-113
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116
Wind speeds >40 mph have little additional effect	LITTLE DANGER				INCREASING DANGER			GREAT DANGER		
	Trenchfoot and immersion foot may occur at any point on this chart.									

1.2 How fast a person's body cools in cold weather depends on: air temperature, wind speed, heat of the sun, and work being done.

1.2.1 The following Table 3 provides guidelines for establishing periods of work to warming break periods based on ambient temperature and wind speed for workers wearing dry clothing.

1.2.2 Notes following the Table take into account additional factor such as physical exertion, whether workers are acclimatized, etc.

Table 3. Work-Warming Schedule Guidelines

<table>
<tr><th rowspan="2">Air Temp. (Sunny Sky) °F</th><th colspan="2">No Noticeable Wind</th><th colspan="2">5 mph Wind (8 km/h)</th><th colspan="2">10 mph Wind (16 km/h)</th><th colspan="2">15 mph Wind (24 km/h)</th><th colspan="2">20 mph Wind (32 km/h)</th><th colspan="2">25 mph Wind (40 km/h)</th><th rowspan="2">Air Temp. (Sunny Sky) °C</th></tr>
<tr><th>Max. Work Period</th><th>Breaks</th><th>Max. Work Period</th><th>Breaks</th><th>Max. Work Period</th><th>Breaks</th><th>Max. Work Period</th><th>Breaks</th><th>Max. Work Period</th><th>Breaks</th><th>Max. Work Period</th><th>Breaks</th></tr>
<tr><td>above 5°</td><td colspan="2" rowspan="5">Normal Work Schedule</td><td colspan="2" rowspan="4">Normal Work Schedule</td><td colspan="2" rowspan="3">Normal Work Schedule</td><td colspan="2" rowspan="2">Normal Work Schedule</td><td colspan="2" rowspan="2">Normal Work Schedule</td><td colspan="2">Normal Work Schedule</td><td>above -15°</td></tr>
<tr><td>5° to -1°</td><td colspan="2" rowspan="2">Normal Work Schedule</td><td>100 min</td><td>2</td><td>-15° to -17°</td></tr>
<tr><td>0° to -4°</td><td colspan="2">100 min</td><td>2</td><td>75 min</td><td>2</td><td>-18° to -20°</td></tr>
<tr><td>-5° to -9°</td><td colspan="2" rowspan="2">100 min</td><td>2</td><td>75 min</td><td>2</td><td>55 min</td><td>3</td><td>-21° to -22°</td></tr>
<tr><td>-10° to -14°</td><td colspan="2">100 min</td><td>2</td><td>75 min</td><td>2</td><td>55 min</td><td>3</td><td>40 min</td><td>4</td><td>-23° to -25°</td></tr>
<tr><td>-15° to -19°</td><td>100 min</td><td>2</td><td>75 min</td><td>2</td><td>55 min</td><td>3</td><td>40 min</td><td>4</td><td>30 min</td><td>5</td><td>-26° to -28°</td></tr>
<tr><td>-20° to -24°</td><td>100 min</td><td>2</td><td>75 min</td><td>2</td><td>55 min</td><td>3</td><td>40 min</td><td>4</td><td>30 min</td><td>5</td><td colspan="2" rowspan="6">Cease Work</td><td>-29° to -31°</td></tr>
<tr><td>-25° to -29°</td><td>75 min</td><td>2</td><td>55 min</td><td>3</td><td>40 min</td><td>4</td><td>30 min</td><td>5</td><td colspan="2" rowspan="5">Cease Work</td><td>-32° to -34°</td></tr>
<tr><td>-30° to -34°</td><td>55 min</td><td>3</td><td>40 min</td><td>4</td><td>30 min</td><td>5</td><td colspan="2" rowspan="4">Cease Work</td><td>-35° to -37°</td></tr>
<tr><td>-35° to -39°</td><td>40 min</td><td>4</td><td>30 min</td><td>5</td><td colspan="2" rowspan="3">Cease Work</td><td>-38° to -39°</td></tr>
<tr><td>-40° to -44°</td><td>30 min</td><td>5</td><td colspan="2" rowspan="2">Cease Work</td><td>-40° to -42°</td></tr>
<tr><td>-44° & below</td><td colspan="2">Cease Work</td><td>-43° & below</td></tr>
</table>

Modified from ACGIH 2014 Threshold Limit Values for Chemical Substances and Physical Agents.

Note 1: Schedule describes the maximum continuous duration of work and number of 10-15 minute breaks to be observed during any 4-hour work period and assumes that period will be followed by an extended warm-up period (e.g., lunch). Allowed breaks should be taken in a warm environment.

Note 2: Schedule applies to moderate to heavy work performed by acclimated workers wearing appropriate layered clothing. For light to moderate work apply the schedule for conditions one step lower. For unacclimated workers apply the schedule for conditions two steps lower. These modifications are additive.

Note 3: For work under 25%–50% overcast/clouds, apply the schedule for conditions one step lower. For work at night or under greater than 50% overcast/clouds, apply the schedule for conditions two steps lower. These modifications are additive with any applicable modifications from Note 2.

Note 4: For wind speeds in excess of 25 mph (40 km/h), cease all nonemergency work when temperatures fall below 5^{o}F (-21°C).

Note 5: When the work involves riding on an unshielded vehicle or some other activity that generates wind, the number of breaks should be increases appropriately.

Note 6: If effective protection against the wind can be provided by shields or screens, work modifications or measures, then the work warm-up schedule for “No Noticeable Wind” would apply.

Note 7: If reliable weather reports are not available, use the following as a guide to estimate wind velocity:

- A 5 mph (8 km/h) wind will move a light flag
- A 10 mph (16 km/h) wind will fully extend the flag
- A 15 mph (24 km/h) wind will raise a newspaper sheet
- A 20 mph (32 km/h) wind will produce blowing and drifting snow.

1.0 Cold Stress-related Illnesses

1.1 Frostbite

1.1.1 Frostbite is a localized cold injury characterized by freezing of the tissues with ice crystal formation. There are several degrees of damage. Frostbite can be categorized into:

- **Frost Nip or Initial Frostbite**: (1st degree frostbite) Characterized by blanching or whitening of skin.
- **Superficial Frostbite**: (2nd degree frostbite) Skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient. Blistering and peeling of the frozen skin will follow exposure.
- **Deep Frostbite**: (3rd degree frostbite) Tissues are cold, pale, and solid; extremely serious injury with possible amputation of affected area.

1.1.2 Frostbite injury is almost always limited to the upper and lower extremities (finger and toes) or to such appendages as the ears, nose or cheeks.

1.1.3 Conditions conducive to frostbite include sub-zero temperatures, hypothermia, dehydration, obstruction of the blood supply to the extremities (by constricting clothing, especially on the feet or at the wrists or ankles), contact with cold metal, contact with organic liquids (such as gasoline or solvents that have been left outdoors in sub-zero temperatures), use of substances that cause vasoconstriction (such as smoking tobacco), or other injury or shock.

1.1.4 Frostbite can occur without hypothermia when the extremities do not receive sufficient heat. Frostbite occurs when there is freezing of the fluids around the cells of the affected tissues.

1.1.5 Contact by the skin with tools or other metal objects below 20°F (-7°C) may result in contact frostbite.

1.1.6 The first symptom of frostbite is an uncomfortable sensation of coldness and pain, followed by numbness. There may be tingling, stinging, or cramping. Ongoing symptoms of frostbite include:

- Sudden and complete cessation of cold or discomfort in affected fingers or toes, often followed by a pleasant feeling of warmth;
- Subsequently the only symptom may be the absence of any sensation in the frozen part;
- Paleness in the affected tissues;
- Firm or hard tissues; and
- Purple tissue, if a large area, such as an entire hand or food, is frostbitten.

1.1.7 If exposure occurs in temperatures that are below freezing (32ºF or below), frostbite or trench foot (immersion foot) may accompany or complicate the symptoms of hypothermia. Frostbite is the freezing of living tissues with a resultant breakdown of cell structure. Symptoms due to frostbite may include, but is not limited to:

- Superficial redness of the skin;
- Slight numbness;
- Blisters;
- Obstruction of blood flow (ischemia);
- Blood clots (thrombosis); and
- Skin discoloration due to insufficient oxygen in the blood (cyanosis).

1.1.8 Frostbite may occur if the skin comes into contact with objects with a surface temperature below freezing, such as metal tool handles. Trench foot is caused by continuous exposure to cold combined with persistent dampness or immersion in water. Injuries in this case include permanent tissue damage due to oxygen deficiency, damage to capillary walls, severe pain, blistering, tissue death, and ulceration.

1.1.9 Additionally, cold exposures may either induce or intensify vascular abnormalities. These include chilblain (a swelling or sore), Raynaud's disease, acrocyanosis (blueness of hands and feet) and thromboangiitis (inflammation of the innermost walls of blood vessels with accompanying clot formation). Workers suffering from these ailments should take particular precautions to avoid chilling.

1.2 Hypothermia

1.2.1 Hypothermia is a lower than normal body temperature that occurs when outer cold cools the body faster than the body can produce heat to stay warm. When this situation first occurs, blood vessels in the skin constrict in an attempt to conserve vital internal heat. Hands and feet are the first affected.

- If the body continues to lose heat, involuntary shivers begin. This is the body's way of attempting to produce more heat, and it is usually the first real warning sign of hypothermia.
- Further heat loss produces speech difficulty, confusion, loss of manual dexterity, collapse, and finally death.

1.2.2 Hypothermia can be caused by exposure to wind, cold, and/or moisture. The combination of wind, cold, and moisture can be deadly. Wet clothes or immersion in cold water greatly increases the hypothermia risk. The progressive clinical presentation of hypothermia is described in the table below.

Condition	Core Body Temp.	Signs/Symptoms	Treatment
Mild Hypothermia	99 – 97 F 37 – 36 C	Normal, shivering may begin	Seek dry shelter; replace wet clothing, insulate whole body and head, avoid sweating, use external warmth (bath, fire) only if core above 95 degrees F, give warm sweet drinks and food.
	97 – 95 F 36 – 35 C	Cold sensation, goose bumps, unable to perform complex tasks with hands, shiver can be mild to severe, hands numb.	
Moderate Hypothermia	95 – 93 F 35 – 34 C	Intense shivering, muscle in-coordination becomes apparent, movements slow and labored, stumbling pace, mild confusion may appear alert.	Avoid exercise and external warmth, gently rest; give warm sweet drinks and calories, internal warming via warm moist air, monitor pulse and breathing.
	93 – 90 F 34 – 32 C	Violent shivering persist, difficulty speaking, sluggish thinking, amnesia starts to appear, gross muscle movements sluggish, unable to use hands, stumbles frequently, signs of depression, withdrawn.	
Severe Hypothermia	90 – 86 F 32 – 30 C	Shivering stops, exposed skin blue or puffy, muscle coordination very poor, inability to walk, confusion, incoherent/irrational behavior, but may be able to maintain posture and appearance of awareness.	Medical emergency, give nothing by mouth, wrap in an insulated blanket, avoid rapid rewarming, transfer to hospital immediately.
	86 – 82 F 30 – 28 C	Muscle rigidity, semiconscious, stupor, loss of awareness of others, pulse and respiration rate decrease, possible heart fibrillation.	
	82 – 78 F 28 – 25.5 C	Unconscious, heart beat and respiration erratic, pulse may not be palpable.	
	78 – 75 F 25.5 – 24 C	Pulmonary edema, cardiac and respiratory failure, death. Death may occur before this temperature is reached.	

1.2.3 Early warning signs of hypothermia:

- Feeling of being cold and tired;
- Heavier breathing and increased pulse rate;
- Tendency to keep moving (e.g., stamping feet, rubbing hands, continued walking/pacing);
- Goose bumps, holding arms tightly wrapped around the body, hunching of shoulders, and
- Shivering.

1.2.4 Hypothermia damages both the body's internal temperature mechanisms (hypothalamus) and the peripheral mechanisms to prevent heat loss (vasoconstriction and perspiration.) These effects may last up to three years after the initial hypothermia episode. Symptoms of hypothermia may include, but are not limited to:

- Pain in the extremities;
- Severe shivering and numbness;
- Low core body temperature;
- Drowsiness and muscular weakness;
- Apathy;
- Mental confusion;
- Loss of consciousness;
- Shock, and
- Decreasing pulse and breathing rate.

2.0 Recommended Treatment for Cold Stress-related Illnesses

2.1 Frostbite

2.1.1 Wrap the victim in woollen blanket and keep dry until he or she can be brought inside.

2.1.2 Remove the victim from the cold environment.

2.1.3 Do not rub, chafe, or manipulate frozen parts.

2.1.4 Place the victim in warm water (102ºF to 105ºF) and make sure the water remains warm. Test the water by pouring it on the inner surface of your forearm. Never thaw affected body parts if the victim has to go back out into the cold; refreezing can cause significant tissue damage.

2.1.5 Do not use hot water bottles or a heat lamp, and do not place the victim near a hot stove.

2.1.6 Do not allow the victim to walk if his or her feet are affected.

2.1.7 Have the victim gently exercise the affected parts once they are thawed.

2.1.8 Seek immediate medical attention for thawing of serious frostbite.

2.2 Hypothermia

2.2.1 Bring the victim into a warm room or shelter as quickly as possible.

2.2.2 Give artificial respiration and stop any bleeding, if necessary.

2.2.3 If the victim cannot be moved (spinal injury, etc.), carefully place newspapers, blankets, or some other insulation between the victim and the ground.

2.2.4 Remove all wet clothing.

2.2.5 Provide an external heat source, because the body cannot generate its own heat. Wrap the victim in prewarmed blankets, place him or her in the liner of a portable hypothermia treatment unit, put the torso (not the extremities) into a tub of warm water, or use body-to-body contact to rewarm the body core. These measures will slowly reopen the peripheral circulation, minimizing the possibility

of after-shock or after-drop (the flowing of cooled, stagnated blood from the limbs to the heart), which may cause ventricular fibrillation, cardiac arrest, or death.

2.2.6 Do not allow the victim to sleep.

2.2.7 Give warm, sweet drinks. Do not give alcohol or pain relievers.

2.2.8 Keep the victim still. Do not try to walk.

2.2.9 Do not rub numb skin.

2.2.10 Get medical attention as soon as possible.

Americas

Heat Stress

S3AM-113-PR1

1.0 Purpose and Scope

1.1 Establishes a Heat Illness Prevention Program to guide employees in preventing heat illness, recognition of the symptoms of heat stress-related illnesses and in taking the appropriate corrective action.

1.2 This procedure applies to all AECOM Americas-based employees and operations.

2.0 Terms and Definitions

2.1 **Acclimated –** Employees who have developed physiological adaptation to hot environments characterized by increased sweating efficiency, circulation stability, and tolerance of high temperatures without stress. Acclimatization occurs after 7 to 10 consecutive days of exposure to heat and much of its benefit may be lost if exposure to hot environments is discontinued for a week.

2.2 **Chemical Protective Clothing (CPC)** – Apparel that is constructed of relatively impermeable materials intended to act as a barrier to physical contact of the Employee with potentially hazardous materials in the workplace. Such materials include Tyvek® coveralls (all types) and polyvinyl chloride coveralls and rain suits.

2.3 **Heat Cramps** – A form of heat stress brought on by profuse sweating and the resultant loss of salt from the body.

2.4 **Heat Exhaustion** – A form of heat stress brought about by the pooling of blood in the vessels of the skin and in the extremities.

2.5 **Heat Rash** – A heat-induced condition characterized by a red, bumpy rash with severe itching.

2.6 **Heat Stress** – The combination of environmental and physical work factors that constitute the total heat load imposed on the body.

2.7 **Heat Stroke** – The most serious form of heat stress, which involves a profound disturbance of the body's heat-regulating mechanism.

2.8 **Sunburn** – Caused by unprotected exposure to ultraviolet radiation present in sunlight that is damaging to the skin (Refer to *S3AM-121-PR1 Non-Ionizing Radiation*). The injury is characterized by red painful skin, blisters, and/or peeling.

2.9 **Unacclimated** – Employees who have not been exposed to hot work conditions for one week or more or who have become heat-intolerant due to illness or other reasons.

3.0 References

3.1 S3AM-003-PR1 SH&E Training

3.2 S3AM-004-PR1 Incident Reporting, Notifications & Investigation

3.3 S3AM-010-PR1 Emergency Response Planning

3.4 S3AM-121-PR1 Non-Ionizing Radiation

3.5 S3AM-208-PR1 Personal Protective Equipment

3.6 S3AM-209-PR1 Risk Assessment & Management

4.0 Procedures

4.1 Roles and Responsibilities

4.1.1 Managers

- Evaluate the need for heat illness prevention measures and incorporate as appropriate into the Safe Work Plan or Task Hazard Analysis.
- Allocate sufficient resources for the management of heat illness in the field including the provision of water, a shaded break area, and sufficient schedule to allow for breaks.

4.1.2 Safety, Health and Environment (SH&E) Manager

- Provide heat illness awareness training.
- Assist in developing appropriate work-rest schedules.
- Conduct/support incident investigations related to potential heat stress-related illnesses.

4.1.3 Supervisor

- Identify those tasks that may be most impacted by heat stress and communicate the hazard to the assigned Employees.
- Confirm that Employees have been trained on the recognition of heat illness.
- Confirm that this procedure, along with any applicable Safe Work Plan and/or Task Hazard Analysis (and heat exposure control plan that may be contained therein) are made available to affected Employees.
- Confirm that adequate supplies of appropriate fluids are readily available to Employees.
- Confirm that a proper rest area is available.
- Conduct heat illness monitoring, as applicable.
- Implement the work-rest schedule.
- Confirm that first aid measures are implemented once heat stress symptoms are identified.
- Confirm personnel are physically capable of performing the assigned tasks and are not in a physically compromised condition.
- Report all suspected heat illnesses.

4.1.4 Employee

- Observe each other for the early symptoms of heat illnesses.
- Maintain an adequate intake of available fluids.
- Be familiar with heat stress hazards, predisposing factors, and preventative measures.
- Report to work in a properly vested and hydrated condition.
- Report all suspected heat stress-related illnesses.

4.2 Restrictions

4.2.1 The Buddy System is required when working in high heat conditions; Employees shall not work alone.

4.2.2 Employees shall not be exposed to levels exceeding those specified for the given work level and work-rest regimen as listed in *S3AM-113-ATT1 Temperature Thresholds*.

4.2.3 Clothing corrections shall be applied in accordance with the tables provided in *S3AM-113-ATT1 Temperature Thresholds*.

4.3 Exposure Controls

4.3.1 It shall be determined whether Employees are or may be exposed to hazardous heat levels. The Supervisor shall:

- Conduct a heat stress assessment to determine the potential for hazardous exposure of Employees. Assessment shall include, but not limited to:
  - Ambient temperature.
  - Amount of sunshine (cloudy, clear). Refer to *S3AM-121-PR1 Non-Ionizing Radiation* additional direction concerning ultraviolet radiation exposures.
  - Other radiant heat sources (e.g. motor, fire, etc.).
  - Humidity.
  - Air flow.
  - Amount or type of physical labor being performed,
  - Physical condition of the Employees (e.g., acclimated/not)
  - Protective clothing in use.
  - Referral to *S3AM-113-ATT1 Temperature Thresholds* to assist in determining whether hazardous heat exposures may exist.
- If potential for hazardous exposure is identified, the Supervisor shall develop and implement a heat stress exposure control plan within the Safe Work Plan and/or Task Hazard Analysis. Refer to *S3AM-209-PR1 Risk Assessment & Management.*

4.3.2 If Employees are or may be exposed, the Supervisor shall implement engineering controls (e.g., shelters, cooling devises, etc.) to reduce the exposure of Employees to levels below those specified for the given work level and work-rest regimen as listed in *S3AM-113-ATT1 Temperature Thresholds*.

4.3.3 If engineering controls are not practicable, the Supervisor shall reduce the exposure of Employees to levels below those listed in *S3AM-113-ATT1 Temperature Thresholds* by providing administrative controls, including a work-rest cycle or personal protective equipment, if the equipment provides protection equally effective as administrative controls.

4.3.4 If Employees are or may be exposed, the Supervisor shall provide and maintain an adequate supply of cool, fresh, potable water close to the work area for the use of a heat exposed Employee. Water shall be provided (paid) by the project or program; if Employees purchase their own drinking water because water is not otherwise available on site, they shall be reimbursed.

4.3.5 If an Employee shows signs or reports symptoms of heat stress or strain, they shall be removed from the hot environment and treated by an appropriate first aid attendant on site, if available, or by a physician, refer to *S3AM-113-ATT2 Symptoms & Treatment* for more specifics.

4.4 Heat Stress Planning

4.4.1 Heat stress can be a significant site hazard, especially for Employees wearing CPC. To prepare for emergency response planning, refer to *S3AM-010-PR1 Emergency Response Planning* procedure.

4.4.2 The project and site specific risks need to be planned using the SH&E Plan and the Task Hazard Assessments (THA). Refer to the *S3AM-209-PR1 Risk Assessment & Management* procedure.

4.4.3 The heat a worker is exposed to may be a combination of air temperature, radiant heat, and humidity. The WBGT (wet-bulb globe thermometer) is a useful index of the environmental contribution to heat stress. Because WBGT is only an index of the environment, the contributions of

work demands, clothing, and state of acclimatization shall also be accounted for, as described in the following steps.

- Monitor ambient temperatures and conduct heat stress monitoring in accordance with the location specific SH&E Plan. Revise the heat stress monitoring and controls if there are any reports of discomfort due to heat stress.
- Monitor temperatures in each unique environment in which workers perform work (e.g., take WBGT measurements inside truck cabs for truck drivers, and take separate WBGT measurements in the outdoor area where field employees work, etc.). Follow manufacturer's instructions on proper use of the WBGT.
- Determine if individual workers are acclimatized or un-acclimatized. Full heat acclimatization requires up to 3 weeks of continued physical activity under heat-stress conditions similar to those anticipated for the work. Its loss begins when the activity under those heat-stress conditions is discontinued, or when there is a sustained increase in temperatures of 10 °F (5.6 °C) or more, and a noticeable loss occurs after 4 days. A worker can be considered acclimatized for the purpose of this procedure when they have been exposed to the site conditions (including level of activity) for 5 of the last 7 days.
- Determine the approximate workload of each worker or group of workers. The following examples (Table 1) can be used for comparison:

Table 1
Examples of Activities within Workload Categories

Categories	Example Activities
Resting	Sitting quietly
	Sitting with moderate arm movements
Light	Sitting with moderate arm and leg movements
	Standing with light work at machine or bench while using mostly arms
	Using a table saw
	Standing with light or moderate work at machine or bench and some walking about
Moderate	Scrubbing in a standing position
	Walking about with moderate lifting or pushing
	Walking on level at 3.5 miles/hr (6 km/hr) while carrying 6.6 lbs (3kg) weight load
Heavy	Carpenter sawing by hand
	Shoveling dry sand
	Heavy assembly work on a non-continuous basis
	Intermittent heavy lifting with pushing or pulling (e.g., pick-and-shovel work)
Very Heavy	Shoveling wet sand

- Determine the approximate proportion of work within an hour during a typical shift. Typically, the initial work schedule will be 60 minutes of work per hour (100 percent work) with a small break in the morning and afternoon, as appropriate, and a 30-minute lunch break mid-day.
- For workers wearing cloth coveralls (e.g., Nomex fire resistant clothing), add 3 to the measured WBGT. For impermeable clothing, such as Tyvek or Saranex, the WBGT procedures cannot be used. For these situations, workers should begin physiological monitoring as soon as the temperature in the work area exceeds 70ºF (21°C).
- Use the collected information to develop appropriate work to rest schedules as detailed in *S3AM-113-ATT1 Temperature Threshold*.

4.4.4 Given the work demands (light, moderate, heavy or very heavy), heat of the work environment, and such aspects as PPE in use, workload will be adjusted appropriately to allow for proper acclimation.

- This is the process by which the body "gets used to" hot work environments. This is achieved by slowly increasing workloads.
- New and returning Employees (absent one week or more) who have not had time to acclimatize may be more susceptible to heat related illnesses, even in seemingly low risk heat exposures.
- All Employees shall be allowed time to acclimatize in the event of a heat wave. All Employees assigned to a new process with additional heat exposures shall be allowed to acclimatize.
- Minimize workload and gradually increase as tolerance is built up. Allow for more frequent breaks.
- While acclimatization normally takes approximately 5 to 7 days, heightened monitoring of these Employees will be maintained for the first 14 days.

4.4.5 Employees shall be instructed in the recognition of heat stress symptoms, the first aid treatment procedures for severe heat stress, and the prevention of heat stress injuries. Employees shall be encouraged to immediately report any heat stress that they may experience or observe in fellow Employees. Supervisors shall use such information to adjust the work-rest schedule to accommodate such problems.

4.4.6 Wherever possible, a designated break area should be established in an air conditioned space, or in shaded areas where air conditioning is impractical. The break area should be equipped to allow Employees to loosen or remove protective clothing, and sufficient seating should be available for all Employees. During breaks, Employees shall be encouraged to drink plenty of water or other liquids, even if not thirsty, to replace lost fluids and to help cool off. Cool water should be available at all times in the break area, and in the work area itself unless hygiene/chemical exposure issues prevent it.

4.5 Symptoms and Treatment

4.5.1 Refer to *S3AM-113-ATT2 Symptoms & Treatment*.

4.5.2 Employees who exhibit ANY signs of significant heat stress (e.g., profuse sweating, confusion and irritability, pale, clammy skin) shall be relieved of all duties at once, made to rest in a cool location, and provided with large amounts of cool water.

4.5.3 Anyone exhibiting symptoms of heat stroke (red dry skin, or unconsciousness) shall be taken immediately to the nearest medical facility. Steps shall be taken to cool the person during transportation (clothing removal, wet the skin, air conditioning, etc.).

4.5.4 Severe heat stress (heat stroke) is a life-threatening condition that shall be treated by a competent medical authority.

4.6 Prevention

4.6.1 Requirements for working in extreme heat may be triggered by a regulatory established criteria (e.g. CAL/OSHA requires high heat procedures when temperature equals or exceeds 95°F) or as a result of a hazard analysis assessing various contributory factors (refer to *S3AM-113-ATT1 Temperature Thresholds*). Employees working in extreme heat or sun should understand and apply the following guidelines for preventing and detecting heat exhaustion and heat stroke.

- When possible, begin hydrating at least three days prior to working in high heat conditions.
- Review the heat stress exposure control plan within the Safe Work Plan and/or Task Hazard Analysis.
- If the supervisor is not immediately available confirm a reliable method of communication is in place to allow for contact with supervision. In the absence of cellular reception a satellite phone or similar device may be required.

- Take frequent short breaks in areas sheltered from direct sunlight; eat and drink small amounts frequently.
- Try to schedule work for the coolest part of the day, early morning and evening.
- Avoid strenuous physical activity outdoors during the hottest part of the day.
- Avoid sudden changes of temperature. Refer *to S3AM-113-ATT1 Temperature Thresholds*.
- Air out a hot vehicle before getting into it.
- Obtain medical direction if taking diuretics during hot weather (a lower dose may be necessary).
- When working in heat, drink 1 quart of water per hour of work.
- Avoid caffeine and alcohol as they increase dehydration.
- Monitor urine frequency and color to detect dehydration. Refer to the *S3AM-113-ATT3 Dehydration Chart.*
- The Buddy System is required when working in high heat conditions to enable effective communication and cross-observation for indications of heat stress.
- Initiate emergency response procedures when necessary, including contacting emergency medical services as appropriate and in accordance with the Emergency Response Plan.

4.6.2 Personal Protective Equipment

- Review the *S3AM-208-PR1 Personal Protective Equipment* procedure.
- Wear a hat and light-colored, loose-fitting clothing to reflect the sun.
- Apply sunscreen to exposed skin (SPF 30 or greater, follow directions on label).
- Wear sunglasses with UV protection.
- Pack extra water to avoid dehydration (try freezing water in bottles overnight to help keep the water cooler for longer during the day).

4.7 Work-Rest Schedule Practices

4.7.1 Intake of fluid will be increased beyond that which satisfies thirst, and it is important to avoid "fluid debt," which will not be made up as long as the individual is sweating.

- Two 8-ounce glasses of water should be taken prior to beginning work, then up to 32 ounces (1 quart) per hour during the work shift; fluid replacement at frequent intervals is most effective.
- The best fluid to drink is water; liquids like coffee or soda do not provide efficient hydration and may increase loss of water.
- If commercial electrolyte drinks (e.g., Gatorade) are used, the drink should be diluted with water, or 8 ounces of water should be taken with each 8 ounces of electrolyte beverage.

4.7.2 Additional salt is usually not needed and salt tablets should not be taken.

4.7.3 Replacement fluids should be cool and fresh, but not cold.

4.7.4 Breaks will be taken in a cool, shaded location, and any impermeable clothing should be opened or removed.

- A relatively cool, shaded area shall be provided for breaks when working in hot environments. For hazardous waste sites, the rest area should be located in the support zone adjacent to the contamination reduction zone, situated so that part of it is in the decontamination area so workers can take breaks without going through full decontamination.

- If shade is not available, shaded areas shall be constructed. This same type of canopy can be set up to shade personnel performing various types of work in hot weather.
- Cooling measures other than shade (e.g., misting, air conditioned break areas, air conditioned vehicles, etc.) can be used in lieu of shade provided it can be demonstrated that they are at least as effective in cooling employees.
- Employees should have access to these rest areas at break times and at any other time when suffering from heat illness or believing a preventive recovery period is needed.

4.7.5 Dry clothing or towels will be available to minimize chills when taking breaks.

4.7.6 Manual labor will not be performed during breaks, other than paperwork or similar light tasks.

4.7.7 Other controls that may be used include:

- Scheduling work at night or during the cooler parts of the day (6 am–10 am, 3 pm–7 pm).
- Erecting a cover or partition to shade the work area.
- Auxiliary cooling - wearing cooling devices beneath protective garments, but over any underclothing.
  - If cooling devices are worn, only physiological monitoring will be used to determine work activity.
  - These vests typically provide cooling via one of two methods: the use of ice or other frozen media, or the use of a vortex cooler. Each method has its advantages and disadvantages.
  - The frozen media vest requires a means for freezing the media, and the media (usually water or "blue ice") will melt, requiring replacement.
  - The vortex cooler tends to cool more uniformly. Instead of frozen media, this vest uses the expansion of compressed air to cool the wearer. The drawback is the compressed air requirement, but this is negated when the wearer is already using an airline respirator supplied by a compressor. A vortex cooler should not be supplied from air cylinders, as this will draw down the cylinders rapidly.
- Auxiliary cooling should be considered when the following conditions exist:
  - Ambient temperature over 80°F (26°C).
  - Workers are wearing impermeable garments (i.e., Tyvek, Saranex, Chemrel, etc.).
  - It is desirable to have long work shifts with minimum interruption.

4.8 Evaluating the Work-Rest Schedule's Effectiveness

4.8.1 Once a work-rest schedule is established, the Supervisor shall continually evaluate its effectiveness through observation of Employees for signs/symptoms of heat stress. Have workers assess themselves and their body's reaction to the heat and work conditions (self-assessment), and report any signs or symptoms of heat illness. These can include nausea or dizziness, heat cramps, extreme thirst, or very dark urine.

4.8.2 Measurement or physiological monitoring of each Employee's vitals (e.g., pulse, blood pressure, and temperature) can provide additional information in determining if the schedule is adequate. Refer to *S3AM-113-ATT1 Temperature Thresholds* for additional guidance on when physiological monitoring should be conducted.

4.8.3 Frequency of physiological monitoring is increased or decreased depending upon such factors as worker fitness, acclimatization, temperature of the work environment, type of PPE, etc.

Based on the results of the physiological monitoring and on the workers' self-assessments, the work period may be adjusted as follows:

- The work period may be increased (generally, by 5- to 10-minutes intervals, up to a maximum of 4 hours) if the results of the first 2 hours of the physiological monitoring and the workers' self-assessments indicate that workers are recovering adequately (see below), and on the judgment of the SH&E Manager.
- The work period shall be decreased if the results of the physiological monitoring and the workers' self-assessment indicate that workers are NOT recovering adequately (see below).

4.8.4 If physiological monitoring is conducted, the Employee and/or the SH&E Manager (or appropriate designate) shall measure and record body temperature and pulse rate as described below.

4.8.5 Monitor body temperature to determine if Employees are adequately dissipating heat build-up. Ear probe thermometers which are adjusted to oral temperature (aural temperature) are convenient and the preferred method of measurement. Determine work/rest regimen as follows:

- Measure oral body temperature at the end of the work period. Oral body temperatures are to be obtained prior to the employee drinking water or other fluids.
- If temperature exceeds 99.6°F (37.5°C), shorten the following work period by 1/3 without changing the rest period.
- If, at the next rest period, temperature still exceeds 99.6°F (37.5°C), the worker should not be allowed to continue work until repeated temperature measurements are in the acceptable range (i.e., less than 99.6°F). Do not leave the worker alone during the recovery time. Watch for signs of heat illness and be prepared to implement emergency response as necessary.
- Do not allow a worker to wear impermeable PPE when his/her oral temperature exceeds 100.6°F (38.1°C).

4.8.6 At the start of the workday each Employee's baseline pulse rate (in beats per minute [bpm]) is determined by taking a pulse count for 15 seconds and multiplying the result by four or by using an automated pulse count device. Pulse rates can then be measured at the beginning of each break period and two minutes thereafter to determine if the rest period allows for adequate recovery.

- Take the radial (wrist) pulse as early as possible in the rest period and determine the worker's heart rate in beats per minute. The heart rate is determined by counting the pulse for ten seconds and multiplying the number by 6 to get the beats per minute. Record this as P1.
- Wait 2 minutes and repeat the pulse measurement. Record this as P2.
- If P1 is greater than or equal to 110 beats per minute (bpm) and if (P1 – P2) is less than or equal to 10 bpm (indicating that workers are not recovering adequately), shorten the next work cycle by 1/3 without changing the rest period.
- At the next rest period, if P1 is still equal to or greater than 110 bpm, and if (P1 – P2) is still less than or equal to 10 bpm, shorten the following work cycle by 1/3 without changing the rest period.
- At the third rest period, if P1 is still equal to or greater than 110 bpm and (P1 – P2) is still less than or equal to 10 bpm, the worker should not be allowed to continue work until repeated pulse measurements are in the acceptable range (i.e., P1 is less than 110 bpm and (P1 – P2) is greater than 10 bpm). Do not leave the worker alone during the recovery time. Watch for signs of heat illness and be prepared to implement emergency response as necessary.

4.8.7 Use of an automated or similar blood pressure device will be used to assess each Employee's blood pressure at the beginning and end of each break period to determine if the rest period allows adequate cooling by applying the following criteria:

- If the blood pressure of an Employee is outside of 90/60 to 150/90, then the Employee will not be allowed to begin or resume work; extend the break period by at least five minutes, at the end of which blood pressure rates will be re-measured and the end-of-break criteria again applied.

4.8.8 All physiological monitoring of heat stress will be documented using *S3AM-113-FM1 Heat Stress Monitoring Log.*

4.9 Training

4.9.1 Employees and their Supervisors that may be exposed to the hazard will be trained and oriented to the hazard and the controls prior to work commencing.

4.9.2 Those Employees, including Supervisors, potentially exposed to heat stress will receive training, refer to the *S3AM-003-PR1 SH&E Training* procedure. Training will include, but is not limited to:

- Sources of heat stress (environmental and personal), influence of protective clothing, and importance of acclimatization;
- How the body handles heat and acclimatization;
- Recognition of heat-related illness symptoms;
- Preventative/corrective measures including, but not limited to;
  - Employees will be informed of the harmful effects of excessive alcohol consumption in the prevention of heat stress.
  - All Employees will be informed of the importance of adequate rest and proper diet in the prevention of heat stress.
- First aid procedures for heat stress-related illnesses; and
- Immediate reporting of any heat-related incident (injury, illness, near-miss), refer to the *S3AM-004-PR1 Incident Reporting, Notifications & Investigation* procedure.

5.0 Records

5.1 None

6.0 Attachments

6.1 S3AM-113-ATT1 Temperature Thresholds

6.2 S3AM-113-ATT2 Symptoms & Treatment

6.3 S3AM-113-ATT3 Dehydration Chart

6.4 S3AM-113-FM1 Heat Stress Monitoring Log

Americas

Temperature Thresholds

S3AM-113-ATT1

1.0 Work-Rest Schedule

The prevention of heat stress is best performed through Supervisor observation of Employees and routine heat stress awareness training activities. However, it is also necessary to implement a work routine that incorporates adequate rest periods to allow Employees to remove protective clothing, drink fluids (vital when extreme sweating is occurring), rest and recover. The frequency and length of work breaks shall be determined by the Supervisor based upon the ambient temperature, amount of sunshine, humidity, the amount of physical labor being performed, the physical condition of the Employees (e.g., acclimated/not), and protective clothing being used.

1.1 Establishing a Work-Rest Schedule:

1.1.1 AECOM permits the use of either of two techniques to initially determine an appropriate daily work-rest schedule. These methods are:

- Wet Bulb Globe Thermometer (WBGT) Method: This method is preferred if a WBGT meter is available.
- Adjusted Temperature Method: This method should be used only if WBGT data is not available.

1.1.2 Either procedure will provide the Supervisor with a recommended routine; however, adjustments to this routine may be required to accommodate the specific daily conditions at the work site.

1.2 WBGT Work-Rest Schedule Guidelines:

1.2.1 If the measured WBGT is less than the action limit value, there is little risk of excessive exposure to heat stress, and work can continue.

- Continue to monitor ambient conditions with the WBGT. However, if there are reports of the symptoms of heat-related disorders, then the analysis of little risk should be reconsidered.
- If the measured WBGT is greater than the values in the following two tables, institute heat stress controls, including the associated work-rest cycle, and perform physiological monitoring as described in *S3AM-113-PR1 Heat Stress*.
- Because of the physiological strain associated with very heavy work among less fit workers regardless of WBGT, values are not provided in Table 1 or 2 for continuous work or 75% work – 25% rest regimen. Physiological monitoring should always be implemented under these conditions.

1.2.2 Table 1, the Non-CPC Activities WBGT Chart, is intended for use where personnel are not utilizing Chemical Protective Clothing (CPC). Where workers are required to utilize CPC, Table 2, the CPC Activities WBGT Chart, will be used.

1.2.3 WBGT readings are compared directly with the values of the applicable WBGT Chart for the applicable work rate (where light work corresponds to minimal physical activity besides standing/watching; very heavy work corresponds to significant, continuous physical labor) to determine the work-rest frequency.

Table 1. Non-CPC Activities WBGT Chart

Work-Rest Regimen	WBGT			
	Light Work	Moderate Work	Heavy Work	Very Heavy Work
Continuous Work	85°F (29.4°C)	81°F (27.2°C)	78°F (25.6°C)	
75% Work – 25% Rest	86°F (30°C)	83°F (28.3°C)	81°F (27.2°C)	
50% Work – 50% Rest	88°F (31.1°C)	85°F (29.4°C)	83°F (28.3°C)	81°F (27.2°C)
25% Work – 75% Rest	90°F (32.2°C)	87°F (30.6°C)	86°F (30°C)	85°F (29.4°C)

Modified from ACGIH's 2014 *Threshold Limit Values for Chemical Substances and Physical Agents*, for acclimatized workers.

Table 2. CPC Activities WBGT Chart

Work-Rest Regimen	WBGT			
	Light Work	Moderate Work	Heavy Work	Very Heavy Work
Continuous Work	74°F (23.3°C)	70°F (21.1°C)	67°F (19.4°C)	
75% Work – 25% Rest	75°F (23.9°C)	72°F (22.2°C)	70°F (21.1°C)	
50% Work – 50% Rest	77°F (25°C)	74°F (23.3°C)	72°F (22.2°C)	70°F (21.1°C)
25% Work – 75% Rest	79°F (26.1°C)	76°F (24.4°C)	75°F (23.9°C)	74°F (23.3°C)

Modified from ACGIH's 2014 *Threshold Limit Values for Chemical Substances and Physical Agents*, for acclimatized workers.

1.3 Humidex Based Work-Rest Schedule Guidelines

1.3.1 The Humidex method is a simplified way of protecting workers from heat stress. It is an equivalent scale intended to express the combined effects of warm temperatures and humidity. Humidex is used as a measure of perceived heat that results from the combined effect of excessive humidity and high temperature.

1.3.2 This method requires only a local air temperature and relative humidity value. Monitoring shall continue throughout the day for changing conditions. Identify a representative location where measurements can be taken. Measurements should be recorded at least hourly when ambient temperatures and 90°F (32°C) for personnel wearing normal permeable work clothes.

- Step 1: On the Humidex table below, look up the temperature on the left (Celsius is located below RH>) and the relative humidity (RH) on the top. Determine the Humidex value.

F	RH>	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%	45%	40%	35%	30%	25%	20%
108	42													55	52	50	48	46
106	41												55	53	51	48	46	44
104	40											55	53	51	49	47	45	43
102	39										55	53	51	49	47	45	43	41
100	38		Step 1 - Determine HUMIDEX VALUE							54	53	51	49	47	45	43	42	40
99	37								54	52	51	49	47	45	44	42	40	38
97	36					57	55	53	52	50	49	47	45	44	42	40	39	37
95	35				56	54	53	51	50	48	47	45	43	42	40	39	37	36
93	34		56	55	53	52	51	49	48	46	45	43	42	40	39	37	36	34
91	33	55	54	53	51	50	48	47	46	44	43	41	40	39	37	36	34	33
90	32	53	51	50	49	48	46	45	44	42	41	40	38	37	36	34	33	32
88	31	50	49	48	47	45	44	43	42	40	39	38	37	35	34	33	32	30
86	30	48	47	46	44	43	42	41	40	39	37	36	35	34	33	31	30	29
84	29	46	45	43	42	41	40	39	38	37	36	35	33	32	31	30	29	28
82	28	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27
81	27	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
79	26	39	38	37	36	35	34	33	33	32	31	30	29	28	27	26	25	24
77	25	37	36	35	34	33	33	32	31	30	29	28	27	26	26	25	24	23

- Step 2: Place the Humidex value into the Heat Index Adjustment Table below. Determine the applicable adjustments based on the given work or task.

Heat Index Adjustment Table

	Step 2 - Risk Factor Adjustment	
Write in value	What is the HUMIDEX value from the table in Step 1?	
	Radiant Heat	**Adjustment**
	Working in full-sun	Add 2
	Working in ½ or partial sun or weak radiant heat source	Add 1
	Working near very hot equipment surfaces or processes	Add 2
	Clothing: Pick One Only	
	Short/long sleeve shirt and pants – no overalls	None
	Overalls (e.g., Nomex suit)	Add 3
	Double layer overalls	Add 5
Stop	Impermeable clothing	Perform Physiological Monitoring
	Acclimatization	
	Have been working at least 5 of last 7 days in heat stress conditions.	Subtract 4
	Work Load & Miscellaneous Factors	
	Light Work (Standing, slow walking)	Subtract 2
	Medium Work (Walking about with moderate lifting or pushing)	None
	Heavy Work (Shoveling dry sand, carrying 50 lbs)	Add 2
	Very Heavy Work (Shoveling wet sand)	Add 3
	TOTAL – Compare to Heat Index Response Plan	

- Step 3: Compare adjusted Heat Index Total to the Heat Index Response Plan table to obtain guidance for work/rest.

Heat Index Response Plan*

TOTAL NUMBER	Final Step 3 - HEAT INDEX Response
30-33	alert & information & water
34-37	warning & increase water
38-39	75% work - 25% rest & monitor for signs of heat stress
40-41	50% work - 50% rest & monitor for signs of heat stress
42-44	25% work - 75% rest & monitor for signs of heat stress
45+	Perform Physiological Monitoring

*** Percent work and rest/recovery are on a per hour basis. Adjustments and subsequent work/rest cycle recommendations are rough guidelines only. No heat stress prediction scheme can replace monitoring of symptoms or a health care practitioners advice in the case of individuals with special medical conditions or predisposing circumstances for heat related illness. Always pay attention to the way workers are feeling. Recuperate if fatigued, nauseated, dizzy or thirsty,**

1.4 Adjusted Temperature Work-Rest Schedule Guidelines:

This method can be utilized where WBGT data is not available, and requires only that the ambient temperature be known. Adjustment factors are applied to the ambient temperature to account for departures from ideal conditions (sunny conditions, light winds, moderate humidity and a fully acclimated work force). The adjustments will be made by addition or subtraction to the ambient temperature reading, or changes in table position, as indicated in Table 3. Adjustments are independent and cumulative, all applicable adjustments should be applied. The result is the Adjusted Temperature, which can be compared with the values in Table 4 for the applicable work rate (where light work corresponds to minimal physical activity besides standing/watching; very heavy work corresponds to significant, continuous physical labor) to determine the work-rest schedule.

Table 3. Temperature Adjustment Factors

Time of Day	
Before daily temperature peak[1]	+2°F (+1.11°C)
10 am – 2 pm (peak sunshine)	+2°F (+1.11°C)
Sunshine	
No clouds	+1°F (+0.56°C)
Partly Cloudy (3/8 – 5/8 cloud cover)	-3°F (-1.67°C)
Mostly Cloudy (5/8 – 7/8 cloud cover)	-5°F (-2.78°C)
Cloudy (>7/8 cloud cover)	-7°F (-3.89°C)
Indoor or nighttime work	-7°F (-3.89°C)
Wind (*ignore if indoors or wearing CPC*)	
Gusts greater than 5 miles per hour at least once per minute	-1°F (-0.56°C)
Gusts greater than 10 miles per hour at least once per minute	+2°F (+1.11°C)
Sustained greater than 5 miles per hour	-3°F (-1.67°C)
Sustained greater than 10 miles per hour	-5°F (-2.78°C)
Humidity (*ignore if wearing CPC*)	
Relative Humidity greater than 90%	+5°F (+2.78°C)
Relative Humidity greater than 80%	+2°F (+1.11°C)
Relative Humidity less than 50%	-4°F (-2.23°C)
Chemical Protective Clothing (CPC)	
Modified Level D (coveralls, no respirator)	+5°F (+2.78°C)
Level C (coveralls w/o hood, full-face respirator)	+8°F (+4.45°C)
Level C (coveralls with hood, full-face respirator)	+10°F (+5°C)
Level B with airline system (hooded chemical resistant clothing)	+9°F (+5.56°C)
Level B with SCBA (hooded chemical resistant clothing)	+9°F (+5.56°C) and right one column[2]
Level A (totally encapsulating chemical protective suit)	+14°F (+7.78°C) and right one column
Other	Specified in the HASP
Miscellaneous	
Unacclimated work force	+5°F (+2.78°C)
Partially acclimated work force	+2°F (+1.11°C)
Working in shade	-3°F (-1.67°C)
Breaks taken in air conditioned space	-3°F (-1.67°C)

For complete descriptions of Level A through D Protective Clothing refer to Unites States 29 CFR 1910.120 Appendix B

[1] This adjustment accounts for temperature rise during the day. If the temperature has already reached its daytime peak it can be ignored.

[2] Locate the proper column based on work rate, then move one column to the right (next higher work rate) before locating the corresponding adjusted temperature.

Table 4. Work-Rest Schedule Based on Adjusted Temperature

Work-Rest Regimen	Adjusted Temperature			
	Light Work	**Moderate Work**	**Heavy Work**	**Very Heavy Work**
No specified requirements	< 80°F (22.67°C)	< 75 (23.88°C)	< 70 (21.11°C)	< 65 (18.33°C)
15 minute break every 90 minutes of work	80°F – 90°F (22.67°C) - (32.22°C)	75 – 85 (23.88°C) - (29.44°C)	70 – 80 (21.11°C) - (22.67°C)	65 – 75 (37.77°C) - (23.88°C)
15 minute break every 60 minutes of work	>90 – 100 (32.22°C) - (37.77°C)	> 85 – 95 (23.88°C) - (35°C)	>80 – 85 (22.67°C) - (23.88°C)	>75 – 80 (23.88°C) - (22.67°C)
15 minute break every 45 minutes of work	>100 – 110 (37.77°C) - (43.33°C)	>95 – 100 (35°C) - (37.77°C)	>85 – 90 (23.88°C) - (32.22°C)	>80 – 85 (22.67°C) - (23.88°C)
15 minute break every 30 minutes of work	>110 – 115 (43.33°C) - (46.11°C)	>100 – 105 (37.77°C) – (40.55°C)	>90 – 95 (32.22°C) - (35°C)	>85 – 90 (23.88°C) - (32.22°C)
15 minute break every 15 minutes of work	>115 – 120 (46.11°C) - (48.88°C)	>105 – 110 (40.55°C) - (43.33°C)	>95 -100 (35°C) - (37.77°C)	>90 – 95 (32.22°C) - (35°C)
Stop Work	**>120** (48.88°C)	**>110** (43.33°C)	**>100** (37.77°C)	**>95** (35°C)

Note: Time spent performing decontamination or donning/doffing CPC should not be included in calculating work or break time lengths.

Americas

Symptoms & Treatment

S3AM-113-ATT2

1.0 Heat Illness Symptoms

1.1 The following are four stages of heat-related illness:

1.1.1 Heat Rash

Heat rash (prickly heat) may result from continuous exposure to heat or humid air. It appears as red papules (elevated skin lesion), usually in areas where the clothing is restrictive, and gives rise to a prickly sensation, particularly as sweating increases. It occurs in skin that is persistently wetted by un-evaporated sweat. The papules may become infected unless treated.

1.1.2 Heat Cramps

Heat cramps are painful muscle cramps caused by heavy sweating and inadequate electrolyte replacement due to over-exertion in extreme heat. Symtpoms include:

- Muscle spasms; and
- Pain in the hands, feet, and abdomen.

1.1.3 Heat Exhaustion

Heat exhaustion is the next stage. Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Symptoms include:

- Cool, moist, pale, flushed or red skin;
- Heavy sweating;
- Headache;
- Nausea or vomiting;
- Dizziness;
- Exhaustion;
- Mood changes (irritable, or confused/can't think straight), and
- Fainting

The key here is that the victim is still sweating, so the cooling system is still working; it's just under severe stress. The body core temperature may be elevated, but not higher than 104ºF (40ºC). It is important to recognize and treat these symptoms as soon as possible, as the transition from heat exhaustion to the very hazardous heat stroke can be quite rapid.

1.1.4 Heat Stroke

Heat exhaustion can sometimes lead to heat stroke, the most serious form of heat stress, which can be fatal and requires emergency treatment. Heat stroke happens when body temperature regulation fails and body temperature continues to rise to critical levels, often to 105 degrees Fahrenheit (°F) (40.5 degrees Celsius [° C]) or higher. Immediate action must be taken to cool the body before serious injury and death occurs. Competent medical help must be obtained. Symptoms of heat stroke:

- Vomiting;
- Decreased alertness level or complete loss of consciousness;
- High body temperature (sometimes as high as 105°F [40.5°C]);
- Red, hot, usually dry skin;
- Lack of or reduced perspiration;
- Skin may still be moist or the victim may stop sweating and the skin may be red, hot, and dry;

- Rapid, weak pulse or rapid, strong pulse;
- Rapid, shallow breathing;
- Nausea;
- Dizziness and confusion; and
- Coma.

2.0 Recommended Treatment for Heat Stress-related Illnesses

2.1 Heat Rash

2.1.1 Treatment for heat rash includes:

- Shower after work, dry off thoroughly, and put on clean, dry underwear and clothes;
- Try to stay in a cool place after work;
- If, in spite of this, you develop heat rash, contact WorkCare.

2.2 Heat Cramps

2.2.1 Treatment for heat cramps includes:

- Gently stretch the cramped muscle and hold the stretch for about 20 seconds, then gently massage the muscle. Repeat these steps if necessary;
- Take more frequent breaks and drink more water;
- Move victim to a cool place;
- Administer drinks of cool water;
- Apply manual pressure to cramped muscles;
- Once spasms disappear, you may return to work;
- Seek medical attention if symptoms are not alleviated or if more serious problems are indicated.

2.3 Heat Exhaustion

2.3.1 Treatment of heat exhaustion includes:

- Get out of the sun to a cool location and drink cool water, a little at a time;
- Remove or loosen tight clothing and elevate the feet;
- If you are nauseated or dizzy, lie down;
- Move the victim to a cool place, administer drinks of cool water and fan to cool;
- Seek medical attention immediately.

2.4 Heat Stroke

2.4.1 Treatment of heat stroke, or if a person's temperature exceeds 102°F (38.9 °C) includes:

- Call for immediate medical help and then try to lower the temperature as quickly as possible:
  - Apply cool (not cold) water the person's whole body, then fan the person;
  - Wrap in wet sheet;
  - If available, use cold packs under arms, neck, and ankles;
  - Body temperature is measured frequently, often constantly. To avoid overcooling, cooling is stopped when the body temperature is reduced to about 102°F (38ºC);
- Do not give aspirin or acetaminophen to reduce the temperature;
- Treat as a true medical emergency. Seek medical help immediately;
- Protect from injury during convulsion;
- Ensure that the person's airway is open;
- Transfer to a medical facility immediately.

Americas

Dehydration Chart

S3AM-113-ATT3

GUIDANCE TOOL FOR MONITORING DEHYDRATION

URINE COLORATION CHART

1 2	3 4	5 6
Target	Dehydration	Severe Dehydration
CONTINUE DRINKING WATER TO MAINTAIN CURRENT HYDRATION LEVELS.	INCREASE WATER CONSUMPTION TO IMPROVE HYDRATION LEVELS, INCREASE BREAKS FREQUENCY, TAKE BREAKS IN A COOL SHADED AREA.	STOP WORK! FIND A SHADED AREA AND BEGIN TO DRINK COOL TO ROOM TEMPERATURE WATER SLOWLY AND STEADILY.

PREVENTING DEHYDRATION

- Start hydrating at least 3 days prior to working in high heat conditions
- Always bring enough water to maintain hydration. CalOSHA requires consuming 1 quart per hour of your work shift - more may be needed

Note: This information is guidance only and should not supersede the recommendation or instruction of a personal physician or medical professional. Contact your physician or medical professional if you have a personal medical condition or take medication for a personal condition which may be adversely affected by dehydration. Urine color can be affected by medications, vitamins and or other personal health conditions.

Americas

Heat Stress Monitoring Log

S3AM-113-FM1

The purpose of this form is to monitor employees for heat illness when applicable. It is the responsibility of the Foreman or Supervisor-in-Charge to ensure that each person completes the required information.

Project Name:			**Foreman/Supervisor:**								**Work/Rest Schedule1:**	IN *(min)*	OUT *(min)*			
Date:	**Water Provided[1]**		**Acclimated[2]**		**Initial Vitals[3]**	**Vital Signs and Time In/Out[3]**					**Celcius** ☐ / **Farenheit** ☐ (select one)					
Employee Name	Yes	No	Yes	No	**Vitals**	In (P_1)	Out (P_1)	**Vitals**	In (P_1)	Out (P_1)	**Vitals**	In (P_1)	Out (P_1)	**Vitals**	In (P_1)	Out (P_1)
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		
					P			**P**			**P**			**P**		
					BP			**BP**			**BP**			**BP**		
					Temp			**Temp**			**Temp**			**Temp**		

1. Each Employee should be provided a sufficient amount of water or sports drink before entering the hot zone. Drinks such as coffee and cola should be discouraged.
2. Am Employee is “acclimated” if he/she has worked in a hot environment for at least 5 - 7 consecutive days. If an Employee is acclimated, check “Yes.” If an Employee is not acclimated, check “No” and reduce the “Min In” by 50 percent for that Employee until the 5 – 7 -day period is reached.
3. “Vitals” refers to Employee vital signs (e.g., pulse [P], blood pressure [BP], body temperature [Temp], etc.). Initial vitals must be taken and recorded before the start of work and at each break period, or as specified in the Heat Stress Exposure Control Plan.

Americas

Hand & Power Tools

S3AM-305-PR1

1.0 Purpose and Scope

1.1 This procedure provides the AECOM requirements for all manually operated hand and power tools and associated use, handling and storage. These requirements apply to tools provided by AECOM for employee use as well as tools provided by employees for use on AECOM work sites.

1.2 This procedure applies to all AECOM Americas-based employees and operations.

2.0 Terms and Definitions

2.1 None

3.0 References

3.1 S3AM-003-PR1 SH&E Training

3.2 S3AM-118-PR1 Hearing Conservation

3.3 S3AM-208-PR1 Personal Protective Equipment

3.4 S3AM-302-PR1 Electrical Safety

3.5 S3AM-325-PR1 Lockout Tagout

4.0 Procedure

4.1 Roles and Responsibilities

4.1.1 **Managers/Supervisors**

- Ensure that all aspects of this procedure are followed and adhered to on all AECOM projects, sites and locations.
- If a specific tool is not included in the work instructions related to this procedure, appropriate guidelines shall be established prior to work associated with that tool, including following manufacturer's recommendations.
- Ensure compliance with applicable client requirements and restrictions regarding hand or power tools.

4.1.2 **Safety, Health and Environment (SH&E) Manager**

- Provide technical guidance and support as to this procedure and associated work instructions.

4.1.3 **Employees**

- Work only with tools for which they are appropriately trained and familiar with.
- Follow manufacturer's recommendations for its use and never modify the equipment without first obtaining authorization from the manufacturer.
- Comply with applicable client requirements and restrictions regarding hand or power tools.

4.2 Requirements

4.2.1 Always conduct a task hazard assessment (THA) prior to work commencing and include the identified hazards associated with the anticipated tool use.

4.2.2 No employee shall use any hand or power tool, unless they are familiar with the use and operation of the equipment or have received specific instruction on its use and operation.

4.2.3 All tools will be used for which they were designed and in accordance with manufacturer's specifications. Do not use tools for jobs they are not intended for. For example, do not use a slot screw driver as a chisel, pry bar, wedge or punch or wrenches as hammers.

4.2.4 Use approved tools only. Never modify or use makeshift tools.

4.2.5 Do not apply excessive force or pressure on tools unless permitted by the manufacturer's specifications. This includes additional force by hammering with body weight, foot or other tools.

4.2.6 Keep surfaces and handles clean and free of excess oil and grease to prevent slipping.

4.2.7 Do not carry sharp tools (e.g. knife, chisel, screwdriver, etc.) in pockets; this practice may cause puncture wounds.

4.2.8 All tools shall be properly maintained. Clean, dry, lubricate and repair tools as applicable, and return to a suitable toolbox, room, rack, or other storage area upon completion of a job.

4.2.9 Ensure proper ergonomics principles are observed when using hand and power tools, such as but not limited to:

- Avoid static and awkward positions when possible.
    - Move at intervals to reduce muscle fatigue.
    - Consider tools with a trigger strip, rather than a trigger button. This strip will allow the exertion of more force over a greater area of the hand that, in turn, will reduce muscle fatigue
- Do not apply excessive force or pressure on tools.
- If possible use tools with comfortable grips that are designed to allow the wrist to stay straight. Avoid using a bent wrist.
- Choose hand tools that have a centre of gravity within or close to the handle.
- Frequently used tools that weigh more than 1 pound (0.45 kilograms) should be counter-balanced.
- Ensure proper body positioning when using a tool to prevent slips or falls in the event of unanticipated tool behaviour (slip, kickback, etc.). Avoid over-reaching.
- Pull on tools such as a wrench or pliers whenever possible. Loss of balance is more likely when pushing if the tool slips. If pushing is necessary, hold the tool with an open palm.
- Hand-arm vibration exposure is associated with the use of hand tools.
    - Reduce power to the lowest setting that can complete the job safely. This action reduces tool vibration at the source.
    - Consider the need for controls such as limiting time of use.
    - If safe to do so, adjust to a looser but stable grip, and use anti-vibration gloves.
- Use of heavy tools such as jackhammers can cause fatigue and strains. Heavy rubber grips can reduce these effects by providing a secure handhold.
- Do not increase a tool's leverage by adding sleeved additions (e.g. a pipe or snipe) to increase tool handle length.

4.2.10 Avoid placing fingers and hands in danger zones:

- Ensure hands and fingers have sufficient clearance in the event the tool slips.
- Ensure stability of the work-piece. Use work-piece holders (e.g. vise, chisel holder, etc.) whenever possible to prevent injury to hands or deflection of tool or work-piece.
- Use push sticks or guides when cutting or machining smaller material.

4.2.11 Secure tools when working from heights to prevent them from falling. Never leave tools on ladders, scaffolds, or overhead work areas when they are not in use.

4.2.12 Utilize good housekeeping practices to ensure tools do not present a tripping hazard.

4.2.13 Ensure no part of a tool extends over the edge of the bench top. Place sharp tools (e.g., saws, chisels, knives) on benches so that sharp points or edges face away from the edge.

4.2.14 When using saw blades, knives, or other tools, if possible direct the tools away from aisle areas and away from other employees working in close proximity.

4.2.15 Do not throw tools from place to place or from person to person, or drop tools from heights. Hand them, handle first, directly to other workers.

4.2.16 Use non-sparking and intrinsically safe tools in atmospheres with flammable or explosive characteristics and where highly volatile liquids, and other explosive substances are stored or used.

- Iron or steel hand tools may produce sparks that can be an ignition source around flammable substances. Where this hazard exists, spark-resistant tools made of non-ferrous materials shall be used.
- Electrical tools shall be identified as intrinsically safe.

4.2.17 If the task presents electrical hazards, worker must be competent and use the appropriate insulated tools to perform work that includes the risk of electrical shock. Cushioned grip handles do not protect against electrical shock.

4.2.18 The fluid used in hydraulic power tools must be an approved fire-resistant fluid and must retain its operating characteristics at the most extreme temperatures to which it will be exposed. The exception to fire-resistant fluid involves all hydraulic fluids used for the insulated sections of derrick trucks, aerial lifts, and hydraulic tools that are used on or around energized lines. This hydraulic fluid shall be of the insulating type.

4.2.19 All tools designed to accommodate guards must have the guard(s) in place when the tool is in use. Do not modify, remove, or disable any machine guards.

4.2.20 Do not allow loose clothing, long hair, loose jewelry, rings, and chains to be worn while working with power tools.

4.2.21 Make provisions to prevent tools from automatically restarting upon restoration of power. Refer to *S3AM-325-PR Lockout Tagout*.

4.3 Training

4.3.1 Instruction in the proper use, safe handling, and maintenance of tools will be provided to employees unfamiliar with the tool.

- Assess the employee's training needs as per *S3AM-003-PR1 SH&E Training* procedure.
- Refer to the applicable work instructions associated with this procedure for any additional training specifics.
- Training shall include applicable manufacturer's recommendations and guidelines.

4.3.2 Employees shall demonstrate knowledge and competency in the use, safe handling and maintenance of the applicable tool prior to operation.

4.4 Personal Protective Equipment (PPE)

4.4.1 Utilize basic PPE appropriate to the task; gloves, safety-toed boots, hard hats and safety glasses with side shields. Refer to *S3AM-208-PR1 Personal Protective Equipment*.

4.4.2 Ensure lockout devices (padlocks, multiple lock hasps, tags) are utilized as necessary. Refer to *S3AM-325-PR Lockout Tagout*.

4.4.3 Ensure PPE is appropriate to the work and use additional PPE as required (e.g. mono-goggles, hearing protection, respiratory protection, etc.).

- Dual eye protection is required to be worn by any employee undertaking or within 3 ½ feet (1 meter) of a task that produces projected particles or material.
- Head and face protection is recommended for employees working with pneumatic tools.
- Noise hazard is associated with pneumatic and many other tools. Working with noisy tools such as jackhammers requires proper, effective use of appropriate hearing protection.

4.4.4 Screens shall also be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills.

4.4.5 Refer to the applicable work instructions associated with this procedure for any additional specialized PPE.

4.5 Inspections

4.5.1 All tools must be inspected prior to each use.

- Any tool that is defective or has missing parts must not be used.
- Every broken or defective tool must be tagged ‘out of service’ or ‘do not use’ and immediately removed from service.
- Tagged tools will be returned to the supervisor for repair or replacement.

4.5.2 All tools must be inspected to manufacture’s specifications and according to tool rests and guard adjustment tolerances. All tools will be inspected to ascertain that all safety devices are present and functioning properly. Refer to *S3AM-305-FM1 Hand & Power Tool Maintenance Inventory* and *S3AM-305-FM2 Hand & Power Tool Inspection Report*.

5.0 Records

5.1 None

6.0 Attachments

6.1 S3AM-305-ATT1 Chainsaw

6.2 S3AM-305-ATT2 Circular Saw

6.3 S3AM-305-ATT3 Cut Off Saw

6.4 S3AM-305-ATT4 Handheld Grinder

6.5 S3AM-305-ATT5 Impact Wrench

6.6 S3AM-305-ATT6 Nail Gun

6.7 S3AM-305-ATT7 Dustless Vacuum

6.8 S3AM-305-ATT8 Power Drill

6.9 S3AM-305-ATT9 Pressure Washer

6.10 S3AM-305-ATT10 Reciprocating Saw

6.11 S3AM-305-ATT11 Sander

6.12 S3AM-305-ATT12 Knives

6.13 S3AM-305-ATT13 Clearing & Grubbing Equipment

6.14 S3AM-305-ATT14 Pneumatic Tools

6.15 S3AM-305-ATT15 Manual Hand Tools

6.16 S3AM-305-ATT16 Small Engines

6.17 S3AM-305-ATT17 Electric & Battery Hand Tools

6.18 S3AM-305-FM1 Hand & Power Tool Maintenance Inventory

6.19 S3AM-305-FM2 Hand & Power Tool Inspection Report

Americas

Clearing & Grubbing Equipment

S3AM-305-ATT13

The following safety precautions will be followed during site clearing and tree falling.

1.0 General

1.1 Refer to *S3AM-305-PR1 Hand & Power Tools* for additional guidance.

1.2 As applicable, refer also to *S3AM-305-ATT15 Manual Hand Tools, S3AM-305-ATT16 Small Engines,* and *S3AM-305-ATT17 Electric & Battery Hand Tools* for additional guidance.

1.3 All clearing activities shall terminate during electrical storms and periods of high winds.

1.4 Dead, broken or rotted limbs or trees (widow makers) shall be felled first.

1.5 Be aware of the presence of other personnel when using any tool, especially picks or axes.

2.0 Machete, Pick and Axe Use

2.1 A machetes, picks and axes will only be used for their designated purpose; do not carelessly swing the tool when it is not needed.

2.2 To prevent lacerations, employees will wear Kevlar gloves and Kevlar chain saw chaps.

2.3 Machetes, picks and axes shall not be used when other employees are in the immediate work area.

3.0 Use of Weed Whips

3.1 Weed whips may be used to clear vegetation such as grass, light brush, briars and tree seedlings. The L-shaped weed whip cuts grass and weeds but is unstable for use on larger growth; the triangular-frame weed whip cuts briars and woody stems up to a half-inch in diameter. A “Suwannee” sling is a heavy duty weed whip that also has an axe blade. It does the same work as a weed whip, but can also cut through large materials. The heavier weight of this tool allows it to more easily cut off larger material than a weed whip.

3.2 When using weed whips, employees should follow these safety procedures:

3.2.1 Select the correct tool for the types and size of vegetation present across the landfill.

3.2.2 Employees will wear gloves that provide impact, abrasion, cut, tear, and puncture resistance when using weed whips.

3.2.3 Weed whips are meant to be swung back and forth with both hands. Avoid using a golf swing. The tool should be swung no higher than an employee’s side.

3.2.4 Strong swings should be made to prevent the blade from bouncing or glancing off springy growth.

3.2.5 Screws hold the serrated double-edge blade in place. These screws can work loose so check them before each use.

3.2.6 At the end of the day, inspect the whips for damage. Clean, sharpen, and oil as necessary and store with a sheath in place.

4.0 Chain Saws

4.1 Refer to *S3AM-305-ATT1 Chainsaw.*

5.0 Felling Trees Manually

5.1 Before cutting begins, survey the work area for dead limbs, the lean of the tree to be cut, wind conditions and the location of other trees.

5.2 Remove lodged trees (tree has not fallen to the ground after being separated from its stump) as soon as possible. Never work under a lodged tree.

5.3 The distance between workers should be maintained at twice the height of the trees being felled.

6.0 Chipping Operations

6.1 Prior to use, make sure all safety devices and controls, such as emergency shut-off devices, are tested and verified to be functioning properly.

6.2 Access covers and doors shall not be opened until the drum or disk is at a complete stop.

6.3 Infeed and discharge ports shall be designed to prevent employee contact with disc, knives and blower blades.

6.4 The operator must be completely familiar with the controls and proper use of the equipment.

6.5 Workers feeding material into self-feeding wood chippers are at risk of being fed through the chipper if they reach or fall into the infeed hopper or become entangled in branches feeding into the machine.

6.5.1 Make sure two workers (buddy system) are in close contact with each other when operating the chipper.

6.5.2 Stand to the side of the chipper while inserting limbs into chipper, never stand directly in front.

6.5.3 Insert trunk portion of tree/limb first. This will prevent the branches from getting entangled with clothing, etc. and pulling you in with the tree/limb.

6.5.4 Bystanders should be kept at least 25 feet (7.6m) away when in operation.

6.5.5 Keep the area around the wood chipper free of tripping hazards.

6.6 Never wear loose clothing that may get caught on feed material or moving parts.

7.0 Personal Protective Equipment

7.1 Wear proper apparel for the task.

7.1.1 Long hair, loose or baggy clothing, ties, or jewellery can become caught in moving parts.

7.1.2 Wear clothing with long sleeves and full length pants of durable material.

7.2 Use gloves that provide impact, abrasion, cut, tear and puncture resistance.

7.3 Safety toed boots with ankle support.

7.4 Safety glasses with side shields and face shield.

7.5 Hearing protection as necessary.

Americas

Manual Hand Tools

S3AM-305-ATT15

1.0 General

1.1 Review manufacturer's operating manual and *S3AM-305-PR1 Hand & Power Tools* for additional guidelines.

1.2 Carry tools using a heavy belt or apron and hang tools at your sides.

1.3 Never carry tools in your pockets or hanging behind your back.

2.0 Hammers

2.1 Hammers are designed according to the intended purpose. Select a hammer that is comfortable for you and that is the proper size and weight for the job. Misuse can cause the striking face to chip, possibly causing a serious injury.

2.2 Choose a hammer with a striking face diameter approximately ½ inch (1.3 centimeters) larger than the face of the tool being struck (e.g., chisels, punches, wedges, etc.).

2.3 Strike a hammer blow squarely with the striking face parallel to the surface being struck. Always avoid glancing blows and over and under strikes. (Hammers with beveled faces are less likely to chip or spall).

2.4 Look behind and above you before swinging the hammer.

2.5 Watch the object you are hitting.

2.6 Hold the hammer with your wrist straight and your hand firmly wrapped around the handle.

2.7 Do not use handles that are rough, cracked, broken, splintered, sharp-edged or loosely attached to the head. Remove from service and replace the handle if possible.

2.8 Do not use any hammer head with dents, cracks, chips, mushrooming, or excessive wear.

2.9 Do not use a hammer for any purpose for which it was not designed or intended.

2.10 Do not use one hammer to strike another hammer, other hard metal objects, stones or concrete.

2.11 Do not redress, grind, weld or reheat-treat a hammer head.

2.12 Do not strike with the side or cheek of the hammer.

3.0 Pipe Cutters, Reamers, Taps and Threaders

3.1 Replace pipe cutter wheels which are nicked or otherwise damaged.

3.2 Use a three- or four-wheeled cutter, if there is not enough space to swing the single wheel pipe cutter completely around the pipe.

3.3 Choose a cutting wheel suitable for cutting the type of pipe material required:

- 3.3.1 Thin wheel for cutting ordinary steel pipe.
- 3.3.2 Stout wheel for cutting cast iron.
- 3.3.3 Other wheels for cutting stainless steel, plastic and other materials.

3.4 Select the proper hole diameter and correct tap size to tap a hole. The hole should be sized so that the thread cut by the tap will be about 75 percent as deep as the thread on the tap.

3.5 Use a proper tap wrench (with a "T" handle) for turning a tap.

3.6 Use lubricant or machine cutting fluid with metals other than cast iron.

3.7 Do not permit chips to clog flutes (groves in the tap that allow metal chips to escape from the hole). The chips may prevent the tap from turning – this may result in the tap breaking if you continue to apply pressure.

3.8 Do not attempt to thread hardened steel. This can chip or damage the die.

3.9 Do not thread any rod or other cylindrical object that is larger in diameter than the major diameter of the die thread.

3.10 Do not use a spiral reamer on a rotating pipe. The reamer may snag and cause serious injury.

4.0 Pliers and Wire Cutters

4.1 Pliers are made in various shapes and sizes and for many uses. Use the correct pliers or wire cutters for the job.

4.2 Choose pliers or wire cutters that have a grip span of 2½ – 3½ inches (6.4 – 8.9 centimeters) to prevent palm or fingers from being pinched when the tools are closed.

4.3 Use adjustable pliers that allow for a firm grip of the work piece while maintaining a comfortable handgrip (i.e., hand grasp is not too wide).

4.4 Use tools only if they are in good condition.

4.4.1 Make sure that the cutting edges are sharp. Dull and worn-down cutting edges require many times more force for cutting.

4.4.2 Make sure that the toothed jaws are clean and sharp. Greasy or worn-down jaws can result in compromised safety. Such tools also require increased force to hold the work piece which, in turn, increases the risk of muscular fatigue and repetitive strain injuries.

4.5 Oil pliers and wire cutters regularly. A drop of oil on the hinge will make the tools easier to use.

4.6 Pull on the pliers; do not push away from you when applying pressure. If the tool slips unexpectedly, you may lose your balance or injure your hand.

4.7 Cut at right angles. Never rock the cutting tool from side to side or bend wire back and forth against the cutting edges.

4.8 Do not cut hardened wire unless the pliers or wire cutters are specifically manufactured for this purpose.

4.9 Do not expose pliers or wire cutters to excessive heat.

4.10 Do not bend stiff wire with light pliers. Needle-nose pliers can be damaged by using the tips to bend large wire. Use a sturdier tool.

4.11 Do not use pliers as a hammer.

4.12 Do not hammer on pliers or wire cutters to cut wires or bolts.

4.13 Do not extend the length of handles to gain greater leverage. Use a larger pair of pliers for gripping or a bolt cutter for cutting.

4.14 Do not use cushion grip handles for jobs requiring tools with electrically insulated handles. Cushion grips are for comfort primarily and do not protect against electric shock.

4.15 Do not use pliers on nuts and bolts; use a wrench.

5.0 Screwdrivers

5.1 Screwdrivers are made in various shapes and sizes and for many uses. Use the correct screwdriver for the job.

5.2 Choose contoured handles that fit the shank tightly, with a flange to keep the hand from slipping off the tool.

5.3 Use a slot screwdriver with a blade tip width that is the same as the width of the slotted screw head.

5.4 For cross-head screws, use the correct size and type of screwdriver; a Phillips screwdriver may slip out of a screw head designed for use with the slightly flatter-tipped Pozidriv screwdriver.

5.5 Use a vise or clamp to hold the stock if the piece is small or moves easily.

5.6 Keep the screwdriver handle clean. A greasy handle could cause an injury or damage from unexpected slippage.

5.7 If work must be carried out on “live” electrical equipment, use screwdrivers that have insulated handles designed for electrical work and a non-conducting shaft. Remember, most plastic handles are designed for grip and comfort.

5.8 Use non-magnetic tools when working near strong magnets (e.g., in some laboratories).

5.9 Use a screw-holding screwdriver (with screw-holding clips or magnetic blades) to get screws started in awkward, hard-to-reach areas. Square-tipped screwdrivers (e.g., Robertson) that hold screws with recessed square holes are also useful in such situations.

5.10 Use an offset screwdriver in close quarters where a conventional screwdriver cannot be used.

5.11 Use a screwdriver that incorporates the following features when continuous work is needed:

5.11.1 Use a pistol grip to provide for a straighter wrist and better leverage.

5.11.2 Use a "Yankee drill" mechanism (spiral ratchet screwdriver or push screwdriver) which rotates the blade when the tool is pushed forward.

5.11.3 Use a ratchet device to drive hard-to-move screws efficiently, or use a powered screwdriver.

5.12 File a rounded tip square making sure the edges are straight. A dull or rounded tip can slip out of the slot and cause hand injury or damage to materials.

5.13 Store screwdrivers in a rack or partitioned pouch so that the proper screwdriver can be selected quickly.

5.14 Do not lean or push on a screwdriver with any more force than necessary to keep contact with the screw. A screw properly piloted and fitted will draw itself into the right position when turned. Keep the shank directly over the screw being driven.

5.15 Do not hold the stock in one hand while using the screwdriver with the other as an injury may result if the screwdriver slips out of the slot.

5.16 Do not hammer screws that cannot be turned.

5.17 Do not grind the screwdriver tip to fit another size screw head.

5.18 Do not try to use screwdrivers on screw heads for which they are not designed (e.g., straight blade screwdrivers on Phillips, clutch head, Torx or multi-fluted spline screw heads).

5.19 Do not use defective screwdrivers (e.g. rounded or damaged edges or tips; split or broken handles; bent shafts).

5.20 Do not use a screwdriver for prying, punching, chiseling, scoring, scraping or stirring paint.

5.21 Do not use pliers on the handle of a screwdriver for extra turning power. A wrench should be used only on the square screwdriver shank designed for that purpose.

5.22 Do not expose a screwdriver blade to excessive heat. Heat can affect the temper of the metal and weaken the tool.

5.23 Do not use a screwdriver to check if an electrical circuit is live. Use a suitable meter or other circuit testing device.

5.24 Do not carry screwdrivers in clothing pockets.

6.0 Snips

6.1 Wear safety glasses and protective gloves when working with snips. Small pieces of metal may go flying in the air and cut edges of metal are sharp.

6.2 Snips are made in various shapes and sizes for various tasks. The handle can be like those on scissors with finger and thumb holes or like plier handles. Models are available for cutting in straight lines and in curves to the left or right.

6.3 Select the right size and type of snips for the job; check the manufacturer's specifications about the intended use of the snips (e.g., type of cut - straight, wide curve, tight curve, right or left, and maximum thickness and kind of metal or other material that can be cut).

6.3.1 Universal snips can cut in both straight and wide curves.

6.3.2 Straight snips and duckbill snips (flat blade, "perpendicular" to the handle, with pointed tips) are generally designed to cut in straight lines; some duckbill snips are designed for cutting curved lines.

6.3.3 Hawk's bill snips (with crescent-shaped jaws) are used for cutting tight circles.

6.3.4 Aviation snips have compound leverage that reduces the effort required for cutting.

6.3.5 Offset snips have jaws that are set at an angle from the handle.

6.4 Use only snips that are sharp and in good condition.

6.5 Use snips for cutting soft metal only. Hard or hardened metal should be cut with tools designed for that purpose.

6.6 Use ordinary hand pressure for cutting. If extra force is needed, use a larger tool.

6.7 Cut so that the waste is on the right if you are right-handed or on the left if you are left-handed.

6.8 Avoid springing the blades. This results from trying to cut metal that is too thick or heavy for the snips you are using.

6.9 Keep the nut and the pivot bolt properly adjusted at all times.

6.10 Oil the pivot bolt on the snips occasionally.

6.11 Do not try to cut sharp curves with straight cut snips.

6.12 Do not cut sheet metal thicker than the manufacturer's recommended upper limit (e.g., cuts up to 16-gauge cold, rolled steel or 18-gauge stainless steel). Do not extend the length of handles to gain greater leverage.

6.13 Do not hammer or use your foot to exert extra pressure on the cutting edges.

6.14 Do not use cushion grip handles for tasks requiring insulated handles. They are for comfort primarily and not for protection against electric shocks.

6.15 Do not attempt to re-sharpen snips in a sharpening device designed for scissors, garden tools, or cutlery.

7.0 Wrenches

7.1 Use the correct wrench for the job - pipe wrenches for pipes and plumbing fittings, and general-use wrenches for nuts and bolts.

7.1.1 Do not use pipe wrenches on nuts and bolts.

7.1.2 Use a box or socket wrench with a straight handle, rather than an off-set handle, when possible.

7.1.3 Do not use a conventional adjustable wrench for turning a tap – it will cause uneven pressure on the tap that may cause it to break.

7.1.4 Do not use a makeshift wrench.

7.2 Inspect pipe wrenches periodically for worn or unsafe parts and replace them:

7.2.1 Wrenches must not be used when jaws are sprung to the point that slippage occurs.

7.2.2 Ensure that the teeth of a pipe wrench are sharp, clean and free of oil and debris.

7.2.3 Do not use worn adjustable wrenches. Inspect the threads, knurl, jaw and pin for wear.

7.2.4 Discard any bent or damaged wrenches (e.g., open-ended wrenches with spread jaws or box wrenches with broken or damaged points).

7.3 Select the correct jaw size to avoid slippage.

7.3.1 Ensure that the jaw of an open-ended wrench is in full contact (fully seated, “flat,” not tilted) with the nut or bolt before applying pressure.

7.3.2 Face a pipe wrench or adjustable wrench “forward,” adjust tightly and turn the wrench so pressure is against the permanent or fixed jaw. Do not pull on a wrench that is loosely adjusted.

7.3.3 Adjust the pipe wrench grip to maintain a gap between the back of the hook jaw and the pipe. This concentrates the pressure at the jaw teeth, producing the maximum gripping force. It also aids the ratcheting action.

7.3.4 Do not insert a shim in a wrench for better fit.

7.3.5 Before applying pressure, ensure that the jaws have a good bite.

7.3.6 Make sure adjustable wrenches do not "slide" open during use.

7.3.7 Do not increase the leverage by adding sleeved additions (e.g., a pipe) to increase tool handle length. Use a larger wrench as necessary.

7.4 Ensure that the pipe or fitting is clean to prevent unexpected slippage and possible injury.

7.5 Maintain a proper stance with feet firmly placed to maintain balance.

7.5.1 Position the body in a way that will prevent loss of balance and injury if the wrench slips or something (e.g., a bolt) suddenly breaks.

7.5.2 Pull, rather than push on the wrench handle as body balance is more likely to be maintained if the wrench slips.

7.5.3 Pull using a slow, steady pull; do not use fast, jerky movements.

7.6 Apply a small amount of pressure to a ratchet wrench initially to ensure that the ratchet wheel (or gear) is engaged with the pawl (a catch fitting in the gear) for the direction you are applying pressure.

7.7 Support the head of the ratchet wrench when socket extensions are used.

7.8 Stand aside when work is done with wrenches overhead.

7.9 Do not use a wrench on moving machinery.

7.10 Do not use the wrong tools for the job. For example: Do not use pliers instead of a wrench or a wrench as a hammer. Do not use pipe wrenches for lifting or bending pipes.

7.11 Do not strike a wrench (except a "strike face" wrench) with a hammer or similar object to gain more force.

7.12 Do not expose a wrench to excessive heat (like from a blow torch) that could affect the temper of the metal and ruin the tool.

8.0 Files/Rasps

8.1 Do not use a file as a pry bar, hammer, screwdriver, or chisel.

8.2 When using a file or a rasp, grasp the handle in one hand and the toe of the file in the other.

8.3 Do not hammer on a file.

9.0 Chisels and Punches

9.1 Use the right size and type of chisel (metal or wood) or punch (drift pin, centre, pin) for the job.

9.2 Use tools only if they are good condition (i.e., cutting edges are sharp, struck head is not mushroomed or chipped).

9.2.1 Do not use chisels or punches if the cutting edge is dull, mushroomed or chipped, or if the point of a punch is slanted or damaged.

9.2.2 Choose smooth, rectangular handles that have no sharp edges and are attached firmly to the chisel. Replace broken or splintered handles.

9.2.3 Redress striking tools with burred or mushroomed heads.

- Redress the point or cutting edge to its original shape.
- Do not use a grinder to redress heat-treated tools. Use a whetstone.
- Grind to a slightly convex cutting edge.
- The point angle of the chisel should be 70° for hard metals, 60° for soft.
- Do not apply too much pressure to the head when grinding a chisel. The heat generated can remove the temper. Immerse the chisel in cold water periodically when grinding.

9.2.4 Replace any chisel or punch that is bent, cracked, shows excessive wear or cannot successfully be redressed.

9.3 Check stock thoroughly for knots, staples, nails, screws, or other foreign objects before chiseling or punching.

9.4 Hold the chisel, for shearing and chipping, at an angle which permits the bevel of the cutting edge to lie flat against the shearing plane.

9.5 Use the appropriate type and size of hammer for the chisel or punch, such as:

9.5.1 A wooden or plastic mallet with a large striking face on chisels.

9.5.2 Heavy-duty or framing chisels made of a solid or molded handle can be struck with a steel hammer.

9.5.3 Ball-peen hammers are generally chosen for use with punches.

9.5.4 Refer to the ‘Hammers’ section of this document for further guidance.

9.6 Chip or cut away from the body. Keep hands and body behind the cutting edge.

9.7 Make finishing or paring cuts with hand pressure alone.

9.8 Provide hand protection if possible:

9.8.1 Use a sponge rubber shield, punch or chisel holder.

9.8.2 Clamp small work pieces in a vise and chip towards the stationary jaw when working with a chisel.

9.8.3 Do not allow bull point chisels to be hand-held by one employee and struck by another. Use tongs or a chisel holder to guide the chisel so that the holder's hand will not be injured.

9.9 Do not use cold chisels for cutting or splitting stone or concrete.

9.10 Do not use a drift pin punch (also called an aligning punch) as a pin punch intended for driving, removing, or loosening pins, keys, and rivets.

9.11 Do not use a wood chisel on metal.

9.12 Do not use a wood chisel as a pry or a wedge.

9.13 Place chisels safely within the plastic protective caps to cover cutting edges when not in use.

9.14 Store chisels in a “storage roll,” a cloth or plastic bag with slots for each chisel, and keep them in a drawer or tray.

10.0 Hacksaws

10.1 Select correct blade for material being cut.

10.2 Keep saw blades clean and lightly oiled using light machine oil on the blade to keep it from overheating and breaking.

10.3 Secure blade with the teeth pointing forward. Tighten the nut until the blade is under tension.

10.4 Keep blade rigid, and frame properly aligned.

10.5 Cut using steady strokes, directed away from you.

10.6 Use entire length of blade in each cutting stroke.

10.7 Cut harder materials more slowly than soft materials.

10.8 Clamp thin, flat pieces requiring edge cutting.

10.9 Do not apply too much pressure on the blade as the blade may break.

10.10 Do not twist when applying pressure.

10.11 Do not use when the blade becomes loose in the frame.

11.0 Vises

11.1 When clamping a long work piece in a vise, support the far end of the work piece by using an adjustable pipe stand, saw horse or box.

11.2 Position the work piece in the vise so that the entire face of the jaw supports the work piece.

11.3 Do not use a vise that has worn or broken jaw inserts, or has cracks or fractures in the body of the vise.

11.4 Do not slip a pipe over the handle of a vise to gain extra leverage.

12.0 Clamps

12.1 Do not use a C-clamp for hoisting materials.

12.2 Do not use a C-clamp as a permanent fastening device.

13.0 Pry Bars

13.1 Establish balance and stable footing when using a bar for prying.

13.2 Pry bars must be appropriate to the task to prevent slipping or tool breakage.

14.0 Jacks

14.1 All jacks—including lever and ratchet jacks, screw jacks, and hydraulic jacks—must have a stop indicator, and the stop limit must not be exceeded.

14.2 The manufacturer’s load limit must be permanently marked in a prominent place on the jack, and the load limit must not be exceeded.

14.3 A jack should never be used to support a lifted load. Once the load has been lifted, it must immediately be blocked up. Put a block under the base of the jack when the foundation is not firm, and place a block between the jack cap and load if the cap might slip.

14.4 To set up a jack, make certain of the following:

14.4.1 The base of the jack rests on a firm, level surface;

14.4.2 The jack is correctly centered;

14.4.3 The jack head bears against a level surface; and

14.4.4 The lift force is applied evenly.

14.5 Clear all tools, equipment and any other obstructions from under the load before lowering the jack.

14.6 Proper maintenance of jacks is essential for safety. All jacks must be lubricated regularly. In addition, each jack must be inspected according to the following schedule:

14.6.1 For jacks used continuously or intermittently at one site—inspected at least once every 6 months;

14.6.2 For jacks sent out of the shop for special work—inspected when sent out and inspected when returned; and

14.6.3 For jacks subjected to abnormal loads or shock—inspected before use and immediately thereafter.

Americas

Electric & Battery Hand Tools

S3AM-305-ATT17

1.0 Objective / Overview

1.1 Electric and battery hand tools, also known as power tools, allow the user to perform their task more easily by providing more torque, speed, etc.

2.0 Hazards

2.1 Electricity

3.0 Safe Work Practices (General)

3.1 Review manufacturer's operating manual and *S3AM-305-PR1 Hand & Power Tools* for additional guidelines.

3.2 All electrical tools and equipment must be operated in accordance with the requirements of *S3AM-302-PR1 Electrical Safety.*

3.3 Keep all people not involved with the work at a safe distance from the work area.

3.4 Inspect power tools prior to each use.

- 3.4.1 Ensure that the power tool has the correct guard, shield or other attachment that the manufacturer recommends.
- 3.4.2 Ensure that the tools are properly grounded using a three-prong plug (no loose or faulty prongs), are double insulated (and are labeled as such), or are powered by a low-voltage isolation transformer; this will protect users from an electrical shock.
- 3.4.3 Check the handle and body casing of the tool for cracks or other damage.
- 3.4.4 If the tool has auxiliary or double handles, check to see that they installed securely.
- 3.4.5 Inspect cords for defects: check the plug and power cord for cracking, fraying, and other signs of wear or faults in the cord insulation.
- 3.4.6 Ensure power tool switches and triggers are fully functional.
- 3.4.7 If equipped with a trigger-lock, ensure it is disabled.
- 3.4.8 If a power tool is defective, remove it from service, and tag it clearly "Out of service for repair" or "Do Not Use". Replace damaged equipment immediately – do not use defective tools "temporarily." DO NOT ATTEMPT FIELD REPAIRS.

3.5 Maintain tools with care; keep them sharp and clean for best performance.

3.6 Follow instructions in the user's manual for lubricating and changing accessories.

3.7 Do not over-reach. Be sure to keep good footing and maintain good balance when operating power tools.

3.8 If they are available, choose tools with double handles to permit easier holding and better manipulation of the tool.

3.9 Do not brush away sawdust, shavings or turnings while the power tool is running. Never use compressed air for cleaning surfaces or removing sawdust, metal turnings, etc.

3.10 Do not operate power tools that are not specified as intrinsically safe in an area containing explosive vapors or gases.

3.11 Do not clean tools with flammable or toxic solvents.

3.12 Do not surprise or touch anyone who is operating a power tool. Startling an operator could result in injury or

property damage.

3.13 Hand-held power tools must be equipped with a constant-pressure switch or control that shuts off the power when pressure is released.

3.13.1 Powered hand tools shall not be capable of being locked in the ON position. Trigger locks are not permitted.

3.13.2 All power tools should be ordered without trigger locks; if a tool is found with a trigger lock intact it must be disabled.

3.14 Avoid accidental starting. Do not hold fingers on the switch button, and ensure it is in the OFF position while plugging the tool in or while carrying an energized (plugged-in, battery in place) tool.

3.15 Do not leave a running tool unattended and ensure the power tool will not re-energize when not in use and when servicing, cleaning, making adjustments, applying flammable solutions or changing accessories:

3.15.1 Ensure it has stopped running completely.

3.15.2 Ensure the trigger or switch is OFF.

3.15.3 Ensure the power tool is disconnected from the power supply (unplugged or battery removed).

3.16 Operate power tools within their design limitations.

3.17 Store power tools, batteries and electrical cords in a clean, dry area off the ground when not in use.

3.18 Do not use power tools in damp or wet locations unless they are approved for that purpose.

3.19 Keep work areas well lighted when operating power tools.

3.20 Equipment must have proper guards or shields and they must remain in place to protect the operator and others from the following:

3.20.1 Point of operation.

3.20.2 In-running nip points.

3.20.3 Rotating parts.

3.20.4 Flying chips and sparks.

3.21 If a guard is removed to clean or repair parts, replace it before testing the equipment and returning the machine to service

3.22 If, due to damage or deterioration, the original guard provided on a piece of equipment cannot be put in place, the tool must be removed from service.

3.23 Do not modify, remove, or disable any machine guards.

3.24 Remove any wrenches and adjusting tools before turning on a tool.

3.25 Use clamps, a vice or other devices to hold and support the piece being worked on, when practical to do so. This will allow you to use both hands for better control of the tool and will help prevent injuries if a tool jams or binds in a work piece.

4.0 Battery Powered Tools

4.1 Use only the type of battery specified by the tool manufacturer for the battery-powered tool to be used.

4.2 Recharge a battery or battery-powered tool only with a charger that specified for the battery.

4.3 Store a battery pack safely so that no metal parts, nails, screws, wrenches and so on can come in contact with the battery terminals; this could result in shorting out the battery and possibly cause sparks, fires or burns.

5.0 Safe Work Practice (Electric)

5.1 During use, keep power cords clear of tools and the path that the tool will take.

5.2 Employees' hands shall not be wet when plugging and unplugging cord and plug connected equipment and extension cords.

5.3 Portable electric equipment shall be disconnected when not in use, before servicing, and when changing accessories such as blades, bits, and cutters.

5.4 Portable electric equipment and extension cords used in potentially wet locations shall be approved for use in those locations by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation (e.g., F.M., UL, etc.).

5.5 The outlet box for portable extension cords for outdoor use shall be weatherproof and shall be maintained in good condition.

5.6 Maintain electrical cords and connections in good working order:

5.6.1 Cords and connection must be American National Standards Institute/Canadian Standards Association approved and bear a standardized certification marking (e.g., CSA, ANSI, UL, CE etc.).

5.6.2 To prevent overheating, use only approved extension cords that have the proper wire size for the length of cord and power requirements of the electric tool to be used.

- Do not connect or splice extension cords together to make a longer connection.
- For outdoor work, use outdoor extension cords marked “W-A” or “W.”

5.6.3 Eliminate octopus connections: if more than one receptacle plug is needed, use a power bar or power distribution strip that has an integral power cord and a built-in overcurrent protection.

5.6.4 Portable electrical equipment shall not be carried by the cord, nor raised or lowered by the cord.

5.6.5 Electrical cords shall not be removed from a receptacle by pulling on the cord line.

5.6.6 Cords shall not be placed across walkways unless appropriate cord and worker protection is in place to prevent damage to the cord and worker tripping hazards (e.g. cable protectors, cords suspended over walkway, etc.).

5.6.7 Do not walk on or allow vehicles or other moving equipment to pass over unprotected power cords. Cords should be put in conduits or protected by placing planks on each side of them.

5.6.8 A cord should not be pulled or dragged over nails, hooks, or other sharp objects that may cause cuts in the insulation.

5.6.9 Keep cords away from heat, oil, sharp edges and moving parts.

5.6.10 Never use extension cords as permanent wiring as they are for temporary use only. Do not run behind bookshelves, or furniture if the cord cannot be monitored for severe bending or damage.

5.6.11 Inspect cords frequently for such damage such as fraying, kinks, cuts, and cracked or broken outer jackets. Any cord that exhibits damage or feels more than comfortably warm to the touch shall be removed from service, tagged “Do Not Use’ and checked by an electrician.

5.6.12 Do not tie power cords in knots. Knots can cause short circuits and shocks. Loop the cords or use a twist lock plug.

5.7 Electrical shock associated with power tool use can cause heart failure and burns, as well as injury from falls. Under certain conditions, even a small amount of electric current can result in fibrillation of the heart and death.

5.7.1 Verify that the power source is the same voltage and current as indicated on the nameplate of the tool. Using a higher voltage can cause serious injury to the operator as well as burn out the tool.

5.7.2 All electrical connections for these tools must be suitable for the type of tool and the working

conditions (wet, dusty, flammable vapors).

5.7.3 To protect the worker from shock and burns, electric tools must have a three-wire cord with a ground and be plugged into a grounded receptacle, be double insulated, or be powered by a low-voltage isolation transformer.

5.7.4 All outdoor receptacles must be protected by means of a ground fault circuit interrupter (GFCI or GFI) available in portable or fixed models. Do not use any electric power tools outdoors in a receptacle that is not properly protected.

5.7.5 Three-wire cords contain two current-carrying conductors and a grounding conductor. Any time an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground.

5.7.6 The third prong must never be removed from the plug.

5.7.7 Double-insulated tools are available that provide protection against electrical shock without third-wire grounding. On double-insulated tools, an internal layer of protective insulation completely isolates the external housing of the tool.

5.7.8 Avoid body contact with grounded surfaces like refrigerators, pipes and radiators when using electric powered tools; this will reduce the likelihood of shock if the operator's body is grounded.

5.7.9 Report all shocks and/or sparks from electrical tools, no matter how minor. The tool in question should be tagged out and not be used until it has been checked for ground fault.

5.8 Only authorized persons are permitted to activate, de-activate or lockout electrical equipment.

5.9 Where there is or may be a danger to a worker, from the inadvertent operation of electrical equipment, then that equipment must be locked out and tagged prior to commencing work. Refer to *S3AM-325-PR1 Lockout Tagout*.

5.9.1 Switch off all appropriate devices (MCC, Distribution Panel, Disconnect).

- Stand to one side when engaging or disengaging an electrical circuit breaker to avoid electrical flash backs Lock and tag Electrical Supply devices in the “OFF” position.

5.9.2 Test to be sure the equipment cannot be operated at the STOP-START switch.

5.9.3 Test to be sure electrical equipment is de-energized.

5.9.4 After completion of task, remove padlocks and destroy tags.

6.0 Personal Protective Equipment (Level D PPE)

6.1 Wear proper apparel for the task. Long hair, loose or baggy clothing, ties, or jewellery can become caught in moving parts.

6.2 Use gloves with protection appropriate to the task (e.g. impact, abrasion, puncture, etc.).

6.3 Safety toed boots.

6.4 Use hearing protection as necessary.

6.5 Kickback aprons as necessary.

6.6 Wear safety glasses with side shields at all times (or safety goggles) and face shield if flying debris may be encountered.

7.0 Belt Sanders

7.1 Refer to *S3AM-305-ATT11 Sanders.*

8.0 Drills

8.1 Refer to *S3AM-305-ATT8 Power Drill*.

9.0 Planers and Joiners

9.1 Use blades of the same weight and set at the same height.

9.2 Ensure that the blade-locking screws are tight.

9.3 Guard planers and joiners to prevent contact with the blades throughout the full length of the cutting area.

9.4 Support the material (stock) in a comfortable position that will allow the job to be done safely and accurately.

9.5 Check stock thoroughly for staples, nails, screws, or other foreign objects before using a planer.

9.6 Start a cut with the infeed table (front shoe) resting firmly on the stock and with the cutter head slightly behind the edge of the stock.

9.7 Use two hands to operate a planer - one hand on the trigger switch and the other on a front handle.

9.8 Do not put fingers or any object in a deflector to clean out chips while a planer is running.

9.9 Disconnect the power supply when stopping to dump out chips.

9.10 Do not set a planer down until blades have stopped turning.

9.11 Keep all cords clear of cutting area.

10.0 Routers

10.1 Ensure that the bit is securely mounted in the chuck and the base is tight.

10.2 Put the base of the router on the work, template or guide. Make sure that the bit can rotate freely before switching on the motor.

10.3 Secure stock. Never hold or have another individual hold the material. Sudden torque or kickback from the router can cause damage and injury.

10.4 Before using a router, check stock thoroughly for staples, nails, screws or other foreign objects.

10.5 Keep all cords clear of cutting area.

10.6 Always hold both hands on router handles, until a motor has stopped. Do not set the router down until the exposed router bit has stopped turning.

10.7 When inside routing, start the motor with the bit above the stock. When the router reaches full power, lower the bit to two times the required depth.

10.8 When routing outside edges, guide the router counter clockwise around the work.

10.9 When routing bevels, moldings and other edge work, make sure the router bit is in contact with the stock to the left of a starting point and is pointed in the correct cutting direction.

10.10 Feed the router bit into the material at a firm, controlled speed.

10.11 Softwood may enable fast router cutting speed. With hardwood, knotty and twisted wood, or with larger bits, cutting may be very slow.

10.12 The sound of the motor can indicate safe cutting speeds. When the router is fed into the material too slowly, the motor makes a high-pitched whine. When the router is pushed too hard, the motor makes a low growling noise.

10.13 When the type of wood or size of the bit requires going slow, make two or more passes to prevent the router from burning out or kicking back.

10.14 To decide the depth of cut and how many passes to make, test the router on scrap lumber similar to the work.

11.0 Circular Saws

11.1 Refer to *S3AM-305-ATT2 Circular Saw*.

12.0 Other Saws

12.1 Use lubricants when cutting metals.

12.2 Keep all cords clear of cutting area.

12.3 Cut green or wet material slowly and with caution. Check all material being cut for nails, hard knots, etc.

12.4 Make sure guards are installed and are working properly.

12.4.1 Table saws must be fitted with blade guards and a splitter to prevent the work from squeezing the blade and kicking back on the operator.

- Exposed parts of the saw blade under the table must be properly guarded.
- All swing cutoff and radial saws that are drawn across a table with limit stops to prevent the saw from traveling beyond the edge of the table

12.4.2 Ensure band saw blades are fully enclosed except at the point of operation.

12.4.3 Ensure swing cut-off saws have a guard completely covering the upper half of the saw.

12.5 Remember sabre saws cut on the upstroke.

12.6 Position the saw beside the material before cutting and avoid entering the cut with a moving blade.

12.7 Secure and support stock as close as possible to the cutting line to avoid vibration.

12.7.1 Hold the material being cut firmly against a back guide or fence and cut with a single, steady pass.

12.7.2 Use a push stick or guide when cutting operation requires the hands of the operator to come close to the blade.

12.7.3 When cutting long stock, provide extension tables and a helper to assist the operator.

12.7.4 Keep the base or shoe of the saw in firm contact with the stock being cut.

12.7.5 Automatic feed devices should be used whenever feasible.

12.8 Select the correct blade for the material being cut and allow it to cut steadily. Do not force it. Clean and sharp blades operate best.

12.9 Set the blade to go no further than 1/8 to 1/4 inch deeper than the material being cut.

12.10 Do not start cutting until the saw reaches its full power.

12.11 Do not force a saw along or around a curve. Allow the machine to turn with ease.

12.12 Do not insert a blade into or withdraw a blade from a cut or lead hole while the blade is moving.

12.13 Do not put down a saw until the motor has stopped.

12.14 Do not reach under or around the stock being cut.

12.15 Maintain control of the saw always. Avoid cutting above shoulder height.

12.16 External Cuts

12.16.1 Make sure that the blade is not in contact with the material or the saw will stall when the motor starts.

12.16.2 Hold the saw firmly down against the material and switch the saw on.

12.16.3 Feed the blade slowly into the stock, maintaining an even forward pressure.

12.17 Internal Cuts

12.17.1 Drill a lead hole slightly larger than the saw blade. With the saw switched off, insert the blade in the hole until the shoe rests firmly on the stock.

12.17.2 Do not let the blade touch the stock until the saw has been switched on.

Americas

Hand & Power Tool Maintenance Inventory

S3AM-305-FM1

Equipment (*Make, Model, Serial #*)	Equipment Owner	Equipment Status (*On Hire, Active, Decommissioned*)	Frequency of service	Service Type	Manufacturer's Standards	Industry Standards	Legislated Requirements	Location of Equipment

Americas

Hand & Power Tool Inspection Report

S3AM-305-FM2

TOOL	DATE	INSPECTED BY	RESULTS	ACTION REQUIRED	ACTION COMPLETED (DATE)

Americas

Wildlife, Plants & Insects

S3AM-313-PR1

1.0 Purpose and Scope

1.1 Communicates the requirements and precautions to be taken by AECOM employees to protect against the biological hazards associated with insects, arachnids, snakes, poisonous plants, and other animals referred to herein collectively as “biological hazards”.

1.2 This procedure applies to all AECOM Americas-based employees and operations.

2.0 Terms and Definitions

2.1 **Field Work –** Any activity conducted at a site that contains brush, overgrown grass, leaf litter, poisonous plants, or is located near mosquito breeding areas and includes work in structures where animals might exist that harbor fleas or ticks or where spiders and mites could be present. Field work includes, but is not limited to, Phase I, Phase II, Operations Monitoring & Maintenance, biological surveys, and other work that meets the definition of field work.

2.2 **Poisonous** – Capable of harming or killing by or as if by poison; toxic or venomous.

2.3 **Phase I Environmental Site Assessment –** Investigation of real property to determine the possibility of contamination, based on visual observation and property history, but no physical testing. Under new Environmental Protection Agency regulations that went into effect on November 1, 2006, a Phase I, as it is called for short, will be mandatory for all investors who wish to take advantage of Comprehensive Environmental Response, Compensation, and Liability Act defenses that will shield them from liability for future cleanup, should that prove necessary. The new Phase I rules, called “All Appropriate Inquiry” or AAI, also require more investigation than previously mandated. Investors can expect to see dramatic price increases over prior experiences.

2.4 **Phase II Environmental Site Assessment** – Investigation of real property through physical samplings and analyses to determine the nature and extent of contamination and, if indicated, a description of the recommended remediation method.

3.0 References

3.1 RS2-001-PR1 Firearms Standard

3.2 S3AM-004-PR1 Incident Reporting, Notifications & Investigation

3.3 S3AM-008-PR1 Fitness for Duty

3.4 S3AM-113-PR1 Heat Stress

3.5 S3AM-208-PR1 Personal Protective Equipment

3.6 S3AM-209-PR1 Risk Assessment & Management

4.0 Procedure

4.1 Roles and Responsibilities

4.1.1 **Managers / Supervisors**

- Responsible for managing field work.
- Work with employees to see that a Task Hazard Analysis (THA) for the work to be conducted has been performed prior to the beginning of the field work and that it includes an assessment of potential biological hazards.

- Implement control measures at the location to reduce the potential for employees to be exposed to injuries and illnesses from biological hazards while working.
- If the exposures cannot be eliminated or managed with engineering controls, approve the use and cost of Personal Protective Equipment (PPE) and protective repellents and lotions and confirm that exposed employees have and use these products.

4.1.2 **SH&E Manager**

- Confirm training and guidance is provided to employees consistent with this procedure.
- During the performance of site visits, assess the precautions being taken against biological hazards for compliance with this procedure.
- Assist AECOM personnel in identifying hazards and selecting appropriate control measures.
- As applicable, review and approve relevant SH&E Plans for locations that have biological hazards.

4.1.3 **Employees**

- Participate in required training related this procedure.
- Participate in the development of THAs for the task, identify control measures to limit exposure and request PPE, repellents, and protective lotions identified by this procedure.
- Update the applicable THA when a new, unaccounted for biological hazard is identified. Employee shall stop work to identify appropriate elimination or control measures (and obtain any necessary guidance) before continuing work.
- Obtain approval from Managers and/or Supervisors to purchase selected PPE prior to purchasing.
- Implement the precautions appropriate to prevent exposure to the hazardous wildlife, insects and plants.
- Observe requirements for reporting (e.g. tick bites, skin irritations, etc.) as detailed within the procedure and attachments.

4.2 Training

4.2.1 Employees shall be trained to recognize organisms that represent a threat in the regions in which they work – experienced field staff shall provide on the job training to assist staff with hazard recognition.

4.2.2 Employees shall be properly trained to the anticipated tasks and the associated required PPE.

4.3 Overview

4.3.1 The procedures discussed below are detailed because these hazards have historically posed the most significant risk to AECOM employees. Note that this discussion is not a fully encompassing list of hazards. As part of the SH&E Plan and THA developed by the AECOM personnel, in accordance with *S3AM-209-PR1 Risk Assessment & Management*, additional consideration shall be given to other biological hazards.

4.3.2 Departments of Public Health local to the worksite, as well as the Centers for Disease Control (CDC) can serve as a resource for identifying biological hazards not discussed in this procedure.

4.3.3 If additional biological hazards are identified, employees should stop work and contact the SH&E Manager to discuss the hazards and identify effective control measures. Those control measures shall be implemented at the location prior to restarting work.

4.4 Employee Sensitivity

4.4.1 Sensitivity to toxins generated by plants, insects and animals varies according to dosage and the ability of the victim to process the toxin; therefore, it is difficult to predict whether a reaction will

occur, or how severe the reaction will be. Employees should be aware that there are a large number of organisms capable of causing serious irritations and allergic reactions. Some reactions will only erupt if a secondary exposure to sunlight occurs. Depending on the severity of the reaction, the result can be severe scarring, blindness or even death.

4.4.2 Employees also need to consider whether they are sensitive to the use of insect repellents.

4.5 Planning and Hazard Assessment

4.5.1 AECOM personnel shall confirm that the potential for exposure to specific biological hazards are assessed prior to the commencement of work and that the procedures specified by this procedure are integrated into the THA planning process and conveyed to employees conducting the field work. This information shall be communicated in the location-specific SH&E plan, the THA, pre-project kickoff meetings, and tailgate meetings at the location.

4.5.2 It is important to note that the precautions to be taken by employees to decrease the risk of exposure to biological hazards can directly increase the risk of heat-related illness due to thermal stresses. Therefore, heat stress monitoring and precautions shall be included as a critical component of the task-specific THA in accordance with *S3AM-511-PR1 Heat Stress.*

4.5.3 During the preparation of the location-specific SH&E plan and task specific THA, Managers, Supervisors, and employees shall determine what biological hazards might be encountered during the task or operations and shall prescribe the precautions to be taken to reduce the potential for exposure and the severity of resulting illnesses. Consideration will be given to conditions such as weather, proximity to breeding areas, host animals, and published information discussing the presence of the hazards.

4.5.4 It should be assumed that at least one of the biological hazards exists whenever working on undeveloped property. This can include insect activity any time that local temperatures exceed 40 degrees Fahrenheit (4.5 degrees Celsius) for a period of more than 24 hours. The stubble and roots of poisonous plants can be a hazard any time of year, including when some plants are dormant or mown.

4.5.5 The hazard assessments shall also consider the additional hazards posed by vegetative clearing such as the increased risk of coming in contact with poison ivy, oak or sumac and hazards associated with the use of tools and equipment to remove vegetation.

4.5.6 Employees in the field where biological hazards exist shall not enter the hazard areas unless they are wearing the appropriate protective clothing, repellents, and barrier creams specified below. If the hazard is recognized in the field but was not adequately assessed during the THA, the field staff shall stop work and not proceed until the THA has been amended and approved and protective measures implemented.

4.5.7 Employees who have severe allergic reactions are strongly recommended to notify their Manager, field Supervisor and co-workers of the potential for a reaction and demonstrate what medication they might need, where they keep it and how it is administered.

4.5.8 A decision flow chart and table for determining the potential for biological hazards in the Americas has been provided in *S3AM-313-ATT1 Biological Hazard Assessment Flow Chart.*

4.5.9 Restrictions:

- No firearms or weapons are allowed to be used without express permission by the Region Executive and Chief Resilience Officer, refer to the *RS2-001-PR1 Firearms Standard*.
- No weapons related work shall occur without an assessment that includes appropriate hazard control measures and training.
- Staff with life-threatening reactions shall not undertake work in areas infested with the allergen (e.g., wasps, poison ivy), unless precautions are met which satisfy a medical practitioner's requirements. Refer to *S3AM-008-PR1 Fitness for Duty*.

4.5.10 Precautions

- Be aware of the potential irritants in your area and know how to recognize them.
- Modify activities to avoid encounters (diurnal rhythms, seasonal rhythms).
- Avoid wearing perfume and cologne and strong smelling deodorants, lotions, soaps, and shampoos.
- When working in areas where there may be small insects that "hitchhike" (e.g., ticks, spiders, scorpions), it is recommended that clothes are turned inside out and shaken at the end of day; do not wear same clothes two days in a row.
- Staff should always be aware of where they are placing their hands, or where they are sitting in order to avoid contact with potential toxins. Avoid reaching into areas where visibility is limited.

4.6 Wildlife Hazards (Wild Animals, Reptiles and Birds)

4.6.1 Employees shall not work alone in areas where the risk of an encounter with dangerous wildlife is high. Wildlife handling shall only be completed under direct supervision of an experienced individual. Refer to the following work instructions for more specifics:

- *S3AM-313-ATT13 Alligators*
- *S3AM-313-ATT9 Large Carnivores & Ungulates*
- *S3AM-313-ATT10 Bear Safety*
- *S3AM-313-ATT11 Small Mammals*
- *S3AM-313-ATT12 Snakes & Scorpions*

4.7 Ticks, Spiders and other Insects

4.7.1 Insects for which precautionary measures should be taken include but are not limited to: mosquitoes (potential carriers of disease aside from dermatitis), black flies, wasps, bees, ticks, fire ants and European fire ants.

4.7.2 Employees with known allergies to insect stings should consult their personal physician for advice on any immediate medications that they should carry with them. Epi-pens[1] shall be carried at all times in the field by employees who are aware that anaphylactic shock is a possibility for them AECOM highly recommends that employees with known allergies inform their co-workers of the allergy and the location of the medications they might carry for the allergy.

4.7.3 Habitat Avoidance, Elimination and/or Control

- The most effective method to manage worker safety and health is to eliminate, avoid and/or control hazards. Clearing the location of brush, high grass and foliage reduces the potential for exposure to biological hazards. Clearing will not eliminate the exposure to flying insects and there might be an increased exposure to ticks and spiders during the clearing process.
- Projects such as subsurface environmental assessment or remediation are often candidates for brush and overgrown grass to be cleared. In these instances, the Manager shall either request that the client eliminate vegetation, or request approval from the client to have vegetation clearing added to the scope of work.
    - It should be noted that vegetation clearance may unintentionally serve to spread noxious and poisonous plant materials around the site.
    - As applicable, measures should be taken to prevent spread, such as but not limited to, confirming equipment and materials are not placed on affected areas, and equipment is decontaminated after use and before removal from site.

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[1] Epi-pens must be prescribed by a personal physician. Renew epi-pens on a regular schedule to ensure effectiveness and make sure your field companions know where it is and how to use it if you cannot self-administer the dose.

- When work shall be conducted in areas that cannot or may not be cleared of foliage, personal precautions and protective measures shall be prescribed.
- Mosquitoes breed in stagnant water and typically only travel a quarter mile (less than half a kilometer) from their breeding site. Whenever possible, stagnant water should be drained to eliminate breeding areas. Managers and client site managers should be contacted to determine whether water can be drained and the most appropriate method for draining containers, containment areas, and other objects of standing water.
- If water cannot be drained, products similar to Mosquito Dunks® can be placed in the water to control mosquitoes. Once wet, the Mosquito Dunks® kill the immature, aquatic stage of the mosquito. The active ingredient is a beneficial organism that is lethal to mosquito larvae, but harmless to fish, humans, and other animals. Mosquito Dunks® provide long-term protection for 30 days or more.

4.7.4 Ticks

- Ticks can be encountered when walking in tall grass or shrubs. They crawl up clothing searching for exposed skin where they will attach themselves. The most serious concern is a possibility of contracting a disease.
- Data from the CDC indicates that tick-borne diseases have become increasingly prevalent. At the same time, tick repellents have become both safe and effective so it is possible to prevent the vast majority of bites and, therefore, most related illnesses. The use of permethrin is strongly advised.
- The most common and severe tick-borne illnesses in the U.S. are Lyme disease, Ehrlichiosis, and Rocky Mountain spotted fever. A summary table listing CDC informational resources for these diseases is provided in *S3AM-313-ATT2 Ticks* along with a listing of CDC information resources and maps showing the distribution of common tick-borne diseases in the U.S.
- When working in areas where ticks may occur, it is recommended that clothes are turned inside out and shaken at the end of day; do not wear the same clothes two days in a row.
- Employees should conduct a thorough full body tick check upon exiting the field. Shower within two hours of coming indoors to help wash away loose ticks. Clothes should be laundered in hot water or tumble dry clothes in a dryer on high heat for 10 minutes to kill ticks.
- To remove ticks that are embedded in skin, utilize a tick key. Alternatively use tweezers or fingers to carefully grasp the tick as close to the skin as possible and pull slowly upward, avoiding twisting or crushing the tick. Do not try to burn or smother the tick. Cleanse the bite area with soap and water, alcohol, or household antiseptic. Note the date and location of the bite and save the tick in a secure container such as an empty pill vial or film canister. A bit of moistened paper towel placed inside the container will keep ticks from drying out. Follow AECOM incident reporting guidelines to report the tick bite within 4 hours and notify the Manager or Supervisor.
- Familiarize yourself with the characteristic bulls-eye pattern of Lyme disease infection surrounding the bite. If you notice this type of pattern or rash resulting from a tick bite, immediately report the issue to your supervisor and follow the incident reporting requirements for your business group.
- If you experience symptoms such as fever, headache, fatigue, and a skin rash, you should immediately visit a medical practitioner as Lyme disease is treated easily with antibiotics in the early stages, but can spread to the heart, joints, and nervous system if left untreated.

4.7.5 Chiggers

- Chiggers are mite larvae, approximately ½ millimeter in size, and typically invisible to the naked eye. While chiggers are not known to carry infectious diseases, their bites and resulting rashes and itching can lead to dermatitis and a secondary infection.

- Chiggers are typically active from the last hard freeze in the winter or spring to the first hard freeze. They are active all year in the Gulf Coast and tropical areas.

4.7.6 Spiders

- Spiders can be found in derelict buildings, sheltered areas, basements, storage areas, well heads and even on open ground. Spiders can be found year round in sheltered areas and are often present in well heads and valve boxes.
- Most spider bites produce wounds with localized inflammation and swelling. The Black Widow and Brown Recluse spiders in the U.S. and others outside the U.S. inject a toxin that causes extensive tissue damage and intense pain.
- Additional information on spider identification can be found in attachment *S3AM-313-ATT3 Poisonous Spider Identification*.

4.7.7 Mosquitoes

- When a mosquito bites, it injects an enzyme that breaks down blood capillaries and acts as an anticoagulant. The enzymes induce an immune response in the host that results in itching and local inflammation. The tendency to scratch the bite sites can lead to secondary infections.
- CDC data indicates that mosquito-borne illnesses, including the strains of encephalitis, are a health risk. At least one of the Encephalitis strains listed below is known to exist in every area of the U.S. and in many other countries as well:
    - Eastern Equine encephalitis
    - Western Equine encephalitis
    - West Nile Virus
    - St. Louis encephalitis
    - La Crosse encephalitis
- Mosquitoes can transmit the West Nile Virus and other forms of encephalitis after becoming infected by feeding on the blood of birds which carry the virus.
- Most people infected with the virus experience no symptoms or they have flu-like symptoms. Sometimes though, the virus can cause severe illness, resulting in hospitalization and even death, so proper precautions should be taken. Consult a medical practitioner if you suspect you have West Nile Virus. Other diseases including Dengue Fever and Malaria are spread by mosquitoes in the sub-tropic and tropical parts of the world. See *S3AM-313-ATT4 Mosquito Borne Diseases* for information on the locations where mosquito borne diseases are known to be present.

4.7.8 Bees, Wasps and Hornets

- Wasps and bees will cause a painful sting to anyone if they are harassed. They are of most concern for individuals with allergic reactions who can go into anaphylactic shock. Also, instances where an individual is exposed to multiple stings can cause a serious health concern for anyone. These insects are most likely to sting when their hive or nest is threatened.
- Bees, hornets, and wasps may be found in derelict buildings, sheltered areas, behind covers or lids and even on open ground. Other protective measures are not normally effective against aggressive, flying insects. Be aware of the potential areas for these types of insects, approach these locations cautiously. Avoid reaching into areas where visibility is limited.
- If you see a nest in the area you are working in stop work. Contact the Manager or Site Supervisor for procedures to have the nest removed.
- If stung by a wasp, bee or hornet, notify a co-worker or someone who can help should you have an allergic reaction. Stay calm and treat the area with ice or cold water. Follow AECOM incident reporting guidelines to report the sting within 4 hours and notify the Manager or

Supervisor immediately. Seek medical attention if you have any reactions to the sting such as developing a rash, excessive swelling or pain at the site of the bite or sting, or any swelling or numbness beyond the site of the bite or sting.

4.7.9 Fire Ants

- The fire ant (southern and western U.S.) and the European fire ant (northeastern U.S. and eastern Canada) is often very abundant where it is established. It is very aggressive and commonly climbs up clothing and stings unprovoked when it comes into contact with skin. Painful irritations will persist for an hour or more.

4.7.10 Personal Protective Equipment (PPE)

- Chemically-treated field clothing, full-length clothing, or Tyvek® coveralls.
- Gloves shall also be worn consistent with the recommendations of the site-specific SWP and/or THA to minimize hand exposure.
- Where ticks, chiggers, and spiders are presumed to exist, the Tyvek® or chemically treated clothing will be taped to the work boots.
- See *S3AM-313-ATT2 Ticks* for configuration of clothing for protection against ticks and insects.
- Application of insect repellent to clothing and/or exposed skin. Oil of lemon eucalyptus, DEET, and Permethrin have been recommended by the CDC for effective protection against mosquitoes that may carry the West Nile virus and related diseases.
- Note that DEET will reduce the effectiveness of Fire Resistance Clothing (FRC) and should not be applied to this clothing. If working in FRC, employees can use Permethrin as it has been shown not to reduce the effectiveness of FRC. Permethrin will need to be applied to FRC well in advance of the planned work. If permethrin is unavailable employees can apply DEET to their skin and let dry prior to putting FRC on.
    - Oil of Lemon Eucalyptus is a plant-based insect repellent on the market as Repel Lemon Eucalyptus. The products have been proven to be effective against mosquitoes, deer ticks, and no-see-ums for up to six hours. Derived from Oil of Lemon Eucalyptus, this non-greasy lotion or spray has a pleasant scent and is not known to be toxic to humans. The spray or lotions will be effective for approximately two to six hours and should be reapplied every two hours to sustain protection. Lemon Eucalyptus products cannot be applied to fire retardant clothing.
    - Permethrin is an insecticide with repellent properties registered with the Environmental Protection Agency and recommended by the CDC.
        - Permethrin is highly effective in preventing tick bites when applied to clothing, but is not effective when applied directly to the skin. Two options are available for Permethrin treatment of clothing worn during field work: 1) pre-treatment of fabric by the clothing manufacturer; or 2) manual treatment of their personal clothing using Permethrin spray in accordance with recommendations manufacturers recommendations. This will likely require treatment at home or the office prior to field mobilization. Caution should be used when applying Permethrin as it is highly toxic to fish and house cats. AECOM strongly recommends the first option (employees obtaining pre-treated clothing) to avoid the time required, potential risk, and housekeeping issues involved with manually treating the clothing with spray. Purchase pre-treated clothing in accordance with *S3AM-208-PR1 Personal Protective Equipment* and with the approval of your Supervisor or Manager.
        - The Permethrin pre-treatment is odorless and retains its effectiveness for approximately 25 washings. After 25 washings, the pre-treated clothing will be considered no longer effective and removed from service. Clothing that has been manually treated by employees will be considered effective for five wash cycles.

- Also, use of clothing that has been pre-treated with Permethrin offers a reduction in the use and application of other insect repellents that shall be applied directly to the skin. Supervisor or Manager approval is required prior to purchase.
- If the employee opts not to utilize chemically pre-treated clothing while potentially exposed to insects, spiders and/or ticks, they shall either: 1) wear Tyvek® coveralls taped to the boots, or 2) wear full-length clothing consisting of long-legged pants and long-sleeved shirts treated with an insect repellent containing Permethrin, DEET, or an oil of lemon eucalyptus to their work clothing.

- Safety Data Sheets (SDS) for the repellents, lotions, and cleansers discussed in this Procedure are not required because the repellents, lotion, and clothing are consumer products used in the manner intended for the general public. Although not required, a SDS should be obtained for the products used and placed into the office SDS library and site-specific safety plan.

4.8 Poisonous Plants

4.8.1 Habitat Avoidance, Elimination and/or Control

- If poisonous plants are identified in the work area, employees will mark the plants using either flags or marking paint, and discuss what the specific indicator will be to signal to other employees to avoid the designated area. If employees decide to use ground-marking paint to identify poisonous plants, they should discuss this tactic with the Manager (and Client as appropriate) for approval.
- If removal of the plants is considered, it should be subcontracted to a professional landscaping service that is capable and experienced in removing the plant. If herbicides are considered for use, a discussion shall need to occur with the Manager (and Client as appropriate) to determine whether it is acceptable to apply herbicides at the work site. Application of herbicides may require a license.
- Employees shall not attempt to physically remove poisonous plants from the work area unless a clearing procedure, including PPE, is prepared in advance and approved by the SH&E Manager. The clearing procedure should be included in the SH&E Plan and THA and the required PPE specified.

4.8.2 Poisonous plants that employees should recognize and take precautions to avoid include: poison sumac, poison ivy (terrestrial and climbing), poison oak, giant hogweed[2] (or giant cow parsnip), wild parsnip, devil's club and stinging nettle. Many others are extremely poisonous to eat (e.g., poison hemlock; water parsnip) – do not eat anything that has not been identified. Refer to *S3AM-313-ATT5 Plants of Concern* for information on locations where some of these poisonous plants are found in the U.S.

- Of the toxic plants in the cashew family, poison ivy (*Rhus radicans*) is most widespread. It grows in a variety of forms such as a low sprawling shrub, dense ground cover, or a thick woody vine that grows high into the tree canopy. Poison oak (*Rhus diversiloba*) is typically a low shrub in drier soils. Both of these plants have leaves of three and white berries. Poison sumac (*Rhus vernix*) is a tall shrub that is less prolific in distribution. It grows in wet areas, has a compound leaf with a red leaf stem (rachis), and white berries. All of these plants possess urushiol oils in all parts of the plant. Touching the plant causes an itchy skin rash that can show up within 4-72 hours following contact. People have a wide range of reactions including swelling, itching, rash and bumps, patches or blisters.
- Uroshiol oil can also transfer onto clothing and equipment. The oil can remain active on surfaces for up to 5 years and can be transferred to your skin.
- Wild parsnip is found throughout the U.S. and contains a poison that produces a rash similar to poison oak and ivy. Unlike poison oak and ivy, the active oil will not be present on unbroken

[2] Phytodermatisi producer: keep skin covered and wash well after exposure

leaves. See *S3AM-313-ATT6 Wild Parsnip Identification* for additional information and photos of wild parsnip.

- Several plants in the carrot family contain toxic sap that causes severe dermatitis if it comes into contact with skin that is then exposed to sunlight. The most serious reaction is caused by the giant hogweed (*Heracleum mantegazzianum*), a plant that is spreading in southern Ontario and is also present in southwestern British Columbia. The plant is enormous, attaining up to 16 feet (5 meters) in height, which it does in one growing season. Contact causes painful blistering that can cause permanent disfigurement. It is to be avoided. Similar but less serious reactions can be caused by meadow parsnip (*Pastinaca sativa*) and cow parsnip (*Heracleum lanatum*). Meadow parsnip can be very abundant on disturbed sites.
- Nettles, particularly stinging nettle (*Urtica dioica*) and wood nettle (*Laportea canadensis*) contain urticating hairs on the leaves and stems that cause sharp pain or itchiness on contact with skin. The irritation is immediate and normally lasts no more than an hour and there are no lasting consequences.
- Some plants contain abundant stiff spines that can present a safety hazard, particularly if one is to fall into them. These include the cactus (*Opuntia spp.*), devils club (*Oplopanax horridum*), and prickly-ash (*Zanthoxylon americanum*).

4.8.3 A large number of plants are not harmful to touch but may contain poisonous berries or foliage that could cause serious complications or death if they are ingested. It goes without saying to not eat any berries or plants if you are unsure of their identity.

- Remember that in the fall and winter the hazard still exists in the form of stubble and roots.

4.8.4 Personal Protective Equipment (PPE)

- Employees conducting clearing, grubbing, or similarly disturbing work activities in areas where poisonous plants exist shall wear long-sleeve clothing or Tyvek® coveralls, and disposable cotton, leather or synthetic gloves. Employees shall not touch exposed skin (neck and face) with potentially contaminated gloves. Tyvek® and gloves worn to protect from exposure to poisonous plants shall be treated as contaminated, removed from the body in a manner that the contamination is not spread, and placed in plastic bags for disposal.
- Personal clothing that has been exposed to poisonous plants shall be decontaminated with a poisonous plant cleanser such as Tecnu® or removed in a careful manner, bagged and washed separately from other clothing to remove urushiol.
- Work boots will be decontaminated with either soap and water or a cleansing agent such as Tecnu® cleanser.
- If foliage is being cleared and includes poisonous plants, exposed skin shall be treated with a dermal barrier cream such as Tecnu®'s Oak 'n Ivy Armor or Enviroderm's Ivy Block and either a full-face respirator or a half-face respirator (with goggles) fitted with a P-100 (HEPA) dust filter.

4.9 Bird Droppings and Biological Soil Hazards

4.9.1 Work in any area where pigeons or other flying animals (e.g. bats) may nest requires a written statement from the client which states the potential for, and extent of, accumulation of excrement on/in the structure from pigeons or other winged animals.

4.9.2 Substantial accumulations of droppings can pose physical and health risks as slippery surfaces (if wet) and if the material is disturbed and becomes airborne, it can be inhaled or ingested if personal hygiene practices are not implemented. Inhalation of airborne droppings can cause diseases such as histoplasmosis. Exposure to surfaces with bird droppings shall be safeguarded by implementing proper work practices, training employees for awareness and using PPE. See *S3AM-313-ATT8 Bird Droppings*.

4.9.3 Tularemia is a problem with contaminated soil in some locations. Tularemia is a disease of animals and humans caused by the bacterium *Francisella tularensis*. Rabbits, hares, and rodents are

especially susceptible and often die in large numbers during outbreaks. Workers can contract Tularemia through tick and deer fly bites, but also through inhalation of contaminated aerosols or agricultural dusts. Check work areas for carcasses before disturbing the ground (e.g. mowing, brushing, grubbing, excavation, etc.).

4.10 Personal Hygiene and Body Checks

4.10.1 Tick-borne diseases typically require that the tick be imbedded for four hours to begin disease transfer. The oils from poisonous plants can take up to 4 hours after exposure to penetrate the skin and react with the live proteins under the skin.

4.10.2 It is recommended that exposed skin be checked frequently for the presence of ticks, insects, rashes, or discolorations. External clothing should also be checked for the presence of ticks and insects; these should be retained for identification and to determine if medical treatment is needed.

4.10.3 Employees shall shower as soon as practical after working in the field and examine their bodies for the presence of ticks, insect bites, rashes, or swollen areas. If imbedded ticks are found, they should be removed using the technique described in *S3AM-313-ATT2 Ticks*.

4.11 Employees shall immediately notify their Manager or Supervisor of the presence of an imbedded tick, bee, wasp or hornet sting, other insect bite, rash, or any abnormal reaction. Reporting shall occur within 4 hours for a significant incident and 24 hours for all other SH&E incidents, and in accordance with *S3AM-004-PR Incident Reporting, Notifications & Investigation.*

4.12 The Manager or Supervisor shall forward the report to the SH&E Manager for follow up.

5.0 Records

None

6.0 Attachments

6.1 S3AM-313-ATT1 Biological Hazard Assessment Flow Chart

6.2 S3AM-313-ATT2 Ticks

6.3 S3AM-313-ATT3 Poisonous Spider Identification

6.4 S3AM-313-ATT4 Mosquito Borne Diseases

6.5 S3AM-313-ATT5 Plants of Concern

6.6 S3AM-313-ATT6 Wild Parsnip Identification

6.7 S3AM-313-ATT7 Alligators

6.8 S3AM-313-ATT8 Bird Droppings

6.9 S3AM-313-ATT9 Large Carnivores & Ungulates

6.10 S3AM-313-ATT10 Bear Safety

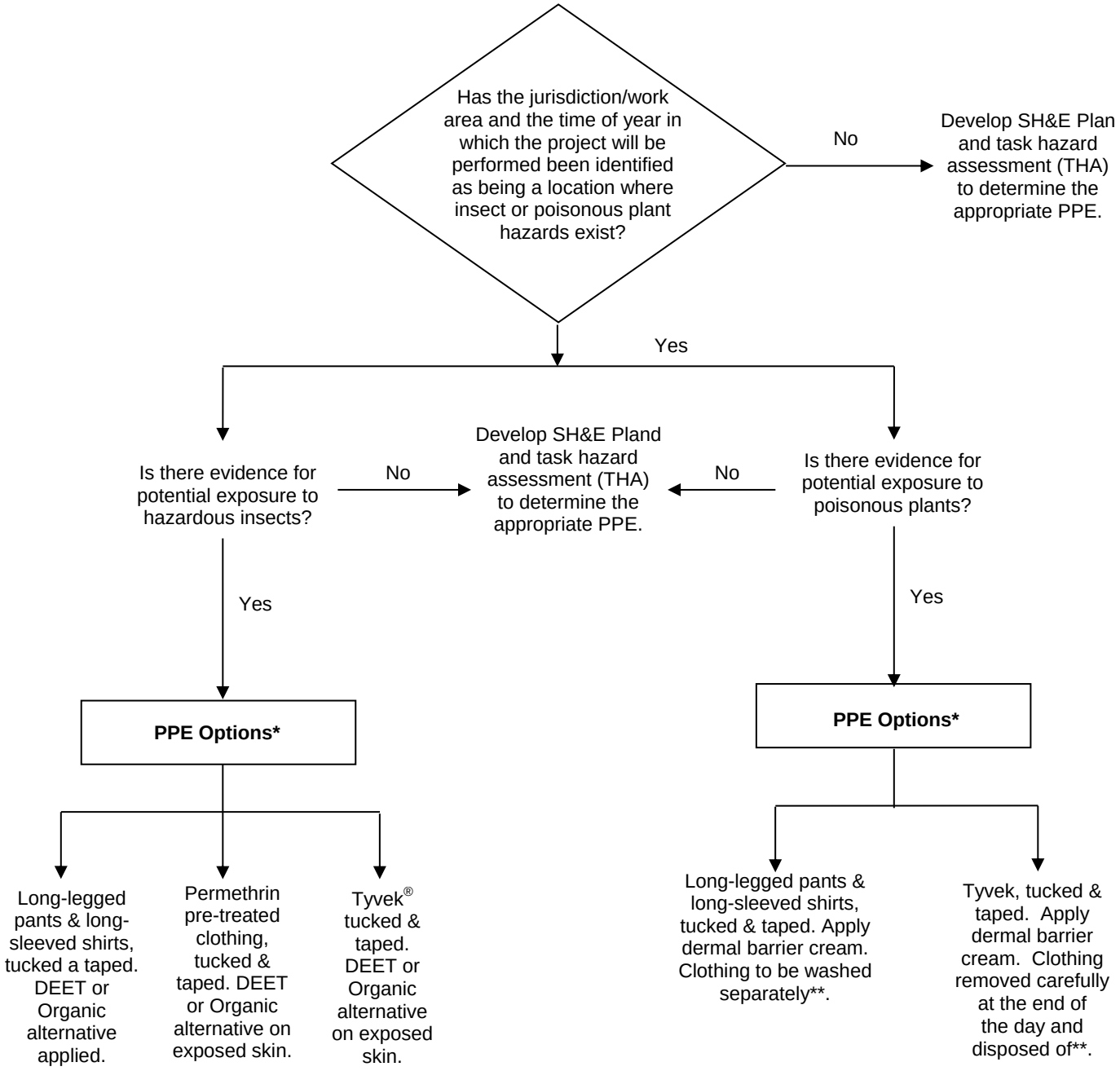
6.11 S3AM-313-ATT11 Small Mammals

6.12 S3AM-313-ATT12 Snakes & Scorpions

Americas

Biological Hazard Assessment Decision Flowchart

S3AM-313-ATT1



* indicates that when both insect and poisonous plant hazards are recognized hazards at a project site, the most conservative combination of the available PPE choices will be selected. Include the selected PPE option in the respective SH&E Plan and THA.

** indicates that clothing that has been known or suspected to have come in contact with poisonous plants must be washed before it can be worn again. Similarly, Tyvek® that has been known or suspected to have come in contact with poisonous plants will be disposed of rather than reused during a subsequent day or project.

Americas

Ticks

S3AM-313-ATT2

1.0 Background

1.1 The Public Health Agency of Canada and the Centers for Disease Control and Prevention work with States and Provinces, health authorities and other experts on research to define and monitor the occurrence of the ticks that carry bacterium that cause disease, including but not limited to:

1.1.1 *Borrelia burgdorferi*, the bacterium that causes Lyme disease.

- In the United States and Canada, the black-legged tick (*Ixodes scapularis*; often referred to as a deer tick) and the western black-legged tick (*Ixodes pacificus*) are the species known to transmit this disease-causing agent, as well as other less common agents.

1.1.2 *Rickettsia rickettsia,* the bacterium that causes Rocky Mountain Spotted Fever.

- In the United States and Canada, the American dog tick (*Dermacentor variabilis*), Rocky Mountain wood tick (*Dermacentor andersoni*), and brown dog tick (*Rhipicephalus sanguineus)* are known to transmit this disease-causing agent.

1.1.3 *Francisella tularensis*, the bacterium that causes Tularemia.

- In the United States, these include the American dog tick (*Dermacentor variabilis*), Rocky Mountain wood tick (*Dermacentor andersoni*), and Lone star tick (*Amblyomma americanum*).

1.1.4 *Ehrlichiosis*, the general name to describe several bacterial diseases that affect animals and humas.

- In the United States, these include the black-legged tick (*Ixodes scapularis*; often referred to as a deer tick) and the western black-legged tick (*Ixodes pacificus*), and Lone star tick (*Amblyomma americanum*).

1.2 Consult local health authorities to determine where tick populations are established or emerging. Locations where distribution may have previously been limited may show evidence of larger populations. Employees working in or adjacent to areas where there are established tick populations may have a greater chance of contact with ticks.

1.3 While there is a higher risk of coming in contact with infected ticks in areas where populations are established, there is also a low risk of tick-borne diseases being contracted almost anywhere in the Americas as migratory birds transport infected ticks over large geographic distances. Take precautions to reduce tick contact.

1.4 Lyme Disease

1.4.1 The rate of infection of ticks with the bacterium that causes Lyme disease varies. Infection rates are typically higher in adult ticks compared to the other stages (nymphs and larvae).

1.4.2 Despite the lower rates of infection, people are most likely to acquire Lyme disease from a nymph because this stage is so small and thus more likely to go unnoticed and feed for a sufficient amount of time for the Lyme disease bacterium to be transmitted (24-36 hours).

1.4.3 Infection rates are often greater in tick populations that have been established for long periods of time compared to newly established ones.

1.4.4 Lyme disease patients are most likely to have illness onset in April through November with onset peaking in June, July, or August and less likely to have illness onset from December through March

2.0 To Remove Attached Ticks

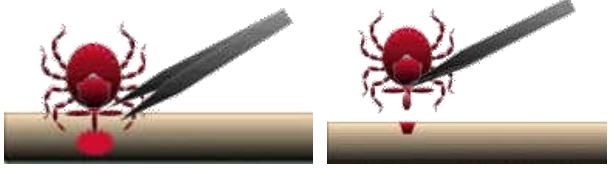
2.1 Use fine-tipped tweezers or notched tick extractor, and protect your fingers with a tissue, paper towel, or latex gloves (see figure). Persons should avoid removing ticks with bare hands.

2.2 Grasp the tick as close to the skin surface as possible and pull upward with steady, even pressure. Do not twist or jerk the tick; this may cause the mouthparts to break off and remain in the skin. (If this happens, remove mouthparts with tweezers. Consult your health care provider if illness occurs.)

2.3 After removing the tick, thoroughly disinfect the bite site and wash your hands with soap and water.

2.4 Do not squeeze, crush, or puncture the body of the tick because its fluids may contain infectious organisms. Skin accidentally exposed to tick fluids can be disinfected with iodine scrub, rubbing alcohol, or water containing detergents.

2.5 Save the tick for identification in case you become ill. This may help your doctor make an accurate diagnosis of potential diseases by determining what type of tick it is. Place the tick in a sealable plastic bag and put it in your freezer. Write the date of the bite on a piece of paper with a pencil and place it in the bag.



3.0 Folklore Remedies Don't Work

3.1 Folklore remedies, such as the use of petroleum jelly or hot matches, do little to encourage a tick to detach from skin. In fact, they may make matters worse by irritating the tick and stimulating it to release additional saliva or regurgitate gut contents, increasing the chances of transmitting the pathogen. These methods of tick removal should be avoided.

4.0 Configuration of Clothing

4.1 Loose-cuff trousers must be tucked into socks, wrapped with duct tape (or equivalent) completely around the cuff of the sock up on to the surface of the pant leg to prevent entry of insects between the sock and pants, and preferably reverse-wrapped with “sticky” side out (see figure below).

Americas

Poisonous Spider Identification

S3AM-313-ATT3

Black Widow Spider

- Found in warm, dry parts of throughout the United States and extend into the southern edge of Canada.
- Prefer to spin their webs in dark, sheltered spots close to the ground
- Abdomen usually shows hourglass marking.
- The female is 1 to 1.5 inches (3-4 centimeters) in diameter.
- Have been found in well casings and flush-mount covers.
- Not aggressive, but more likely to bite if guarding eggs.
- Light, local swelling and reddening of the bite are early signs of a bite, followed by intense muscular pain, rigidity of the abdomen and legs, difficulty breathing, and nausea.
- If bitten, see physician as soon as possible.

Brown Spiders (Recluse)

- Central and South U.S., although in some other areas, as well.
- 0.25-to 0.5-inch (0.6 to 1.3 centimeters)-long body and the size of silver dollar.
- Hides in decaying wood, baseboards, ceilings, cracks, and undisturbed piles of material.
- Bite either may go unnoticed or may be followed by a severe localized reaction, including scabbing, necrosis of affected tissue, and very slow healing.
- If bitten, see physician as soon as possible.

Hobo Spider

- Primarily found in Washington, Oregon, Wyoming, Colorado, Utah, Montana and the Pacific Northwest United States.
- 0.4-to 0.5-inch (1.1 to 1.3 centimeters)-long body and the size of silver dollar.
- Because of its common features and color, it is easily confused with other spider such as Brown Recluse Spiders.
- They rarely climb vertical surfaces and are uncommon above basements or ground level.
- Bite is initially painless. After 24 hours, the bite develops into a blister and after 24-36 hours, the blister breaks open, leaving an open, oozing ulceration.
- If bitten, see physician as soon as possible.

Exercise care when collecting samples and avoid reaching into areas where visibility is limited. If bitten by a spider, attempt to identify the spider, notify a co-worker or someone who can help should the bite site become painful, discolored, or swollen. Stay calm and treat the area with ice or cold water. Seek medical attention if you have any reactions to the sting such as developing a rash, excessive swelling or pain at the site of the bite or any swelling or numbness beyond the site of the bite.

Americas

Mosquito-Borne Diseases

S3AM-313-ATT4

1.0 Background

1.1 Employees working outdoors in the Americas may be exposed to mosquitoes that may transmit illnesses, including Encephalitis and Dengue.

1.2 Dengue is transmitted by the bite of a mosquito infected with one of the four dengue virus serotypes. Dengue is endemic to South America**.**

1.2.1 Dengue is a febrile illness that affects infants, young children and adults with symptoms appearing 3-14 days after the infective bite.

1.2.2 Symptoms range from mild fever, to incapacitating high fever, with severe headache, pain behind the eyes, muscle and joint pain, and rash.

1.2.3 Severe dengue (also known as dengue hemorrhagic fever) is characterized by fever, abdominal pain, persistent vomiting, bleeding and breathing difficulty and is potentially fatal.

1.3 West Nile encephalitis is an infection of the brain that is caused by a virus known as the West Nile virus.

1.3.1 Most individuals infected with WNV remain asymptomatic. West Nile (WN) fever is typically a mild illness lasting 3 to 6 days.

1.3.2 The main symptoms are sudden onset of fever with chills, rash, malaise, headache, backache, arthralgia, myalgia and eye pain. Other non-specific symptoms may include nausea, vomiting, anorexia, diarrhoea, rhinorrhoea, sore throat, and cough.

1.3.3 The main route of infection is via the bite of a mosquito that has been infected by feeding on West Nile Virus infected birds.

1.4 Arboviral encephalitis is a virus that exists in various forms in global distribution. Numerous forms occur in the Americas, including the following four primary forms that can be transmitted by mosquitoes:

1.4.1 Eastern equine encephalitis (EEE) – United States and Canada

1.4.2 Western equine encephalitis (WEE) – United States

1.4.3 St. Louis encephalitis (SLE) – United States and Canada

1.4.4 La Crosse (LAC) encephalitis.all of which are transmitted by mosquitoes – United States

1.5 Mosquitoes are known to breed in standing water; therefore, when standing water is found at a job site, actions should be taken to drain the water. Typically, mosquitoes will fly only a quarter of a mile (400 meters) from their breeding location.

1.6 The local Public Health Department and Center for Disease Control and Prevention (CDC) should be consulted to determine what diseases transmitted by mosquitoes are present and exposure prevention recommendations.

Americas

Plants of Concern

S3AM-313-ATT5

1.0 Background

1.1 Poison ivy, oak and sumac (poisonous plants) pose a significant threat to AECOM employees due to the dermatitis that results from exposure to the oil on these plants, called urushiol.

Poison Oak **Poison Sumac** **Poison Ivy**

1.2 Exposure to urushiol produces a rash that can be irritating and cause the exposed employee to scratch the infected area, increasing susceptibility for an infection to result from the rash.

1.3 It should be noted that each time an employee is exposed to urushiol, it increases the severity of the reaction they will have in subsequent exposures.

1.4 Giant Hogweed is a phototoxic plant that causes skin irritation on contact with the sap and, when exposed to sun causes deep blisters.

1.5 Blisters from contact with Giant Hogweed can form black or purplish scars that can last for several years. Even a tiny amount of the sap in the eyes can cause temporary to permanent blindness.

Giant Hogweed

Giant Hogweed Distribution

Image obtained from www.gclandscape.com

2.0 Treatment

2.1 In cases that involve severe rashes, medical treatment may be necessary to control the rash.

2.2 Employees that develop a rash as a result of exposure to poison ivy, oak or sumac should report the exposure immediately to their Supervisor, Project Manager and Region Safety, Health and Environment Manager.

Pacific Poison Oak Distribution

Image obtained from www.cdc.gov

Atlantic Poison Oak Distribution

Image obtained from www.cdc.gov

Poison Sumac Distribution

Image obtained from www.cdc.gov

Western Poison Ivy Distribution

Image obtained from www.cdc.gov

Eastern Poison Ivy Distribution

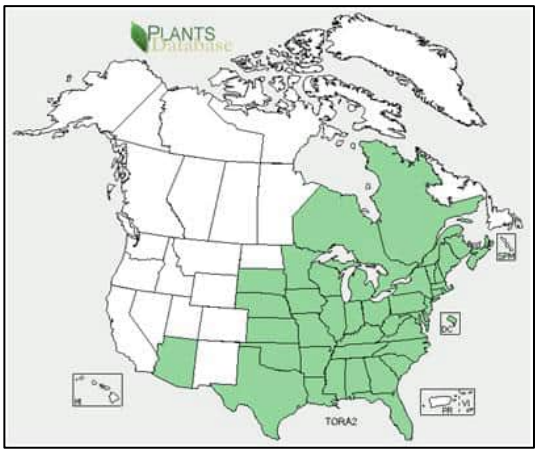


Image obtained from www.cdc.gov

Americas

Wild Parsnip Identification

S3AM-313-ATT6

1.0 Background

1.1 Wild parsnip (also known as poison parsnip) looks similar to a large carrot plant and is found in open places along roadsides and in waste places throughout the United States and Canada.

1.2 This plant produces a compound that causes severe blistering and discoloration after being exposed to sunlight—a condition known as photodermatitis. That is, when the skin comes in contact with this plant's juice and then is exposed to UV light, a severe burn develops.

2.0 Hazard

2.1 Everyone can get burned by wild parsnip. Unlike poison ivy, you don't need to be sensitized by a prior exposure. However, wild parsnip is only dangerous when the juice from broken leaves or stems gets on your skin—therefore, you can touch and brush against the undamaged plant without any danger.

2.2 If one gets some of the sap of hogweed (or meadow parsnip or cow parsnip) in contact with skin, it is critical that they stay out of the sun for 8 hours. If one needs to remove the plant they should be completely covered with overalls, gloves, hat and safety glasses.

Americas

Large Carnivores & Ungulates

S3AM-313-ATT9

1.0 Hazard

1.1 Most wild carnivores in the feline family (cougars, lynx, and bobcat) or the canine family (wolves and coyotes) are more predictable than bears and are not predatory towards humans; however, all wild animals can be dangerous if they feel threatened or if they are sick or starving.

1.2 Most ungulates (deer, moose, elk, and caribou) will avoid humans and will flee as soon as a human is sighted; however, females with young (during May and June) and males during the mating season (September to November) can be very aggressive, especially if provoked.

2.0 Personal Protective Equipment

2.1 Noise makers such as bear bangers, whistles and bells can be used as deterrents for an approaching animal.

2.2 Pepper (bear) spray can be used to ward off an imminent attack.

3.0 Safe Work Practice

3.1 Most negative encounters with ungulates or carnivores can be avoided with a few key preventative measures:

3.1.1 When working in wilderness isolation, always travel in pairs and make lots of noise.

3.1.2 Always store food in air-tight containers away from sleeping areas (if camping) and never carry strong smelling foods which could attract animals.

3.1.3 Keep your eyes open for fresh animal signs which may indicate a dangerous situation:

- Extensive fresh rubbing on branches in the fall might indicate the presence of a rutting male ungulate that may become aggressive to defend a potential mate.
- A fresh kill or carcass which might indicate the presence of a carnivore that may become aggressive to defend its food.

3.2 Maintaining a distance of at least 100 feet (30 meters) allows large animals an escape route. If you notice any signs of aggression or behavioral changes, you should move away to a safe location. Wildlife should not be enticed by reaching out or simulating calls.

3.3 Pets should be kept secure and away from wildlife as their actions can provoke an attack. Moose, deer and other wildlife may appear quite docile; however, if a dog makes them feel threatened, their behavior can become unpredictable.

3.4 **If you are approached by a carnivore (wolf, coyote, or cougar):**

3.4.1 Pick up small children immediately.

3.4.2 Try to appear bigger, hold your arms or an object over your head.

3.4.3 Face the animal and retreat slowly. Do not run or play dead.

3.4.4 Maintain steady eye contact with the animal.

3.4.5 If the animal continues to approach, deter an attack by yelling, waving a stick or throwing rocks.

3.4.6 If you are attacked, fight back. Hit the animal with a heavy stick or rock.

3.5 **If you are approached by an ungulate (moose, elk, deer, bison or caribou):**

3.5.1 An angry moose, elk or deer will face you with its head and ears lowered.

3.5.2 Back away slowly.

3.5.3 Look for something to get behind like a tree or a car. You can go faster around an obstacle than the ungulate can.

3.5.4 An ungulate is more likely to bluff charge but if it continues the charge and you are attacked in the open, curl up in a ball on the ground. Always protect your head with your arms and lie still.

3.5.5 Stay still after the attack until the ungulate moves away.

Americas

Bear Safety

S3AM-313-ATT10

1.0 Hazard

1.1 An encounter with a bear of any species can have a wide variety of outcomes, ranging from a simple sighting, to a false charge, to a serious mauling or even death. Consequently, the risk of a bear encounter must be taken very seriously.

1.2 The hazard or risk associated with a bear encounter varies significantly depending on the location. It is important to research the project area before field work commences to determine the expected probability of encountering a bear. Remoteness from urbanized areas should not be a criterion, as bears have been encountered within city limits, especially near landfills.

1.3 The risk associated with a bear encounter also varies with the species of bear, the season, and the circumstances under which the bear is encountered.

1.4 Preparing staff for any type of encounter is key to managing the risk.

2.0 Personal Protective Equipment

2.1 The best deterrent of a “bad bear encounter” is knowledge: a good understanding of the ecology and the behavior of the bears that will likely be encountered.

2.2 Bear Spray and Bear Bangers

2.2.1 Staff must have hands-on training for the safe use of bear spray (a pre-season practice run is a good use of expired bear spray).

2.2.2 Prior to work commencing, staff must ensure that the bear spray they are carrying is still valid and not past its expiration date.

2.2.3 During travel, bear spray must be sealed in an airtight container or bag and must not travel in the cab of a vehicle, aircraft, or helicopter.

2.3 Firearms

2.3.1 Environments and conditions which pose a high risk of bear encounters, may warrant the use of an armed wildlife monitor. Project managers, in consultation with appropriate project staff and Safety, Health and Environment Management, are responsible for determining the level of risk for their projects and whether or not such measures are required.

2.3.2 A person hired as an armed bear monitor must be properly trained in wildlife monitoring as well as certified in the expert usage of firearms.

2.3.3 The usage of an armed bear monitor is intended only as an additional precautionary measure to be used in specific environments to ensure the protection of field staff; staff should still be equipped and trained appropriately for the risk.

3.0 Restrictions

3.1 Staff must not work alone in areas where there is a medium or high risk of a bear encounter.

3.2 AECOM personnel shall not carry firearms or attempt to function as a wildlife monitor and/or perform their professional duties. For possible exceptions contact the Regional SH&E Manager who will evaluate the potential hazards with Regional Manager and Legal and provide written response. This can only be over-ridden with expressed permission of Region Executive and AECOM Chief Resilience Officer, refer to *WP-001-PR Firearms Standard*.

4.0 Training

4.1 In-house Bear Awareness training must be taken by all field staff who work in bear country every three years at a minimum, or more often as required.

4.2 The Bear Awareness training involves testing and improving the employee's knowledge about bear encounters, watching videos regarding bear awareness and behavior, and participating in group discussions about how to avoid and how to respond to bear encounters.

4.3 Specific considerations are given to black bear, grizzly bear, and polar bear encounters.

5.0 Safe Work Practice

5.1 Staff must be aware of wildlife signs and avoid wildlife encounters.

5.2 Bear Signs

5.2.1 Fresh tracks – It is often better to see the bear's tracks than to see the actual bear. If you can tell the direction that the bear is travelling in, it is prudent to change your course of direction. Bears will travel down the same pathways people or other large animals use. If you have a clear track you can determine which type of bear has passed through the area. If you see more than one track, you can tell that it is possibly a female with cubs. Avoid females with cubs!

5.2.2 Scat – Bear scat will look different depending upon the bear's diet. Close examination of bear scat can sometimes give you an indication of what the bears have been eating at that time of year. If the scat contains remnants of human garbage, there is a human food conditioned bear in the area. These bears associate people with food and can be the most dangerous type of bear to encounter.

5.2.3 Animal carcasses – IF YOU COME ACROSS A CARCASS, LEAVE THE AREA IMMEDIATELY. Grizzly bears will often cover their kills for a few days and let it rot, then come back and eat it. THE BEAR WILL STAY CLOSE BY. Grizzly bears will defend their kill and this is a situation that could prompt a defensive attack by a bear.

5.2.4 Torn-up logs and stumps – Bears will forage for insects in dead logs and rotting trees. You will often see torn up logs and stumps, evidence of their foraging.

5.2.5 Evidence of digging – Holes dug into the ground are often made by grizzly bears digging for roots or ground squirrels. In particular, grizzlies will dig for food in the early spring soon after they leave their dens.

5.2.6 Claw marks on trees – Claw marks can be left on trees by black bears when they have climbed up a tree. Grizzly bears will also leave claw marks on trees and on the ground. Bears will often chew a small tree or a sign-post, so watch for signs of chew marks along the trail.

5.2.7 Hair on trees – Bears will rub against trees, usually trees with rough bark, to scratch themselves. You can find evidence of bears by the hair left in the tree's bark. The higher the hair left on the tree, the bigger the bear. Remember that the bear will often stand on its back legs to scratch its back on the tree.

5.2.8 Daybeds – Bears will be most active in the early morning and in the evening. It would be prudent for field staff to restrict their field activities during the bear's most active foraging times as much as possible. During the heat of the day, bears will rest in daybeds. These can be shallow depressions of piled up leaves in the forest, trampled vegetation, a shallow scrape or a hole. Daybeds are usually located in cool places. Bears will make daybeds along streams and rivers. Daybeds are often associated with feeding places and therefore should be avoided.

5.3 Prevention

5.3.1 Your best defense against bears is to actively practice bear avoidance techniques when working in the field. You can prevent chance encounters by taking the following precautions:

- Know the areas and habitats bears use at different times of the year, and attempt to avoid such areas or be extremely cautious if you have to travel through them.
- Contact the local Fish & Wildlife Office to get current information on the bears in the area. Ask what other camps are in the area and if they are following good bear avoidance practices. (i.e., do they keep a clean camp?) If there are nearby human food sources available, e.g., an open dumpsite, the local bears may not be afraid to approach your camp.
- Always be aware of your surroundings. Stay alert. Watch for signs of bears along your route.
- Use binoculars to look around for bears when you are in open terrain.
- Never approach a bear if you see one feeding in the distance.
- Note the behavior of other wildlife in the area. Flocks of ravens can alert you to a possible animal carcass, and perhaps a bear. The area should be avoided. Bird or squirrel alarm calls might be telling you that a bear is near.
- Whenever possible, travel in daylight and try to avoid areas with restricted visibility, e.g., dense brush.
- Make lots of noise, especially when travelling in dense vegetation. Sing, shout, or talk loudly. You can carry portable air horns or cans of rocks. (Please note that bear bells are not effective – they do not make enough noise to warn a bear that you are approaching. You need to be loud so the bear can hear you coming.) Remember that the noise you make can be masked by loud natural sounds such as the wind or water. Therefore it is possible that the noise you make can go unnoticed by a bear whose attention is focused on feeding. You must make every attempt not to surprise a bear. In areas of loud natural noise, be louder!
- Stay together and travel in groups. Bears are less likely to attack groups of people. When travelling in groups, stay close together. Being in a group doesn't help if the individuals have spread apart along the trail.
- Pets should not accompany you when you are travelling in bear country. If you must take your pet, keep the animal on a short leash at all times. Unleashed dogs will harass bears and once scared, run back to their owner with an angry bear in pursuit.
- Do not wear perfumes or cosmetic products when you are travelling in bear country. Do not mask your human scent.
- All sanitary products should be stored in a similar fashion as food (stored at least 10 feet [3 meters] above site).
- Children should be kept very close by in bear country.
- Carry bear deterrents and know their limitations. Be familiar with how to use the deterrents, how to transport the deterrent safely and under what conditions it is most effective. Carry the deterrent in a belt, out in front and ready to grab at a moment's notice, never in your backpack.

5.4 Field Worker Precautions in Bear Country

5.4.1 Field workers should take extra precautions when working in bear country:

- Make every effort to go out into the field with another person; you should not be working alone in the field. One person can act as a lookout for the other. Keep watch for bear signs.
- Never approach a bear.
- Report where you are going and when you will return every time you leave camp. Have a plan of action if someone does not report back to camp at a specified time.

- Bears do get used to a camp's schedule and you will have fewer surprise encounters if everyone in the camp comes and goes at the same time every day.
- Take a two-way radio with you when you go out into the field.
- Always carry bear deterrents with you in the field and understand each deterrent's limitations. Carry your deterrents on a belt, out in front and ready to use instantly. Do not carry your deterrents in your backpack.
- Keep any food that you take with you sealed in odor-proof/bear-proof containers. Make every attempt to take odorless food with you, not something with a heavy scent.
- Pack out any garbage in odor-proof containers and burn once you return to camp.
- The noise of an ATV or skidoo can scare off a bear. Starting the machine and revving it up can scare off a curious bear. DO NOT CHASE A BEAR WITH AN ATV OR SKIDOO. You may need to drive the ATV around in circles to scare off the bear, but do not chase the bear.
- Take extra precautions when travelling along lakes or stream beds; bears use streams and river beds as travel routes. Be sure to carry noise makers.
- Limit your workday so you are not out in the early morning or evening when bears are most likely to be foraging.
- All **employees** should be proficient in First Aid. Do not go out into the field without first aid training.
- All field camps should have a First Aid Kit.
- All field camps should have means of communication with local ambulance or air ambulance personnel.
- A person's best defense against bears is to avoid them. If this is not possible, then being heard, smelled, or seen may lessen your chances of surprising a bear and/or provoking an attack.
- All wildlife should be respected, avoided, and not harassed at any time.
- Cooking in remote areas should be avoided. Any food should be stored in airtight containers and all garbage should be managed appropriately: "pack it in, pack it out".
- A bear in camp or within human structures is not a chance encounter. If this bear challenges you, you must fight, scream, and do whatever is necessary to live, no matter what species the bear is!
- In general, there are two types of bear encounters: Defensive and Non-defensive for grizzly bears and black bears. Your response will vary based on your assessment of the situation (your training will help you in identifying these situations and the appropriate response).

6.0 Encounters

6.1 General Recommendations When Encountering a Bear

- Consider your surroundings and assess the situation before you act.
- Remain calm. Do not turn your back to a bear.
- DO NOT RUN – Running may trigger the bear's natural pursuit response. Bears are able to reach speeds of 25 miles per hour [40 kilometers per hour], must faster than Olympic sprinters. Bears are also excellent swimmers.

6.2 Bear Encounters in the Field

6.2.1 Your response will depend upon the type of encounter.

6.2.2 Bears are more predictable than once believed and you can determine your best course of action in a confrontation by understanding the bear's characteristics and motivation. There are two pieces of information you should be aware of in any bear encounter:

- The type of bear you are dealing with, and
- The reason for the encounter.

6.2.3 Some people believe that when you stand your ground against a predatory black bear attack, the bear will feel threatened and leave. This has been effective in some cases. HOWEVER, it is not effective against a grizzly bear predatory attack and it is very difficult to know when it will be effective against black bears. Polar bears do not follow the same behavioral patterns as grizzly and black bears; polar bears are almost always aggressive and will not back down. Special considerations must be given to projects where polar bear encounters are anticipated.

6.3 If you can leave undetected:

6.3.1 Leave the area quietly in the same direction that you came from.

6.3.2 Move while the bear's head is down. Stop moving when the bear lifts its head to check its surroundings.

6.3.3 Stay downwind so the bear will not pick up your scent.

6.3.4 When you have moved a safe distance away, you can either watch and wait until the bear leaves or make a wide detour around the bear.

6.3.5 If the bear is unaware of you and approaching, allow the bear the right of way.

6.4 If you cannot leave undetected:

6.4.1 Let the bear know that you are present by smell first; therefore move upwind so they can pick up your scent.

6.4.2 If it is possible, try to keep the bear in your sight. Watch to see if the bear leaves when it smells that a person is nearby.

6.4.3 Attempt to move out of the way without being noticed by the bear. If you cannot do this, talk loudly to let the bear know where you are.

6.5 If the bear is aware of you but in the distance:

- Remain calm.
- Continue walking slowly in the same general direction, but head away from the bear.
- DO NOT RUN.
- If the bear begins to follow you, drop your pack or some article, (not food) to distract the bear. This may distract the bear long enough for you to escape. If you drop food for the bear – you will help the bear associate food with humans and teach it that aggressive behaviour will be rewarded with food.
- If it is a grizzly following you, climb a tree if there is a large tree around. Proper escape up a tree would require sclimbing at least 33 feet (10 m), however this is applicable only to Grizzly encoutners. Black bears are excellent climbers. Tree climbing should be last resort.

6.6 If the bear is aware of you and close:

- A bear will feel threatened in a close confrontation. The bear's natural tendency will be to reduce or to remove the threat. Assist the bear by acting as non-threatening as possible.
- Do not make direct eye contact with the bear.
- Do not make any sudden moves.
- Do not run!

- The bear needs to identify you as a person, so talk in low tones and slowly wave your arms over your head.
- Attempt to give the bear an opportunity to leave. Be sure the bear has an open escape route. Do not corner a wild animal.
- Try to back away slowly and/or climb a tree if appropriate.
- Attempt to deter the bear if you are in a safe position.

6.7 If the bear is close and threatening:

- If you have a deterrent such as a bear banger or bear spray, be prepared to use it depending on how close the bear is. Try to scare the bear off.
- If you do not have a deterrent, or if using the deterrent is not successful, act as non-threatening as possible.
- Talk to the bear in a calm authoritative tone of voice.
- Do not startle or provoke the bear by making sudden moves.
- Never imitate the bear's aggressive sounds, signals or posture. The bear is attempting to establish dominance and imitating its moves is a challenge to its dominance.
- Back slowly away from the bear and drop a pack or some other article in order to distract the bear momentarily.
- Remember that the bear may be defending cubs that you have not yet seen or they have a food cache nearby. Attempt to look as non-threatening as possible.

6.8 If the bear is very close and approaching:

- A distance of less than 164 feet (50 meters) in an open area and closer in a forested area.
- If the bear continues to approach, use your deterrent.
- If the bear does not respond to the deterrent you must now STAND YOUR GROUND!
- If the bear continues to approach and is acting aggressive, YOU MAY HAVE TO SHOOT if you are carrying a firearm.

6.9 If the Bear Charges:

- A bear will charge you at high speed down on all four legs and often crouched low to the ground.
- Bears do not charge when standing up on the hind legs.
- Many charges are bluffs and the bear will often stop or veer off just at the last minute. It is difficult to know if the bear is bluff charging or not until it gets very close.
- When faced with a charging bear you have two options:
    - Use your bear deterrent; or
    - Roll into a ball and cover your neck and head with your arms if you are unarmed and have no other choice.

Americas

Small Mammals

S3AM-313-ATT11

1.0 Hazard

1.1 Working in the field either directly or indirectly with small mammals has inherent risks of injury or exposure to zoonotic diseases (infectious diseases that can be transmitted from animals to humans) that all field staff need to protect themselves against.

1.2 The risks are usually higher when there is direct contact with a wild animal, either through a break in the skin (blood), saliva, or excrement; however, there are also risks through air-borne diseases (e.g., Hantavirus).

1.3 Obviously, wildlife biologists directly handling wildlife, dead or alive, or working with wildlife feces or in enclosed habitats (such as caves), have an increased risk of exposure to a wider range of zoonotic diseases and should take extra precautions.

2.0 Personal Protective Equipment

2.1 Full-length clothing (long sleeves and pants)

2.2 Insect repellent

2.3 Respiratory equipment (when directly handling wildlife)

2.4 Gloves (when directly handling wildlife)

3.0 References

3.1 None.

4.0 Restrictions

4.1 Wildlife handling must only be completed under direct supervision of an experienced individual.

5.0 Training

5.1 Any staff that will be handling wildlife must be adequately trained and/or supervised by a wildlife biologist experienced in the job task.

6.0 Safe Work Practice

6.1 Wild animals can carry a variety of diseases that humans can contract: viral, parasitic, bacterial, and protozoal. Basic Personal Protective Equipment such as full-length clothing, gloves and a respiratory mask will greatly reduce the risk of exposure.

6.2 Treat unknown dogs encountered in field activities in the same manner as a wild animal. Be conscious of behaviors that seem to indicate anxiety (tail under the belly), defensiveness or aggressiveness, and attempt to leave the area if these are identified.

6.3 Whenever a wild animal must be handled, the procedure must be accomplished as safely and quickly as possible.

6.4 Proper techniques must be employed to avoid or minimize the risk of personal injury while, at the same time, avoiding or minimizing injury to the animal.

6.5 Gloves, catch sticks, caging, and other appropriate equipment may be necessary when handling a wild animal. Most of these animals will be extremely stressed, resisting every restraint attempt.

6.6 In the unfortunate circumstance that a person is bitten or scratched, he or she should cleanse the wound thoroughly with soap and flush with water immediately, providing for a mechanical removal of potentially infective organisms. This should be followed by cleansing under medical supervision and consultation with a physician to consider the potential exposure to the rabies virus.

7.0 Rabies

7.1 You will not be able to accurately determine if an animal has rabies simply by observation as traditional symptoms of rabies (foaming at the mouth, biting, etc.) do not occur in all animals nor at all stages. There are some mammals that are at a higher risk than others for the rabies virus, such as raccoons, skunks, stray cats and dogs, foxes, coyotes, rodents. and bats; however, any mammal can contract the virus.

7.2 Rabies is contracted by contact of an infected animal's saliva with an open wound – a bite or a scratch.

7.3 Symptoms of rabies in humans usually do not present themselves for a minimum of 10 days to a year or longer (the average is 30 to 50 days). Symptoms are typical of a flu, including malaise, loss of appetite, fatigue, headache, and fever. Over half of all patients have pain (sometimes itching) or numbness at the site of exposure. They may complain of insomnia or depression. Two to ten days later, signs of nervous system damage appear; these include hyperactivity and hypersensitivity, disorientation, hallucinations, seizures, and paralysis.

7.4 Because rabies is so difficult to detect and positively identify, it is very important to consult a physician immediately. If rabies is a possibility, begin treatment with the rabies vaccine as soon as possible (unlike other vaccines, rabies vaccination begins after exposure because the virus takes a comparatively long time to induce disease).

8.0 Hantavirus

8.1 Rodents can carry a variety of diseases; of notable concern is the North American hantavirus which can cause Hantavirus Pulmonary Syndrome (HPS).

8.2 A common host of the hantavirus is deer mouse and related species (*Peromyscus* spp.), which are common throughout much of North America.

8.3 Although infection is rare, it can be fatal and, therefore, it is necessary that risk of exposure be minimized. Infection can be spread to humans when they:

8.3.1 Breathe air contaminated by deer mouse saliva, urine or feces containing infectious hantaviruses; or

8.3.2 Accidentally rub eyes, mouth or broken skin with hantavirus-infected deer mouse saliva, urine or feces.

8.4 The following precautions will be taken for all field operations:

8.4.1 Limit exposure to soils handling and use gloves where appropriate.

8.4.2 Wash or sanitize hands often throughout the day and before meals.

8.4.3 Equipment bags, storage areas, and vehicles will be inspected daily for signs of deer mouse infestation.

8.4.4 Rodent-proof storage containers will be used when practical.

8.4.5 Do not enter buildings infested with deer mice without adequate respiratory protection.

8.4.6 Droppings should never be removed by vacuuming or sweeping. Wetting down an area with a mixture of 1:9 household bleach and water solution will reduce risk of airborne exposure.

8.5 If flu-like symptoms develop three days to six weeks after exposure to rodents, a doctor should be contacted immediately (mechanical ventilation is the primary method of treatment).

9.0 Bubonic Plague

9.1 The bacteria that cause plague, *Yersinia pestis*, maintain their existence in a cycle involving rodents and their fleas.

9.1.1 In urban areas or places with dense rat infestations, the plague bacteria can cycle between rats and their fleas.

9.1.2 Humans may contract the plague bacteria through:

- Infected flea bites.
- Contact with contaminated fluid or tissue of a plague infected animal.
- Infectious droplets from an infected person coughing into the air (very uncommon in the United States, but relatively frequent in developing countries.

9.1.3 Individuals infected develop sudden onset of fever, headache, chills, and weakness and one or more swollen, tender and painful lymph nodes (called buboes).

9.1.4 Immediate medical attention is necessary to prevent complications or death.

9.1.5 Rodent control measures should be employed at AECOM locations.

9.1.6 Wear gloves if handling potentially infected animals to prevent contact between skin and the plague bacteria. Contact the local health department with and questions about disposal of dead animals.

9.1.7 Repellent shall be used if there is potential exposure to rodent fleas. Products containing DEET can be applied to the skin as well as clothing and products containing permethrin can be applied to clothing (always follow instructions on the label).

Americas

Snakes & Scorpions

S3AM-313-ATT12

1.0 Hazard

1.1 Snakes have the ability to inject venom. A bite from a venomous snake, which may inject varying degrees of toxic venom, is rarely fatal but should always be considered a medical emergency.

2.0 Personal Protective Equipment

2.1 Long pants and shirts

2.2 Heavy gloves if staff will be handling debris or be close to the ground

2.3 Rubber boots, or boots that fully cover the foot (not sandals!) and preferably are at least 10 inches (25 centimeters) high

2.4 Snake Chaps that cover at least the shin

2.5 Personal first aid kit

3.0 Restrictions

3.1 Staff must not work alone in areas where the risk of a snake encounter is high.

4.0 Safe Work Practice

4.1 Prior to going into the field, staff should research the area and identify what species are present. Once confirmed, staff should contact local hospitals to identify which carry anti-venom and include that information into the SH&E Plan and THA.

4.2 Staff working in areas known to be inhabited by venomous snakes should take extra precautions, be able to identify the local snake species, and understand the best practices for administering first aid.

4.3 Most snakes in Canada are non-venomous; and most snake bites are not fatal, only painful. Learning to identify snake species will assist you in responding appropriately to an encounter, and will assist medical professionals in determining if antivenin needs to be administered if anyone is bit.

4.4 Most snakes are non-aggressive and will only attack if immediately threatened.

4.5 Prevention

4.5.1 Before venturing out into the wilderness, familiarize yourself with the snakes in your area, both venomous and non-venomous species.

4.5.2 Learn which habitats the venomous species in your region are likely to be encountered in, and use caution when in those habitats.

4.5.3 Try as much as possible not to take a snake by surprise.

4.5.4 Stay on trails where possible, and watch where you place your hands and feet, especially when climbing or stepping over fences, large rocks, and logs, or when collecting firewood. Take care when overturning any objects on the ground when in snake country.

4.5.5 If you see a snake, give it as much room as possible. Most snakes have a strike distance that is only half the length of their body.

4.5.6 If you get very close to a rattlesnake, hold very still until it calms down and starts to move away. Then slowly move backwards until you are at least one snake-body length away.

4.6 Treatment

4.6.1 A bite from a venomous snake should be considered a major medical emergency. Emergency services should be contacted immediately and staff should follow the direction of the medical responders.

4.6.2 Try to keep the snakebite victim still, as movement helps the venom spread through the body.

4.6.3 Keep the injured body part motionless and just below heart level.

4.6.4 Keep the victim warm, calm, and at rest, and transport him or her immediately to medical care.

4.6.5 Do not allow him to eat or drink anything.

4.6.6 If medical care is more than half an hour away, wrap a bandage a few inches above the bite, keeping it loose enough to enable blood flow (you should be able to fit a finger beneath it). Do not cut off blood flow with a tight tourniquet. Leave the bandage in place until reaching medical care.

4.6.7 Identify the snake that caused the bite to determine if it is venomous, and if antivenin needs to be administered. Do not waste time or endanger yourself trying to capture or kill it. Note the shape and color of the snake's head.

4.6.8 If you are alone and on foot, start walking slowly toward help, exerting the injured area as little as possible.

- Note that there are several species of snakes that superficially resemble rattlesnakes. Several species, including Bull, Milk, Fox, and Rat Snakes will even rattle their tails when startled.
- Massasauga Rattlesnake is recognized as a Threatened Species in Ontario and it is an offence to harass, or destroy the habitat of this species.

4.6.9 Workers in scorpion habitat have the potential to be stung.

- Scorpions usually hide during the day and are active at night. They may be hiding under rocks, wood, or anything else lying on the ground. Some species may also burrow into the ground. Most scorpions live in dry, desert areas. However, some species can be found in grasslands, forests, and inside caves.
- Scorpions are found in Southern and Southwestern United States.
- One scorpion species, the Northern Scorpion (*Paruroctonus boreus*) occurs in semi-arid areas of southern British Columbia, Alberta, and Saskatchewan. It carries a stinger on the end of its tail. The sting is painful but not life threatening unless there is an allergic reaction.
- Workers should wear longsleeves and pants. Clothing and shoes should be shaken out before putton on.
- Symptoms of a scorpion sting may include:
  - A stinging or burning sensation at the injection site (very little swelling or inflammation)
  - Convulsions
  - Staggering gait
  - Slurred speech
  - Drooling
  - Muscle twitches
  - Abdominal pain and cramps
- Scorpion stings may be painful, but most are harmless. In the United States, only the Bark Scorpion has venom that can potentially cause severe symptoms.
- Scorpions capable of lethal stings are found predominantly in Mexico and South America.
- If the is any question as to what type of scorpion caused the sting, contact medical services immediately.

5.0 Species

5.1 Venomous Snakes in Canada

Eastern Massasauga Rattlesnake (*Sistrurus catenatus*) found around Wainfleet, Windsor, Bruce Penninsula and eastern Georgian Bay in Ontario.	 Eastern Massasauga Rattlesnake picture by Michael Redmer/Courtesy Lincoln Park Zoo
Northern Pacific Rattlesnake (*Crotalus viridis*) found primarily in Okanagan and Thompson River valleys of southern British Columbia.	
Prairie Rattlesnake (*Crotalus viridis*) found in south eastern Alberta, and south western Saskatchewan.	

5.2 Venomous snakes in the United States

Rattlesnake(*Crotalus cerastes)* found mostly concentrated in the southwestern United States, they extend north, east and south in diminishing numbers and varieties. Every contiguous state has one or more varieties of rattlesnake. The rattlesnake is found in many different biomes ranging from along the coast at sea level, the inland prairies and desert areas to the mountains at elevations of more than 10,000 feet. Species include: Sidewinder, Santa Catalina, Western,	 Western Rattlesnake

Mojave, Red Diamond, Western Diamond, Ridge Nosed, Eastern Diamondback, and Pigmy.	 Eastern Diamondback
Copperhead (*Agkistrodon contortrix*) is the most common venomous snake found in the eastern United States. It can be found in the states of Texas, Oklahoma, Kansas, Missouri, Arkansas, Louisiana, Mississippi, Alabama, Georgia, Florida, South Carolina, North Carolina, Tennessee, Kentucky, Virginia, Illinois, Indiana, Ohio, Iowa, Pennsylvania, Maryland, New Jersey, Delaware, New York, Connecticut, and Massachusetts.	
Cottonmouths (water moccasins) (*Agkistrodon piscivorus)* found in the eastern United States from Virginia, south through the Florida peninsula and west to Arkansas, eastern and southern Oklahoma, and east and central Texas.	
Coral Snake (*Micrurus sp.)* found in the southern range of many temperate United States including North Carolina, Georgia, Alabama, Mississippi, Louisiana, Texas, Arkansas, Kentucky, Arizona, and New Mexico.	 Eastern Coral Snake, *Micrurus fulvius*

Attachment D

Stretch/Flex Poster

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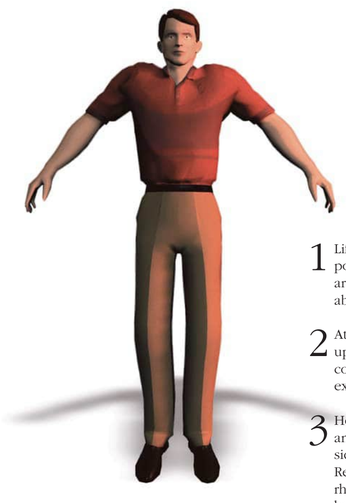
URS

Stretch & Flex Program

WARM-UP BEFORE STRETCHING

Run in place for 30 seconds, 10 jumping jacks, chicken dance, hokie pokie, Macarena, etc. to warm your muscles up.

SHOULDER SHRUG WITH HIGH REACH *Reach High*



1 Lift (shrug) shoulders as high as possible while slowly raising your arms to fully extended position above head.

2 At the same time, lift the body up onto your toes (for as long as comfortable). While reaching high, extend and spread fingers.

3 Hold this position for 10 seconds and then slowly lower arms to the side into a neutral body position. Relax while breathing slowly and rhythmically. Concentrate on your breathing rate for at least five breath cycles.

TARGET: Biceps, lats, forearms, and muscles that support the spine. Particularly good for using hand tools and light lifting tasks.

NECK STRETCH *Bobblehead*

1 Keep your neck as straight as possible while relaxing your shoulders. Tilt your head to the right. Slowly lower head toward right shoulder.

2 Repeat in four positions: right; left; front, and back each time returning to the upright position.

3 Be sure to do this slowly and do not hold your breath. There should be a complete breath cycle with each position of the head!

TARGET: Neck muscles and stress reducer. Particularly good for equipment operators, office personnel, drafters, CAD operators, and engineers.

TRICEP STRETCH *Backscratch*

1 Bring right hand to upper back between shoulder blades from above shoulder.

2 Place left hand on the tricep (muscle on the underside of the arm) near the elbow.

3 Gently pull right elbow up and back with left hand, moving the right hand down center of upper back as far as comfortable. This should not cause pinching in the neck. Repeat on opposite side.

TARGET: Triceps and shoulders. Particularly good for light lifting, carrying or pushing such as laborers, and mail clerks.

UPPER TRUNK STRETCH *Back Bend*

1 Place hands on back of hips.

2 Slowly arch upper body backward to a comfortable position. Hold while continuing to breath.

3 Return to neutral position and repeat two more times.

TARGET: Lower back, abdominals. Particularly good for truck drivers, equipment operators, laborers.

SHOULDER ROTATION STRETCH *Can Opener*

1 Keeping knees slightly bent, clasp hands behind back.

2 Slowly bend forward from the waist to a comfortable angle while lifting arms upward and behind your back.

3 Hold position for one breath cycle and slowly return to upright position. Repeat two more times.

TARGET: Shoulders and upper back. Particularly good for carpenters, office workers.

TRUNK ROTATION *Sprinkler*

1 Extend left arm out to side and grasp left hip with right hand.

2 Rotate upper body to the left while pulling on hip with right hand.

3 Release tension and change to other side. Repeat on opposite side.

TARGET: Lower back and trunk support muscles. Particularly good for laborers, mechanics, iron workers.

LATERAL ROTATION STRETCH *Take a Bow*

1 Stand upright, feet slightly apart for balance. Extend left arm out to side and grasp left hip with right hand.

2 Rotate upper body to left while pulling on hip with right hand, then bend slowly from waist to left side to a comfortable angle.

3 Return to upright position and change hand locations to other side. Repeat on opposite side.

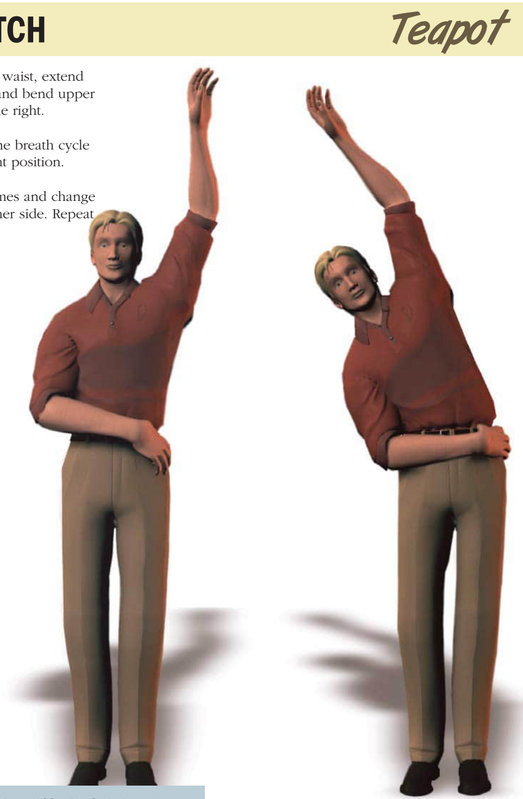
TARGET: Lats, lower back muscles, abdominals, upper leg muscles. Particularly good for laborers, iron workers.

LATERAL STRETCH *Teapot*

1 Place right hand on waist, extend left arm over head and bend upper body sideways to the right.

2 Hold position for one breath cycle and return to upright position.

3 Repeat two more times and change hand position to other side. Repeat on opposite side.



TARGET: Lats, and triceps plus shoulder mobility. Particularly good for masons, riggers, machinists.

SINGLE LEG STRETCH *Touch Your Toes*

1 Cross legs, keeping both knees slightly flexed.

2 Bend forward slowly from the waist and place both hands on the forward knee. Continue bending forward as far as possible.

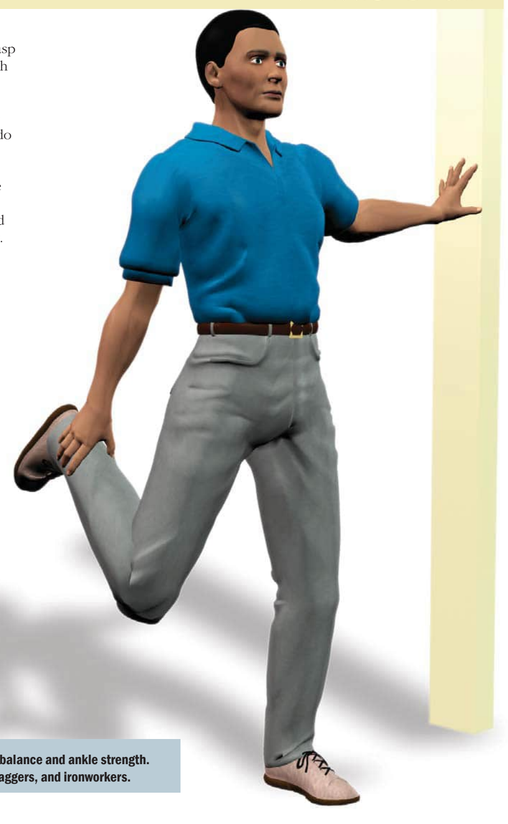
3 Hold position for one breath cycle. WARNING: discontinue this exercise if you become dizzy or lose your balance. Change leg position and repeat.

TARGET: Hamstrings, lower back muscles and stability. Particularly good for laborers, masons, mechanics.

SINGLE QUADRICEPS STRETCH *Ankle Grab*

1 With your left hand hold onto a stationary object for support, grasp your right ankle behind hips with right hand.

2 Pull ankle upward to stretch the quadriceps muscle. WARNING: do not attempt this exercise if you have problems with balance or severe knee injuries. If you have knee injuries, you may elect to lift the lower leg behind you and hold the position for 10 seconds. Repeat on opposite side.



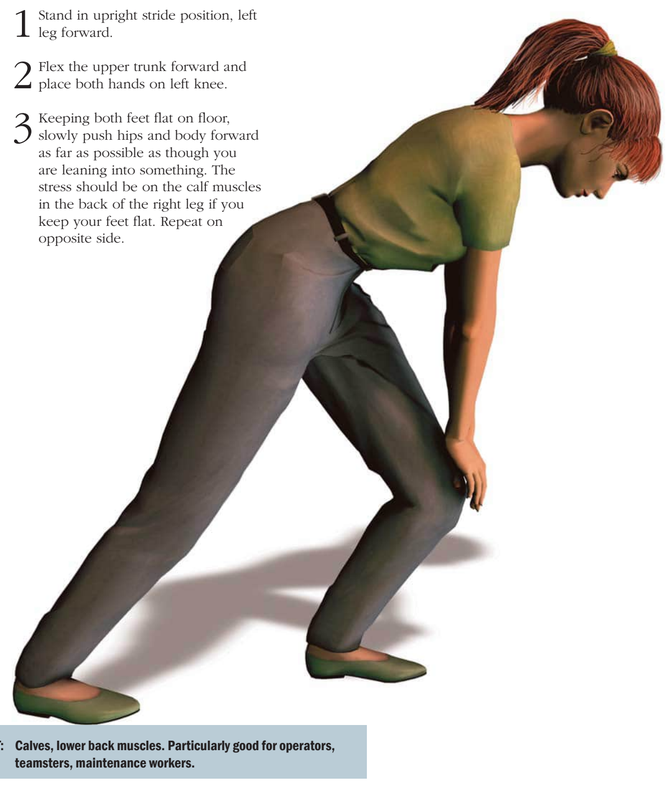
TARGET: Quadriceps and also helps body balance and ankle strength. Particularly good for laborers, flaggers, and ironworkers.

CALF STRETCH *Starting Line*

1 Stand in upright stride position, left leg forward.

2 Flex the upper trunk forward and place both hands on left knee.

3 Keeping both feet flat on floor, slowly push hips and body forward as far as possible as though you are leaning into something. The stress should be on the calf muscles in the back of the right leg if you keep your feet flat. Repeat on opposite side.



TARGET: Calves, lower back muscles. Particularly good for operators, teamsters, maintenance workers.

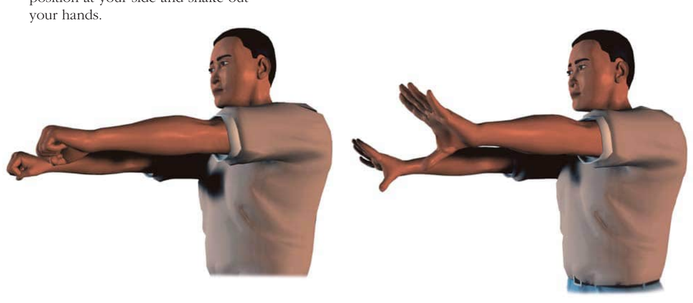
WRIST EXTENSION *Magic Hands*

1 Palms together with fingers apart, press momentarily together and release.

2 Stretch arms out forward and make a fist in each hand. Hold 5 seconds and open hand wide.

3 Force your thumbs down while keeping fingers pointing up towards the sky, wrists are bent back and elbows should be locked. You should feel a slight burn in the upper arm muscles (extensor muscles) of the forearm. These muscles are frequently less used and developed than the flexor muscles in the forearm which leads to unbalance and potential wrist injuries.

4 Hold 10 seconds and release. Return your arms to the neutral arm position at your side and shake out your hands.



TARGET: Extensor muscles. Particularly good for carpenters, administrative professionals, CAD operators, machinists, and maintenance workers.

Attachment E

Safety Data Sheets (SDSs)

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3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Product Specification

Product Name:

Product Number: **267961**
CAS Number: 7440-38-2

Formula: As
Formula Weight: 74.92 g/mol

TEST	Specification
Appearance (Color)	Conforms to Requirements
Grey	
Appearance (Form)	Powder
X-Ray Diffraction	Conforms to Structure
Purity	Conforms
> = 99.997% Based On Trace Metals Analysis	
Trace Metal Analysis	≤ 30.0 ppm

Specification: PRD.0.ZQ5.10000040480

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Product Specification

Product Name:
Lead - powder, −100 mesh, 99.95% trace metals basis

Product Number:	**391352**
CAS Number:	7439-92-1
MDL:	MFCD00134050
Formula:	Pb
Formula Weight:	207.2 g/mol

Pb

TEST	Specification
Appearance (Color)	Conforms to Requirements
Grey to Black	
Appearance (Form)	Powder
Particle Size Measurements	
ICP Major Analysis	Confirmed
Confirms Lead Component	
Purity	Conforms
99.95% Based On Trace Metals Analysis	
Trace Metal Analysis	≤ 550.0 ppm

Specification: PRD.1.ZQ5.10000021109

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Safety Data Sheet

Material Name: Gasoline All Grades

SDS No. 9950
US GHS

Synonyms: Hess Conventional (Oxygenated and Non-oxygenated) Gasoline; Reformulated Gasoline (RFG); Reformulated Gasoline Blendstock for Oxygenate Blending (RBOB); Unleaded Motor or Automotive Gasoline

* * * Section 1 - Product and Company Identification * * *

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

* * * Section 2 - Hazards Identification * * *

GHS Classification:

Flammable Liquid - Category 2
Skin Corrosion/Irritation - Category 2
Germ Cell Mutagenicity - Category 1B
Carcinogenicity - Category 1B
Toxic to Reproduction - Category 1A
Specific Target Organ Toxicity (Single Exposure) - Category 3 (respiratory irritation, narcosis)
Specific Target Organ Toxicity (Repeat Exposure) - Category 1 (liver, kidneys, bladder, blood, bone marrow, nervous system)
Aspiration Hazard - Category 1
Hazardous to the Aquatic Environment – Acute Hazard - Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER

Hazard Statements

Highly flammable liquid and vapour.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs (liver, kidneys, bladder, blood, bone marrow, nervous system) through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist/vapours/spray.
Use only outdoors or in well-ventilated area.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.

Response

In case of fire: Use water spray, fog, dry chemical fire extinguishers or hand held fire extinguisher.
IF ON SKIN (or hair): Wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Get medical advice/attention if you feel unwell.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting.

Storage

Store in a well-ventilated place.
Keep cool. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
86290-81-5	Gasoline, motor fuel	100
108-88-3	Toluene	1-25
106-97-8	Butane	<10
1330-20-7	Xylenes (o-, m-, p- isomers)	1-15
95-63-6	Benzene, 1,2,4-trimethyl-	<6
64-17-5	Ethyl alcohol	0-10
100-41-4	Ethylbenzene	<3
71-43-2	Benzene	0.1-4.9

110-54-3	Hexane	0.5-4

A complex blend of petroleum-derived normal and branched-chain alkane, cycloalkane, alkene, and aromatic hydrocarbons. May contain antioxidant and multifunctional additives. Non-oxygenated Conventional Gasoline and RBOB do not have oxygenates (Ethanol). Oxygenated Conventional and Reformulated Gasoline will have oxygenates for octane enhancement or as legally required.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. Flowing product may be ignited by self-generated static electricity. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Firefighting foam suitable for polar solvents is recommended for fuel with greater than 10% oxygenate concentration.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Caution, flammable vapors may accumulate in closed containers.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

USE ONLY AS A MOTOR FUEL.
DO NOT SIPHON BY MOUTH

Handle as a flammable liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Incompatibilities

Keep away from strong oxidizers.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Gasoline, motor fuel (86290-81-5)

ACGIH: 300 ppm TWA
500 ppm STEL

Toluene (108-88-3)

ACGIH: 20 ppm TWA
OSHA: 200 ppm TWA; 375 mg/m3 TWA
150 ppm STEL; 560 mg/m3 STEL
NIOSH: 100 ppm TWA; 375 mg/m3 TWA
150 ppm STEL; 560 mg/m3 STEL

Butane (106-97-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)
OSHA: 800 ppm TWA; 1900 mg/m3 TWA
NIOSH: 800 ppm TWA; 1900 mg/m3 TWA

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: 100 ppm TWA
150 ppm STEL
OSHA: 100 ppm TWA; 435 mg/m3 TWA
150 ppm STEL; 655 mg/m3 STEL

Benzene, 1,2,4-trimethyl- (95-63-6)

NIOSH: 25 ppm TWA; 125 mg/m3 TWA

Ethyl alcohol (64-17-5)

ACGIH: 1000 ppm STEL
OSHA: 1000 ppm TWA; 1900 mg/m3 TWA
NIOSH: 1000 ppm TWA; 1900 mg/m3 TWA

Ethylbenzene (100-41-4)

ACGIH: 20 ppm TWA
OSHA: 100 ppm TWA; 435 mg/m3 TWA
125 ppm STEL; 545 mg/m3 STEL
NIOSH: 100 ppm TWA; 435 mg/m3 TWA
125 ppm STEL; 545 mg/m3 STEL

Benzene (71-43-2)

ACGIH: 0.5 ppm TWA
2.5 ppm STEL
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA
NIOSH: 0.1 ppm TWA
1 ppm STEL

Hexane (110-54-3)

ACGIH: 50 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route
OSHA: 500 ppm TWA; 1800 mg/m3 TWA
NIOSH: 50 ppm TWA; 180 mg/m3 TWA

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Translucent, straw-colored or light yellow	**Odor:**	Strong, characteristic aromatic hydrocarbon odor. Sweet-ether like
Physical State:	Liquid	**pH:**	ND
Vapor Pressure:	6.4 - 15 RVP @ 100 °F (38 °C) (275-475 mm Hg @ 68 °F (20 °C)	**Vapor Density:**	AP 3-4
Boiling Point:	85-437 °F (39-200 °C)	**Melting Point:**	ND
Solubility (H2O):	Negligible to Slight	**Specific Gravity:**	0.70-0.78
Evaporation Rate:	10-11	**VOC:**	ND
Percent Volatile:	100%	**Octanol/H2O Coeff.:**	ND
Flash Point:	-45 °F (-43 °C)	**Flash Point Method:**	PMCC
Upper Flammability Limit (UFL):	7.6%	**Lower Flammability Limit (LFL):**	1.4%
Burning Rate:	ND	**Auto Ignition:**	>530°F (>280°C)

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Contact with nitric and sulfuric acids will form nitrocresols that can decompose violently.

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Gasoline, motor fuel (86290-81-5)

Inhalation LC50 Rat >5.2 mg/L 4 h; Oral LD50 Rat 14000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Toluene (108-88-3)

Inhalation LC50 Rat 12.5 mg/L 4 h; Inhalation LC50 Rat >26700 ppm 1 h; Oral LD50 Rat 636 mg/kg; Dermal LD50 Rabbit 8390 mg/kg; Dermal LD50 Rat 12124 mg/kg

Butane (106-97-8)

Inhalation LC50 Rat 658 mg/L 4 h

Xylenes (o-, m-, p- isomers) (1330-20-7)
Inhalation LC50 Rat 5000 ppm 4 h; Inhalation LC50 Rat 47635 mg/L 4 h; Oral LD50 Rat 4300 mg/kg; Dermal LD50 Rabbit >1700 mg/kg

Benzene, 1,2,4-trimethyl- (95-63-6)
Inhalation LC50 Rat 18 g/m3 4 h; Oral LD50 Rat 3400 mg/kg; Dermal LD50 Rabbit >3160 mg/kg

Ethyl alcohol (64-17-5)
Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

Ethylbenzene (100-41-4)
Inhalation LC50 Rat 17.2 mg/L 4 h; Oral LD50 Rat 3500 mg/kg; Dermal LD50 Rabbit 15354 mg/kg

Benzene (71-43-2)
Inhalation LC50 Rat 13050-14380 ppm 4 h; Oral LD50 Rat 1800 mg/kg

Hexane (110-54-3)
Inhalation LC50 Rat 48000 ppm 4 h; Oral LD50 Rat 25 g/kg; Dermal LD50 Rabbit 3000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Moderate irritant. Contact with liquid or vapor may cause irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product may cause genetic defects.

Carcinogenicity

A: General Product Information

May cause cancer.

IARC has determined that gasoline and gasoline exhaust are possibly carcinogenic in humans. Inhalation exposure to completely vaporized unleaded gasoline caused kidney cancers in male rats and liver tumors in female mice. The U.S. EPA has determined that the male kidney tumors are species-specific and are irrelevant for human health risk assessment. The significance of the tumors seen in female mice is not known. Exposure to light hydrocarbons in the same boiling range as this product has been associated in animal studies with effects to the central and peripheral nervous systems, liver, and kidneys. The significance of these animal models to predict similar human response to gasoline is uncertain.

This product contains benzene. Human health studies indicate that prolonged and/or repeated overexposure to benzene may cause damage to the blood-forming system (particularly bone marrow), and serious blood disorders such as aplastic anemia and leukemia. Benzene is listed as a human carcinogen by the NTP, IARC, OSHA and ACGIH.

B: Component Carcinogenicity

Gasoline, motor fuel (86290-81-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

Toluene (108-88-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Xylenes (o-, m-, p- isomers) (1330-20-7)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

Ethyl alcohol (64-17-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [2010] (in alcoholic beverages) (Group 1 (carcinogenic to humans))

Ethylbenzene (100-41-4)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC: Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))

Benzene (71-43-2)

ACGIH: A1 - Confirmed Human Carcinogen
OSHA: 5 ppm STEL (Cancer hazard, Flammable, See 29 CFR 1910.1028, 15 min); 0.5 ppm Action Level; 1 ppm TWA
NIOSH: potential occupational carcinogen
NTP: Known Human Carcinogen (Select Carcinogen)
IARC: Monograph 100F [in preparation]; Supplement 7 [1987]; Monograph 29 [1982] (Group 1 (carcinogenic to humans))

Reproductive Toxicity

This product is suspected of damaging fertility or the unborn child.

Specified Target Organ General Toxicity: Single Exposure

This product may cause drowsiness or dizziness.

Specified Target Organ General Toxicity: Repeated Exposure

This product causes damage to organs through prolonged or repeated exposure.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Gasoline, motor fuel (86290-81-5)

Test & Species		Conditions
96 Hr LC50 Alburnus alburnus	119 mg/L [static]	
96 Hr LC50 Cyprinodon variegatus	82 mg/L [static]	
72 Hr EC50 Pseudokirchneriella subcapitata	56 mg/L	
24 Hr EC50 Daphnia magna	170 mg/L	

Toluene (108-88-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	15.22-19.05 mg/L [flow-through]	1 day old
96 Hr LC50 Pimephales promelas	12.6 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.89-7.81 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	14.1-17.16 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	5.8 mg/L [semi-static]	
96 Hr LC50 Lepomis macrochirus	11.0-15.0 mg/L [static]	
96 Hr LC50 Oryzias latipes	54 mg/L [static]	
96 Hr LC50 Poecilia reticulata	28.2 mg/L [semi-static]	
96 Hr LC50 Poecilia reticulata	50.87-70.34 mg/L [static]	
96 Hr EC50 Pseudokirchneriella subcapitata	>433 mg/L	
72 Hr EC50 Pseudokirchneriella subcapitata	12.5 mg/L [static]	
48 Hr EC50 Daphnia magna	5.46 - 9.83 mg/L [Static]	
48 Hr EC50 Daphnia magna	11.5 mg/L	

Xylenes (o-, m-, p- isomers) (1330-20-7)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	13.4 mg/L [flow-through]	

96 Hr LC50 Oncorhynchus mykiss	2.661-4.093 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	13.5-17.3 mg/L
96 Hr LC50 Lepomis macrochirus	13.1-16.5 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	19 mg/L
96 Hr LC50 Lepomis macrochirus	7.711-9.591 mg/L [static]
96 Hr LC50 Pimephales promelas	23.53-29.97 mg/L [static]
96 Hr LC50 Cyprinus carpio	780 mg/L [semi-static]
96 Hr LC50 Cyprinus carpio	>780 mg/L
96 Hr LC50 Poecilia reticulata	30.26-40.75 mg/L [static]
48 Hr EC50 water flea	3.82 mg/L
48 Hr LC50 Gammarus lacustris	0.6 mg/L

Benzene, 1,2,4-trimethyl- (95-63-6)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	7.19-8.28 mg/L [flow-through]
48 Hr EC50 Daphnia magna	6.14 mg/L

Ethyl alcohol (64-17-5)

Test & Species	Conditions
96 Hr LC50 Oncorhynchus mykiss	12.0 - 16.0 mL/L [static]
96 Hr LC50 Pimephales promelas	>100 mg/L [static]
96 Hr LC50 Pimephales promelas	13400 - 15100 mg/L [flow-through]
48 Hr LC50 Daphnia magna	9268 - 14221 mg/L
24 Hr EC50 Daphnia magna	10800 mg/L
48 Hr EC50 Daphnia magna	2 mg/L [Static]

Ethylbenzene (100-41-4)

Test & Species	Conditions
96 Hr LC50 Oncorhynchus mykiss	11.0-18.0 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	4.2 mg/L [semi-static]
96 Hr LC50 Pimephales promelas	7.55-11 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	32 mg/L [static]
96 Hr LC50 Pimephales promelas	9.1-15.6 mg/L [static]
96 Hr LC50 Poecilia reticulata	9.6 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	4.6 mg/L
96 Hr EC50 Pseudokirchneriella subcapitata	>438 mg/L
72 Hr EC50 Pseudokirchneriella subcapitata	2.6 - 11.3 mg/L [static]

96 Hr EC50 Pseudokirchneriella subcapitata	1.7 - 7.6 mg/L [static]
48 Hr EC50 Daphnia magna	1.8 - 2.4 mg/L

Benzene (71-43-2)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	10.7-14.7 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	5.3 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	22.49 mg/L [static]
96 Hr LC50 Poecilia reticulata	28.6 mg/L [static]
96 Hr LC50 Pimephales promelas	22330-41160 µg/L [static]
96 Hr LC50 Lepomis macrochirus	70000-142000 µg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	29 mg/L
48 Hr EC50 Daphnia magna	8.76 - 15.6 mg/L [Static]
48 Hr EC50 Daphnia magna	10 mg/L

Hexane (110-54-3)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	2.1-2.98 mg/L [flow-through]
24 Hr EC50 Daphnia magna	>1000 mg/L

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

DOT Information

Shipping Name: Gasoline
UN #: 1203 **Hazard Class:** 3 **Packing Group:** II
Placard:

* * * Section 15 - Regulatory Information * * *

Regulatory Information

A: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Toluene (108-88-3)
SARA 313: 1.0 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Xylenes (o-, m-, p- isomers) (1330-20-7)
SARA 313: 1.0 % de minimis concentration
CERCLA: 100 lb final RQ; 45.4 kg final RQ

Benzene, 1,2,4-trimethyl- (95-63-6)
SARA 313: 1.0 % de minimis concentration

Ethylbenzene (100-41-4)
SARA 313: 0.1 % de minimis concentration
CERCLA: 1000 lb final RQ; 454 kg final RQ

Benzene (71-43-2)
SARA 313: 0.1 % de minimis concentration
CERCLA: 10 lb final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule); 4.54 kg final RQ (received an adjusted RQ of 10 lbs based on potential carcinogenicity in an August 14, 1989 final rule)

Hexane (110-54-3)

SARA 313: 1.0 % de minimis concentration
CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 – Hazard Classes

Acute Health	Chronic Health	Fire	Sudden Release of Pressure	Reactive
X	X	X	--	--

Component Marine Pollutants

This material contains one or more of the following chemicals required by US DOT to be identified as marine pollutants.

Component	CAS #	
Gasoline, motor fuel	86290-81-5	DOT regulated marine pollutant

State Regulations

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	**CAS**	**CA**	**MA**	**MN**	**NJ**	**PA**	**RI**
Gasoline, motor fuel	86290-81-5	No	No	No	No	Yes	No
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes	No
Butane	106-97-8	Yes	Yes	Yes	Yes	Yes	No
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	Yes	Yes	Yes	Yes	No
Benzene, 1,2,4-trimethyl-	95-63-6	No	Yes	Yes	Yes	Yes	No
Ethyl alcohol	64-17-5	Yes	Yes	Yes	Yes	Yes	No
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes	No
Benzene	71-43-2	Yes	Yes	Yes	Yes	Yes	No
Hexane	110-54-3	No	Yes	Yes	Yes	Yes	No

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Toluene	108-88-3	1 %
Butane	106-97-8	1 %
Benzene, 1,2,4-trimethyl-	95-63-6	0.1 %
Ethyl alcohol	64-17-5	0.1 %
Ethylbenzene	100-41-4	0.1 %
Benzene	71-43-2	0.1 %
Hexane	110-54-3	1 %

Additional Regulatory Information

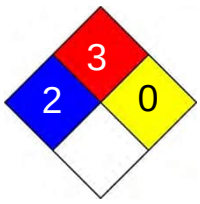
Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Gasoline, motor fuel	86290-81-5	No	DSL	EINECS
Toluene	108-88-3	Yes	DSL	EINECS
Butane	106-97-8	Yes	DSL	EINECS
Xylenes (o-, m-, p- isomers)	1330-20-7	Yes	DSL	EINECS
Benzene, 1,2,4-trimethyl-	95-63-6	Yes	DSL	EINECS
Ethyl alcohol	64-17-5	Yes	DSL	EINECS
Ethylbenzene	100-41-4	Yes	DSL	EINECS
Benzene	71-43-2	Yes	DSL	EINECS
Hexane	110-54-3	Yes	DSL	EINECS

* * * Section 16 - Other Information * * *

NFPA® Hazard Rating

Health	2
Fire	3
Reactivity	0



HMIS® Hazard Rating

Health	2	Moderate
Fire	3	Serious
Physical	0	Minimal
		*Chronic

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

MATERIAL SAFETY DATA SHEET

ALCONOX®

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Union REACH Regulations

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	**ALCONOX®**
CHEMICAL FAMILY NAME:	Detergent.
PRODUCT USE:	Critical-cleaning detergent for laboratory, healthcare and industrial applications
U.N. NUMBER:	Not Applicable
U.N. DANGEROUS GOODS CLASS:	Non-Regulated Material
SUPPLIER/MANUFACTURER'S NAME:	Alconox, Inc.
ADDRESS:	30 Glenn St., Suite 309, White Plains, NY 10603. USA
EMERGENCY PHONE:	**TOLL-FREE in USA/Canada** 800-255-3924
	International calls 813-248-0585
BUSINESS PHONE:	914-948-4040
DATE OF PREPARATION:	May 2011
DATE OF LAST REVISION:	February 2008

SECTION 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a white granular powder with little or no odor. Exposure can be irritating to eyes, respiratory system and skin. It is a non-flammable solid. The Environmental effects of this product have not been investigated.

US DOT SYMBOLS

Non-Regulated

CANADA (WHMIS) SYMBOLS

EUROPEAN and (GHS) Hazard Symbols

Signal Word: **Warning!**

EU LABELING AND CLASSIFICATION:

Classification of the substance or mixture according to Regulation (EC) No1272/2008 Annex 1
EC# 205-633-8 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 268-356-1 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 231-838-7 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 231-767-1 This substance is not classified in the Annex I of Directive 67/548/EEC
EC# 207-638-8 Index# 011-005-00-2
EC# 205-788-1 This substance is not classified in the Annex I of Directive 67/548/EEC

GHS Hazard Classification(s):

Eye Irritant Category 2A

Hazard Statement(s):

H319: Causes serious eye irritation

Precautionary Statement(s):

P260: Do not breath dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P271: Use only in well ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection/

Hazard Symbol(s):

[Xi] Irritant

Risk Phrases:
R20: Harmful by inhalation
R36/37/38: Irritating to eyes, respiratory system and skin

Safety Phrases:
S8: Keep container dry
S22: Do not breath dust
S24/25: Avoid contact with skin and eyes

HEALTH HAZARDS OR RISKS FROM EXPOSURE:

ACUTE: Exposure to this product may cause irritation of the eyes, respiratory system and skin. Ingestion may cause gastrointestinal irritation including pain, vomiting or diarrhea.

CHRONIC: This product contains an ingredient which may be corrosive.

TARGET ORGANS: ACUTE: Eye, respiratory System, Skin CHRONIC: None Known

SECTION 3 - COMPOSITION and INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS:	CAS #	EINECS #	ICSC #	WT %	HAZARD CLASSIFICATION; RISK PHRASES
Sodium Bicarbonate	144-55-8	205-633-8	1044	33 - 43%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium (C10 – C16) Alkylbenzene Sulfonate	68081-81-2	268-356-1	Not Listed	10 – 20%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium Tripolyphosphate	7758-29-4	231-838-7	1469	5 - 15%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Tetrasodium Pyrophosphate	7722-88-5	231-767-1	1140	5 - 15%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Sodium Carbonate	497-19-8	207-638-8	1135	1 - 10%	HAZARD CLASSIFICATION: [Xi] Irritant RISK PHRASES: R36
Sodium Alcohol Sulfate	151-21-3	205-788-1	0502	1 – 5%	HAZARD CLASSIFICATION: None RISK PHRASES: None
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).					

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

SECTION 4 - FIRST-AID MEASURES

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation persists.

SKIN CONTACT: Wash skin thoroughly after handling. Seek medical attention if irritation develops and persists. Remove contaminated clothing. Launder before re-use.

INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if breathing dificulty continues.

INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or MSDS with the victim to the health professional.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin, or eye problems may be aggravated by prolonged contact.

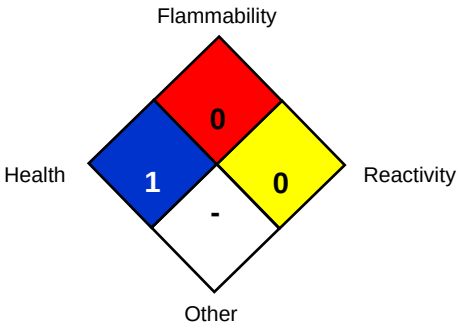
RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and reduce over-exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT: Not Flammable
AUTOIGNITION TEMPERATURE: Not Applicable
FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): NA Upper (UEL): NA
FIRE EXTINGUISHING MATERIALS: As appropriate for surrounding fire. Carbon dioxide, foam, dry chemical, halon, or water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This product is non-flammable and has no known explosion hazards.
Explosion Sensitivity to Mechanical Impact: Not Sensitive.
Explosion Sensitivity to Static Discharge: Not Sensitive
SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	1
FLAMMABILITY HAZARD (RED)	0
PHYSICAL HAZARD (YELLOW)	0

PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Personnel should be trained for spill response operations.
SPILLS: Contain spill if safe to do so. Prevent entry into drains, sewers, and other waterways. Sweep, shovel or vacuum spilled material and place in an appropriate container for re-use or disposal. Avoid dust generation if possible. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: Containers of this product must be properly labeled. Store containers in a cool, dry location. Keep container tightly closed when not in use. Store away from strong acids or oxidizers.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS#	ACGIH TWA	OSHA TWA	SWA
Sodium Bicarbonate	144-55-8	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium (C10 – C16) Alkylbenzene Sulfonate	68081-81-2	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium Tripolyphosphate	7758-29-4	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Tetrasodium Pyrophosphate	7722-88-5	5 mg/m³	5 mg/m³	5 mg/m³
Sodium Carbonate	497-19-8	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust
Sodium Alcohol Sulfate	151-21-3	10 mg/m³ Total Dust	15 mg/m³ Total Dust	10 mg/m³ Total Dust

Currently, International exposure limits are not established for the components of this product. Please check with competent authority in each country for the most recent limits in place.

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use local exhaust ventilation to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Based on test data, exposure limits should not be exceeded under normal use conditions when using Alconox Detergent. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Use chemical resistant gloves to prevent skin contact.. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: Use body protection appropriate to prevent contact (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid
APPEARANCE & ODOR:	White granular powder with little or no odor.
ODOR THRESHOLD (PPM):	Not Available
VAPOR PRESSURE (mmHg):	Not Applicable
VAPOR DENSITY (AIR=1):	Not Applicable.
BY WEIGHT:	Not Available
EVAPORATION RATE (nBuAc = 1):	Not Applicable.
BOILING POINT (C°):	Not Applicable.
FREEZING POINT (C°):	Not Applicable.
pH:	9.5 (1% aqueous solution)
SPECIFIC GRAVITY 20°C: (WATER =1)	0.85 – 1.1
SOLUBILITY IN WATER (%)	>10% w/w
COEFFICIENT OF WATER/OIL DIST.:	Not Available
VOC:	None
CHEMICAL FAMILY:	Detergent

SECTION 10 - STABILITY and REACTIVITY

STABILITY: Product is stable
DECOMPOSITION PRODUCTS: When heated to decomposition this product produces Oxides of carbon (COx)
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong acids and strong oxidizing agents.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Contact with incompatible materials and dust generation.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicity data is available for mixture:

CAS# 497-19-8 LD50 Oral (Rat)	4090 mg/kg
CAS# 497-19-8 LD50 Oral (Mouse)	6600 mg/kg
CAS# 497-19-8 LC50 Inhalation (Rat)	2300 mg/m³ 2H
CAS# 497-19-8 LC50 Inhalation (Mouse)	1200 mg/m³ 2H
CAS# 7758-29-4 LD50 Oral (Rat)	3120 mg/kg
CAS# 7758-29-4 LD50 Oral (Mouse)	3100 mg/kg
CAS# 7722-88-5 LD50 Oral (Rat)	4000 mg/kg

SUSPECTED CANCER AGENT: None of the ingredients are found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.
IRRITANCY OF PRODUCT: Contact with this product can be irritating to exposed skin, eyes and respiratory system.
SENSITIZATION OF PRODUCT: This product is not considered a sensitizer.
REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
ENVIRONMENTAL STABILITY: No Data available at this time.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this product's effects on plants or animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this product's effects on aquatic life.

SECTION 13 - DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT; IATA; IMO; ADR:

THIS PRODUCT IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.
PROPER SHIPPING NAME: Non-Regulated Material
HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable
UN IDENTIFICATION NUMBER: Not Applicable
PACKING GROUP: Not Applicable.
DOT LABEL(S) REQUIRED: Not Applicable
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2004): Not Applicable
MARINE POLLUTANT: None of the ingredients are classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B)

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS:
This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:
This product is not classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):
This product is not classified as Dangerous Goods, by rules of IATA:

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION:
This product is not classified as Dangerous Goods by the International Maritime Organization.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

This product is not classified by the United Nations Economic Commission for Europe to be dangerous goods.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES REGULATIONS

SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act., as follows: None

TSCA: All components in this product are listed on the US Toxic Substances Control Act (TSCA) inventory of chemicals.

SARA 311/312:

Acute Health: Yes Chronic Health: No Fire: No Reactivity: No

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): None

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): None of the ingredients are on the California Proposition 65 lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: All of the components of this product are on the DSL Inventory

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: This product is categorized as a Controlled Product, Hazard Class D2B as per the Controlled Product Regulations

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

EU LABELING AND CLASSIFICATION:

Classification of the mixture according to Regulation (EC) No1272/2008. See section 2 for details.

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: All components of this product are listed on the AICS.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Asia-Pac:	Listed
Australian Inventory of Chemical Substances (AICS):	Listed
Korean Existing Chemicals List (ECL):	Listed
Japanese Existing National Inventory of Chemical Substances (ENCS):	Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS):	Listed
Swiss Giftliste List of Toxic Substances:	Listed
U.S. TSCA:	Listed

SECTION 16 - OTHER INFORMATION

PREPARED BY: Paul Eigbrett Global Safety Management, 10006 Cross Creek Blvd. Suite 440, Tampa, FL 33647

Disclaimer: To the best of Alconox, Inc. knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type either express or implied are provided. The information contained herein relates only to this specific product.

ANNEX:

IDENTIFIED USES OF ALCONOX® AND DIRECTIONS FOR USE

Used to clean: Healthcare instruments, laboratory ware, vacuum equipment, tissue culture ware, personal protective equipment, sampling apparatus, catheters, tubing, pipes, radioactive contaminated articles, optical parts, electronic components, pharmaceutical apparatus, cosmetics manufacturing equipment, metal castings, forgings and stampings, industrial parts, tanks and reactors. Authorized by USDA for use in federally inspected meat and poultry plants. Passes inhibitory residue test for water analysis. FDA certified.

Used to remove: Soil, grit, grime, buffing compound, slime, grease, oils, blood, tissue, salts, deposits, particulates, solvents, chemicals, radioisotopes, radioactive contaminations, silicon oils, mold release agents.

Surfaces cleaned: Corrosion inhibited formulation recommended for glass, metal, stainless steel, porcelain, ceramic, plastic, rubber and fiberglass. Can be used on soft metals such as copper, aluminum, zinc and magnesium if rinsed promptly. Corrosion testing may be advisable.

Cleaning method: Soak, brush, sponge, cloth, ultrasonic, flow through clean-inplace. Will foam—not for spray or machine use.

Directions: Make a fresh 1% solution (2 1/2 Tbsp. per gal., 1 1/4 oz. per gal. or 10 grams per liter) in cold, warm, or hot water. If available use warm water. Use cold water for blood stains. For difficult soils, raise water temperature and use more detergent. Clean by soak, circulate, wipe, or ultrasonic method. Not for spray machines, will foam. For nonabrasive scouring, make paste. Use 2% solution to soak frozen stopcocks. To remove silver tarnish, soak in 1% solution in aluminum container. RINSE THOROUGHLY—preferably with running water. For critical cleaning, do final or all rinsing in distilled, deionized, or purified water. For food contact surfaces, rinse with potable water. Used on a wide range of glass, ceramic, plastic, and metal surfaces. Corrosion testing may be advisable.

Safety Data Sheet: **Simple Green® All-Purpose Cleaner** ★

Version No. 13000-14B Issue Date: September 13, 2014 Supersedes Date: January 7, 2014 *OSHA HCS-2012 / GHS*

Section 1: IDENTIFICATION

Product Name: Simple Green® All-Purpose Cleaner
Additional Names:

Manufacturer's Part Number: **Please refer to Section 16*

Recommended Use: Cleaner & Degreaser for water tolerant surfaces.
Restrictions on Use: Do not use on non-rinsable surfaces.

Company: Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Beach, CA 92649 USA

Telephone: 800-228-0709 ● 562-795-6000 *Mon – Fri, 8am – 5pm PST*
Fax: 562-592-3830
Email: info@simplegreen.com

Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-255-3924

Section 2: HAZARDS IDENTIFICATION

This product is not classified as hazardous under 2012 OSHA Hazard Communication Standards (29 CFR 1910.1200).

OSHA HCS 2012
Label Elements
Signal Word: None **Hazard Symbol(s)/Pictogram(s):** None required

Hazard Statements: None
Precautionary Statements: None
Hazards Not Otherwise Classified (HNOC): None
Other Information: None Known

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent Range
Water	7732-18-5	> 84.8%*
Ethoxylated Alcohol	68439-46-3	< 5%*
Sodium Citrate	68-04-2	< 5%*
Tetrasodium *N,N*-bis(carboxymethyl)-L-glutamate	51981-21-6	< 1%*
Sodium Carbonate	497-19-8	< 1%*
Citric Acid	77-92-9	< 1%*
Isothiazolinone mixture	55965-84-9	< 0.2%*
Fragrance	Proprietary Mixture	< 1%*
Colorant	Proprietary Mixture	< 1%*

**specific percentages of composition are being withheld as a trade secret*

Section 4: FIRST-AID MEASURES

Inhalation: Not expected to cause respiratory irritation. If adverse effect occurs, move to fresh air.
Skin Contact: Not expected to cause skin irritation. If adverse effect occurs, rinse skin with water.
Eye Contact: Not expected to cause eye irritation. If adverse effect occurs, flush eyes with water.
Ingestion: May cause upset stomach. Drink plenty of water to dilute. See section 11.

Most Important Symptoms/Effects, Acute and Delayed: None known.

Indication of Immediate Medical Attention and Special Treatment Needed, if necessary: Treat symptomatically

Section 5: FIRE-FIGHTING MEASURES

Suitable & Unsuitable Extinguishing Media: Use Dry chemical, CO2, water spray or "alcohol" foam. Avoid high volume jet water.
Specific Hazards Arising from Chemical: In event of fire, fire created carbon oxides may be formed.
Special Protective Actions for Fire-Fighters: Wear positive pressure self-contained breathing apparatus; Wear full protective clothing.

This product is non-flammable. See Section 9 for Physical Properties.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: *For non-emergency and emergency personnel:* See section 8 – personal protection. Avoid eye contact. Safety goggles suggested.

Environmental Precautions: Do not allow into open waterways and ground water systems.

Methods and Materials for Containment and Clean Up: Dike or soak up with inert absorbent material. See section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Precautions for Safe Handling: Ensure adequate ventilation. Keep out of reach of children. Keep away from heat, sparks, open flame and direct sunlight. Do not pierce any part of the container. Do not mix or contaminate with any other chemical. Do not eat, drink or smoke while using this product.

Conditions for Safe Storage including Incompatibilities: Keep container tightly closed. Keep in cool dry area. Avoid prolonged exposure to sunlight. Do not store at temperatures above 109°F (42.7°C). If separation occurs, mix the product for reconstitution.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values: No components listed with TWA or STEL values under OSHA or ACGIH.

Appropriate Engineering Controls: Showers, eyewash stations, ventilation systems

Individual Protection Measures / Personal Protective Equipment (PPE)
Eye Contact: Use protective glasses or safety goggles if splashing or spray-back is likely.
Respiratory: Use in well ventilated areas or local exhaust ventilations when cleaning small spaces.
Skin Contact: Use protective gloves (any material) when used for prolonged periods or dermally sensitive.
General Hygiene Considerations: Wash thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Green Liquid
Odor: Added sassafras odor
Odor Threshold: Not determined
pH ASTM D-1293**:** 8.5 – 9.5
Freezing Point ASTM D-1177**:** 0-3.33°C (32-38°F)
Boiling Point & Range ASTM D-1120**:** 101°C (213.8°F)
Flash Point ASTM D-93**:** > 212°F
Evaporation Rate ASTM D-1901**:** ½ Butyl Acetate @ 25°C
Flammability (solid, gas): Not applicable
Upper/Lower Flammability or Explosive Limits: Not applicable
Vapor Pressure ASTM D-323**:** 0.60 PSI @77°F, 2.05 PSI @100°F
Vapor Density: Not determined

Partition Coefficient: n-octanol/water: Not determined
Autoignition Temperature: Non-flammable
Decomposition Temperature: 109°F
Viscosity: Like water
Specific Gravity ASTM D-891**:** 1.01 – 1.03
VOCs: ***Water & fragrance exemption in calculation*

SCAQMD 304-91 / EPA 24:	0 g/L	0 lb/gal	0%
CARB Method 310**:	2.5 g/L	0.021 lb/gal	0.25%
SCAQMD Method 313:	Not tested		

VOC Composite Partial Pressure: Not determined
Relative Density ASTM D-4017**:** 8.34 – 8.42 lb/gal
Solubility: 100% in water

Section 10: STABILITY AND REACTIVITY

Reactivity: Non-reactive.
Chemical Stability: Stable under normal conditions 70°F (21°C) and 14.7 psig (760 mmHg).
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Excessive heat or cold.
Incompatible Materials: Do not mix with oxidizers, acids, bathroom cleaners, or disinfecting agents.
Hazardous Decomposition Products: Normal products of combustion - CO, CO2.

Section 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:
Inhalation - Overexposure may cause headache.
Skin Contact - Not expected to cause irritation, repeated contact may cause dry skin.
Eye Contact - Not expected to cause irritation.
Ingestion - May cause upset stomach.

Symptoms related to the physical, chemical and toxicological characteristics: no symptoms expected under typical use conditions.
Delayed and immediate effects and or chronic effects from short term exposure: no symptoms expected under typical use conditions.
Delayed and immediate effects and or chronic effects from long term exposure: headache, dry skin, or skin irritation may occur.
Interactive effects: Not known.

Numerical Measures of Toxicity

Acute Toxicity:
Oral LD_{50} (rat) > 5 g/kg body weight
Dermal LD_{50} (rabbit) > 5 g/kg body weight
Calculated via OSHA HCS 2012 / Globally Harmonized System of Classification and Labelling of Chemicals

Skin Corrosion/Irritation: Non-irritant per Dermal Irritection® assay modeling. No animal testing performed.
Eye Damage/Irritation: Minimal irritant per Ocular Irritection® assay modeling. No animal testing performed.
Germ Cell Mutagenicity: Mixture does not classify under this category.
Carcinogenicity: Mixture does not classify under this category.
Reproductive Toxicity: Mixture does not classify under this category.
STOT-Single Exposure: Mixture does not classify under this category.
STOT-Repeated Exposure: Mixture does not classify under this category.
Aspiration Hazard: Mixture does not classify under this category.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Volume of ingredients used does not trigger toxicity classifications under the Globally Harmonized System of Classification and Labelling of Chemicals.
Aquatic: Aquatic Toxicity - Low, based on OECD 201, 202, 203 + Microtox: EC_{50} & IC_{50} ≥100 mg/L. Volume of ingredients used does not trigger toxicity classifications under the Globally Harmonized System of Classification and Labelling of Chemicals.
Terrestrial: Not tested on finished formulation.

Persistence and Degradability: Readily Biodegradable per OCED 301D, Closed Bottle Test
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
Other Adverse Effects: No data available.

Section 13: DISPOSAL CONSIDERATIONS

Unused or Used Liquid: May be considered hazardous in your area depending on usage and tonnage of disposal – check with local, regional, and or national regulations for appropriate methods of disposal.

Empty Containers: May be offered for recycling.

Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

U.N. Number: Not applicable
U.N. Proper Shipping Name: Cleaning Compound, Liquid NOI
Transport Hazard Class(es): Not applicable
NMFC Number: 48580-3
Packing Group: Not applicable
Class: 55
Environmental Hazards: Marine Pollutant - NO
Transport in Bulk (according to Annex II of MARPOL 73/78 and IBC Code): Unknown.
Special precautions which user needs to be aware of/comply with, in connection with transport or conveyance either within or outside their premises: None known.

U.S. (DOT) / Canadian TDG: Not Regulated for shipping.
ICAO/ IATA: Not classified as Hazardous
IMO / IDMG: Not classified as Hazardous
ADR/RID: Not classified as Hazardous

Section 15: REGULATORY INFORMATION

All components are listed on: TSCA and DSL Inventory.

SARA Title III: Sections 311/312 Hazard Categories – Not applicable.
Sections 313 Superfunds Amendments and Reauthorizations Act of 1986 – Not applicable.
Sections 302 – Not applicable.

Clean Air Act (CAA): Not applicable
Clean Water Act (CWA): Not applicable

State Right To Know Lists: No ingredients listed
California Proposition 65: No ingredients listed
Texas ESL:

Ethoxylated Alcohol	68439-46-3	60 µg/m³ long term	600 µg/m³ short term
Sodium Citrate	68-04-2	5 µg/m³ long term	50 µg/m³ short term
Sodium Carbonate	497-19-8	5 µg/m³ long term	50 µg/m³ short term
Citric Acid	77-92-9	10 µg/m³ long term	100 µg/m³ short term

Section 16: OTHER INFORMATION

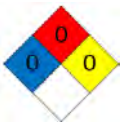
Size	UPC	Size	UPC
2 oz. Pump	043318130366	1 Gallon w/ Dilution Bottle	043318000669
2 oz. Pump	043318131035	1 Gallon	043318000799
4 oz. Pump	043318130014	1 Gallon w/ Dilution Bottle	043318001383
16 oz. Trigger	043318130021	1 Gallon w/ Dilution Bottle	043318002021
22 oz. Trigger	043318130229	1 Gallon	043318130052
24 oz. Trigger, 12 per case	043318000034	1 Gallon w/ Dilution Bottle, 112 per case	043318480140
24 oz. Trigger	043318000300	1 Gallon w/ Dilution Bottle, 4 per case	043318480416
24 oz. Trigger	043318130137	1 Gallon w/ Dilution Bottle, 24 per case	043318480492
32 oz. Trigger	043318000652	1 Gallon w/ laundry	043318002052
32 oz. Trigger	043318130335	1 Gallon w/ towel	043318001222
67.6 oz	043318000393	140 oz.	043318001390
67.6 oz.	043318130144	140 oz., 168 per case	043318561405
1 Gallon w/ Dilution Bottle	043318000539	140 oz. w/ Dilution Bottle	043318001468
1 Gallon w/ Dilution Bottle	043318000645		

USA items listed only. Not all items listed. USA items may not be valid for international sale.

Section 16: OTHER INFORMATION - continued

NFPA:

Health – None
Flammability – Non-flammable
Stability – Stable
Special - None



Acronyms

NTP	National Toxicology Program	IARC	International Agency for Research on Cancer
OSHA	Occupational Safety and Health Administration	CPSC	Consumer Product Safety Commission
TSCA	Toxic Substances Control Act	DSL	Domestic Substances List

Prepared / Revised By: Sunshine Makers, Inc., Regulatory Department.
This SDS has been revised in the following sections: Revised SDS layout

DISCLAIMER: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Hydrogen Chloride

Section 1. Identification

GHS product identifier : Hydrogen Chloride

Chemical name : Hydrogen chloride

Other means of identification :

Product use : Synthetic/Analytical chemistry.

Synonym :

SDS # : 001028

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas
ACUTE TOXICITY (inhalation) - Category 3
SKIN CORROSION/IRRITATION - Category 1
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Contains gas under pressure; may explode if heated.
Toxic if inhaled.
Causes severe skin burns and eye damage.
Causes serious eye damage.
May cause respiratory irritation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing gas. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Store locked up. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Hydrogen chloride

Other means of identification :

CAS number/other identifiers

CAS number : 7647-01-0

Product code : 001028

Ingredient name	%	CAS number
hydrogen chloride	100	7647-01-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

Eye contact : Causes serious eye damage. Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : Toxic if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:, pain, watering, redness

Inhalation : Adverse symptoms may include the following:, respiratory tract irritation, coughing

Skin contact : Adverse symptoms may include the following:, pain or irritation, redness, blistering may occur

Ingestion : Adverse symptoms may include the following:, stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
halogenated compounds

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not breathe gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Do not breathe gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
hydrogen chloride	**ACGIH TLV (United States, 3/2015).** C: 2 ppm **NIOSH REL (United States, 10/2013).** CEIL: 7 mg/m³ CEIL: 5 ppm **OSHA PEL (United States, 2/2013).** CEIL: 7 mg/m³ CEIL: 5 ppm **OSHA PEL 1989 (United States, 3/1989).** CEIL: 7 mg/m³ CEIL: 5 ppm

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied compressed gas.]

Color : Colorless. Yellowish.

Molecular weight : 36.46 g/mole

Molecular formula : Cl-H

Boiling/condensation point : -85°C (-121°F)

Melting/freezing point : -114°C (-173.2°F)

Critical temperature : 51.45°C (124.6°F)

Odor : Pungent.

Odor threshold : Not available.

pH : Not available.

Flash point : [Product does not sustain combustion.]

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Section 9. Physical and chemical properties

Vapor pressure : 613 (psig)

Vapor density : 1.3 (Air = 1)

Specific Volume (ft ^{3}/lb) : 10.5263

Gas Density (lb/ft ^{3}) : 0.095

Relative density : Not applicable.

Solubility : Soluble in the following materials: cold water.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.25

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
hydrogen chloride	LC50 Inhalation Gas. LC50 Inhalation Gas.	Rat Rat	3124 ppm 1562 ppm	1 hours 4 hours

IDLH : 50 ppm

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
hydrogen chloride	Eyes - Mild irritant Skin - Mild irritant	Rabbit Human	- -	0.5 minutes 5 milligrams 24 hours 4 Percent	- -

Sensitization

Not available.

Mutagenicity

Not available.

Section 11. Toxicological information

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
hydrogen chloride	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
hydrogen chloride	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage. Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : Toxic if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:, pain, watering, redness

Inhalation : Adverse symptoms may include the following:, respiratory tract irritation, coughing

Skin contact : Adverse symptoms may include the following:, pain or irritation, redness, blistering may occur

Ingestion : Adverse symptoms may include the following:, stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
hydrogen chloride	Acute LC50 240000 µg/l Marine water Acute LC50 282 ppm Fresh water	Crustaceans - Carcinus maenas - Adult Fish - Gambusia affinis - Adult	48 hours 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
hydrogen chloride	0.25	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

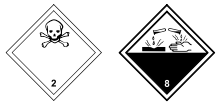
Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1050	UN1050	UN1050	UN1050	UN1050
UN proper shipping name	HYDROGEN CHLORIDE, ANHYDROUS	HYDROGEN CHLORIDE, ANHYDROUS	HYDROGEN CHLORIDE, ANHYDROUS	HYDROGEN CHLORIDE, ANHYDROUS	HYDROGEN CHLORIDE, ANHYDROUS
Transport hazard class(es)	2.3 (8)	2.3 (8)	2.3 (8)	2.3 (8) 	2.3 (8)
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	Inhalation hazard zone C **Reportable quantity** 5000 lbs / 2270 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. **Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: Forbidden. **Cargo aircraft** Quantity limitation: Forbidden. **Special provisions** 3	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.40-2.42 (Class 8). **Explosive Limit and Limited Quantity Index** 0 **ERAP Index** 25 **Passenger Carrying Ship Index** Forbidden **Passenger Carrying Road or Rail Index** Forbidden **Special provisions** 38	-	-	**Passenger and Cargo Aircraft**Quantity limitation: 0 Forbidden **Cargo Aircraft Only** Quantity limitation: 0 Forbidden

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Water Act (CWA) 311: Hydrogen chloride

Clean Air Act (CAA) 112 regulated toxic substances: Hydrogen chloride

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Section 15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
hydrogen chloride	100	Yes.	500	-	5000	-

SARA 304 RQ : 5000 lbs / 2270 kg

SARA 311/312

Classification : Sudden release of pressure
Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
hydrogen chloride	100	No.	Yes.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Hydrogen chloride	7647-01-0	100
Supplier notification	Hydrogen chloride	7647-01-0	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : This material is listed.

New York : This material is listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

International regulations

International lists

National inventory

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : This material is listed or exempted.

Malaysia : This material is listed or exempted.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Section 15. Regulatory information

Canada

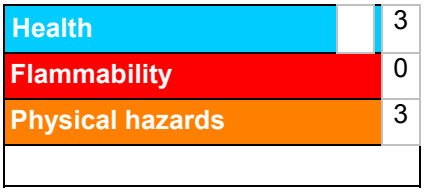
WHMIS (Canada) : Class A: Compressed gas.
Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
Class E: Corrosive material

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.
Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
Class E: Corrosive material

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
Press. Gas Comp. Gas, H280	According to package
Acute Tox. 3, H331	On basis of test data
Skin Corr. 1, H314	Expert judgment
Eye Dam. 1, H318	Expert judgment
STOT SE 3, H335	Expert judgment

History

Date of printing : 6/24/2016

Date of issue/Date of revision : 6/24/2016

Section 16. Other information

Date of previous issue : No previous validation

Version : 0.01

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Hydrochloric Acid, 31 – 36%

Product Name: Hydrochloric Acid, 31 – 36.7%

Identified Uses: acid etching, steel pickling, oil and gas, ore and mineral, food processing, pharmaceutical, organic chemical synthesis

Company Information:
ASHTA Chemicals Inc.
P.O. Box 858
Ashtabula Ohio 44005
Phone: (440) 997-5221
Fax: (440) 998-0286
24-hour Emergency Phone: CHEMTREC: (800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

GHS label elements, including precautionary statements:

Signal Word: **Danger**

Pictogram(s):

Hazard Statements	
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

Precautionary Statements	
P234	Keep only in original container.
P261	Avoid breathing dust/ fume/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water. Shower.

P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P403 + P233	Store in a well-ventilated place. Keep container with a resistant inner liner.
P405	Store locked up.
P406	Store in corrosive resistant stainless steel container with a resistant inner liner.
P501	Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms:

CHEMICAL NAME:	Hydrochloric acid
TRADE NAME:	Hydrochloric acid, 31 – 36%
SYNONYMS:	Muriatic acid, Chlorohydric acid, Hydrogen Chloride
C.A.S:	7647-01-0
EC:	231-595-7
WHMIS:	D2A, E
CHEMICAL FORMULA:	HCl (in aqueous solution)
CHEMICAL FAMILY:	Inorganic Acid

SECTION 4 FIRST AID MEASURES

Description of first aid measures:
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give humidified air. Give oxygen, but only by a certified physician. Consult a physician.

In case of skin contact
Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Remove contact lenses if present and easy to do. Continue rinsing eyes during transport to medical facility.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Consult a physician.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point (Method):	Non-combustible.
Extinguishing Media:	Use extinguishing agents compatible with acid and appropriate for the burning material. Use water spray to keep fire-exposed containers cool.
Auto Ignition Temp:	Non-combustible.
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus and full protective clothing. In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.
Unusual Fire/Explosion Hazards:	Releases flammable hydrogen gas when reacting with metals.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Environmental Precautions:
Use closed systems when possible. Provide local exhaust ventilation where vapor or mist may be generated. Avoid discharge into drains, water courses or onto the ground.

Containment and Cleaning:
Follow preplanned emergency procedures. Only properly equipped, trained, functional personnel should attempt to contain a leak. All other personnel should be evacuated from the danger area. Using full protective equipment, apply appropriate emergency device or other securement technology to stop the leak if possible.

Small Spill:	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: neutralize the residue with a dilute solution of sodium carbonate.
Large Spill:	Corrosive liquid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to knock down vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate. Be careful that vapor is not present at a concentration level above TLV.

SECTION 7: HANDLING AND STORAGE

Precautions to be taken for handling and storage:
Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Do not breathe mist or vapor. Observe good industrial hygiene practices. Do not empty into drains. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes. Store in a well-ventilated place. Store away from incompatible materials. Store closed containers in a clean, cool, open or well ventilated area. Keep out of sun.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Principal Component: Hydrochloric Acid
Occupational Exposure Limits:
Regulatory Limits:

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Hydrochloric Acid Mixture	---	---	5 ppm 7.59 mg/m^3

ACGIH TLV = 5 ppm (7.59 mg/m^3) TWA

NIOSH IDLH = 50 ppm (as HCl, 2010)

Exposure Controls:

Eye Protection: Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Other Protection: Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Ventilation Recommended: Exhaust ventilation is required to meet PEL limits.

Glove Type Recommended: Wear neoprene, nitrile, butyl rubber or PVC gloves to prevent exposure.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance	Colorless to light yellow liquid
Odor	Pungent (irritating/strong)
Odor Threshold	0.3ppm (can cause olfactory fatigue)
pH	<1 (in aqueous solution)
Melting point/freezing point	-30°C (-22°F)
Initial boiling point	>100°C (>212°F)
Flash point	Not applicable
Auto-ignition Temp	Not applicable
Evaporation rate	No data available

Decomposition temperature	No data available
Flammability (solid, gas)	Not combustible
Upper/lower flammability or explosive limits	Not combustible
Water solubility	100%
Molecular Weight	36.46
Relative Density (Specific Gravity)	1.16 (32% HCl solution) 1.19 (36.5% HCl solution)
Bulk Density	8.75 lbs/gal (32% HCl solution) 9.83 lbs/gal (36.5% HCl solution)
Vapor Density (air = 1)	1.267 at 20 °C
Vapor Pressure	84 mm Hg @ 20°C
Partition Coefficient: n-octanol/water	No data available

SECTION 10: STABILITY AND REACTIVITY

Stability: Hydrochloric acid is stable under normal conditions and pressures.

Conditions to avoid: Incompatible materials, metals, excess heat, bases.

Incompatibility: Bases, amines, metals, permanganates, (e.g. potassium permanganate), fluorine, metal acetylides, hexalithium disilicide.

Hazardous decomposition products: Hydrogen chloride, chlorine, hydrogen gas.

Polymerization: Hazardous polymerization WILL NOT occur.

SECTION 11: TOXICOGICAL INFORMATION

Information on likely routes of exposure:

Inhalation: Vapors and mist will irritate throat and respiratory system and cause coughing.

Skin contact: Causes skin burns.

Eye contact: Causes eye burns.

Ingestion: Harmful if swallowed. Causes digestive tract burns. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.

Symptoms related to the physical, chemical and toxicological characteristics:

Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.

Information on toxicological effects:

Acute toxicity: Harmful if swallowed.

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye Irritation: Causes serious eye damage.

Respiratory sensitization: Not available.

Skin sensitization:	No data available.
Germ cell mutagenicity:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive toxicity:	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure:	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure:	No data available.
Aspiration hazard:	Not available.
Chronic effects:	Prolonged inhalation may be harmful.

Components Species Test Results:
Hydrochloric acid (CAS# 7647-01-0)

Rat - Inhalation LC_{50}:	3124 ppm, (1 hour)
Rabbit - Dermal LD_{50}:	5010 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Because of the low pH of this product, it would be expected produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
Aquatic Toxicity:	This material is toxic to fish and aquatic organisms. Most aquatic species do not tolerate pH lower than 5.5 for any extended period.
Fish Toxicity:	Fish LC_{50} Mosquito fish: 282 mg/l, 96 hours Fish LC_{50} Bluegill: 3.6 mg/l, 48 hours
Persistence and degradability:	Not biodegradable. Hydrochloric acid will likely be neutralized to chloride by alkalinity present in natural environment..
Bioaccumulative Potential:	No data available.
Mobility in soil:	Hydrochloric acid will be neutralized by naturally occurring alkalinity. The acid will permeate soil, dissolving some soil material and will then neutralize.
Other adverse effects:	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation

SECTION 13: DISPOSAL CONSIDERATIONS

Collect and reclaim or dispose in sealed containers at a properly licensed waste disposal site. This material , if not neutralized, must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national or international regulations.

SECTION 14: TRANSPORT INFORMATION

Shipping:

Usual Shipping Containers:	Tank cars, bulk tankers.
Usual Shelf Life:	Indefinite (life of containers).
Storage/Transport Temperatures:	Ambient.

Suitable Storage:

Materials/Coatings:	Teflon, Tygon, Rubber, PVC and polypropylene materials.

D.O.T. Information:

Labeling:	Corrosive
D.O.T. Identification Number	UN 1789
D.O.T. Shipping Name:	Hydrochloric Acid
Hazard Class:	8
Packing Group:	II
Hazard Guide:	157
Placard:	UN 1789

SECTION 15 REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Hydrochloric Acid CAS#: 7647-01-0

SARA 311/312 Hazards
Acute health hazard, reactive hazard.

Massachusetts Right To Know Components
Hydrochloric Acid CAS#: 7647-01-0
Pennsylvania Right To Know Components
Hydrochloric Acid CAS#: 7647-01-0
New Jersey Right To Know Components
Hydrochloric Acid CAS#: 7647-01-0

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm.

OSHA PSM/RMP Threshold for Accidental Release:
CAS# 7647-01-0 is regulated under OSHA PSM ***only*** if anhydrous HCl.
CAS# 7647-01-0 is regulated under EPA RMP ***only*** if ≥ 37% HCl.

Toxic Substances Control Act (TSCA):
Hydrochloric Acid CAS#: 7647-01-0

Comprehensive Environmental Response Compensation Liability Act: (CERCLA)
Hydrochloric Acid CAS#: 7647-01-0

SECTION 16 OTHER INFORMATION

NFPA Rating:
Health hazard: 3
Fire Hazard: 0
Reactivity Hazard: 1

This information is drawn from recognized sources believed to be reliable. ASHTA Chemicals, Inc. Makes no guarantees or assumes any liability in connection with this information. The user should be aware of changing technology, research, regulations, and analytical procedures that may require changes herein. The above data is supplied upon the condition that persons will evaluate this information and then determine its suitability for their use. Only U.S.A regulations apply to the above.

Version 1.0	For the new GHS SDS Standard	Revision Date: 12/31/2014
Version 1.1	Graphics updated	Revision Date: 3/9/2015
Version 1.2	Title updated	Revision Date: 6/2/2015
Version 1.3	Section 9 changes	Revision Date: 7/30/2015
Version 1.4	Section 1, 15 changes	Revision Date: 4/15/2016

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 12-Mar-2009 **Revision Date** 28-Nov-2016 **Revision Number** 5

1. Identification

Product Name **Nitric acid (65 - 70%)**

Cat No. : **A198C-212, A200-212, A200-212LC, A200-500, A200-500LC, A200-612GAL, A200C-212, A200S-212, A200S-212LC, A200S-500, A200SI-212, A467-1, A467-2, A467-250, A467-500, A483-212; S719721**

Synonyms Azotic acid; Engraver's acid; Aqua fortis

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing liquids	Category 3
Corrosive to metals	Category 1
Skin Corrosion/irritation	Category 1 A
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Danger

Hazard Statements
May intensify fire; oxidizer
May be corrosive to metals
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary Statements
Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep/Store away from clothing/ other combustible materials
Take any precaution to avoid mixing with combustibles
Keep only in original container
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Spills
Absorb spillage to prevent material damage
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant polypropylene container with a resistant inliner
Store in a dry place
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

Component	CAS-No	Weight %
Nitric acid	7697-37-2	65 - 70
Water	7732-18-5	30 - 35

4. First-aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Call a physician immediately.

Inhalation If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove from exposure, lie down. Call a physician immediately.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.

Most important symptoms/effects Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media CO_2, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point Not applicable
Method - No information available

Autoignition Temperature No information available

Explosion Limits
Upper No data available
Lower No data available

Oxidizing Properties Oxidizer

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

Hazardous Combustion Products
Nitrogen oxides (NOx) Thermal decomposition can lead to release of irritating gases and vapors
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
4	0	0	OX

6. Accidental release measures

Personal Precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not breathe vapors or spray mist. Keep away from clothing and other combustible materials.

Storage Keep containers tightly closed in a cool, well-ventilated place. Do not store near combustible materials.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nitric acid	TWA: 2 ppm STEL: 4 ppm	(Vacated) TWA: 2 ppm (Vacated) TWA: 5 mg/m³ (Vacated) STEL: 4 ppm (Vacated) STEL: 10 mg/m³ TWA: 2 ppm TWA: 5 mg/m³	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m³ STEL: 4 ppm STEL: 10 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Nitric acid	TWA: 2 ppm TWA: 5.2 mg/m³ STEL: 4 ppm STEL: 10 mg/m³	TWA: 2 ppm TWA: 5 mg/m³ STEL: 4 ppm STEL: 10 mg/m³	TWA: 2 ppm STEL: 4 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tightly fitting safety goggles. Face-shield.

Skin and body protection Long sleeved clothing.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Keep away from food, drink and animal feeding stuffs. When using, do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. For environmental protection remove and wash all contaminated protective equipment before re-use. Wear suitable gloves and eye/face protection.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear Colorless, Light yellow
Odor	Strong Acrid
Odor Threshold	No information available
pH	< 1.0 (0.1M)
Melting Point/Range	-41 °C / -41.8 °F
Boiling Point/Range	Not applicable
Flash Point	Not applicable

Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.94 kPa (20°C)
Vapor Density	No information available
Specific Gravity	1.40
Solubility	miscible
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	HNO3
Molecular Weight	63.02

10. Stability and reactivity

Reactive Hazard Yes

Stability Oxidizer: Contact with combustible/organic material may cause fire.

Conditions to Avoid Incompatible products. Combustible material. Excess heat. Exposure to air or moisture over prolonged periods.

Incompatible Materials Combustible material, Strong bases, Reducing agents, Metals, Powdered metals, Organic materials, Aldehydes, Alcohols, Cyanides, Ammonia, Strong reducing agents

Hazardous Decomposition Products Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50 Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nitric acid	Not listed	Not listed	LC50 = 2500 ppm. (Rat) 1h
Water	-	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Causes severe burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Nitric acid	7697-37-2	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nitric acid	Not listed	LC50: = 72 mg/L, 96h (Gambusia affinis)	Not listed	Not listed

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Nitric acid	-2.3

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

TDG

UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

IATA

UN-No UN2031
Proper Shipping Name NITRIC ACID
Hazard Class 8
Subsidiary Hazard Class 5.1
Packing Group II

IMDG/IMO

UN-No	UN2031
Proper Shipping Name	NITRIC ACID
Hazard Class	8
Subsidiary Hazard Class	5.1
Packing Group	II

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Nitric acid	X	X	-	231-714-2	-		X	X	X	X	X
Water	X	X	-	231-791-2	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Nitric acid	7697-37-2	65 - 70	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nitric acid	X	1000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Nitric acid	-	TQ: 500 lb

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nitric acid	1000 lb	1000 lb

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Nitric acid	X	X	X	X	X
Water	-	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Nitric acid	2000 lb STQ

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class
C Oxidizing materials
E Corrosive material
D2B Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 12-Mar-2009
Revision Date 28-Nov-2016
Print Date 28-Nov-2016
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

Attachment F

Site Orientation

© AECOM Restricted

Attachment F. Site Orientation

URS will conduct a site safety briefing for a person's initial visit to the Site. The briefing will be conducted:

- Prior to the start of work;
- For any new URS or subconsultant personnel; and
- At each mobilization, or whenever there is a change in task or significant change in task location.

All personnel working on the project who have received the site briefing (including the HASP review) will sign the Personal Acknowledgement located at the end of the HASP. Visitors may receive a shortened version to address the hazards specific to their visit.

The following items, at minimum, will be discussed during the site safety briefing:

- Contents of this HASP;
- The Emergency Response Plan;
- Contractor SH&E Management expectations;
- Injury management, including notification and hospital and occupational clinic locations;
- The URS 4-Sight program;
- Stop Work authority;
- The THAs (**Attachment B**) for the tasks that will be performed on a given project;
- Types of hazards at the Site and means for minimizing exposure to them;
- Instructions for new operations to be conducted, and safe work practices;
- PPE that must be used;
- Lone worker check-in procedures;
- Emergency evacuation routes, muster points, and tornado/storm shelters; and
- Location and use of emergency equipment.

These meetings must be documented and maintained in the project files.

APPENDIX F:

FIELD ORDERS

URS CORPORATION – NEW YORK
257 W. GENESEE ST.
BUFFALO, NEW YORK 14202

NYSDEC SITE NO.915206
LACKAWANNA
INCINERATOR SITE
NYSDEC CONTRACT NO.
D007622-54

FIELD ORDER NO. 1

TO:
Thomas D. Palmer
Project Manager
Groundwater & Environmental Services, Inc.
TPalmer@gesonline.com

DESCRIPTION OF FIELD ORDER:

GES shall make repairs to the drainage system in the Incinerator Area as shown on the attached Figure 1.

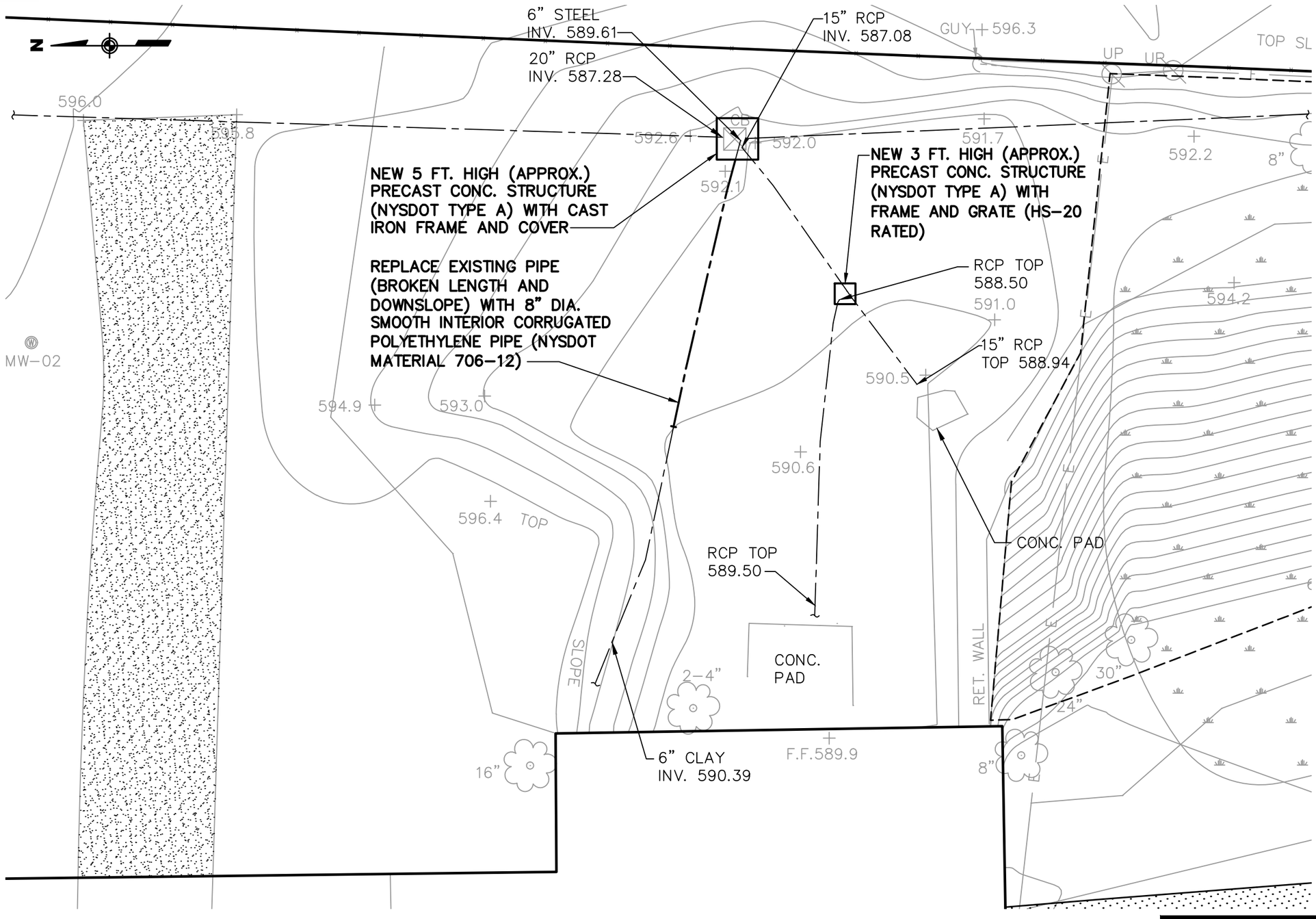
REASON FOR FIELD ORDER:

An unanticipated site condition of additional subsurface piping in need of repair was discovered during excavation activity at the Site.

ISSUED BY:

David Cofield, Jr.
Resident Engineer
URS Corporation – New York

February 5, 2020



LEGEND

- MW-04 — EXISTING MONITORING WELL
- CB — EXISTING CATCH BASIN
- LIMITS OF CAP IN INCINERATOR AREA
- GRAVEL ROAD PORTION OF CAP
- LIMITS OF EROSION CONTROL BLANKET
- 568 — EXISTING CONTOUR
- ASPHALT ROAD PORTION OF CAP

NOTES:

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. CONTRACTOR SHALL CUT EXISTING PIPES, INSTALL SLEEVES, AND GROUT THE ANNULUS TO INSTALL THE DRAINAGE STRUCTURES.
3. STRUCTURES SHALL BE SET ON 6-INCH THICKNESS OF BEDDING. PIPES SHALL BE BEDDED 6 INCHES ALL AROUND.
4. TAKEN FROM DRAWING C-005.

10' 0 10'

SCALE IN FEET

LACKAWANNA INCINERATOR SITE
PROPOSED SITE CONDITIONS
FIELD ORDER NO. 1

URS

FIGURE 1

J:\Projects\60594844_Lackawanna\900_CAD_GIS\910_CAD\CAD\100% SUBMISSION\FIGURE 1.dwg, 2/5/20 -1-RAL

URS CORPORATION – NEW YORK
257 W. GENESEE ST.
BUFFALO, NEW YORK 14202

NYSDEC SITE NO.915206
LACKAWANNA
INCINERATOR SITE
NYSDEC CONTRACT NO.
D007622-54

FIELD ORDER NO. 2

TO:
Thomas D. Palmer
Project Manager
Groundwater & Environmental Services, Inc.
TPalmer@gesonline.com

DESCRIPTION OF FIELD ORDER:

GES shall make changes to the grading of the Smokes Creek corridor as shown on the attached Figure.

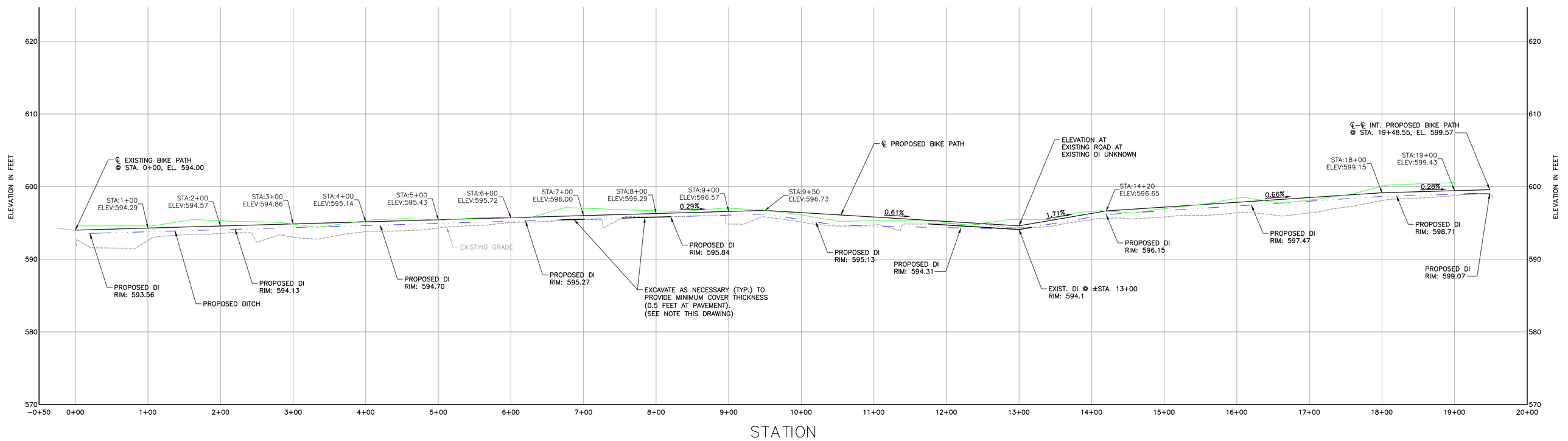
REASON FOR FIELD ORDER:

To allow for construction access, the existing bike path was removed in its entirety along the Smokes Creek Corridor. This resulted in revised grading requirements for final cover along the Smokes Creek Corridor.

ISSUED BY:

Randolph West
Project Engineer
URS Corporation – New York

May 26, 2020



0 60' 120'

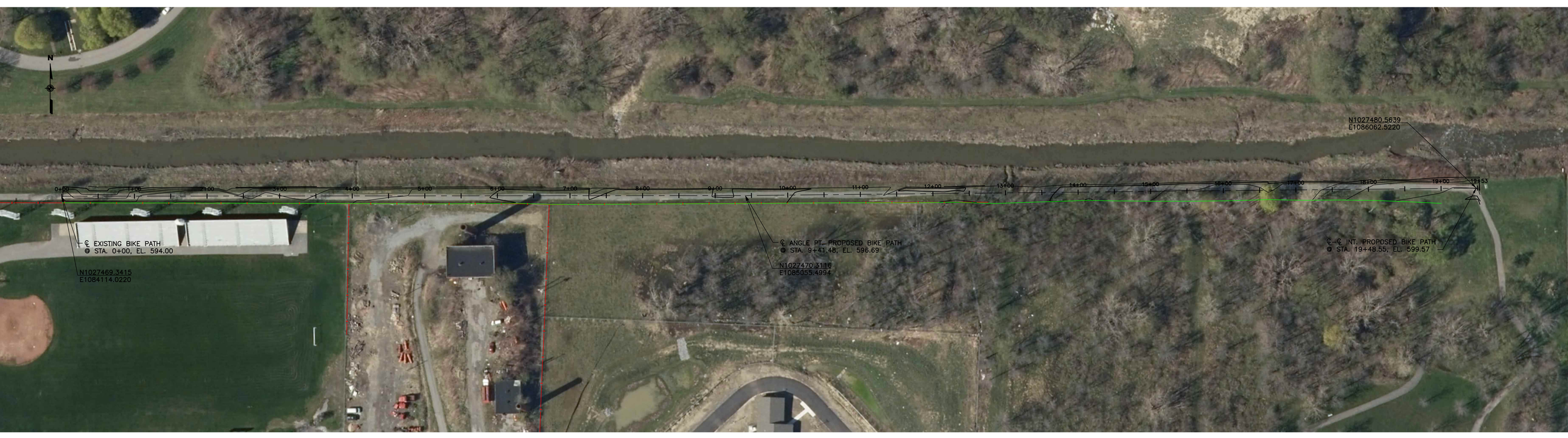
1" = 60' HORIZONTAL

0 6' 12'

1" = 6' VERTICAL

NOTES:

1. GRADES SHOWN ARE AT THE CENTERLINE OF THE PROPOSED REPLACEMENT BIKE PATH. MINIMUM 6 INCHES PAVEMENT COVER REQUIRED THERE. SEE THE PLANS AND DETAILS FOR THE GRADES REQUIRED EITHER SIDE OF THE BIKE PATH.



PLAN VIEW

0 60' 120'

1" = 60'

APPENDIX G:

PERMITS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY:
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Allegany County Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Allied Waste Niagara Falls Landfill	Niagara Falls , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
American Recyclers Transfer Station	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant Waste Oil	
BIRD ISLAND WWTP	BUFFALO , NY	Non-Hazardous Industrial/Commercial Grease Trap Waste Non-Residential Raw Sewage or Sewage-Contaminated Wastes Sludge from Sewage or Water Supply Treatment Plant	
Chaffee Landfill	Chaffee , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Chautauqua Landfill	Ellery , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Covanta Niagara I, LLC	Niagara Falls , NY	Non-Hazardous Industrial/Commercial	

*** AUTHORIZED WASTE TYPES BY DESTINATION FACILITY LISTING (continued on next page) ***

NOTE: By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the Environmental Conservation Law, all applicable regulations, and the General Conditions printed on the back of this page.

ADDRESS: New York State Department of Environmental Conservation
Division of Materials Management - Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

AUTHORIZED SIGNATURE: _____ Date: 12/4/19

WASTE TRANSPORTER PERMIT

GENERAL CONDITIONS

The permittee must:

1. Carry a copy of this waste transporter permit in each vehicle to transport waste. Failure to produce a copy of the permit upon request is a violation of the permit.

2. Display the full name of the transporter on both sides of each vehicle and display the waste transporter permit number on both sides and rear of each vehicle containing waste. The displayed name and permit number must be in characters at least three inches high and of a color that contrasts sharply with the background.

3. Transport waste only in authorized vehicles. An authorized vehicle is one that is listed on this permit.

4. Submit to the Department a modification application for additions/deletions to the authorized fleet of vehicles. The permittee must wait for a modified permit before operating the vehicles identified in the modification application.

5. Submit to the Department a modification application to add a new waste category or a new destination facility, or to change the current waste or destination facility category. The permittee must wait for a modified permit before transporting new waste types or transporting to new destination facilities.

6. Submit to the Department a modification application for change of address or company name.

7. Comply with requirements for placarding and packaging as set forth in New York State Transportation Law as well as any applicable federal rules and regulations.

8. Contain all wastes in the vehicle so there is no leaking, blowing, or other discharge of waste.

9. Use vehicles to transport only materials not intended for human or animal consumption unless the vehicle is properly cleaned.

10. Comply with requirements for manifesting hazardous waste, regulated medical waste, or low-level radioactive waste as set forth in the New York State Environmental Conservation Law and the implementing regulations. Transporters who provide a pre-printed manifest to a generator/shipper/ offeror of regulated waste shall ensure that all information is correct and clearly legible on all copies of the manifest.

11. Deliver waste only to transfer, storage, treatment and disposal facilities authorized to accept such waste. Permittee must demonstrate that facilities are so authorized if requested to do so.

12. Maintain liability insurance as required by New York State Environmental Conservation Law.

13. Maintain records of the amount of each waste type transported to each destination facility on a calendar-year basis. The transporter is obligated to provide a report of this information to the Department at the time of permit renewal, or to any law enforcement officer, if requested to do so.

14. Pay regulatory fees on an annual basis. Non-payment may be cause for revocation or suspension of permit.

15. This permit is not transferrable. A change of ownership will invalidate this permit.

16. This permit does not relieve the permittee from the obligation to obtain any other approvals or permits, or from complying with any other applicable federal, state, or local requirement.

17. **Renewal applications must be submitted no less than 30 days prior to the expiration date of the permit to:**

New York State Department of Environmental Conservation
Division of Materials Management, Waste Transporter Program
625 Broadway, 9th Floor
Albany, NY 12233-7251

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED WASTE TYPES BY DESTINATION FACILITY: (Continued)
The Permittee is Authorized to Transport the Following Waste Type(s) to the Destination Facility listed :

Destination Facility	Location	Waste Type(s)	Note
Covanta Niagara I, LLC	Niagara Falls , NY	Petroleum Contaminated Soil Grease Trap Waste	
CWM CHEMICAL SERVICES LLC	MODEL CITY , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil Waste Tires	
DEPEW VILLAGE LANDFILL	DEPEW , NY	Hazardous Industrial/Commercial	
EASTMAN BUSINESS PARK	ROCHESTER , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	Petr. Cont. Water
EQ DETROIT TRANSFER & PROCESSING	DETROIT , MI	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
EQ DETROIT, INC (US ECOLOGY DETROIT SOUTH)	DETROIT , MI	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil Sludge from Sewage or Water Supply Treatment Plant	
Hyland Landfill	Angelica , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Industrial Oil Tank Used Oil Storage Facility	Oriskany , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Mill Seat SLF	Riga , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Modern Landfill, Inc.	Model City , NY	Non-Hazardous Industrial/Commercial Asbestos Petroleum Contaminated Soil	
NOCO Energy Corporation-Tonawanda	Tonawanda , NY	Non-Hazardous Industrial/Commercial	PETR CONT WAT
North Youngmann Commerce Center	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	
Safety-Kleen	Buffalo , NY	Non-Hazardous Industrial/Commercial	PETR CONT WAT
Tonawanda Terminals Corp	Tonawanda , NY	Non-Hazardous Industrial/Commercial Petroleum Contaminated Soil	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF MATERIALS MANAGEMENT

PART 364
WASTE TRANSPORTER PERMIT NO. 9A-775

Pursuant to Article 27 ,Titles 3 and 15 of the Environmental Conservation Law and 6 NYCRR 364

PERMIT ISSUED TO:

RUSSO DEVELOPMENT, INC.
3710 MILESTRIP ROAD
BLASDELL, NY 14219

CONTACT NAME: JOSEPH L. RUSSO II
COUNTY: ERIE
TELEPHONE NO: (716)844-8745

PERMIT TYPE:

☐ NEW
☐ RENEWAL
■ MODIFICATION

EFFECTIVE DATE: 12/06/2019
EXPIRATION DATE: **11/14/2020**
US EPA ID NUMBER: NYR000157917

AUTHORIZED VEHICLES:
The Permittee is Authorized to Operate the Following Vehicles to Transport Waste:

(Vehicles enclosed in <>'s are authorized to haul Residential Raw Sewage and/or Septage only)

7 (Seven) Permitted Vehicle(s)

NY 13338TC
NY 30816MH
NY 81684ME
NY 95975MJ
NY 95976MJ
NY 95977MJ
NY 95979MJ
End of List

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7165 | F: (716) 851-7168
www.dec.ny.gov

August 9, 2017

Mr. Michael Mahar, Senior District Manager
Waste Management of New York LLC
10860 Olean Road
Chaffee, New York 14030-9799

PERMIT TRANSMITTAL LETTER
CHAFFEE LANDFILL – PERMIT RENEWAL
PERMIT NO. 9-1462-00001/00006

Enclosed is your renewed 6 NYCRR Part 360 permit which was issued in accordance with applicable provisions of the Environmental Conservation Law. The permit is valid for only that project, activity or operation expressly authorized.

The DEC permit number and Program ID number, if applicable, should be retained for your records and should be referenced on all future correspondence and applications related to the permit. If modifications are desired after permit issuance, you must submit the proposed revisions and receive written approval from the Permit Administrator prior to initiating any change. If the Department determines that the modification represents a material change in the scope of the authorized project, activity, operation or permit conditions, you will be required to submit a new application for permit.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address. For SPDES, Solid Waste and Hazardous Waste Permits, renewals must be made at least 180 days prior to the expiration date.

PLEASE REVIEW ALL PERMIT CONDITIONS CAREFULLY. IN PARTICULAR, IDENTIFY YOUR INITIAL RESPONSIBILITIES UNDER THIS PERMIT IN ORDER TO ASSURE TIMELY ACTION IF REQUIRED. SINCE FAILURE TO COMPLY PRECISELY WITH PERMIT CONDITIONS MAY BE TREATED AS A VIOLATION OF THE ENVIRONMENTAL CONSERVATION LAW, **YOU ARE REQUESTED TO PROVIDE A COPY OF THE PERMIT TO THE PROJECT CONTRACTOR, FACILITY OPERATOR, AND OTHER PERSONS DIRECTLY RESPONSIBLE FOR PERMIT IMPLEMENTATION (IF ANY).**

If you have any questions, please contact this office at the above address.

Respectfully,
David S. Denk
Regional Permit Administrator

Enclosure

Ecc: Peter Grasso, NYSDEC, Division of Materials Management, R9, Attn: James Sacco
Andrew Nichols, P.E., McMahon & Mann Consulting Engineers

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
WASTE MANAGEMENT OF NEW YORK LLC
1001 FANNIN STE 4000
HOUSTON, TX 77002
(713) 512-6200

Facility:
CHAFFEE LANDFILL
10860 OLEAN RD
CHAFFEE, NY 14030-9799

Facility Location: in SARDINIA in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 212.6 NYTM-N: 4720.3
Latitude: 42°34'53.7" Longitude: 78°30'07.8"
Authorized Activity: Activities authorized under this permit include:
- Construction of Cells 1 and 2 of the Western Expansion Landfill
- Construction and Operation of the Valley Fill Landfill Expansion - Overliner Cells 1 and 2
- Operation of the Western Expansion Landfill
- Operation of the Landfill Gas Collection System
- Operation of the Soil Borrow Area
- Operation of the Liquid Solidification Process
- Post-Closure monitoring and maintenance of the closed 50 acre landfill

Permit Authorizations

Solid Waste Management - Under Article 27, Title 7
Permit ID 9-1462-00001/00006
Renewal Effective Date: 8/9/2017 Expiration Date: 8/8/2027

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: LISA M CZECHOWICZ, Deputy Regional Permit Administrator
Address: NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY 14203 -2915

Authorized Signature: Lisa M. Czechowicz Date 8/9/17

Permit Components

SOLID WASTE MANAGEMENT PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

SOLID WASTE MANAGEMENT PERMIT CONDITIONS

1. Previous Permits This permit supersedes all previously issued Solid Waste Management Facility permits and permit modifications issued by the New York State Department of Environmental Conservation (Department) for this facility.

2. Emergency Notification In the event of an emergency requiring implementation of the Contingency Plan (see Solid Waste Management Permit Condition 6 of this permit), or other conditions that may affect operations under this permit, the Department's Region 9 Materials Management Engineer (RMME) or the DEC Environmental Monitor (Monitor) shall be notified of the emergency within four hours of discovery on a business day or on the next business day following a weekend or holiday. The details of the incident and the remediation or corrective action(s) taken shall be fully described in writing to the RMME within five working days of the incident.

3. Transfer of Ownership Upon transfer of ownership of this facility, provisions shall be included in the property deed stating the period of time during which the property was used as a landfill and a description of the wastes contained therein. The fact that records, including the limits of the landfill waste within the property, a statement of the length of time the property was used as a landfill and a description of wastes disposed on-site, are on file with this Department shall also be noted in the deed. This deed shall be filed with the Erie County Clerk's Office.

4. Permit Conflicts If any condition of this permit conflicts with the approved reports and plans identified in Solid Waste Management Permit Condition 6 of this permit, the permit condition(s) shall prevail over the reports and plans unless specific written approval for such change is obtained from the RMME prior to implementation. Where there are conflicts between elements of the approved reports and plans, the most recently dated element shall prevail with respect to the conflicting material.

APPROVED DOCUMENTS AND WASTES

5. Conformance With Plans All activities authorized by this permit must be in strict conformance with the permit application, plans and materials prepared by (see Solid Waste Management Permit Condition 6 of this permit) on (see Solid Waste Management Permit Condition 6 of this permit).

6. Approved Reports and Plans Unless expressly authorized by this permit or unless modified by conditions of any permit issued by this Department, construction and operation of the Western Landfill Expansion and the Valley Fill Landfill expansion and related facilities shall be carried out in conformance with the applicable requirements of 6 NYCRR Part 360 (current edition and as subsequently modified) and the following documents:

- "Site Analytical Plan" dated November 1, 1999 (last revised February 4, 2000) and prepared by Severn Trent Laboratories.

- "Preconstruction (Air) Permit Application for Waste Management of New York Chaffee Landfill Western Expansion" dated November 18, 2004 and prepared by Earth Tech.

- "Waste Management of New York, Chaffee Facility, Western Expansion Landfill, 6 NYCRR Part 360 Solid Waste Management Permit Modification Application" dated February 2005 and prepared by McMahon and Mann Consulting Engineers, P.C. This application includes the following:
    - Part I Introduction
    - Part II Administration Information
    - Part III Hydrogeologic Report
    - Part IV Engineering Report
    - Part VII Mined Land Use Plan (revised October 2005)

- Plan sheets for "Chaffee Landfill Western Expansion" prepared by McMahon & Mann Consulting Engineer P.C. The list of the approved plan sheets is provided in the following table:

Sheet #	CAD File Drawing #	Title	Date	Last Revised Date
1	00016-089	Title Page	February 2005	
2	00016-093	Regional and Vicinity Maps	February 2005	
3	00016-150	Existing Conditions	February 2005	
4	00016-151	Existing Conditions w/Final Cover	February 2005	
5	00016-147a	Subgrade Development Plan - Sht 1	February 2005	
6	00016-161	Subgrade Development Plan - Sht 2	February 2005	
7	00016-153	Conceptual Cover Grading Plan	February 2005	
8	00016-147b	Landfill Sections	February 2005	
9	00016-167	Clay Till Thickness Plan	February 2005	
10	00016-088	Clay Till Thickness Chart	February 2005	

11	00016-228	Clay Till Groundwater Separation Plan	February 2005
12	00016-073	Perimeter Berm Section Details	February 2005
13	00016-074	Floor Intercell Berm Sections and Details	February 2005
14	00016-075	Floor to Overliner Sections	February 2005
15	00016-160	Liner System Section and Details	February 2005
16	00016-094	Leachate Collection and Transmission Plan	February 2005
17	00016-076	Leachate Sump and Riser Plan - Sht 1	February 2005
18	00016-216	Leachate Sump and Riser Plan - Sht 2	February 2005
19	00016-085	Leachate Sump and Riser Sections - Sht 1	February 2005
20	00016-082	Leachate Sump and Riser Sections - Sht 2	February 2005
21	00016-217	Leachate Sump & Riser Sections - Sht 3	February 2005
22	00016-086	Leachate Collection System Details	February 2005
23	00016-092	Leachate Storage Plan, Sections and Elevations	February 2005
24	00016-254	Leachate Control Vault Sections	February 2005
25	00016-255	Leachate Loadout Building Plan, Sections and Details	February 2005
26	00016-256	Leachate Storage Tank #3/#4 Modifications and Misc. Details	February 2005
27	00016-090	Stormwater Drainage Plan	February 2005
28	00016-084	Stormwater Drainage Sections and Details - Sht 1	February 2005
29	00016-268	Stormwater Drainage Sections and Details - Sht 2	February 2005
29a	00016-279	Stormwater Drainage Sections and Details - Sht 3	February 2005
30	00016-080	Erosion and Sediment Control Details	February 2005
31	00016-087	Conceptual Closure and Stormwater Sections	February 2005

32	00016-259	Phased Operation Plan - Cells 5 & 6 Construction	February 2005	
33	00016-260	Phased Operation Plan - Cell 4 Construction	February 2005	
34	00016-261	Phased Operation Plan - Cell 3 Construction	February 2005	
35	00016-262	Phased Operation Plan - Cell 2 Construction	February 2005	
36	00016-264	Phased Operation Plan - Cell 1 Construction	February 2005	
37	00016-183	Landscape Plan	February 2005	3/31/06

- "Chaffee Landfill Gas Power Production Plant 6 NYCRR Part 360 Solid Waste Management Permit Modification Application Operation and Maintenance Manual" last revised May 2006 and prepared by McMahon & Mann Consulting Engineers, P.C.

- "6 NYCRR Part 360 Solid Waste Management Permit Modification Application Borrow Area Use Plan" dated March 2009 and prepared by McMahon & Mann Consulting Engineers, P.C.

- Letter dated July 2, 2009 from McMahon & Mann Consulting Engineers, P.C. (Andrew J. Nichols, P.E./Michael J. Mann, P.E.) to NYSDEC (David Denk) regarding comments and responses for the Borrow Area Use Plan.

- "Borrow Area Use Plan" figures prepared by McMahon & Mann Consulting Engineer. The list of the approved figures is provided in the following table:

Figure #	Title	Date	Last Revised Date
1	Site Location Map		
2	Site Plan	March 2009	7/2/09
3	Existing Conditions & Cross Sections	March 2009	7/2/09
4	Reclamation Plans and Cross Sections	March 2009	7/2/09
5	West Area Basin and Sections	March 2009	7/2/09
6	East Area Basin and Sections	November 2008	7/2/09
7	Sections and Details	November 2008	7/2/09

- Letter dated September 17, 2009 from McMahon & Mann Consulting Engineers, P.C. (Andrew J. Nichols, P.E./Michael J. Mann, P.E.) to Town of Sardinia (Town Board) regarding Town of Sardinia special use permit application (includes a revised Figure 1 attached to the letter).

- "Waste Management of New York, Chaffee Facility, Valley Fill Landfill Expansion, 6 NYCRR Part 360 Solid Waste Management Permit Modification Application" dated December 2012 and prepared by McMahon and Mann Consulting Engineers P.C. This application includes the following:
    - Part I Introduction
    - Part II Administration Support Information
    - Part III Engineering Report
    - Part IV Contingency Plan
    - Part V Operation & Maintenance Plan (revised October 2015)
    - Part VI Environmetnal Monitoring Plan
    - Part VII Stormwater Pollution Prevention Plan for Stormwater Discharges Associated with Industrial Activities

- Plan sheets for "Chaffee Facility Valley Fill Expansion" prepared by McMahon & Mann Consulting Engineers, P.C. The list of the approved plan sheets is provided in the following table:

Sheet #	CAD File Drawing #	Title	Date
1	00016-510	Title Page	December 2012
2	00016-511	Regional and Vicinity Maps	December 2012
3	00016-512	Current Facility Site Plan	December 2012
4	00016-513	Currently Permitted Final Cover Grading System	December 2012
5	00016-514	Permitted and Proposed Subgrade Plan	December 2012
6	00016-515	Proposed Subgrade Plan	December 2012
7	00016-515	Proposed Final Grading Plan	December 2012
8	00016-519a	Liner System Sections and Details - Sht 1	December 2012
9	00016-519b	Liner System Sections and Details - Sht 2	December 2012
10	00016-519c	Liner System Sections and Details - Sht 3	December 2012
11	00016-519d	Liner System Sections and Details - Sht 4	December 2012
12	00016-519e	Liner System Sections and Details - Sht 5	December 2012
13	00016-518	Permitted and Proposed Leachate Collection and Transmission Plan	December 2012
14	00016-520a	Leachate Sump and Riser Plan	December 2012
15	00016-520b	Leachate Sump and Riser Sections - Sht 1	December 2012
16	00016-520c	Leachate Sump and Riser Sections - Sht 2	December 2012
17	00016-520d	Leachate Sump and Riser Sections - Sht 3	December 2012

18	00016-526	Existing Leachate Sump #5 Plan, Detail and Sections	December 2012
19	00016-527a	Leachate Sump #5 Modification Plan, Details and Sections	December 2012
20	00016-527b	Leachate Sump #5 Modification Details and Sections	December 2012
21	00016-521a	Leachate Collection System Details - Sht 1	December 2012
22	00016-521b	Leachate Collection System Details - Sht 2	December 2012
23	00016-517a	Existing Gas Collection System Modification Plans	December 2012
24	00016-517b	Existing Gas Collection System Modification Sections and Details	December 2012
25	00016-528	Permitted and Proposed Gas Collection System Plan	December 2012
26	00016-529a	Gas Collection System Sections and Details	December 2012
27	00016-529b	Horizontal Gas Collection System Sections and Details	December 2012
28	00016-525	Permitted and Proposed Stormwater Drainage System	December 2012
29	00016-524	Stormwater Drainage Sections and Details	December 2012
30	00016-522	Erosion and Sediment Control Sections and Details	December 2012
31	00016-523	Conceptual Closure Sections	December 2012
32	00016-534	Phased Operation Plan - Cells 2 Baseliner Construction	December 2012
33	00016-535	Phased Operation Plan - Cells 1 Baseliner Construction	December 2012
34	00016-536	Phased Operation Plan - Cell 2 Overliner Construction	December 2012
35	00016-537	Phased Operation Plan - Cell 2 Overline Construction	December 2012

- Letter dated April 18, 2016 with enclosed plans from McMahon & Mann Consulting Engineers, P.C (Andrew J. Nichols, P.E./Michael J. Mann, P.E.) to NYSDEC James Sacco, P.E. requesting the revision of the Cell 1 Subgrade.

Letter dated May 2, 2016 with enclosed plans (Sheet 2 of Attachment D to the May 2, 2016 letter was subsequently revised on May 23, 2016) from McMahon & Mann Consulting Engineers, P.C (Andrew J. Nichols, P.E./Michael J. Mann, P.E.) to NYSDEC James Sacco, P.E. regarding comments and responses for revision of the Cell 1 Subgrade.

7. Permitted Waste The only wastes permitted for disposal shall be municipal solid waste, asbestos waste, nonhazardous industrial and commercial solid wastes, construction and demolition (C&D) debris, contaminated soil waste, sludge waste, as well as liquids including waste containing free liquids, and waste with a solid content less than 20% may be received for solidification and disposal in the landfill provided that the following precautions and practices are observed:

a. All non-hazardous industrial waste, friable asbestos waste, contaminated soil waste, sludge waste, and solid waste incinerator ash may be received by the permittee upon review and written approval of the permittee, provided the permittee maintains verification that the wastes are nonhazardous and meet all landfill disposal criteria, and
b. All liquids, waste containing free liquids, and waste with a solid content less than 20% received for solidification and disposal in the landfill and all applications for disposal of a waste quantity more than one thousand (1,000) tons are to be received only upon written acceptance from the RMME or Monitor, and
c. All requests for acceptance shall be submitted on form 47-19-7, Application for Disposal of an Industrial Waste Stream or other equivalent waste profile form approved by the RMME, and
d. A summary of all approved waste stream applications must be submitted to the RMME within 7 days of such approval with a copy of the waste stream approvals
being submitted in a format deemed acceptable to the RMME on a monthly basis, and
e. All Waste Approvals Issued by the RMME, the Monitor and/or the Permittee shall be for a time period not to exceed 3 years.

8. Unacceptable Waste No hazardous waste (as defined in 6 NYCRR Part 371, which is subject to regulation under 6 NYCRR Part 370 through 374) and no radioactive waste (as defined and regulated in 6 NYCRR Part 380) may be received at this facility. Liquids, wastes containing free liquids and waste with a solid content of less than 20% shall not be received at the landfill, unless the liquid is approved for solidification pursuant the requirements of Permit Condition (7) .

9. Approved Design Capacity The approved design capacity for this landfill is 2,770 tons per day. The approved design capacity is not a limit. The maximum waste receipts at the landfill during any quarter shall not exceed 180,000 tons. Annual waste receipts at the landfill shall not exceed 600,000 tons.

10. Comprehensive Recycling Analysis The permittee is prohibited from accepting wastes from customers in a municipality which has either not completed a Comprehensive Recycling Analysis (CRA) or is not included in another municipality's CRA satisfying the requirements of 6NYCRR Part 360-1.9(f) which has been approved by the Department and implemented the recyclables recovery program determined to be feasible by the analysis.

COMPLIANCE SCHEDULE

11. Surety Notification Within 60 days of the effective date of this permit, the permittee shall notify the sureties (Evergreen National Indemnity Company - Bond number 556300 and Bank of America - Letter of Credit number 7403932) of this permit modification and obtain written notification from the sureties that the Surety Bond and Letter of Credit are still valid. The RMME must receive a copy of

both letters.

12. Cell 1 and Cell 2 Overliner Design Prior to finalizing the design of Overliner Cells 1 and 2, the permittee shall submit, to the RMME for review and approval, an evaluation of settlement data and observations of the closed cap to determine if any modifications are needed to the overliner design.

13. Gas Collection System Construction Thirty days prior to installing any portion of the horizontal or vertical gas collection system, and/or associated appurtenances, the permittee must submit to the RMME, for review and approval, final design construction documents including drawings, specifications and CQA Plan. The final design documents must, at a minimum, include all requirements outlined in the approved 'conceptual' design (drawings C1, C2, C3, D1 and D2) submitted as part of the Preconstruction Air Permit Application (Solid Waste Management Permit Condition 6 of this permit)

14. Updated Plans and Specifications For each phase of landfill construction, the permittee shall submit, to the RMME, updated specifications, an updated CQA/CQC Plan and drawings for construction of the next phase. These items shall be submitted at least 90 days prior to beginning of construction for Department review and approval.

15. Construction Schedule A construction schedule for any phase of landfill construction or closure shall be submitted to the RMME before the start of construction of that phase.

16. Revised Closure and Post-Closure Cost Estimate Prior to operation of any new cell, the permittee shall submit to the RMME a revised closure and post-closure cost estimate that includes the new cell to be operated.

17. Revised Surety Prior to operation of any new cell, the permittee shall submit to the RMME a revised financial surety instrument (if needed) to provide surety for the revised closure and post-closure cost estimates provided in accordance with Solid Waste Management Permit Condition 16 of this permit.

18. New Cell Operation Prior to the operation of any new cell or portion thereof, the permittee shall receive the RMMEs acceptance of the record drawings and Construction Certification Report (CCR) (see Solid Waste Management Permit Condition 28 of this permit).

19. Partial Closure Prior to closure of any portion of the Western Expansion Landfill or the Valley Fill Expansion Landfill, the permittee shall submit closure plans, specifications and a CQA/CQC Plan for the area to be closed. In addition, if any design changes are proposed to the Conceptual Closure Plan (see Solid Waste Management Permit Condition 6 of this permit), the appropriate design calculations shall be presented to justify the changes. This closure plan information shall be submitted to the RMME, for review and approval, at least 60 days prior to anticipated beginning of construction.

20. Closure Site Investigation Prior to final closure of the facility (all permitted landfills are full or waste can no longer be received at the facility), a Closure Site Investigation (CSI) shall be completed, as needed, and a report prepared in accordance with 6 NYCRR Part 360-2.15(a). The CSI Report shall be submitted to the RMME at least 180 days before receipt of the last waste, at least 180 days before the last day of the operating permit, or in accordance with any permit conditions or schedule of an Order on Consent, whichever is sooner.

21. Final Closure Plan Prior to the final closure of the facility (all permitted landfills are full or waste can no longer be received at the facility), a final Closure Plan and Post-Closure Monitoring and Maintenance Plan, including all design calculations, as well as a CQA/CQC Plan and specifications, must be prepared in accordance with 6 NYCRR Part 360-2.15(c). The final Closure Plan and Post-Closure Monitoring and Maintenance Plan shall be submitted to the RMME at least 60 days before receipt of the last waste, at least 60 days before the last day of the operating permit, or in accordance with any permit condition or schedule of an Order on Consent, whichever is sooner.

CONSTRUCTION REQUIREMENTS

22. Borrow Area Mining If sand/silt lenses are found during the excavation of the north wall of the West Borrow Area, the sand/silt shall be removed and be replaced with clay.

If a natural gas well, or evidence thereof, is discovered during the course of mining operations, all excavation activities shall be suspended and the RMME and the Region 9 Division of Mineral Resources shall be notified immediately. A plan for either avoiding any discovered well or otherwise mitigating its presence must be developed by the permittee and approved by the Department before mining operations within 100 feet of the well may resume.

23. Gas Monitoring Probes The perimeter landfill gas migration monitoring probes must be installed prior to beginning waste placement in a particular cell. Also, at least one round of monitoring must be completed at each gas migration monitoring probe location prior to placing waste in the adjacent cell. This information will be used to determine if naturally existing methane is present at the probe location, prior to placing waste in the adjacent cell.

24. Horizontal/Vertical Gas Collectors The horizontal portion of the gas collection system must be constructed in phases, as waste is placed within the landfill. Vertical gas collection wells must be installed within 1-year after achieving final grade in the areas where the well is to be installed. All horizontal and vertical gas collection wells must be connected to the active gas collection system promptly after installation. The wells and horizontal collectors must be placed under vacuum as soon as practical, provided operation of the wells and horizontal collectors will not adversely impact operation of the flare and/or create potential hazards (fires, etc). The Department may require the permittee to modify, upgrade or expand gas collection capabilities within the landfill if off-site landfill gas odors are determined to be an offsite nuisance by the Department.

25. Interim Final Cover: The approved interim final cover must be installed on all areas of the landfill that have reached final grade and on all areas of the landfill where waste has not or will not be placed within one year. The interim cover for the Western Landfill Expansion and the Valley Fill Expansion Landfill shall meet the requirements outlined in Section 9.1.4 of the approved Operation and Maintenance Manual (see Solid Waste Management Permit Condition 6 of this permit). For each phase of the Interim Final Cover construction, when the Interim Final Cover - Geosynthetic Option is used, the permittee shall submit to the RMME construction drawings, specifications, and a CQA/CQC Plan. These items shall be submitted at least 60 days prior to installation of an exposed cover system for Department review and approval.

26. Construction Inspection Per the requirement of 6 NYCRR Part 360-1.4(b), the Department reserves the right to inspect landfill construction and final cover installation at any time. The RMME or the Monitor shall be notified at least 24 hours before any scheduled final inspection of the final lift of clay and the geomembrane liner so appropriate Department staff have the ability to accompany the permittee or his designated representative(s) performing the Construction Quality Assurance inspections prior to installation of the next overlying layer.

27. Field Change Log A log shall be maintained on-site during each landfill construction and final closure phase to record all proposed field changes. Changes materially altering the permitted design and/or approved specifications must be approved in writing by the RMME before they are implemented. The CCR (see Solid Waste Management Condition 28 of this permit) shall include the Field Change Log for the respective construction/final closure phase.

28. Construction Certfication Report A CCR for any landfill cell construction, gas removal system construction, and final cover construction shall be submitted to the RMME within 60 days of construction completion. The permittee's CQA/CQC Engineer shall certify in writing that the construction of the landfill cell, the final cap, and/or the gas removal system was in accordance with this permit and tested in accordance with generally accepted engineering practice. The CCR shall also include record drawings and a report documenting the results of all testing. The CCR shall be signed and stamped by a New York State Licensed Professional Engineer.

29. Secondary Leachate Flow Data A minimum of 30 days of flow data shall be collected from the secondary leachate collection system of a cell after completion of construction. This data shall be submitted to the RMME for review and approval prior to operation of the cell.

OPERATIONS

30. Hours of Operation In regard to the hours of operation, the permittee shall abide by the existing court order of Judge Joselin granted March 15, 1982, except as modified by the consent of the Town of Sardinia or further order of the Court.

31. Waste Receipts Landfill personnel shall be on duty at all times when the facility is receiving waste to ensure that only Department approved wastes are deposited in the landfill. In the event that unauthorized wastes are received at the landfill, landfill personnel shall refuse to accept these wastes for disposal in the landfill and shall notify the Monitor and/or the RMME of the incident within four hours of discovery on a business day or on the next business day following a weekend or holiday, providing the hauler's name and (if possible) license plate of the vehicle, the type of waste thought to have been transported and the generator of the waste. If the waste has been dumped and cannot be reloaded, the waste shall be segregated from the working face. Proper disposal of the waste shall be arranged for within 30 days. A written report summarizing the incident shall be submitted to the Department with the Quarterly Report required by Solid Waste Management Condition 55 of this permit.

32. Alternate Daily Cover (ADC) In addition to soil, the Department may approve, on a case-by-case basis, the use of wastes and contaminated soils for ADC. All ADCs that would be regulated under Part 364, must be transported by Department permitted Part 364 waste haulers. Use of ADCs must be pre-approved by the RMME as outlined in 6 NYCRR Part 360-2.17(c) and Sections 9.1.1 and 9.1.2 of the approved Operations and Maintenance Manual (Solid Waste Management Permit Condition 6 of this permit) and meet the following conditions:

(a) Should the permittee receive additional ADC that is more than the amount (tonnage) that was part of the approved Waste Profile, the permittee can approve and receive this additional ADC with notification to the Department afterwards provided that:
  (i) The Permittee can confirm the analysis that was part of the original waste approval represents this additional material received, and
  (ii) the amount of additional material received is less than 10% of the tonnage originally approved, and
  (iii) the total tonnage approved (that which was approved as a part of the original waste profile and this additional tonnage) does not exceed 1000 tons.

(b) On an annual basis, the amount of approved waste used for ADC cannot exceed 20% of the annual waste receipts unless otherwise approved by the Department. Any ADC in excess of the 20% amount must be counted as waste, even if it is utilized as daily cover.

33. BUD Material The RMME may approve, on a case-by-case basis, the use of wastes for beneficial use (BUD) inside of the landfill. This BUD material may be approved for interior road construction and other similar uses. All BUD material that would be regulated under Part 364, must be transported by Department permitted Part 364 waste haulers. Requests for use of BUD material shall be submitted in writing to the RMME. In the event that a nuisance condition(s) develops from the use of BUD material, the RMME can rescind this approval without the need to modify this permit. Any storage of BUD materials is limited to areas where runoff can be collected as leachate and where windblown materials will not land on intermediate and final cover areas. Pre-determined BUD materials as listed in 360-1.15(b)(3), 360-1.15(b)(5) and 360-1.15(b)(11) are not subject to these storage requirements, however the storage and handling of these materials must not create any nuisance conditions as determined by the Department. Any BUD material used in accordance with the DEC approval will not count against the annual waste receipt limit for the facility. On an annual basis, the amount of approved waste used as BUD material cannot exceed 10% of the annual waste receipts unless otherwise approved by the Department. Any BUD material in excess of the 10% amount must be counted as waste, even if utilized as BUD material.

34. Landfill Gas Recovery System The landfill gas recovery system shall be operated in accordance with the requirements of 6 NYCRR Part 360-2.16(e). Annual condensate sampling and analysis shall be performed and reported in accordance with section 8 of the Gas Power Production Plant Operation and Maintenance Manual (see Solid Waste Management Permit Condition 6 of this permit).

35. Liquid Solidification Process The liquid solidification process shall be operated in accordance with the Operations and Maintenance Manual (see Solid Waste Management Permit Condition 6 of this permit).

36. Borrow Area Operations Operation of the Borrow Area shall be in accordance with the Borrow Area Use Plan (see Solid Waste Management Permit Condition 6 of this permit).

37. Borrow Area C The use of proposed Borrow Area C, located on the north side of Hand Road, is not authorized as part of this permit.

LEACHATE COLLECTION, STORAGE AND DISPOSAL

38. Primary Leachate Line Verification Prior to operation of any subcell, the integrity of the primary leachate collection pipes in the landfill must be verified by passing a cleaning device through them. After placement of two lifts (15 feet) of waste, the integrity of the pipes shall be re-verified by passing a cleaning device through them. The Monitor shall be notified at least five days in advance of the verification activities. The results of the primary leachate pipe cleaning activities shall be forwarded to the RMME, in writing, within 30 days.

39. Video Inspection Once a minimum of 15 feet of waste has been placed across the cell floor, the primary leachate collection lines must be videoed to verify their integrity. The Monitor shall be notified at least five days in advance of the video activities. The video inspection shall be recorded and kept on file at the landfill. A written summary of the video inspection shall be provided to the RMME within 30 days of completion of the video inspection.

40. Leachate Line Cleaning: All primary leachate collection pipes within the Western Expansion landfill shall be cleaned at least once annually. The cleaning shall include high pressure flushing of the full length of each collection pipe, with sufficient pressure to remove accumulated sediment and biological growth. All leachate collection pipes within the approximately 51 acre closed landfill (Existing Landfill) that are accessible, or were originally constructed to be accessible, for cleaning shall be cleaned twice annually and be completed on approximately 6 month intervals. The Monitor shall be notified a minimum of 5 days prior to beginning the cleaning. A written summary of the leachate collection system cleaning shall be submitted to the RMME within 30 days following completion of the cleaning.

41. Leachate Lines Video Inspection The interior of the expansion landfills primary leachate collection and transfer piping, shall be videoed at least once every two years. This includes the primary leachate collection sumps. The video inspection shall be recorded and maintained on file at the landfill. A written summary of the inspection shall be submitted to this Department within 30 days following completion of the video inspection. Routine video taping of the leachate collection and transfer pipes associated with the existing landfill is not required. However, in the event that a video inspection is deemed necessary, the permittee will video tape all or portions of the interior of the existing landfill's leachate collection and transfer piping, as requested by this Department. The Monitor shall be notified a minimum of 5 days prior to beginning the video inspection.

42. Leachate Facilities Cleaning Annually, all of the leachate transfer, storage, and load-out facilities must be emptied for cleaning and maintenance. These facilities include, but are not limited to, leachate storage tanks, sumps, manholes, the vault, load-out pads, etc. These leachate transfer, storage and load-out facilities must be emptied, cleaned and inspected for deterioration as outlined in the appropriate sections of the approved Operations and Maintenance Manual (see Solid Waste Management Permit Condition 6 of this permit). At a minimum, all accumulated sediment/debris must be removed and all deterioration that may adversely effect the operation of the facility must be repaired. A written

summary of all cleaning and remedial activities must be forwarded to the RMME within 30 days of completing the cleaning event. The Monitor shall be notified a minimum of 5 days prior to beginning the cleaning.

LANDFILL MONITORING

43. Analytical Work All analytical work conducted under the permittee's approved Environmental Monitoring Plan (EMP - see Solid Waste Management Permit Condition 6 of this permit) must be performed by a laboratory certified by the New York State Department of Health for the analysis to be performed.

44. Predisposal Sampling Prior to the deposition of waste in any of the landfill cells in the expansion area, the downgradient monitoring wells associated with the cell must be sampled for a minimum of 6 rounds of analyses, as specified in the approved EMP (see Solid Waste Management Permit Condition 6 of this permit).

45. Leak Detection Locations If fluid is found in any of the leak detection locations, it shall be analyzed for routine leachate indicator parameters [6 NYCRR Part 360-2.11(d)(6)] within 5 business days unless otherwise approved by the Department. This does not include liquids from the secondary leachate collection system which shall be tested in accordance with the approved EMP (see Solid Waste Management Permit Condition 6 of this permit).

46. Reporting of Monitoring Data Water quality monitoring data must be reported to the addresses listed in Solid Waste Management Permit Condition 58 of this permit, as required by Part 360-2.11(c)(5)(iv) within 90 days of the sampling date, unless more rapid reporting is required to address an imminent environmental or public health concern.

47. Contingency Monitoring The facility must implement the contingency monitoring set forth in the approved EMP (see Solid Waste Management Permit Condition 6 of this permit) under the provisions of 6 NYCRR Part 360-2.11(c)(5)(ii) if any organic or inorganic parameter is found in the groundwater or surface water at a significant increase from existing water quality data as set forth in the EMP, and it cannot be demonstrated that the contamination is derived from a source other than the facility. The RMME may also require a greater frequency of monitoring, expanded range of constituents, increased number of monitoring points or other measures.

48. Damage to Monitoring Point In the event of damage to or inability to sample any monitoring point, the RMME shall be notified in writing within 10 working days of the attempted sampling. The notification must include the facility's plans for repair or replacement of the monitoring point and a schedule for performance of the necessary work. Unless otherwise approved, all work must be completed within 120 days of the date of notification. In the case of a replacement well, the well must be initially sampled for baseline parameters. In addition, the Department will require 10 working days notice prior to installation, repair, or replacement of any monitoring wells at the facility. When wells are installed, replaced, or repaired, a report detailing the work performed must be submitted to the RMME within 45 days after completion of the work. For new well installations, the reports must include the information listed in Appendix D of the EMP (see Solid Waste Management Permit Condition 6 of this permit).

49. Monitoring Well Modifications Any proposals to extend or reduce the height of monitoring wells due to construction must be approved by the RMME prior to implementation.

50. Porewater Drain If, during excavation of any cell, excessive seepage is encountered in the till soils which does not cease after a reasonable period of time, a porewater drain system may be required if the seepage is within 5 feet of the subgrade and/or would create difficulties installing the liner system. If porewater systems are constructed, they must be incorporated into the quarterly monitoring program.

51. Sampling Notification The RMME shall be notified a minimum of 10 working days in advance of when the quarterly groundwater sampling will be conducted.

52. Sedimentation Basins If there is any indication that surface runoff which is being directed to the sedimentation basins may be contaminated due to a leachate breakout, spill, or other event, the facility must direct the surface runoff immediately into the contingency surface water runoff basin, so that it may be held and tested, as detailed in the Contingency Plan (see Solid Waste Management Permit Condition 6 of this permit), prior to determining whether to release it or dispose of it at a wastewater treatment plant.

53. Gas Collection System Monitoring The permittee shall monitor the active gas collection and control system in accordance with 40 CFR Part 60 Subpart WWW. Reporting to the Department shall be in accordance with 40 CFR Part 60 Subpart WWW.

CLOSURE

54. Landfill Closure The landfill shall be properly closed in accordance with 6 NYCRR Part 360-2.15 and the approved Final Closure Plan to be submitted in accordance with Solid Waste Management Permit Condition 21 of this permit. The height of the finished landfill is limited to a maximum elevation of 1,658 feet. The final topography shall not exceed those elevations shown on sheet 7 of the plans entitled "Chaffee Facility Valley Fill Expansion" (see Solid Waste Management Permit Condition 6 of this permit).

POST-CLOSURE

55. Monitoring and Maintenance The facility shall be monitored and maintained in accordance with 6 NYCRR Part 360-2.15(k) and the approved Post-Closure Plan to be submitted with the Closure Plan in accordance with Solid Waste Management Permit Condition 21 of this permit. The period of post-closure care shall continue for a minimum of 30 years after facility final closure.

QUARTERLY/ANNUAL REPORTS

56. Quarterly Report Each quarterly monitoring report must provide information on activities occurring during the quarter in question (January 1 to March 31, April 1 to June 30, July 1 to September 30, October 1 to December 31) and must be submitted no later than 60 days after the last day of the quarter in question. All quarterly reports must be submitted on the forms provided by the Department (see attached) or electronically, as specified by the Department. Quarterly reports shall contain the information identified in Section 19.2.1 of the approved Operation and Maintenance Manual (see Solid Waste Management Condition 6 of this permit).

57. Annual Report An annual report must be submitted no later than 60 days after January 1 of each year on forms provided by the Department (see attached) or electronically, as specified by the Department. The annual report shall contain the information identified in Section 19.2.2 of the approved Operation and Maintenance Manual (see Solid Waste Management Permit Condition 6 of this permit).

58. Report Submission Quarterly and Annual Reports shall be submitted to the following:

NYSDEC
Division of Materials Management
9th Floor
625 Broadway
Albany, NY 12233-7253

NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2915
Attn: Regional Materials Management Engineer

FINANCIAL SURETY

59. Surety Instrument The permittee shall maintain a financial surety, acceptable to the RMME, that complies with 6 NYCRR Part 360-1.12 and Part 360-2.19 for closure and for a minimum of 30 years of post-closure monitoring and maintenance.

60. Updated Surety Within 60 days of Department approval of the annual revised closure and post-closure estimates provided with the annual report (see Solid Waste Management Permit condition 57 of this permit) a revised financial surety(s) shall be submitted (if needed) to the RMME.

MONITORING

61. Environmental Monitor a. The Permittee shall fund environmental monitoring services to be performed by or on behalf of the Department. These monitoring services will include, but not be limited to, the scope of work in an annual environmental monitoring work plan which is incorporated by reference and enforceable under this Permit.

b. The Permittee shall provide to the Department on an annual basis the funds necessary to support the activities set forth in the annual environmental monitoring work plan. The sum to be provided will be based on the annual budgeted amount and is subject to annual revision. Subsequent annual payments shall be made for the duration of this Permit or until the environmental monitoring services are no longer necessary, whichever comes first.

c. The Permittee shall be billed annually, prior to the start of each State Fiscal Year (SFY) (April 1). If this Permit is to first become effective subsequent to April 1, the initial bill will be for an amount sufficient to meet the anticipated cost of the environmental monitoring services through the end of the current SFY.

d. The Department may revise the required annual bill on an annual basis to include all of the Department's estimated costs associated with the environmental monitoring services. The annual revision may take into account such factors as inflation, salary increases, changes in the fringe benefits rate, changes in operating hours and procedures, changes in non-personal service costs (including travel, training, sampling and analytical, and equipment costs, etc.), an increase or decrease in the level of environmental monitoring services necessary, and an increase or decrease in the number of environmental monitors.

Upon written request by the Permittee, the Department shall provide the Permittee with a written explanation of the basis for any revisions.

e. Prior to making its annual payment, the Permittee will receive, and have an opportunity to review and request adjustment to, an annual environmental monitoring work plan that the Department will undertake during the year. The Department will provide a final annual work plan that the Department will undertake during the year.

f. Payments are to be made in advance of the period in which they will be expended and shall be made in full within 30 days of receiving a bill from the Department. The bill from the Department to the Permittee will provide information regarding to whom payments should be made payable and the address to which payments should be sent.

g. Failure to make the required payments shall be a violation of this Permit. The Department reserves all rights to take appropriate action to enforce the above payment provisions.

h. The environmental monitor shall, when present at any of the Permittee facilities, abide by all of the Permittee health and safety and operational requirements and policies, if such requirements and policies exist and provided they are not inconsistent with Department policies and labor management contracts, and further provided, however, that this shall not be construed as limiting the environmental monitor's powers as otherwise provided for by law and shall not result in the environmental monitor being afforded less protection than otherwise provided to the environmental monitor by State and Federal health and safety requirements.

i. The environmental monitor shall receive from the Permittee all general and site-specific safety training which is normally given to new facility/site employees for all areas of the facility or site. This training will be a supplement to the health and safety training that the environmental monitor routinely receives from the Department.

j. Upon selection of the environmental monitor, the Permittee shall immediately furnish to the environmental monitor any facility/site health and safety and operational requirements and policies. Within five (5) days of any revision to the facility/site health and safety and operational requirements and policies, the Permittee shall furnish to the environmental monitor the health and safety and operational requirements and policies.

k. The environmental monitor shall be permitted to use environmental monitoring and data collection devices (e.g., photo ionization detectors, cameras, video recording devices, computers, cell phones, etc.) deemed necessary by the Department to evaluate and document observed conditions. If the data or images are collected from areas where confidentiality is a concern to the Permittee, the Permittee may request that the data or images be considered confidential information. The Department will consider any confidentiality requests and, if determined by the Department to be appropriate, copies of the data or images collected from areas where confidentiality has been determined by the Department to be a concern shall be provided to the Permittee.

l. It will remain the responsibility of the Permittee to contact the Spill Hotline or any Division within the Department regarding any required notification of any spill, release, exceedances etc. Notification to the environmental monitor will not be considered sufficient to replace any required notifications.

62. **Hazard Assessment:** The Permittee shall provide to the Department a Hazard Assessment for the workplace which complies with OSHA rule 29 CFR 1910.132. Based on that assessment, the appropriate Personal Protective Equipment (PPE) will be provided to the monitor.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 9 Headquarters
270 Michigan Ave
Buffalo, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 180 days before permit expiration for the following permit authorizations: Solid Waste Management.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

APPENDIX H:

USACE SECTION 408 PERMITTING AND SUPPORTING DOCUMENTATION

DEC Permit Number	NEW YORK STATE OF OPPORTUNITY — Department of Environmental Conservation	Issuance Date
Facility Name	APPLICATION FOR PERMIT Under the Environmental Conservation Law Article 16 Flood Control Land Use	Expiration Date

Shaded Boxes For Office Use Only: Type of Permit (check all that apply)

☐ New Permit ☐ Renewal of Permit ☐ Modification to Permit ☐ Extension to Permit
☐ Major Permit ☐ Minor Permit ☐ Temporary Permit

1. Name of Applicant:	Mr. Benjamin Rung, PE (Agent for NYSDEC)				
2. Mailing Address:	625 Broadway, 12th Floor				
3. City/Post Office:	Albany	4.State:	NY	5. Zip:	12233
6. Telephone #:	5184029826	7. Email:	benjamin.rung@dec.ny.gov		
8. Location of State Maintained Flood Control Land:	Smokes Creek Flood Control Project				
City/Town/Village:	Lackawanna	County:	Erie		
Location:	North Branch of Smoke's Creek, approximately from river station 345+00N to 367+00N.				

9. Project Description/Reason for use of flood control land (attach supporting materials):

Installation of a soil cap on upper bank of Smoke's Creek (south side of Smokes Creek only) along existing recreation trail.

10. Design Engineer Information:	Randolph West, PE				
Company or Name:	URS				
Mailing Address:	257 West Genesee St				
City/Post Office:	Buffalo	State:	NY	Zip:	14202-2657
Telephone #:	7169231222	Email	randy.west@aecom.com		
PE License #:	073189-1	Title:	Sr. Civil Engineer		
11. Construction Engineer Information:	Same				
Company or Name:					
Mailing Address:					
City/Post Office:		State:		Zip:	
Telephone #:		Email:			
PE License #:		Title:			

12. The above named applicant hereby applies to use State maintained flood control lands as indicated above in accordance with the attached plans, and pursuant to the conditions and regulations, whether general or special, which are hereinafter set forth; all forming a part hereof, and will obtain any other consents or permits that may be necessary to accomplish the purpose set forth herein.

Date:	10/07/2019	Signature:	Benjamin Rung	Digitally signed by Benjamin Rung, P.E. Date: 2019.10.07 11:18:08 -04'00'
Name, Title, and Company (please print or type):	Benjamin Rung, PE (Agent for NYSDEC) Division of Environmental Remediation			

Flood Control Regional Office Approval		US Army Corps Of Engineers No Objection Determination (Corps Review not required for minor or temporary permits)	
3/13/2020	Charlene A. Myers	See Section 408 Permission	
Date	Signature	Date	Signature

Reset Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Print Form

Form to be prepared by insurance agent or Insurance company representative. Send completed form to:
Chief, Flood Protection and Dam Safety 625 Broadway, 4th Floor Albany, NY 12233-3504

CERTIFICATE OF INSURANCE FOR PERMITS ON FLOOD CONTROL PROJECT LANDS

To New York State Department of Environmental Conservation:
The subscribing insurance company certifies that protective liability insurance has been procured for **The People of the State of New York and/or the Department of Environmental Conservation and all employees of the Department of Environmental Conservation as the Named Insured. (The permit applicant is not the Named Insured.)** This policy covers liability of the Named Insured for damages of any action or actions resulting from the use of a Flood Control permit, including omissions and supervisory acts of the State. This document certifies the issuance of an insurance policy to the permit applicant as follows:

1. Name of Permit Applicant:							
2. Address of Permit Applicant:							
3. City/Post Office:				**State:**		**Zip:**	
4. Policy Number:		**Effective Date:**			**Term:**	***Continuous***	
5. Minimum Coverage – Bodily Damage (including death) – Each person:		***$1,000,000***		**Each Accident:**		***$2,000,000***	
6. Minimum Coverage – Property Damage – Each accident:		***$1,000,000***					
7. Flood Control Land Use Permit Number:			**Flood Control Project Name:**				
8. Reason for use of lands:							

The subscribing company agrees that no policy referred to herein shall be changed, terminated, modified, revoked or permitted to expire until:

*** All work or purpose authorized by the permit has been completed to the satisfaction of the Commissioner of the Department of Environmental Conservation or his/her representative, and he/she has authorized termination of said insurance coverage in writing; or**

*** 30 days written notice has been given to Commissioner of the Department of Environmental Conservation and written approval has been granted by the Department. Any such notice must indicate permit number, applicant's name and policy number and must be sent to:**

New York State Department of Environmental Conservation
Attention – Chief, Flood Protection
625 Broadway, 4th Floor
Albany, New York 12233-3504

This certificate is furnished in accordance with the rules and regulations of the New York State Department of Environmental Conservation pertaining to Flood Control Permits.

Name of Insurance Company				
Address of Insurance Company				
By:	**Print Name**		**Signature of Authorized Representative**	
	Insurance Agent Name		**Phone**	
	Address			

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS FLOOD CONTROL LAND USE PERMIT APPLICATION

INSTRUCTIONS TO APPLICANT

It is understood that completing this application does not constitute permission to commence work on New York State Flood Control Lands. A Flood Control Land Use Application (Major Permit) requires at least 3 months for review. A Major Permit must be reviewed and approved by the NYSDEC Regional Flood Control Engineer, the US Army Corps of Engineers District Engineer (a Minor or Temporary Permit does not need USACE review), and the NYSDEC Central Office Flood Control Engineer. The permit is then issued by the Bureau Director of Flood Protection and Dam Safety. Before an issued permit becomes effective five (Major Permit) or four (Minor or Temporary Permit) signed, notarized and completed copies of the permit with all of the required bonds, deposits, certificates of insurance, certifications, etc. must be received and acknowledged by the Department.

SUBMITTAL REQUIREMENTS:

1. Submit five (Major Permit) or four (Minor or Temporary Permit) copies of the entire application package to the Regional Flood Control Engineer.
2. Forward the filled in original copy of the "Certificate of Insurance for Permits on Flood Control Project Lands" to the address as indicated on the form.

APPLICATION FORM:

1. The Applicant shall be the individual, corporation, government agency, municipality, industry or other legal entity responsible for the proposed work and the continued operation and maintenance of the facilities installed.

2 - 7. Provide address and contact information for the Applicant.

8. Provide the City/Town/Village, County and location of the proposed work.

9. Provide a description of activity and reason for use of flood control lands. Supporting information shall demonstrate that the proposed activity will not impair the operation of the flood control facility or impede maintenance. Drawings shall be on sheets not to exceed 30 inches by 48 inches.

10 - 11. As determined by the Regional Flood Control Engineer, activities that may affect structural integrity or function of the flood control project require that the design and construction is prepared and supervised by a licensed professional engineer registered to practice in New York State. Provide the name, address and contact information for the licensed engineer responsible for the design of the work and the construction of the work in accordance with the approved plans.

12. Provide signature, date and title of Applicant.

INSURANCE FORM: TO BE COMPLETED BY INSURANCE COMPANY AGENT OR INSURANCE COMPANY REPRESENTATIVE.

1 - 3. Provide the name and address of the Applicant.

4. Provide the policy identification number that covers use of state flood control lands, date that policy becomes effective, and term of the policy.

7. NYSDEC central office will assign the Flood Control Land Use Permit Number and provide the flood control project name.

8. Provide a description of the work and the continued operation and maintenance of the installed facilities that are covered by this policy.

Reset Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Print Form

PERMIT ISSUANCE FORM

Permittee Name: Benjamin Rung, PE (Agent for NYSDEC) Division of Environmental Remediation			Permission to proceed as set forth and represented in the foregoing application pursuant to Part 501, Title 6 NYCRR, and at the particular location described therein, in accordance with the map and plant hereto attached and pursuant to the conditions and regulations, whether general or special, which are hereinafter set forth; all forming a part hereof, to writ:
Mailing Address: 625 Broadway, 12th Floor			
City/Post Office: Albany	State: NY	Zip: 12233-7017	

GENERAL CONDITIONS AND REGULATIONS

DEFINITIONS

1. The "Department" shall mean the New York State Department of Environmental Conservation.

SUBMITTAL OF PLANS

2. The Permittee shall submit to said Department a detailed plan of structure to be built, if any, with a description of proposed method of construction, before any work hereunder is started, which plans shall require the prior approval by the Department and any other agency having jurisdiction thereof.

FEES, COSTS AND, DAMAGES

3. The Flood Control Land Use Permit fees have been eliminated.

4. The Permittee agrees to pay all necessary expenses incident to supervision and inspection by reason of the granting of such permit as certified by representative of the Department, Flood Control Section, and such payment shall be made within ten days from the rendering of the certified account.

5. Monuments marking the boundary of Flood Control Lands shall be undisturbed and fully protected. A recompense for damages of not less than $25.00 will be imposed for each monument disturbed.

REQUIRED BONDS

6. The Permittee shall post a certified check or bond in the amount of $ waived to secure the fulfillment of the Conditions and Regulations pertaining to this permit.

7. The Permittee shall post a certified check or bond in the amount of $ waived before or at the time of issuance of this permit by the Department to be used as security that the Flood Control Works or any part thereof will be restored to its original condition where disturbed, at the expense of the Permittee, as soon as the work has been completed, and the said Department is hereby authorized to expend all or as much of such deposit as may be necessary for that purpose, should the said Permittee neglect or refuse to perform the work.

LIABILITY

8. The Permittee shall be responsible for all damages resulting in bodily injury, including death and/or property damage liability due to activities of the Permittee, its contractors, sub-contractors of either or both, agents or employers in connection with any act or omission hereunder; and does hereby expressly agree to indemnify and save harmless the United States of America, the Department of the Army Corps of Engineers, the People of the State of New York and /or the Department, its Commissioner, and their representatives and employees from claims, suits, actions, damages and costs of every name and description, arising out of or resulting from any act or omission hereunder.

9. Unless expressly waived by the Department, the Permittee shall furnish with the foregoing application a policy of protective liability insurance issued to and covering liability of the People of the State of New York and/or the Department, with respect to all operation under this permit by the Permittee or by anyone acting by, through or for the Permittee, including omissions and supervisory acts of the State. The limits of liability in such policy shall not be less than $1,000,000 per person/per accident for all damages arising out of bodily injury, including death at any time resulting there from, sustained by one person in any one accident and, subject to that limit for each person, not less than $2,000,000 aggregate for all damages arising out of bodily injury, including death at any time resulting there from, sustained by two or more persons in any one accident, and not less than $1,000,000 for all damages arising out of injury to or destruction of property in any one accident, and subject to that limit per accident. Such policy shall state that it (they) will not be changed or canceled until thirty days' **written** notice has been given to said Department and **written approval** has been granted by the Department representative identified in the attached Special Conditions, Special Condition Number 3.

10. The enumeration in this permit of the kind and amount of insurance shall not abridge, diminish or affect the Permittee's legal responsibilities for the consequences of accidents arising out of or resulting from the operation of the Permittee under this permit.

11. The above named Permittee hereby certifies that it has secured compensation for the benefit of, and will keep insured during the performance of the above described work, such employees as are required to be insured, by the provisions Workers' Compensation Law.

START DATE

12. The Permittee shall be responsible for obtaining all necessary permits, rights of entry and other items required by other State agencies, landlords, etc., before commencing work on this permit.

13. Work under this permit shall be commenced within (1) one year of permit issuance and continued in an expeditious manner.

14. The Department shall be given 7 days notice by said Permittee of the DATE when he intends to begin work authorized by this permit, and shall be given prompt notice of its completion.

PERMIT USE

15. This permit shall not be assigned or transferred without the written consent of the Department's representative as identified in the attached Special Conditions, Special Condition Number 3.

16. The said Department reserves the right to at any time revoke or annul this permit should the Permittee fail to comply with the terms and conditions upon which it is granted.

17. The use of State lands shall be subject at all times to the interests of the State and/or the United States of America in making improvements and repairs to the Flood Control Works. The Department, its agent, employees and representatives shall at all times, having a right of entry thereto, if in the judgment of the Department, the interests of the State or the United States of America shall require.

18. Work permitted under this permit shall be progressed in such a manner as to avoid interference with the operation and maintenance of Flood Control Works.

19. The work authorized shall be supervised by responsible agent of the Permittee and the work shall be performed to the satisfaction of the Department representatives identified in the attached Special Conditions, Special Condition Number 3.

20. A copy of this permit shall be in the possession of the Permittee or his representative at the site of the permitted activity and shall be promptly displayed upon request of a representative of the Department or any other person empowered to enforce the conditions of the permit.

Reset Form

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Print Form

SPECIAL CONDITIONS

PERMIT DESCRIPTION AND CONTACT PERSONNEL

1. This permit is for the use of State Maintained Flood Control Lands for the excavation of incinerator ash and impacte d soils/restoration, top of bank/bike path *(proposed work)* by NYSDEC DER Standby Contractor *(applicant)* within the limits of the Smokes Creek *(project name)* Flood Control Project.

2. The permitted work shall be in accordance with Plans titled, Remedial Design Contract Drawings - Lackawanna Incinerator Site *(title of plans)*, dated September 2019 *(date)* as prepared by URS Corporation *(engineering firm)*, and in accordance with Specifications Contained in the same *(specifications report title)* Dated *(date)*, Prepared by *(preparer)*.

3. The Permittee agrees that this permit shall not take effect until all bonds, deposits, certificates of insurance, etc. as required by Conditions 6, 7, and 9 of the "Conditions and Regulation" have been received and acknowledged by the Regional Flood Control Engineer. The Flood Control Land Use Permit review process requires approval by the Regional Flood Control Engineer, the US Army Corps of Engineers District Engineer, and the DEC Central Office Flood Control Engineer. The permit application is then issued by the DEC Commissioner or his/her representative.

REGIONAL FLOOD CONTROL ENGINEER

Name:

Theodore Myers

Region:

9

Address: *New York State Department Environmental Conservation*

270 Michigan Ave

Buffalo, NY 14203

Telephone:

7168517070

USACE DISTRICT ENGINEER

Name:

District:

Buffalo

Address: *United States Army Corps of Engineers*

1776 Niagara Street

Buffalo, NY 14207

Telephone:

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SUBMITTAL REQUIREMENTS

1. The Permittee shall furnish "as–built" drawings in triplicate to the Regional Flood Control Engineer as identified in Special Conditions Number 3.

2. The Permittee shall submit a plan for undertaking any earthwork construction including initial soil testing and results, proposed compaction equipment and methods, and the proposed methods and frequencies of testing during construction. This plan shall be submitted to the Regional Flood Control Engineer for approval at least two weeks prior to the start of construction.

3. The Permittee agrees that prior to commencement of the permitted work and immediately upon its completion; notice must be given to the Regional Flood Control Engineer as identified in Special Condition Number 3.

4. The Permittee agrees that prior to any future changes on State Flood Control Project Lands, notice must be given to the Regional Flood Control Engineer. Changes must not be implemented until the Permittee receives approval from the Regional Flood Control Engineer.

PERMITTEE'S RESPONSIBILITY

5. This permit is for construction and for the continued use of the installed facilities remaining on flood control lands. **The Permittee agrees to maintain the protective liability insurance** as required by condition 9 of the "General Conditions and Regulations" **for as long as the Permit is in effect.**

6. The Permittee agrees that all permitted works shall be operated and maintained entirely by the Permittee or the Permittee's agent(s).

7. The Permittee shall assume responsibility for and require all of its contractors, sub-contractors of either or both agents or employees to abide by all applicable conditions of this permit.

8. The Permittee shall maintain any of the Permittee's facilities remaining on flood control lands in a manner which is not detrimental to the flood control works. If in the opinion of the Regional Flood Control Engineer or his assistant, the permitted activity is ever found to endanger, or interfere with the maintenance or operation of the flood control works, the Permittee will immediately remedy the adverse condition and/or modify the adverse activity in a manner acceptable to the Department.

9. It shall be the Permittee's responsibility and the Permittee shall assume any liability incurred by the Department for failure of the flood control works in the work area due to both the Permittee's active installation and for the Permittee's facilities as long as they remain on the flood control land.

10. The Permittee agrees that any damage to existing flood protection facilities or features shall be repaired to the satisfaction of the Regional Flood Control Engineer.

11. The Permittee agrees that the U.S. Government and the Department will not be held responsible for any damage to the Permittee's installation due to operation and maintenance activities of the flood control works nor for any damage asserted or claimed as the result of the Permittee's installation.

12. If the Department chooses at any time to exercise any of its rights on the flood control land, the Permittee agrees to bear any required expense and loss for removal, modification, or termination of its permitted facilities or activities, in such manner as directed by and to the satisfaction of the Department.

13. The Permittee shall not interfere with the operations of the Department, or contractors for the State working in the same area on the flood control land.

14. The Permittee agrees that the permitted works shall not fall into a state of disrepair such that they become hazards to the flood control project.

SITE CONDITIONS

15. General

    a. The Permittee agrees to take responsibility for construction site security and safety measures while undertaking this permitted work.

    b. Disturbed rip-rap and adjacent areas will be replaced free from soil, vegetation and other debris.

    c. The Permittee agrees to replace and reset to Department standards, flood control land boundary markers which may be disturbed or removed during the course of the permit work.

    d. The Permittee shall remove all materials and debris from the flood control land upon completion of the work.

    e. No trash, material or debris will be deposited within the existing flood control project at anytime.

16. Vehicles, Equipment, and Roadways

    a. The Permittee agrees that no vehicular traffic of any kind will be allowed on the flood control system except that portion of the project which is directly involved with this permitted work.

    b. The Permittee agrees that before any excavation into the flood control system (or into State Flood Control Lands), all necessary equipment must be on the job site.

    c. The Permittee and all project contractors shall not block any flood project maintenance roadways. Those roads shall be kept open for vehicle passage at all times.

PROJECT INTEGRITY

17. It is the Permittee's responsibility to ensure that there will be no reduction in the structural integrity or the level of protection provided by the Flood Protection Project. This applies to both the construction phase and after completion of work. The Permittee is responsible for quickly and effectively closing any potential breach in the flood Protection Project due to the failure of the flood control works in the work area due to both the Permittee's active installation and for the Permittee's facilities.

18. The Permittee shall have the construction performed within flood control lands inspected by a professional engineer or his representative. The permittee shall supply a written statement from the professional engineer that the installation was properly placed per the approved plans and special conditions.

EROSION

19. Any project contractor shall employ best management practices to control soil erosion at all times. If soil erosion occurs at any time, the Department may shut down the construction project until such time that the contractor properly remedies the erosion situation.

20. The Permittee agrees that measures to prevent erosion and/or sedimentation will be implemented throughout this permitted work.

POLLUTANTS

21. The Permittee agrees that precautions shall be taken to avoid pollutants from entering the creek or river either directly or from areas where pollutants would be carried to the creek or river by storm runoff.

22. Any accidental petroleum spills shall be immediately cleaned up and properly disposed of per Department regulations.

LEVEE CUTS AND TRENCHES FOR PIPES ON ALL PROJECT LANDS

23. Emergency Requirements

    a. The Permittee agrees to provide the Regional Flood Control Engineer with an emergency contact roster of key personnel involved with the permit work at least two weeks prior to the start of construction.

    b. The permittee shall immediately restore a channel cross section with side slopes protected by medium stone fill if directed by the Regional flood control engineer, due to a significant storm event being forecast.

24. Excavations, Fill and Backfill Material

    a. The Permittee shall submit a plan for undertaking the earthwork construction including initial soil testing and results, proposed compaction equipment and methods, and the proposed methods and frequencies of testing during construction. This plan shall be submitted to the Regional Flood Control Engineer for approval at least two weeks prior to the start of construction.

    b. The Permittee agrees that no excavations will be made on flood control lands, except as indicated on the approved project drawings.

    c. Excavation receiving fill, and partially completed fill shall be kept thoroughly drained.

    d. Impervious trench and embankment fill material, and backfill, shall be reasonably well graded, containing at least 25% passing the No. 200 mesh sieve and have a Plasticity Index of at least 6. No organic matter such as sod, or other undesirable material such as frozen soil, snow, ice, debris, etc., shall be permitted in the fill. Material from the excavation may be used if the above criteria are satisfied. In addition, no rock fragments, stones or cobbles greater than 2/3 of the allowable lift thickness shall be permitted in the fill.

    e. Moisture content should generally not exceed the limits of + or - 2% above or below the optimum natural moisture content. Materials that are too wet or too dry shall be conditioned by aerating or sprinkling, respectively before placing. Adherence to these moisture requirements is necessary for obtaining the maximum density for trenches and embankments.

25. Compaction

    a. When the moisture content and condition of the backfill material are satisfactory, each lift shall be thoroughly compacted with suitable equipment making enough passes over it such as to produce a relative density equal to 90% of the maximum obtainable using ASTM 698D (Standard Proctor). Should a layer not meet the compaction requirements, it shall be removed replaced and compacted such that it meets the compaction requirements. Special care shall be taken to achieve the desired compaction in the vicinity of the pipe.

    b. Mechanical hand tampers shall be of the internal combustion or pavement breaker type, operated by pneumatic pressure and having enough weight and striking power to produce the required degree of compaction.

26. Pipelines

    a. The Permittee agrees that on all pipelines placed, the strength of the pipe/ foundation/ backfill will be adequate to support maintenance equipment including a 40-ton crane and will withstand loadings associated with creek stages at the maximum protection level of the flood control project.

    b. The Permittee agrees that all backfill placed over a pipeline shall not interfere with the natural surface drainage.

    c. Permanent markers shall be placed and maintained which indicate the alignment of the pipelines placed on flood control lands.

SOD RESTORATION

27. The contractor shall regrade, seed and mulch any flood project lands disturbed by the project construction. The contractor is required to reestablish a vigorous sod ground covering. If the sod does not properly germinate, the contractor shall reseed and mulch again. Any disturbed ground shall be raked to remove all rocks that can damage mowing equipment.

28. The Permittee agrees to regrade all disturbed earthen areas to their original lines and grades in a neat, smooth compact condition ready for seeding.

29. The Permittee agrees to place four to six inches of good quality topsoil on disturbed areas before proceeding with the seeding operation.

30. The Permittee agrees to provide a good stand of grass for one year after completion of the work before being relieved of its seeding responsibility.

RECREATIONAL USES

31. The Permittee must perform routine maintenance including mowing at recommended intervals, brush cutting, sod restoration, litter cleanup, dog waste cleanup and graffiti removal.

32. To the satisfaction of the Regional Flood Control Engineer, the Permittee must take steps to eliminate traffic on side trails that develop on project lands.

33. The Permittee accepts responsibility for any and all damages from maintenance activities as well as the use of heavy equipment by the Department or its agents. If the Department chooses at any time to exercise any of its rights, the Permittee agrees to bear any expense and loss for removal, modification or termination of the permitted facility.

34. Emergency

    a. The Permittee must close off access to recreational features when notified by the Department and at pre-determined high-water stages in order to avoid dangerous conditions and interference with the Department activities during periods of both planned and emergency operation and maintenance.

    b. The Permittee must provide security for the facility and assume all liability incurred by the Department for the installation and use of the facilities being installed.

    c. The Permittee must assume liability incurred by the Department for failure of the flood control works in the work area.

ADDITIONAL REQUIREMENTS

35. The outlet of the conduit defined in detail 7 should include a flap gate or duckbill to prevent backflow.

TIME FOR COMPLETION

36. The proposed work on State maintained flood control lands must be completed within two (2) years from the issuance date, as determined by the signature date of the representative of the Department of Environmental Conservation. To extend the deadline, the Permittee must submit a written request to the Regional Flood Control Engineer at least three months in advance of the deadline. After review, the Department will inform the Permittee in writing of its determination to extend, or not extend the allowed time.

PERMIT EXPIRATION

37. The duration of the permit will terminate twenty (20) years from the issuance date, one exception to this is for a bridge installation the duration of the permit will be fifty (50) years as determined by the signature date of the representative of the Department of Environmental Conservation. To extend the duration, the Permittee must submit a written request to the Department at least three month in advance of the termination. After review, the Department will inform the Permittee in writing of its determination to extend, or not extend the permit.

END

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

FLOOD CONTROL LAND USE PERMIT

SIGNATURE ISSUANCE PAGE

PERMIT #:
FLOOD CONTROL PROJECT NAME: Lackawanna Incinerator - 915206 - Section 408 Application
Issued Pursuant to Article 16 (Flood Control), Section 0107.13 of the Environmental Conservation Law
March20, 2020
Department of Environmental Conservation

In consideration of the granting of the within permit, the undersigned affirming, under penalty of perjury that he/she is acting under authority hereby accepts the same, subject to the restrictions and regulations therein described.

Dated: By:	Signature and Title of Permittee
Dated: By:	Signature of Notary Public

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 03/12/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Jane Begreen	
Insurance Solutions & Services, Inc. 619 Amboy Avenue Edison NJ 08837	PHONE (A/C, No, Ext): (732) 738-6080	FAX (A/C, No): (732) 738-6081
	E-MAIL ADDRESS: jbegreen@issi-nj.com	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Groundwater & Environmental Services, Inc. 415 Lawrence Bell Boulevard Suite 6 Williamsville NY 14221	INSURER A : Great Divide Insurance Company	25224
	INSURER B : Nautilus Insurance Company	17370
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** CL1961800727 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:	Y		GLP2023000	07/01/2019	07/01/2020	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Employee Benefits	$ 1,000,000 $ 300,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y		BAP2022996	07/01/2019	07/01/2020	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Medical payments	$ 1,000,000 $ $ $ $ 5,000
B	[ ] UMBRELLA LIAB [X] OCCUR [X] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [X] RETENTION $ 0	Y		FFX2023001	07/01/2019	07/01/2020	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ 10,000,000 $
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WCA2022992	07/01/2019	07/01/2020	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
B	PROFESSIONAL/POLLUTION LIABILITY			CCP2005634	07/01/2019	07/01/2020	EACH CLAIM: EACH POLLUTION CON AGGREGATE:	$ 5,000,000 $ 5,000,000 $10,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The Certificate Holder is included as Additional Insured with regards to the General Liability, Automobile Liability, and Umbrella Liability as respects the Operations of the Insured. Additional Insured status is subject to written contract requirements.

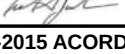
CERTIFICATE HOLDER

NYSDEC and City of Lackawanna
2960 South Park Avenue
Buffalo NY 14218

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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REMEDIAL DESIGN
CONTRACT DRAWINGS

FOR
LACKAWANNA INCINERATOR SITE
2960 SOUTH PARK AVENUE, LACKAWANNA, NEW YORK
NYSDEC SITE 915206

NEW YORK STATE OF OPPORTUNITY™ | Department of Environmental Conservation

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

Basil Seggos, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

SEPTEMBER 2019

URS Corporation
New York
257 West Genesee Street, Suite 400
Buffalo, New York 14202
(716)856-5636 phone - (716)856-2545 fax

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
COVER

Scale: N.T.S.

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:
T-001

J:\Projects\60594844_Lackawanna\900_CAD_GIS\910_CAD\CAD\95% SUBMISSION\T-001.dwg, 9/27/19 - 1 - RAL

SITE PLAN

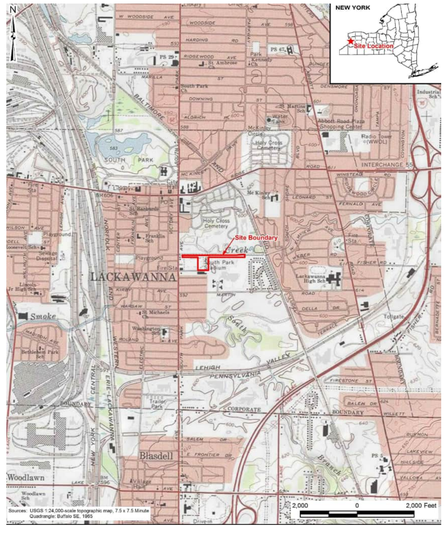
200' 0 200'

SCALE IN FEET

DRAWING INDEX

DWG. No.	TITLE
	COVER
G-001	ABBREVIATIONS, NOTES, INDEX OF DRAWINGS, SITE PLAN AND SITE LOCATION MAP
G-002	SPECIFICATIONS (SHEET 1 OF 3)
G-003	SPECIFICATIONS (SHEET 2 OF 3)
G-004	SPECIFICATIONS (SHEET 3 OF 3)
C-001	EXISTING SITE CONDITIONS (1 OF 3)
C-002	EXISTING SITE CONDITIONS (2 OF 3)
C-003	EXISTING SITE CONDITIONS (3 OF 3)
C-004	REMEDIAL OPERATIONS PLAN
C-005	PROPOSED SITE CONDITIONS – INCINERATOR AREA
C-006	PROPOSED SITE CONDITIONS – SMOKES CREEK CORRIDOR (1 OF 2)
C-007	PROPOSED SITE CONDITIONS – SMOKES CREEK CORRIDOR (2 OF 2)
D-001	GENERAL DETAILS (1 OF 2)
D-002	GENERAL DETAILS (2 OF 2)

SITE LOCATION MAP



Source: USGS 1:24,000-scale topographic map, 7.5 x 7.5 Minute Quadrangle: Buffalo SE, 1965

ABBREVIATIONS

APPROX.	APPROXIMATELY	NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
BLDG.	BUILDING	NYSDOTSS	NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS
CB	CATCH BASIN	NYSSSESC	NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL
CONC.	CONCRETE	OD	OUTSIDE DIAMETER
CY	CUBIC YARD	℄	PROPERTY LINE
DI	DRAINAGE INLET	PPM	PARTS PER MILLION
DIA/ø	DIAMETER	PROJ.	PROJECTED
DWGS.	DRAWINGS	PVC	POLYVINYL CHLORIDE
EL., ELEV.	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EXIST.	EXISTING	RECP	ROLLED EROSION CONTROL PRODUCT
F.E.	FINISHED ELEVATION	ROW	RIGHT-OF-WAY
F.F.	FINISHED FLOOR	S	SOUTH
FT	FEET	SAN	SANITARY
HDPE	HIGH DENSITY POLYETHYLENE	SB	SOIL BORING
HORZ.	HORIZONTAL	SCH	SCHEDULE
HYD	HYDRANT	SD	SEDIMENT SAMPLE
ID	INSIDE DIAMETER	SQ	SQUARE
IN.	INCHES	SS	SOIL SAMPLE
INV.	INVERT	STD.	STANDARD
LF	LINEAR FEET	TEMP.	TEMPORARY
MAX.	MAXIMUM	TYP	TYPICAL
MH	MANHOLE	UP	UTILITY POLE
MW	MONITORING WELL	VERT.	VERTICAL
N	NORTH	W	WIDTH/WIDE
NIC	NOT IN CONTRACT	WSEL	WATER SURFACE ELEVATION
NTS	NOT TO SCALE		

LEGEND

PROPERTY LINE	MW	MONITORING WELL	SILT FENCE
568 EXISTING CONTOUR		SOIL BORING	WOODED AREA
BOLLARD	E	OVERHEAD ELECTRIC LINE	4 C-005 | D-002 DETAIL CALLOUT
TREE	G	UNDERGROUND GAS LINE	CONSTRUCTION TRAFFIC DIRECTION
UTILITY POLE	ST	STORM SEWER	
HYDRANT	SAN	SANITARY SEWER	
GAS MARKER	X	FENCE/CHAINLINK FENCE	
MH MANHOLE		SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT	
CB CATCH BASIN	568	EXISTING CONTOUR	
595.7 + SPOT ELEVATION			

GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
2. WORK INCLUDED IN THIS CONTRACT SHALL BE PERFORMED IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL STATUTES, REGULATIONS, CODES, AND POLICIES. COMPLIANCE ASSURANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. WORK INCLUDED IN THIS CONTRACT SHALL BE COORDINATED WITH THE DEPARTMENT OR THEIR APPOINTED REPRESENTATIVE.
5. THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION, INCLUDING TEST PITTING IF NECESSARY. ANY ENCOUNTERED BURIED UTILITIES, NOT IDENTIFIED BEFORE THE START OF CONSTRUCTION, SHALL BE REPORTED TO THE DEPARTMENT OR THEIR APPOINTED REPRESENTATIVE IMMEDIATELY.
6. THE CONTRACTOR SHALL PROTECT, MAINTAIN, AND RELOCATE (IF REQUIRED) LIGHTING AND POWER CONDUITS, PIPES, WIRES, SIGNAL/COMMUNICATION CABLES, AND EQUIPMENT ENCOUNTERED DURING THIS PROJECT.
7. STRUCTURES AND SITE FEATURE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION EQUIPMENT CAN BE TRANSPORTED TO AND OPERATED IN THE WORK AREA.
8. ANALYTICAL TESTING RESULTS FOR SOILS TO BE EXCAVATED WILL BE PROVIDED TO THE CONTRACTOR.
9. NO WORK SHALL BE PERFORMED UNTIL THE SUBMITTAL/SHOP DRAWING FOR THAT WORK ELEMENT HAS BEEN REVIEWED AND APPROVED.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING PEDESTRIAN AND VEHICULAR TRAFFIC IN THE VICINITY OF THE WORK.
11. THE CONTRACTOR SHALL CALL 811 PRIOR TO DIGGING. THE CONTRACTOR SHALL APPLY APPROPRIATE DUE DILIGENCE IN CLEARING AND WORKING AROUND UTILITIES. THE CONTRACTOR SHALL HAND EXCAVATE OR USE A VACUUM AIR KNIFE (VACTOR UNIT) TO REMOVE SOIL TO A MINIMUM DEPTH OF FIVE (5') FEET WHEN WORKING NEAR UTILITIES TO DETERMINE THEIR EXACT LOCATIONS.
12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SECURITY TO PROTECT THEIR MATERIALS AND EQUIPMENT.
13. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL STRUCTURES AND ITEMS THAT ARE TO REMAIN.
14. ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING PRIOR TO CONSTRUCTION.
15. THE LOCATION OF UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. PRIOR TO ANY CONSTRUCTION ACTIVITIES, ALL UTILITY COMPANIES SHALL BE PROPERLY NOTIFIED TO VERIFY OR AMEND LOCATIONS AND/OR EXISTENCE OF UTILITIES.

SURVEY NOTES

1. HORIZONTAL AND VERTICAL DATUM PROVIDED ON THE SITE PLAN ARE TAKEN FROM THE WORK OF JEFFREY F. PHILLIPS, LS 50773, DATED 11/9/15 AND PROVIDED TO THE POPLI DESIGN GROUP. THIS SURVEY WAS UPDATED BY A URS CORPORATION SURVEY, DATED 3/26/19.
2. HORIZONTAL DATUM IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (2011) – NEW YORK STATE PLANE COORDINATE SYSTEM, WEST ZONE.
3. VERTICAL DATUM IS REFERENCED TO THE NAVD88.
4. MAPPING UNITS ARE U.S. SURVEY FEET.
5. THE CONTOUR INTERVAL IS 1 FOOT.
6. UTILITIES SHOWN HEREON WERE PLOTTED FROM SURFACE FEATURES ONLY. UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN HEREON.
7. TAX PARCEL 142.14-1-5.112 IS IDENTIFIED ON COUNTY TAX MAPPING, HOWEVER, ERIE COUNTY'S TAX ROLL DATABASE HAS NO RECORD OF THIS TAX ACCOUNT, CURRENT OWNER OR CURRENT DEED.

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
ABBREVIATIONS, NOTES, INDEX OF DRAWINGS, SITE PLAN AND SITE LOCATION MAP
Scale: AS SHOWN

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:
G-001

Pg No: 2 of 14

J:\Projects\60594844_Lackawanna\900_CAD_GIS\910_CAD\CAD\95% SUBMISSION\G-001.dwg 1:1 9/27/19 - 1 JJS

SUMMARY OF WORK:

1. MAJOR WORK ELEMENTS OF THIS CONTRACT INCLUDE THE FOLLOWING. THE CONTRACTOR SHALL IDENTIFY AND INCORPORATE INTO THE DESIGN THE MEASURES NECESSARY TO PERFORM THE SPECIFIED WORK SAFELY.
   - EXCAVATION AND DISPOSAL OF CONTAMINATED SOIL AND VEGATATION FROM THE TOP OF A STEEP SLOPE ABOVE A CREEK. CONSTUCTION OF A SOIL COVER OVER THE EXCAVATION AREA, WITH CROSS-DRAINAGE STRUCTURES BELOW AN ASPHALT PATH.
   - REPAIR, WITH RIPRAP, OF AN AREA OF SEVERE EROSION OF THE BANK OF SMOKES CREEK, AND REALIGNMENT OF THE ADJACENT BIKE PATH.
   - EXCAVATION AND DISPOSAL OF CONTAMINATED SOIL, DEBRIS, AND VEGETATION FROM NEAR TWO OLD MUNICIPAL BUILDINGS. CONSTRUCTION OF SOIL OR ASPHALT COVER OVER THE EXCAVATION AREA.

SITE CONDITIONS:

1. THE SITE COMPRISES TWO DISTINCT USAGES, THE DEPARTMENT OF PUBLIC WORKS (DPW) INCINERATOR AREA AND THE SMOKES CREEK CORRIDOR. THE DPW INCINERATOR AREA'S MAIN STRUCTURAL FEATURES ARE TWO RED-BRICK, MULTI-STORY BUILDINGS AND ASSOCIATED CHIMNEYS THAT HOUSED MUNICIPAL SOLID WASTE INCINERATORS. THE PRIMARY USE OF THE AREA IS FOR COMMERCIAL PURPOSES, SUCH AS MATERIALS STAGING AND EQUIPMENT/VEHICLE STORAGE FOR THE CITY DPW. THE SMOKES CREEK CORRIDOR COMPRISES THE NORTHERN PORTION OF THE SITE, WHERE AN ASPHALT PAVED RECREATIONAL TRAIL RUNS EAST TO WEST ALONG THE TOP OF THE EMBANKMENT TO SMOKES CREEK. THE PRIMARY USE OF THE CORRIDOR IS FOR COMMERCIAL PURPOSES, I.E. PASSIVE RECREATION ACTIVITIES WHICH INCLUDE WALKING, CYCLING, AND FISHING.
2. BORING LOGS AND LOCATIONS ARE AVAILABLE UPON REQUEST.

REGULATORY REQUIREMENTS:

1. THE CONTRACTOR SHALL ADHERE TO ALL APPROPRIATE REGULATIONS AND LAWS IN CONDUCTING THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALERTING THE PROPER REGULATORY AGENCIES AND AUTHORITIES AS TO THE NATURE AND TIMING OF SITE ACTIVITIES WHICH WILL BE OCCURRING AT THE WORK SITE. THE CONTRACTOR SHALL INFORM AND UPDATE THE DEPARTMENT ON STATUS OF REQUIRED PERMITS AND REGULATORY COMPLIANCE.
2. COMPLIANCE WITH STATE AND FEDERAL REGULATIONS GOVERNING ACTIVITIES IS REQUIRED.
3. STATE AND FEDERAL REPRESENTATIVES SHALL BE AFFORDED UNRESTRICTED ACCESS TO THE SITE, SUBJECT TO REQUIREMENTS OF THE SITE HEALTH AND SAFETY PLAN.
4. EXCEPT AS NOTED, THE CONTRACTOR SHALL OBTAIN AND MAINTAIN AT THE SITE ALL PERMITS NECESSARY TO PERFORM THE WORK IN THIS CONTRACT. THE CONTRACTOR SHALL PAY ALL FEES IN ASSOCIATION WITH OBTAINING THESE PERMITS. APPLICABLE PERMITS INCLUDE THOSE ASSOCIATED WITH OFF-SITE TRANSPORTATION OF CONTAMINATED MATERIAL AND DISCHARGE OR WATER.

CONTRACTOR HEALTH AND SAFETY:

1. THE CONTRACTOR SHALL SUBMIT A HEALTH AND SAFETY PLAN SPECIFIC TO TASKS PERFORMED UNDER THIS CONTRACT FOR REVIEW PRIOR TO INITIATING THE WORK. AT A MINIMUM THE PLAN SHALL INCLUDE:
   - DESCRIPTIONS OF PHYSICAL HAZARDS, INCLUDING RISKS OF WORKING NEAR STEEP SLOPES ABOVE WATER.
   - DESCRIPTIONS OF CHEMICAL HAZARDS.
   - STANDARD OPERATING PROCEDURES AND ENGINEERING CONTROLS.
   - SAFE WORK PLANS FOR EACH TYPE OF ACTIVITY.
   - EMERGENCY RESPONSE AND CONTINGENCY PLAN.
   - CONFINED SPACE ENTRY PROCEDURES (IF NECESSARY).
   - PROCEDURES FOR COORDINATING WITH EMERGENCY SERVICES.
   - APPROPRIATE PERSONNEL PROTECTIVE EQUIPMENT.
   - SAFETY OFFICER'S RESUME AND CERTIFICATIONS.
   - EMPLOYEE ROSTER OF OSHA 1910.120 TRAINED WORKERS.
   - PERSONNEL AND EQUIPMENT DECONTAMINATION, INCLUDING THE PROPOSED DESIGN, OPERATION, CLOSURE, AND DISPOSAL OF DECONTAMINATION PADS.
   - DAILY SAFETY LOGS AND RECORD KEEPING.
   - DIRECTIONS TO NEAREST HOSPITAL.
2. THE CONTRACTOR'S EQUIPMENT SHALL MEET ALL OSHA REQUIREMENTS AND SHALL BE INSPECTED DAILY FOR COMPLIANCE.
3. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE CONSTRUCTION ACTIVITIES WITH THE LOCAL FIRE DEPARTMENT.

QUALITY CONTROL:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE MANAGEMENT OF QUALITY IN ALL PHASES OF THE PROJECT, INCLUDING ACTIVITIES OF SUBCONTRACTORS AND SUPPLIERS, TO ACHIEVE AN END PRODUCT THAT CONFORMS TO THE LEVEL OF QUALITY REQUIRED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUBMIT A QUALITY WORK PLAN SPECIFIC TO TASKS PERFORMED UNDER THIS CONTRACT FOR REVIEW PRIOR TO INITIATING WORK. THE PLAN SHALL INCLUDE THE FOLLOWING ITEMS TO THE EXTENT APPLICABLE FOR THE WORK ACTIVITY:
   - ASSURANCE AND CONTROL OF INSTALLATION, REFERENCES AND STANDARDS, TOLERANCES, FIELD SAMPLES, INSPECTION AND TESTING SERVICES, TESTING BY CONTRACTOR, AND MANUFACTURER'S FIELD SERVICES AND REPORTS.
   - METHODS TO BE USED (TOOLS, MEASURING DEVICES, ETC.) TO ENSURE COMPLIANCE WITH SPECIFICATION REQUIREMENTS.
   - CALIBRATION CONTROL OF MEASURING AND TESTING DEVICES.
   - COMPLIANCE WITH SPECIFIED STANDARDS AS A MINIMUM QUALITY FOR THE WORK, EXCEPT WHEN MORE STRINGENT TOLERANCES, CODES, OR SPECIFIED REQUIREMENTS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.
   - MONITOR FABRICATION AND INSTALLATION TOLERANCE CONTROL OF PRODUCTS TO PRODUCE ACCEPTABLE WORK. DO NOT PERMIT TOLERANCES TO ACCUMULATE.
   - METHODS FOR EXCAVATION AND BACKFILL OF SMOKES CREEK CORRIDOR. THIS SHALL INCLUDE PROPOSED TRAFFIC PATTERNS AND EQUIPMENT TO BE USED. ACCESS IN THIS AREA IS LIMITED AND WILL AFFECT THE METHODS REQUIRED TO COMPLETE THIS WORK.

MEASUREMENT FOR PAYMENT:

1. PAYMENT FOR THE WORK REQUIRED BY THESE CONTRACT DOCUMENTS SHALL BE MADE IN ACCORDANCE WITH TERMS AND CONDITIONS OF NYSDEC CALL-OUT CONTRACT UNDER WHICH THE WORK IS PERFORMED.

PROJECT COORDINATION:

1. PROJECT COORDINATION INCLUDES REQUIREMENTS FOR CONTRACTOR COORDINATION, SUBCONTRACTOR APPROVALS, AND PROJECT SCHEDULE STATUS AND UPDATING.
2. THE CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF PROPOSED SUBCONTRACTORS (INCLUDING DISPOSAL FACILITIES) IDENTIFYING NAME, ADDRESS, PHONE NUMBER, CONTACT, TYPE OF WORK TO BE SUBCONTRACTED, DOLLAR AMOUNT AND M/WBE STATUS.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE COORDINATION OF SCHEDULES FOR ALL OF HIS SUBCONTRACTORS. THE ENGINEER SHALL APPROVE ALL SCHEDULES AND THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ANY APPROPRIATE CHANGES TO THE SCHEDULE.
4. THE CONTRACTOR SHALL COORDINATE A LIST OF SUBMITTAL PACKAGES WITH THE ENGINEER PRIOR TO ANY SUBMITTALS BEING MADE.
5. IF TIME-AND-MATERIALS (T&M) DOCUMENTATION OF WORK IS REQUIRED, THE CONTRACTOR SHALL SUBMIT LABOR CLASSES, MATERIALS, AND EQUIPMENT, ALONG WITH ASSOCIATED RATES FOR TIME AND MATERIAL WORK TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. ENGINEER'S AND CONTRACTOR'S FIELD REPRESENTATIVES WILL SIGN A T&M RECORD OF WORK ON A DAILY BASIS. SIGNATURES FROM FIELD REPRESENTATIVES DO NOT REPRESENT THAT THE WORK SHOWN IS AN EXTRA OR THAT THE RATES ARE ACCEPTABLE. RATHER, IT IS MERELY TO DOCUMENT THE MATERIALS, LABOR, AND EQUIPMENT SHOWN WERE IN FACT USED FOR THE WORK IN QUESTION.
7. DAILY T&M WORKSHEETS WITHOUT THE SIGNATURE OF THE ENGINEER'S REPRESENTATIVE WILL NOT BE THE BASIS FOR A CLAIM FOR ADDITIONAL COMPENSATION.

ENVIRONMENTAL PROTECTION:

1. ENVIRONMENTAL PROTECTION INCLUDES, BUT IS NOT LIMITED TO THE CONTROL OF DUST, VAPOR, ODOR, EROSION AND SEDIMENTATION, AND IMPLEMENTATION OF OTHER MEASURES AS REQUIRED TO PROTECT LAND, AIR, AND WATER RESOURCES DURING ALL CONTRACT ACTIVITIES.
2. THE CONTRACTOR SHALL MAINTAIN THE ENVIRONMENT IN ITS NATURAL STATE TO THE GREATEST EXTENT POSSIBLE DURING PROJECT CONSTRUCTION AND ENHANCE THE NATURAL APPEARANCE IN ITS FINAL CONDITION. ENVIRONMENTAL PROTECTION REQUIRES CONSIDERATION OF AIR, SURFACE WATER, GROUNDWATER, WETLANDS, AND LAND RESOURCES AND INVOLVES NOISE, SOLID WASTE MANAGEMENT, AND MANAGEMENT OF OTHER POLLUTANTS.
3. IN ORDER TO PREVENT, AND TO PROVIDE FOR ABATEMENT AND CONTROL OF ANY ENVIRONMENTAL POLLUTION ARISING FROM THE CONTRACTOR'S ACTIVITIES IN PERFORMANCE OF THIS CONTRACT, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. COMPLIANCE WITH THE PROVISIONS OF THIS SECTION BY SUBCONTRACTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CONFINE HIS CONSTRUCTION ACTIVITIES TO AREAS DEFINED BY THE PLANS AND SPECIFICATIONS.
5. EXCEPT IN AREAS INDICATED ON THE PLANS AND SPECIFIED TO BE CLEARED, THE CONTRACTOR SHALL NOT DEFACE, INJURE, OR DESTROY TREES OR SHRUBS, NOR REMOVE OR CUT THEM WITHOUT THE APPROVAL OF THE DEPARTMENT.
6. RESTORATION OF LANDSCAPE DAMAGE: ANY TREE, TURFED AREAS OR OTHER LANDSCAPE FEATURE SCARRED OR DAMAGED BY THE CONTRACTOR'S EQUIPMENT OR OPERATIONS SHALL BE RESTORED TO A CONDITION SATISFACTORY TO THE DEPARTMENT. RESTORATION OF SCARRED AND DAMAGED TREES SHALL BE PERFORMED IN AN APPROVED MANNER BY EXPERIENCED WORKMEN. ANY DISTURBED TURFED (GRASSED) AREAS SHALL BE GRADED, SEEDED, AND MULCHED AS DIRECTED BY THE DEPARTMENT.
7. THE CONTRACTOR SHALL NOT POLLUTE ANY WETLANDS, STREAMS, RIVERS, OR WATERWAYS WITH FUELS, OILS, BITUMENS, CALCIUM CHLORIDE, ACIDS, INSECTICIDES, HERBICIDES, OR OTHER HARMFUL MATERIALS. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY, AND MUNICIPAL LAWS CONCERNING POLLUTION OF WETLANDS, WATERWAYS, RIVERS, AND/OR STREAMS.
8. ALL DEBRIS/WASTE WHICH THE CONTRACTOR GENERATES (E.G., LUMBER, PAPER) SHALL BE DISPOSED OFF-SITE AT THE CONTRACTOR'S OWN EXPENSE.

CONTRACTOR EROSION AND SEDIMENT CONTROL PLAN:

1. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, AN EROSION AND SEDIMENT CONTROL PLAN MEETING THE REQUIREMENTS OF THE SPDES GENERAL PERMIT GP-0-15-002, FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY. INFORMATION TO BE PROVIDED INCLUDES BUT IS NOT LIMITED TO:
   - SPECIFIC PRODUCTS TO BE USED.
   - SPECIFIC LOCATIONS AND ALIGNMENTS OF SILT FENCING, DRAINAGE SWALES, STRAW BALES, EROSION CONTROL BLANKETS, CONSTRUCTION ENTRANCES, AND OTHER PROPOSED FEATURES.
   - SPECIFIC SEQUENCING OF CONSTRUCTION OPERATIONS AND INSTALLATION OF CONTROL MEASURES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVALS (FROM REGULATORS AND THE DEPARTMENT) FOR THE SITE-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN.

SURVEY REQUIREMENTS:

1. THE STAKEOUT SURVEY SHALL PROCEED IMMEDIATELY FOLLOWING THE CONTRACTOR'S MOBILIZATION.
2. SURVEY WORK SHALL BE PERFORMED BY A STATE OF NEW YORK-LICENSED SURVEYOR WITH CURRENT REGISTRATION.
3. THE CONTRACTOR SHALL PERFORM, PREPARE, AND SUBMIT THE FOLLOWING SURVEYS, WHICH WILL BECOME THE SUPPLEMENTAL RECORD DRAWINGS OF THE WORK COMPLETED AS SPECIFIED:
   - PRECONSTRUCTION SURVEY OF THE SITE.
   - SOIL COVER SUBGRADE: THIS DRAWING SHALL BE SUBMITTED FOR THE DEPARTMENT'S REVIEW AND APPROVAL PRIOR TO PLACEMENT OF OVERLYING MATERIALS. THIS DRAWING MAY BE SUBMITTED INCREMENTALLY TO FACILITATE CONSTRUCTION.
   - GENERAL FILL LAYER (TOP ELEVATION).
   - TOPSOIL LAYER (TOP ELEVATION). THIS DRAWING SHALL INCLUDE THE RIPRAP, ALL OTHER FINAL ELEVATIONS, DRAINAGE SWALES, AND LIMITS OF TOPSOIL PLACEMENT AND SEEDING.
4. EACH OF THE SUPPLEMENTAL RECORD DRAWINGS SHALL INDICATE THE TOP AND BOTTOM ELEVATIONS OF THE LAYER, AS WELL AS THE TOTAL THICKNESS OF THE LAYER ON A 50-FOOT BY 50-FOOT GRID, AT SHARP BREAKS IN THE GRADE, AT THE TOES AND TOPS OF SLOPES AND AT OTHER UNIQUE POINTS THAT DO NOT LIE ON GRID POINTS. ONLY THE SUBGRADE ELEVATIONS SHALL BE SHOWN ON THE SUBGRADE DRAWING. EACH OF THESE DRAWINGS SHALL ALSO SHOW RECORD CONTOUR LINES AT THE TOP OF THE LAYER.
5. EACH RECORD DRAWING SHALL BE PREPARED ON A MINIMUM SIZE 22-INCH BY 34-INCH SHEET AND SHALL LOCATE ALL WORK REFERENCED TO APPROVED ESTABLISHED LIMITS. IN ADDITION, AN ELECTRONIC FILE COPY OF THE RECORD DRAWINGS SHALL ACCOMPANY THE HARDCOPY DRAWINGS.
6. ALL LOCATIONS SHALL BE REFERENCED TO THE HORIZONTAL COORDINATE SYSTEM SHOWN ON THE PLANS. THE GRID COORDINATE SYSTEM SHALL BE SHOWN ON ALL RECORD DRAWINGS. ELEVATIONS SHALL BE REFERENCED TO THE VERTICAL CONTROL ESTABLISHED FOR THE PROJECT.
7. SUPPLEMENTAL RECORD DRAWINGS SHALL BE STAMPED AND SIGNED BY A SURVEYOR LICENSED IN THE STATE OF NEW YORK, WITH CURRENT REGISTRATION.

PROJECT RECORD DRAWINGS:

1. THE CONTRACTOR SHALL CLEARLY AND NEATLY MARK UP IN RED INK ONE COMPLETE SET OF PAPER PRINTS OF THE DRAWINGS TO SHOW THE RECORD CONDITIONS. THESE RECORD MARKED PRINTS SHALL BE KEPT CURRENT AND AVAILABLE ON THE JOB SITE AT ALL TIMES. ALL CHANGES FROM THE CONTRACT PLANS WHICH ARE MADE IN THE WORK, OR ADDITIONAL INFORMATION WHICH MIGHT BE UNCOVERED OR PROVIDED IN THE COURSE OF CONSTRUCTION SHALL BE ACCURATELY AND NEATLY RECORDED AS THEY OCCUR BY MEANS OF DETAILS AND NOTES.
2. ALL PAPER PRINTS WILL BECOME THE PROPERTY OF THE DEPARTMENT UPON FINAL APPROVAL.
3. THE RECORD DRAWINGS SHALL BE JOINTLY INSPECTED FOR ACCURACY AND COMPLETENESS BY THE ENGINEER AND A RESPONSIBLE REPRESENTATIVE OF THE CONTRACTOR PRIOR TO SUBMISSION OF EACH MONTH'S PAY ESTIMATE.
4. THE RECORD DRAWINGS SHALL INCLUDE:
   - INSTALLATIONS OF ANY KIND OR DESCRIPTION KNOWN TO EXIST WITHIN THE CONSTRUCTION AREA. THE LOCATIONS SHALL INCLUDE DIMENSIONS TO PERMANENT FEATURES.
   - THE LOCATION AND DIMENSIONS OF ANY CHANGES WITHIN THE DESIGN FEATURES OF ANY KIND, OR DESCRIPTION KNOWN TO EXIST WITHIN THE CONSTRUCTION AREA.
   - CORRECT GRADE OR ALIGNMENT OF ROADS, STRUCTURES, UTILITIES, OR PROJECT COMPONENTS.
   - CORRECT ELEVATIONS.
   - CHANGES IN DETAILS OR DIMENSIONS.
   - THE TOPOGRAPHY AND GRADES OF ALL DRAINAGE STRUCTURES INSTALLED OR AFFECTED AS PART OF THE PROJECT CONSTRUCTION.
   - ADDITIONAL INFORMATION OBTAINED FROM WORKING DRAWINGS.
   - WHERE CONTRACT DOCUMENTS ALLOW OPTIONS, ONLY THE OPTION SELECTED FOR CONSTRUCTION SHALL BE SHOWN ON THE RECORD DRAWINGS.
   - ADDITIONAL WORK ORDERED BY THE ENGINEER OR DEPARTMENT.
6. THE CONTRACTOR SHALL PREPARE TWO (2) COPIES OF RECORD DRAWINGS AND THE SURVEYOR SHALL PREPARE TWO (2) COPIES OF SUPPLEMENTAL RECORD DRAWINGS. THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER WITHIN SEVEN (7) CALENDAR DAYS OF SUBSTANTIAL COMPLETION OF THE WORK FOR REVIEW AND APPROVAL BY THE ENGINEER.
   - IF UPON REVIEW, THE DRAWINGS ARE FOUND TO CONTAIN ERRORS AND/OR OMISSIONS, THEY SHALL BE RETURNED TO THE CONTRACTOR AND/OR SURVEYOR FOR CORRECTION.
   - THE CONTRACTOR AND/OR SURVEYOR SHALL COMPLETE THE CORRECTIONS AND RETURN TO THE ENGINEER WITHIN TEN (10) CALENDAR DAY FOR SUBSEQUENT REVIEW.
7. UPON APPROVAL OF THE RECORD DRAWINGS AND SUPPLEMENTAL RECORD DRAWINGS, THE CONTRACTOR SHALL SUPPLY SIX (6) COPES OF THE APPROVED RECORD DRAWINGS AND THE SURVEYOR SHALL PROVIDE SIX (6) COPIES OF THE SUPPLEMENTAL RECORD DRAWINGS.

CONTRACTOR SUBMITTALS:

1. THE ENGINEER'S REVIEW, COMMENTS AND EXCEPTIONS TAKEN, IF ANY, SHALL NOT EXTEND TO, NOR CONSTITUTE DIRECTIONS NOR APPROVAL OF, THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES OF CONSTRUCTION OR SAFETY PRECAUTIONS, THE CORRECTNESS OF WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. THE ENGINEER'S REVIEW WILL NOT BE INTENDED TO BE FOR THE PURPOSE OF DETERMINING THE ACCURACY OF OTHER MATTERS THAT MAY BE CONTAINED IN THE SUBMITTALS. WHEN THE REVIEW OF A SUBMITTAL RESULTS IN A NUMBER OF COMMENTS OR EXCEPTIONS TAKEN, THE DEPARTMENT DOES NOT WARRANT THAT THESE COMMENTS ARE INCLUSIVE OF ALL VARIATIONS, AS IT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND TO IDENTIFY EXPRESSLY ANY PROPOSED VARIATIONS.
3. THE REVIEW OF SUBMITTALS FROM THE CONTRACTOR SHALL NOT CONSTITUTE A WAIVER OF ANY OF THE REQUIREMENTS OF THIS CONTRACT, NOR SHALL THE DEPARTMENT BE COMPELLED TO ACCEPT ANY WORK, STRUCTURE, EQUIPMENT OR APPARATUS UNLESS IT PASSES ALL OF THE TESTS AND REQUIREMENTS OF THESE SPECIFICATIONS.
4. ALL CALCULATIONS SHALL BE STAMPED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER WITH CURRENT REGISTRATION AND SHALL BE SUBMITTED PRIOR TO STARTING FABRICATION OR INSTALLATION. THE ENGINEER WILL NOT BE RESPONSIBLE FOR THE CALCULATIONS OF SUCH PROFESSIONAL ENGINEERS.
5. GENERAL REVIEW: UNLESS OTHERWISE SPECIFIED, SUBMITTALS SHALL BE SUBMITTED AT LEAST 14 CALENDAR DAYS BEFORE THEY ARE REQUIRED FOR FABRICATION OF THE MATERIALS BY THE CONTRACTOR OR SUPPLIER, AND AT LEAST 14 CALENDAR DAYS BEFORE THE SUBMITTAL PROCEDURE OR PLAN IS INTENDED TO BE IMPLEMENTED. LATE OR UNTIMELY SUBMITTAL OF INFORMATION SHALL NOT BE CAUSE TO REDUCE THE ENGINEER'S REVIEW TIME, TO ACCEPT LOWER QUALITY, OR TO DELAY THE PROJECT COMPLETION.
6. LIST OF REQUIRED SUBMITTALS (INCLUDING, BUT NOT LIMITED TO):

A. DATA FROM THE PROPOSED MANUFACTURER/SUPPLIER OF THE FOLLOWING MATERIALS DEMONSTRATING THAT THE PROPOSED MATERIAL MEETS THE CONTRACT REQUIREMENTS:
   - GENERAL FILL
   - TOPSOIL
   - AGGREGATE MATERIALS AND RIPRAP
   - ALL TEMPORARY AND PERMANENT GEOSYNTHETIC MATERIALS, INCLUDING EROSION CONTROL MATERIALS
   - DRAINAGE STRUCTURES AND MATERIALS NOT PROVIDED BY THE CITY
   - SEED
   - MULCH

B. A WORK PLAN IDENTIFYING THE CONTRACTOR'S PROPOSED MEANS AND METHODS FOR PERFORMING THE FOLLOWING WORK:
   - STOCKPILES (LOCATION)
   - SITE ACCESS (HAUL ROUTES)
   - SITE SUBGRADE PREPARATION
   - FILLING AND GRADING
   - PLACEMENT OF ALL MATERIALS
   - ENVIRONMENTAL PROTECTION
   - SURVEY
   - DISPOSAL LOCATION OF EXCAVATED MATERIALS

C. THE FOLLOWING REQUIRED PLANS AND INFORMATION:
   - HEALTH AND SAFETY PLAN
   - EROSION AND SEDIMENT CONTROL PLAN
   - WORK PLAN
   - PROGRESS SCHEDULE
   - RECORD DRAWINGS AND SUPPLEMENTAL RECORD DRAWINGS

CONSTRUCTION PROGRESS SCHEDULE:

1. PREPARE AND SUBMIT PROGRESS SCHEDULES AND UPDATES.
2. WITHIN 10 DAYS OF THE NOTICE TO PROCEED, SUBMIT A PRELIMINARY CONSTRUCTION SCHEDULE WITH ALL PLANNED OPERATIONS.
3. SUBMIT UPDATED SCHEDULES AS NEEDED, OR AS REQUESTED BY THE DEPARTMENT.

PROGRESS MEETINGS:

1. THE ENGINEER WILL SCHEDULE AND ADMINISTER PRE-CONSTRUCTION MEETINGS, PROGRESS MEETINGS, AND OTHER MEETINGS REQUIRED DURING THE PROGRESS OF THE WORK. REPRESENTATIVES OF CONTRACTOR, SUBCONTRACTORS, AND SUPPLIERS SHALL ATTEND MEETINGS AND SHALL BE QUALIFIED AND AUTHORIZED TO ACT ON BEHALF OF THE ENTITY EACH REPRESENTS.
2. A SCHEDULE FOR REGULAR MEETINGS WILL BE ESTABLISHED AT THE PRE-CONSTRUCTION MEETING. MEETINGS WILL BE HELD AS PROGRESS OF THE WORK DICTATES.

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
SPECIFICATIONS
(1 OF 3)

Scale: N.T.S.

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:
G-002

Pg No: 3 of 14

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CLEARING:

1. THE CONTRACTOR SHALL STAKE OUT THE LIMITS OF CLEARING. CLEARING SHALL NOT PROCEED WITHOUT THE ENGINEER'S APPROVAL.
2. KEEP ROADS AND WALKS FREE OF DEBRIS AT ALL TIMES.
3. PROTECT EXISTING UTILITY LINES AND POLES, THAT ARE INDICATED TO REMAIN.
4. TREES, WETLANDS, AND OTHER VEGETATION TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY ALL CONSTRUCTION OPERATIONS BY ERECTING SUITABLE BARRIERS, GUARDS AND ENCLOSURES.
5. DO NOT OPERATE HEAVY EQUIPMENT OR STOCKPILE MATERIALS WITHIN THE BRANCH SPREAD OF EXISTING TREES. IMMEDIATELY REPAIR ANY DAMAGE TO EXISTING TREE CROWNS, TRUNKS, OR ROOT SYSTEMS.
6. CONDUCT THE CLEARING IN A MANNER THAT PREVENTS, TO THE EXTENT POSSIBLE, SOIL OR SOIL LIKE MATERIAL FROM BEING COLLECTED WITH CLEARED MATERIAL.
7. TRIM ONLY THOSE TREES AND OTHER VEGETATION ADJACENT TO CLEARED WORK AREAS AND NECESSARY TO CONDUCT THE REQUIRED WORK.
8. CONTAMINATED AREAS SHALL NOT BE GRUBBED. STUMPS, ROOTS, AND OTHER SUBSURFACE VEGETATION IN CONTAMINATED AREAS SHALL BE EXCAVATED AND HANDLED IN THE SAME MANNER AS CONTAMINATED SOILS OR SEDIMENTS.
9. MATERIALS CLEARED BY THE CONTRACTOR SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL NOT SEPARATELY GRUB THE ROOTS, ETC. ALL ROOTS, ETC. TO WHICH SIGNIFICANT QUANTITIES OF SOIL ADHERE SHALL BE EXCAVATED AND DISPOSED OF WITH THE EXCAVATED SOIL.

EXCAVATION:

1. THE EXTENT OF SOIL EXCAVATION AND HANDLING IS AS SPECIFIED AND SHOWN ON THE PLANS.
2. ALL EXISTING PIPES, WIRES, PROPERTY LINE MARKERS, AND OTHER STRUCTURES, WHICH THE ENGINEER DECIDES MUST BE PRESERVED IN PLACE WITHOUT BEING TEMPORARILY OR PERMANENTLY RELOCATED SHALL BE CAREFULLY SUPPORTED AND PROTECTED FROM DAMAGE BY THE CONTRACTOR. REPAIR TO PIPES, WIRES, OR CABLES SHALL BE PERFORMED BY THE CONTRACTOR AT NO EXPENSE TO THE DEPARTMENT.
3. THE CONTRACTOR SHALL KEEP MATERIALS CLASSIFIED FOR DIFFERENT TYPES OF DISPOSAL SEGREGATED. EXCAVATION AND STOCKPILING OPERATIONS FOR THE DIFFERENT MATERIALS MUST NOT BE MIXED.
4. THE CONTRACTOR SHALL EMPLOY DUST AND ODOR CONTROL METHODS DURING HANDLING ACTIVITIES AS NECESSARY, IN ACCORDANCE WITH THE HEALTH AND SAFETY PLAN AND THE RELEVANT SECTIONS OF THE ENVIRONMENTAL PROTECTION PLAN. THE CONTRACTOR SHALL USE WATER OR WATER AMENDED WITH AN APPROPRIATE SURFACTANT, USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR OTHER MEANS TO CONTROL DUST AND ODORS ACCEPTABLE TO THE ENGINEER. NO VISIBLE DUST OR SIGNIFICANT ODORS ARE PERMITTED BEYOND THE LIMITS OF THE EXCLUSION ZONE AS A RESULT OF EXCAVATION ACTIVITIES, AS DETERMINED BY THE ENGINEER.
5. ANY EXCAVATIONS THAT ARE LEFT UNATTENDED FOR ANY PERIOD OF TIME SHALL BE SECURELY FENCED WITH ORANGE SNOW FENCE AND POSTED WITH BARRICADE TAPE TO PREVENT UNAUTHORIZED ENTRY INTO THE EXCAVATION. ALL TEMPORARY FENCING IS TO BE REMOVED AND PROPERLY DISPOSED AT THE COMPLETION OF THE CONTRACT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAMPLING AND ANALYSES AS MAY BE REQUIRED BY DISPOSAL FACILITIES FOR DISPOSAL OF SOILS, SEDIMENTS, AND OTHER MATERIAL UNDER THIS CONTRACT. ALL SAMPLING WILL BE CONDUCTED WITH THE ENGINEER PRESENT.
7. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL EXCAVATION WORK IN ACCORDANCE WITH ALL APPLICABLE LAWS INCLUDING, BUT NOT LIMITED TO, OSHA EXCAVATION AND TRENCHING SAFETY REGULATIONS (29 CFR 1926.650).
8. EXCAVATE TO CONTOURS, ELEVATIONS, AND DIMENSIONS INDICATED. CUT TRENCHES SUFFICIENTLY WIDE TO ENABLE INSTALLATION OF UTILITIES AND ALLOW INSPECTIONS. EXCAVATE SOIL DISTURBED OR WEAKENED BY CONTRACTOR'S OPERATIONS, SOILS SOFTENED OR MADE UNSUITABLE FOR SUBSEQUENT CONSTRUCTION DUE TO EXPOSURE OF WEATHER.

OFF-SITE TRANSPORTATION AND DISPOSAL:

1. THE CONTRACTOR SHALL PROPERLY TRANSPORT AND DISPOSE OF ALL ITEMS, INCLUDING SOLID AND LIQUID HAZARDOUS AND NONHAZARDOUS WASTES REMOVED FROM THE SITE, TO APPROPRIATE DISPOSAL FACILITIES. THIS INCLUDES EXISTING WASTES AS WELL AS THE WASTES GENERATED BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL COMPLY WITH (AND DOCUMENT) ALL SAMPLING, ANALYSES, TRANSPORTATION, AND DISPOSAL REQUIREMENTS OF THE FEDERAL, STATE, AND LOCAL GOVERNMENTS.
3. THE CONTRACTOR SHALL SUBMIT COPIES OF TRANSPORTATION PERMITS FOR ALL PROPOSED DISPOSAL FACILITIES AND VEHICLES.
4. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, INFORMATION REGARDING PROPOSED FACILITIES FOR DISPOSAL OF EACH TYPE OF WASTE. ALL PROPOSED FACILITIES MUST BE PERMITTED. INFORMATION SUBMITTED SHALL INCLUDE:
   - NAME.
   - DEPARTMENT.
   - TYPE OF FACILITY/PERMIT.
   - CONTACT PERSON, PHONE NUMBER, AND LOCATION.
   - HOURS OF OPERATION.
   - COPIES OF PERMITS.
5. MATERIALS AND EQUIPMENT:
   - ALL EQUIPMENT SUPPLIED SHALL BE IN GOOD WORKING CONDITION. EQUIPMENT AND MACHINERY DELIVERED TO THE SITE, INCLUDING HAUL TRUCKS, THAT HAVE VISIBLE OIL OR HYDRAULIC FLUID LEAKS, WILL NOT BE ALLOWED ON SITE UNTIL SATISFACTORILY REPAIRED. THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP OF ANY OIL OR HYDRAULIC FLUID SPILLS AT THE CONTRACTOR'S EXPENSE.
   - THE CONTRACTOR SHALL NOT ALLOW SOIL TO BE TRACKED OFF-SITE AT ANY TIME DURING THE PROJECT. VISIBLE SOIL TRACKS ON STREETS WILL NOT BE ALLOWED. THE CONTRACTOR SHALL TAKE SUFFICIENT PRECAUTIONS TO PREVENT LOOSE SOILS FROM ADHERING TO TIRE TREADS, WHEEL WELLS, ETC. ANY LOOSE SOIL SPREAD SHALL BE CLEANED UP.
   - TRUCKS USED FOR TRANSPORTATION OF MATERIAL FOR OFF-SITE DISPOSAL SHALL BE WATERTIGHT AND PERMITTED PURSUANT TO 6 NYCRR PART 364. ALL TRUCKS SHALL BE COVERED PRIOR TO LEAVING THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST ASSOCIATED WITH SAMPLING AND ANALYSES, ETC. AS MAY BE REQUIRED BY THE DISPOSAL FACILITY.
7. THE CONTRACTOR SHALL COMPLETE ALL REQUIRED MANIFEST FORMS AND BILL OF LOADING FORMS FOR THE DEPARTMENT FOR PROPER TRANSPORTATION AND DISPOSAL OF MATERIALS OFF-SITE. CONTRACTOR SHALL SIGN MANIFESTS AS AGENT OF NYSDEC.

SITE/SUBGRADE PREPARATION:

1. SUBGRADE IS DEFINED AS THE EXPOSED SURFACE ON WHICH FILL OR OTHER MATERIAL WILL BE PLACED. SUBGRADE SHALL BE SHAPED TO LINE, GRADE, AND CROSS-SECTION AS SPECIFIED AND REQUIRED.
2. LIMITS OF CLEARING SHALL BE VERIFIED IN THE FIELD AND APPROVED BY THE ENGINEER.
3. TREES, BRUSH, EXPOSED ROOTS, AND OTHER VEGETATION IN AREAS TO BE CLEARED, SHALL BE CUT OFF FLUSH WITH THE EXISTING GROUND SURFACE OR TO THE DEPTH OF STRIPPING, WHICHEVER IS DEEPER.

FILLING AND GRADING:

1. PRIOR TO ANY GRADING, THE CONTRACTOR SHALL SURVEY AND STAKEOUT THE SITE FOR FIELD APPROVAL BY THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPERVISION, LABOR, EQUIPMENT, AND MATERIALS AS NEEDED TO PERFORM THE SPECIFIED WORK, INCLUDING BUT NOT LIMITED TO, EXCAVATING, LOADING, HAULING, AND COMPACTING THE MATERIALS FROM APPROVED BORROW AND STOCKPILE AREAS TO THE SOIL COVER/FILL PLACEMENT LOCATIONS.
3. THE CONTRACTOR WILL NOT BE PERMITTED TO BRING ON SITE ANY PROPOSED OFF-SITE MATERIALS UNTIL SUBMITTALS REQUIRED FOR THOSE MATERIALS ARE APPROVED.
4. THE CONTRACTOR SHALL DEVELOP AND SUBMIT FOR APPROVAL A WORK PLAN DETAILING THE FOLLOWING:
   - PROPOSED STOCKPILE LOCATIONS FOR EACH MATERIAL TYPE.
   - EQUIPMENT PROPOSED FOR EACH WORK OPERATION.
   - ON-SITE TRAFFIC PATTERNS.
   - MATERIAL PLACEMENT DIRECTIONS/SEQUENCING.
   - SPECIAL MEASURES TO ADDRESS RISK ASSOCIATED WITH WORKING NEAR STEEP SLOPES ABOVE WATER.
5. THE CONTRACTOR SHALL PROVIDE THE DEPARTMENT WITH COPIES OF ALL WAYBILLS AND DELIVERY TICKETS OF ALL MATERIALS USED IN FILLS.
6. FILL SHALL BE PLACED AS REQUIRED ON APPROVED SUBGRADE TO CONSTRUCT THE SOIL COVER TO ACHIEVE REQUIRED THICKNESSES, LINES, GRADES, AND/OR ELEVATIONS INDICATED BY THE CONTRACT DRAWINGS.
7. FILL MATERIALS SHALL NOT BE PLACED ON SURFACES THAT ARE FROZEN OR CONTAIN FROST.
8. THE CONTRACTOR SHALL ENSURE THAT FINISHED GRADES PROMOTE POSITIVE DRAINAGE.
9. GENERAL FILL AND TOPSOIL SHALL BE PLACED AS SHOWN ON THE PLANS AND AS REQUIRED TO CONSTRUCT THE SOIL COVER, SURFACE WATER DRAINAGE STRUCTURES, AND OTHER DESIGN FEATURES.
10. THE FILL MATERIAL SHALL BE PLACED IN MAXIMUM 12-INCH (MEASURED AFTER COMPACTION) LIFTS, SPREAD IN LAYERS OF UNIFORM THICKNESS BY BULLDOZERS OR OTHER APPROVED MEANS, AND COMPACTED BY APPROVED COMPACTION EQUIPMENT.

GENERAL FILL:

1. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE RESULTS FOR ALL REQUIRED TESTING.
2. GENERAL FILL AND TOPSOIL FOR USE AS SOIL COVER IN THE INCINERATOR AREA SHALL MEET REQUIREMENTS OF THE PUBLIC HEALTH SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE AS SET IN TABLE 375-6.8(b) IN 6 NYCRR PART 375.
3. GENERAL FILL AND TOPSOIL FOR USE AS SOIL COVER IN THE SMOKES CREEK CORRIDOR SHALL MEET REQUIREMENTS OF THE PUBLIC HEALTH SOIL CLEANUP OBJECTIVES FOR UNRESTRICTED USE AS SET IN TABLE 375-6.8(b) IN 6 NYCRR PART 375.
4. ANALYTICAL CRITERIA: THE SOURCE OF THE SOIL WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DOCUMENTATION AS REQUESTED THAT DEMONSTRATES THAT PROPOSED SOIL (INCLUDING TOPSOIL) MEETS THE FOLLOWING REQUIREMENTS.
   - ALL SOIL IMPORTED TO THE SITE MUST BE TESTED FOR 1,4-DIOXANE AND PFAS CONTAMINATION IN GENERAL CONFORMANCE WITH NYSDEC DER-10, SECTION 5.4(E). SOIL SAMPLES MUST BE ANALYZED FOR 1,4-DIOXANE USING EPA METHOD 8270 AS WELL AS THE FULL LIST OF PFAS COMPOUNDS (CURRENTLY 21) USING EPA METHOD 537.1 (MODIFIED).
   - FOR 1,4-DIOXANE, SOIL EXCEEDING THE UNRESTRICTED SCO OF 0.1 PPM MUST BE REJECTED PER NYSDEC DER 10: APPENDIX 5 – ALLOWABLE CONSTITUENT LEVELS FOR IMPORTED FILL OR SOIL, SUBDIVISION 5.4(E).
   - IF PFOA OR PFOS IS DETECTED IN ANY SAMPLE AT OR ABOVE 1 PPB, THEN A SOIL SAMPLE MUST BE TESTED BY THE SYNTHETIC PRECIPITATION LEACHING PROCEDURE (SPLP) AND THE LEACHATE ANALYZED. IF THE SPLP RESULTS EXCEED 70 PPT COMBINED PFOA/S, THEN THE SOURCE OF BACKFILL MUST BE REJECTED. DUE TO LABORATORY BACKLOGS BEING EXPERIENCED, CONTRACTORS ARE HIGHLY ENCOURAGED TO SAMPLE CONCURRENTLY FOR BOTH PFAS IN SOIL AND IN THE SPLP LEACHATE TO MINIMIZE PROJECT DELAYS. CATEGORY B DELIVERABLES ARE REQUIRED FOR PFAS ANALYSIS.
5. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH COPIES OF ALL WAYBILLS AND DELIVERY TICKETS.
6. GENERAL FILL FROM OFF-SITE BORROW SOURCES SHALL BE FREE FROM ORGANIC OR OTHER PERISHABLE MATERIAL, ROOTS, FROZEN MATERIAL, STONES, OR OTHER MATERIALS LARGER THAN WHAT IS SPECIFIED IN THIS SECTION IN ANY DIMENSION, DEBRIS, CONTAMINANTS, AND ANY OTHER OBJECTIONABLE MATERIAL. MATERIALS WILL NOT BE PERMITTED FOR PLACEMENT IF THEY APPEAR TOO WET TO EFFECTIVELY COMPACT.
7. GENERAL FILL SHALL CONFORM TO THE FOLLOWING:
   - MAXIMUM PARTICLE SIZE: THE MAXIMUM PARTICLE SIZE SHALL BE THREE (3) INCHES IN ITS GREATEST DIMENSION.
   - SATISFACTORY MATERIAL FOR GENERAL FILL SHALL BE ANY NATURAL MATERIAL CLASSIFIED BY ASTM D-2487 AS SC, SM, ML, AND CL.
   - THE CONTRACTOR SHALL PERFORM PRECONSTRUCTION TESTING TO PROVE THAT PROPOSED OFF-SITE MATERIALS AND SOURCES CAN MEET THE MATERIAL REQUIREMENTS NOTED ABOVE PER THE LABORATORY TEST PROCEDURES SHOWN IN TABLE 1.
8. GENERAL FILL SHALL BE PLACED AS INDICATED BY THE PLANS AND AS REQUIRED TO CONSTRUCT THE SOIL COVER, SURFACE WATER DRAINAGE STRUCTURES, AND OTHER DESIGN FEATURES TO ACHIEVE REQUIRED LINES, GRADES, POSITIVE DRAINAGE, AND ELEVATIONS SHOWN ON THE PLANS.
9. GENERAL FILL SHALL BE APPROVED BY THE DEPARTMENT PRIOR TO PLANNED PLACEMENT. THE FILL MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 12 INCHES AFTER COMPACTION AND SPREAD IN LAYERS OF UNIFORM THICKNESS BY BULLDOZERS OR OTHER APPROVED MEANS.
10. GENERAL FILL SHALL BE COMPACTED WITH A MINIMUM OF 2 PASSES WITH A BULLDOZER AFTER PLACEMENT, AND TO AN UNYIELDING STATE.

TABLE 1

REQUIRED PHYSICAL TESTING FOR OFF-SITE FILL MATERIALS

TEST	TEST METHOD	FREQUENCY
PARTICLE SIZE (INCLUDING HYDROMETER)	ASTM D-422	1 TEST PER 2,5000 CY OF MATERIAL FROM EACH SOURCE
ATTERBERG LIMITS	ASTM D-4318	
USCS CLASSIFICATION	ASTM D-2487	

AGGREGATE MATERIALS AND RIP RAP:

1. THE CONTRACTOR SHALL SUBMIT NYSDOT SOURCE APPROVED MATERIAL CERTIFICATES OF COMPLIANCE WITH REFERENCE STANDARDS FOR EACH OF THE FOLLOWING AGGREGATE MATERIALS FOR PLACEMENT AT THE LOCATIONS SHOWN ON THESE PLANS:
   - BEDDING STONE – CONFORMING TO NYSDOTSS SECTION 703-02, TABLE 703-4 SIZE DESIGNATION NO. 1.
   - SUBBASE – CONFORMING TO NYSDOTSS SECTION 304, SUBBASE TYPE 2. BLAST FURNACE SLAG WILL NOT BE PERMITTED.
   - GRAVEL – CONFORMING TO NYSDOTSS SECTION 667-2, LOCAL ROAD GRAVEL SURFACE COURSE, TYPE A.
2. RIP RAP SHALL CONFORM TO THE REQUIREMENTS OF NYSDOTSS ITEM 620.03 (LIGHT STONE FILLING), AND SHALL BE SOUND, DURABLE ROCK, ANGULAR IN SHAPE, AND OF SUITABLE QUALITY TO ENSURE THE PERMANENCE IN THE CONDITION IN WHICH IT IS TO BE USED. ROUNDED STONES, BOULDERS, SANDSTONE, OR SIMILAR SOFT STONE WILL NOT BE ACCEPTABLE. MATERIAL SHALL BE FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATERIALS, AND SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.
3. SUBBASE SHALL BE PLACED IN UNIFORM LIFTS AND COMPACTED THOROUGHLY TO AN UNYIELDING STATE WITH SUITABLE APPROVED EQUIPMENT.
4. BEDDING STONE SHALL BE PLACED IN A UNIFORM 6-INCH (MIN.) LAYER.

ASPHALT PAVEMENT:

1. THE FURNISHING, HANDLING AND COMPACTION OF ALL BITUMINOUS MATERIALS SHALL BE IN ACCORDANCE WITH THE NYSDOT STANDARDS.
2. ASPHALT TACK COAT SHALL BE APPLIED AT THE RECOMMENDED RATE BETWEEN ALL ASPHALT PAVING COURSES. IN AREAS WHERE BINDER COURSE IS TO BE APPLIED TO EXISTING PAVEMENT, THE CONTRACTOR SHALL APPLY ASPHALT TACK COAT TO THE EXISTING PAVEMENT PRIOR TO PLACING THE BINDER COURSE.
3. CONSTRUCT ASPHALT PAVEMENT IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATIONS SECTION 400, HOT MIX ASPHALT, AND THE CONTRACT DRAWINGS.
4. ALL BITUMINOUS ASPHALT MATERIALS SHALL CONFORM TO NYSDOT STANDARD SPECIFICATIONS SECTION 400 HOT MIX ASPHALT:
   - TOP COURSE: NYSDOT, Table 403-1, Type 7.
   - BINDER COURSE: NYSDOT, Table 403-1, Type 3.
   - BASE COURSE: NYSDOT, Table 403-1, Type 1.
5. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE ASPHALT MIX DESIGN.
6. DO NOT PLACE ASPHALT CONCRETE ON WET SURFACES, OR WHEN WEATHER CONDITIONS OTHERWISE PREVENT THE PROPER HANDLING OR FINISHING OF BITUMINOUS MIXTURES.

DRAINAGE STRUCTURES AND PIPING:

1. MATERIAL:
   - CONTRACTOR SHALL SUPPLY THE FOLLOWING, AS REQUIRED:
     - YARD DRAINS: NYOPLAST 2FT X 2FT STRUCTURE WITH H-20 BICYCLE SAFE GRATE OR APPROVED EQUAL.
     - DRAINAGE PIPE: 4"x100' COREX DRAIN PIPE, PERFORATED, BY ADS OR APPROVED EQUAL.
     - DRAINAGE CROSS PIPE: 6" ADS N-12 DUAL WALL – HDPE PIPE OR APPROVED EQUAL.
   - CATCH BASIN, GRATE, AND PIPE FOR CURVE AREA RESTORATION WILL BE PROVIDED BY THE CITY OF LACKAWANNA.
2. INSTALLATION:
   - THE CONTRACTOR SHALL PLACE, SHAPE, AND COMPACT ALL BEDDING MATERIAL TO RECEIVE THE MATERIAL TO BE SUPPORTED. THE CONTRACTOR SHALL INSTALL MATERIALS TO BEAR ON THE BEDDING MATERIAL ALONG THE ENTIRE LENGTH OF THE PIPE.
   - THE CONTRACTOR SHALL INSTALL PIPING IN ACCORDANCE WITH ASTM D-2321 AND THE CORRUGATED PE PIPE ASSOCIATION'S "RECOMMENDED INSTALLATION PRACTICES FOR CORRUGATED PE PIPE AND FITTINGS," BEGINNING AT THE LOW POINT, TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. FOR CULVERT, BELL ENDS OF PIPING SHALL FACE UPSTREAM. INSTALL GASKETS, SEALS, SLEEVES, COUPLINGS, END SECTIONS, AND MISCELLANEOUS FITTINGS ACCORDING TO THE MANUFACTURERS' WRITTEN INSTRUCTIONS.
   - PLASTIC PIPE, GRATES, AND FITTINGS SHALL BE INSTALLED AT THE LOCATIONS, LINES, AND GRADES SHOWN ON THE PLANS. ALL STORM DRAINAGE PIPE AND APPURTENANT STRUCTURES SHALL BE INSTALLED TO THE REQUIRED GRADES AND INVERTS PLUS OR MINUS ONE (1) TENTH OF ONE (1) FOOT (±0.1 FT.).

GEOTEXTILE FABRIC:

1. FIBERS USED IN THE MANUFACTURE OF GEOTEXTILES SHALL CONSIST OF LONG CHAIN SYNTHETIC POLYMERS, COMPOSED OF AT LEAST 85% BY WEIGHT POLYOLAFINS, POLYESTERS, OR POLYAMIDES.
2. GEOTEXTILES WITH LOW RESISTANCE TO ULTRAVIOLET DEGRADATION (MORE THAN 30% STRENGTH LOSS AT 500 HOURS EXPOSURE ASTM D-4355) SHALL NOT BE EXPOSED TO SUNLIGHT FOR MORE THAN 7 DAYS. GEOTEXTILES WITH HIGHER RESISTANCE TO ULTRAVIOLET DEGRADATION SHALL NOT BE EXPOSED FOR MORE THAN 30 DAYS.
3. GEOTEXTILE SEPARATION FABRIC SHALL BE MIRAFI 1100N OR APPROVED EQUAL.
4. THE GEOTEXTILE SEPARATION FABRIC SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
   - GRAB STRENGTH (LBS.) 250 (ASTM D-4632)
   - ELONGATION (%) 50 (ASTM D-4632)
   - PUNCTURE STRENGTH (LBS.) 155 (ASTM D-4833)
   - BURST STRENGTH (PSI) 500 (ASTM D-3786)
   - TRAPEZOID TEAR (LBS.) 100 (ASTM D-435)
5. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL LARGE STONES, ROOTS, AND DEBRIS AND EXCAVATE AND SHAPE THE SITE TO THE LINES AND GRADES AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FILL DEPRESSIONS OR HOLES TO PERMIT CLOSE CONTACT BETWEEN THE GEOTEXTILE AND THE PREPARED SURFACE.
6. PLACE THE GEOTEXTILE IN CLOSE CONTACT WITH THE SOIL, ELIMINATING FOLDS OR EXCESSIVE WRINKLES. THE CONTRACTOR SHALL NOT DAMAGE THE GEOTEXTILE DURING ANY CONSTRUCTION ACTIVITY.
7. THE GEOTEXTILE SHALL BE JOINED BY OVERLAPPING OR SEWING. THE MINIMUM OVERLAP DISTANCE IN THE TRANSVERSE OR LONGITUDINAL DIRECTION IS 2 FEET., EXCEPT IN UNDERWATER INSTALLATIONS WHERE THE MINIMUM OVERLAP IS 3 FEET. SEWN SEAMS ARE ALLOWED IF THE OVERLAP IN THE TRANSVERSE OR LONGITUDINAL DIRECTION IS AT LEAST 6 INCHES.
8. STONE FILLING SHALL NOT BE DROPPED ONTO THE GEOTEXTILE FROM A HEIGHT OF MORE THAN 1 FOOT. ANY GEOTEXTILE DAMAGED DURING PLACEMENT SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
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Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

SPECIFICATIONS
(2 OF 3)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

G-003

Pg No: 4 of 14

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ROLLED EROSION CONTROL PRODUCT:

1. THE ROLLED EROSION CONTROL PRODUCT (RECP), SHALL BE:
   - CURLEX NET FREE, AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, ARLINGTON TX.
   - BIONET C125N, AS MANUFACTURED BY NORTH AMERICAN GREEN, POSEYVILLE, IN.
   - APPROVED EQUAL.
2. RECP'S WITH POLYNETTING, INCLUDING BIODEGRADABLE/PHOTODEGRADABLE NETTING, WILL NOT BE ACCEPTED.
3. THE SELECTED RECP SHALL MEET THE STANDARDS SET FORTH BY THE EROSION CONTROL TECHNOLOGY COUNCIL WHERE NATURAL VEGETATION WILL PROVIDE PERMANENT EROSION CONTROL.
4. THE CONTRACTOR SHALL INSTALL THE RECP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
5. ROLLED EROSION CONTROL PRODUCT (RECP) SHALL BE INSTALLED IN ALL SLOPED AREAS OF THE SITE (SLOPE STEEPER THAN 25%) THAT ARE TO BE VEGETATED.
6. THE CONTRACTOR SHALL CLEAR THE SITE OF ALL LARGE STONES, ROOTS, AND DEBRIS AND EXCAVATE AND SHAPE THE SITE TO THE LINES AND GRADES AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL FILL DEPRESSIONS OR HOLES TO PERMIT CLOSE CONTACT BETWEEN THE RECP AND THE PREPARED SURFACE.
7. IN WATERWAY SLOPE APPLICATIONS A 2" OVERLAP SHALL BE APPLIED DURING THE INSTALLATION OF MULTIPLE BLANKETS. THE OVERLAPPING BLANKETS SHALL BE SECURED WITH A ROW OF STAPLES OR STAKES.
8. THE CONTRACTOR SHALL FASTEN THE RECP WITH STAPLES OF APPROPRIATE SIZE AND SPACING AS SPECIFIED BY THE MANUFACTURER.

TOPSOIL:

1. MATERIAL:
   - ORGANICS: TOPSOIL SHALL HAVE AT LEAST 6 PERCENT BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL AND NO GREATER THAN 20 PERCENT.
   - TOPSOIL SHALL HAVE NO LESS THAN 20 PERCENT FINE TEXTURED MATERIALS (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15 PERCENT CLAY.
   - TOPSOIL TREATED WITH SOIL STERILANTS OR HERBICIDES SHALL NOT BE USED.
   - TOPSOIL SHALL BE FREE OF STONES OVER 1 ½ INCHES IN DIAMETER, TRASH, NOXIOUS WEEDS, AND SHALL HAVE LESS THAN 10 PERCENT GRAVEL BY WEIGHT.
   - TOPSOIL CONTAINING SOLUBLE SALTS GREATER THAN 500 PPM WILL NOT BE PERMITTED.
   - TOPSOIL MAY BE MANUFACTURED AS A MIXTURE OF A MINERAL COMPONENT AND ORGANIC MATERIAL SUCH AS COMPOST.
   - ANALYTICAL CRITERIA: THE SOURCE OF THE TOPSOIL WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH DOCUMENTATION AS REQUESTED THAT DEMONSTRATES THAT PROPOSED SOURCE(S) OF TOPSOIL ARE FREE FROM CONTAMINATION AND MEET THE ANALYTICAL CRITERIA SPECIFIED IN SECTION "GENERAL FILL."
2. SITE PREPARATION:
   - AS NEEDED, INSTALL EROSION AND SEDIMENT CONTROL STABILIZING MEASURES SUCH AS DIVERSIONS, CHANNELS, SEDIMENT TRAPS, AND STABILIZING MEASURES, OR MAINTAIN THOSE ALREADY INSTALLED.
   - COMPLETE ROUGH GRADING AND FINAL GRADE, ALLOWING FOR REQUIRED DEPTH OF TOPSOIL TO BE ADDED.
   - SCARIFY ALL COMPACT, SLOWLY PERMEABLE, MEDIUM AND FINE TEXTURED SUBSOIL AREAS. SCARIFY AT APPROXIMATELY RIGHT ANGLES TO THE SLOPE DIRECTION IN SOIL AREAS THAT ARE STEEPER THAN 5 PERCENT. AREAS THAT HAVE BEEN OVERLY COMPACTED SHALL BE DECOMPACTED IN ACCORDANCE WITH THE SOIL RESTORATION STANDARD.
   - REMOVE REFUSE, WOODY PLANT PARTS, STONES OVER 3 INCHES IN DIAMETER, AND OTHER LITTER.
3. APPLICATION AND GRADING:
   - TOPSOIL SHALL BE DISTRIBUTED TO A UNIFORM DEPTH OVER THE AREA. IT SHALL NOT BE PLACED WHEN IT IS PARTLY FROZEN, MUDDY, OR ON FROZEN SLOPES, ICE, SNOW, OR STANDING WATER PUDDLES.
   - TOPSOIL PLACED AND GRADED ON SLOPES STEEPER THAN 5 PERCENT SHALL BE PROMPTLY FERTILIZED, SEEDED, MULCHED, AND STABILIZED BY "TRACKING" WITH SUITABLE EQUIPMENT.
   - APPLY TOPSOIL TO A UNIFORM 4–INCH DEPTH AFTER GRADING.

GEOGRID:

1. BIAXIAL GEOGRIDS SHALL BE TENSAR BX–1300 OR APPROVED EQUAL.
2. GEOGRID SHALL BE INSTALLED IN ACCORDANCE WITH PUBLISHED INSTALLATION GUIDELINES OF THE GEOGRID MANUFACTURER, MEETING GENERALLY ACCEPTED STANDARDS OF THAT INDUSTRY.

SEED AND MULCH:

1. ALL DISTURBED AREAS SHALL BE STABILIZED WITH TOPSOIL AND PERMANENT OR TEMPORARY SEEDING AS SPECIFIED BELOW.
2. TOPSOIL PREPARATION:
   - INSTALL NEEDED WATER AND EROSION CONTROL MEASURES AND BRING AREA TO BE SEEDED TO DESIRED GRADES.
   - SCARIFY IF COMPACTED. REMOVE DEBRIS AND OBSTACLES SUCH AS ROCKS AND ROOTS FROM SURFACE.
   - LIME TO PH OF 6.5.
   - FERTILIZE AS PER SOIL TEST OR, IF SOIL MUST BE FERTILIZED BEFORE RESULTS OF A SOIL TEST CAN BE OBTAINED, APPLY COMMERCIAL FERTILIZER AT 850 LBS. OF 5–5–10 OR EQUIVALENT PER ACRE (20 LBS./1,000 SQ. FT.).
   - INCORPORATE LIME AND FERTILIZER IN TOP 2–4 INCHES OF TOPSOIL.
3. PLANTING:
   - USE A CULTIPACKER TYPE SEEDER IF POSSIBLE.
   - SEED TO A DEPTH OF 1/8 TO 1/4 INCH.
   - IF SEED IS TO BE BROADCAST, CULTIPACK OR ROLL AFTER SEEDING.
   - IF HYDROSEEDED, LIME AND FERTILIZER MAY BE APPLIED THROUGH THE SEEDER, AND ROLLING IS NOT PRACTICAL.
4. MULCHING:
   - MULCH ALL SEEDINGS WITH NETLESS ROLLED EROSION CONTROL PRODUCT, OR AS SPECIFIED IN NYSSSESC.
5. SEED MIXTURE:

TABLE 2
PERMANENT SEED MIX

MIXTURE	LBS./ACRE	LBS./1000 SQ. FT.
CREEPING RED FESCUE	20	0.45
CHEWINGS FESCUE COMMON	20	0.45
PERENNIAL RYEGRASS	5	0.1
RED CLOVER COMMON	10	0.45
TOTAL	55	1.45

6. TIME OF SEEDING:
   - FALL PLANTING IS PREFERRED. SEED AFTER AUGUST 15. IF SPRING PLANTING IS REQUIRED, PLANT UNTIL MAY 15.
   - IF SEEDING IS DONE BETWEEN MAY 15 AND AUGUST 15, IRRIGATION MAY BE NECESSARY TO ENSURE A SUCCESSFUL SEEDING.
   - THE CONTRACTOR SHALL WATER AS NECESSARY TO ESTABLISH GROWTH, AT NO ADDITIONAL COST TO THE DEPARTMENT.
   - ALL DISTURBED OR NEWLY–GRADED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION IF PERMANENT SEEDINGS ARE NOT SCHEDULED TO OCCUR FOR 14 DAYS OR MORE. TEMPORARY SEEDINGS SHALL BE MADE WITHIN 24 HOURS OF CONSTRUCTION OR DISTURBANCE. IF NOT, THE SOIL SHALL BE SCARIFIED PRIOR TO SEEDING.

HANDLING AND DISPOSAL OF JAPANESE KNOTWEED:

1. THE NEW YORK STATE LISTED INVASIVE SPECIES JAPANESE KNOTWEED (FALLOPIA JAPONICA) IS PRESENT WITHIN THE PROJECT LIMITS. THESE ARE EXTREMELY PERSISTENT AND INVASIVE PLANTS. EVERY POSSIBLE EFFORT SHALL BE MADE TO AVOID CONTACT WITH AND DISTURBANCE OF THESE INVASIVE PLANT SPECIES EXCEPT AT THE LOCATION INDICATED IN THE CONTRACT DOCUMENTS AND AS OTHERWISE APPROVED. THE CONTRACTOR SHALL CONCENTRATE ON MINIMIZING THE POTENTIAL FOR SPREADING THIS SPECIES.
2. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL CONSTRUCTION EQUIPMENT AND VEHICLES OPERATING IN AREAS INFESTED WITH AN IDENTIFIED INVASIVE SPECIES PRIOR TO MOVING TO NON–INFESTED AREAS.
3. THE CONTRACTOR SHALL NOT MIX EXCAVATION SPOILS THAT CONTAIN REMNANTS OF INVASIVE PLANT SPECIES PARTS (STEMS, ROOTS, FLOWERS, ETC.) WITH OTHER EXCAVATED MATERIALS. THE CONTRACTOR SHALL NOT SPOIL MATERIAL CONTAINING REMNANTS OF THE INVASIVE SPECIES PLANT PARTS OFF SITE.
4. STANDS OF INVASIVE PLANT SPECIES THAT REQUIRE EXCAVATION SHALL BE EXCAVATED TO THE DEPTHS INDICATED IN THE CONTRACT DOCUMENTS. STANDS OF INVASIVE PLANT SPECIES THAT REQUIRE CLEARING SHALL BE CLEARED AS INDICATED IN THE CONTRACT DOCUMENTS.
5. INVASIVE SPECIES "SPOILS" INCLUDING BUT NOT LIMITED TO ROOTS, STEMS, LEAVES, SHOOTS AND INVASIVE–SPECIES–INFESTED SOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF AS DESCRIBED BELOW.
6. IF EXCAVATION BEGINS DURING THE PLANT'S DORMANCY OR BEFORE THE INVASIVE PLANT SPECIES REACHES A HEIGHT OF 150 MM (6 IN.) THE CONTRACTOR SHALL EXCAVATE THE INVASIVE PLANT SPECIES MATERIAL.
7. IF EXCAVATION DOES NOT BEGIN BEFORE THE PLANTS REACH A HEIGHT OF 150 MM (6 IN.). THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING TREATMENT SCHEDULE:
   - THE CONTRACTOR SHALL CUT THE INVASIVE SPECIES TO A HEIGHT OF 150 MM (6 IN.).
   - ALL CUT INVASIVE PLANT SPECIES PARTS SHALL BE REMOVED FROM SITE AND DISPOSED OF AS DESCRIBED BELOW.
   - THE CONTRACTOR SHALL EXCAVATE THE INVASIVE PLANT SPECIES FROM THE AREAS INDICATED IN THE CONTRACT DOCUMENTS AND SHALL REMOVE THE CUT SOIL FROM SITE FOR DISPOSAL AS DESCRIBED BELOW.
8. AFTER EQUIPMENT COMES IN CONTACT WITH INVASIVE PLANT SPECIES, THE CONTRACTOR SHALL KEEP THE EQUIPMENT IN THE IMMEDIATE VICINITY OF THE INVASIVE PLANTS UNTIL THE EQUIPMENT CAN BE CLEANED. ALL EQUIPMENT USED IN AREAS CONTAINING INVASIVE PLANT SPECIES SHALL BE CLEANED PRIOR TO LEAVING THAT AREA OR WORKING IN AREAS THAT ARE NOT INFESTED WITH INVASIVE PLANT SPECIES. UNDER NO CIRCUMSTANCES ARE VEHICLES, EQUIPMENT AND ANY MATERIAL INFESTED WITH INVASIVE SPECIES ALLOWED TO ENTER THE HIGHWAY OR BE MOVED OR TRANSPORTED PRIOR TO CLEANING.
9. CUT PLANT MATERIAL SHALL BE PLACED IN (4 MIL MINIMUM THICKNESS) BLACK PLASTIC BAGS FOR TRANSPORTATION OUT OF THE AREA. BAGS SHALL BE SECURELY TIED OR SEALED. SOIL CONTAINING SEEDS, ROOTS AND/OR RHIZOMES SHALL BE WRAPPED IN BLACK PLASTIC SHEETING (4 MIL MINIMUM THICKNESS) AND TRANSPORTED IN A MANNER WHICH PREVENTS THE SPREAD OF THE CONTAMINATED MATERIAL DURING TRANSPORT. ACCEPTABLE DISPOSAL METHODS CAN BE ONE OF THE FOLLOWING:
   - NYSDEC QUARRY/ MINE RECLAMATION – WHERE FEASIBLE AND ACCESSIBLE, MATERIAL SHALL BE TRANSPORTED TO AN APPROVED QUARRY/ MINE ACCEPTING INVASIVE MATERIAL.
   - LANDFILL/ INCINERATOR – PLANT MATERIAL OR SPOIL CONTAINING INVASIVE PLANT MATERIAL SHALL BE DISPOSED OF IN A MUNICIPAL SOLID WASTE MANAGEMENT FACILITY OR INCINERATOR THAT IS OPERATED UNDER CURRENT 6 NYCRR PART 360 REGULATIONS.
   - APPROVED NYSDOT DISPOSAL FACILITY – WHERE AVAILABLE, PLANT MATERIAL OR SPOIL CONTAINING INVASIVE PLANT MATERIAL MAY BE DISPOSED OF IN REGIONAL INVASIVE SPECIES DISPOSAL FACILITIES.
10. EQUIPMENT USED IN AREAS CONTAINING INVASIVE PLANT SPECIES SHALL BE POWER–WASHED (1000 PSI MINIMUM) AND CLEANED WITH CLEAN WATER (WITHOUT USING CLEANING SOAPS OR CHEMICALS) BEFORE LEAVING THE INVASIVE CONTROL/REMOVAL AREA TO PREVENT THE SPREAD OF SEEDS, ROOTS, OR OTHER VIABLE PLANT PARTS. EQUIPMENT CLEANING STATIONS SHALL INCLUDE EITHER A CONSTRUCTED CLEANING STATION OR A PORTABLE COMMERCIAL CLEANING STATION WITH A RACK. LOOSE PLANT AND SOIL MATERIAL THAT HAS BEEN REMOVED FROM CLOTHING, BOOTS AND EQUIPMENT, OR GENERATED FROM CLEANING OPERATIONS, INCLUDING CONSTRUCTED CLEANING STATION MATERIAL AFTER USE, SHALL BE DISPOSED OF AS DESCRIBED IN DISPOSAL OF MATERIAL, ABOVE.

100% DESIGN

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NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

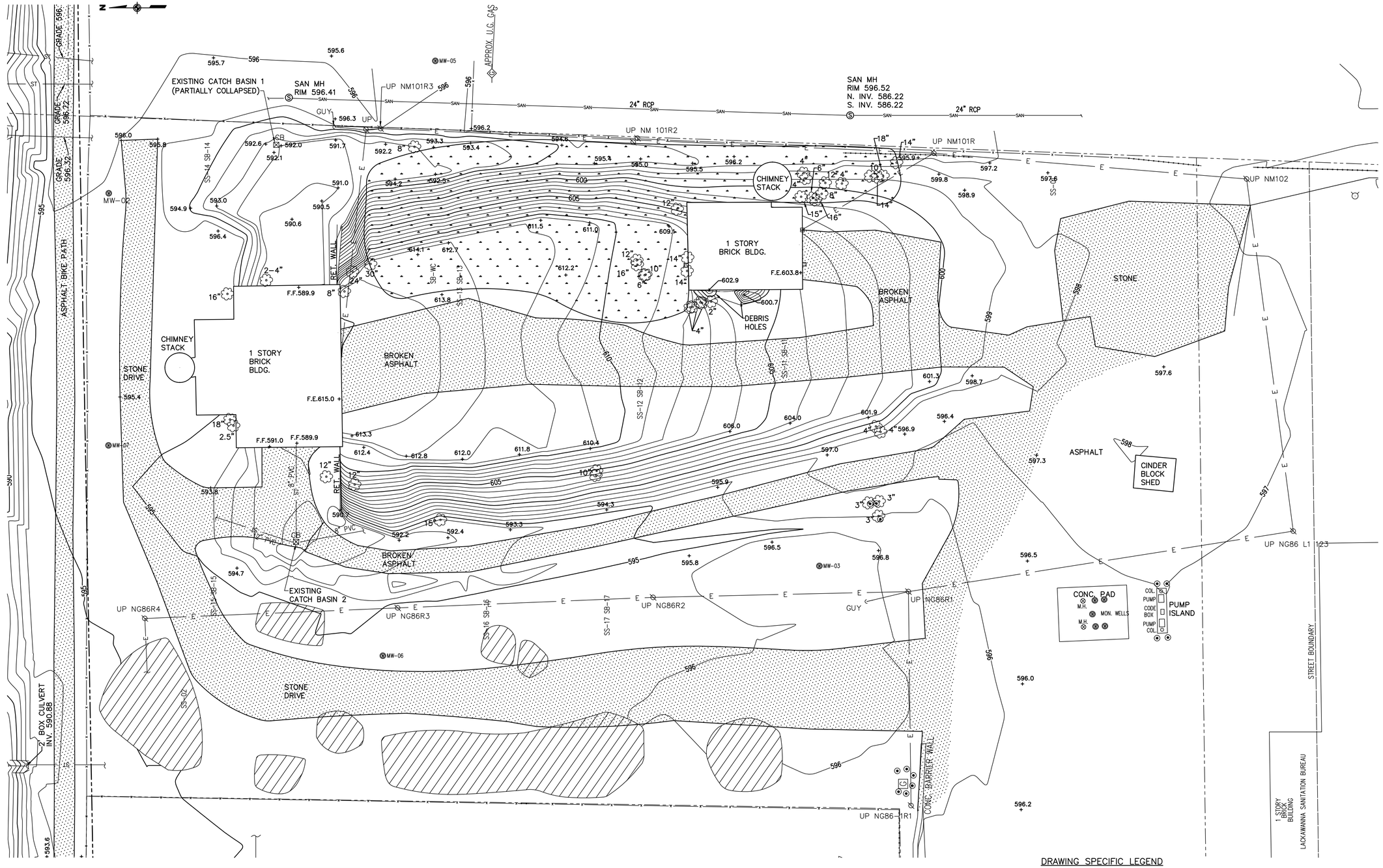
Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

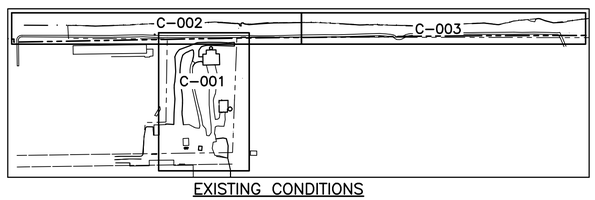
Sheet title:
SPECIFICATIONS
(3 OF 3)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:
G-004





EXISTING CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- DEBRIS PILE (AS OF 3/26/19 URS SURVEY) NOT ALL DEBRIS PILES, ETC. SHOWN.
- APPROXIMATE AREA OF KNOTWEED. TO BE VERIFIED IN THE FIELD
- ASPHALT/STONE DRIVE OR BIKE PATH

100% DESIGN

20' 0 20'
SCALE IN FEET

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

EXISTING SITE
CONDITIONS (1 OF 3)

Scale: 1"=20'

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: CED

Dwg No:

C-001

Pg No: 6 of 14

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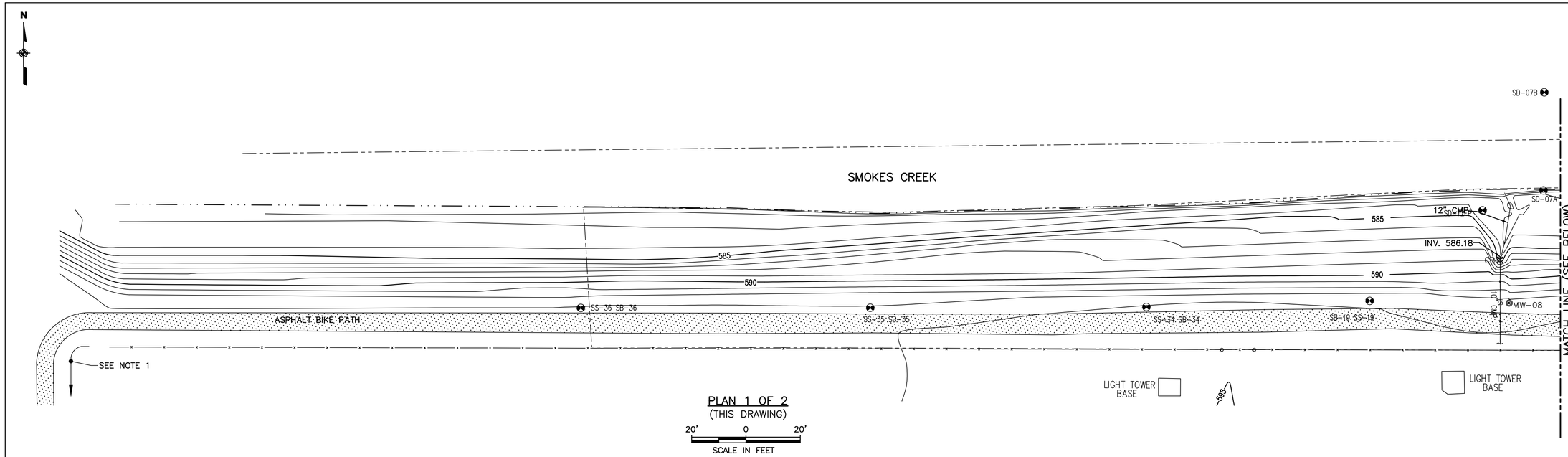

PLAN 1 OF 2
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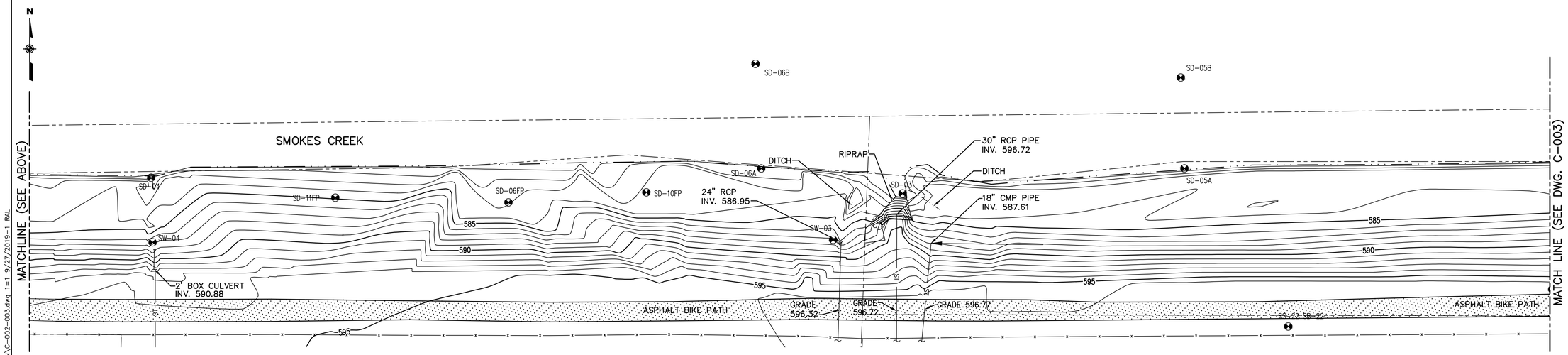
20' 0 20'
SCALE IN FEET

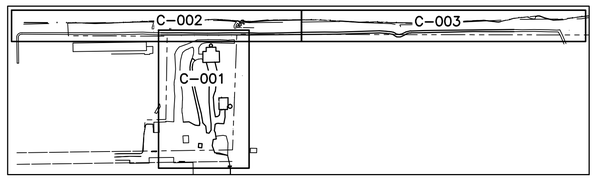


PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET

NOTE:

1. LOCATION OF WESTERN EXTENT OF ASPHALT BIKE PATH APPROXIMATED FROM AERIAL PHOTOGRAPHY.



EXISTING CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND

ASPHALT BIKE PATH

100% DESIGN

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
EXISTING SITE CONDITIONS (2 OF 3)

Scale: 1"=20'

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:
C-002

Pg No: 7 of 14

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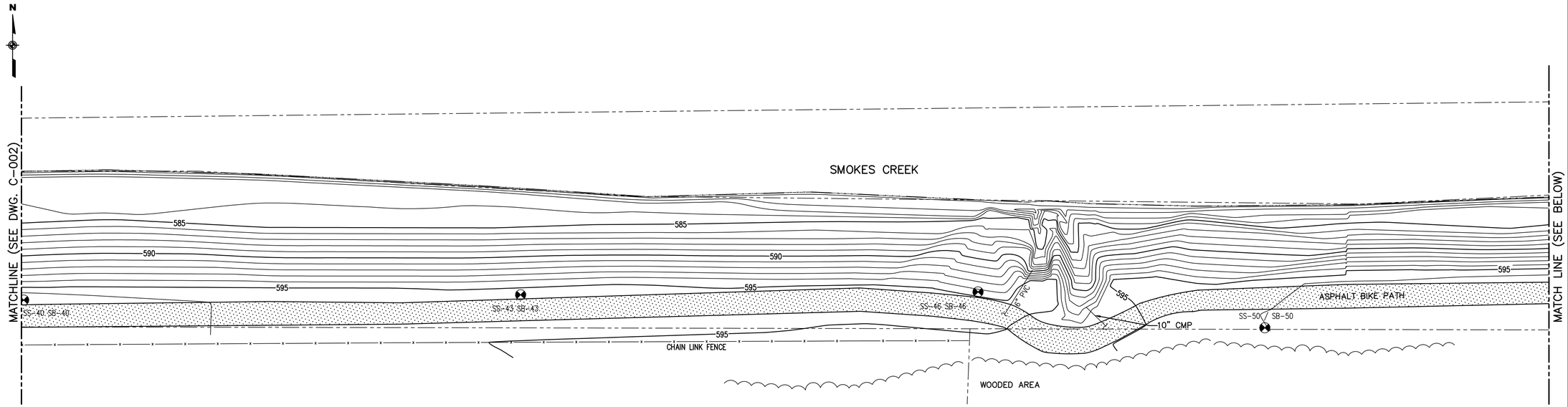
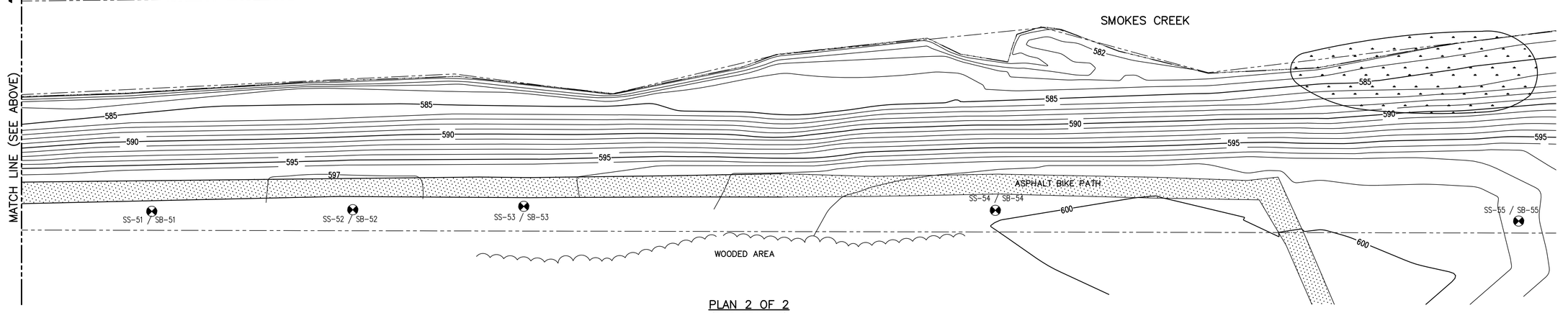


PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET



PLAN 2 OF 2
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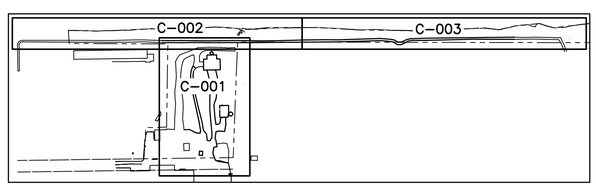
20' 0 20'
SCALE IN FEET



EXISTING CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND

APPROXIMATE AREA OF KNOTWEED. TO BE VERIFIED IN THE FIELD

ASPHALT BIKE PATH

100% DESIGN

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
EXISTING SITE CONDITIONS (3 OF 3)

Scale: 1"=20'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:
C-003

Pg No: 8 of 14

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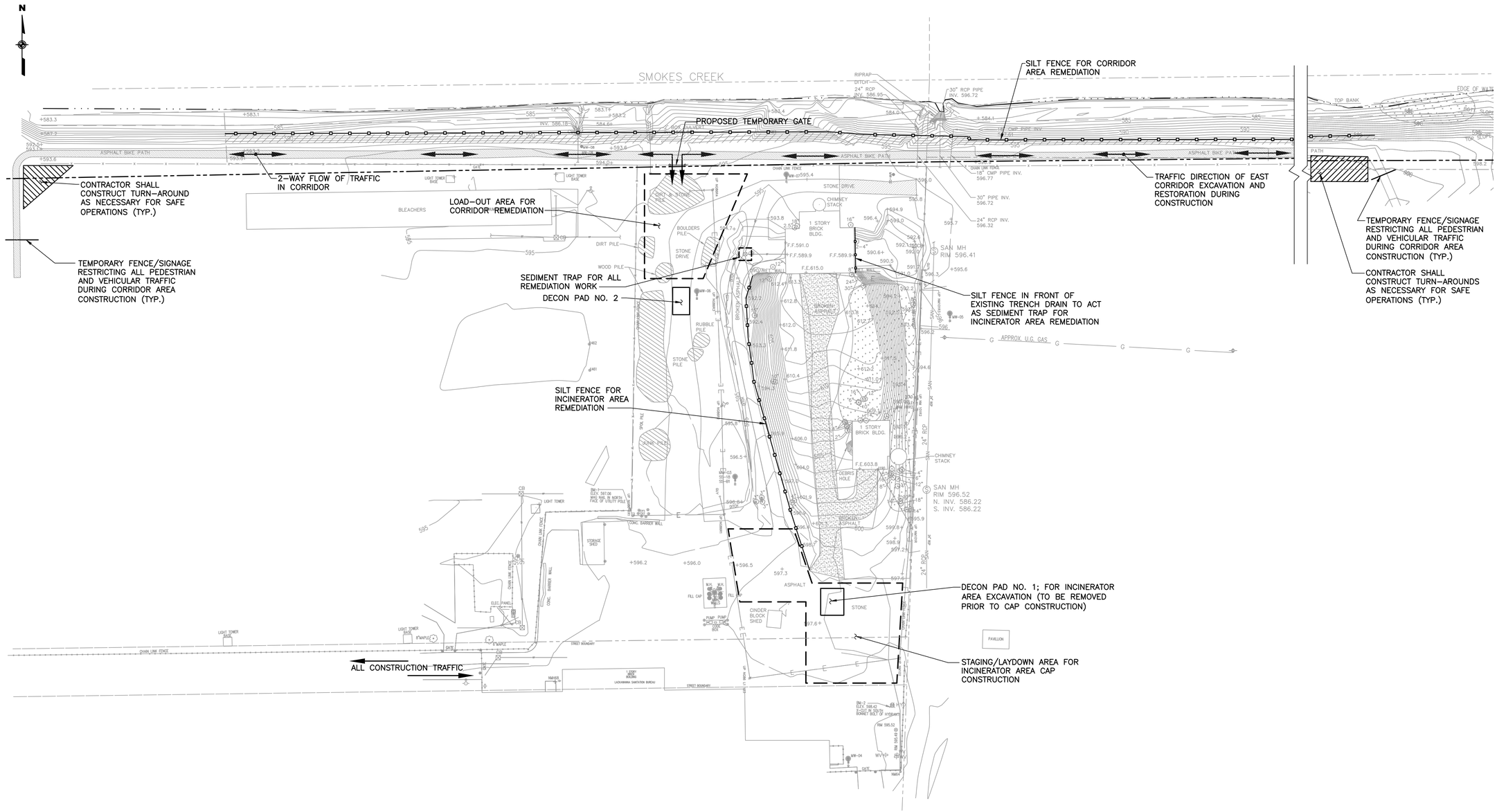

ANTICIPATED WORK LAYOUT:

THIS ANTICIPATED WORK LAYOUT IS INTENDED TO PROMOTE SAFETY AND REDUCE THE TIME REQUIRED FOR THE WORK. THE CONTRACTOR SHALL SUBMIT ITS PROPOSED WORK PLAN FOR APPROVAL BY THE ENGINEER OR THE DEPARTMENT PRIOR TO STARTING THE WORK.

100% DESIGN

50' 0 50'
SCALE IN FEET

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

REMEDIAL OPERATIONS PLAN

Scale: 1"=50'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:

C-004

Pg No: 9 of 14

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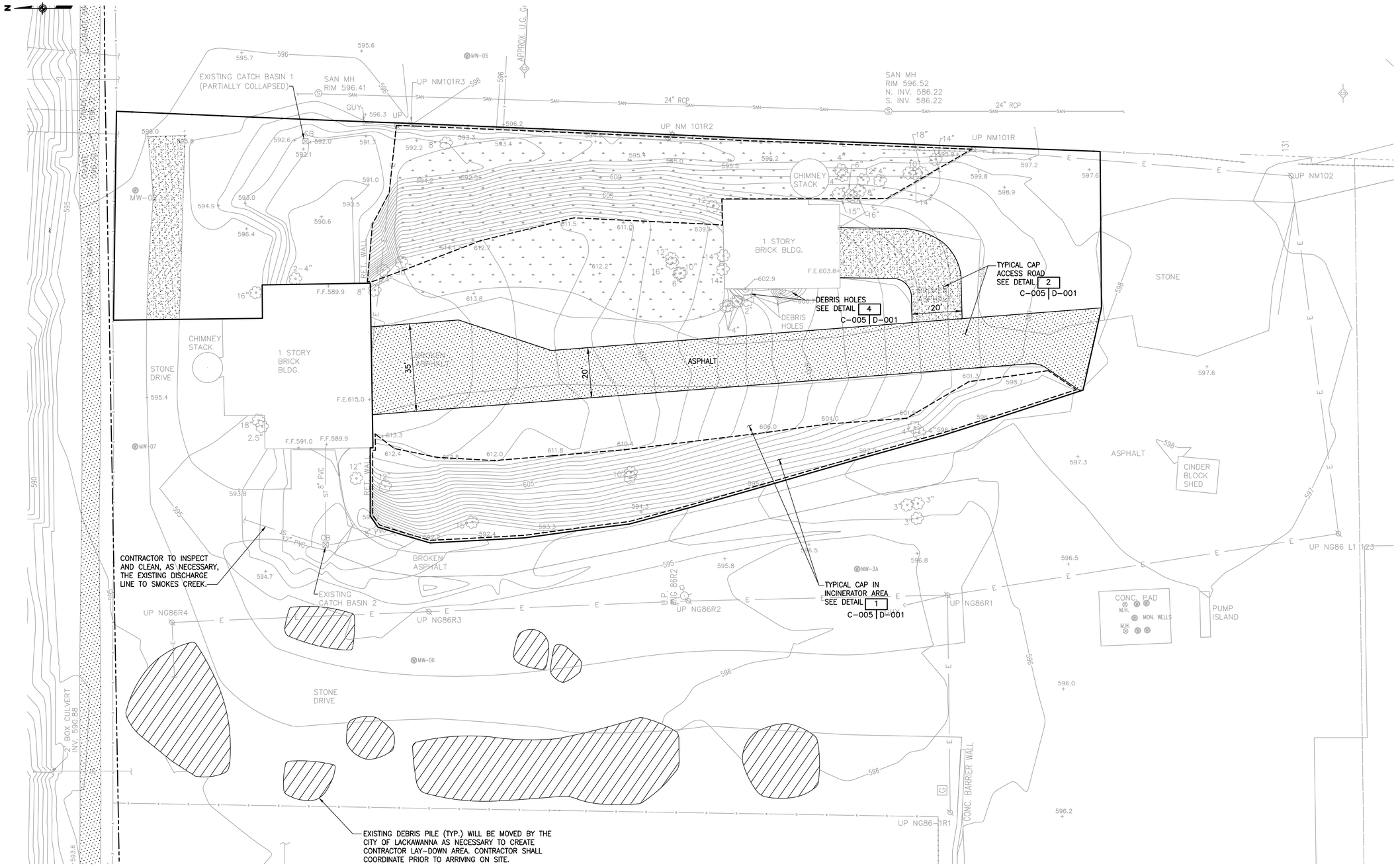

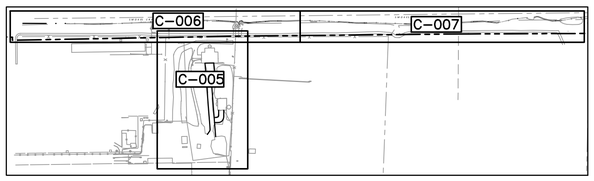

PROPOSED CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND

- MW-04 EXISTING MONITORING WELL
- LIMIT OF CAP IN INCINERATOR AREA
- ASPHALT ROAD PORTION OF CAP
- GRAVEL ROAD PORTION OF CAP
- APPROXIMATE AREA OF KNOTWEED. TO BE CONFIRMED IN THE FIELD.
- LIMITS OF EROSION CONTROL BLANKET
- DEBRIS PILE (AS OF 3/26/19 URS SURVEY) (SEE NOTE 1)
- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 568 EXISTING CONTOUR

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
PROPOSED SITE CONDITIONS – INCINERATOR AREA
Scale: 1"=20'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	CED

Dwg No:
C-005

Pg No: 10 of 14

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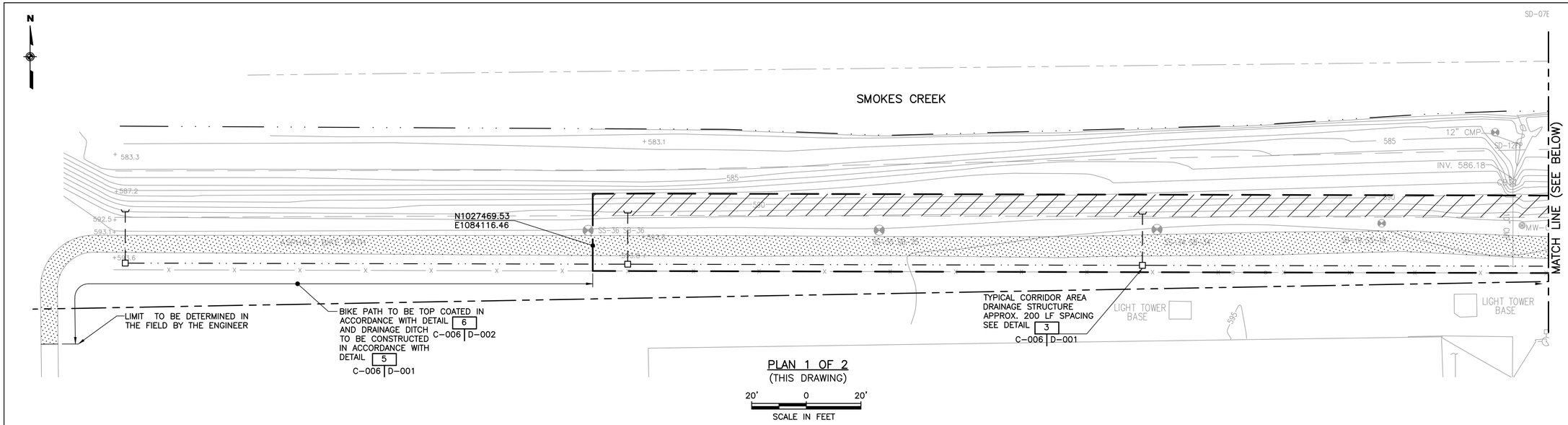

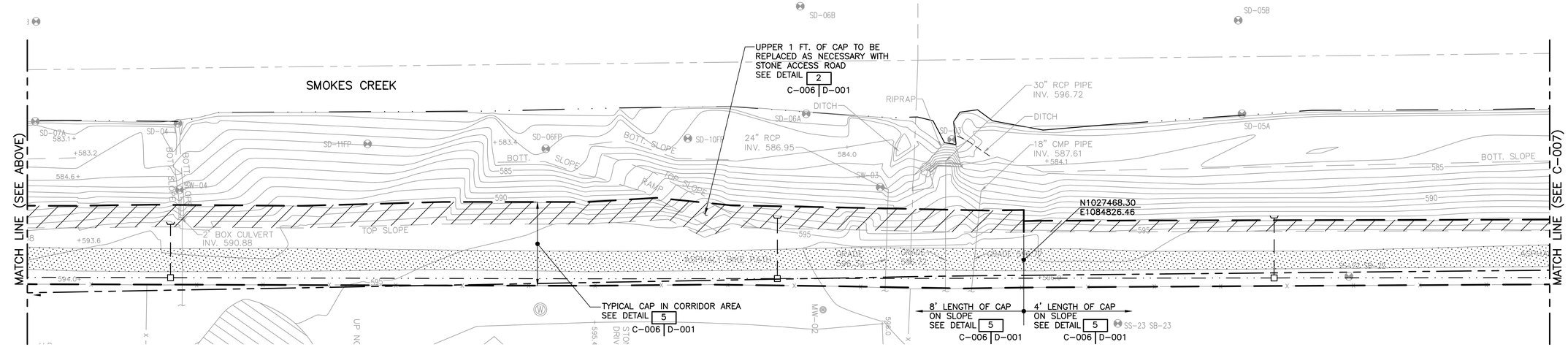

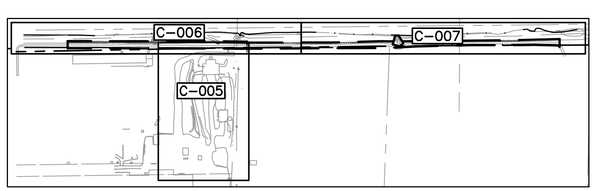

PROPOSED CONDITIONS KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND:

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 568 EXISTING CONTOUR
- 2 FOOT EXCAVATION/BACKFILL AND STABILIZATION WITH RULED EROSION CONTROL PRODUCT
- LIMIT OF CAP IN CORRIDOR AREA
- ASPHALT BIKE PATH

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
PROPOSED SITE CONDITIONS-SMOKES CREEK CORRIDOR (1 OF 2)

Scale: 1"=20'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:
C-006

Pg No: 11 of 14

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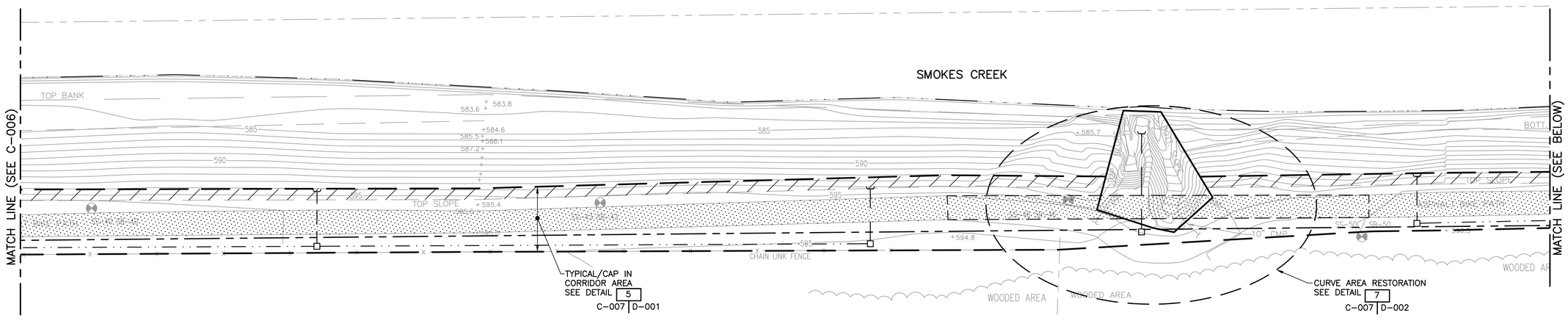
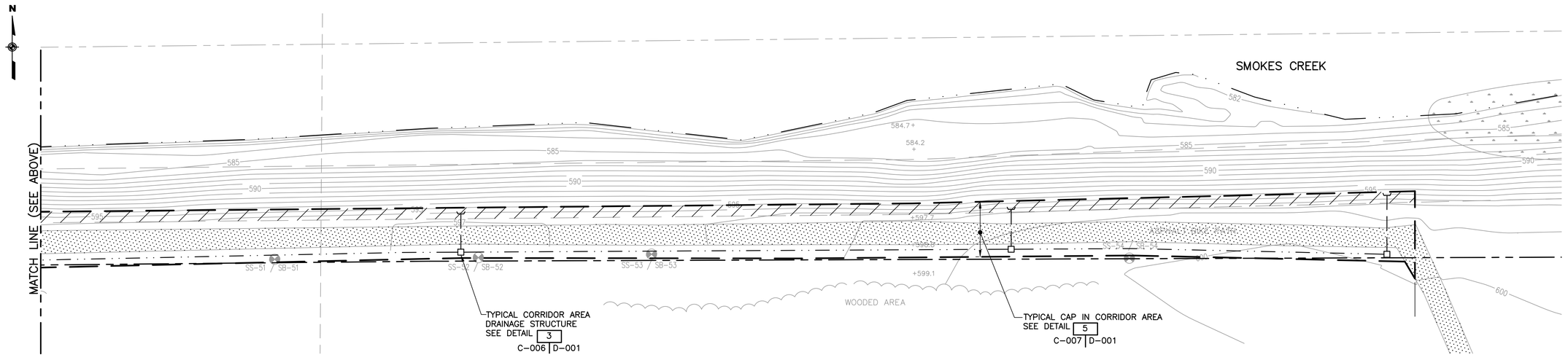


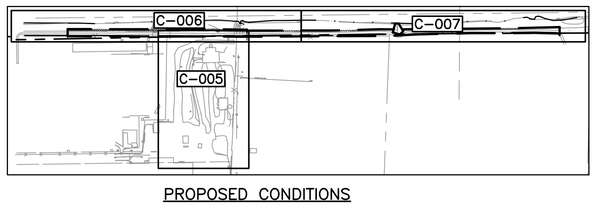
PLAN 1 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET



PLAN 2 OF 2
(THIS DRAWING)

20' 0 20'
SCALE IN FEET



PROPOSED CONDITIONS
KEY PLAN
SCALE: 1"=300'

DRAWING SPECIFIC LEGEND:

- SOUTHERN LIMIT OF USACE PERMANENT MAINTENANCE EASEMENT
- 568 EXISTING CONTOUR
- 2 FOOT EXCAVATION/BACKFILL AND STABILIZATION WITH RULED EROSION CONTROL PRODUCT
- LIMIT OF CAP IN CORRIDOR AREA
- ASPHALT BIKE PATH

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:
LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:
PROPOSED SITE CONDITIONS-
SMOKES CREEK CORRIDOR
(2 OF 2)
Scale: 1"=20'

Date:	SEPTEMBER 2019
Project No.:	60594844
Dwg By:	RAL
Chk By:	RMC

Dwg No:
C-007

Pg No: 12 of 14

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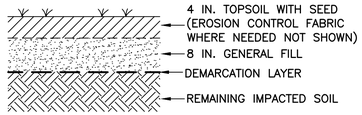
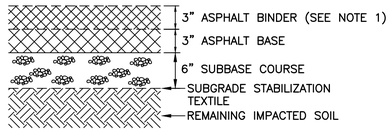
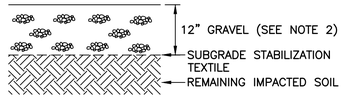


TYPICAL CAP IN INCINERATOR AREA DETAIL 1

NTS C-005 | D-001



PAVED ACCESS ROAD



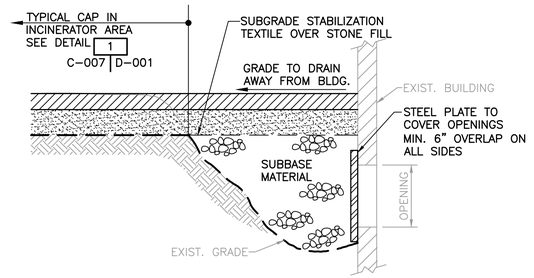
STONE ACCESS ROAD

ACCESS ROAD DETAIL 2

NTS C-005 | D-001

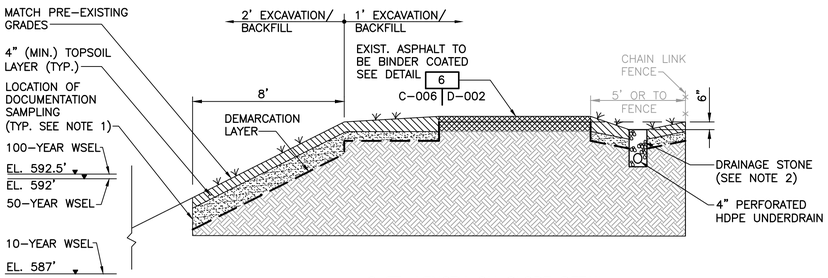
NOTES:

1. ASPHALT PAVEMENT FOR INCINERATOR AREA ACCESS ROAD SHALL CONSIST OF 3" NYSDOT TYPE 3 BINDER COURSE AND 3" NYSDOT TYPE 1 BASE COURSE.
2. GRAVEL FOR INCINERATOR AREA ACCESS ROAD SHALL CONSIST OF NYSDOT ITEM 667.01.



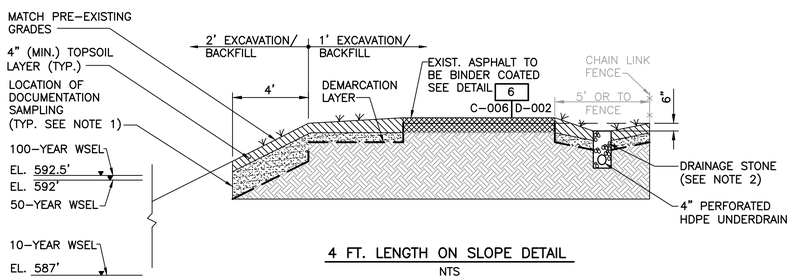
TYPICAL DEBRIS HOLE RESTORATION DETAIL 4

NTS C-005 | D-001



8 FT. LENGTH ON SLOPE DETAIL

NTS



4 FT. LENGTH ON SLOPE DETAIL

NTS

TYPICAL CAP IN CORRIDOR AREA 5

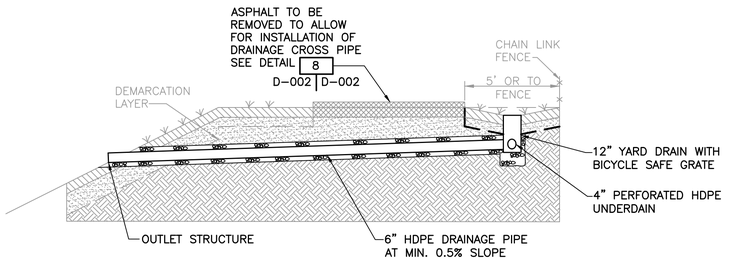
NTS C-006 | D-001

NOTE:

1. DOCUMENTATION SAMPLING IN IN CORRIDOR AREA TO BE TAKEN EVERY 500 LF.
2. DRAINAGE STONE WILL BE PROVIDED BY THE CITY OF LACKAWANNA.

LEGEND:

- VEGETATED TOPSOIL
- GENERAL FILL
- ASPHALT
- REMAINING IMPACTED SOIL
- SUBBBASE



TYPICAL CORRIDOR AREA DRAINAGE STRUCTURE

CORRIDOR AREA DRAINAGE DETAIL 3

NTS C-006 | D-001

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:
URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

GENERAL DETAILS
(1 OF 2)

Scale: N.T.S.

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

D-001

Pg No: 13 of 14

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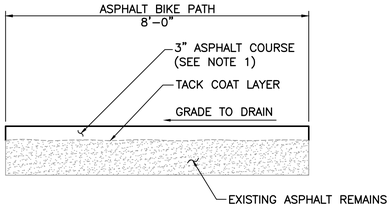
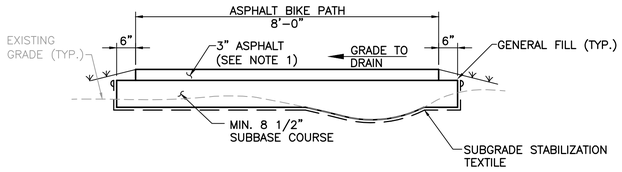


TYPICAL TOP-COAT ASPHALT BIKE PATH DETAIL 6

NTS

C-006 | D-002



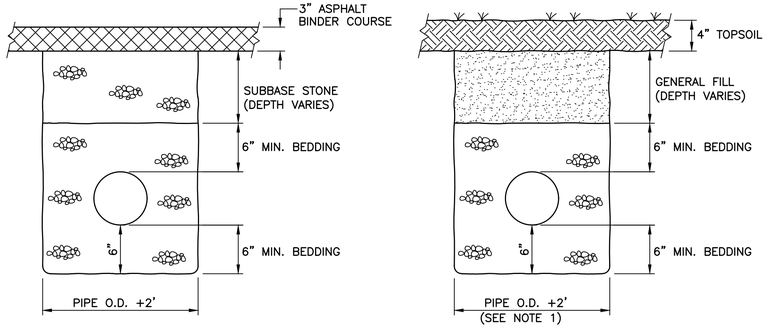
TYPICAL FULL DEPTH BIKE PATH DETAIL 8

NTS

D-002 | D-002

NOTE:

1. ASPHALT SHALL CONSIST OF 3" NYSDOT TYPE 3 BINDER COURSE.



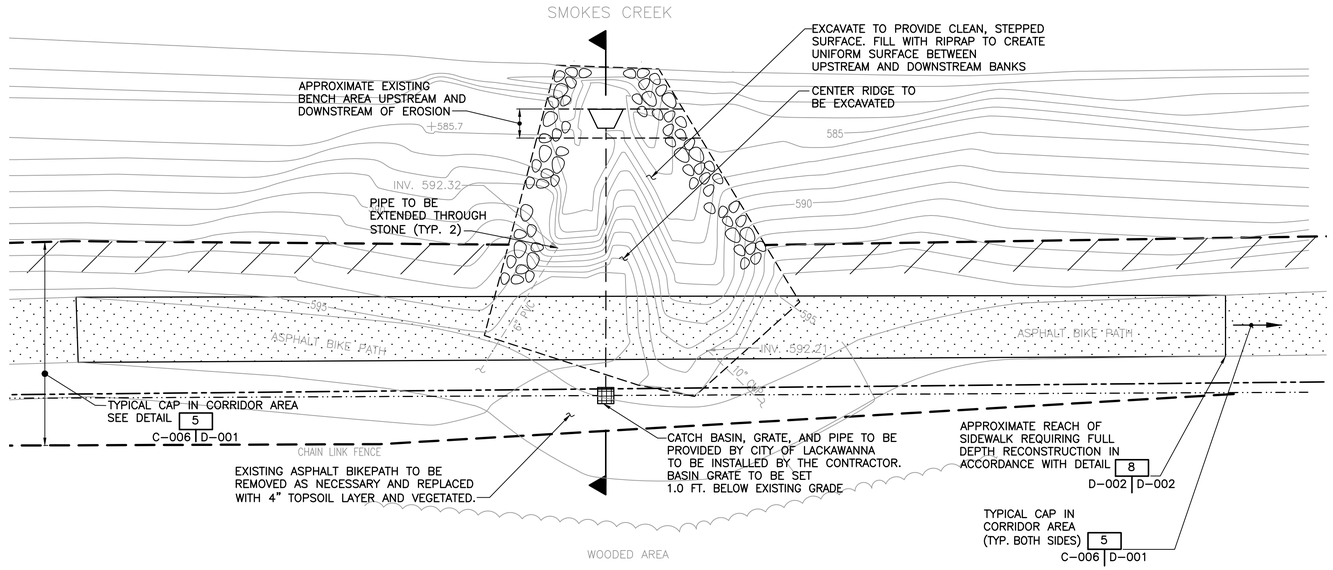
TYPICAL PIPE BEDDING DETAIL 9

N.T.S.

D-002 | D-002

NOTE:

1. WIDTH OF TRENCH FOR 4" HDPE UNDERDRAIN SHALL BE 1 FT.

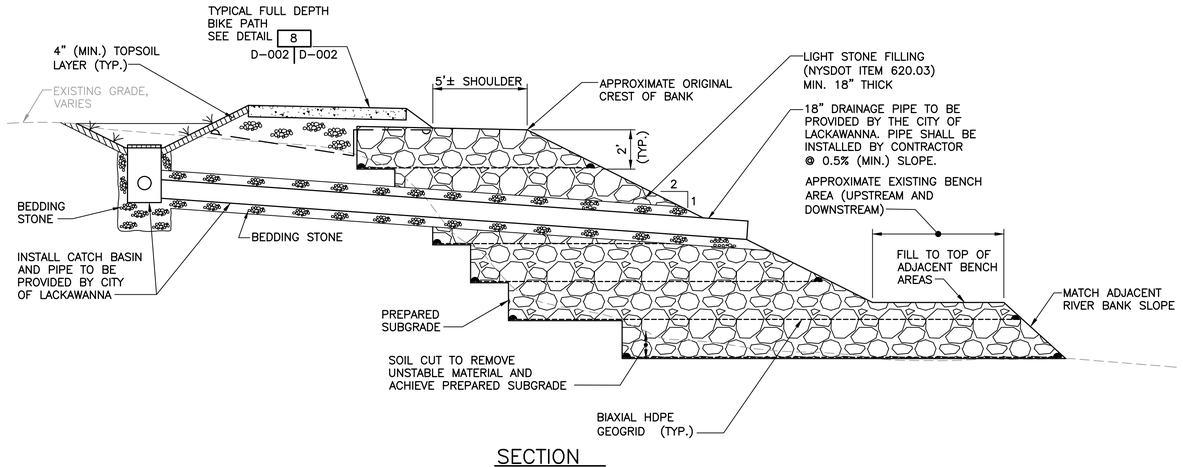


CURVE AREA RESTORATION DETAIL 7

C-007 | D-002

10' 0 10'

SCALE IN FEET



SECTION

N.T.S.

NOTES:

1. BIAXIAL GEOGRIDS SHALL BE TENSAR BX-1300 OR APPROVED EQUAL.
2. GEOGRIDS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS.
3. GEOGRIDS SHALL BE PLACED PERPENDICULAR TO THE FACE OF THE FILL, EXCEPT WHERE THE FACE OF THE FILL IS CURVED. GEOGRIDS SHALL BE INSTALLED IN ACCORDANCE WITH NYSDOT STANDARD SHEET 554-02, DETAIL H AND OVERLAPPING LAYERS SHALL BE SEPARATED BY A MINIMUM OF 3" OF BACKFILL MATERIAL.
4. ADJACENT GEOGRIDS SHALL BE BUTTED TOGETHER SIDE-BY-SIDE WITHOUT OVERLAP.
5. GEOGRIDS SHALL BE PRETENSIONED TO REMOVE ANY SLACK. PRETENSIONING SHALL BE MAINTAINED THROUGHOUT THE INSTALLATION BY STAKING OR ANCHORING WITH BACKFILL MATERIAL.
6. GEOGRID SHALL BE INSTALLED IN ACCORDANCE WITH PUBLISHED INSTALLATION GUIDELINES OF THE GEOGRID MANUFACTURER, MEETING GENERALLY ACCEPTED STANDARDS OF THAT INDUSTRY.
7. ANY LOOSE MATERIALS TO BE REMOVED PRIOR TO PLACEMENT OF NYSDOT 620.03 STONE.

100% DESIGN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

PROJECT NAME:

LACKAWANNA INCINERATOR SITE

NYSDEC SITE NO. 915206
ERIE COUNTY, NEW YORK

Engineer:

URS CORPORATION - NY
257 WEST GENESEE STREET
BUFFALO, NY 14202
T: 716.856.5636

Seal and Signature:

REV. NO.	DATE:	REVISION:

Owner's Information:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York 12233

Sheet title:

GENERAL DETAILS (2 OF 2)

Scale: AS SHOWN

Date: SEPTEMBER 2019
Project No.: 60594844
Dwg By: RAL
Chk By: RMC

Dwg No:

D-002

Pg No: 14 of 14

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